EWNext Performance -HC

Electronic controllers compatible with flammable refrigerant gases

User Manual

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EWNXP-02EN

www.eliwell.com

by Schneider Electric

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Safety information

Important information

Notices

Read these instructions carefully and visually inspect the equipment to familiarize yourself with the controller before attempting to install it and/or put it into operation, or before servicing it. The following warning messages may appear anywhere in this documentation or on the equipment to warn of potential dangers or to call attention to information that can clarify or simplify a procedure.

The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety warning symbol. It is used to warn the user of the potential dangers of personal injury. Observe all the safety warnings that follow this symbol to avoid the risk of serious injury or death.

⚠ DANGER
DANGER indicates a dangerous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING
WARNING indicates a dangerous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION
CAUTION indicates a potentially dangerous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE
NOTICE used in reference to procedures not associated with physical injuries.

Please Note

Electrical equipment must only be installed, used and repaired by qualified technicians. Schneider Electric and Eliwell do not accept any liability for any consequences arising from the use of this material.

An authorized person is someone in possession of the skills and knowledge applicable to the structure, to the operation of the electrical equipment and to its installation, and who has received safety training in order to recognize and avoid the risks involved.

Personnel qualification

Only personnel with suitable training and an in-depth knowledge and understanding of the contents of this manual and any other documentation relevant to the product are authorized to work on and with this product. Qualified personnel must be capable of identifying any dangers which may arise from the parameterization or changing of parameter values, and from the use of mechanical, electric and electronic equipment in general.

Plus, they must be familiar with the personal safety laws, provisions and regulations which must be observed during system planning and implementation.

Permitted use

This product is used to control refrigerated cabinets, display units and refrigerated units.

The controller must be installed and used in accordance with the provided instructions and in particular, in normal conditions, dangerous energized parts must not be accessible.

The controller should be suitably protected from water and dust. Access to the various product parts from the front should involve the use of a keyed or tooled locking mechanism.

The controller is suitable for integration into equipment for controlling refrigerated cabinets, display units and refrigerated units, and has been checked on the basis of the harmonized European standards of reference.

Only use the product with the specified cables and accessories. Only use genuine accessories and spare parts.

Prohibited use

Any use other than that indicated in the above paragraph "Permitted use" is strictly prohibited.

The relay contacts supplied are electromechanical and are subject to wear. The functional safety protection devices, specified by international or local laws, must be installed outside this device.

Liability and residual risks

The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- unspecified installation/use and, in particular, in contravention of the safety requirements of the legislation in force in the country of installation and/or specified in this document;
- use on equipment which does not provide adequate protection against electrocution, water and dust in the actual installation conditions;
- use on devices which allow access to dangerous parts without the aid of tools and/or which do not have a keyed locking mechanism;
- product tampering and/or alteration;
- installation/use on equipment that does not comply with the regulations in force in the country of installation.

Disposal

The equipment (or product) must be subjected to separate waste collection in compliance with local legislation regarding waste disposal.

About the book

Document Scope

This document describes the **EWNext Performance -HC** controllers and corresponding accessories, including information regarding installation and wiring.

Note: read this document and all related documents carefully before installing, operating or servicing the controller.

Validity Note

The technical characteristics of the devices described in this manual are also available online, through the Eliwell website (**www.eliwell.com**).

The characteristics illustrated in this manual should be identical to those which can be found online. In accordance with our policy of continuous improvement, the content of the documentation may be revised from time to time in order to improve its clarity and accuracy. If there are any discrepancies between the manual and the information available online, use the latter as your point of reference.

Related documents

Publication title	Reference document code
Instruction Sheet EWNext Performance -HC	9IS54767 (7L)

All available technical documentation and other technical information is available to download from the website: **www.eliwell.com**

Product related information

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and use this equipment in an enclosure appropriately rated for its intended environment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.

Failure to follow these instructions will result in death or serious injury.

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK AND/OR FIRE

- Do not expose the equipment to liquids.
- Do not exceed the temperature and humidity ranges specified in the technical data and keep the area surrounding the cooling slits aerated.
- Do not apply dangerous voltages to the SELV connection terminals (see "Connections" chapter).
- Only connect compatible accessories - as specified in the section "Accessories" - to the device.
- Only use cables with a suitable cross-section (see “Best wiring practices”).
- Only use recommended disconnectable terminals (see “Best wiring practices”)

Failure to follow these instructions will result in death or serious injury.

⚠ ⚠ DANGER

LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK AND/OR FIRE

Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING

HAZARD OF OVERHEATING AND/OR FIRE

- Do not use with loads other than those indicated in the technical data.
- Do not exceed the maximum permitted current; in the case of higher loads, use a contactor with suitable power.
- Make sure the application has not been designed with the controller outputs connected directly to instruments that generate a frequently activated capacitive load (1).
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay output, including the shared pole, using cables with a cross-section of 2.5 mm^2 (14 AWG) and a length of at least 200 mm (7.87 in.).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) Even if the application does not apply a frequently activated capacitive load to the relay, capacitive loads reduce the life of any electromechanical relay and the installation of a contactor or external relay, sized and maintained according to the ratings and characteristics of the capacitive load, helps to minimize the consequences of relay degradation.

When handling the equipment, take care to avoid damage caused by electrostatic discharge. In particular, the unshielded connectors are extremely vulnerable to electrostatic discharge.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE

Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTICE

UNINTENDED EQUIPMENT OPERATION

- Prevent subject devices from direct access or direct link by unauthorized parties or unauthenticated actions.
- You must have a complete understanding of the application and the machine before attempting to control the application remotely.
- Isolate your industrial network from other networks inside your company.
- Take the precautions necessary to assure that you are operating remotely on the intended machine by having clear, identifying documentation within the application and its remote connection.

Failure to follow these instructions can result in equipment damage.

NOTICE

INOPERABLE DEVICE

- For the connection of probes and the digital input, use cables shorter than 10 m (32.80 ft).
- For Open Collector output connection, use cables no longer than 10 m (32.80 ft).
- For defrost synchronization line connection, use cables no longer than 10 m (32.80 ft).
- For TTL serial line connection, use cables no longer than 1 m (3.28 ft).

Failure to follow these instructions can result in equipment damage.

The controller can be upgraded only with authenticated Schneider Electric or Eliwell files. In case the authenticity check fails the controller stay idle, without any capacity for regulation.

NOTICE

UNINTENDED EQUIPMENT OPERATION

Use authenticated Schneider Electric or Eliwell files only.

Failure to follow these instructions can result in equipment damage.

To restore the normal operation of the controller, upload an authenticated file.

NOTICE

UNINTENDED EQUIPMENT OPERATION

The SELV wiring must be kept separate from all the other wiring (see "Connections" chapter).

Failure to follow these instructions can result in equipment damage.

The temperature (NTC) probes have no specified connection polarity; the connections can be extended using a normal bipolar cable. Extending the probe wiring influences the electromagnetic compatibility (EMC) of the controller.

Flammable refrigerant gases

The use of flammable gas refrigerants is dependent on may factors, including local, regional and/or national regulations.

The devices and corresponding accessories described in the documentation accompanying the product use components and, more specifically, electromechanical relays tested in accordance with IEC standard 60079-15 and classed as nC components (non-sparking ‘n’ electrical apparatus).
This condition complies to Annex BB of EN/IEC 60335-2-89.

Conformance to Annex BB EN/IEC 60335-2-89 is considered sufficient, and thereby suitable, for commercial refrigeration applications applying flammable gas refrigerants, such as R290. However, other limitations, equipment, locations and/or type of machine (refrigerators, vending machines and dispensers, bottle coolers, ice machines, Reach-Ins, etc.) may also be implicated, restricted and/or required in so doing.

The use and application of the information contained herein require expertise in the design and parameterizing/programming of refrigeration control systems. Only you—the original equipment manufacturer, installer or user—can be aware of all the conditions and factors present, and the regulations applicable, during the design, installation and setup, operation, and maintenance of the machine or related processes. Therefore, only you can determine the suitability of automation and associated equipment, and the related safeties and interlocks, which can be effectively and properly used in the locations for which the equipment is to be put into service. When selecting automation and control equipment, and any other related equipment or software for an application, you must also consider any applicable local, regional or national standards and/or regulations.

You must verify, while incorporating this controller and related equipment, the final compliance of the machine to regulations and standards when using flammable gas refrigerants. Although all statements and information contained herein are believed to be accurate and reliable, they are presented without warranty of any kind. Information provided herein does not relieve you from the responsibility of carrying out your own tests and validations of conformance to any applicable regulations.

⚠ WARNING

REGULATORY INCOMPATIBILITY

Be sure that all equipment applied and systems designed comply with all applicable local, regional and national regulations and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Introduction

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This section includes the following topics:

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Introduction

General Description

EWNext Performance -HC is a family of electronic controllers for managing refrigerated cabinets, display units and refrigerated units.

Every controller has 3 preset applications: **AP1**, **AP2** and **AP3**, that pre-configure the controller to work with 3 real usage situations, reducing installation time and only requiring precision changes to parameters.

Main regulators

The main regulators for the controller are as follows:

- heat/cool
- compressor
- deep cooling cycle
- dual compressor
- variable-speed compressor
- evaporator/condenser fans
- Modulating defrost
- Standard defrost
- dual evaporator defrost
- door switch
- AUX output (Auxiliary/Light)
- pressure switch
- day/night
- energy saving
- deadband

In this manual, the photographs and diagrams are provided to illustrate the controller (and other Eliwell devices) and are purely illustrative. The corresponding dimensions and proportions may not correspond to actual dimensions in terms of life-size or scale. Furthermore, all the wiring or electrical diagrams should be considered as simplified representations which may not accurately represent the reality.

Models

The following is a list of **EWNext Performance -HC** models:

Product	Description
EWNext 961 P	EWNext 961 P NTC 2Hp 230 Vac AIR -HC
	EWNext 961 P NTC 2Hp 230 Vac PH AIR -HC
EWNext 961 P/B	EWNext 961 P NTC 1Hp 115 Vac BUZ AIR -HC
	EWNext 961 P NTC 1Hp 115 Vac BUZ PH AIR -HC
	EWNext 961 P NTC 2Hp 230 Vac BUZ AIR -HC
	EWNext 961 P NTC 2Hp 230 Vac BUZ PH AIR -HC
EWNext 971 P	EWNext 971 P NTC 2Hp/8 230 Vac AIR -HC
	EWNext 971 P NTC 2Hp/8 230 Vac PH AIR -HC
EWNext 971 P/B	EWNext 971 P NTC 1Hp/8 115 Vac BUZ AIR -HC
	EWNext 971 P NTC 1Hp/8 115 Vac BUZ PH AIR -HC
	EWNext 971 P NTC 2Hp/8 230 Vac BUZ AIR -HC
	EWNext 971 P NTC 2Hp/8 230 Vac BUZ PH AIR -HC
EWNext 974 P	EWNext 974 P NTC 2Hp/8/5 230 Vac AIR -HC
	EWNext 974 P NTC 2Hp/8/5 230 Vac PH AIR -HC
EWNext 974 P/B	EWNext 974 P NTC 1Hp/8/5 115 Vac BUZ AIR -HC
	EWNext 974 P NTC 1Hp/8/5 115 Vac BUZ PH AIR -HC
	EWNext 974 P NTC 2Hp/8/5 230 Vac BUZ AIR -HC
	EWNext 974 P NTC 2Hp/8/5 230 Vac BUZ PH AIR -HC
EWNext 974 P/C	EWNext 974 P NTC 2Hp/8/5 230 Vac RTC AIR -HC
	EWNext 974 P NTC 2Hp/8/5 230 Vac RTC PH AIR -HC
EWNext 974 P/CY	EWNext 974 P NTC 2Hp/8/5 230 Vac RTC SYN AIR -HC
EWNext 978 P/BC	EWNext 978 P NTC 0.5Hp/8/5/5 115 Vac BUZ RTC AIR -HC
	EWNext 978 P NTC 0.5Hp/8/5/5 115 Vac BUZ RTC PH AIR -HC
	EWNext 978 P NTC 1.5Hp/8/5/5 230 Vac BUZ RTC AIR -HC
	EWNext 978 P NTC 1.5Hp/8/5/5 230 Vac BUZ RTC PH AIR -HC
EWNext 978 P/BCI	EWNext 978 P NTC VSC/1.5Hp/1.5Hp/5 SMPS BUZ RTC AIR -HC
	EWNext 978 P NTC VSC/1.5Hp/1.5Hp/5 SMPS BUZ RTC PH AIR -HC

Abbreviations

The following is a list of abbreviations used in the descriptions:

- **AIR** = controller compatible with the BTLE Dongle
- **PH** = controller with disconnectable terminals
- **BUZ** (/**B**) = controller with Buzzer
- **RTC** (/**C**) = controller with RTC
- **VSC** (/**I**) = controller with Open Collector output for connecting a variable-speed compressor
- **SYN** (/**Y**) = controller with defrosts synchronized via digital input.

Accessories

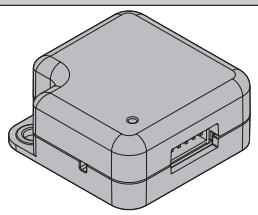
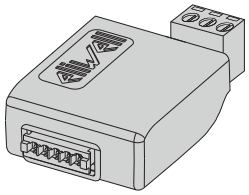
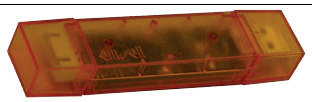
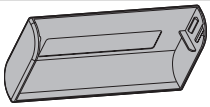
⚠ ⚠ DANGER

RISK OF ELECTRIC SHOCK, FIRE OR ARC FLASH

Only connect compatible accessories to the instrument.

Failure to follow these instructions will result in death or serious injury.

Contact a Eliwell representative for further information regarding the accessories that can be used.

Accessory	Description
	**BTLE Dongle**: TTL/Bluetooth communication interface
	**BusAdapter 150 Dongle**: Non-opto-isolated TTL/RS485 communication interface
	**BusAdapter**: Opto-isolated TTL/RS485 communication interface
	**UNICARD**: Programming key
	**DMI**: Programming interface
	**Probes**: NTC
	**Protection**: Dripping protection for connections

Preliminary configurations

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Introduction

Overview

EWNext Performance -HC is a family of electronic controllers for managing refrigerated cabinets, display units and refrigerated units.

Every controller has 3 preset applications: **AP1**, **AP2** and **AP3**, that pre-configure the controller to work with 3 real usage situations, reducing installation time and only requiring precision changes to parameters.

Applications

Changing the controller operating parameters does not affect the preset application values.

The first time the instrument is switched on, the operating parameters are the same (for value and visibility) as those for application **AP1**.

Applications **AP1**, **AP2** and **AP3** cannot be edited from the instrument.

Applications **AP2** and **AP3** can only be edited via Device Manager, an Eliwell proprietary software.

Application **AP1** can never be edited (not even using Device Manager) so that the controller can be restored with a reliably working application.

Switching on for the first time

Once the electrical connections have been completed, simply power up the device for it to start working.

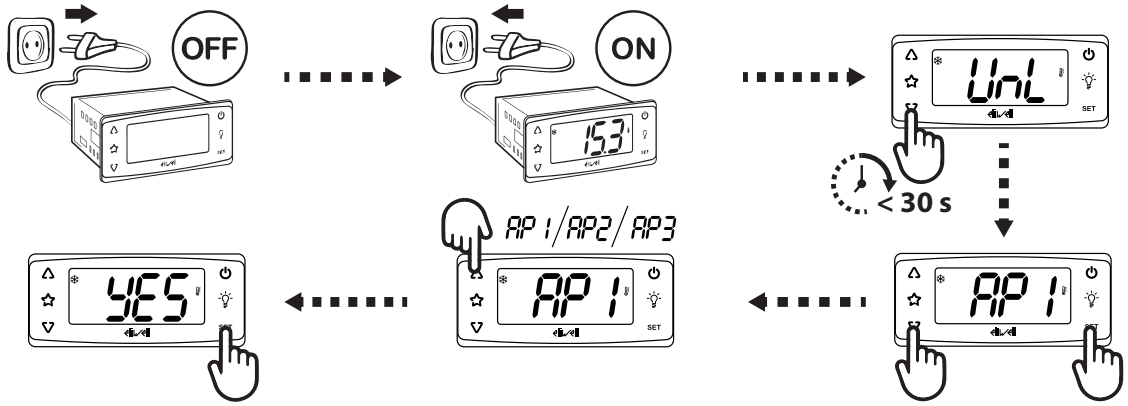
At the first startup:

1. Select and load the preset application - **AP1**, **AP2** or **AP3** - that best reflects the usage requirements.
2. Verify and, if necessary, adjust the value of the main controller parameters to adapt the selected application to your system.
3. Make sure there are no active alarms.

Loading Preset Applications

The procedure to load one of the preset applications is:

1. If the device is on, switch it off
2. Switch on the device
3. Press and hold ∇ for at least 3 seconds, until the keypad unlock label “UnL” appears
4. Within 30 seconds since the device power-on, press and hold (**SET** + ∇) for at least 5 seconds, until the label “AP1” appears
5. Scroll through applications **AP1**, **AP2** and **AP3** using ∆ and ∇
6. Confirm the selected preset application using **SET**.
   Note: The process can be canceled by pressing ⏻ or letting a timeout occur (15 seconds)
7. If the procedure completes successfully, the display will show "**yES**"; otherwise it will show "**no**"
8. The regulator will restart



The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters NON specific for the application that retain the value set previously. These values, left unaltered, may not be correct and may therefore need to be changed.

NOTICE
INOPERABLE DEVICE Verify the parameters after loading a preset application. **Failure to follow these instructions can result in equipment damage.**

Restore default values

When necessary, you can restore the parameters to their default values, by loading one of the preset applications **AP1**, **AP2** or **AP3**.

View Preset applications

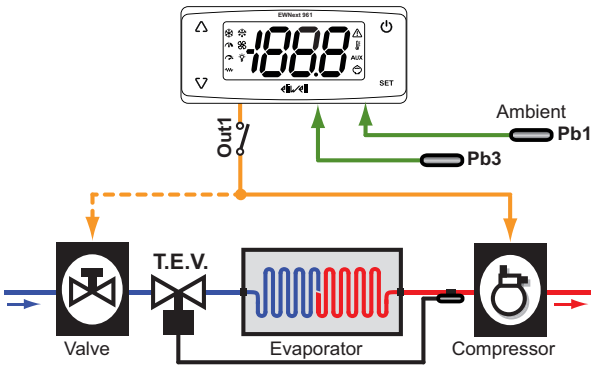
Click on the controller model purchased to access the corresponding Preset applications:

- **EWNext 961 P**
- **EWNext 961 P/B**
- **EWNext 971 P**
- **EWNext 971 P/B**
- **EWNext 974 P**
- **EWNext 974 P/B**
- **EWNext 974 P/C**
- **EWNext 974 P/CY**
- **EWNext 978 P/BC**
- **EWNext 978 P/BCI**

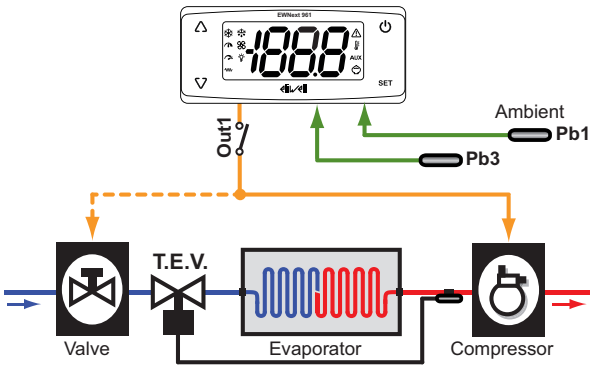
EWNext 961 P (230 Vac)

Application overview

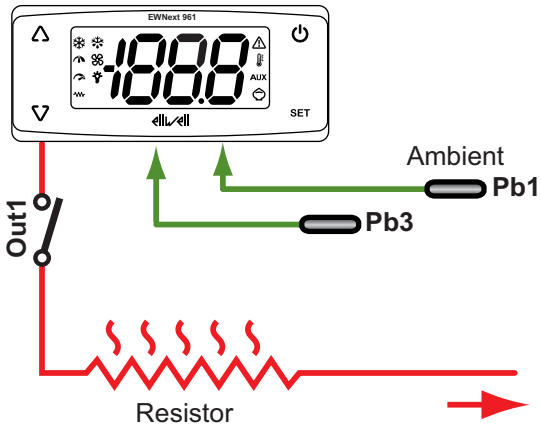
AP1: AT static refrigerated units



AP2: NT static refrigerated units



AP3: heat application



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor
- **Resistor** = Resistor

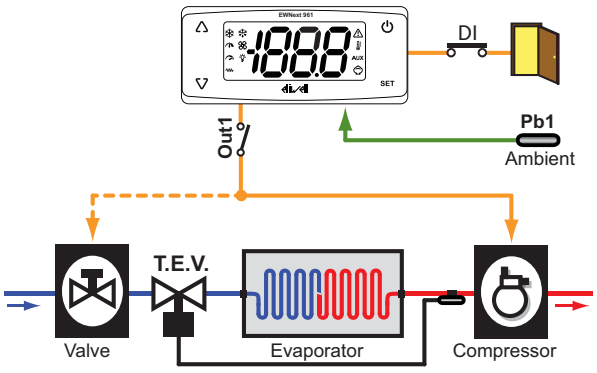
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = 0.0°C (32.0 °F)
Analog inputs	2 NTC input (**Pb1** and **Pb3**)
Digital inputs	No Digital Input
Digital outputs	**Out1** relay (default: Compressor)
Buzzer	NO
RTC	NO
SYN	NO
Type of defrost	**AP1**, **AP2** = Defrost due to compressor stop; **AP3** = ---
End of defrost	**AP1**, **AP2** = due to compressor stop; **AP3** = ---
Active alarms	Pb1 maximum / minimum temperature (**HAL** and **LAL**)
Key configuration	⏃: manual defrost (**H31** = 1) ⏄: not set (**H32** = 0) ⏻: stand-by (**H33** = 4)

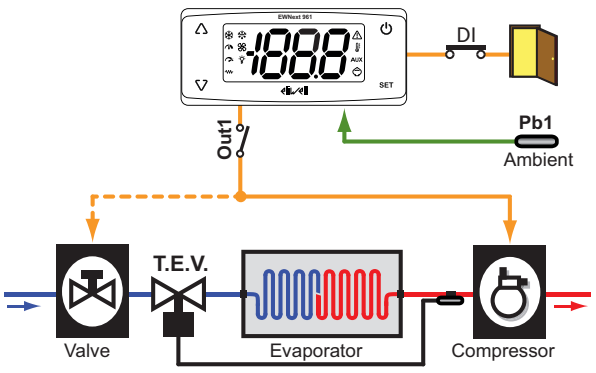
EWNext 961 P/B (115 Vac - 230 Vac)

Application overview

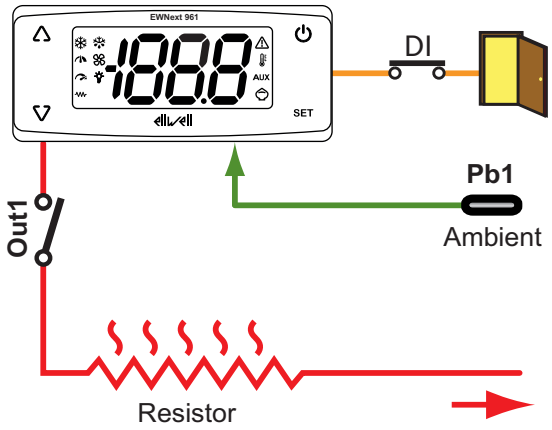
AP1: AT static refrigerated units



AP2: NT static refrigerated units



AP3: heat application



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor
- **Resistor** = Resistor

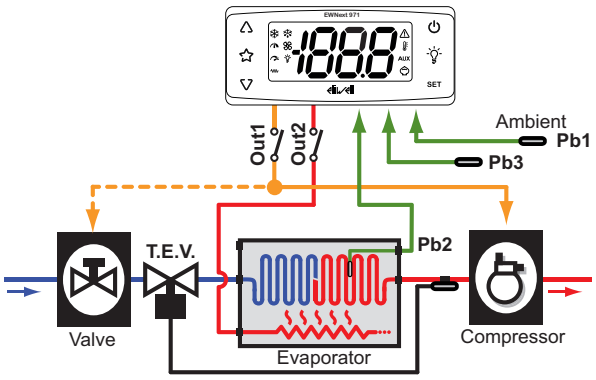
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = 0.0°C (32.0 °F)
Analog inputs	1 NTC input (**Pb1**)
Digital inputs	1 digital input **DI** set for energy saving with port (**H11**=11)
Digital outputs	**Out1** relay (default: Compressor)
Buzzer	YES
RTC	NO
SYN	NO
Type of defrost	**AP1**, **AP2** = Defrost due to compressor stop; **AP3** = ---
End of defrost	**AP1**, **AP2** = due to compressor stop; **AP3** = ---
Active alarms	Pb1 maximum / minimum temperature (**HAL** and **LAL**)
Key configuration	∆: manual defrost (**H31** = 1) ∇: not set (**H32** = 0) ⏻: stand-by (**H33** = 4)

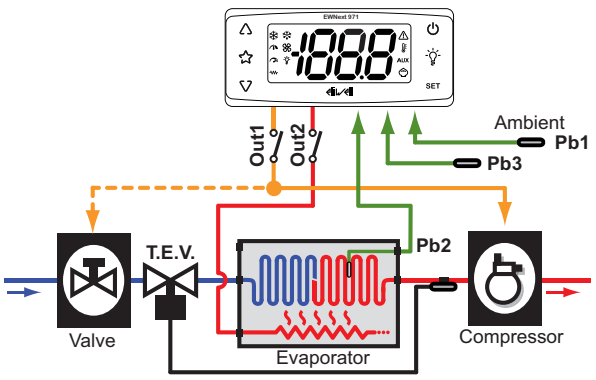
EWNext 971 P (230 Vac)

Application overview

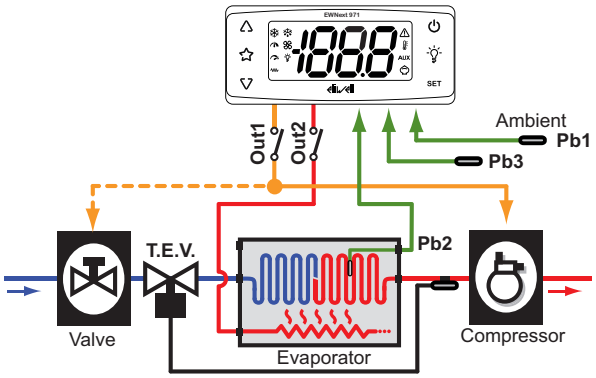
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

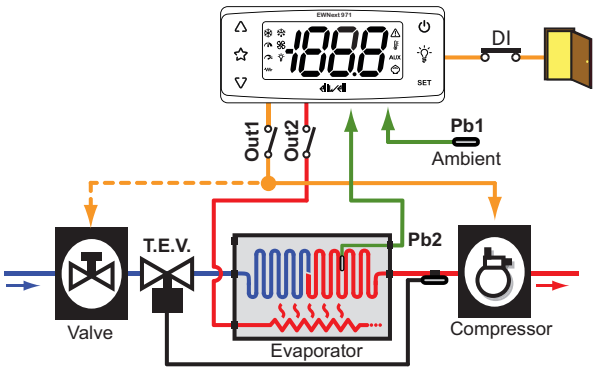
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	3 NTC inputs (**Pb1**, **Pb2** and **Pb3**)
Digital inputs	1 digital input **DI2** on TTL not set (**H12**=0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost)
Buzzer	NO
RTC	NO
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum / minimum temperature (**HAL** and **LAL**)
Key configuration	△: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: not set (**H35** = 0)

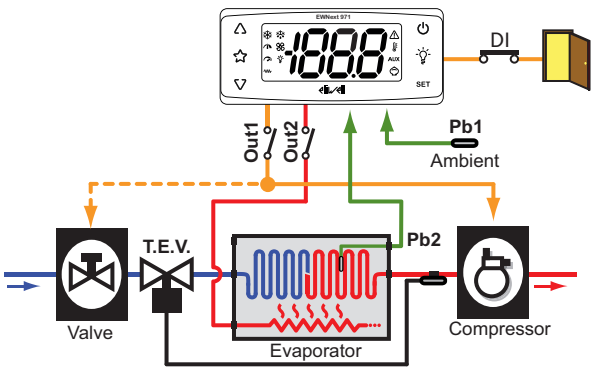
EWNext 971 P/B (115 Vac - 230 Vac)

Application overview

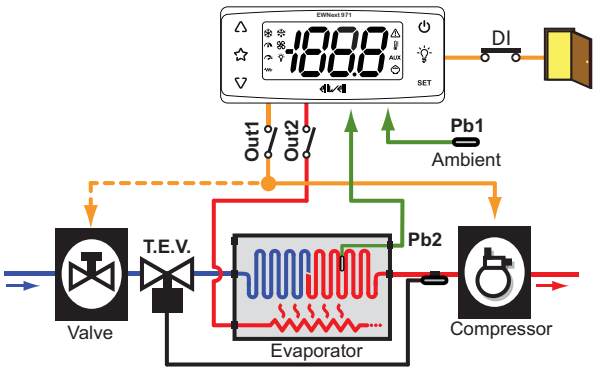
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

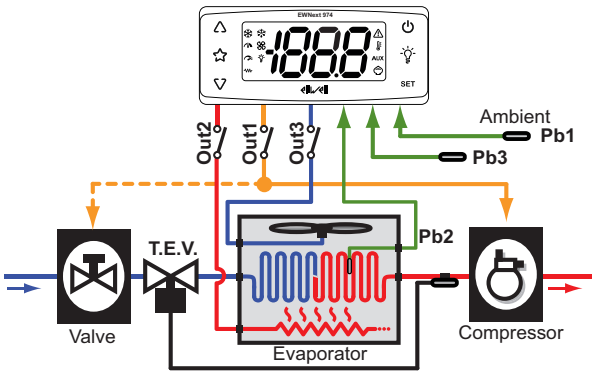
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	2 NTC inputs (**Pb1**, **Pb2**)
Digital inputs	1 digital input **DI** set for energy saving with port (**H11**=11) 1 digital input **DI2** on TTL not set (**H12**=0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost)
Buzzer	YES
RTC	NO
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum / minimum temperature (**HAL** and **LAL**)
Key configuration	∆: manual defrost (**H31** = 1) ∇: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) : not set (**H34** = 0) : not set (**H35** = 0)

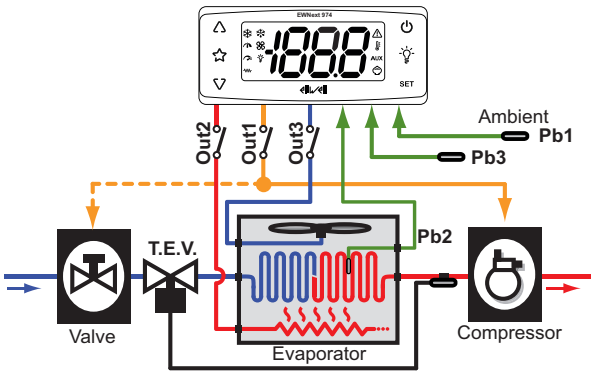
EWNext 974 P (230 Vac)

Application overview

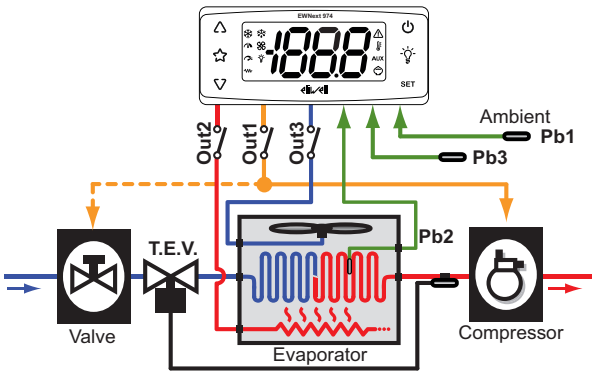
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

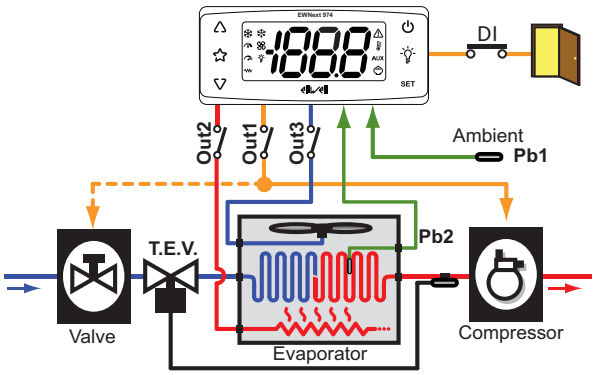
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	3 NTC inputs (**Pb1**, **Pb2** and **Pb3**)
Digital inputs	1 digital input **DI2** on TTL not set (**H12** = 0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans)
Buzzer	NO
RTC	NO
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	△: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

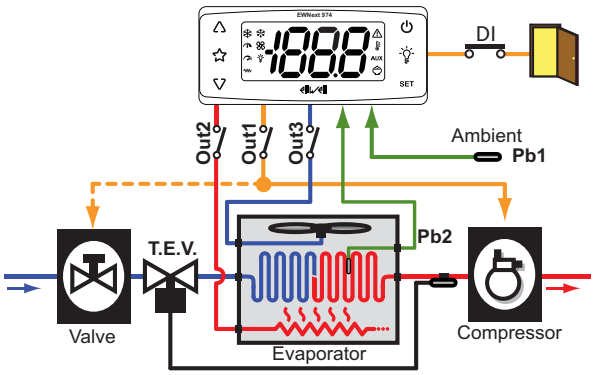
EWNext 974 P/B (115 Vac - 230 Vac)

Application overview

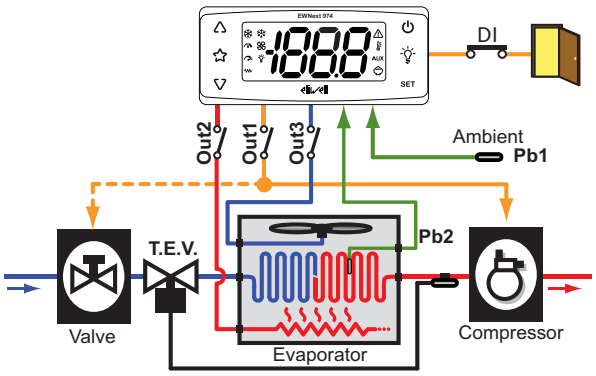
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

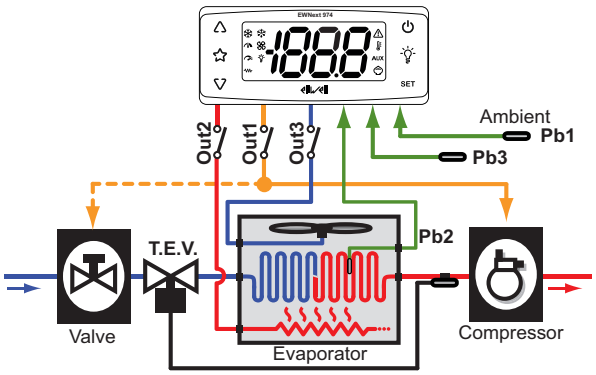
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	2 NTC inputs (**Pb1**, **Pb2**)
Digital inputs	1 digital input **DI** set for energy saving with port (**H11** = 11) 1 digital input **DI2** on TTL not set (**H12** = 0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans)
Buzzer	YES
RTC	NO
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	⚠: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

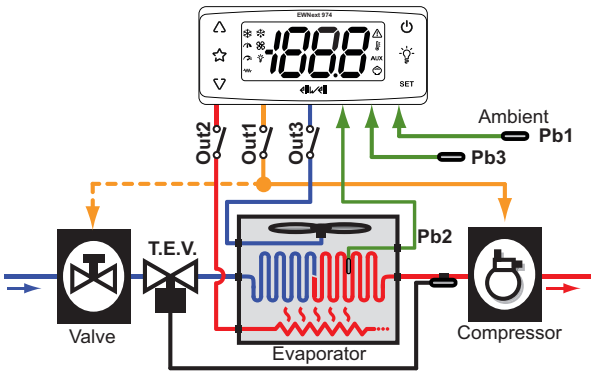
EWNext 974 P/C (230 Vac)

Application overview

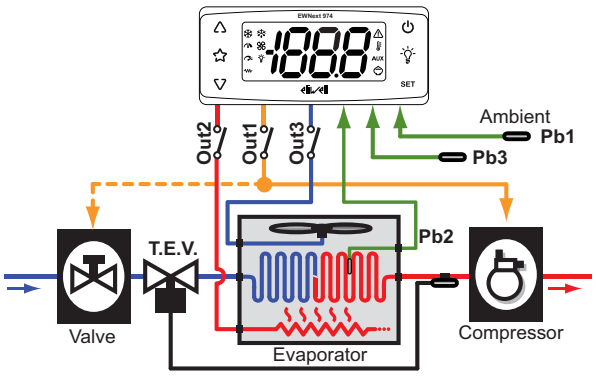
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

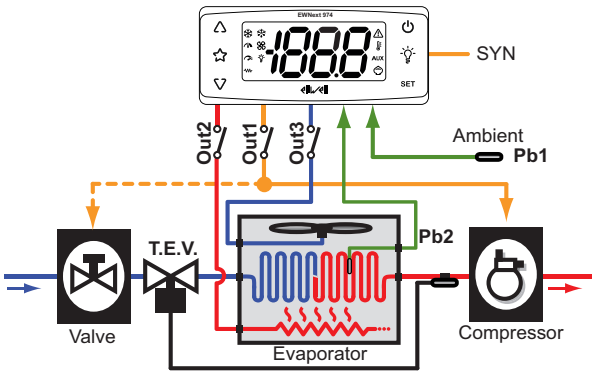
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	3 NTC inputs (**Pb1**, **Pb2** and **Pb3**)
Digital inputs	No Digital Input
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans)
Buzzer	NO
RTC	YES
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	⚠: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

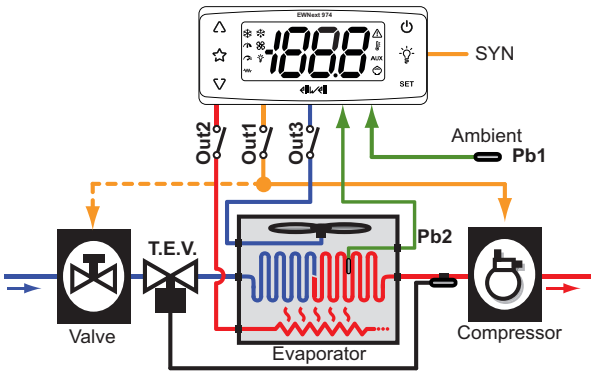
EWNext 974 P/CY (230 Vac)

Application overview

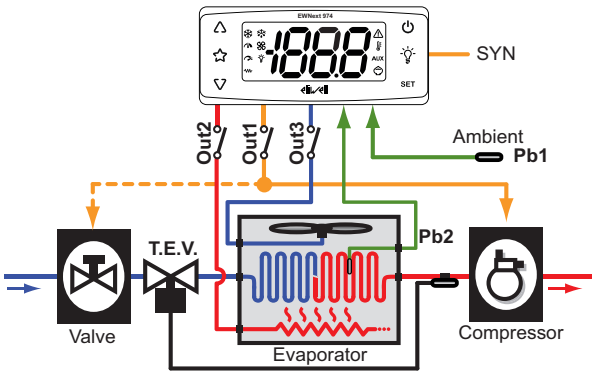
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor
- **SYN** = Synchronism connection

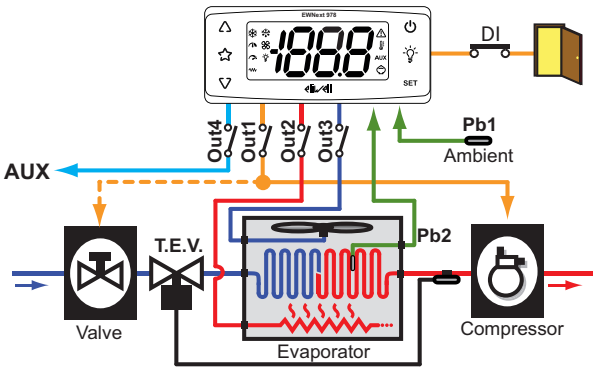
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	2 NTC inputs (**Pb1**, **Pb2**)
Digital inputs	1 digital input **DI2** on TTL not set (**H12** = 0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans)
Buzzer	NO
RTC	YES
SYN	YES (11 = "**+**"; 10 = "**-**")
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	△: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

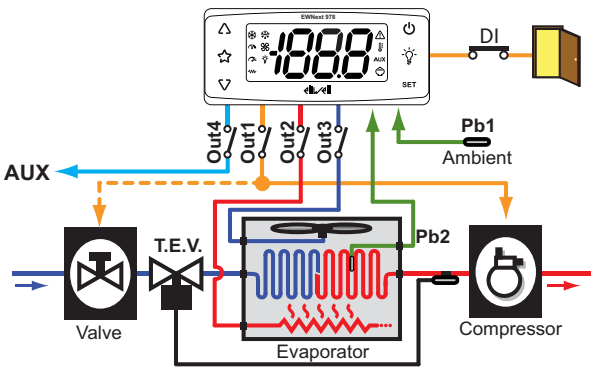
EWNext 978 P/BC (115 Vac - 230 Vac)

Application overview

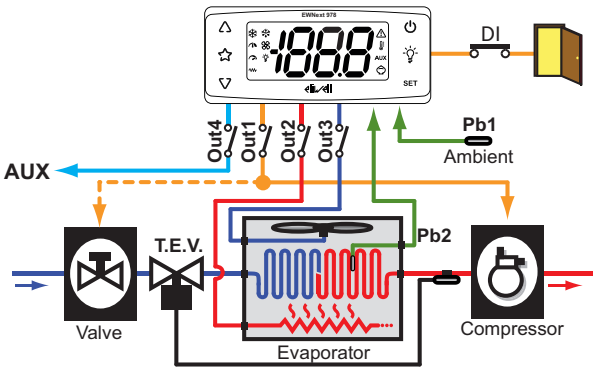
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

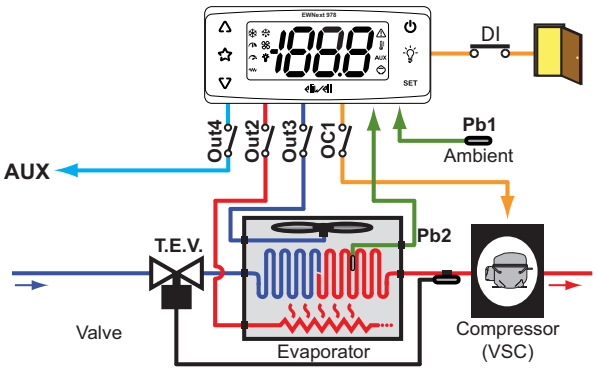
Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	2 NTC inputs (**Pb1**, **Pb2**)
Digital inputs	1 digital input **DI** set for energy saving with port (**H11** = 11) 1 digital input **DI2** on TTL not set (**H12** = 0)
Digital outputs	**Out1** relay (default: Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans) **Out4** relay (default: AUX)
Buzzer	YES
RTC	YES
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	△: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) ☼: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

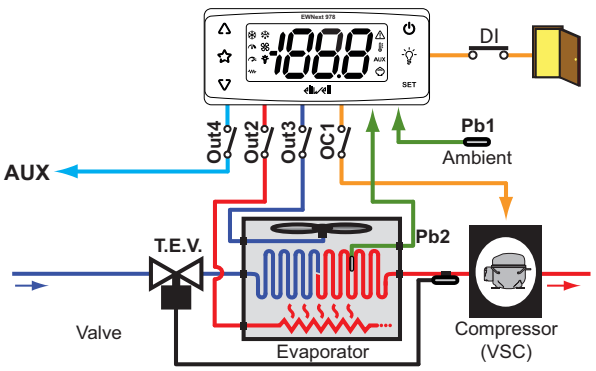
EWNext 978 P/BCI (100...240 Vac)

Application overview

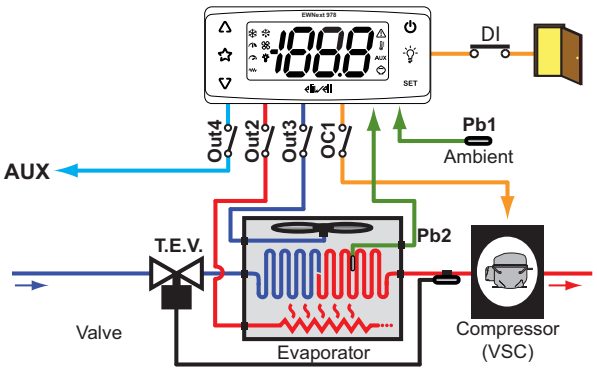
AP1: AT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Ambient** = Ambient
- **Valve** = Valve
- **T.E.V.** = Expansion valve
- **Evaporator** = Evaporator
- **Compressor** = Compressor

Application details

Setpoint	**AP1** = 3.5°C (38.3°F); **AP2** = 0.0°C (32.0°F); **AP3** = -18.0°C (0.4°F)
Analog inputs	2 NTC inputs (**Pb1**, **Pb2**)
Digital inputs	1 digital input **DI** set for energy saving with port (**H11** = 11) 1 digital input **DI2** on TTL not set (**H12** = 0)
Digital outputs	**OC1** output (default: Variable Speed Compressor) **Out2** relay (default: Defrost) **Out3** relay (default: Evaporator fans) **Out4** relay (default: AUX)
Buzzer	YES
RTC	YES
SYN	NO
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0°C (46.4°F)
Active alarms	Pb1 maximum/minimum temperature (**HAL** and **LAL**)
Key configuration	△: manual defrost (**H31** = 1) ▽: not set (**H32** = 0) ⏻: stand-by (**H33** = 4) 💡: not set (**H34** = 0) ☆: auxiliary (**H35** = 2)

Mechanical installation

Contents

This section includes the following topics:

Before starting 32
Power supply disconnection 32
Operating environment 33
Comments concerning installation 34
Installation 35

Before starting

Read this manual carefully before installing the controller and its accessories.

In particular, ensure conformity with all safety indications, electrical requirements and current legislation for the machine or the process used with this equipment.

The use and application of information contained herein requires experience in the design and programming of automated control systems. Only the machine user, integrator or manufacturer will be aware of all the conditions and factors affecting installation, configuration, operation and maintenance of the machine or process and can therefore identify the associated equipment and corresponding safety interlocks and systems that can be used appropriately and efficiently. When selecting automation and control equipment, other equipment and connected software for a particular application, all local, regional and national standards and/or legislation must be taken into account.

⚠ WARNING

REGULATORY INCOMPATIBILITY

Be sure that all equipment applied and systems designed comply with all applicable local, regional and national regulations and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Power supply disconnection

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and use this equipment in an enclosure appropriately rated for its intended environment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.

Failure to follow these instructions will result in death or serious injury.

Operating environment

The use of flammable gas refrigerants is dependent on may factors, including local, regional and/or national regulations.

The devices and corresponding accessories described in the documentation accompanying the product use components and, more specifically, electromechanical relays tested in accordance with IEC standard 60079-15 and classed as nC components (non-sparking 'n' electrical apparatus).
This condition complies to Annex BB of EN/IEC 60335-2-89.

Conformance to Annex BB EN/IEC 60335-2-89 is considered sufficient, and thereby suitable, for commercial refrigeration applications applying flammable gas refrigerants, such as R290. However, other limitations, equipment, locations and/or type of machine (refrigerators, vending machines and dispensers, bottle coolers, ice machines, Reach-Ins, etc.) may also be implicated, restricted and/or required in so doing.

The use and application of the information contained herein require expertise in the design and parameterizing/programming of refrigeration control systems. Only you—the original equipment manufacturer, installer or user—can be aware of all the conditions and factors present, and the regulations applicable, during the design, installation and setup, operation, and maintenance of the machine or related processes. Therefore, only you can determine the suitability of automation and associated equipment, and the related safeties and interlocks, which can be effectively and properly used in the locations for which the equipment is to be put into service. When selecting automation and control equipment, and any other related equipment or software for an application, you must also consider any applicable local, regional or national standards and/or regulations.

You must verify, while incorporating this controller and related equipment, the final compliance of the machine to regulations and standards when using flammable gas refrigerants. Although all statements and information contained herein are believed to be accurate and reliable, they are presented without warranty of any kind. Information provided herein does not relieve you from the responsibility of carrying out your own tests and validations of conformance to any applicable regulations.

⚠ WARNING

REGULATORY INCOMPATIBILITY

Be sure that all equipment applied and systems designed comply with all applicable local, regional and national regulations and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Comments concerning installation

Important information

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and use this equipment in an enclosure appropriately rated for its intended environment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.

Failure to follow these instructions will result in death or serious injury.

When handling the equipment, take care to avoid damage caused by electrostatic discharge. In particular, the unshielded connectors are extremely vulnerable to electrostatic discharge.

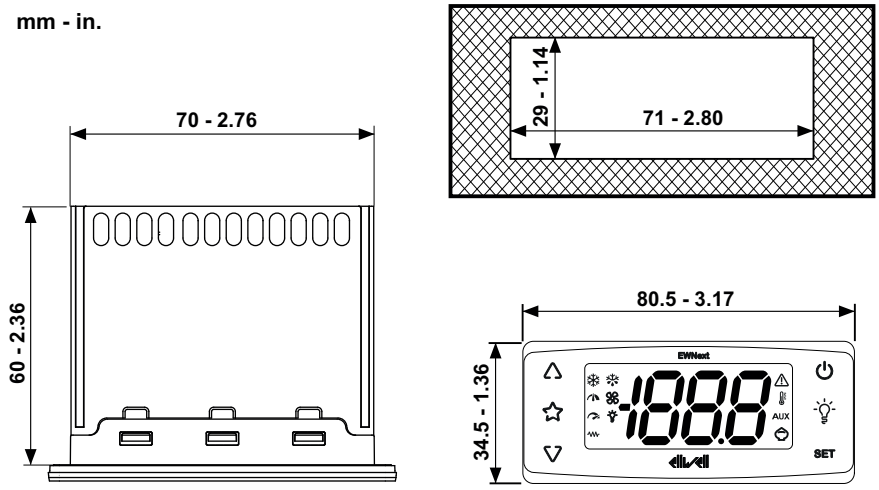
⚠ WARNING

UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE

Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Mechanical dimensions



Installation

Installing/uninstalling the controller

Mount the controller horizontally.
To install, proceed as follows:

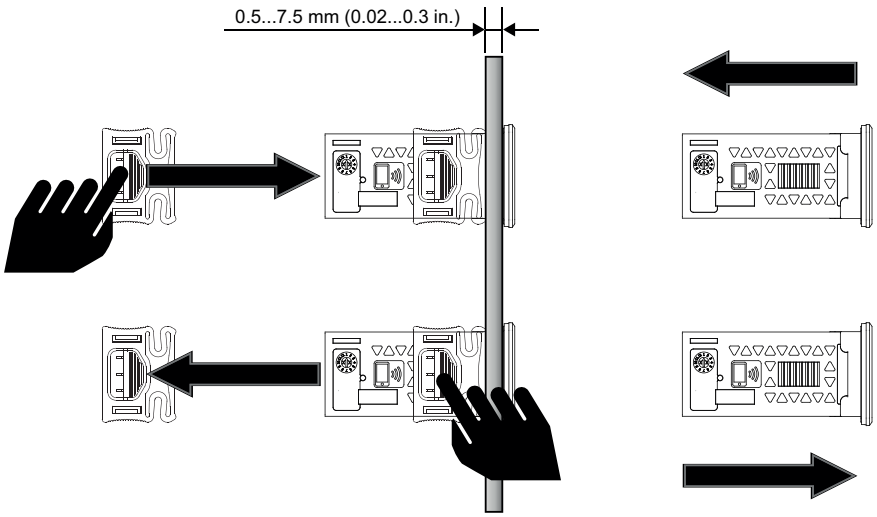
1. Make a hole measuring 71 x 29 mm (2.80 x 1.14 in.)
2. Introducing the controller
3. Secure it by inserting the brackets in the relevant rails at the 2 sides of the controller, until it clicks into place

To uninstall it, proceed as follows:

1. Press the brackets on the 2 sides of the device until you hear a click and take them out
2. Removing the controller

Note: Leave the area around the slits clear to allow air to circulate, keeping the controller cool.

Note: The panel thickness must be between 0.5 mm (0.02 in.) and 7.5 mm (0.3 in.) inclusive.



Electrical connections

Contents

This section includes the following topics:

Best wiring practices 37
Connections 39
EWNext 961 P (230 Vac) 40
EWNext 961 P/B (115 Vac - 230 Vac) 40
EWNext 971 P (230 Vac) 41
EWNext 971 P/B (115 Vac - 230 Vac) 41
EWNext 974 P (230 Vac) 42
EWNext 974 P/B (115 Vac - 230 Vac) 42
EWNext 974 P/C (230 Vac) 43
EWNext 974 P/CY (230 Vac) 43
EWNext 978 P/BC (115 Vac - 230 Vac) 44
EWNext 978 P/BCI (100...240 Vac) 45

Best wiring practices

Warnings

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, FIRE OR ARC FLASH

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and use this equipment in an enclosure appropriately rated for its intended environment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK AND/OR FIRE

- Do not expose the equipment to liquids.
- Do not exceed the temperature and humidity ranges specified in the technical data and keep the area surrounding the cooling slits aerated.
- Do not apply dangerous voltages to the SELV connection terminals (see "Connections" chapter).
- Only connect compatible accessories - as specified in the section "Accessories" - to the device.
- Only use cables with a suitable cross-section (see “Best wiring practices”).
- Only use recommended disconnectable terminals (see “Best wiring practices”)

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING

HAZARD OF OVERHEATING AND/OR FIRE

- Do not use with loads other than those indicated in the technical data.
- Do not exceed the maximum permitted current; in the case of higher loads, use a contactor with suitable power.
- Make sure the application has not been designed with the controller outputs connected directly to instruments that generate a frequently activated capacitive load (1).
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay output, including the shared pole, using cables with a cross-section of 2.5 mm^2 (14 AWG) and a length of at least 200 mm (7.87 in.).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) Even if the application does not apply a frequently activated capacitive load to the relay, capacitive loads reduce the life of any electromechanical relay and the installation of a contactor or external relay, sized and maintained according to the ratings and characteristics of the capacitive load, helps to minimize the consequences of relay degradation.

⚠ WARNING

REGULATORY INCOMPATIBILITY

Be sure that all equipment applied and systems designed comply with all applicable local, regional and national regulations and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Wiring guidelines

⚠ ⚠ DANGER

LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK AND/OR FIRE

Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.

Failure to follow these instructions will result in death or serious injury.

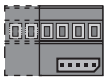
Use copper wires (obligatory)

The table below shows the type and size of permitted cables for screw terminals and the torque values:

mm / in. 6.5 / 0.26								
mm²	0.2…2.5	0.2…2.5	0.25…2.5	0.25…2.5	2 x 0.2...0.75	2 x 0.2...0.75	2 x 0.25...0.75	2 x 0.5...1.5
AWG	24…14	24…14	24...14	24...14	2 x 24…18	2 x 24…18	2 x 24…18	2 x 20...16

Ø 3.5 mm (0.14 in.)	C	N•m	0.5...0.6
		lb-in	4.42...5.31

The table below shows the type and size of permitted cables for the type of screw terminals illustrated below and the torque values:



mm / in. 6.0 / 0.24		
mm²	0.05…2.50	.05…1.5
AWG	30…14	30…16

Ø 3.5 mm (0.14 in.)	C	N•m	0.5
		lb-in	4.5

The table below shows the type and size of permitted cables for MSTB 2.5/x-ST-5.00 disconnectable terminals and the torque values.

mm / in. 7 / 0.28								
mm²	0.2…2.5	0.2…2.5	0.25…2.5	0.25…2.5	2 x 0.2...1	2 x 0.2…1.5	2 x 0.25...1	2 x 0.5...1.5
AWG	24…14	24…14	24...14	24...14	2 x 24…18	2 x 24…16	2 x 22…18	2 x 20...16

Ø 3.5 mm (0.14 in.)	C	N•m	0.5...0.6
		lb-in	4.42...5.31

Only use the removable screw terminal blocks provided (in some models) or bought directly from Eliwell. Otherwise, make sure you are using suitable terminals to jointly operate with the Eliwell device in the condition of the specific application.

NOTICE

UNINTENDED EQUIPMENT OPERATION

The SELV wiring must be kept separate from all the other wiring (see "Connections" chapter).

Failure to follow these instructions can result in equipment damage.

NOTICE

INOPERABLE DEVICE

- For the connection of probes and the digital input, use cables shorter than 10 m (32.80 ft).
- For Open Collector output connection, use cables no longer than 10 m (32.80 ft).
- For defrost synchronization line connection, use cables no longer than 10 m (32.80 ft).
- For TTL serial line connection, use cables no longer than 1 m (3.28 ft).

Failure to follow these instructions can result in equipment damage.

The temperature (NTC) probes have no specified connection polarity; the connections can be extended using a normal bipolar cable. Extending the probe wiring influences the electromagnetic compatibility (EMC) of the controller.

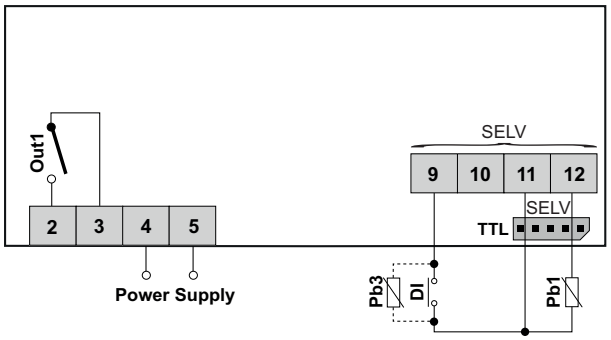
Connections

Wiring diagrams

Click on the controller model to access the corresponding wiring diagram:

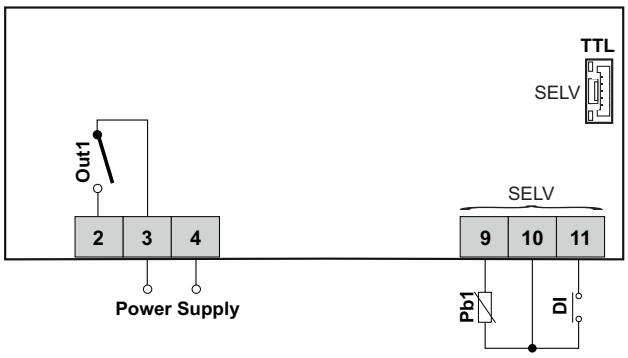
- **EWNext 961 P**
- **EWNext 961 P/B**
- **EWNext 971 P**
- **EWNext 971 P/B**
- **EWNext 974 P**
- **EWNext 974 P/B**
- **EWNext 974 P/C**
- **EWNext 974 P/CY**
- **EWNext 978 P/BC**
- **EWNext 978 P/BCI**

EWNext 961 P (230 Vac)



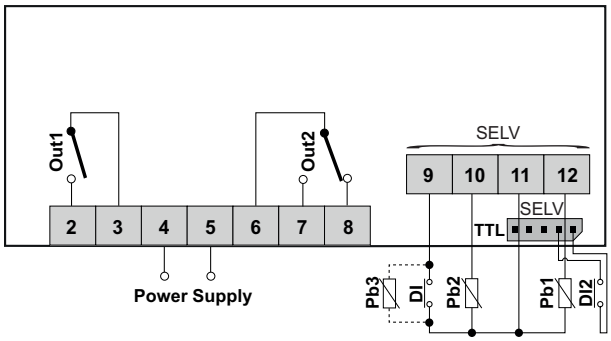
Terminals	Description
2-3	Compressor relay (**Out1**)
4-5	Power supply input 230 Vac
9-11	Digital input DI (**H11**≠0 and **H43**=n) / probe Pb3 (**H11**=0 and **H43**=y)
12-11	Probe Pb1
SELV	SELV terminals
TTL	TTL serial port

EWNext 961 P/B (115 Vac - 230 Vac)



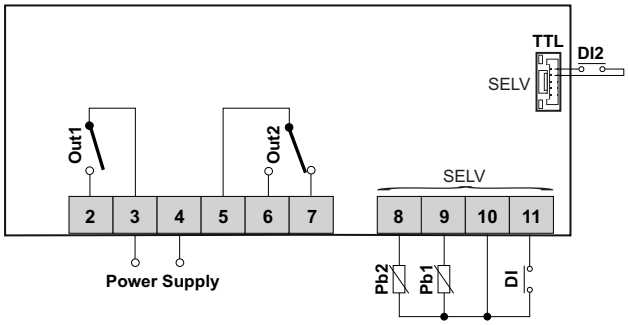
Terminals	Description
2-3	Compressor relay (**Out1**)
4-3	Power supply input 115 Vac or 230 Vac (depending on the model)
9-10	Probe Pb1
11-10	Digital input DI
SELV	SELV terminals
TTL	TTL serial port

EWNext 971 P (230 Vac)



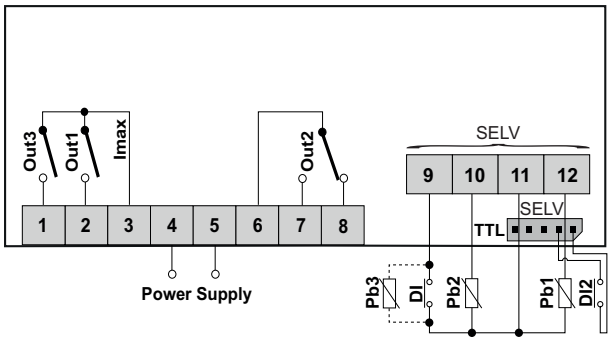
Terminals	Description
2-3	Compressor relay (**Out1**)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (**Out2**)
9-11	Digital input DI (**H11**≠0 and **H43**=n) / probe Pb3 (**H11**=0 and **H43**=y)
10-11	Probe Pb2
12-11	Probe Pb1
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 971 P/B (115 Vac - 230 Vac)



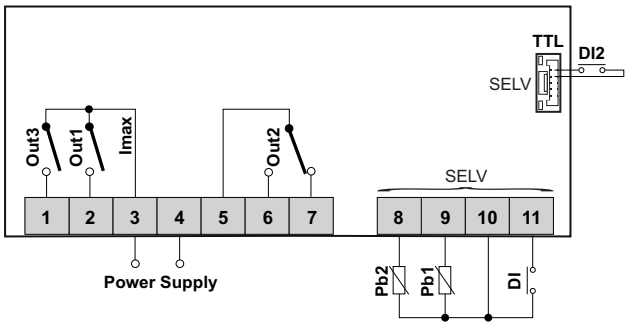
Terminals	Description
2-3	Compressor relay (**Out1**)
4-3	Power supply input 115 Vac or 230 Vac (depending on the model)
5-6-7	Defrost relay (**Out2**)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	Digital input DI
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 974 P (230 Vac)



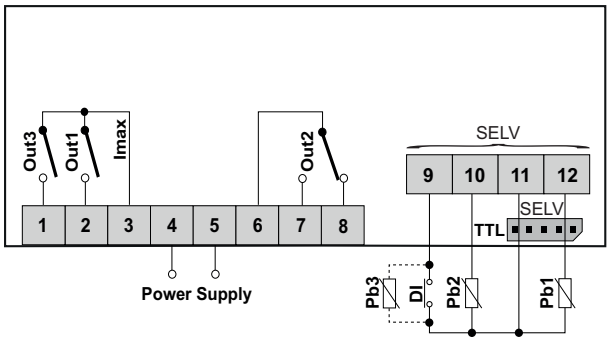
Terminals	Description
1-3	Evaporator fans relay (**Out3**)
2-3	Compressor relay (**Out1**)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (**Out2**)
9-11	Digital input DI (**H11**≠0 and **H43**=n) / probe Pb3 (**H11**=0 and **H43**=y)
10-11	Probe Pb2
12-11	Probe Pb1
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 974 P/B (115 Vac - 230 Vac)



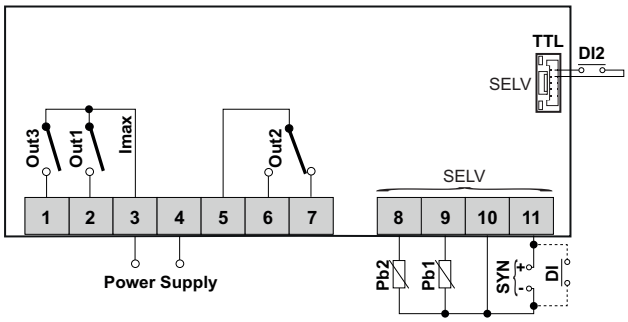
Terminals	Description
1-3	Evaporator fans relay (**Out3**)
2-3	Compressor relay (**Out1**)
4-3	Power supply input 115 Vac or 230 Vac (depending on the model)
5-6-7	Defrost relay (**Out2**)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	Digital input DI
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 974 P/C (230 Vac)



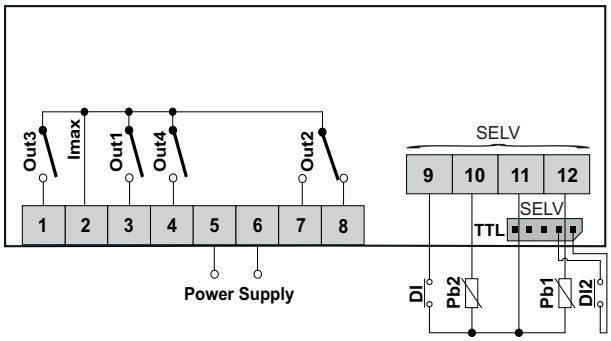
Terminals	Description
1-3	Evaporator fans relay (**Out3**)
2-3	Compressor relay (**Out1**)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (**Out2**)
9-11	Digital input DI (**H11**≠0 and **H43**=n) / probe Pb3 (**H11**=0 and **H43**=y)
10-11	Probe Pb2
12-11	Probe Pb1
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port

EWNext 974 P/CY (230 Vac)



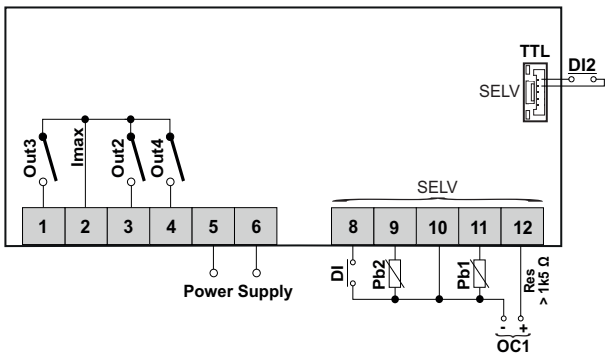
Terminals	Description
1-3	Evaporator fans relay (**Out3**)
2-3	Compressor relay (**Out1**)
4-3	Power supply input 230 Vac
5-6-7	Defrost relay (**Out2**)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	SYN (11 = "**+**"; 10 = "**-**") for synchronized defrosts (if **H11**=±13) or DI (if **H11**≠±13)
Imax	17 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 978 P/BC (115 Vac - 230 Vac)



Terminals	Description
1-2	Evaporator fans relay (**Out3**)
3-2	Compressor relay (**Out1**)
4-2	AUX relay (**Out4**)
5-6	Power supply input 115 Vac or 230 Vac (depending on the model)
2-7-8	Defrost relay (**Out2**)
9-11	Digital input DI
10-11	Probe Pb2
12-11	Probe Pb1
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

EWNext 978 P/BCI (100...240 Vac)



Terminals	Description
1-2	Evaporator fans relay (**Out3**)
3-2	Defrost relay (**Out2**)
4-2	AUX relay (**Out4**)
5-6	Power supply input 100...240 Vac
8-10	Digital input DI
9-10	Probe Pb2
11-10	Probe Pb1
OC1	Open Collector Output: 10 = negative terminal OC1 (-) e 12 = positive terminal OC1 (+). 12 Vdc ±5 % - Load impedance ≥ 1500 Ω
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if **H12**≠0)

Technical characteristics

Contents

This section includes the following topics:

Technical data 47
Power supply and power draw 47
Output characteristics 48
Input characteristics 50
Further Information 50

Technical data

The product complies with the following harmonized Standards: EN 60730-1 and EN 60730-2-9	
Device construction:	Electronic automatic incorporated Control
Device purpos:	Operating control (non-safety related) device
Type of action:	1.C
Degree of protection by enclosure:	IP00 for models with removable screw terminal blocks IP20 for models with screw terminal blocks IP65 front panel only (Tested in accordance with EN 60529 with a steel sheet 2 mm (0.08 in.) thick ±10 %)
Pollution degree:	2
Overvoltage category:	II
Nominal pulse voltage:	2500 V
Power supply:	see table below
Power draw:	see table below
Environmental operating conditions:	Temperature: -5...55°C (23...131°F) Humidity: 10…90% RH (non-condensing)
Transportation and storage conditions:	Temperature: -30...85°C (-22...185°F) Humidity: 10…90% RH (non-condensing)
Software class:	A
Front panel protection type:	Type 1
Temperature for the ball pressure test:	Front and Rear cover: 128 °C (262,4 °F) Terminal blocks: 107 °C (224,6 °F) PWB (Printed Wiring Board): 125 °C (257 °F)

Power supply and power draw

Model	Power supply	Power draw (maximum)
EWNext 961 P	230 Vac (±10%) 50/60 Hz	5.5 VA
EWNext 961 P/B	115 Vac or 230 Vac (±10%) 50/60 Hz (depending on the model)	5.5 VA
EWNext 971 P	230 Vac (±10%) 50/60 Hz	5.5 VA
EWNext 971 P/B	115 Vac or 230 Vac (±10%) 50/60 Hz (depending on the model)	5.5 VA
EWNext 974 P	230 Vac (±10%) 50/60 Hz	5.5 VA
EWNext 974 P/B	115 Vac or 230 Vac (±10%) 50/60 Hz (depending on the model)	5.5 VA
EWNext 974 P/C	230 Vac (±10%) 50/60 Hz	5.5 VA
EWNext 974 P/CY	230 Vac (±10%) 50/60 Hz	5.5 VA
EWNext 978 P/BC	115 Vac or 230 Vac (±10%) 50/60 Hz (depending on the model)	5.5 VA
EWNext 978 P/BCI	100...240 Vac (±10%) 50/60 Hz	6 VA

Note: Verify the power supply specified on the controller label.

Output characteristics

230 Vac models	Output	EU (230 Vac)	USA (230 Vac)
EWNext 961 P	**Out1**	12(8) A	12FLA 72LRA
EWNext 961 P/B	**Out1**	12(8) A	12FLA 72LRA
EWNext 971 P	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
EWNext 971 P/B	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
EWNext 974 P	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole(**Out1 + Out3**). V*: Imax = 17 A - S**: Imax = 12 A.		
EWNext 974 P/B	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole (**Out1 + Out3**). V*: Imax = 17 A - S**: Imax = 12 A.		
EWNext 974 P/C	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole (**Out1 + Out3**). V*: Imax = 17 A - S**: Imax = 12 A.		
EWNext 974 P/CY	**Out1**	12(8) A	12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current 17 A on common pole (**Out1 + Out3**).		
EWNext 978 P/BC	**Out1**	10(6) A	10FLA 60LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Out4	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole (**Out1 + Out2 + Out3 + Out4**). V*: Imax = 17 A - S**: Imax = 12 A.		

V* = models with screw terminals - **S**** = models with disconnectable terminals.

115 Vac models	Output	EU (115 Vac)	USA (115 Vac)
EWNext 961 P/B	**Out1**	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
EWNext 971 P/B	**Out1**	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
EWNext 974 P/B	**Out1**	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole (**Out1 + Out3**). V*: Imax = 17 A - S**: Imax = 12 A.		
EWNext 978 P/BC	**Out1**	10(6) A	10FLA 60LRA
	Out2	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6FLA 21.6LRA
	Out3	5(2) A	5 A resistive -2FLA 12LRA
	Out4	5(2) A	5 A resistive - 2FLA 12LRA
	Imax = Maximum current on common pole (**Out1 + Out2 + Out3 + Out4**). V*: Imax = 17 A - S**: Imax = 12 A.		

100...240 Vac models	Output	EU (230 Vac)	USA (115 Vac)
EWNext 978 P/BCI	**Out2**	10(6) A	10FLA 60LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Out4	10(6) A	10FLA 60LRA
	Imax = Maximum current on common pole (**Out2 + Out3 + Out4**). V*: Imax = 17 A - S**: Imax = 12 A.		

V* = models with screw terminals - **S**** = models with disconnectable terminals.

Input characteristics

Analog inputs	• **EWNext 961 P**: 2 NTC inputs (Pb1 and Pb3**) • **EWNext 961 P/B**: 1 NTC input (Pb1) • **EWNext 971 P**: 3 NTC inputs (Pb1, Pb2 and Pb3**) • **EWNext 971 P/B**: 2 NTC inputs (Pb1 and Pb2) • **EWNext 974 P**: 3 NTC inputs (Pb1, Pb2 and Pb3**) • **EWNext 974 P/B**: 2 NTC inputs (Pb1 and Pb2) • **EWNext 974 P/C**: 3 NTC inputs (Pb1, Pb2 and Pb3**) • **EWNext 974 P/CY**: 2 NTC inputs (Pb1 and Pb2) • **EWNext 978 P/BC**: 2 NTC inputs (Pb1 and Pb2) • **EWNext 978 P/BCI**: 2 NTC inputs (Pb1 and Pb2)
Digital inputs	• **EWNext 961 P**: 1 voltage free digital input (DI**). • **EWNext 961 P/B**: 1 voltage free digital input (DI). • **EWNext 971 P**: 2 voltage free digital inputs (DI** and DI2*). • **EWNext 971 P/B**: 2 voltage free digital inputs (DI and DI2*). • **EWNext 974 P**: 2 voltage free digital inputs (DI** and DI2*). • **EWNext 974 P/B**: 2 voltage free digital inputs (DI and DI2*). • **EWNext 974 P/C**: 1 voltage free digital inputs (DI**). • **EWNext 974 P/CY**: 1 voltage free digital input (DI) or SYN connection for defrost synchronization + 1 voltage free digital input (DI2*). • **EWNext 978 P/BC**: 2 voltage free digital inputs (DI and DI2*). • **EWNext 978 P/BCI**: 2 voltage free digital inputs (DI and DI2*).

(*) digital input **DI2**, if enabled, should be connected to the TTL connector (if **H12**≠0)

(**) analog input **Pb3** can also be configured as digital input **DI** (if **H11**≠0 and **H43**=n)

Further Information

Probe values

Display ranges	-99.9…99.9 or -999…999
Measurement range	**NTC**: -50...110°C (-58...230°F) - on display with 3 digits + sign
Accuracy	**NTC**: -50...-30 °C (-58...-22 °F): better than ±2.4 °C (±4.3 °F) ±1 digit. -30...110 °C (-22...230 °F): better than ±1.6 °C (±2.9 °F) ±1 digit.
Resolution	1°C/°F or 0.1°C/°F (depending on the display range setting)

Mechanical characteristics

Connectors	TTL serial port for connection of compatible accessories
Dimensions	Front panel 80.5 x 34.5 mm (3.17 x 1.36 in.), depth 60 mm (2.36 in.)
Mounting panel thickness	0.5...7.5 mm (0.02...0.3 in.)
Terminals	Screw terminal blocks / removable screw terminal blocks.

Note: the technical characteristics provided in this document concerning measurement (range, accuracy, resolution, etc.) refer only to the device itself and not to any accessories supplied, such as the probes.

User interface and operation

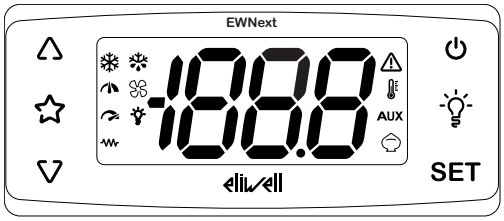
Contents

This section includes the following topics:

User interface 52
Using the controller 54
Setting the probes 58
Setting the displayed values 59

User interface

Interface



Keys

Keys	press and release	press for at least 5 seconds
△	• Scroll through the menu options. • Increase the values.	From outside the menus only. Can be configured by the user (parameter **H31**) Default: Activate manual defrost.
☆	Direct access to the function set with parameter **H35**. From outside the menus only. Default: Activates AUX output.	---
▽	• Scroll through the menu options. • Decrease the values.	• From outside the menus only. Can be configured by the user (parameter **H32**) • Unlock keypad (press and hold for at least 3 seconds)
⏻	• Go back (up one level) in the menu. • Confirm the parameter value.	From outside the menus only. Can be configured by the user (parameter **H33**) Default: Activate stand-by.
💡	Direct access to the function set with parameter **H34**. From outside the menus only.	---
SET	• Access the "Machine Status" menu. • Display alarms (if present). • During device power-on, access selection mode for the application to be loaded.	• Access the "Programming" menu. • Confirm commands.
▽ + SET	Press both simultaneously for at least 5 seconds at device power-on to load the preset applications (only after unlocking the keypad).	

Note: some keys may not be present, depending on the model.

Note: At device power-on or after 30 seconds since last action on the user interface, the device keypad locks automatically. If it is locked and any key is pressed, the text ‘LoC’ will appear. To unlock the keypad, press and hold ▽ for at least 3 seconds until the text "UnL" appears.

Icons

Icon	Function	Description
	Compressor	On steadily: compressor active Flashing: delay, protection or activation inhibited Off: compressor off
	Defrost	On steadily: defrost active Flashing: defrost activated manually or via digital input Off: defrost inactive
	Evaporator fans	On steadily: fans active Off: fans off
	Middle VSC speed	On steadily: Vmin ≤ required speed < 90% Vmax Off: 0% ≤ required speed < Vmin
	Maximum VSC speed	On steadily: required speed ≥ 90% Vmax Off: required speed < 90% Vmax
	Light	On steadily: light on Off: light off
	Heating	On steadily: Heating regulator active Off: Heating regulator off
	Alarm	On steadily: alarm present Flashing: alarm silenced Off: No alarm active
	Temperature	On steadily: a temperature is displayed (**°C** or **°F**) Off: a value not relating to temperature or a label is displayed
AUX	AUX	On steadily: AUX output active (depending on model) Flashing: Deep cooling active Off: AUX output off
	Energy saving	On steadily: Energy saving active Flashing: reduced set active

Note: **Vmin** = minimum compressor speed; **Vmax** = maximum compressor speed.

Note: Some icons may be associated with unavailable functions, depending on the model.

Note: If the value of the parameter **CuS**≠0, when the instrument is switched on it shows the label **CuS** and the value of the parameter for approximately 2 seconds.

Using the controller

Switching on for the first time

Once the electrical connections have been completed, simply power up the device for it to start working.

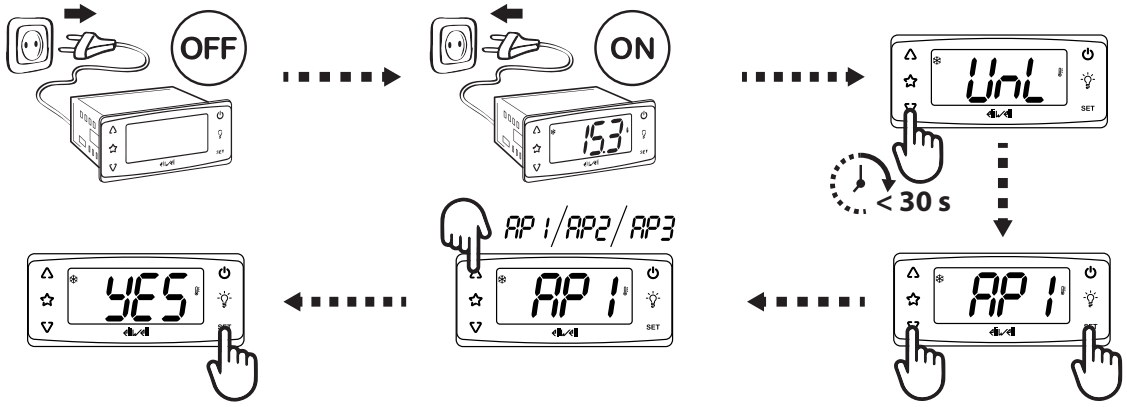
At the first startup:

1. Select and load the preset application - **AP1**, **AP2** or **AP3** - that best reflects the usage requirements.
2. Verify and, if necessary, adjust the value of the main controller parameters to adapt the selected application to your system.
3. Make sure there are no active alarms.

Loading Preset Applications

The procedure to load one of the preset applications is:

1. If the device is on, switch it off
2. Switch on the device
3. Press and hold ▽ for at least 3 seconds, until the keypad unlock label “UnL” appears
4. Within 30 seconds since the device power-on, press and hold (**SET** + ▽) for at least 5 seconds, until the label “AP1” appears
5. Scroll through applications **AP1**, **AP2** and **AP3** using △ and ▽
6. Confirm the selected preset application using **SET**.
   Note: The process can be canceled by pressing ⏻ or letting a timeout occur (15 seconds)
7. If the procedure completes successfully, the display will show "**yES**"; otherwise it will show "**no**"
8. The regulator will restart



The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters NON specific for the application that retain the value set previously. These values, left unaltered, may not be correct and may therefore need to be changed.

NOTICE
INOPERABLE DEVICE Verify the parameters after loading a preset application. **Failure to follow these instructions can result in equipment damage.**

Password

The passwords **PA1** and **PA2** are required to access the device parameters:

- **PA1**: access the User parameters (default: **PA1** = 0 - disabled)
- **PA2**: access the Installer parameters (default: **PA2** = 15 - enabled)

To change the password value:

1. To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label "**UnL**" appears
2. Press and hold for at least 5 seconds **SET**
3. Scroll through the parameters with △ and ▽ until you find the label "PA2"
4. Press and release **SET**
5. Set the value "15" using the keys △ and ▽
6. Confirm the value by pressing **SET** (the first folder will be displayed)
7. Scroll through the folders with △ and ▽ until you find the label "diS"
8. Press and release **SET**
9. Scroll through the parameters with △ and ▽ until you find the label "PS1" or "PS2", depending on whether you want to change access password **PA1** or **PA2**
10. To confirm the value press **SET** or ⏻, or let a timeout occur (15 seconds).

Note: If **PA1**=0, the User parameters will be not protected and displayed before **PA2** label.

Note: If the value entered is incorrect, the label **PA1**/**PA2** will be shown again. Repeat the procedure.

Machine Status Menu

To enter the Machine Status menu:

1. To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET**
3. Scroll through the folders with keys △ and ▽ until you find the label for the desired folder
4. Press and release **SET**
5. View the value reading
6. To exit press **SET** or ⏻, or let a timeout occur (15 seconds).

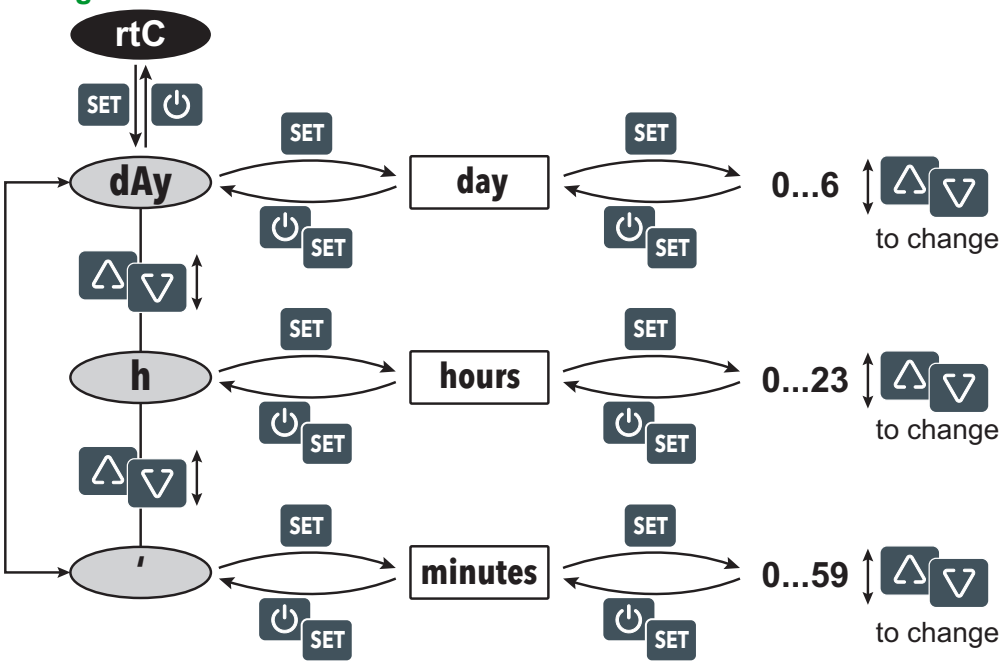
List of folders:

The folders shown are as follows:

- **SEt**: setpoint setting folder
- **ALr**: alarms folder (only visible if there are active alarms)
- **rtC**: clock parameters folder
  - **dAy**: day
  - **h**: hour
  - **'**: minutes
- **Pb1**: Pb1 probe value folder
- **Pb2**: Pb2 probe value folder
- **Pb3**: Pb3 probe value folder
- **VSC**: VSC value folder (if available)
- **idF**: firmware mask value folder
- **rEL**: firmware release value folder
- **nAM**: product name folder

Note: some folders may not be present, depending on the model

RTC setting



Programming Menu

To enter the Programming menu:

a. To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label "**UnL**" appears
b. Press and hold for at least 5 seconds **SET**

If required, an access PASSWORD **PA1** will be requested for User parameters and **PA2** for Installer (Inst) parameters (see **Password** section).

User parameters (User):

Upon access the first parameter (**SEt**) will be shown.

1. Scroll through the parameters with keys △ and ▽ until you find the label for the parameter you want to change
2. Press and release **SET**
3. Set the desired value using the keys △ and ▽
4. To confirm the value press **SET** or ⏻, or let a timeout occur (15 seconds).

Installer parameters (Inst):

Upon access the first folder (**CP**) will be shown.

1. Scroll through the folders with keys △ and ▽ until you find the label for the desired folder
2. Press and release **SET**
3. Scroll through the parameters with keys △ and ▽ until you find the label for the parameter you want to change
4. Press and release **SET**
5. Set the desired value using the keys △ and ▽
6. To confirm the value press **SET** or ⏻, or let a timeout occur (15 seconds).

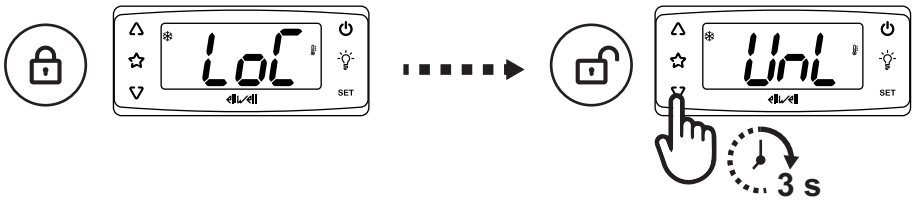
Note: Switch the device off and on again every time you change the parameter configuration.

Locking/unlocking the keypad

The keypad locks automatically in the following situations:

- at device power-on
- after 30 seconds of inactivity

To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label 'UnL' appears.



Viewing the probe values

1. Unlock the keypad by pressing and holding ▽ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET** to access the 'Machine status' menu
3. Scroll through the folders with △ and ▽ until you find the folder **Pb1** or **Pb2** or **Pb3**
4. Press **SET** to view the value measured by the corresponding probe.

Notes:
- the displayed value cannot be changed.
- folder **Pb2** can only be viewed on models that manage probe Pb2.
- folder **Pb3** can only be viewed on models that manage probe Pb3.

Setting the setpoint

1. To unlock the keypad, press and hold ▽ for at least 3 seconds, until the label "**UnL**" appears
2. Press and release **SET** to access the "Machine status" menu
3. Scroll through the folders with △ and ▽ until you find the folder **SEt**
4. Press **SET** to view the current setpoint value.
5. Change the setpoint value using △ and ▽ within 15 seconds.
6. To confirm the value press **SET** or ⏻, or let a timeout occur (15 seconds).

Setting frequently used functions

Some frequently used functions may be paired with the keys by suitably configuring the corresponding parameters; they can then be activated by pressing and holding the paired key.

Note: Some keys may not be present or settable, depending on the model.

Key	Parameter
△	**H31**
▽	**H32**
⏻	**H33**
💡	**H34**
☆	**H35**

Value H31/H32/H33/H34/H35	Description
0	Disabled
1	Defrost
2	AUX
3	Reduced set
4	Stand-by
5	**nPL** autotuning procedure (VSC models)
6	**tun** autotuning procedure (VSC models)
7	Deep cooling
8	Light
9	Energy saving
10	Self-learning (RTC models)

Setting the main parameters

See "User" menu in the parameters table for the various models.

Setting the probes

Introduction

Only connect probes of the same type to the device (all NTC).

Probe inputs

Depending on the model, the controller has the following inputs:

- one or two analog inputs (**Pb1** and **Pb2**)
- one analog/digital multifunctional input that can be configured as analog probe **Pb3** (if **H11**=0 and **H43**=y) or as digital input **DI** (if **H11**≠0 and **H43**=n) for models without buzzer.

Probe calibration

The **diS** folder, within the “Installer” menu, contains the parameters:

- **CA1** (probe Pb1)
- **CA2** (probe Pb2)
- **CA3** (probe Pb3)

to force an additional value (with sign) on reading the corresponding probe (if managed by the specific model).

Setting the displayed values

Introduction

The following settings refer to the parameters in folder **diS**.

Display with decimal point

You need to set parameter **ndt**:

ndt value	Description
y	Display with decimal point and resolution to tenths of a degree
n	Display with no decimal point

Note: this setting only influences the displaying of data, not the resolution of the measurement or the accuracy of the controller's calculations.

Default display

You need to set parameter **ddd**:

ddd value	Description
0	Display setpoint
1	Display the value read by Pb1
2	Display the value read by Pb2
3	Display the value read by Pb3 (only if **H11**=0 and **H43**=y)

Note: If the selected probe is not present, the displayed value cannot be considered reliable.

Default ECPlus module display (via Modbus)

The controller can manage a **ECPlus** module (via Modbus) connected to the TTL serial port. **Note**: the controller always acts as a Master.

To enable viewing, set parameter **ddE**:

ddE value	Description
0	**ECPlus** module not connected
1	View the value read by Pb1. If Pb1 is in error, "**E1**" will appear.
2	View the value read by Pb2. If Pb2 is in error, "**E2**" will appear.
3	View the value read by Pb3. If Pb3 is in error, "**E3**" will appear.
4	View the setpoint value.

Note: If the selected probe is not present, the displayed value cannot be considered reliable.

Display during defrost

You need to set parameter **ddL**:

ddL value	Description
0	Display the values read by Pb1
1	Display the value read by Pb1 at the start of defrost
2	Display the label **dEF**

Filter displayed value

Filtering of the value shown on the display depends on parameters **FiS** and **Fit**.

FIS parameter:

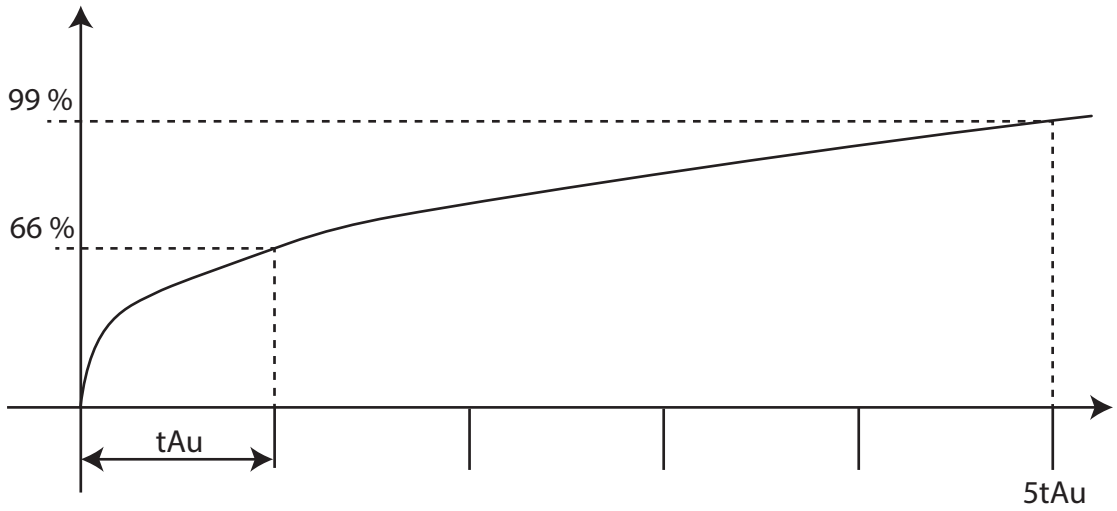
- **FiS**=0: the filter is disabled
- **FiS**=1: the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit**.
- **FiS**=2: the temperature value shown changes by 1°C/°F every **tAu** minutes

Note: **tAu** and **5tAu** are, respectively:

- **tAu** = the time taken by the temperature shown to reach 66% of the final value
- **5tAu** = the time taken by the temperature shown to reach 99% of the final value

FIt parameter:

- **Fit**=0: the filter is only enabled when the temperature increases
- **Fit**=1: the filter is always enabled (both when the temperature increases and when it decreases)



Set the unit of measure for the temperatures

You need to set parameter **dro**:

dro value	Description
0	Display the temperature in °C
1	Display the temperature in °F

Note: this setting only influences how the temperatures read by the probes are displayed. After changing the unit of measure from °C to °F, the value of parameters **SEt**, **diF**, etc, remains the same and they will take on a different meaning, since they are expressed in a new unit of measure (**SEt** = 10°C becomes **SEt** = 10°F).

Defrost

Contents

This section includes the following topics:

Introduction 62
Display and alarm operation 63
Manual defrost 64
Modulating Defrost 66
Standard defrost 78
Synchronized Defrost from Digital Input 86
Dual evaporator defrost 89

Introduction

In addition to Standard defrosts, a Modulating defrost has been developed with the aim of activating the defrost function "when necessary", on the basis of conditions defined previously.

In models that manage probe Pb3, defrost can be managed on two separate evaporators that, on the basis of the value of parameter **H45**, can be activated individually, at the same time or alternately.

List of defrost types

Click on the desired defrost type to access the relevant section:

- Modulating Defrost
- Standard defrost
- Synchronized Defrost
- Dual evaporator defrost

Functioning conditions

Defrosting removes ice from the surface of the evaporator.
If **dt** ≠ 0, once defrost is complete, a dripping cycle takes place to prevent the water left on the evaporator from freezing again.

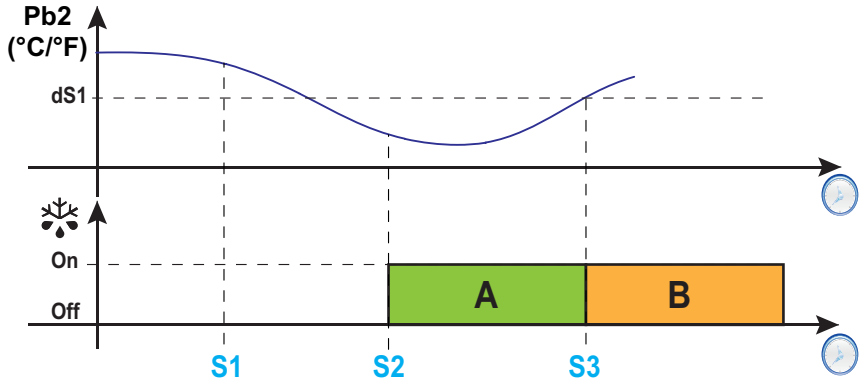
Defrost is triggered automatically if:

- the temperature of the evaporator is lower than the defrost end setpoint **dS1*** (**dS2**** for defrost on the second evaporator).
- the defrost activation timer has elapsed and the temperature of the evaporator 1 is lower than the defrost end setpoint **dS1*** (**dS2**** for defrost on the evaporator 2).

Defrost is NOT triggered automatically if:

- a manual defrost is already underway.
- the defrost activation timer has elapsed and the temperature of the evaporator 1 is higher than the defrost end setpoint **dS1*** (**dS2**** for defrost on the evaporator 2), in which case a new timer count will begin.

(*) models that manage probe Pb2.
(**) models that manage probe Pb3.



Legend: **A** = Defrost; **B** = Dripping; **S1** = Defrost not performed; **S2** = Defrost start; **S3** = End of defrost and start of dripping cycle.

Setting the dripping interval

To activate dripping at the end of the defrost cycle, set parameter **dt** ≠ 0. During dripping, the fans are switched off even if **Fdt** < **dt**.

Note: parameter **dt** is only present in models that manage probe Pb2 and that can control the evaporator fans.

Parameters

Parameter	Description
dS1	Temperature value set for the end of defrost on evaporator 1.
dS2	Temperature value set for the end of defrost on evaporator 2.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Display and alarm operation

Alarm operation during defrost

You can activate an alarm for defrost ending due to timeout, by setting parameter **dAt** = y (see alarm **Ad2** in the section "Alarms and indications" on page 133).

Note: this function can only be activated on models that manage probe Pb2.

In the event of a regulation probe (Pb1) error, defrosts will still take place and during defrost the temperature alarm associated with the probe error will be excluded.

Displayed values

By setting parameter **ddL**, you can choose the values displayed during the defrost phase until the end of dripping time.

The value shown on the display may be configured in one of the following ways:

- **ddL** = 0: display the temperature read by the regulation probe (Pb1)
- **ddL** = 1: display the temperature read by the regulation probe (Pb1) at the start of defrost
- **ddL** = 2: display (steadily) the label **dEF** (defrost)

Restore standard displaying

The standard displaying is restored on the display:

- on reaching the setpoint and after dripping
- on reaching the timeout value, defined by parameter **Ldd**

Parameters

Parameter	Description
dAt	Defrost ended due to timeout alarm indication.
ddL	Display mode during defrosting.
Ldd	Display unlock timeout value - label **dEF**.

Manual defrost

Introduction

The Manual Defrost function can be activated in one of the following ways:

- press and hold a key (configured with **H3x** = 1)
- via digital input (configured with **H1x** = ±1)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)

Note: if the **odo** count is in progress, the defrost cycle does not begin, the request is not carried out and the display will flash three times to indicate that defrosting is not possible.

Functioning conditions

If manual defrost is activated, depending on the value of parameter **dMr**, the defrost interval count (**dit** time):

- if **dMr** (0) = **n** the count is not reset.
- if **dMr** (1) = **y** the count is reset

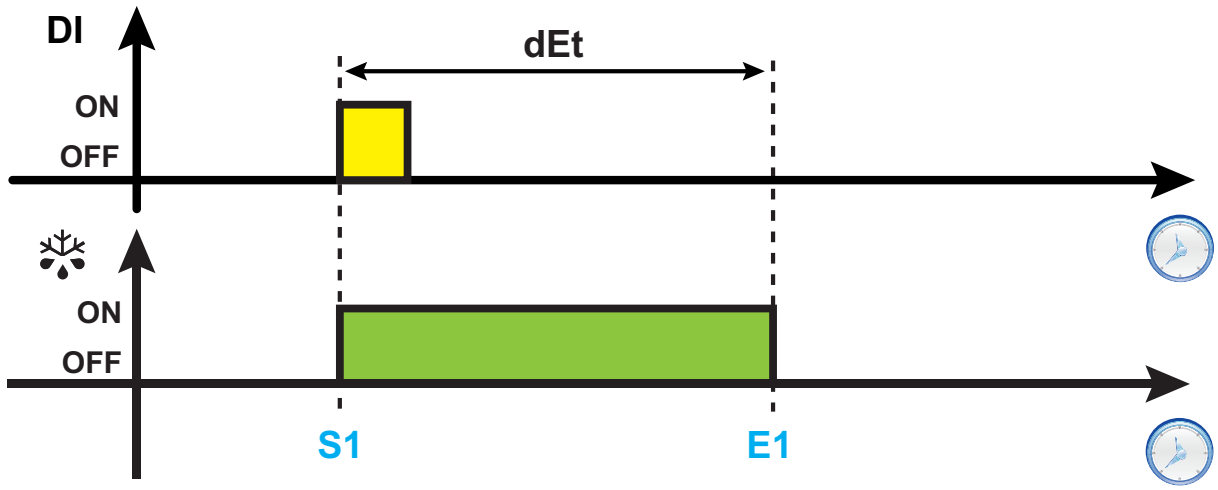
If the **odo** count is in progress and the evaporator temperature is greater than the value of parameter **dS1*** (evaporator 1) or **dS2**** (evaporator 2), the defrost will not be activated and the display will flash three times.

(*): only models that manage probe Pb2.
(**): only models that manage probe Pb3.

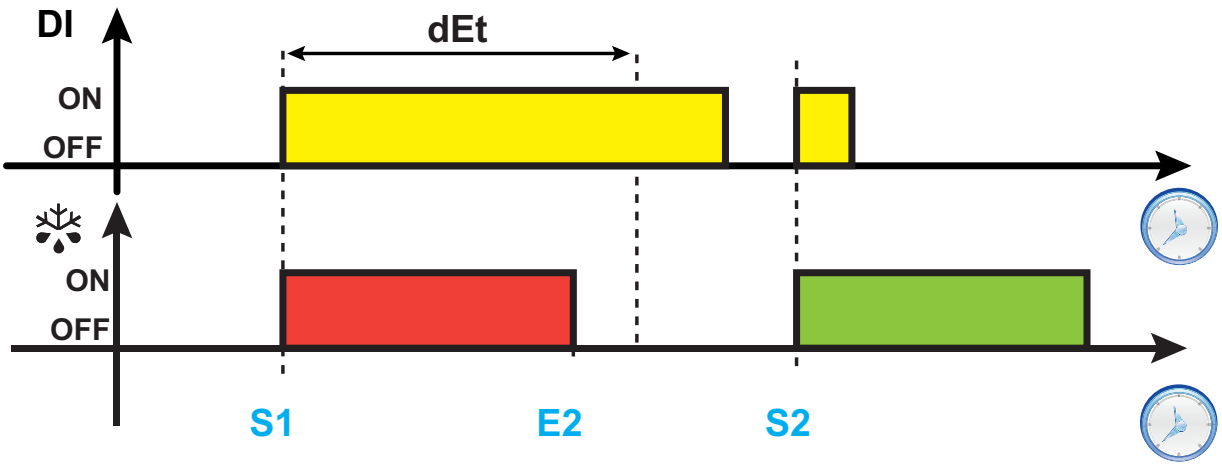
Note: defrost activation takes place upon closure (**H1x**=1) or opening (**H1x**=-1) of the digital input DI (if activated). You can only activate a defrost, not end an active one. Any defrost or dripping cycle in progress and the defrost or dripping time cannot be suspended.

Regulation examples

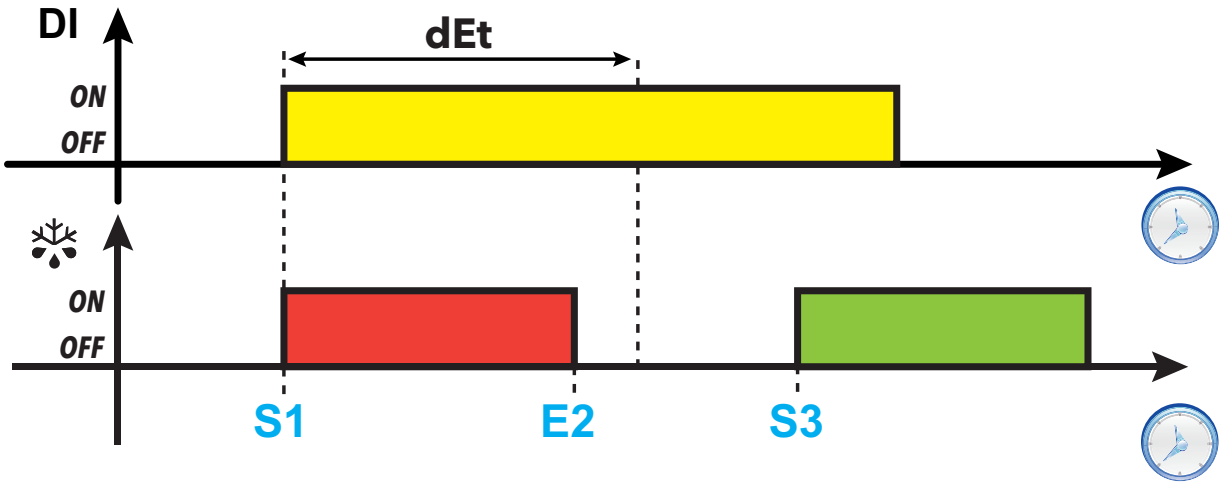
Example 1:



Example 2:



Example 3:



Legend: **S1** = Defrost 1 start; **S2** = Defrost 2 start; **S3** = Regular defrost start with fixed expiration; **E1** = End of defrost due to timeout; **E2** = End of defrost due to temperature.

Parameters

Parameter	Description
dit	Time interval between one defrost and the next.
odo	Output activation delay time from switching on the controller or after a power outage.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
dS2	Evaporator 2 defrost end temperature.
H11	DI digital input/polarity configuration.
H12	DI2 digital input/polarity configuration (on TTL port).
H31	△ key configuration.
H32	▽ key configuration.
H33	⏻ key configuration.
H34	💡 key configuration.
H35	☆ key configuration.

Modulating Defrost

The Modulating defrost methods that can be activated simultaneously are as follows:

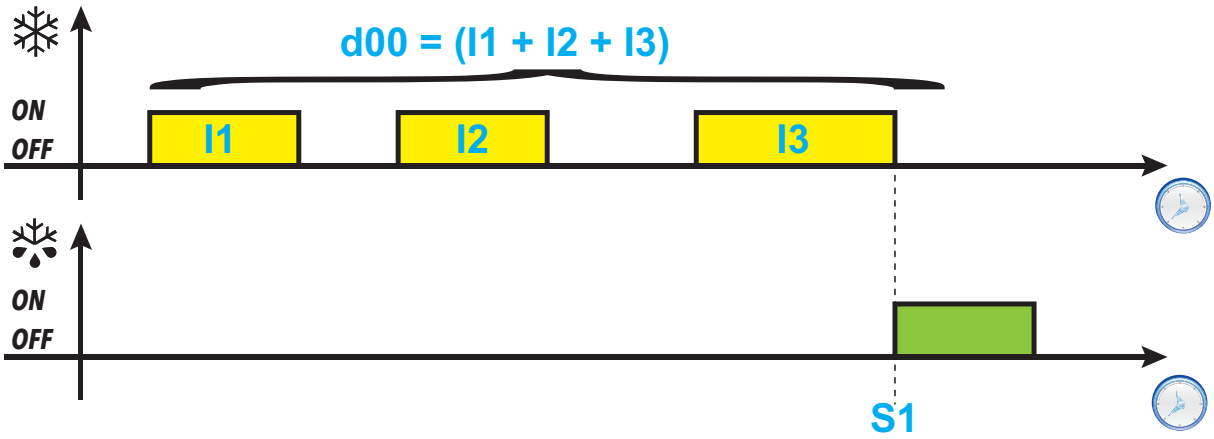
Activation method	Parameters
Compressor running time The defrost is activated when the sum of compressor operating period durations reaches the value **d00**.	**d00/d01**
Instrument running time The defrost is activated when the instrument operating period duration reaches the value **dit**.	**dit/d11**
Compressor stop The defrost is activated when the compressor switches off (only if **d20** = 1).	**d20**
Evaporator temperature The defrost is activated when the Evaporator temperature drops below the set threshold **d41**.	**d40...d44**
Temperature differential The defrost is activated on the basis of the value (**Pb2**-**Pb1**), considered in absolute or relative mode, and on the basis of the defrost activation threshold **d52**.	**d50...d55**
RTC (Real Time Clock) The defrost will be activated at preset intervals and on specified days (RTC with fixed or regular intervals)	**d90...d94**

Compressor running time

This defrost can be configured via the following parameters:

Parameter	Description
d00	Compressor running time before defrost is activated. When the compressor on time is equal to **d00**, defrost is active. The value of **d00** is calculated as the sum of all the compressor on times.
d01	**d00** unit of measure: • **0** = hours • **1** = minutes • **2** = seconds

Regulation diagram



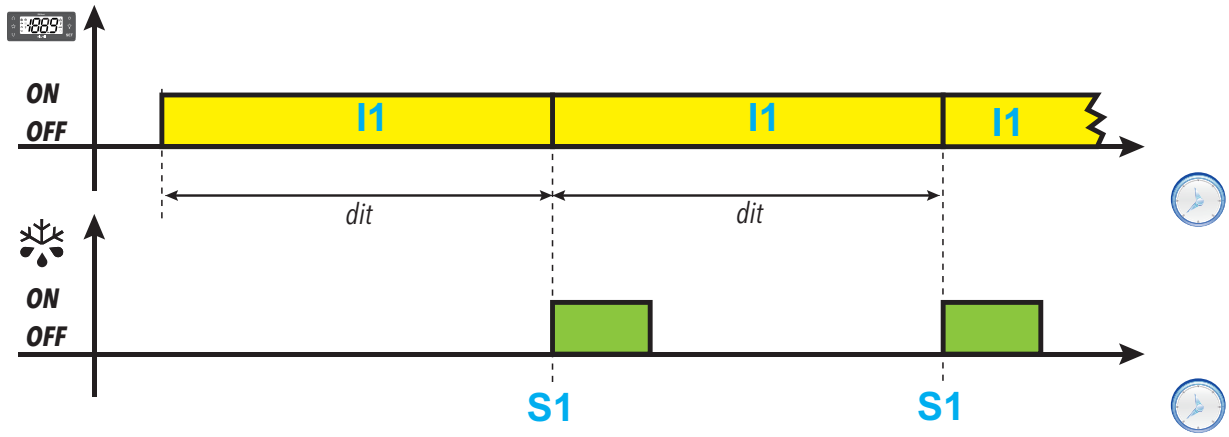
Legend: **I1, I2, I3** = Compressor on times; **S1** = Defrost start.

Instrument running time

This defrost can be configured via the following parameters:

Parameter	Description
dit	Time interval between one defrost and the next. After the instrument is switched on, a meter is activated and remains on, regardless of the compressor status. When the time period **dit** has elapsed, defrost will be activated and the meter will start a new count until the next defrost is activated.
d11	**dit** unit of measure: • **0** = hours • **1** = minutes • **2** = seconds

Regulation diagram



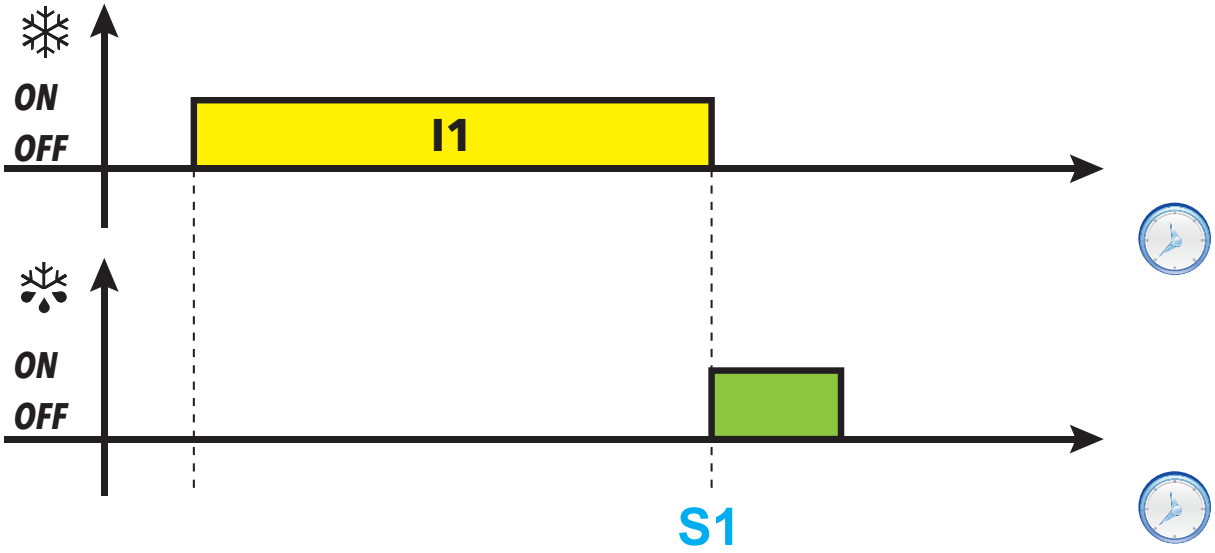
Legend: **I1** = Controller on time (equal to **dit**); **S1** = Defrost start.

Compressor stop

This defrost can be configured via the following parameters:

Parameter	Description
d20	Can be used to activate the defrost when the compressor switches off. • **0** = mode disabled. • **1** = enabled. Defrost is activated when the compressor switches off.

Regulation diagram



Legend: **I1** = Compressor on time; **S1** = Defrost start

Evaporator temperature

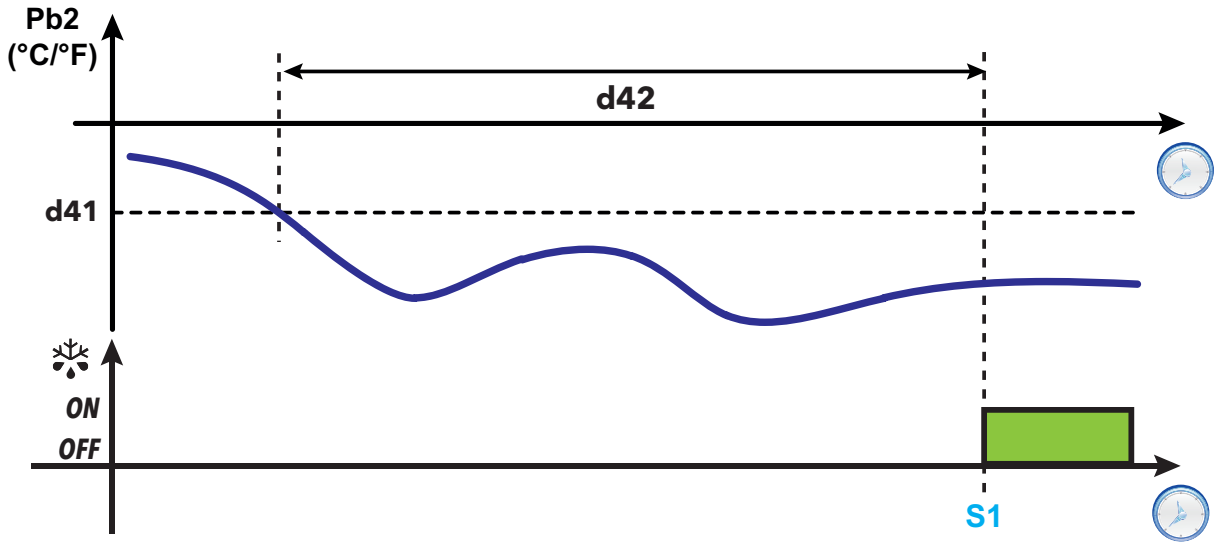
This defrost can be configured via the following parameters:

Parameter	Description
d40	Enables/disables use of probe Pb2. • **0** = mode disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)
d41	Sets the defrost activation threshold (on the value read by probe Pb2)
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**
d43	Sets the type of incremental time count in which the evaporator temperature remains under the threshold value. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature rises above the threshold **d41** • **3** = incremental count with compressor on and until the temperature rises above the threshold **d41**
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on startup). Set the threshold to a value equal to the value measured by probe Pb2 at the end of the first cooling cycle or at startup (if **d40** = 1) reduced by the amount set in parameter **d41**.

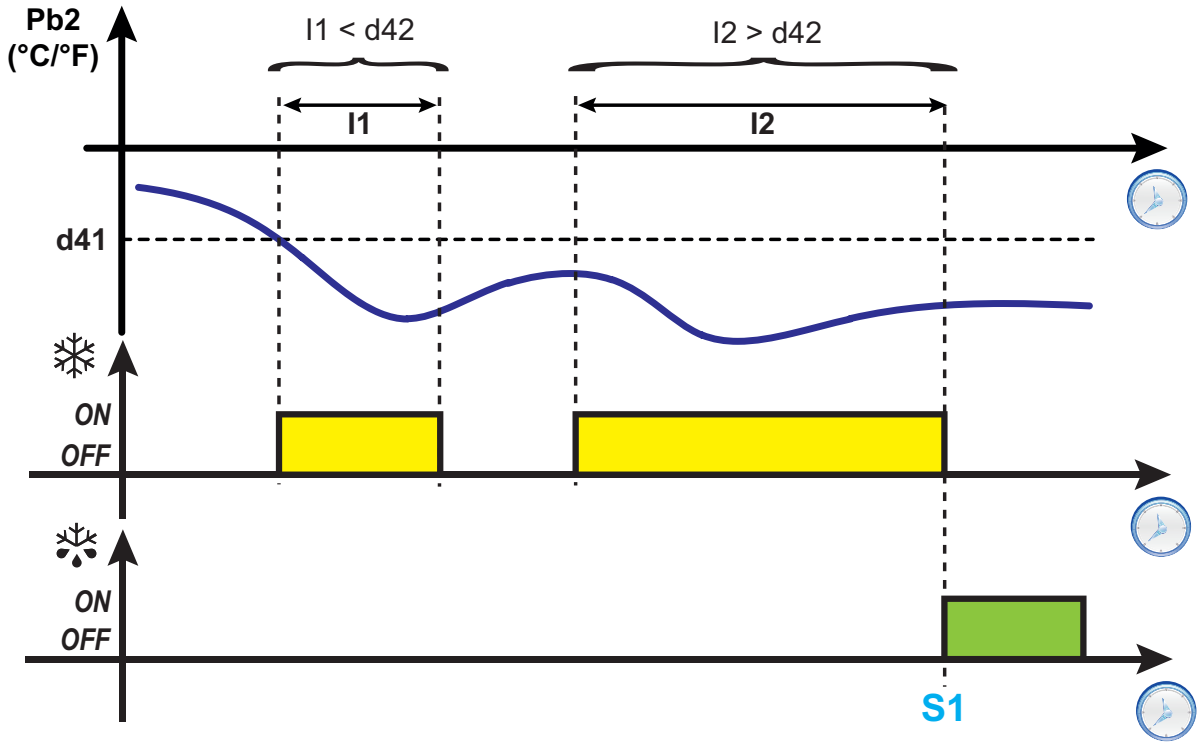
Note: this function can only be activated in models which manage probe Pb2 (as long as the conditions are correct to do so).

Regulation diagrams

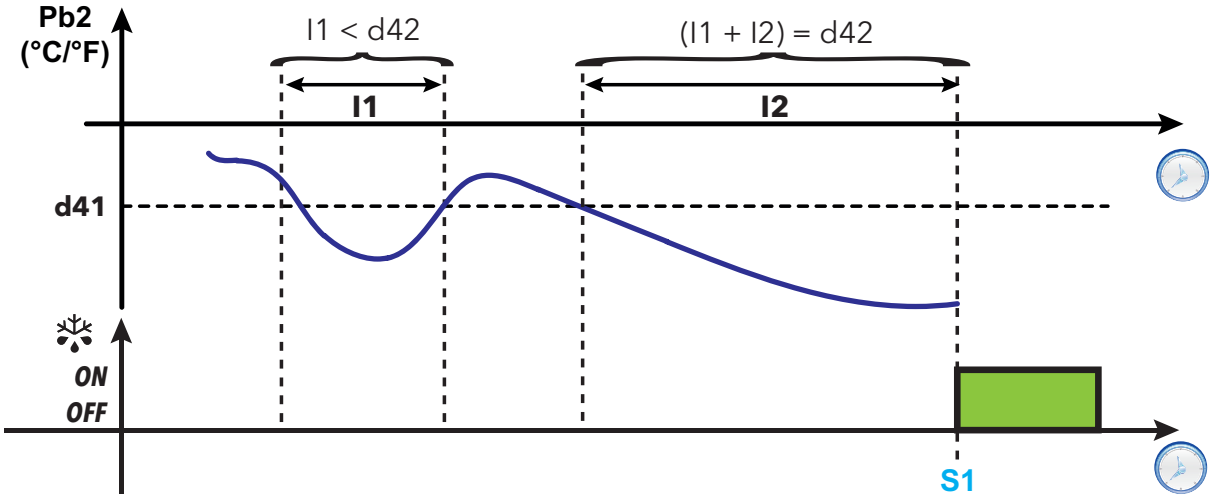
d43 = 0: count independent of the compressor status



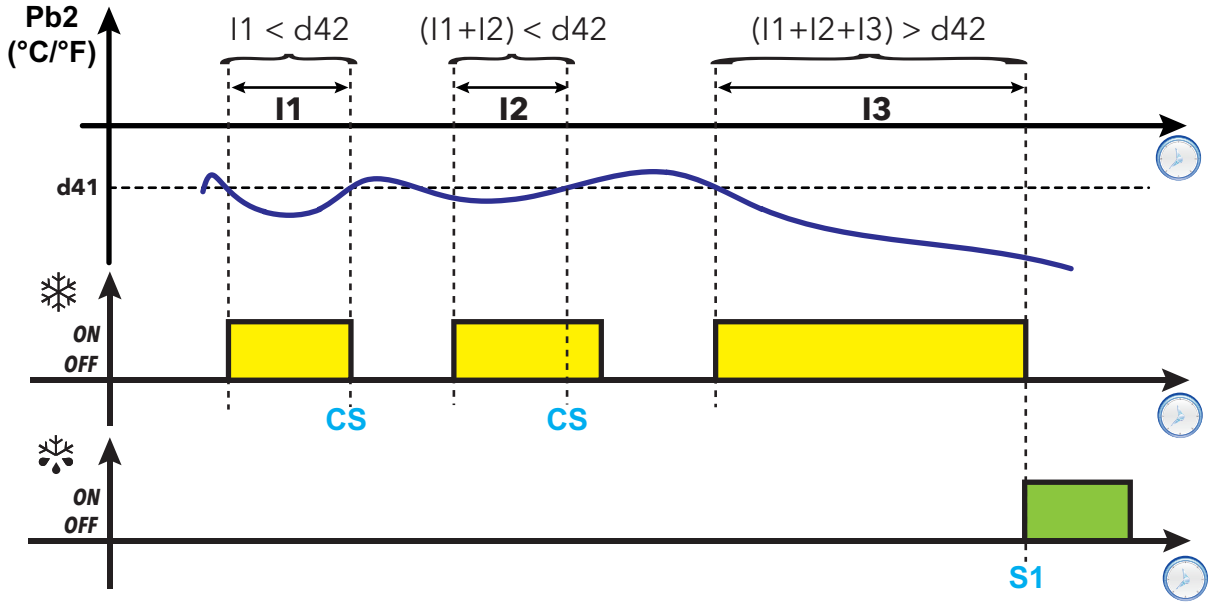
d43 = 1: count with compressor on



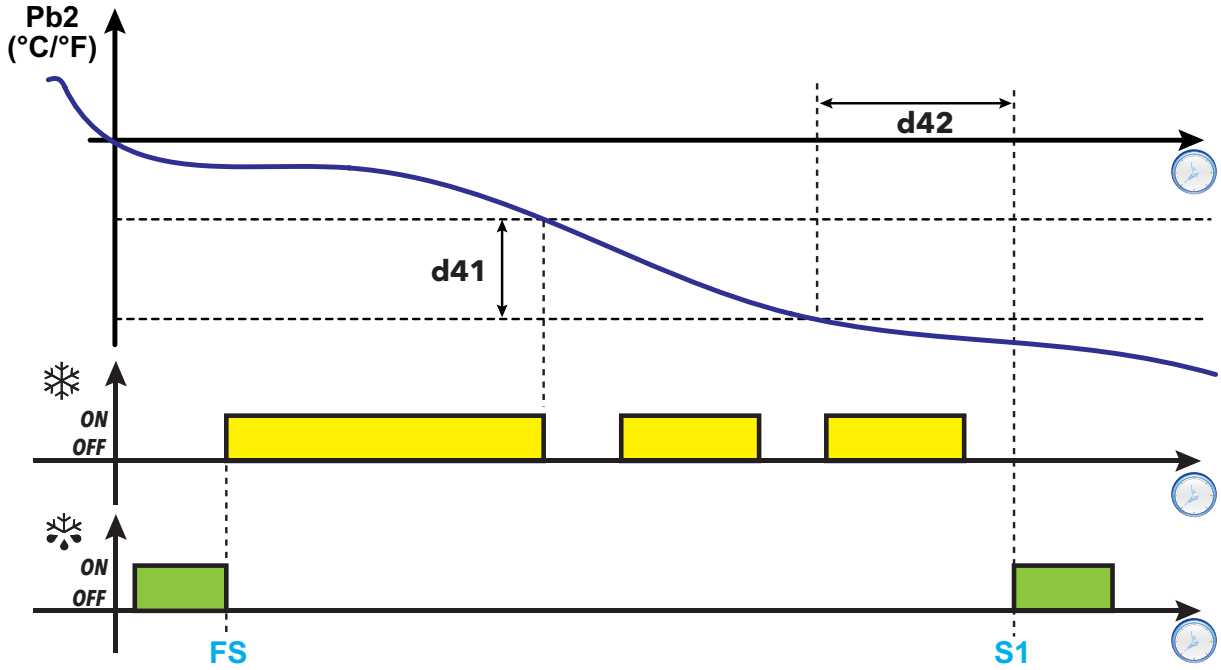
d43 = 2 : count independent of compressor status, count active for Pb2 values below threshold d41



d43 = 3 : count with compressor on, count active for Pb2 values below threshold d41



d44 = 1: Threshold in relative value



Legend: **I1, I2, I3** = Times with count active; **FS** = End of defrost; **S1** = Defrost start; **CS** = Count stop (Pb2 > **d41**).

Temperature differential

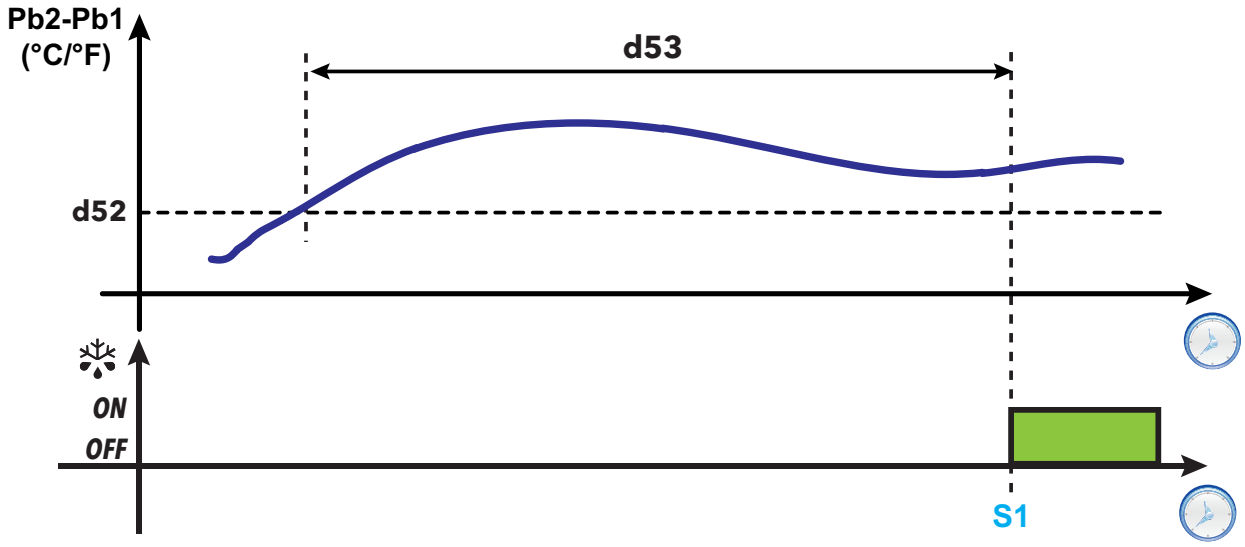
This defrost can be configured via the following parameters:

Parameter	Description
d50	Enables/disables use of probe Pb2. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)
d52	Sets the defrost activation threshold (absolute differential **Pb2-Pb1**)
d53	Sets the maximum time for which the temperature difference (**Pb2-Pb1**) can remain above the threshold **d52**
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature difference (**Pb2-Pb1**) falls below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**
d55	Sets the threshold management mode. • **0** = absolute value • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**Pb2-Pb1**) at the end of the first cooling cycle or on startup).

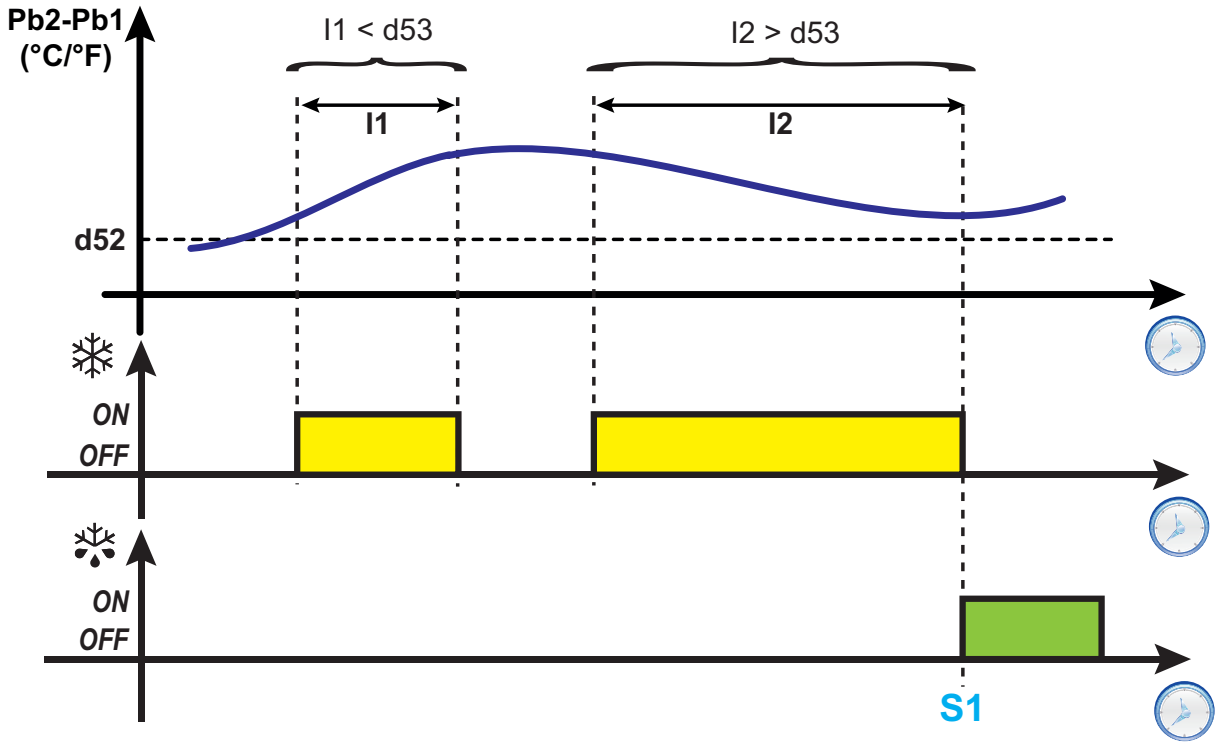
Note: this function can only be activated in models which manage probe Pb2 (as long as the conditions are correct to do so).

Regulation diagrams

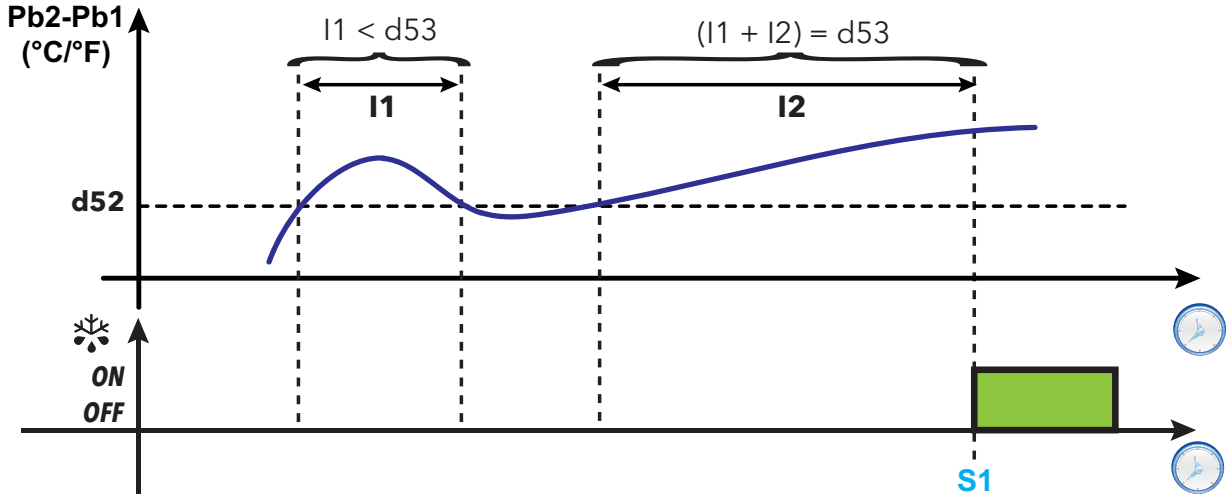
d54 = 0: count independent of the compressor status



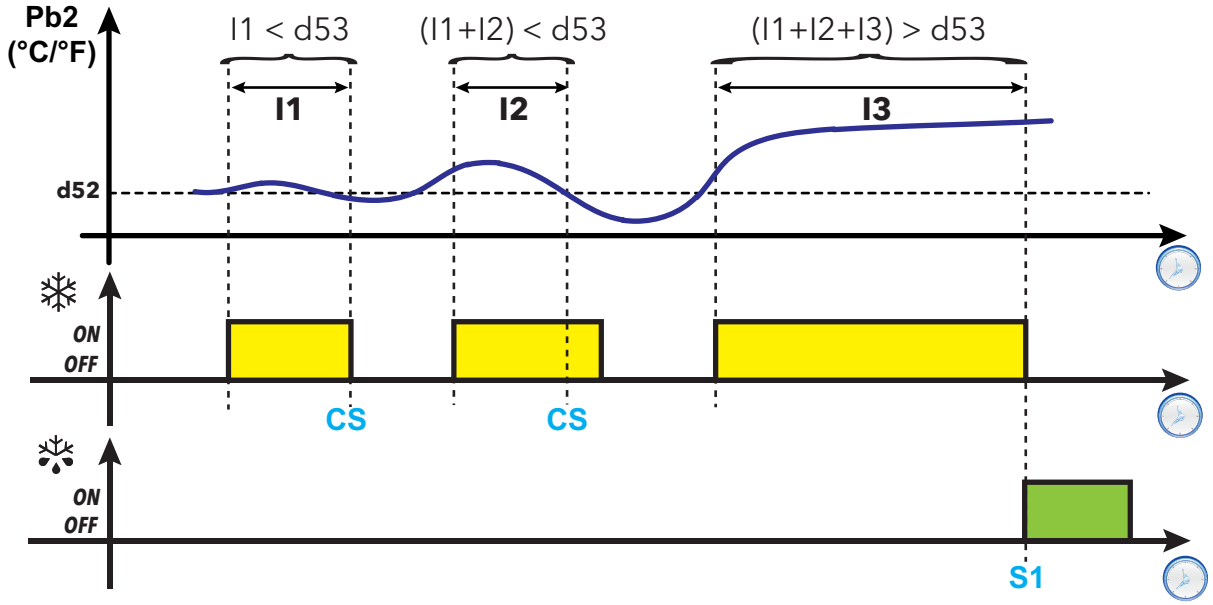
d54 = 1: count with compressor on



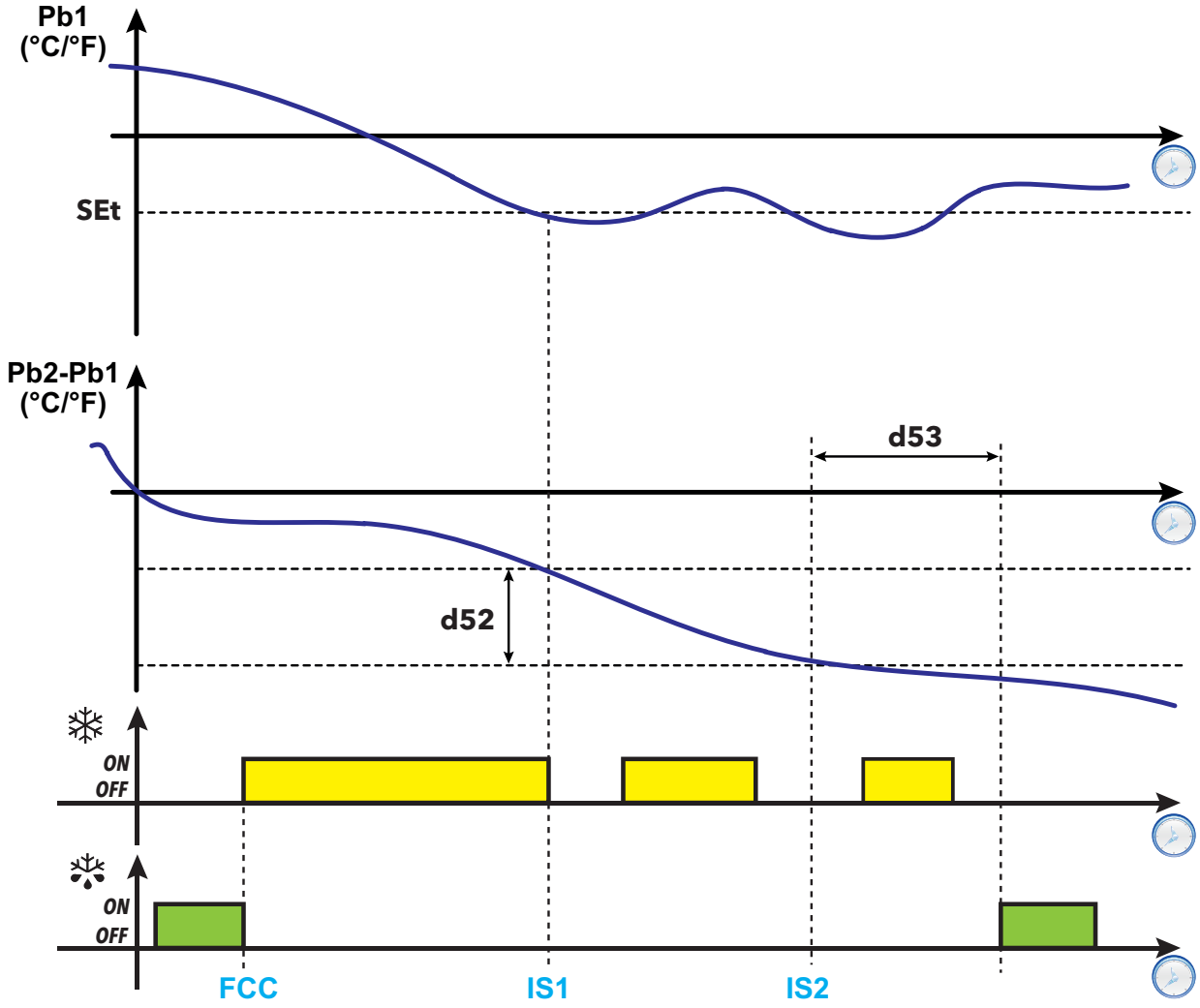
d54 = 2: count independent of the compressor status, count stop below the threshold



d54 = 3: count with compressor on, count stop below the threshold



d55 = 1: Threshold in relative value



Legend: **I1, I2, I3** = Times with count active; **S1** = Defrost request; **CS** = Count stop (Pb2 > **d52**); **FCC** = Start first cooling cycle; **IS1** = Moment in correspondence with the first cooling cycle in which the cut-in threshold is calculated (Threshold = Pb2-Pb1+Offset); **IS2** = Activation threshold crossing moment calculated at the **IS1** time.

RTC (Real Time Clock)

This defrost can be configured via the following parameters:

Parameter	Description
d90	Sets the defrost mode with RTC. • **0** = Mode disabled • **1** = RTC at time intervals (maximum 6 different intervals) • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC
d91	Sets the number of daily defrosts (only if **d90**=2).
d92	Sets the first weekend/holiday defrost (only if **d90**≠3) • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled
d93	Sets the second weekend/holiday day. Same as **d92**.
d94	Sets the interval (duration) of the regular defrost expressed in days.

Note: this function can only be activated in models with RTC.

RTC operation at time intervals

If RTC at time intervals mode is selected (**d90**=1), up to 6 different defrost intervals can be programmed. The intervals can be customized to different schedules for weekdays (**dxH**, **dxn**) or weekends/holidays (**FxH**, **Fxn**).

Note: it is not possible to set the maximum duration or the defrost end temperature for a single defrost event.

RTC operation at fixed intervals

If RTC at fixed intervals mode is selected (**d90**=2), the first defrost starts with the first programmed defrost time (holiday / weekday). The next defrost begins at fixed intervals: the time between two defrosts (expressed in hours) is calculated with the formula 24 h/**d91** (example: if **d91**=6, defrost begins every 4 hours after the first).

The defrost events are described via parameters:

- **d1H** (weekday start hour)
- **d1n** (weekday start minute)
- **F1H** (weekend/holiday start hour)
- **F1n** (weekend/holiday start minute).

Regular RTC operation

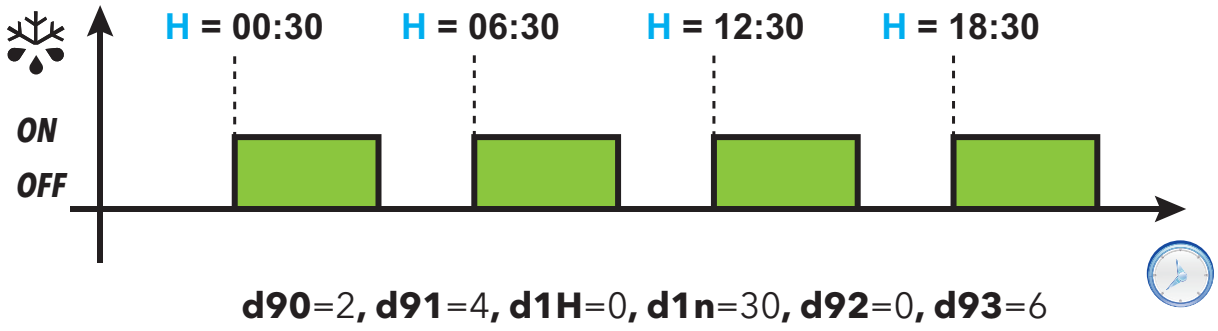
If regular interval RTC is selected (**d90**=3), the first defrost begins at the time programmed using parameters **d1H**, **d1n** (**F1H** and **F1n** are not taken into account).

After **d94** days from the first defrost, at the time **d1H** & **d1n**, a new defrost begins. After **d94** days from the second defrost, at the time **d1H** & **d1n**, a new defrost begins and so on.

Note: No distinction is made between weekdays and weekends/holidays. The value of parameter **d92** is not important.

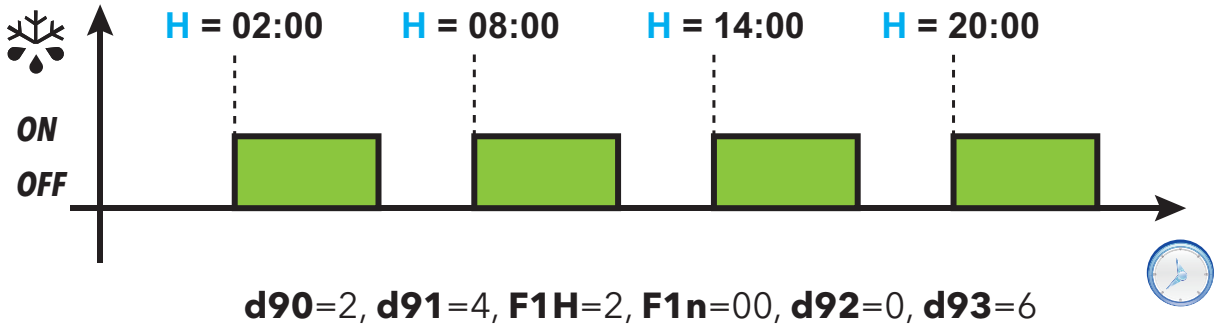
Regulation diagrams

a) Example of defrost at fixed intervals during the week (Monday...Friday)



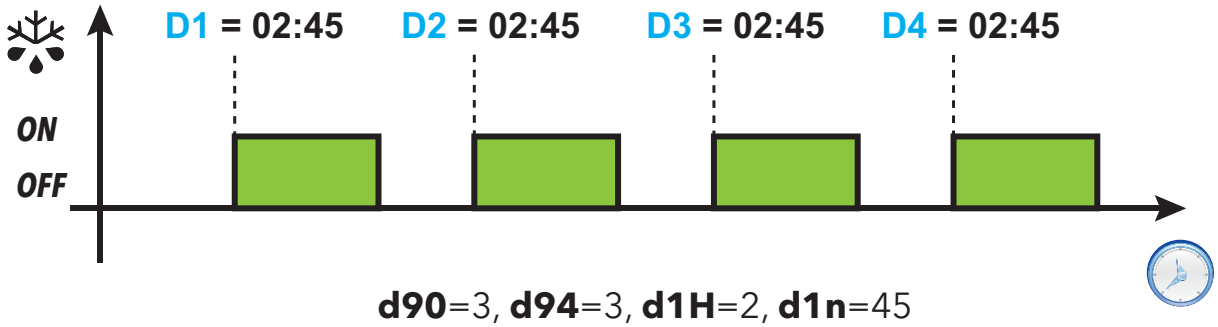
d90=2, **d91**=4, **d1H**=0, **d1n**=30, **d92**=0, **d93**=6

b) Example of defrost at fixed intervals on weekends/holiday (Saturday/Sunday)



d90=2, **d91**=4, **F1H**=2, **F1n**=00, **d92**=0, **d93**=6

c) Example of defrost at regular intervals (start day: Sunday)



d90=3, **d94**=3, **d1H**=2, **d1n**=45

Legend:

- **H** = Defrost start time;
- **Dx** = day of the week (Start day **D1** = Sunday. **d94**=3 days on which consecutive defrosts will start with **D2**=Wednesday, **D3**=Saturday and **D4**=Tuesday).

Standard defrost

To select this defrost mode, set parameter **dty** (defrost type).

Defrost takes place due to the evaporator heating up, in one of the following ways:

dty value	Defrost mode
0	Electric heater defrost
	Defrost due to compressor stoppage
1	Cycle inversion (hot gas) defrost*
2	Free defrost*

(*): only models that manage probe Pb2.

Electric heater defrost

When defrost is activated (**dty** = 0):

- The compressor stops
- the relay to which the electric heaters are connected, configured as defrost regulator output, is activated

At the end of defrost, if **dt**≠0 the controller will move on to the dripping phase and the compressor, fans and heaters will remain inactive. At the end of the dripping cycle, regulation begins again as normal.

End of defrost

Defrost ends in the following conditions:

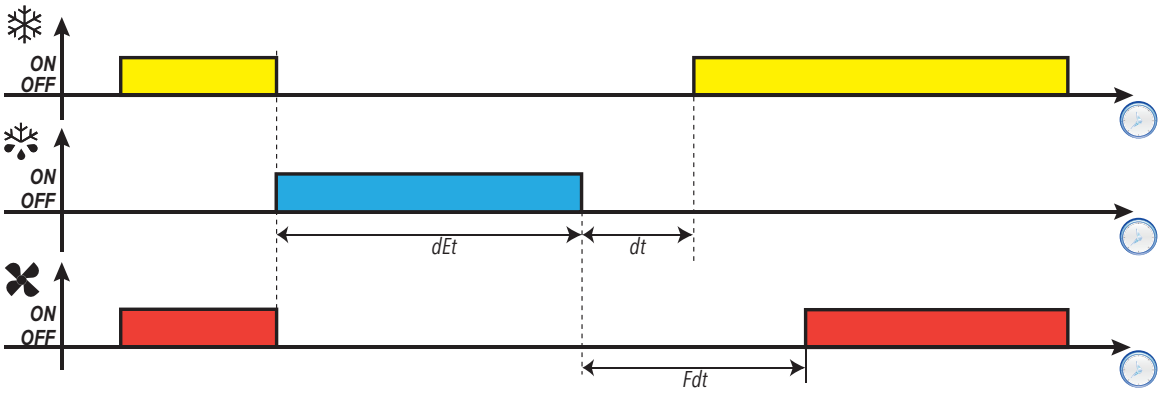
Condition	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter **dEt**.	0	Not managed
Defrost end setpoint set using parameter **dS1** reached or due to timeout if the setpoint is not reached within the time period **dEt**.	1	Managed

Notes:

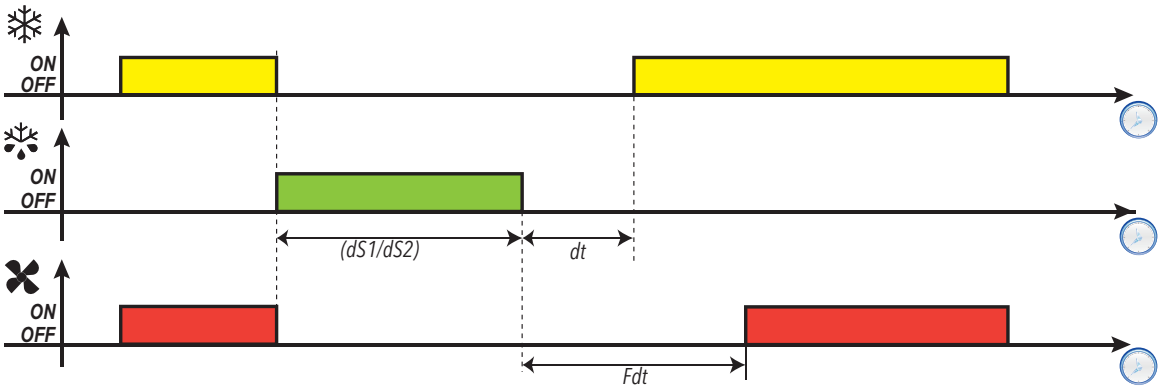
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1** intervention
- If **Fdt** < **dt Fdt** = **dt** is set
- During the defrost the fans are off if **dFd** = y, otherwise they follow the other settings for the fan regulator
- The programmed defrost is carried out independently of the Pb1 status
- Defrost and dripping are carried out independently of the door switch activation or not

Regulation diagram

End of electric heater defrost due to timeout



End of electric heater defrost due to temperature



Parameters

Parameter	Description
don	Compressor relay activation delay time from call.
doF	Delay time after compressor relay switch-off and the next switch-on.
dbi	Delay time between two compressor switch-ons.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
d40	Enables/disables use of probe Pb2.
Fdt	Fan activation delay after a defrost.
dFd	Evaporator fan exclusion during defrost.
dt	Dripping duration.

Defrost due to compressor stoppage

When electric defrost is activated (**dty**= 0),

- The compressor stops
- No relay is configured as defrost regulator output

End of defrost

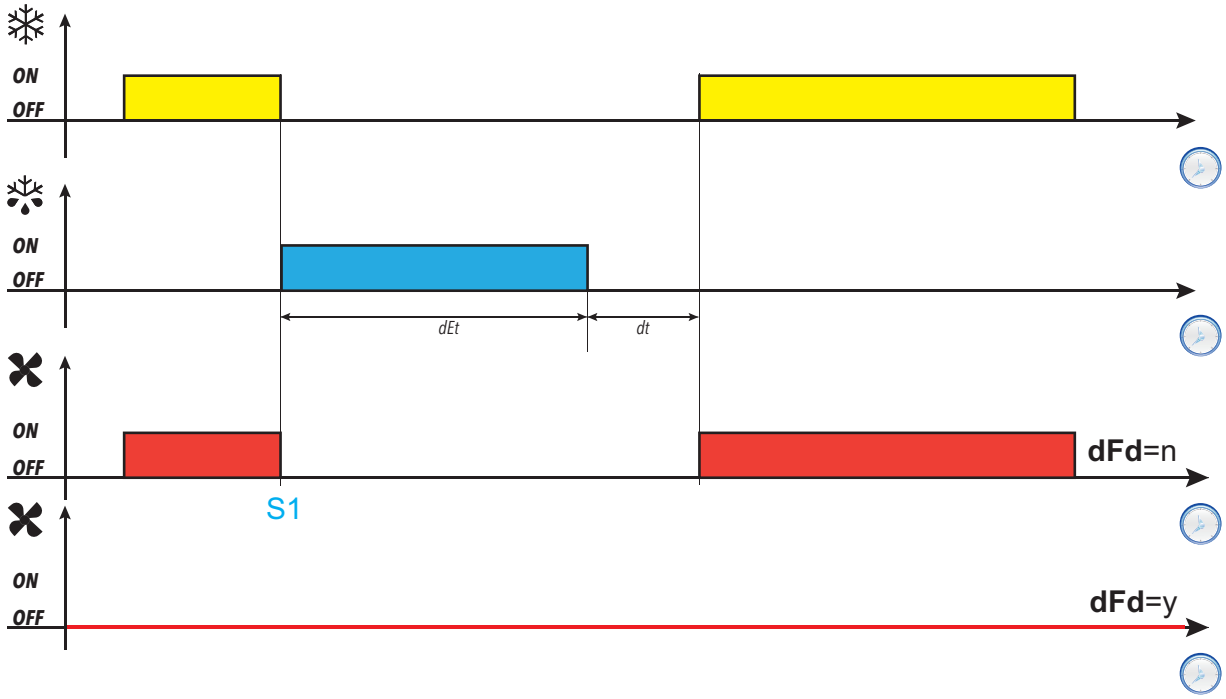
Defrost ends in the following conditions:

Condition	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter **dEt**.	0	Not managed
Defrost end setpoint set using parameter **dS1** reached or due to timeout if the setpoint is not reached within the time period **dEt**.	1	Managed

Notes:

- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dt** ≠ 0, at the end of defrost the compressor and fans remain off for the time period **dt** (dripping time)
- During the defrost the fans are off if **dFd** = y, otherwise they follow the other settings for the fan regulator
- The programmed defrost is carried out independently of the Pb1 status
- Defrost and dripping are carried out independently of the door switch activation or not

Regulation diagram



Legend: **S1** = Start of defrost

Parameters

Parameter	Description
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dFd	Evaporator fan exclusion during defrost.
dt	Dripping duration.

Cycle inversion (hot gas) defrost

When defrost is activated (**dty**= 1):

- The compressor remains active for the entire duration of the defrost
- the relay to which the solenoid valve is connected, configured as defrost regulator output, is activated

At the end of defrost the valve relay and the compressor relay are deactivated. The compressor relay is stopped for the entire duration of the dripping cycle, set via parameter **dt** (if a value other than zero). At the end of the dripping cycle regulation begins again as normal.

End of defrost

Defrost ends in the following conditions:

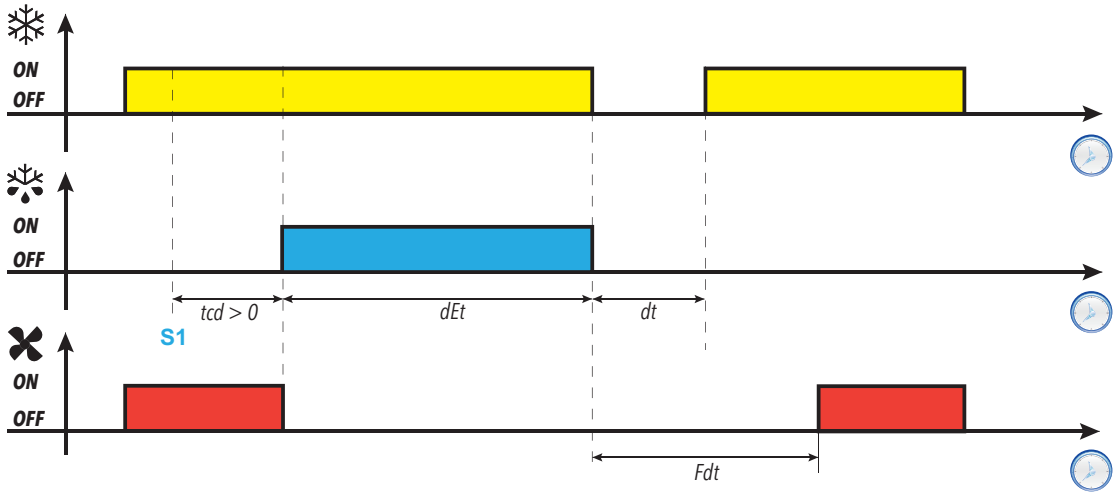
Condition	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter **dEt**	0	Not managed
Defrost end setpoint set using parameter **dS1** reached or due to timeout if the setpoint is not reached within the time period **dEt**.	1	Managed

Notes:

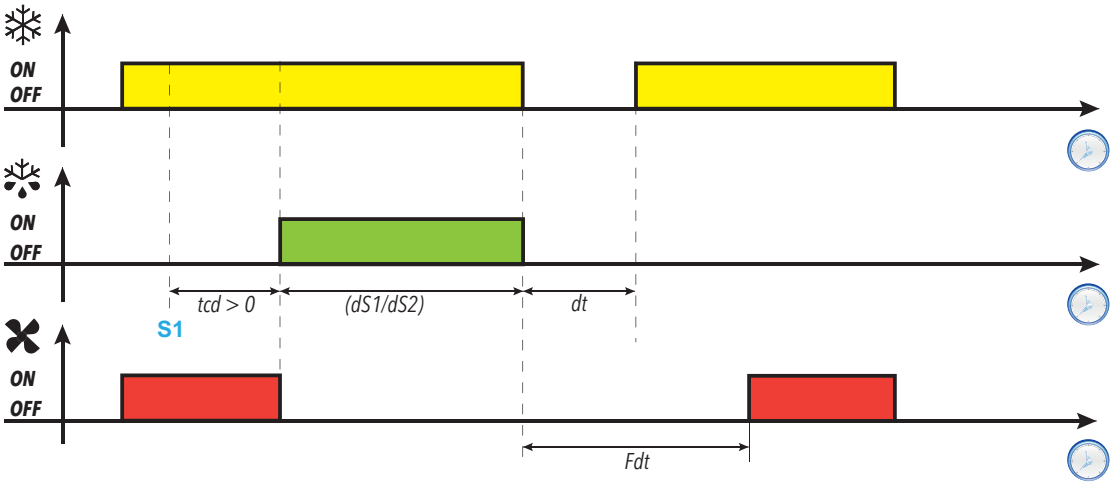
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- The compressor safety timings (managed by parameters **don**, **doF** and **dbi**) take priority over defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1** intervention
- If **Fdt** < **dt**, **Fdt** = **dt** is set
- During the defrost the fans are off if **dFd** = y, otherwise they follow the other settings for the fan regulator
- The programmed defrost is carried out independently of the Pb1 status
- Defrost and dripping are carried out independently of the door switch activation or not

Regulation diagrams

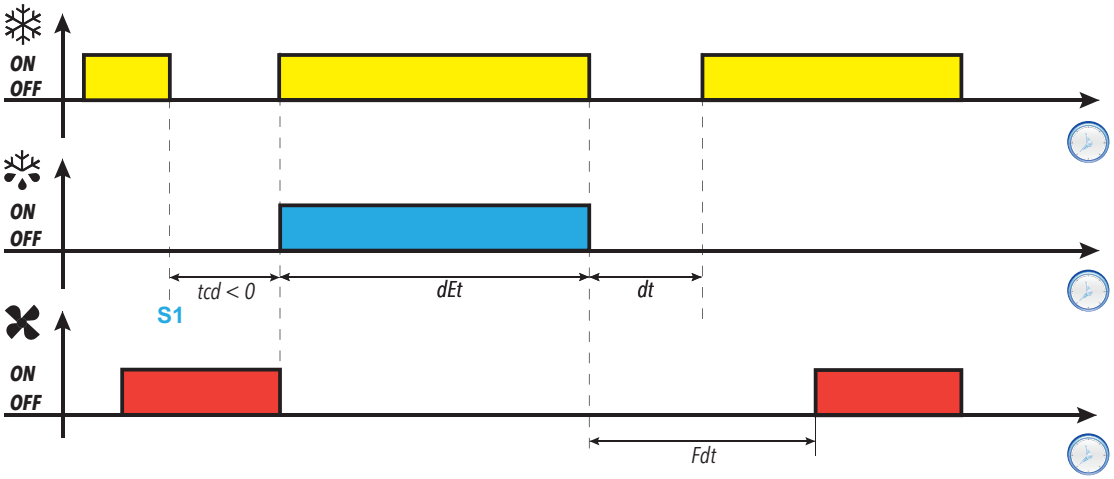
End of hot gas defrost due to timeout, with tcd > 0



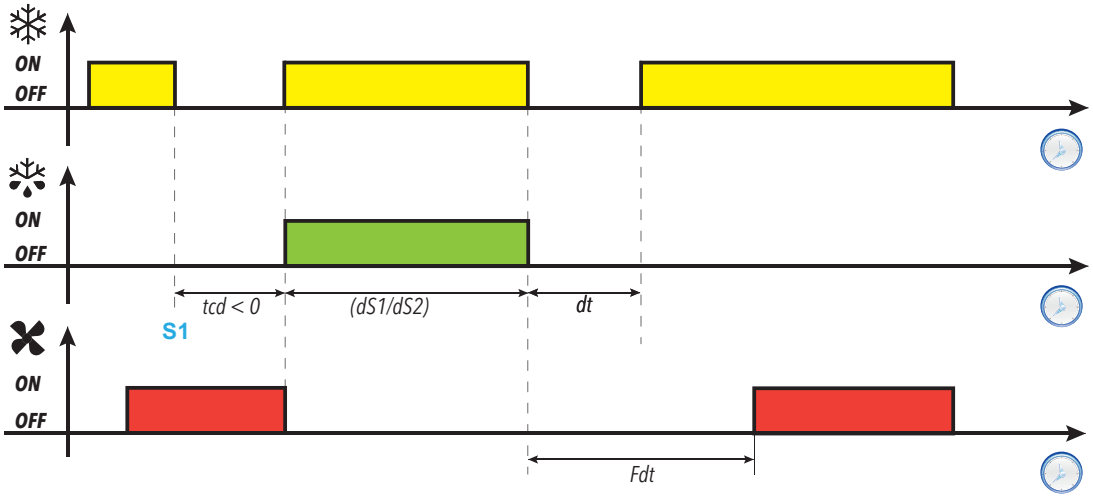
End of hot gas defrost due to temperature, with tcd > 0



End of hot gas defrost due to timeout, with tcd < 0



End of hot gas defrost due to temperature, with tcd < 0



Legend: **S1** = Defrost request

Parameters

Parameter	Description
don	Compressor relay activation delay time from call.
doF	Delay time after compressor relay switch-off and the next switch-on.
dbi	Delay time between two compressor switch-ons.
tcd	Minimum compressor on or off time which must elapse before defrost is activated.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Free defrost

When defrost is activated (**dty**= 2):

- The compressor remains under control of the compressor regulator for the duration of the defrost
- the relay to which the electric heaters are connected, configured as defrost regulator output, is activated

At the end of the defrost the heaters switch off.
During the dripping cycle the compressor continues to run.

End of defrost

Defrost ends in the following conditions:

Condition	Evaporator probe (Pb2)	H42 value
End of timeout period set using parameter **dEt**	Not managed	0
End of defrost temperature setpoint, set using parameter **dS1**, reached. **Note**: (only models that manage probe Pb2) If the setpoint is not reached within the time set using parameter **dEt** (defrost timeout), the defrost ends in any case due to timeout.	Managed	1

Notes:

- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is nevertheless activated in correspondence with the end of interval **dEt**
- The programmed defrost is carried out independently of the Pb1 status
- Defrost and dripping are carried out independently of the door switch activation or not

Parameters

Parameter	Description
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Synchronized Defrost from Digital Input

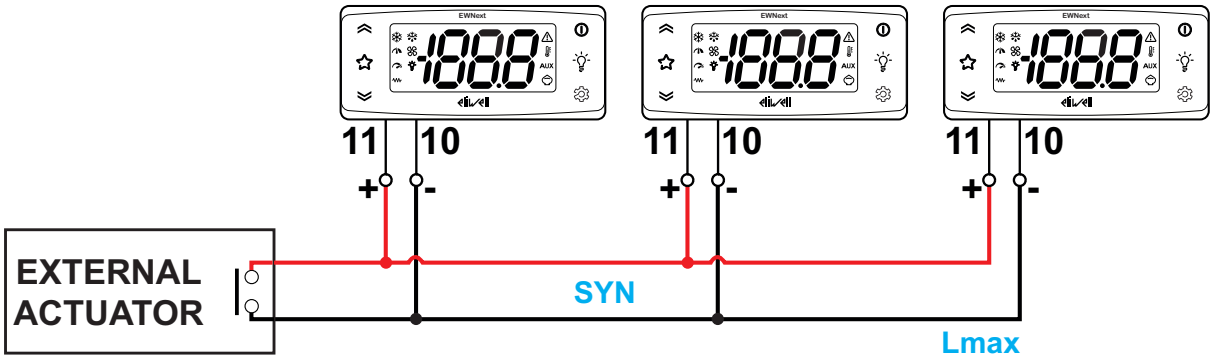
Functioning conditions

The function can be activated by setting:

- **H11** = ±13 (Synchronized defrost)
- **H43** = 0 (Probe Pb3 disabled)

The start of a synchronized defrost can be enabled by means of an external actuator or via one of the EWNext devices that share the synchronism connection.

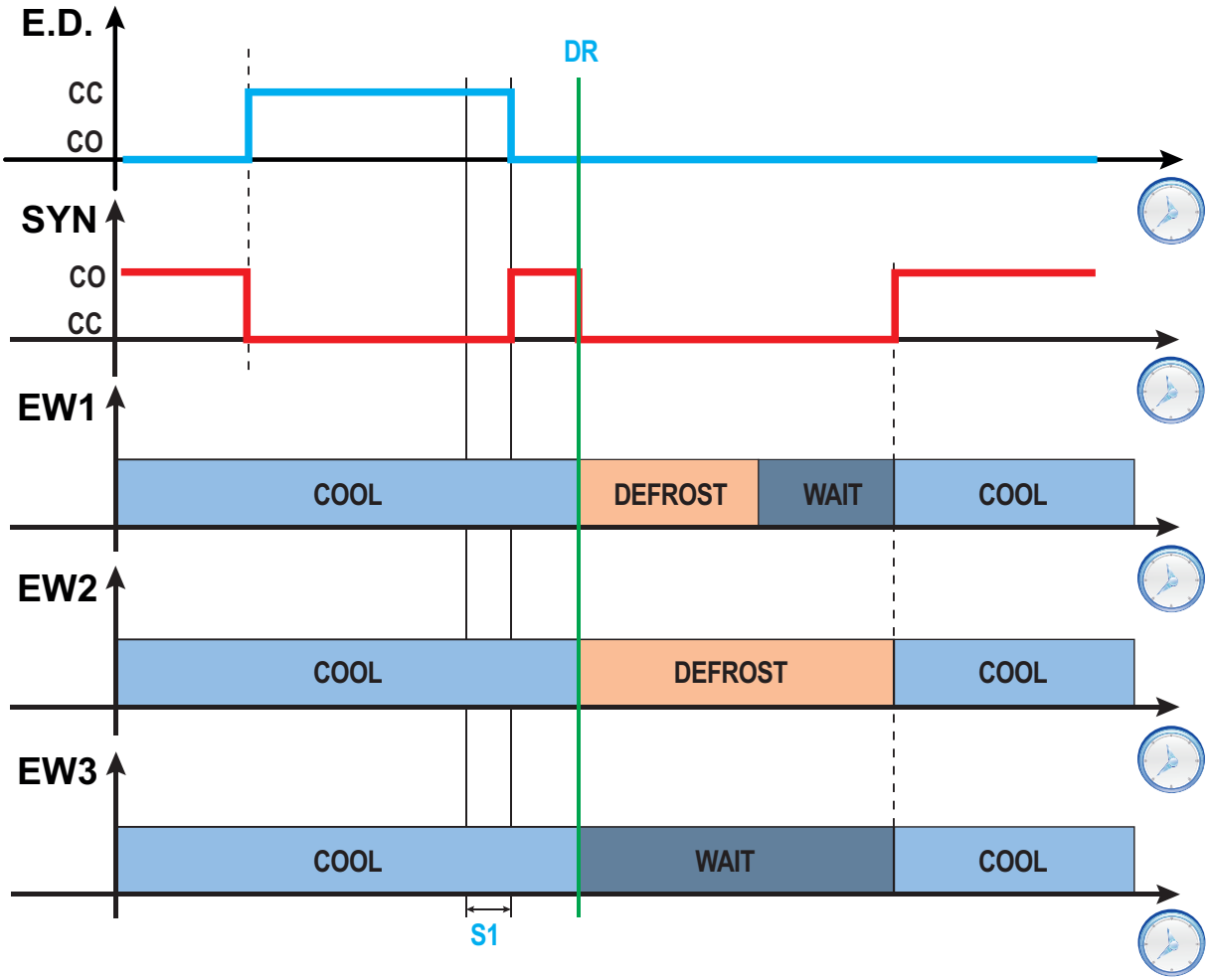
NOTICE
INOPERABLE DEVICE • The external actuator should be voltage free. • Use a maximum of 8 EWNext devices in the network. • For defrost synchronization line connection, use cables no longer than 10 m (32.80 ft). **Failure to follow these instructions can result in equipment damage.**



Legend: **External Actuator** = External actuator; **SYN** = Defrost synchronization line; **Lmax** = Maximum connection length (must be under 10 m - 32.8 ft).

CASE 1: at least one controller can start a defrost

If at least one controller is capable of starting a defrost, the other controllers - that do not possess the conditions for starting it - inhibit normal regulation. When all syncronized controllers have completed the defrost sequence, they will begin regulating normally again.



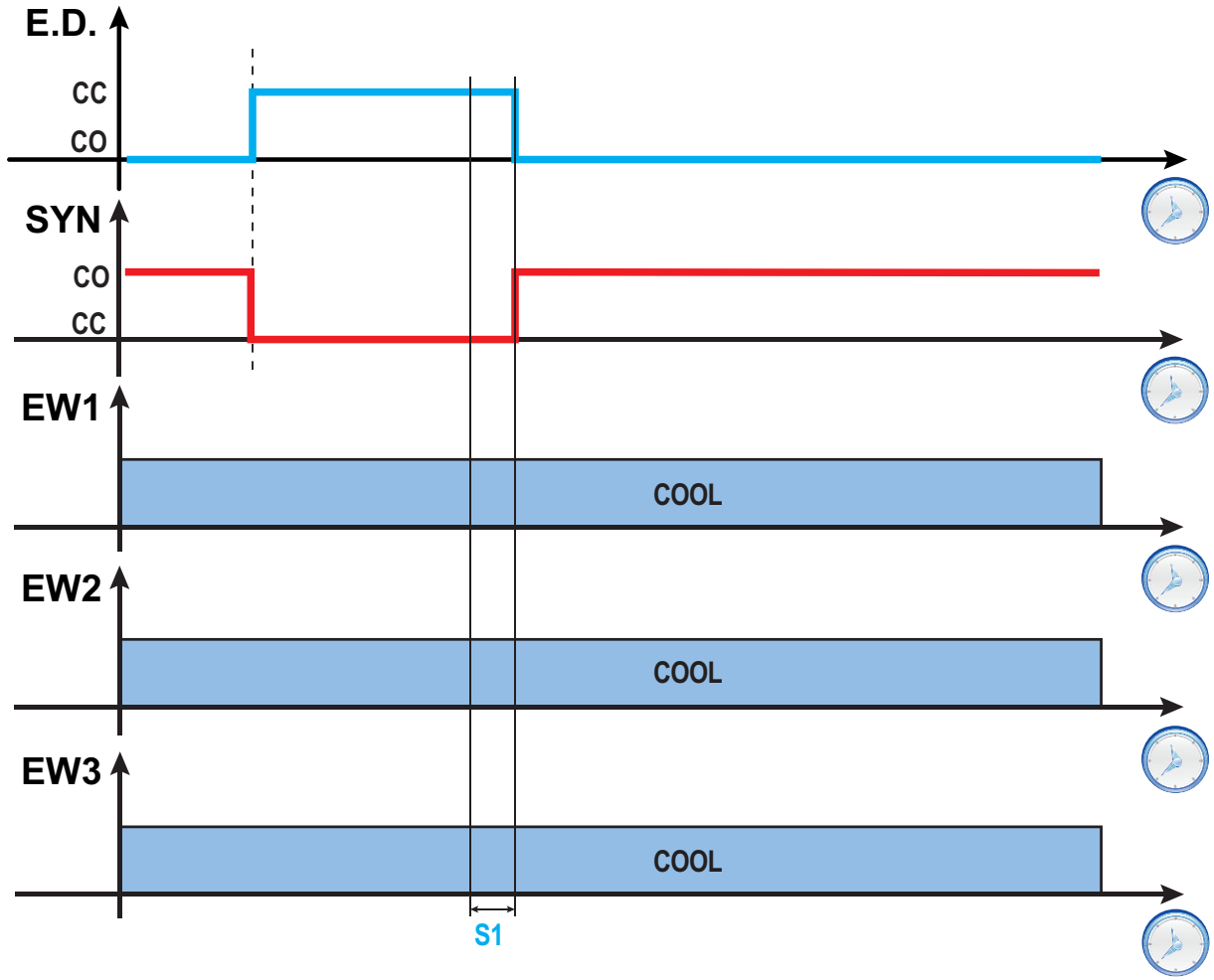
Legend: **E.D.** = External device; **SYN** = Synchronization line; **CC** = Closed contact; **CO** = Open contact; **EW1...EW3** = Synchronization network tools; **DR** = Defrost request; **S1** = Time period of 0.5 seconds; **COOL** = Normal regulation; **WAIT** = Command wait time; **DEFROST** = Defrost.

The defrost sequence will be:

1. The external device activates the synchronization line, closing the circuiti for a time period of at least 0.5 seconds (**S1**). During this period all the shared controllers continue to regulate normally.
2. The external device deactivates the synchronization line.
   The controllers that possess the conditions for starting a defrost start it activating the synchronization line.

If none of the controllers are in a condition to start a defrost, they will continue to regulate normally.

CASE 2: none of the controllers can start a defrost



Legend: **E.D.** = External device; **SYN** = Synchronization line; **CC** = Contact closed; **CO** = Contact open; **EW1...EW3** = Synchronization network tools; **DR** = Defrost request; **S1** = Time period of 0.5 seconds; **COOL** = Normal regulation.

Dual evaporator defrost

Introduction

To activate this function:

- Configure a relay output as a second evaporator using parameter **H2x** = 10
- Configure the type of dual defrost management using parameter **H45**
- Configure probe Pb3 as a second evaporator: **H11** = 0 and **H43** = 2EP.

Note: this function is only present in models that manage probes Pb2 and Pb3.

Functioning conditions

Defrost in dual evaporator mode can be carried out in 3 different ways:

H45 value	Description
0	Defrost on Evaporator 1 is active and ensures that the temperature read by probe Pb2 is lower than the defrost end temperature **dS1**. **Note**: The second evaporator is not taken into account.
1	Defrost is active and ensures that at least one of the temperatures read by probes Pb2 and Pb3 is lower than the defrost end temperature **dS1** for Evaporator 1 and **dS2** for Evaporator 2.
2	Defrost is active and ensures that both of the temperatures read by probes Pb2 and Pb3 are lower than the respective defrost end temperatures **dS1** for Evaporator 1 and **dS2** for Evaporator 2.
3	Defrost is activated on Evaporator 1 and Evaporator 2 alternately.

If one of the probes is in error, its temperature is considered as a trigger for the defrost function.

End of defrost

The end of defrost occurs when the temperature read by both evaporator probes is above the end unlock temperature (**dS1** and **dS2**) or when a timeout takes place.

General notes

- Defrost is not carried out if the conditions are not right to do so
- If **H45** = 3, the defrost sequence is always: Evaporator 1, Evaporator 2, Evaporator 1, and so on
- The end of defrost with Evaporator 1 only occurs when the probe measures a value that is equal to or greater than the defrost end temperature or when a timeout takes place
- Dripping begins when both defrosts have ended. If **H45** = 3, dripping will begin at the end of each defrost.
- If one or both probes are in error, the defrost will end due to timeout **dEt**
- If Pb3 is not configured as an Evaporator 2 probe (**H43** ≠ 2EP) or it is in error, the Evaporator 2 defrost can only be carried out if a digital output is configured as Evaporator 2 defrost (**H2x** = 10). In this case the temperature is not checked and the defrost ends due to timeout **dEt**
- Fan regulation follows normal operation in the same way as when a single evaporator is managed

Operation

Function	Start of defrost	End of defrost
Defrost on Evaporator 1	• Pb2<**dS1** if **H45**=0 • Pb2<**dS1** if **H45**=1 • Pb2<**dS1** & Pb3<**dS2*** if **H45**=2	• Pb2>**dS1** or • Timeout if Pb2<**dS1** or • Timeout if Pb2 in error
Defrost on Evaporator 2	• Pb2<**dS1** if **H45**=0: • Pb3<**dS2** if **H45**=1: • Pb2<**dS1** & Pb3<**dS2*** if **H45**=2	• Pb3>**dS2** or • Timeout if Pb3<**dS2** or • Timeout if Pb3 in error or • Timeout if **H43** ≠ 2EP
Function	**Start of dripping**	**End of dripping**
Dripping	• If **H45** ≠ 3: it is activated when both evaporators have finished defrosting. • If **H45** = 3: it is activated on the evaporator that was active when it finishes defrosting.	As for defrost with single evaporator

(*): If Pb3 is in error or **H43** ≠ 2EP and a digital output is configured as Evaporator 2, the condition Pb3<**dS2** will be considered as satisfied.

Parameters

Parameter	Description
don	Compressor relay activation delay time from call.
doF	Delay time after compressor relay switch-off and the next switch-on.
dbi	Delay time between two compressor switch-ons.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
dS2	Evaporator 2 defrost end temperature.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Functions

Contents

This section includes the following topics:

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Stand-by 93
Copy parameters (UNICARD) 94
Boot loader firmware 95
Reset TelevisAir diagnostic counters 96

Door switch

Description

By setting **H1x** = ±4 it is possible to connect a door switch to the digital input. When it is activated, the compressor and/or fans are deactivated instantly or after a time period set with parameter **dCo**.

By setting **H2x** = 5, an AUX relay output can be associated with the door switch regulator output.

Operating mode

Controller operation on opening of the door switch depends on parameters **dod**, **dAd** and **dCo**:

dod	dCo	Fans	Compressor
0 = function disabled	NA	On	On
1 = fans disabled	NA	Off	On
2 = compressor disabled	0	On	Off
	> 0		Off after **dCo** time
3 = compressor and fans disabled	0	Off	Off
	> 0		Off after **dCo** time

Note: If the door is opened during a defrost cycle, the defrost continues normally.

Parameters

Parameter	Description
dod	Utilities switched off upon activation of the digital input set for the door switch.
dAd	Digital input activation delay.
dCo	Compressor switch-off delay from door switch.
oAo	Alarm signaling delay after deactivation of the digital input (door closure).
tdo	Delay time due to door open alarm.
AuP	Association of an AUX output when the door is open.
H11	**DI** digital input/polarity configuration.
H12	**DI2** digital input/polarity configuration (on TTL port).
H21	Configuration of digital output **Out1**
H22	Configuration of digital output **Out2**
H23	Configuration of digital output **Out3**
H24	Configuration of digital output **Out4**

Stand-by

Description

The stand-by function maintains the controller power supply and, depending on the value of parameter **H08**:

- switches off the display or shows **oFF**
- deactivates all regulators (or not)
- excludes alarms (or not)

Activation

The stand-by function can be activated in one of the following ways:

- press and hold a key (configured with **H3x** = 4)
- via digital input (configured with **H1x** = ±6)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)

Note: the digital input takes priority over the key. If both are configured, the key command will be excluded.

Operation

When the stand-by function is activated, depending on the setting for **H08**, the following will occur:

- **H08** = **0**: display off, the regulators remain active and the instrument can activate the alarm icon ⚠ when an alarm occurs
- **H08** = **1**: display off, all relays are de-energized and the alarms deactivated
- **H08** = **2**: the display shows the text **oFF**, all relays are de-energized and the alarms deactivated

On exiting stand-by function, the temperature alarm is excluded for the time period set with parameter **PAo**; the outputs are deactivated for the time period set with parameter **odo**. These timing are reset every time the controller is switched off.

If stand-by had been active when the controller was switched off (as the result of a blackout, to the opening of the general switch, etc.), it will also remain active the next time it is switched on.

Parameters

Parameter	Description
PAo	Alarm exclusion time when switching on the controller, after a power failure
odo	Output activation delay after startup
H08	Stand-by operating mode
H11	**DI** digital input/polarity configuration.
H12	**DI2** digital input/polarity configuration (on TTL port).
H31	△ key configuration.
H32	▽ key configuration.
H33	⏻ key configuration.
H34	💡 key configuration.
H35	☆ key configuration.

Copy parameters (UNICARD)

Introduction

The UNICARD connects to the TTL serial port and allows uploading/downloading of a parameters map.

Note: Format the UNICARD the first time it is used.

The UNICARD:

- Can be connected directly to a computer by means of a USB port.
- If powered by a USB power supply device, it can power **EWNext Performance -HC** during the upload/download phases.

Formatting the UNICARD

1. Access the installer parameters, entering the **PA2** password if enabled
2. Scroll through the folders with ∧ and ∨ until you find the folder **FPr**
3. Press **SET** to confirm
4. Scroll through the parameters using ∧ and ∨ until you see parameter **Fr**
5. Press **SET** to confirm.

This command is used to format the UNICARD (necessary when using the card for the first time).
Note: the **Fr** parameter deletes all data present. It's not possible to stop and/or undo this task.

Uploading parameters from the controller to the UNICARD

1. Access the installer parameters, entering the **PA2** password if enabled
2. Scroll through the folders with ∧ and ∨ until you find the folder **FPr**
3. Press **SET** to confirm
4. Scroll through the parameters using ∧ and ∨ until you see parameter **UL**
5. Press **SET** to confirm
6. If the operation is completed, the display will show **yES**, otherwise it will show **no**.

Downloading parameters from the UNICARD to the controller

Connect the UNICARD when the controller is switched off. When the controller is switched on, the data is downloaded automatically from the UNICARD to the controller. On the display shows **dLy** if the operation was successful, otherwise it will show **dLn**.

Note: after downloading the data, the instrument will work with the settings for the loaded map straight away.

Boot loader firmware

Description

The device comes with Boot Loader, which makes it possible to update the firmware directly on site. Updating takes place via UNICARD.

Operating mode

To carry out the update:

1. Connect the UNICARD with the authentic application loaded onto it
2. Restore the device power, if it is off; otherwise, switch it off and on again
3. Wait for the UNICARD LED to flash (operation in progress)
4. The operation is complete when the UNICARD LED is:
   - **ON**: operation completed successfully
   - **OFF**: operation not completed (application incompatible …)
5. At the end of the download, if the operation was successful, firmware is started automatically with the new release. Otherwise, if the applicative is authentic, a feedback is given on display and the applicative does not start.

The controller can be upgraded only with authenticated Schneider Electric or Eliwell files. In case the authenticity check fails the controller stay idle, without any capacity for regulation.

NOTICE
UNINTENDED EQUIPMENT OPERATION Use authenticated Schneider Electric or Eliwell files only. **Failure to follow these instructions can result in equipment damage.**

To restore the normal operation of the controller, upload an authenticated file.

Diagnostics

During application update the display shows:

- **Fans icon on** ( ): UNICARD connected
- **Alarm icon on** ( ): binaries file non authentic
- **Alarm and reduced set icons on** (+): error during firmware updating
- **Temperature icon flashing** ( ): firmware updating running

Reset TelevisAir diagnostic counters

Description

The controller provides via Televis**Air** a set of counters that can be used for diagnostic or maintenance functions.

Counters list

Label	Counter	Counter presence	RS	RD
tC1	Compressor 1 working hours	Always	10 h	100 h
nC1	Compressor 1 activations	Always	1	10
tC2	Compressor 2 working hours	If configured	10 h	100 h
nC2	Compressor 2 activations	If configured	1	10
td1	Defrost 1 working hours	If configured	1 m	1 h
nd1	Defrost 1 activations	If configured	1	10
td2	Defrost 2 working hours	If configured	1 m	1 h
nd2	Defrost 2 activations	If configured	1	10
tdo	Door opening time	If configured	1 m	1 h
ndo	Door opening count	If configured	1	10
nP0	Power ON counter	Always	1	1
rSt	Reset all the counters			

Legend:

- **RS** = Multiplier factor to be applied to the counter when the value is read via the serial port.
- **RD** = Multiplier factor to be applied to the counter when the value is read on display.

Operating mode

To reset one or more counters, proceed as follows:

1. Access the Installer parameters entering the **PA2** password if enabled
2. Scroll through the folders with ∧ and ∨ until you find the folder **FnC**
3. Press **SET** to confirm
4. Scroll through the menu options with ∧ and ∨ until you find the label **Cnt** and press **SET**
5. Scroll through the parameters with ∧ and ∨ until you find the counter to reset
6. Press and hold **SET** for at least 5 seconds to confirm.

Note: Parameter **rSt** allows you to reset all the counters simultaneously.

Regulators

Contents

This section includes the following topics:

Heat/Cool 98
Low ambient temperature protection 99
Compressor 100
Managing the compressor with the probe in error 103
Variable-speed compressor 104
Activating the Auto-tuning function for the PID regulator (VSC) 106
Dual compressor 107
Deep cooling cycle 108
Evaporator fans 110
Condenser fans 113
Pressure switch 116
Auxiliary output 118
Light output 120
Deadband 122
Night/Day 123
Night/Day - Self-learning 125
Energy saving - Reduced set 127
Pull-down regulator 130

Heat/Cool

Description

The regulator can work with an absolute or relative differential, both in Heat and Cool modes, and is controlled by the value of probe Pb1.

Functioning conditions

Before activating the compressor, the regulator makes sure of the following conditions:

- The controller is on or in stand-by (in the latter case, only applies if **H08** = 0)
- Regulation probe Pb1 is not in error (alarm **E1** is not present)
- From power-on the time set using parameter **odo** has elapsed (only if **odo**≠0)
- There are no active defrosts (depending on the defrost type)

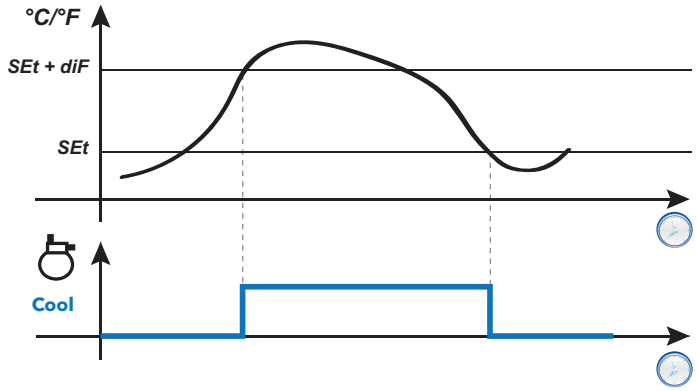
If an offset is activated on the setpoint (**oSP**) and on the differential (**odF**), then:

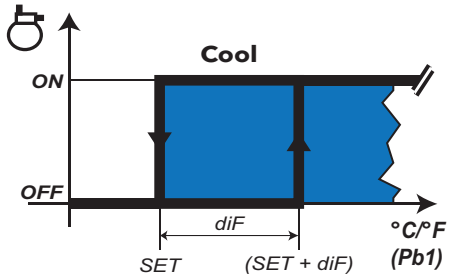
- **SEt** will be replaced by the value (**SEt + oSP**)
- **diF** will be replaced by the value (**diF+ odF**)

Note: **oSP** can assume both positive and negative values.

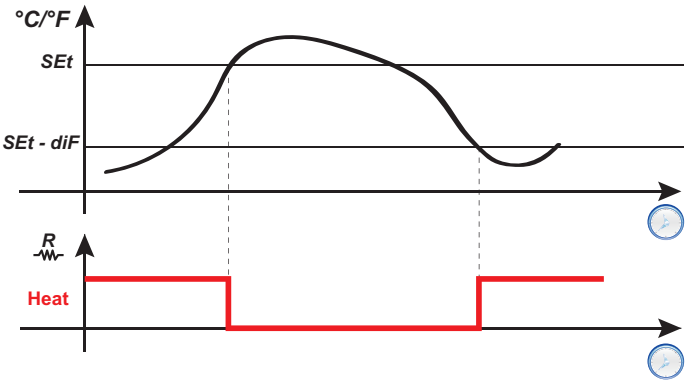
Regulation diagrams

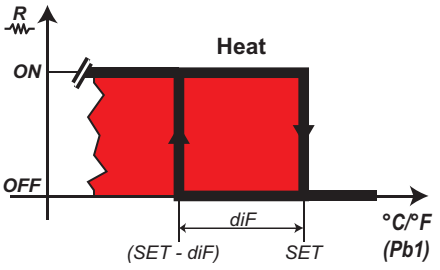
Cooling Regulation (**HC** = C)





Heating Regulation (**HC** = H)





Legend: **Heat** = Heating; **Cool** = Cooling.

Parameters

Parameter	Description
SEt	Regulation setpoint
diF	Regulator activation differential
HC	Select regulation mode (**H** = Heat / **C** = Cool)
oSP	Offset on setpoint
odF	Offset on differential in energy saving mode
odo	Output activation delay after startup

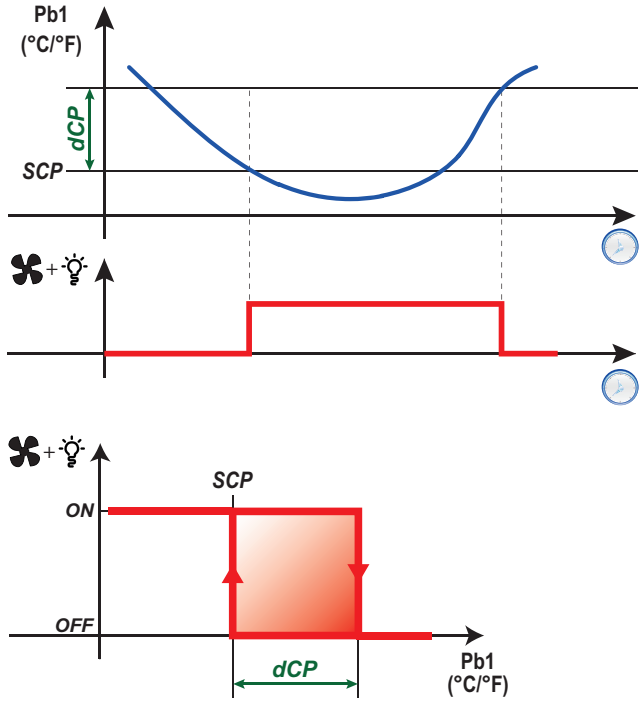
Low ambient temperature protection

Description

Regulator activations takes place when the temperature measured by **Pb1** drops below the temperature **SCP** for a time period **tCP**.

This protection attempts to heat the machine by switching on the lights and the fans until the temperature (**SCP**+**dCP**) is reached. If **tCP** = 0, the function is disabled.

Regulation diagram



Parameters

Parameter	Description
SCP	Excessive cold protection setpoint
dCP	Excessive cold protection differential
tCP	Amount of time the temperature remains below setpoint **SCP**.

Compressor

Description

The compressor is controlled by a relay and switches on/off according to the following elements:

- the temperature value measured by probe Pb1
- the temperature control functions set
- the defrost/dripping functions

For compressor-controller wiring diagrams, refer to the "Electrical Connections" section.

Note: digital output **Out1** is set as "Compressor" by default.

Functioning conditions

The regulator is activated if the following conditions occur:

- The controller is on or in stand-by (in the latter case, only applies if **H08** = 0)
- Regulation probe Pb1 is not in error (alarm **E1** is not present)
- From power-on the time set using parameter **odo** has elapsed (only if **odo**≠0)
- There are no active defrosts (depending on the defrost type)

The Compressor activation request at startup can be delayed by setting parameter **odo**.

During this period, the compressor remains off and, if an activation request is made, the compressor icon ❄ flashes.

Regulator activations is possible also near a defrost cycle.

There is a fixed interval of one second between the request and the actuation of the linked relay.

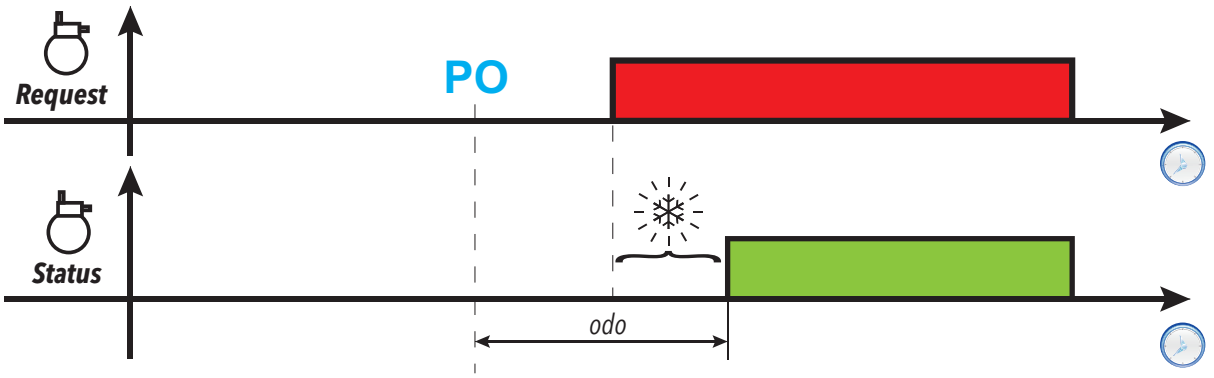
Compressor protections

To avoid damaging the compressor, the following protections can be set up:

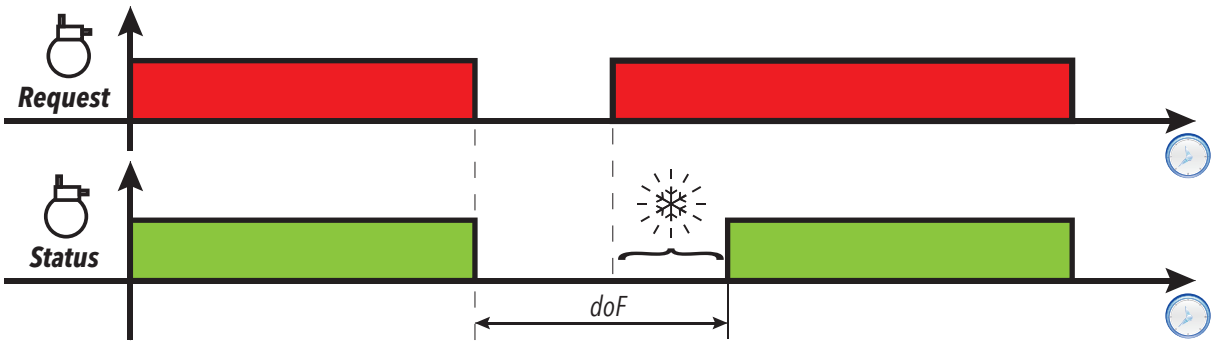
- a delay **doF** between compressor relay switch-off and the next switch-on. If a new activation request arises during the delay **doF**, the compressor icon will flash on the display.
- a delay **dbi** between one compressor startup and the next. The delay **dbi** is calculated from the previous compressor startup. If a request arises during the delay **dbi**, the compressor icon will flash on the display.
- a delay **don** for compressor startup after the request. During the delay **don**, the compressor icon will flash on the display.
- Minimum compressor output activation time **Cit** .
- a maximum compressor running time **CAt**, even if the activation request has not ended and is normally associated with the delay **doF**. During the time period **doF** in which the compressor remains off, the compressor icon will flash on the display.

Regulation diagrams

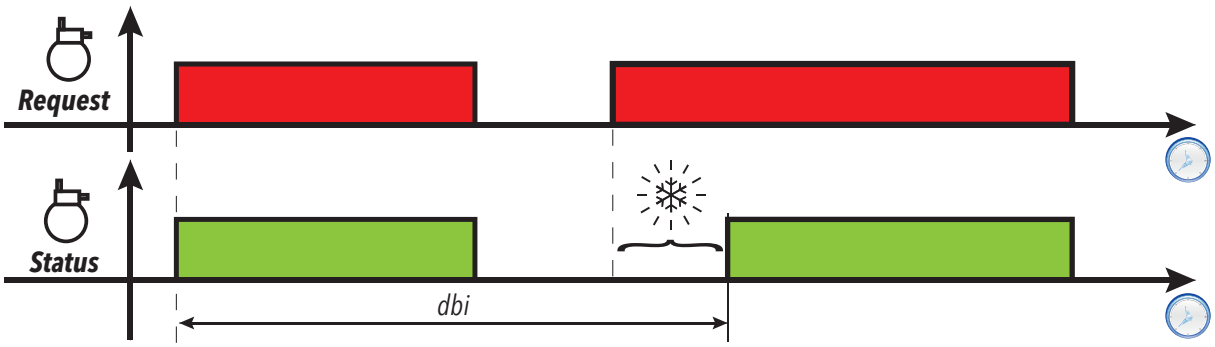
Compressor activation delay from controller power-on



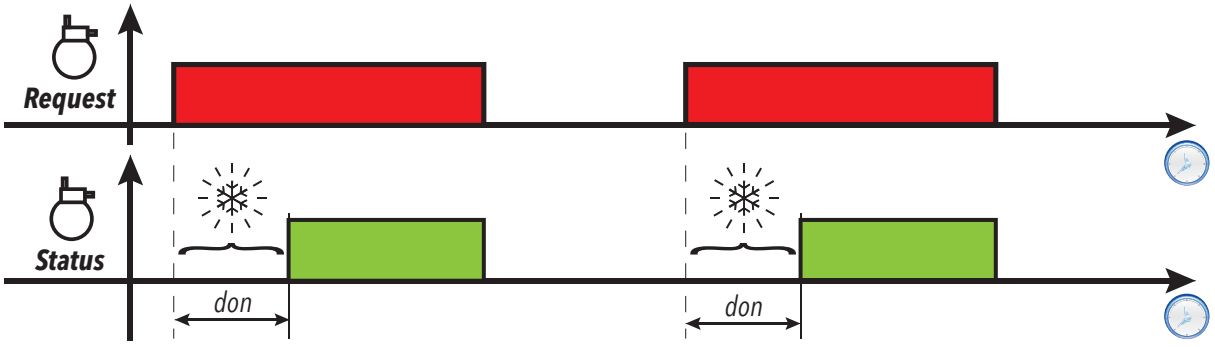
Compressor output activation delay from switch-off



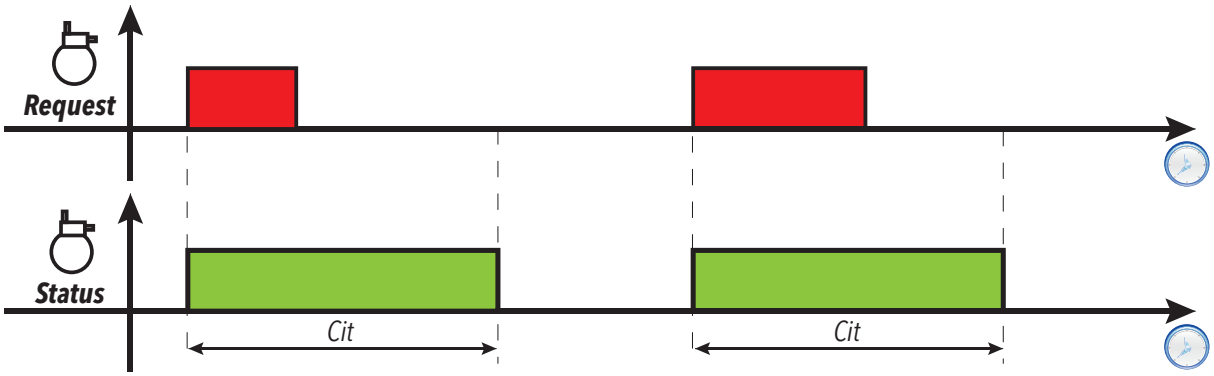
Delay between two consecutive compressor output activations



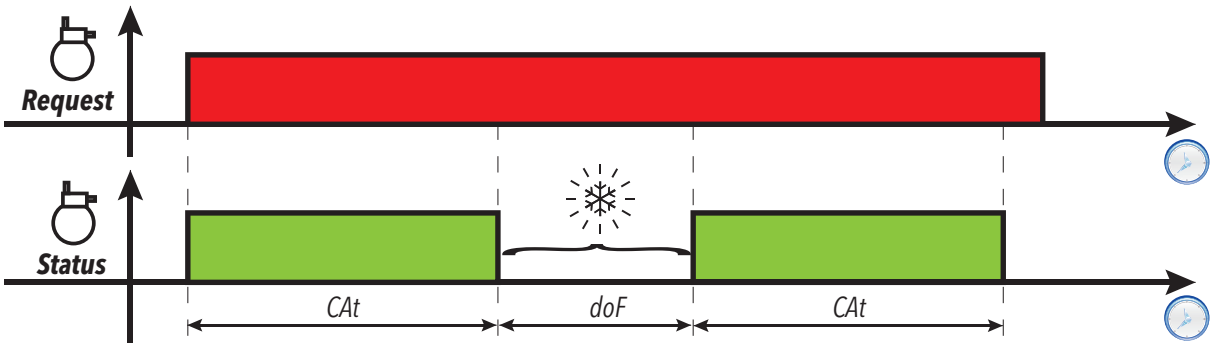
Compressor activation delay from request



Minimum compressor output activation time



Maximum compressor output activation time



Legend: **PO** = Controller switch-on; ❄ = Compressor icon flashing; **Request** = Compressor activation request; **Status** = Compressor status (ON/OFF).

Parameters

Parameter	Description
don	Compressor relay activation delay from call
doF	Delay between compressor relay switch-off and the next switch-on
dbi	Delay between two subsequent compressor starts
Cit	Minimum compressor activation time
CAt	Maximum compressor activation time
odo	Output activation delay from startup

Managing the compressor with the probe in error

Description

The compressor relay operates in Duty cycle mode (according to parameters **ont** and **oft**) if:

- probe Pb1 is in error and the display shows **E1** (see alarms list)

The first time to consider is always **ont**. If **ont** >0 the compressor protections set using **don**, **doF**, **dbi**, **Cit** and **CAt** still apply.

Note: parameter **odo** inhibits activation of the relay outputs for its duration, with the exception of the alarm relay and the buzzer (if present).

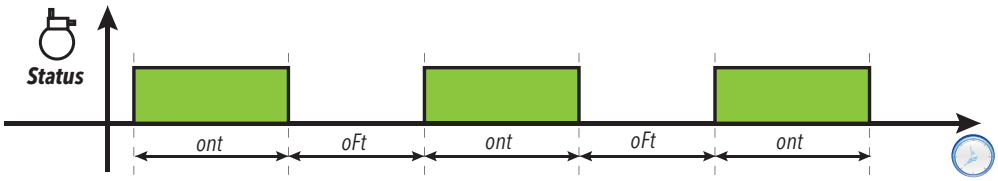
Functioning conditions

Ont	OFt	Compressor output
0	0	off
0	>0	off
>0	0	active
>0	>0	Duty cycle, regardless of the probe values (probe Pb1 not working) and requests from other utilities

Note: if probe Pb1 is functioning, Duty cycle mode is not active and conventional regulation is activated (see compressor section).

Note: when the probe is restored (connected/replaced), normal regulation starts up again.

Regulation diagram



Parameters

Parameter	Description
ont	Compressor output ON time if probe Pb1 is not functioning
oFt	Compressor output OFF time if probe Pb1 is not functioning
don	Compressor relay activation delay from call
doF	Delay between compressor relay switch-off and the next switch-on
dbi	Delay between two subsequent compressor starts
Cit	Minimum compressor activation time
CAt	Maximum compressor activation time
odo	Output activation delay after startup

Variable-speed compressor

Description

The VSC (Variable Speed Control) regulator can only be activated on models equipped with the output **OC1**, by setting parameter **H21** = 13.

This regulator can be used to manage a variable-speed compressor via the PFM (Pulse Frequency Modulation) Open Collector output. This output drives an inverter and can be used to regulate the ability of the compressor to cool a system (e.g. a refrigerated display unit, a room, etc.) while keeping the temperature close to the setpoint value **SEt**. The algorithm generates an outgoing value between 0.0...100% and converts it proportionally into **rpm**.

The maximum frequency **F_1** and minimum frequency **F_2** values can be set via parameter within the range 0...250 Hz; these values correspond to **rpm** compressor values (depending on the specific compressor characteristic).

The control algorithm is a PID algorithm that can be set using the auto-tuning function.

There are also special functions that can be customized for:

- "pull down" or "pull up" systems at startup or at the end of defrost
- requests relating to inverter compressors
- functions for managing overload conditions, etc.

Note: After the initial startup, and every time it becomes necessary, a new auto-tuning cycle can be started (see Manual auto-tuning).

Note: Whenever sudden load variations occur, a series of parameters speed up regulation around the setpoint during normal operating conditions ("pull-up" or "pull-down" procedures).

Functioning conditions

During startup / switch-off, the compressor is subjected to delays and protections that can be selected via parameters **don**, **doF**, **dbi**, **Cit**, **CAt** and **odo**. If the regulation probe is in error or is not configured, the set capacity is equal to **CEr** and the values of parameters **ont** and **oFt** are not taken into account.

At controller startup and in general after a Stand-by/stop condition, a compressor capacity of **CSC** is set for a time period **CSd**. After the startup sequence, the compressor capacity will be set to 100% (pull-down) until the temperature **SEt** + **PdE** is reached.

At the end of a "pull-down" sequence, a capacity value of **CPd** (day mode) or **CPn** (night mode) should be set. The PID regulator begins regulating, starting from this value.

When the controller is set to regulate cooling and the value read by Pb1 is greater than **SEt** + **PdS** or less than **SEt** + **PUS**, a countdown of **PUd** begins. When the time has elapsed, an optimized pull-up / pull-down procedure is started in line with the temperature value.

Note: If the temperature falls within the limits indicated above before the **PUd** time has elapsed, the timer is reloaded.

Pull-down/pull-up operation:

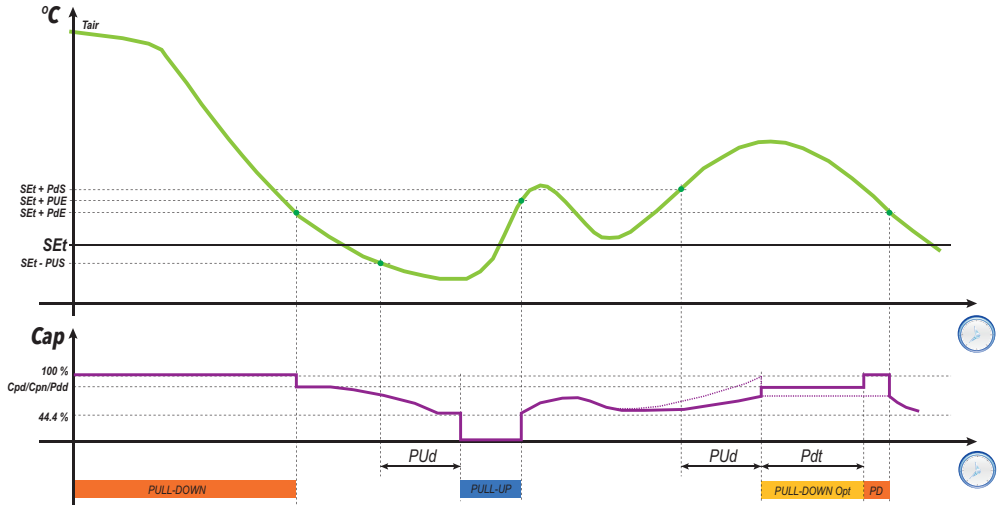
- **Pull-Down**: when an optimized pull-down is activated, the compressor capacity is forced to the value **Pdd** for a time period **Pdt**. When the time period **Pdt** has elapsed, the capacity should be forced to 100% until the temperature reaches the value (**SP1** + **PdE**).
- **Pull-Up**: when a pull-up is activated, the compressor is switched off until the temperature reaches the value **SP1** + **PUE**.

When the "pull-down"/"pull-up" cycle has ended, the controller begins regulation again, setting a capacity equal to the last value set before the cycle was activated.

During normal regulation (for example, when the "pull-down"/"pull-up" cycles are not active), the compressor can be set to a fixed capacity value by setting **CAU** = 1 ("FiH") and setting the value using parameter **CdU** (%).

If **CAU** = 0 (“Aut”), **CdU** will represent the maximum capacity that the regulator can request. Also in this case, when the compressor is activated for a period of time equal to **CSd**, a compressor capacity of **CSC** will be set.

Regulation diagram



Legend: **Tair** = Value read by regulation probe Pb1; **Cap** = Compressor capacity value; **Pull-Down Opt** = Optimized pull-down; **PD** = Pull-down cycle

Parameters

Parameter	Description
don	Compressor relay activation delay from call
doF	Delay between compressor relay switch-off and the next switch-on
dbi	Delay between two subsequent compressor starts
Cit	Minimum compressor activation time
CAt	Maximum compressor activation time
odo	Output activation delay from startup
CEr	Controlled capacity value in the event of regulation probe error
PdS	Differential for forced activation of a pull-down
PUS	Differential for forced activation of a pull-up
PUd	Temperature outside range timeout
PdE	Pull-down end differential
PUE	Pull-up end differential
Pdt	Optimized pull-down timeout
Pdd	Controlled capacity value, if a pull-down is activated, when the time period **PUd** has elapsed
CPd	Controlled capacity after a pull-down in day mode
CPn	Controlled capacity after a pull-down in night mode
CPb	PID regulator proportional band
Cti	PID integral time
Ctd	PID derivative time
CSd	Duration of constant-speed compressor heating **CSC** on startup or after a stand-by
CSC	Fixed compressor capacity for a time period **CSd** on startup or after a stand-by
CAU	Select automatic or manual PID mode
CdU	PID duty cycle in manual mode
F_1	Maximum compressor operation frequency
F_2	Minimum compressor operation frequency

Activating the Auto-tuning function for the PID regulator (VSC)

Description

Auto-tuning can be activated manually in 2 ways using the functions in the folder **FnC** for the table "Installer parameters":

- **nPL** = calculates the preliminary values to assign to the parameters in order to make the system run.
- **tun** = calculates the value of the parameters precisely.

"nPL" procedure

When this procedure is activated, the preliminary values for managing the variable-speed compressor parameters.

Typically this procedure is activated when the controller remains off for a long period of time and the regulator probe therefore has a value that is very different from the Setpoint.

Note: In most cases, this procedure is enough to achieve good regulator configuration.

The controller performs ON-OFF cycles, which it uses to determine the value of the parameters required for regulation.

"tun" procedure

When this procedure is activated, the optimized values for the PID regulator parameters are calculated.

Typically this function is used following execution of the function **nPL**.

At the end of the procedure, the values of the PID regulator parameters are updated.

Dual compressor

Description

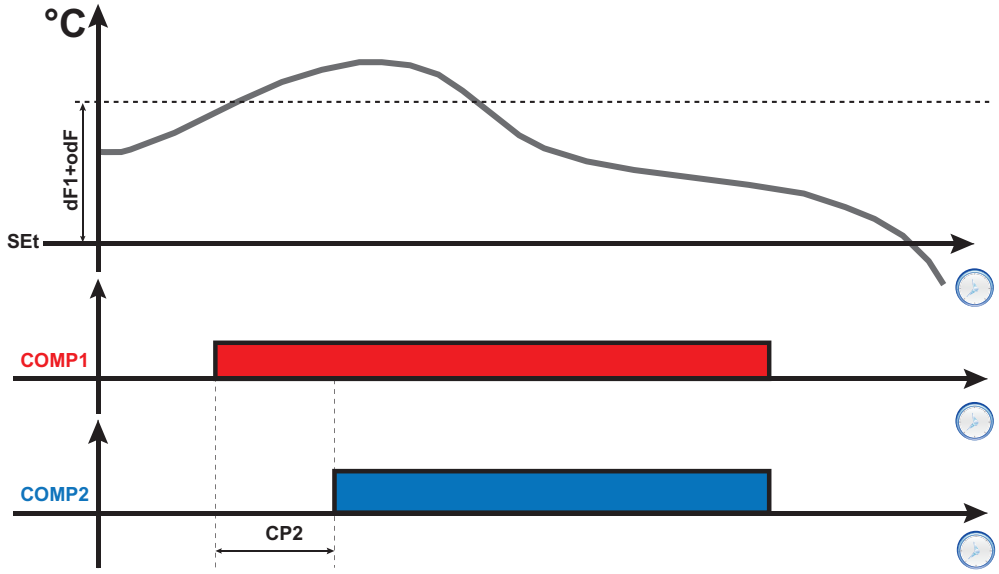
If a digital output is set as compressor 2, the controller will manage 2 power steps. Activation of the second step is conditioned at the activation of the first step.
The first step follows all the rules of the main compressor regulator (delays, safety settings, behavior in the event of an inoperable / missing probe).

Functioning conditions

If activated, compressor 2 will use the same setpoint and differential as compressor 1.
Offsets, differentials, etc. relating to the first compressor also apply to the second compressor.

Compressor 2 will be activated once the delay **CP2** has elapsed.

Regulation diagram



Legend: **COMP1** = Compressor 1 activation; **COMP2** = Compressor 2 activation.

Deep cooling cycle

Description

The Deep Cooling Cycle (DCC) type can be set using parameter **dCA**.

After deep cooling cycle activation, the interval between 2 programmed defrosts is reset and the defrost disabled.

Operating condition

A deep cooling cycle can be activated based on the value of **dCA**:

- **dCA** = **dis**: Deep cooling cycle disabled
- **dCA** = **Std**: Manual deep cooling cycle
- **dCA** = **Aut**: Automatic deep cooling cycle

When the **dCC** meter runs out (Defrost activation delay after a "Deep cooling cycle"):

- a defrost is forced
- the defrost meters are restarted.

Note: If **dCC**=0, automatic defrost after a deep cooling cycle is disabled.

If the temperature probe is in error, the deep cooling cycle is inhibited and standard regulation takes place (with management of the probe in error).

Alarm operation during the deep cooling cycle

During the deep cooling cycle, the temperature alarms are disabled with the exception of the low temperature alarm LAL. Normal management is restored at the end of the cycle, when the regulation setpoint is reached.

Manual deep cooling cycle

The regulator can be activated manually in one of the following ways:

- press and hold a key (configured with **H3x** = 8)
- digital input (only if **H1x** = ±3)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)

During manual deep cooling cycle the regulation will work:

- using the value **dCS** as a setpoint
- using the value **diF** as a differential
- using the value **tdC** as the maximum regulation duration

If the cycle ends due to timeout (**tdC**), the controller will resume normal regulation according to the status of the machine.

Automatic Deep cooling cycle

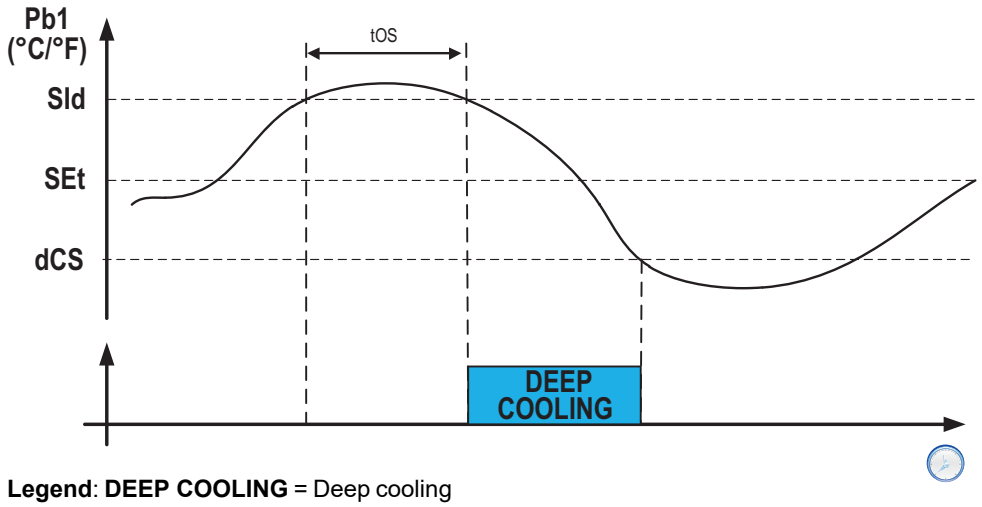
The regulator is activated if the value read by regulation probe **Pb1** remains above the temperature **SId** for a period of time **toS**.

During automatic deep cooling cycle the regulation will work:

- using the value **dCS** as a setpoint
- using the value **diF** as a differential

The cycle will end based on the value **tdC**:

- if **tdC** = 0: it will end when the temperature read by Pb1 drops below the value **dCS**
- if **tdC** > 0: it will end when the time period **tdC** elapses



Legend: **DEEP COOLING** = Deep cooling

Evaporator fans

Functioning conditions

The evaporator fan regulator is activated if the following conditions occur:

- From power-on the time set using parameter **OdO** has elapsed (only if **OdO**≠0).
- The temperature read by the evaporator probe (Pb2) is lower than the value of parameter **FSt**.
- The fans regulator is not deactivated from parameter **dFd** during the defrost (**dFd** = y).
- Dripping is not active (**dt**).
- Fan delay after defrost is not active (**Fdt**).

Regulator activation

The request for fan activation or deactivation can come:

- from the compressor regulator (temperature control mode)
- from the defrost regulator, to control and/or limit the circulation of warm air.

Fan operating modes

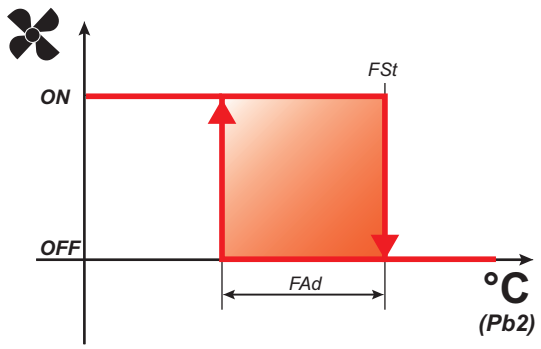
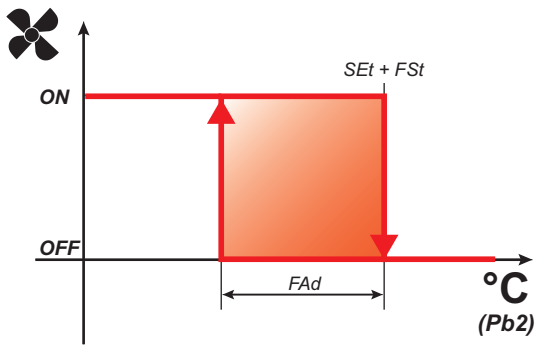
			Day		Night	
Probe Pb2	**H42**	**FCo**	**Compressor ON**	**Compressor OFF**	**Compressor ON**	**Compressor OFF**
Present	y	0	Thermostat controlled	Off	Thermostat controlled	Off
		1	Thermostat controlled	Thermostat controlled	Thermostat controlled	Thermostat controlled
		2	Thermostat controlled	Day duty cycle	Thermostat controlled	Night duty cycle
		3	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
		4	Thermostat controlled	Off	Thermostat controlled	Off
		5	Thermostat controlled	Thermostat controlled	Thermostat controlled	Thermostat controlled
		6	Thermostat controlled	Thermostat controlled	Thermostat controlled	Thermostat controlled
In error **E2**	y	0	Day duty cycle	Off	Night duty cycle	Off
		1	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
		2	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
		3	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
		4	On	Off	On	Off
		5	On	Off	On	Off
		6	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
Absent	n	0	On	Off	On	Off
		1	On	Day duty cycle	On	Night duty cycle
		2	On	Day duty cycle	On	Night duty cycle
		3	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle
		4	On	Off	On	Off
		5	On	Off	On	Off
		6	Day duty cycle	Day duty cycle	Night duty cycle	Night duty cycle

Fan operation in regulation mode

During cooling, fan regulation is carried out based on values **FSt** (fan disabling temperature) and **FAd** (fan differential). Parameter **FPt** can be used to select whether the set temperature values are absolute or relative to the setpoint.

Note: around the fan start temperature **Fot**, the differential will always be specified by **FAd** but with the sign inverted.

Regulation diagrams based on whether the values are absolute or relative are shown below:

FPt = 0 (absolute values)	**FPt** = 1 (relative values)
	

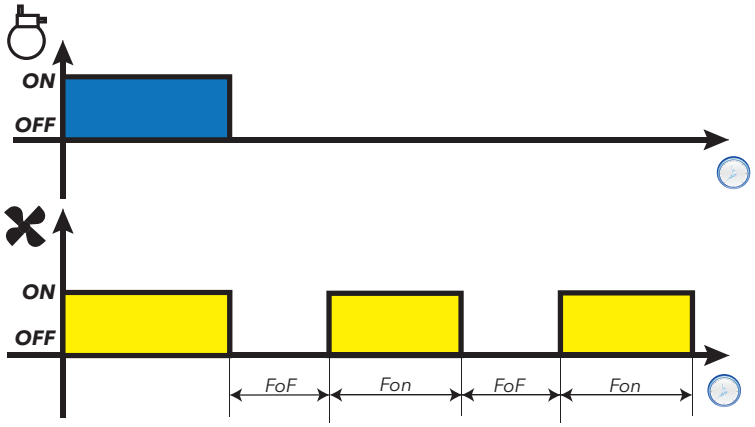
Fan operation in duty cycle

The fans run in duty cycle mode when the compressor is off and this mode is specified by parameter **FCo**.

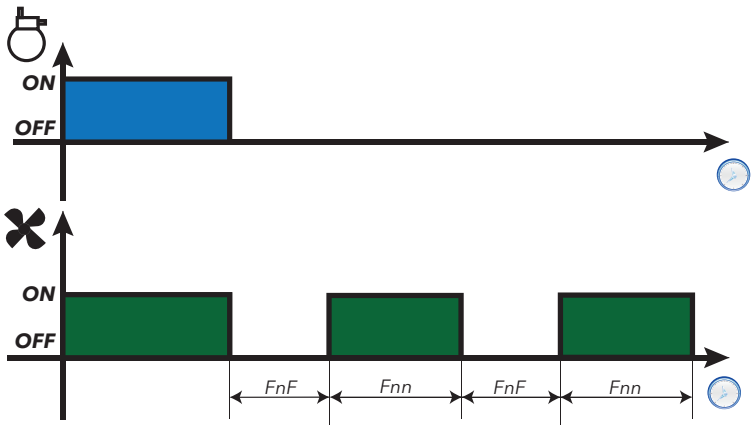
Depending on whether the controller is in day or night mode, fan operation is based on parameters **Fon** and **FoF** (day) or **Fnn** and **FnF** (night):

Fon / Fnn	FoF / FnF	Fans
0	0	Off
0	≠0	Off
≠0	0	On
≠0	≠0	Duty cycle

Regulation diagram for Day duty cycle with compressor off



Regulation diagram for Night duty cycle with compressor off



Fan operation in defrost mode

Operation depends on parameter **dFd**:

dFd	Fans
y	Off
n	Regulation or duty cycle

Note: to exclude the fans during a defrost, you must set **dFd** = y.
Otherwise the compressor is stopped during defrost but the fans run normally.

Fan operation in dripping mode

During dripping the fans remain stopped for the time set using parameter **dt**.

Note: if **Fdt** is greater than **dt** the fans remain off for the time set in **Fdt**.

Post-ventilation

Parameter **FdC** delays fan deactivation after the compressor has stopped. If **FdC** = 0 the function is excluded.

Parameters

Parameter	Description
odo	Output activation delay from startup
FPt	Sets whether parameter **FSt** is expressed as an absolute value or as a value relative to the Setpoint
FSt	Evaporator fan disabling temperature
Fot	Evaporator fan activation temperature
Fdt	Evaporator fan activation delay time after a defrosting cycle
dFd	Evaporator fan exclusion during a defrost cycle
FCo	Evaporator fan operating mode
FdC	Evaporator fan shutoff delay after compressor deactivation
FAd	Evaporator fan trigger differential
dt	Dripping time
Fon	Evaporator fan ON time in day duty cycle mode
FoF	Evaporator fan OFF time in day duty cycle mode
Fnn	Evaporator fan ON time in night duty cycle mode
FnF	Evaporator fan OFF time in night duty cycle mode
ESF	Night mode activation

Condenser fans

Functioning conditions

If the following conditions have arisen:

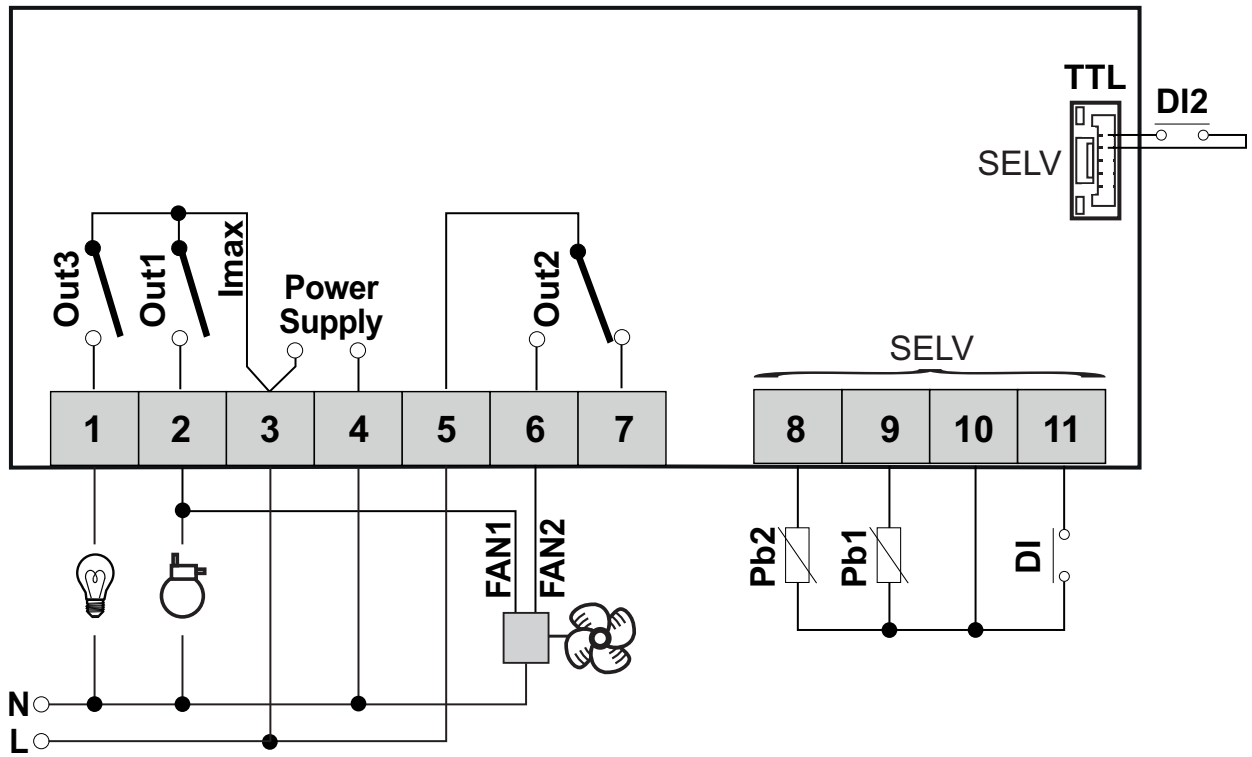
- A digital output is set as "Condenser fan inversion" (**H2x** = 11)
- Defrost is configured as "Defrost due to stoppage" (**dty** = 0)

the condenser fan regulator is activated at the moment the compressor stops (in day mode only).

Note: this regulator is only present in models that manage probe Pb2.

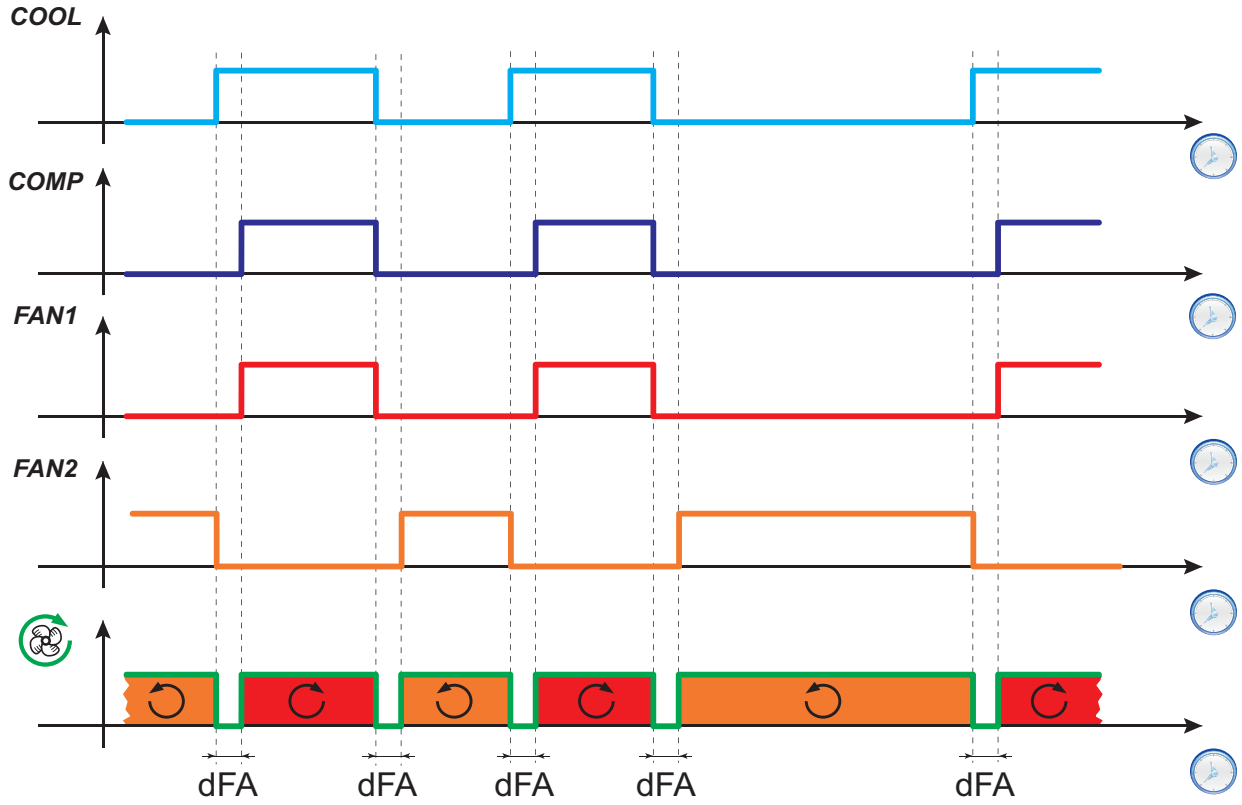
Note: If the compressor and condenser fan activation delay time after the call (**dFA**) and the compressor relay activation delay time after the call (**don**) are both configured, the larger of the two parameters will be taken into account.

Wiring diagram

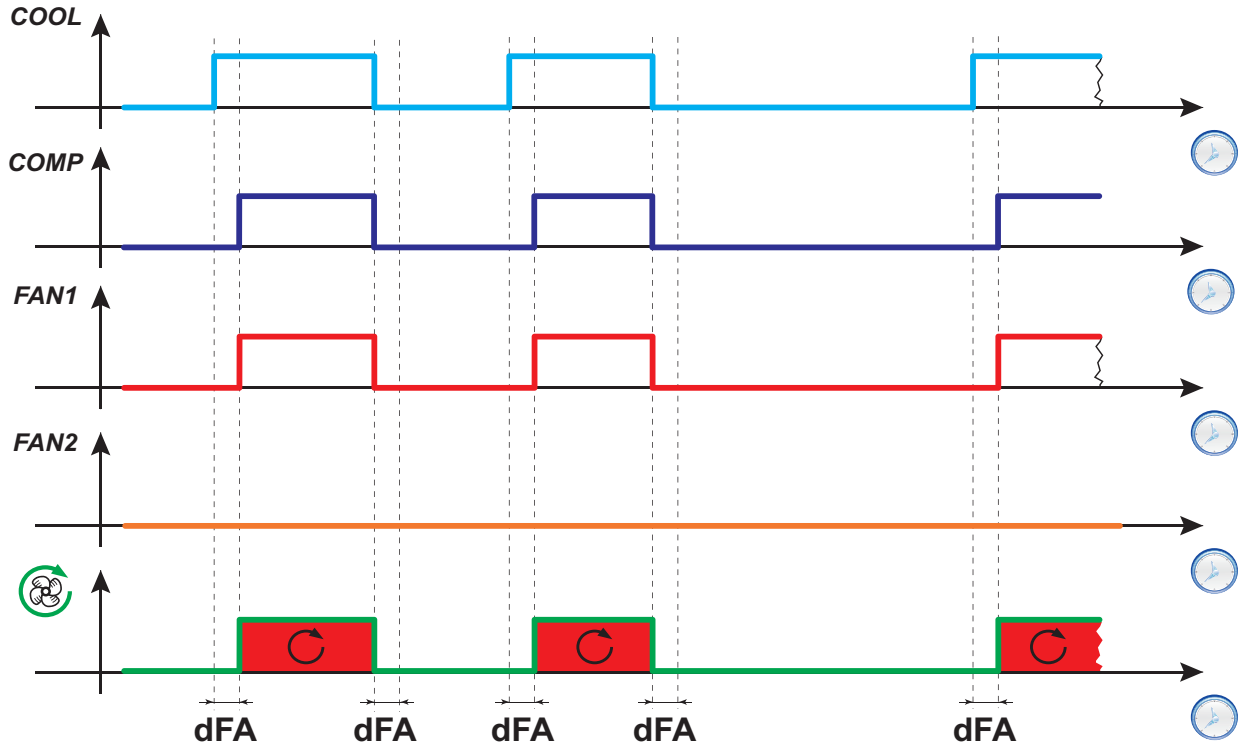


Regulation diagrams

Regulation diagram in Day mode



Regulation diagram in Night mode



Legend: **COOL** = Cooling request; **COMP** = Compressor status; **FAN1** = Condenser fan relay; **FAN2** = Condenser fan inversion relay; = Condenser fan rotation direction.

Parameters

Parameter	Description
dFA	Condenser fan and compressor activation delay from the call
dty	Type of defrost. **0** = Electric defrost or due to stoppage; **1** = Cycle inversion defrost; **2** = Free mode defrost
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Pressure switch

Introduction

A pressure switch can be connected to a digital input on the controller.

Setting a digital input as a pressure switch

To set a digital input as a pressure switch:

- Set the digital input as a pressure switch (**H1x** = ±7)
- Set the number of errors permitted per pressure switch, parameter **PEn**

  Note: if **PEn** = 0, the function is disabled.

Pressure switch activation effects

When the pressure switch is activated, the controller carries out the following operations:

- It inhibits the compressor
- It adds the **nPA** alarm to the alarms folder **AL** with an indication of the number of pressure switch activations

The compressor can only be reactivated if the time set using parameter **PEt** has elapsed since the pressure switch was deactivated.

The alarm status is reset automatically when the pressure returns to a normal level.

Effects of reaching the maximum number of pressure switch activations

If the number of pressure switch activations reachs the maximum number set using parameter **PEn** in a time period shorter than the value of parameter **PEI**, the controller performs the following operations:

- It inhibits the compressor, fans and defrost.
- The alarm icon ⚠ appears on the display.
- The label **PAL** is shown on the display.
- It replaces label **nPA** with alarm label **PA** in alarms folder **AL**.
- It activates the alarm relay, if configured.

To reset this alarm status, execute the **rAP** function in folder **FPr** or switch the controller off and on again.

Operating mode

The interval **PEI** is divided into 32 sub-intervals. If one or more activations are recorded within a sub-interval, the meter is increased by one unit.

The reference instant to calculate the **PEI** interval is the last recorded activation. The number of activations recorded in the 32 sub-intervals preceding the most recent activation are counted.

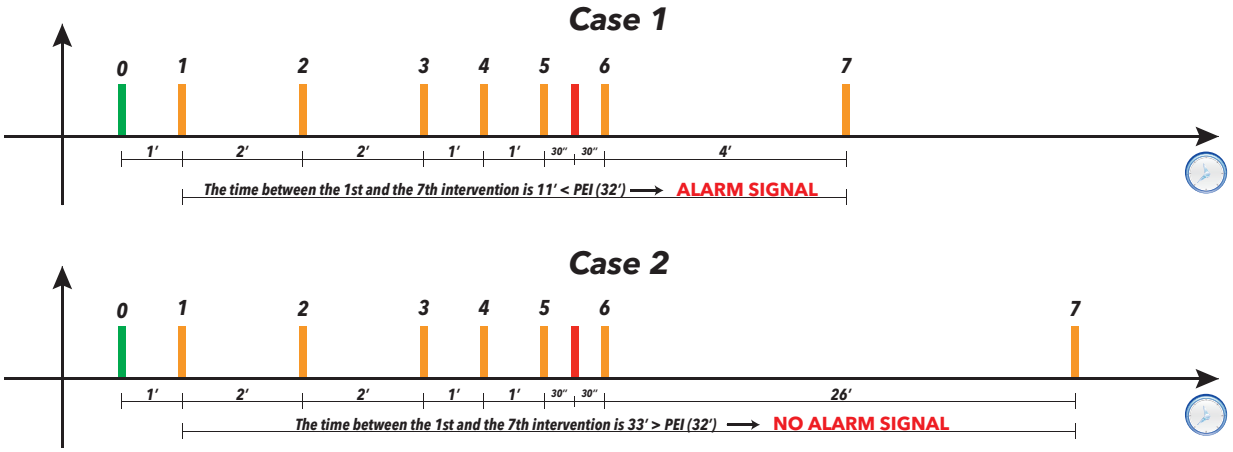
Note: The defrost interval count is independent of any pressure switch alarms.

Regulation diagrams

Examples

PEI = 32 minutes (sub-interval = 32/32 = 1 minute)

PEn = 7



In case 1 the pressure switch alarm is triggered because in the 32 minutes preceding the most recent activation 7 pressure switch activations were counted (including the last one, to which the expiration of the 32-minute window refers).

In case 2 the alarm is not triggered because in the 32 minutes preceding the most recent activation at least 7 pressure switch activations were not counted (including the last one).

Parameters

Parameter	Description
PEn	Number of activations permitted per minimum/maximum pressure switch input
PEI	Minimum/maximum pressure switch activation count interval (in minutes)
PEt	Compressor activation delay after pressure switch deactivation

Auxiliary output

Description

To set a relay as an auxiliary output **AUX**, set the corresponding parameter **H2x**= 5.

Note: The outputs may not be present, depending on the model.

During stand-by the regulator operates in accordance with parameter **H08**.

Activation

The regulator can be activated in one of the following ways:

- press and hold a key (configured with **H3x** = 2)
- digital input (only if **H1x** = ±3)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)
- RTC activation (models with RTC only)

Note: every time a key associated to the AUX function is pressed the output changes (inverts) status; the digital input, if associated to the AUX function, changes the status of the output in correspondence with its variations.

Regulation during Energy Saving

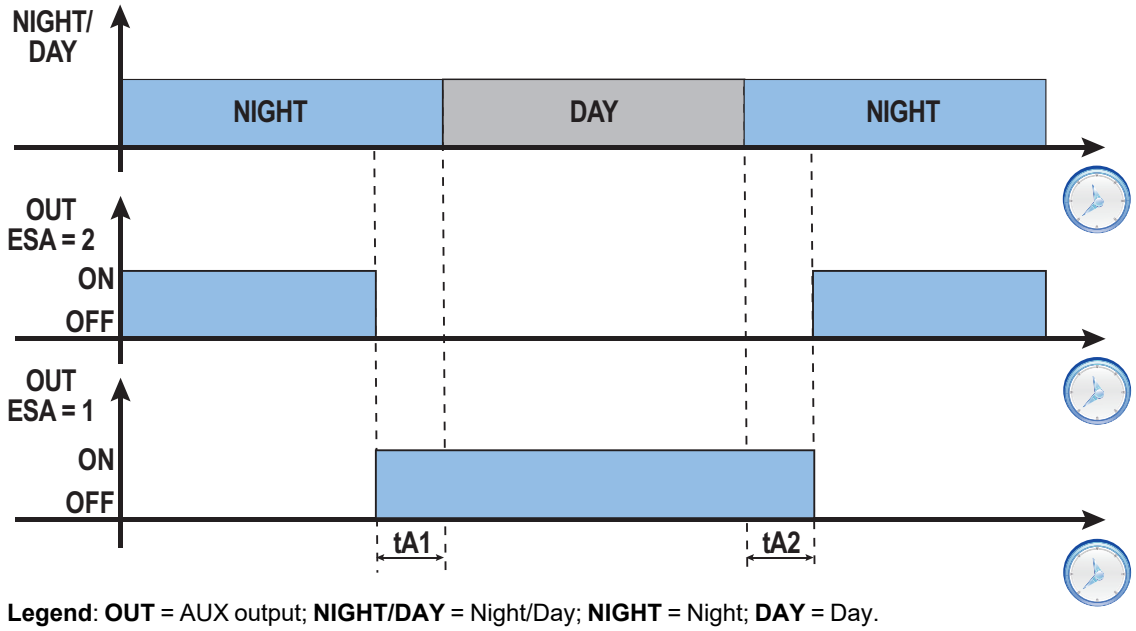
The status of the **AUX** output during Energy Saving is managed by parameter **ESA**:

- **ESA** = 0: No effect on the status of the AUX output
- **ESA** = 1: Output disabled
- **ESA** = 2: Output enabled

The activation / deactivation of the **AUX** output during Night/Day regulation can:

- be brought forward by a period of time **tA1**
- be delayed by a period of time **tA2**

Note: **tA1** and **tA2** can only be used during Energy saving in models with RTC only (Night/Day - Self-learning).



Legend: **OUT** = AUX output; **NIGHT/DAY** = Night/Day; **NIGHT** = Night; **DAY** = Day.

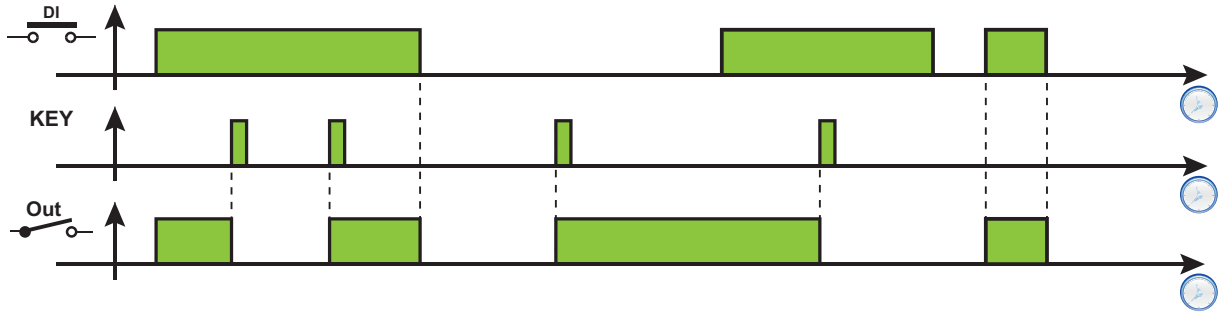
Controlling the auxiliary output via key

To control the output (relay opening/closing) via key, set **H3x** = 2.

Note: depending on the model, some keys may not be present.

Note: the relay status is restored after a blackout.

Regulation diagram



Legend: **DI** = Digital input; **KEY** = Key; **Out** = Digital output.

Parameters

Parameter	Description
ESA	AUX/Light operation during Energy saving
tA1	Bring AUX/Light output activation in Night/Day transition forward
tA2	Delay AUX/Light output activation in Night/Day transition
H08	Stand-by operating mode
H11	Digital input **DI**/Polarity configuration
H12	Digital input **DI2**/Polarity configuration
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration
H31	key configuration.
H32	key configuration.
H33	key configuration.
H34	key configuration.
H35	key configuration.

Light output

Description

To set a relay as an auxiliary **Light**, set the corresponding parameter **H2x**= 7.

Note: The outputs may not be present, depending on the model.

During stand-by the regulator operates in accordance with parameter **H08**.

Activation

The regulator can be activated in one of the following ways:

- press and hold a key (configured with **H3x** = 8)
- digital input (only if **H1x** = ±3)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)
- RTC activation (models with RTC only)

Note: every time a key associated to the Light function is pressed the output changes (inverts) status; the digital input, if associated to the Light function, changes the status of the output in correspondence with its variations.

Regulation during Energy Saving

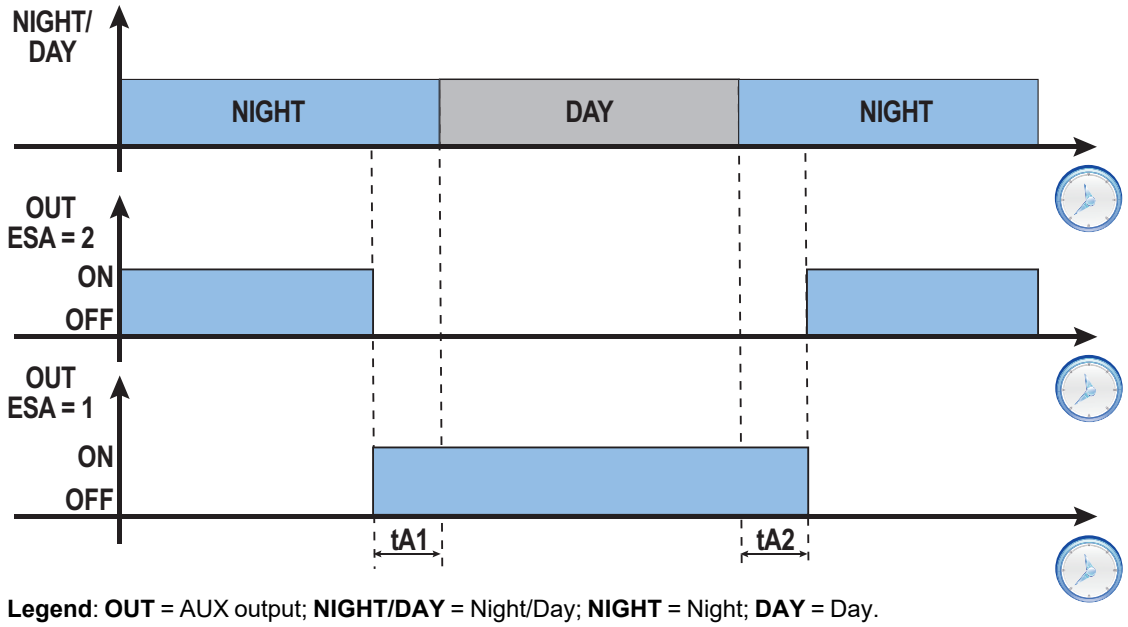
The status of the **Light** output during Energy Saving is managed by parameter **ESA**:

- **ESA** = 0: No effect on the status of the Light output
- **ESA** = 1: Output disabled
- **ESA** = 2: Output enabled

The activation / deactivation of the **AUX** output during Night/Day regulation can:

- be brought forward by a period of time **tA1**
- be delayed by a period of time **tA2**

Note: **tA1** and **tA2** can only be used during Energy saving in models with RTC only (Night/Day - Self-learning).



Legend: **OUT** = AUX output; **NIGHT/DAY** = Night/Day; **NIGHT** = Night; **DAY** = Day.

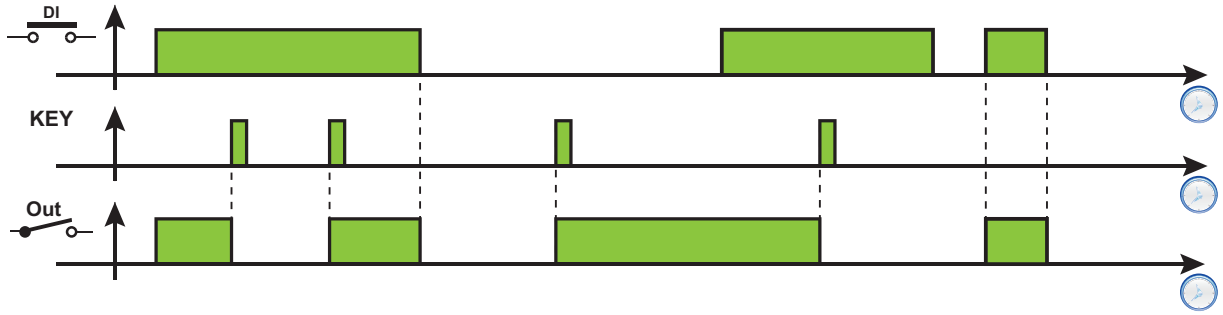
Controlling the light output via key

To control the output (relay opening/closing) via key, set **H3x** = 8.

Note: depending on the model, some keys may not be present.

Note: the relay status is restored after a blackout.

Regulation diagram



Legend: **DI** = Digital input; **KEY** = Key; **Out** = Digital output.

Parameters

Parameter	Description
ESA	AUX/Light operation during Energy saving
tA1	Bring AUX/Light output activation in Night/Day transition forward
tA2	Delay AUX/Light output activation in Night/Day transition
H08	Stand-by operating mode
H11	Digital input **DI**/Polarity configuration
H12	Digital input **DI2**/Polarity configuration
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration
H31	key configuration.
H32	key configuration.
H33	key configuration.
H34	key configuration.
H35	key configuration.

Deadband

Description

The Deadband function can be used to set a temperature band with two differentials pertaining to the setpoint, executing temperature regulation within a reduced range.

Activation

The Deadband zone can only be enabled if:

- at least one digital output is set to 12 (**H2x** = 12) and a heater is connected to that output
- parameter **HC** is set to Cool (**HC** = **C**)

Operation

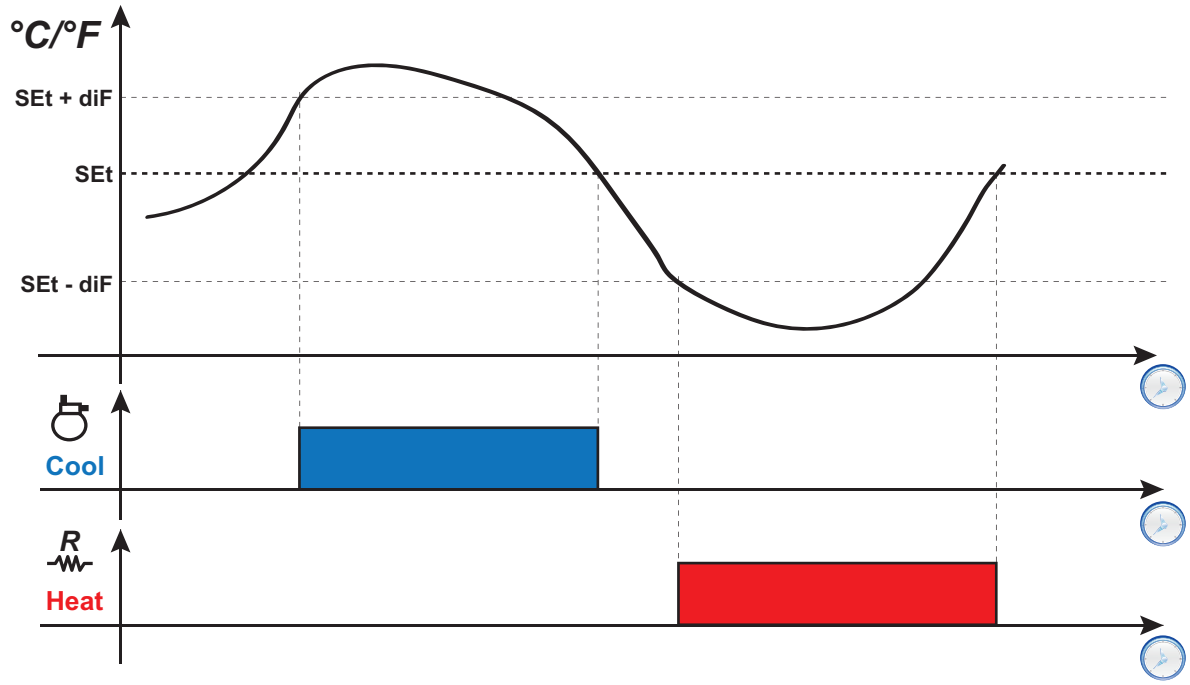
This function should be used when you want the controlled temperature to remain around the value of the setpoint **SEt**. To do so:

- the heating output is activated when the temperature measured by Pb1 drops below the threshold (**SEt-diF**)
- the cooling output is activated when the temperature measured by Pb1 exceeds the value (**SEt+diF**).

Notes:

- If a pressure alarm (which requires a manual reset) is activated, the controller disables both outputs.
- If a defrost is active, the controller disables the output set to Deadband (**H2x** = 12).

Regulation diagram



Legend: **Heat** = Heating; **Cool** = Cooling.

Parameters

Parameter	Description
HC	Heat/cool operation
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Night/Day

Description

The Night&Day regulator (Energy Saving) can be used to program 2 events.

Functioning conditions

An occurrence can be linked to each of the two events by setting parameters **E10** (Event 1) and **E20** (Event 2):

- **0** = disabled
- **1** = event only active on Mondays
- **2** = event only active on Tuesdays
- **3** = event only active on Wednesdays
- **4** = event only active on Thursdays
- **5** = event only active on Fridays
- **6** = event only active on Saturdays
- **7** = event only active on Sundays
- **8** = event active from Monday to Friday
- **9** = event active from Monday to Saturday
- **10** = event only active on Saturdays and Sundays
- **11** = event active every day

The start and end time can be set for each event:

- START: **E11**, **E12** (Event 1) and **E21**, **E22** (Event 2)
- END: **E13**, **E14** (Event 1) and **E23**, **E24** (Event 2).

If the event end time follows the start time, the event will end on the same day, otherwise it will start on one day and end the next day.

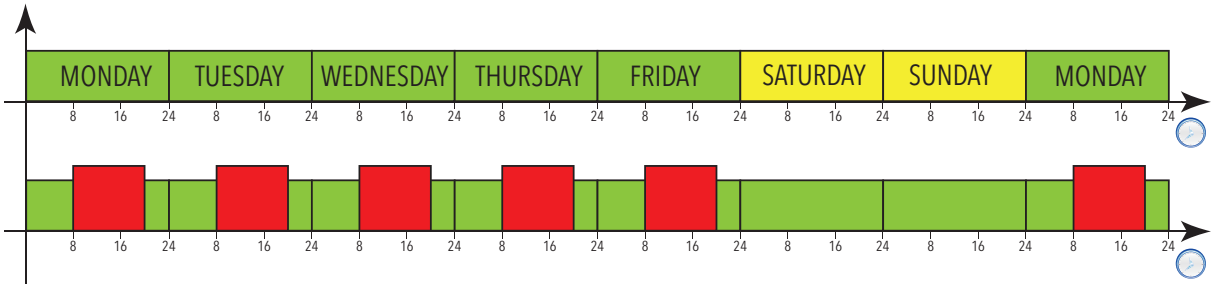
You can set the type of each of the two events using parameters **E15** (Event 1) and **E25** (Event 2):

- **0** = Energy saving
- **1** = AUX deactivated
- **2** = AUX activated
- **3** = Stand-by
- **4** = Light on
- **5** = Light off.

Regulation diagrams

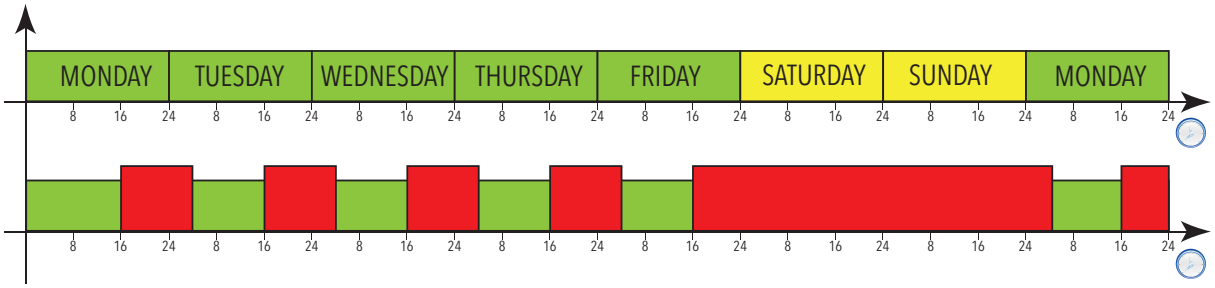
Example 1: The event starts and ends on the same day (E11/E12 < E13/E14)

Settings: **E10** = 8; **E11** = 8; **E12** = 0; **E13** = 20; **E14** = 0 and **E15** = 4.



Example 2: The event starts on one day and ends the next day (E11/E12 > E13/E14)

Settings: **E10** = 8; **E11** = 16; **E12** = 0; **E13** = 4; **E14** = 0 and **E15** = 0.



Legend: **Monday** = Monday; **Tuesday** = Tuesday; **Wednesday** = Wednesday; **Thursday** = Thursday; **Friday** = Friday; **Saturday** = Saturday; **Sunday** = Sunday.

Regulation during a blackout

If a blackout occurs during a Night&Day (NaD), then:

- if a **NaD** event was active and the power supply is restored within the same period of activity as the event, the controller will restart with the same status set by the event
- if a **NaD** event was active and the power supply is restored after the end of the same period but before the next event, the controller will restart, ending the event
- if a **NaD** event was active and the power supply is restored not only after the end of the same period but after the start of one of the next events, the controller will restart, setting the status associated with the new event
- external events (key press, activation of a digital input, serial command) always have priority over the status set by the **NaD** event until the next **NaD** event (activation or deactivation). These events are only acknowledged if the power supply is present
- If an external event inverts the status set by the **NaD** event during a status activation, and then there is a blackout and the power supply is restored within the same period, the controller will restart with the status set by the external event. At the end of the **NaD** event, the status of the controller will be restored to its initial condition
- If an external event inverts the status set by the **NaD** event during a status activation, and then there is a blackout and the power supply is restored after the end of the same period but during one of the next events, the controller will restart with the status forced by the external event
- If an external event inverts the status set by a **NaD** event outside a **NaD** event status activation, and then there is a blackout and the power supply is restored with no **NaD** event active, the controller will restart with the status forced by the external event
- If an external event inverts the status set by a **NaD** event outside a **NaD** event status activation, and then there is a blackout and the power supply is restored during a new **NaD** event, the controller will restart with the status requested by the external **NaD** event

Parameters

Parameter	Description
E10	Select Event 1 activation method
E11	Event 1 start hour
E12	Event 1 start minute
E13	Event 1 end hour
E14	Event 1 end minute
E15	Set Event 1 type
E20	Select Event 2 activation method
E21	Event 2 start hour
E22	Event 2 start minute
E23	Event 2 end hour
E24	Event 2 end minute
E25	Set Event 2 type

Night/Day - Self-learning

Description

The controller is equipped with an algorithm capable of observing the store opening times and switching from day mode to night mode automatically. The algorithm uses the door switch input or a presence sensor for its observations.

Algorithm operation is linked to the value of parameter **SLE**.

- If **SLE**=0: the algorithm is deactivated. The energy saving function and the pull-down regulator are disabled and regulation always takes place in “day” mode
- If **SLE**=1: the algorithm is enabled. The instrument will run as described below.

The algorithm anticipates 2 controller operating phases:

1. Self-learning phase.
2. Normal operation phase.

1. Self-learning phase

This phase can be activated:

- by pressing and holding a key (configured with **H3x**=10)
- automatically in the event of a blackout that lasts longer than **SLb** days (only if **SLb**≠0)

The duration of this phase can be set using the following parameters:

- **SLP**: sets whether the operating mode should be daily (SLP=0) or weekly (SLP=1)
- **SL1**: sets the duration of self-learning in days when daily mode is set (only if SLP=0)
- **SL2**: sets the duration of self-learning in weeks when weekly mode is set (only if SLP=1)
- **SLb**: in the event of a lack of power (blackout or extended disconnection from the power supply), sets how many consecutive days will elapse before the self-learning phase is activated

During this operating mode, the display will show the temperature value and the label “SL” alternately.

During the self-learning phase, the Energy Saving functions are disabled (light always on and normal setpoint enabled)

2. Normal operation phase

Once the self-learning period is complete, parameter **SIr** can be used to:

- **SLr**=0: run the operation calculated during self-learning mode
- **SLr**=1: opt for slow self-learning that extends beyond the period set via **SL1** or **SL2**

Light on/off:

- **tA1**: Sets by how much to bring forward light activation when changing from NIGHT to DAY
- **tA2**: Sets by how much to delay light activation when changing from DAY to NIGHT

Operation in Duty Cycle:

- **tn1:**: sets by how much to delay the daytime Duty Cycle when changing from DAY to NIGHT
- **tPd:**: sets by how much to bring forward the daytime Duty Cycle when changing from NIGHT to DAY (Pull-Down period).

Self-learning Algorithm

Quick Self-learning

This is the first self-learning phase and is activated when the controller receives a self-learning command. In this phase the display shows the label “SL”.

Note: The duration of the various phases is expressed in minutes (e.g. 8.5 hours is expressed as 510 minutes).

After every day of self-learning the controller:

- Calculates the opening period by comparing it with previous periods and making the necessary corrections, then saves the new value.
- Calculates the closing period by comparing it with previous periods and making the necessary corrections, then saves the new value.

At the end of the self-learning phase, the controller will use the calculated and saved opening / closing values.

For correct operation, make sure there are no active "**E10**" clock alarms.

End self-learning

At the end of the quick self-learning phase, the controller can use the calculated data or, by activating end self-learning, it can carry out a more precise regulation of the calculated data.

In this phase, the applied correction is less than the value used by quick self-learning and can only be worth to ±15 minutes.

Parameters

Parameter	Description
tA1	Time AUX/Lights activation brought forward before a night/day transition
tA2	AUX/Lights activation delay time after a day/night transition
SLE	Enables/disables self-learning.
SLP	Sets the controller self-learning mode
SL1	Self-learning duration in daily mode
SL2	Self-learning duration in weekly mode
SLr	Enables end self-learning
SLb	Duration of the period in the absence of power (blackout)
tn1	Night mode activation delay in Energy saving
tPd	Pull-down phase duration

Energy saving - Reduced set

Reduced set operating conditions

The reduced set function can be activated:

- by pressing and holding a key (configured with **H3x** = 3)
- by activating the digital input (configured with **H1x** = ±2)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)
- via functions menu (label **SP**)

When the "reduced set" is activated:

- the icon comes on
- **SEt** will be replaced by the value (**SEt + oSP**)
- **diF** will be replaced by the value (**diF+ odF**)

Note: for further details, see: "Heat/Cool".

Energy Saving operating conditions

The energy saving function can be activated:

- by pressing and holding a key (configured with **H3x** = 9)
- by activating the digital input (configured with **H1x** = ±10 or ±11)
- using a Supervisor, via Modbus command (serial)
- via APP (if the BTLE Dongle is present. See accessories section)

Note: This regulator is mutually exclusive in relation to Night/Day self-learning.

Parameters **ESt** and **ESA** manage device behavior during the energy saving phase.

When energy saving is enabled, the icon is on.

Parameter **ESt** sets the type of controller operation:

- **ESt**=0: function disabled
- **ESt**=1: An offset is applied to the setpoint (Setpoint = **SEt + oSP**)
- **ESt**=2: An offset is applied to the differential (Differential = **diF+ odF**)
- **ESt**=3: An offset is applied to the setpoint and differential
- **ESt**=4: Management of open Bottle coolers is activated (**H1x** = ±10)
- **ESt**=5: Management of Bottle coolers with door is activated (**H1x** = ±11)

Parameter **ESA** sets the AUX/Lights status during energy saving:

- **ESA**=0: No effect on the status of the AUX/Lights output
- **ESA**=1: Output disabled
- **ESA**=2: Output enabled

Open Bottle coolers

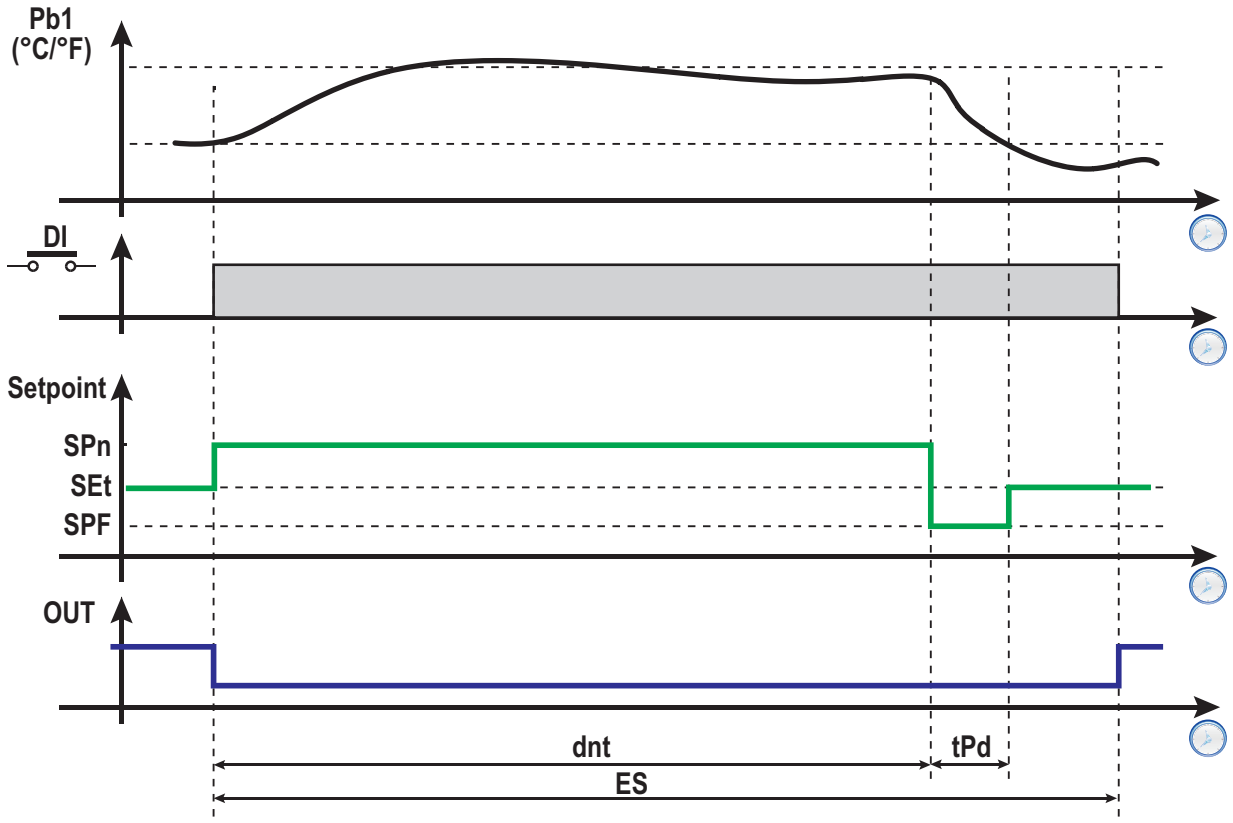
This algorithm can be activated by setting **ESt**=4 , **H1x**=±10 (see pull-down regulator).

Every time the energy saving phase is activated (the curtain is closed), the **dnt** and **tPd** timings are started.

The energy saving phase continues until the time period **dnt** elapses.
Once the energy saving phase has finished, the rapid cooling phase start for a time period **tPd**.
If **dnt**=0, the energy saving function is disabled.

If the Bottle cooler curtain is opened during the energy saving phase, rapid cooling begins immediately.
If the Bottle cooler curtain is opened during the rapid cooling phase, rapid cooling does not end but continues until the time **tPd** has elapsed.

An example of this operation is shown below (in this example **ESA**=1):



Legend: **DI** = Digital input; **OUT** = AUX/Light output; **ES** = Energy saving; **Setpoint** = Setpoint value.

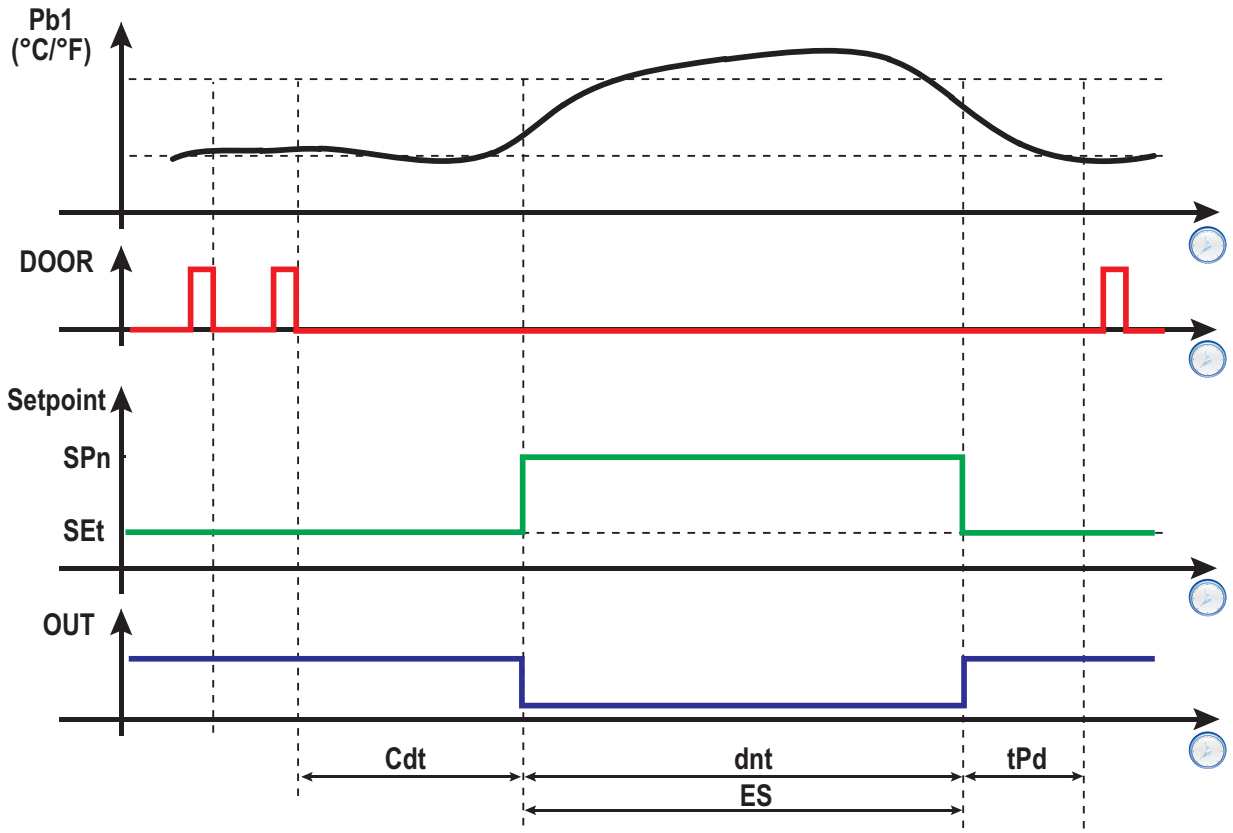
Bottle cooler with door

This algorithm can be activated by setting **ESt**=5 , **H1x**=±11 (See pull-down regulator).

If the Bottle cooler door remains closed for a period greater than the value of parameter **Cdt**, energy saving is activated. When the time period **dnt** or the door is opened, the algorithm will be deactivated.

If the end of the energy saving phase occurs due to timeout, a pull-fown phase will be started. If **dnt**=0, pull-down is disabled while energy saving will be disabled the first time the door is opened.

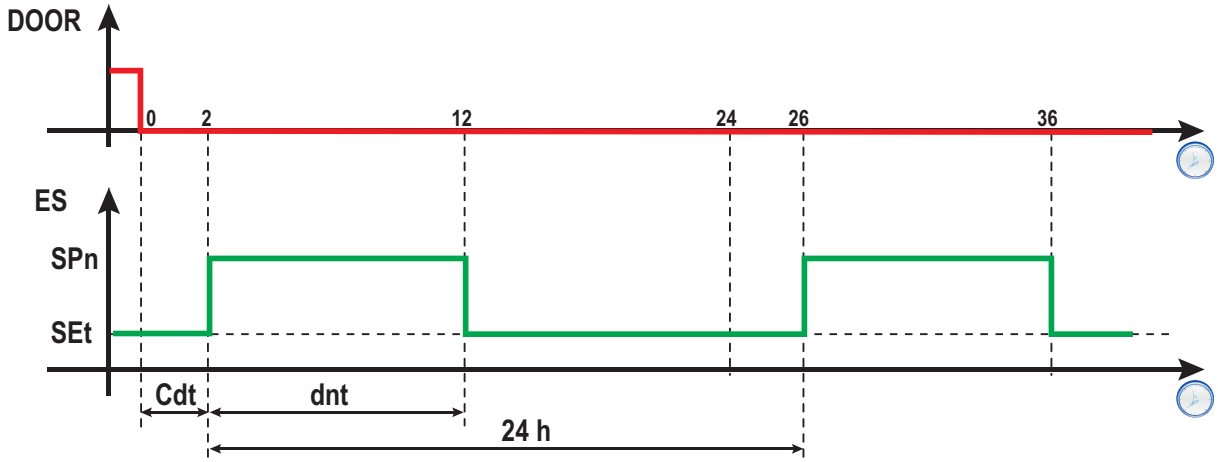
An example of this operation is shown below (in this example **ESA**=1):



Legend: **DOOR** = Bottle cooler door; **OUT** = AUX/Light output; **ES** = Energy saving; **Setpoint** = Setpoint value.

After a blackout, the controller will resume with the energy saving status prior to the power supply disconnection and until the door is closed.

If the door is not opened / closed any more during the day, the controller will activate the night / day phases in accordance with parameters **Cdt** and **dnt**.



Legend: **DOOR** = Bottle cooler door; **ES** = Energy saving.

Pull-down regulator

Description

The pull-down sequence anticipates bringing the end of a “Night” cycle forward by **tPd** minutes, by activating cooling with a setpoint lower than the one used for regulation to overcome thermal inertia of the machine, ensuring the temperature will be close to the regulation temperature when the store reopens.

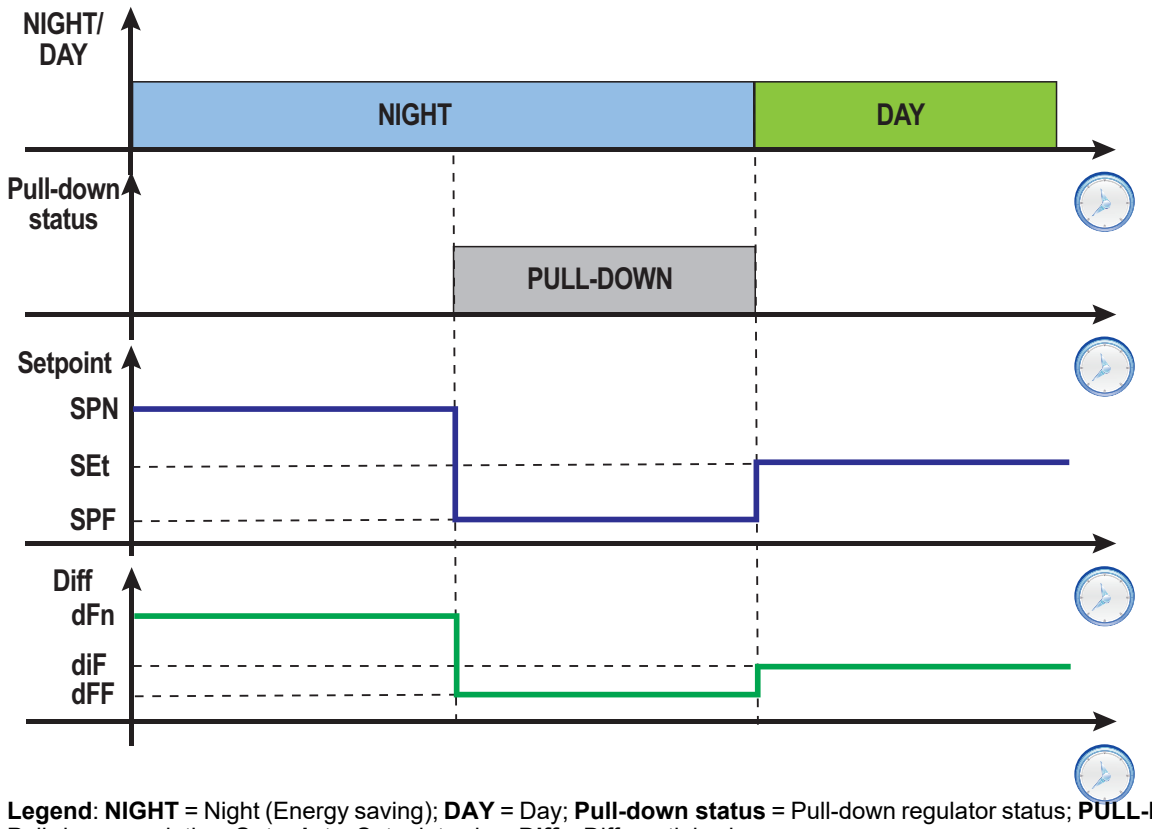
Parameter **PdC** can be used to select the pull-down type:

- **PdC** = **diS**: regulator disabled
- **PdC** = **FI**: pull-down with fixed setpoint
- **PdC** = **Aut**: automatic pull-down

Pull-down with fixed setpoint

If the pull-down with fixed setpoint (**PdC** = FI), regulation will use the following values:

- **SPF** = regulation setpoint in pull-down
- **dFF** = regulation differential in pull-down



Legend: **NIGHT** = Night (Energy saving); **DAY** = Day; **Pull-down status** = Pull-down regulator status; **PULL-DOWN** = Pull-down regulation; **Setpoint** = Setpoint value; **Diff** = Differential value;

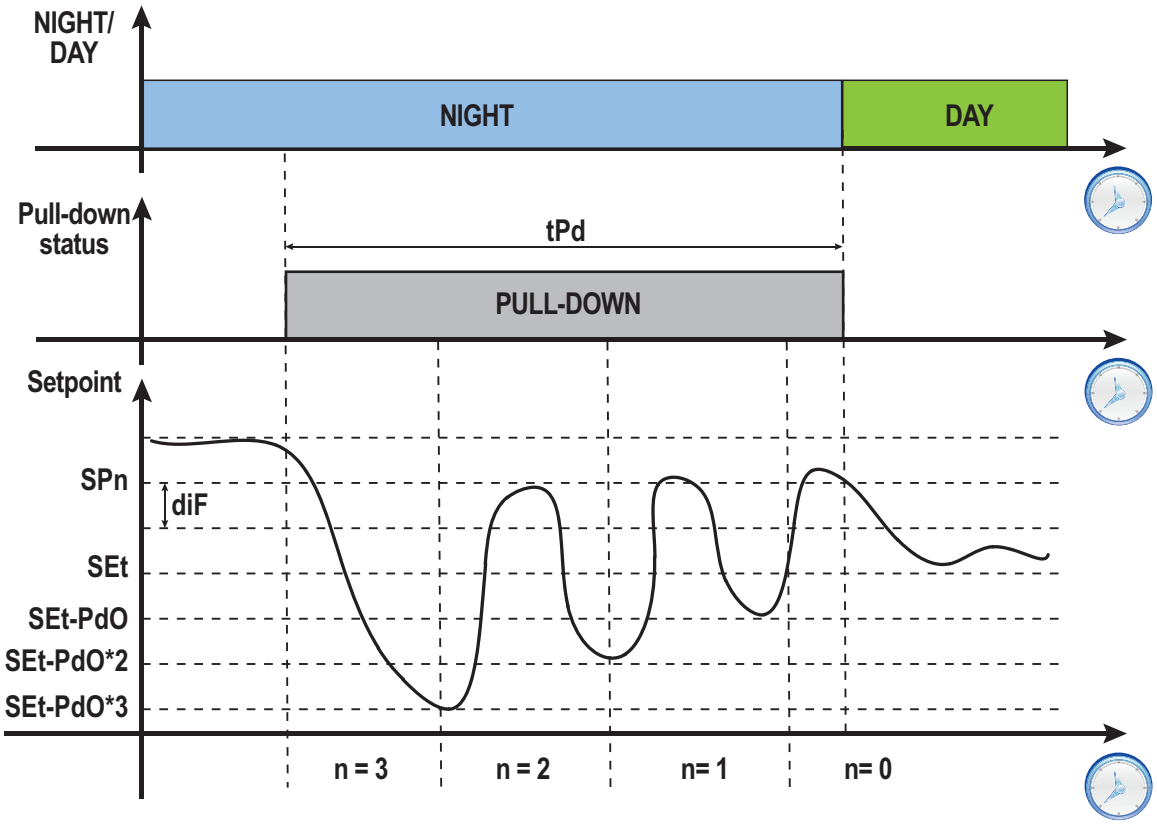
Automatic Pull-down

If automatic pull-down is enabled (**PdC** = Aut), the setpoint and differential values will be:

- **Setpoint** = **SEt** - **Pdo*n**
- **Differental** = **diF** + **Pdo*n**

When regulation begins, **n** = 3 (value set using parameter **Pdn**) and decreases by one every time the calculated setpoint is reached. This system helps to reduce energy consumption during pull-down.

If pull-down regulation does not end before the time period **tPd**, regulation will be stopped and the controller will begin regulating with the “day” regulator settings.



Legend: **NIGHT/DAY** = Night/Day (Energy saving/Normal operation); **NIGHT** = Night; **DAY** = Day; **Pull-down status** = Pull-down regulator status; **PULL-DOWN** = Pull-down regulation; **Setpoint** = Setpoint.

Diagnostics

Contents

This section includes the following topics:

Alarms and indications 133
Minimum and maximum temperature alarm 135

Alarms and indications

Introduction

All alarms are deactivated automatically when their cause is removed, except the pressure switch alarm **PA**, which can be deactivated via the **rAP** function.

Detecting an alarm condition

If there is an alarm condition, the alarm icon ⚠ comes on steadily. If present and enabled, the buzzer and the alarm relay are also activated.

Note: If alarm exclusion timings are in progress, the alarm is not signaled.

All active alarms, except those relating to probe error, are listed in the **AL** folder within the "Machine status" menu.

Silencing an alarm

Press any key or use the menu function: the buzzer is silenced, the alarm icon ⚠ flashes and the alarm relay is de-energized.

Alarms legend

Code	Description	Buzzer and alarm relay	Cause	Effects	Solutions
E1	Probe Pb1 error	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E1** shown • Steady alarm icon ⚠ • Maximum/minimum alarm regulator disabled • Compressor operation based on parameters **Ont** and **OFt**	• Verify the type of probe (default NTC) • Verify the probe wiring • Replace probe.
E2	Probe Pb2 error **Note**: only models that manage probe Pb2	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E2** shown • Steady alarm icon ⚠ • Defrost ends due to timeout (**dEt**) • The evaporator fans are: on (compressor ON), or run according to parameter **FCo**, (compressor OFF).	• Verify the type of probe (default NTC) • Verify the probe wiring • Replace probe.
E3	Probe Pb3 error **Note**: only models that manage probe Pb3	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E3** shown • Steady alarm icon ⚠ • No effect on regulation	• Verify the type of probe (default NTC) • Verify the probe wiring • Replace probe.
AH1	Alarm due to Pb1 HIGH Temperature	Active	Value read by Pb1 > **HAL** for longer than time **tAo** (see section "Minimum and maximum temperature alarm" on page 135)	• Alarm **AH1** added to folder **AL** • No effect on regulation	Wait for the temperature read by Pb1 to drop below the alarm threshold (**HAL-AFd**)
AL1	Alarm due to Pb1 LOW Temperature	Active	Value read by Pb1 < **LAL** for longer than time **tAo** (see section "Minimum and maximum temperature alarm" on page 135)	• Alarm **AL1** added to folder **AL** • No effect on regulation	Wait for the temperature read by Pb1 to rise above the alarm threshold (**LAL+AFd**)
EA	External alarm	Active	Activation of the digital input (**H1x** = ±5)	• Alarm **EA** added to folder **AL** • Steady alarm icon ⚠ • Regulation inhibited if **EAL** = y	Verify and remove the external cause that caused the alarm on the digital input.
oPd	Open door alarm	Active	Digital input activation (**H1x** = ±4) for a time greater than **tdo**	• Alarm **oPd** added to folder **AL** • Steady alarm icon ⚠ • Regulator inhibited, on the basis of parameter **dod**	• Close the door • Increase the value of parameter **oAo**

Code	Description	Buzzer and alarm relay	Cause	Effects	Solutions
Ad2	Defrost due to timeout **Note**: only models that manage probe Pb2	Not active	End of defrost due to timeout, instead of the defrost end temperature being detected by Pb2	• Alarm **Ad2** added to folder **AL** • Steady alarm icon ⚠	Wait for the next defrost for automatic deactivation.
CoH	Overheating alarm	Active	Value set by parameter **SA3** exceeded	• Alarm **COH** added to folder **AL** • Steady alarm icon ⚠ • Compressor regulation inhibited	Wait for the temperature read by Pb3 to drop below the alarm threshold (**SA3**-**dA3**)
E10	Clock alarm **Note**: models with RTC only	Not active	Clock alarm or battery low	• Alarm **E10** added to folder **AL** • Functions related to the clock not present or not synchronized with the real time	Set the correct time. If the error persists, replace the instrument (RTC battery low)
rFA	Low refrigerant alarm	Not active	Even with the compressor on, the temperature trend does not fall within the interval set by **rFt**.	• Alarm **rFA** added to folder **AL** • Steady alarm icon ⚠	Switch the instrument off and on again (alarm deactivated if **rFt** = 0)
nPA	Pressure switch alarm	Not active	Pressure switch alarm activation caused by the external pressure switch.	If the number **n** of pressure switch activations is lower than **PEn**: • **nPA** alarm is added to the folder **AL** with the number of pressure switch activations • Compressor regulation inhibited	Verify and remove the cause that triggered the alarm on the digital input (automatic reset) (see Pressure switch)
PAL	Pressure switch alarm	Active	Pressure switch alarm activation caused by the external pressure switch.	If the number **N** of pressure switch activations is **N** = **PEn** in a time period < **PEi**: • **PAL** is shown • Alarm **PA** is added to the folder **AL** and alarm **nPA** is removed from the folder **AL** • Steady alarm icon ⚠ • Compressor regulation, fans and defrost are inhibited	• Switch the controller off and on again • Select **rAP** (manual reset) in the functions folder to reset the alarms.

Minimum and maximum temperature alarm

Description

The alarms operate according to the temperature read by regulation probe Pb1. The accepted temperature interval limits are set using parameters **HAL** and **LAL**.

Alarm codes

Code	Description
AH1	High temperature alarm
AL1	Low temperature alarm

High and low temperature alarms are excluded during a defrost. The triggering of these alarms does not have any effect on the regulation in progress.

Absolute or relative temperature values

Depending on the value of parameter **Att**, the temperature is expressed as an absolute or relative value (differential in respect to the setpoint):

Att value	Label	Description
0	**Ab**	Absolute values. The **HAL** and **LAL** values must have a sign.
1	**rE**	Relative values. **HAL** > 0 and **LAL** < 0.

Alarm conditions

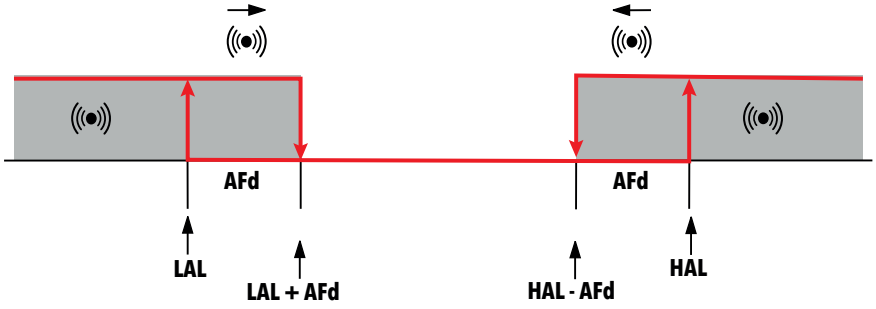
Att value	Temperature read by Pb1	Alarm generated
0	≥ **HAL**	Maximum temperature
	≤ **LAL**	Minimum temperature
1	≥ (**SEt** + **HAL**)	Maximum temperature
	≤ (**SEt** + **LAL**)	Minimum temperature

Conditions for alarm deactivation

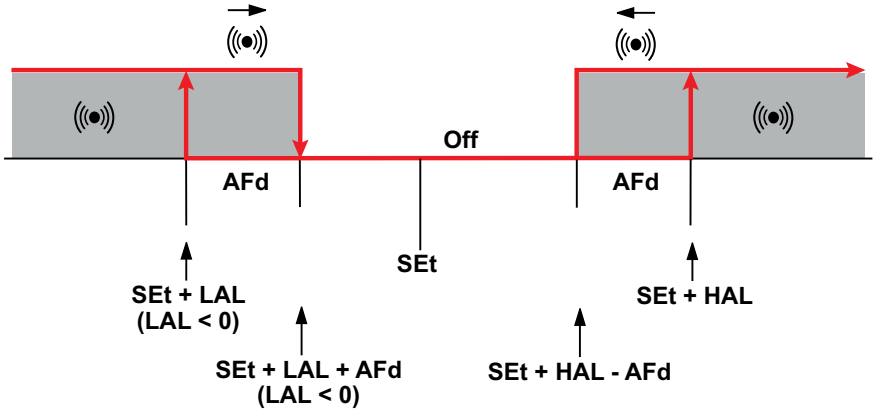
Att value	Temperature read by Pb1	Alarm generated
0	≤ (**HAL** - **AFd**)	Maximum temperature
	≥ (**LAL** + **AFd**)	Minimum temperature
1	≤ (**SEt** + **HAL** - **AFd**)	Maximum temperature
	≥ (**SEt** + **LAL** + **AFd**)	Minimum temperature

Operating diagrams

Operation with Att=0 (absolute values)



Operationwith Att=1 (relative values)



Parameters

Parameter	Description
Att	Expression mode for **HAL** and **LAL** values (absolute or relative)
AFd	Alarm activation differential
HAL	Maximum temperature limit
LAL	Minimum temperature limit
PAo	Alarm exclusion time when switching on the controller, after a power failure
dAo	Exclusion time for temperature alarms after a defrost cycle
oAo	Exclusion time for temperature alarms after closing the door
tAo	Temperature alarm signaling delay time

Parameters EWNext Performance -HC

Contents

This section includes the following topics:

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Parameters EWNext 974 P/C 201
Parameters EWNext 974 P/CY 215
Parameters EWNext 978 P/BC 229
Parameters EWNext 978 P/BCI 243

Parameters EWNext 961 P

User parameters EWNext 961 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	0.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	1
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	0
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 961 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	0.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
HC	The regulator will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	-	-	-	H
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	1
dPo	Defrost activation request at power-on. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	-

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	0
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	-
AL (Alarms)							
Att	Sets the absolute or relative value for parameters **HAL** and **LAL**. • **0** = absolute value • **1** = relative value	0/1	flag	0	0	0	0
AFd	Alarm differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
SA3	Probe 3 alarm setpoint.	-67.0...302	°C/°F	30.0	30.0	30.0	30.0
dA3	Probe 3 alarm differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	-
dAd	Digital input activation delay	0...250	min	0	0	0	-

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	-
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	-
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	-
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	-
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CA3 (!)	Positive or negative temperature value to be added to the value of Pb3.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = reserved • **3** = Pb3 probe.	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = reserved • **3** = Pb3 probe. • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H31	Configuration of ∆ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ∇ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H43	Probe Pb3 present. • **n**(0) = not present • **y**(1) = present • **2EP**(2) = second evaporator.	n/y/2EP	flag	n	n	n	n
H45	Defrost input mode for applications with dual evaporator. **0** = first evaporator only; **1** = if at least one of the evaporators is below its defrost end temperature; **2** = only if both evaporators are under the respective defrost end temperature; **3** = evaporator 1 and evaporator 2 alternately.	0...3	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 961 P/B

User parameters EWNext 961 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	0.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	1
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	0
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 961 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	0.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
HC	The regulator will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	-	-	-	H
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	1
dPo	Defrost activation request at power-on. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	-

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	0
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	-
AL (Alarms)							
Att	Sets the absolute or relative value for parameters **HAL** and **LAL**. • **0** = absolute value • **1** = relative value	0/1	flag	0	0	0	0
AFd	Alarm differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	-
dAd	Digital input activation delay	0...250	min	0	0	0	-
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	-

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	-
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	-
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	-
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = reserved • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = reserved • **3** = reserved • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H25	Enables/disables the buzzer. • **0** = disabled • **1** = enabled.	0/1	flag	1	1	1	1
H31	Configuration of ∆ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ∇ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 971 P

User parameters EWNext 971 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 971 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature (measured by Pb3 if **H43** = 2EP)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	-

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	-
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	-
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
SA3	Probe 3 alarm setpoint.	-67.0...302	°C/°F	30.0	30.0	30.0	30.0
dA3	Probe 3 alarm differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA3 (!)	Positive or negative temperature value to be added to the value of Pb3.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe.	0...3	num	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe. • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H31	Configuration of ⌃ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ⌄ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	0	0	0	0
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H43	Probe Pb3 present. • **n**(0) = not present • **y**(1) = present • **2EP**(2) = second evaporator.	n/y/2EP	flag	n	n	n	n
H45	Defrost input mode for applications with dual evaporator. **0** = first evaporator only; **1** = if at least one of the evaporators is below its defrost end temperature; **2** = only if both evaporators are under the respective defrost end temperature; **3** = evaporator 1 and evaporator 2 alternately.	0...3	num	0	0	0	0
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 971 P/B

User parameters EWNext 971 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
Fan (Fans)							
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 971 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H25	Enables/disables the buzzer. • **0** = disabled • **1** = enabled.	0/1	flag	1	1	1	1
H31	Configuration of ∧ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ∨ key. Same as **H31**.	0...10	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	0	0	0	0
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

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User parameters EWNext 974 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 974 P

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature (measured by Pb3 if **H43** = 2EP)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
SA3	Probe 3 alarm setpoint.	-67.0...302	°C/°F	30.0	30.0	30.0	30.0
dA3	Probe 3 alarm differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA3 (!)	Positive or negative temperature value to be added to the value of Pb3.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe.	0...3	num	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe. • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H31	Configuration of ⚠ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ▽ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	0	0	0	0
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H43	Probe Pb3 present. • **n**(0) = not present • **y**(1) = present • **2EP**(2) = second evaporator.	n/y/2EP	flag	n	n	n	n
H45	Defrost input mode for applications with dual evaporator. **0** = first evaporator only; **1** = if at least one of the evaporators is below its defrost end temperature; **2** = only if both evaporators are under the respective defrost end temperature; **3** = evaporator 1 and evaporator 2 alternately.	0...3	num	0	0	0	0
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 974 P/B

User parameters EWNext 974 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
Fan (Fans)							
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 974 P/B

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H25	Enables/disables the buzzer. • **0** = disabled • **1** = enabled.	0/1	flag	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H31	Configuration of ⏢ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ▽ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of ☼ key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	2	2	2	2
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 974 P/C

User parameters EWNext 974 P/C

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	24 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	24 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	24 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 974 P/C

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature (measured by Pb3 if **H43** = 2EP)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	1	1	1	1
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	0	0	0	0
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	0	0	0	0
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	24 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	24 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	24 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
SA3	Probe 3 alarm setpoint.	-67.0...302	°C/°F	30.0	30.0	30.0	30.0
dA3	Probe 3 alarm differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
tA1	Time AUX/Lights activation brought forward before a night/day transition.	0...250	min	0	0	0	0
tA2	AUX/Lights activation delay time after a day/night transition.	0...250	min	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
tn1	Night mode activation delay in Energy saving.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **Fl** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ Fl/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA3 (!)	Positive or negative temperature value to be added to the value of Pb3.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe.	0...3	num	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved • **3** = Pb3 probe. • **4** = setpoint.	0...4	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning • **±13** = reserved **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = evaporator 2 defrost • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H31	Configuration of ∧ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = reserved	0...10	num	1	1	1	1
H32	Configuration of ∨ key. Same as **H31**.	0...10	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of ☼ key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	2	2	2	2
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H43	Probe Pb3 present. • **n**(0) = not present • **y**(1) = present • **2EP**(2) = second evaporator.	n/y/2EP	flag	n	n	n	n
H45	Defrost input mode for applications with dual evaporator. **0** = first evaporator only; **1** = if at least one of the evaporators is below its defrost end temperature; **2** = only if both evaporators are under the respective defrost end temperature; **3** = evaporator 1 and evaporator 2 alternately.	0...3	num	0	0	0	0
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
nAd (Night and Day)							
E10	Selects Event 1 activation mode. **0** = disabled; **1** = Monday; **2** = Tuesday; **3** = Wednesday; **4** = Thursday; **5** = Friday; **6** = Saturday; **7** = Sunday; **8** = Monday to Friday; **9** = Monday to Saturday; **10** = Saturday and Sunday; **11** = every day.	0...11	num	0 (not in applications)			
E11	Event 1 start hour.	0...23	hours	0 (not in applications)			
E12	Event 1 start minute.	0...59	min	0 (not in applications)			
E13	Event 1 end hour.	0...23	hours	0 (not in applications)			
E14	Event 1 end minute.	0...59	min	0 (not in applications)			
E15	Sets Event 1 type. **0** = Energy Saving; **1** = AUX deactivated; **2** = AUX activated; **3** = Stand-by; **4** = Light on; **5** = Light off.	0...5	num	0 (not in applications)			
E20	Selects Event 2 activation mode. Same as **E10**.	0...11	num	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
E21	Event 2 start hour.	0...23	hours	0 (not in applications)			
E22	Event 2 start minute.	0...59	min	0 (not in applications)			
E23	Event 2 end hour.	0...23	hours	0 (not in applications)			
E24	Event 2 end minute.	0...59	min	0 (not in applications)			
E25	Sets Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5
SL (Self-learning cycle)							
SLP	Sets the controller self-learning mode. • **0** = daily • **1** = weekly.	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	min	1	1	1	1
SL2	Self-learning duration in weekly mode.	1...30	num	1	1	1	1
SLr	Enables self-learning after the initial self-learning period. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
SLb	Duration of the period in the absence of power (blackout), after which self-learning is activated automatically once the power is restored.	0...250	days	0	0	0	0
SLE	Enables/disables self-learning. • **0** = enabled • **1** = disabled	0/1	flag	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 974 P/CY

User parameters EWNext 974 P/CY

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 974 P/CY

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	1	1	1	1
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
tn1	Night mode activation delay in Energy saving.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **Fl** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ Fl/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
SPF	Regulation setpoint during the pull-down phase.	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **4** = setpoint.	0...4	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning • **±13** = synchronized defrost. **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-13...+13	num	13	13	13	13

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = reserved • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H31	Configuration of ⚠ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = self-learning	0...10	num	1	1	1	1
H32	Configuration of ▽ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H34	Configuration of ☼ key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	2	2	2	2
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
nAd (Night and Day)							
E10	Selects Event 1 activation mode. **0** = disabled; **1** = Monday; **2** = Tuesday; **3** = Wednesday; **4** = Thursday; **5** = Friday; **6** = Saturday; **7** = Sunday; **8** = Monday to Friday; **9** = Monday to Saturday; **10** = Saturday and Sunday; **11** = every day.	0...11	num	0 (not in applications)			
E11	Event 1 start hour.	0...23	hours	0 (not in applications)			
E12	Event 1 start minute.	0...59	min	0 (not in applications)			
E13	Event 1 end hour.	0...23	hours	0 (not in applications)			
E14	Event 1 end minute.	0...59	min	0 (not in applications)			
E15	Sets Event 1 type. **0** = Energy Saving; **1** = AUX deactivated; **2** = AUX activated; **3** = Stand-by; **4** = Light on; **5** = Light off.	0...5	num	0 (not in applications)			
E20	Selects Event 2 activation mode. Same as **E10**.	0...11	num	0 (not in applications)			
E21	Event 2 start hour.	0...23	hours	0 (not in applications)			
E22	Event 2 start minute.	0...59	min	0 (not in applications)			
E23	Event 2 end hour.	0...23	hours	0 (not in applications)			
E24	Event 2 end minute.	0...59	min	0 (not in applications)			
E25	Sets Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5
SL (Self-learning cycle)							
SLP	Sets the controller self-learning mode. • **0** = daily • **1** = weekly.	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	min	1	1	1	1
SL2	Self-learning duration in weekly mode.	1...30	num	1	1	1	1
SLr	Enables self-learning after the initial self-learning period. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
SLb	Duration of the period in the absence of power (blackout), after which self-learning is activated automatically once the power is restored.	0...250	days	0	0	0	0
SLE	Enables/disables self-learning. • **0** = enabled • **1** = disabled	0/1	flag	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 978 P/BC

User parameters EWNext 978 P/BC

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 978 P/BC

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	1	1	1	1
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
tn1	Night mode activation delay in Energy saving.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **FI** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ FI/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved • **4** = setpoint.	0...4	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning • **±13** = reserved **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning **Note**: • the "+" sign indicates that the input is active if the contact is closed. • the "-" sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = reserved	0...13	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H24	Configuration of digital output 4 (**Out4**). Same as **H22**.	0...12	num	5	5	5	5
H25	Enables/disables the buzzer. • **0** = disabled • **1** = enabled.	0/1	flag	1	1	1	1

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H31	Configuration of ⌂ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = self-learning	0...10	num	1	1	1	1
H32	Configuration of ▽ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of ☼ key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	2	2	2	2
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
nAd (Night and Day)							
E10	Selects Event 1 activation mode. **0** = disabled; **1** = Monday; **2** = Tuesday; **3** = Wednesday; **4** = Thursday; **5** = Friday; **6** = Saturday; **7** = Sunday; **8** = Monday to Friday; **9** = Monday to Saturday; **10** = Saturday and Sunday; **11** = every day.	0...11	num	0 (not in applications)			
E11	Event 1 start hour.	0...23	hours	0 (not in applications)			
E12	Event 1 start minute.	0...59	min	0 (not in applications)			
E13	Event 1 end hour.	0...23	hours	0 (not in applications)			
E14	Event 1 end minute.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
E15	Sets Event 1 type. **0** = Energy Saving; **1** = AUX deactivated; **2** = AUX activated; **3** = Stand-by; **4** = Light on; **5** = Light off.	0...5	num	0 (not in applications)			
E20	Selects Event 2 activation mode. Same as **E10**.	0...11	num	0 (not in applications)			
E21	Event 2 start hour.	0...23	hours	0 (not in applications)			
E22	Event 2 start minute.	0...59	min	0 (not in applications)			
E23	Event 2 end hour.	0...23	hours	0 (not in applications)			
E24	Event 2 end minute.	0...59	min	0 (not in applications)			
E25	Sets Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5
SL (Self-learning cycle)							
SLP	Sets the controller self-learning mode. • **0** = daily • **1** = weekly.	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	min	1	1	1	1
SL2	Self-learning duration in weekly mode.	1...30	num	1	1	1	1
SLr	Enables self-learning after the initial self-learning period. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
SLb	Duration of the period in the absence of power (blackout), after which self-learning is activated automatically once the power is restored.	0...250	days	0	0	0	0
SLE	Enables/disables self-learning. • **0** = enabled • **1** = disabled	0/1	flag	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNext 978 P/BCI

User parameters EWNext 978 P/BCI

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y
HAL	Maximum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...302	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
dnt	Night mode duration.	0...24	hours	11	11	11	11
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.
Note: the “User” menu parameters also include **PA2**, which allows access to the "Installer" menu.
Note: for the full list of parameters, see the section "**Installer parameters**".

Installer parameters EWNext 978 P/BCI

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
SEt	Regulation setpoint with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	0.0	-18.0
CP (Compressor)							
diF	Compressor relay activation differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe) and restarts at a temperature value equal to the setpoint plus the value of the differential.	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum setpoint value.	-67.0...**HSE**	°C/°F	-50.0	-50.0	-50.0	-50.0
HSE	Maximum setpoint value.	**LSE**...302	°C/°F	99.0	99.0	99.0	99.0
ont	Regulator switch-on time for faulty probe: • if **Ont** = 1 and **OFt** = 0 compressor always on • if **Ont** = 1 and **OFt** > 0 compressor in duty cycle	0...250	min	0	0	0	0
oFt	Regulator switch-off time for faulty probe: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	1	1	1	1
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	0	0	0	0
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dEt	Defrost timeout. Determines the maximum duration of the defrost	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature (measured by probe Pb2)	-67.0...302	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on, if the temperature measured by Pb2 allows. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
dMr	Enables the defrost count reset in the case of manual defrosting. • **n** (0) = count reset does not take place • **y** (1) = count reset takes place	n/y	flag	n	n	n	n
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	hours	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **0** = disabled. Defrost is not activated. • **1** = enabled. Defrost is activated when the compressor is off.	0/1	flag	0	0	0	0
d40	Enables/disables use of probe Pb2. • **0** = disabled. Defrost does not take Pb2 into account • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d41	Sets the defrost activation threshold	-67.0...302	°C/°F	0.0	0.0	0.0	0.0
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**	0...250	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **0** = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **1** = relative value (negative offset, relative to the value measured by the defrost probe Pb2 (if **d40** = 1) at the end of the first cooling cycle or on power-on)	0/1	flag	0	0	0	0
d50	Enables/disables use of probe Pb2 ('differential' mode). • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. • **0** = disabled • **1** = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold)	0/1	flag	0	0	0	0
d52	Sets the defrost activation threshold (absolute differential **d50**-**d51**)	0.0...302	°C/°F	0.0	0.0	0.0	0.0
d53	Sets the maximum time for which the evaporator can remain above the threshold **d52**	0...999	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d54	Sets the type of incremental time count in which the evaporator temperature remains above the threshold value **d52**. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature drops below the threshold **d52** • **3** = incremental count with compressor on and until the temperature drops below the threshold **d52**	0...3	num	0	0	0	0
d55	Sets the threshold management mode. • **0** = absolute value (for example: **d52** = **d50**-**d51**) • **1** = relative value (negative offset, relative to the differential of the temperatures measured by probes Pb1 and Pb2 (**d50**-**d51**) at the end of the first cooling cycle or on power-on).	0/1	flag	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	1	1	1	1
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	5 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	12 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	18 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	18 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
Fan (Fans)							
FPt	Sets whether parameter **FSt** is expressed as an absolute temperature value or as a value relative to the Setpoint. • **0** = absolute • **1** = relative.	0/1	flag	0	0	0	0
FSt	Fan disabling temperature; a value, read by the evaporator probe.	-67.0...302	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature.	-67.0...302	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan trigger differential.	0.1...25.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Fan activation delay time after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Used to select or deselect the exclusion of the evaporator fans during defrosting. • **n**(0) = no • **y**(1) = yes (fan excluded - off).	n/y	flag	y	y	y	y

<table>
<tr><th>Parameter</th><th>Description</th><th>Range</th><th>MU</th><th>Default</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table><tr><th rowspan="2">Pb2</th><th rowspan="2">H42</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr><tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr><tr><td rowspan="7">ok</td><td rowspan="7">y</td><td>0</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>1</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>2</td><td>T</td><td>DCd</td><td>T</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>T</td><td>Off</td><td>T</td><td>Off</td></tr><tr><td>5</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td>6</td><td>T</td><td>T</td><td>T</td><td>T</td></tr><tr><td rowspan="7">ko</td><td rowspan="7">y</td><td>0</td><td>DCd</td><td>Off</td><td>DCn</td><td>Off</td></tr><tr><td>1</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>2</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td rowspan="7">no</td><td rowspan="7">n</td><td>0</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>1</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>2</td><td>On</td><td>DCd</td><td>On</td><td>DCn</td></tr><tr><td>3</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr><tr><td>4</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>5</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr><tr><td>6</td><td>DCd</td><td>DCd</td><td>DCn</td><td>DCn</td></tr></table>Headings legend:
Pb2 = probe Pb2 status (ok = present; ko = in E2 error and no = absent; day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; DCd = Day duty cycle or DCn = Night duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Fon</td><td>Day duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FoF</td><td>Day duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Night duty cycle: time with fans on.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Night duty cycle: time with fans off.</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>ESF</td><td>"Night" mode activation.
• n(0) = no
• y(1) = yes.</td><td>n/y</td><td>flag</td><td>n</td><td>n</td><td>n</td><td>n</td></tr>
<tr><td colspan="8">AL (Alarms)</td></tr>
<tr><td>Att</td><td>Sets the absolute or relative value for parameters HAL and LAL.
• 0 = absolute value
• 1 = relative value</td><td>0/1</td><td>flag</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AFd</td><td>Alarm differential.</td><td>0.1...25.0</td><td>°C/°F</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></tr>
<tr><td>HAL</td><td>Maximum temperature alarm.
Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.</td><td>LAL...302</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
</table>

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
LAL	Minimum temperature alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-67.0...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...10	min*10	0	0	0	0
dAo	Temperature alarm exclusion time after defrosting.	0...999	min	0	0	0	0
oAo	Alarm signaling delay after deactivation of the digital input (door closure). Alarm refers to high and low temperature alarms.	0...10	hours	0	0	0	0
tdo	Door open alarm activation delay time.	0...250	min	0	0	0	0
tAo	Temperature alarm signaling delay time.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **n**(0) = alarm not activated • **y**(1) = alarm activated.	n/y	flag	0	0	0	0
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = compressor and defrost inhibited • **2** = fans, compressor and defrost inhibited;	0/1/2	flag	n	n	n	n
AoP	Alarm output polarity. • **0** = NC (Normally closed) • **1** = NO (Normally open).	0/1	flag	1	1	1	1
rFt	Low refrigerant alarm signaling delay.	0...250	min	0 (not in applications)			
Lit (Lights and digital inputs)							
ESA	AUX/Lights status during energy saving. • **0** = No effect on the status of the AUX/Light output • **1** = Output disabled • **2** = Output enabled	0/1/2	flag	1	1	1	1
tA1	Time AUX/Lights activation brought forward before a night/day transition.	0...250	min	0	0	0	0
tA2	AUX/Lights activation delay time after a day/night transition.	0...250	min	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. • **0** = disabled • **1** = disables fans • **2** = disables compressor • **3** = disables fans and compressor.	0...3	num	1	1	1	1
dAd	Digital input activation delay	0...250	min	0	0	0	0
dCo	Compressor switch-off delay from door opening.	0...250	min	0	0	0	0
tn1	Night mode activation delay in Energy saving.	0...250	min	0	0	0	0
PrE (Pressure switch)							
PEn	Number of errors permitted per minimum/maximum pressure switch input	0...15	num	5	5	5	5
PEi	Minimum/maximum pressure switch error count interval	1...99	min	1	1	1	1
PEt	Compressor activation delay after pressure switch deactivation	0...250	min	0	0	0	0
EnS (Energy Saving)							
SPn	Night mode Setpoint.	-67.0...302	°C/°F	7.0	7.0	7.0	7.0
dFn	Night mode differential.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0
oSP	Temperature value to be added to the setpoint in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
odF	Differential offset during an energy saving cycle or reduced set.	0.1...30.0	°C/°F	4.0	4.0	4.0	4.0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ESt	Energy Saving mode. • **0** = disabled • **1** = offset on setpoint • **2** = offset on differential • **3** = offset on setpoint and differential • **4** = "Open Bottle coolers" algorithm • **5** = "Bottle cooler with door" algorithm.	0...5	num	0	0	0	0
dnt	Night mode duration.	0...24	hours	11	11	11	11
Cdt	Door closure time due to dynamic setpoint activation.	0...250	min*10	6	6	6	6
PLd (Pull-down)							
PdC	Enable pull-down. • **diS** (0) = disabled • **Fl** (1) = with fixed setpoint • **AUt** (2) = automatic	diS/ Fl/ AUt	num	diS	diS	diS	diS
tPd	Pull-down phase duration.	1...250	min	30	30	30	30
dFF	Regulation offset during the pull-down phase.	0.1...30.0	°C/°F	0.1	0.1	0.1	0.1
Pdo	Temperature step in operation with automatic pull-down.	0.1...30.0	°C/°F	0.2	0.2	0.2	0.2
Pdn	Number of steps in operation with automatic pull-down.	1...10	num	3	3	3	3
Add (Communication)							
Adr	Modbus protocol controller address.	1...247	num	1 (not in applications)			
bAU	Modbus Baudrate selection. • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
diS (Display)							
dro	Selects the unit of measure used when displaying the temperature read by the probes. (**0** = °C, **1** = °F). **Note**: changing from °C to °F or vice-versa does NOT change the **SEt**, **diF** values, etc. (example: **SEt** = 10°C becomes 10°F).	0/1	flag	0	0	0	0
CA1 (!)	Positive or negative temperature value to be added to the value of Pb1.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CA2 (!)	Positive or negative temperature value to be added to the value of Pb2.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LoC	Keypad lock. • **n**(0) = Keypad lock disabled • **y**(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface)	n/y	flag	y	y	y	y
ddd	Selects the type of value to show on the display. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECPlus**. • **0** = module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = reserved • **4** = setpoint.	0...4	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value - label **dEF**	0...250	min	30	30	30	30
ndt	Display with decimal point. • **n**(0) = no • **y**(1) = yes.	n/y	flag	y	y	y	y
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
VSC (Variable-speed compressor)							
CEr	Controlled capacity value in the event of regulation probe error.	0.0...100	%	50.0	50.0	50.0	50.0
PdS	Differential for forced activation of a pull-down.	-50.0...50.0	K/°R	3.0	3.0	3.0	3.0
PUS	Differential for forced activation of a pull-up.	-50.0...50.0	K/°R	-3.0	-3.0	-3.0	-3.0
PUd	Temperature outside range timeout. The timer is activated when the regulation probe reaches a value greater than **SEt+PdS** (for Pull Down) or less than **SEt+PuS** (for Pull Up). When the timer runs out, a Pull Down or Pull Up procedure will be started depending on the zone in which the probe is located. If the temperature recovers before the end of this timed period, the timer is reloaded.	0...1000	min	4	4	4	4
PdE	Pull-down end differential.	-50.0...50.0	K/°R	0.0	0.0	0.0	0.0
PUE	Pull-up end differential. If a pull-up is activated when the timer **PUd** runs out, the compressor is stopped until **SEt+PUE** is reached.	-50.0...50.0	K/°R	0.0	0.0	0.0	0.0
Pdt	Optimized pull-down timeout.	0...1000	min	10	10	10	10
Pdd	Controlled capacity value, if a pull-down is activated, when the time period **PUd** has elapsed, that will be maintained: • for a time period **Pdt** at the end of which the capacity will be forced to 100% until **SEt+PdE** is reached. • until the temperature **SEt+PdE** is reached (if the time < Pdt).	0.0...100	%	60.0	60.0	60.0	60.0
CPd	Controlled capacity after a pull-down in day operating mode.	0.0...100	%	60.0	60.0	60.0	60.0
CPn	Controlled capacity after a pull-down in night operating mode.	0.0...100	%	50.0	50.0	50.0	50.0
CPb	PID regulator proportional band.	0.1...3200	K/°R	3.0	3.0	3.0	3.0
Cti	PID integral time.	0...65535	s	600	600	600	600
Ctd	PID derivative time.	0...65535	s	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CSd	Duration of constant-speed compressor heating (set by **CSC**) on startup or after a stand-by.	0...900	s	120	120	120	120
CSC	Fixed compressor capacity for a time period equal to **CSd** on startup or after a stand-by.	44.4...100	%	80.0	80.0	80.0	80.0
CAU	Selects automatic or manual PID mode. • **0** = automatic • **1** = manual.	0/1	flag	0	0	0	0
CdU	PID duty cycle in manual mode. If **CAU** = **AUt**, **CdU** will function as a maximum controlled capacity limiter (%). If **CAU** = **FiH**, **CdU** will force controlled capacity of the compressor (%).	0.0...100	%	100	100	100	100
F_1	Maximum compressor operating frequency.	0.0...250	Hz	150	150	150	150
F_2	Minimum compressor operating frequency.	0.0...250	Hz	67.0	67.0	67.0	67.0
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H11	Configuration of digital input 1 (**DI**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning • **±13** = reserved **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-13...+13	num	0	0	0	0
H12	Configuration of digital input 2 (**DI2**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = energy saving • **±11** = energy saving with door • **±12** = night/day self-learning **Note**: • the “+” sign indicates that the input is active if the contact is closed. • the “-” sign indicates that the input is active if the contact is open.	-12...+12	num	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H21	Configuration of digital output 1 (**OC1**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control • **13** = variable-speed compressor (VSC).	0...13	num	13	13	13	13
H22	Configuration of digital output 2 (**Out2**). • **0** = disabled • **1** = compressor • **2** = defrost • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = reserved • **11** = condenser fans • **12** = heater deadband control.	0...12	num	2	2	2	2
H23	Configuration of digital output 3 (**Out3**). Same as **H22**.	0...12	num	3	3	3	3
H24	Configuration of digital output 4 (**Out4**). Same as **H22**.	0...12	num	5	5	5	5
H25	Enables/disables the buzzer. • **0** = disabled • **1** = enabled.	0/1	flag	1	1	1	1
H31	Configuration of △ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = Autotuning procedure**nPL** • **6** = Autotuning procedure**tun** • **7** = deep cooling • **8** = light • **9** = energy saving • **10** = self-learning	0...10	num	1	1	1	1
H32	Configuration of ▽ key. Same as **H31**.	0...10	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...10	num	4	4	4	4
H34	Configuration of ☼ key. Same as **H31**.	0...10	num	0	0	0	0
H35	Configuration of ☆ key. Same as **H31**.	0...10	num	2	2	2	2
H42	Probe Pb2 present. • **n**(0) = not present • **y**(1) = present.	n/y	flag	y	y	y	y
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
tAb	Reserved: read-only parameter.	/	/	/ (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CuS	Customer model reference.	0...999	num	0 (not in applications)			
FPr (UNICARD)							
UL	Transfer of the programming parameters from the controller to the UNICARD.	/	/	/ (not in applications)			
Fr	UNICARD formatting. Deletes all data on the UNICARD. **Note**: the use of parameter **Fr** results in the loss of all data entered. This operation cannot be reversed.	/	/	/ (not in applications)			
FnC (Functions)							
oSP	Reduced set activation. The labels displayed will be: • **SP** = Reduced set active • **oSP** = Reduced set NOT active	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: • **Aon** = AUX output active • **AoF** = AUX output not active	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
tun	Autotuning activation/deactivation	/	/	/ (not in applications)			
nPL	Preliminary Autotuning procedure activation/deactivation.	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
nAd (Night and Day)							
E10	Selects Event 1 activation mode. **0** = disabled; **1** = Monday; **2** = Tuesday; **3** = Wednesday; **4** = Thursday; **5** = Friday; **6** = Saturday; **7** = Sunday; **8** = Monday to Friday; **9** = Monday to Saturday; **10** = Saturday and Sunday; **11** = every day.	0...11	num	0 (not in applications)			
E11	Event 1 start hour.	0...23	hours	0 (not in applications)			
E12	Event 1 start minute.	0...59	min	0 (not in applications)			
E13	Event 1 end hour.	0...23	hours	0 (not in applications)			
E14	Event 1 end minute.	0...59	min	0 (not in applications)			
E15	Sets Event 1 type. **0** = Energy Saving; **1** = AUX deactivated; **2** = AUX activated; **3** = Stand-by; **4** = Light on; **5** = Light off.	0...5	num	0 (not in applications)			
E20	Selects Event 2 activation mode. Same as **E10**.	0...11	num	0 (not in applications)			
E21	Event 2 start hour.	0...23	hours	0 (not in applications)			
E22	Event 2 start minute.	0...59	min	0 (not in applications)			
E23	Event 2 end hour.	0...23	hours	0 (not in applications)			
E24	Event 2 end minute.	0...59	min	0 (not in applications)			
E25	Sets Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
CPr (Low ambient temperature protection)							
tCP	Time temperature remains below low ambient temperature protection Setpoint (CPS).	0...250	min	0	0	0	0
SCP	Low ambient temperature protection setpoint.	-67.0...302	°C/°F	-10.0	-10.0	-10.0	-10.0
dCP	Low ambient temperature protection differential.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
dEC (Deep Cooling Cycle)							
dCA	Enable "Deep cooling cycle". • **diS**(0) = disabled • **Std**(1) = manual • **AUt**(2) = automatic	diS/ Std/ AUt	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	-67.0...302	°C/°F	-2.0	-2.0	-2.0	-2.0
tdC	"Deep cooling cycle" duration	0...250	min	0	0	0	0
dCC	Defrost activation delay after a "Deep cooling cycle"	0...250	min	0	0	0	0

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
Sid	Threshold for entering a “Deep Cooling Cycle”.	-67.0...302	°C/°F	12.0	12.0	12.0	12.0
toS	“Deep Cooling Cycle” activation time.	0...250	min	5	5	5	5
SL (Self-learning cycle)							
SLP	Sets the controller self-learning mode. • **0** = daily • **1** = weekly.	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	min	1	1	1	1
SL2	Self-learning duration in weekly mode.	1...30	num	1	1	1	1
SLr	Enables self-learning after the initial self-learning period. • **n**(0) = no • **y**(1) = yes.	n/y	flag	n	n	n	n
SLb	Duration of the period in the absence of power (blackout), after which self-learning is activated automatically once the power is restored.	0...250	days	0	0	0	0
SLE	Enables/disables self-learning. • **0** = enabled • **1** = disabled	0/1	flag	0	0	0	0

Note: if one or more parameters in folder **CnF** or marked with **(!)** are changed, the controller must be switched off and then on again to make sure it works properly.

Modbus MSK 780 functions and resources

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Setting parameters via Modbus

Introduction

Modbus is a client/server protocol for communication between devices connected in a network. Modbus devices communicate using a master-slave technique in which only one device (master) can send request messages. The other devices in the network (slave) respond, returning the data requested by the master or executing the action contained in the message sent by the master. A slave is a device connected to a network that processes information and sends the results to the master using the Modbus protocol.

The master device can send messages to individual slaves, or to all devices connected to the network (broadcast), whilst slave devices can only respond to messages individually and to the master device. The Modbus standard used by Eliwell employs the RTU code for data transmission.

Data format (RTU)

The coding type used defines the structure of messages transmitted on the network and the way in which this information is deciphered. The coding type is usually chosen according to specific parameters (baudrate, parity, stop), plus certain devices only support specific coding types. Use the same coding type for all devices connected to a Modbus network.

The protocol uses the RTU binary method with the serial frame configured as follows:

- 8 bits for data
- parity bits NONE (configurable)
- 2 stop BITS

Parameters can be changed via:

- Device keypad
- UNICARD / DMI
- Send data via Modbus protocol directly to an individual device or in a broadcast using the address 0 (broadcast)

Modbus commands available and data areas

The following commands are implemented:

Modbus command	Description
03 (hex 0x03)	Read resources
16 (hex 0x10)	Write resources
43 (hex 0x2B)	Read device ID. The following 3 fields can be read: • 0 = Manufacturer ID • 1 = Model ID • 2 = Family ID (MSK 780) / device version

Note: Maximum length of transmitted/received messages equal to 50 bytes.

Configuration

The **TTL** serial port may be used to configure the device, parameters, statuses, variables using the Modbus protocol.

The address of a device within a Modbus message is set via parameter **Adr**.

The address **0** is used for broadcast messages that all slaves recognize. Slaves do not respond to a broadcast type request.

The device configuration parameters are as follows:

Parameter	Description
Adr	Modbus protocol controller address
bAU	Baudrate selection
Pty	Sets the Modbus protocol parity BIT and the number of stop BITs: • **n** = NONE parity bit + 2 stop BITS • **E** = EVEN parity bit + 1 stop BIT • **o** = ODD parity bit + 1 stop BIT

Note: Switch the controller off and on again after changing **Pty**.

Parameter values and visibility

Below are several notes relating to the value and visibility of the parameters.

Notes:

- Unless otherwise indicated, the parameter should be considered as visible and able to be changed unless the user applies custom settings via the serial port.
- If the visibility of the folder is changed all the parameters in that folder will assume the new setting.

Modbus table content

Introduction

The tables below contain the information required to access the resources properly.

There are 3 tables:

- **Modbus Parameters Table**: contains all the device configuration parameters including visibility
- **Folder Visibility Table**: contains the visibility of the folders containing the parameters
- **Modbus Resource Table**: contains all status (I/O) and alarm resources available in the volatile memory of the device.

Description of the columns

FOLDER
Indicates the name of the folder containing the parameter in question.

LABEL
Indicates the name with which the parameter appears in the menu.

DESCRIPTION
Description of the parameter's meaning.

PAR. ADDRESS VAL.
Represents the Modbus register address which contains the read or write value of the resource in the device.

FILTER VAL.
Represents the position of the most significant data bit inside the register. This information is always provided when the register contains more than one piece of information and it is necessary to distinguish which bits actually represent the data (the useful size of the data, indicated in the DATA SIZE column, should also be taken into account).

PAR. ADDRESS VIS.
Contains the Modbus register address which contains the visibility value of the resource to read or write in the device.

FILTER VIS.
Mask representing the position of the data inside the register (it has BITs set to 1 in correspondence with the register BITs effectively associated with the resource). It assumes values from 0 to 65535.

Note: in binary representation the least significant is furthest to the right.

Note: the size of the piece of visibility data is 2 BIT.

Visibility values:

- Value **0** = parameter or folder NOT visible
- Value **1** = parameter or folder visible at 'User' level only
- Value **2** = parameter or folder visible at 'Installer' level only
- Value **3** = parameter or folder visible both 'User' and 'Installer' level

R/W
Indicates the option of reading or writing the resource:

- R = the resource is read-only
- W = the resource is write-only
- R/W = the resource can be both read and written

DATA SIZE
Indicates the size of the piece of data (in bit):

- WORD = 16 bit
- Byte = 8 bit
- “n” bit = 0...15 bit based on the value of “n”

CPL
When the field indicates **Y**, the value read by the register needs to be converted because the value represents a number with a sign. In the other cases the value is always positive or null.

To convert it, proceed as follows:

If the register value falls between...	Then the result is...
0 and 32767	the same value (zero and positive values).
32768 and 65535	the register value, from which to subtract 65536 (negative values).

RANGE
Describes the interval of values that can be assigned to the parameter. This range can be correlated to the value of other parameters.

MU
Unit of measure for the values.

Table of Modbus Parameters

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
-	**SEt**	Regulation setpoint	32769	0	32931	49152	R/W	Word	Y	**LSE**...**HSE**	°C/°F
CP	**diF**	Setpoint differential	32770	0	32928	768	R/W	Word	-	0.1...30.0	°C/°F
CP	**LSE**	Minimum setpoint value that can be set	32771	0	32928	3072	R/W	Word	Y	-67.0...**HSE**	°C/°F
CP	**HSE**	Maximum setpoint value that can be set	32773	0	32928	12288	R/W	Word	Y	**LSE**...302	°C/°F
CP	**HC**	Operating mode (Heating/Cooling)	32968	256	32928	49152	R/W	Byte	-	0/1	flag
CP	**ont**	Compressor output ON time if regulation probe is faulty	32768	0	32929	3	R/W	Byte	-	0...250	min
CP	**oFt**	Compressor output OFF time if regulation probe is faulty	32772	0	32929	12	R/W	Byte	-	0...250	min
CP	**don**	Compressor output activation delay from call	32776	0	32929	48	R/W	Byte	-	0...250	s
CP	**doF**	Compressor output activation delay from switch-off	32780	0	32929	192	R/W	Byte	-	0...250	min
CP	**dbi**	Delay between two consecutive compressor output power-ons	32784	0	32929	768	R/W	Byte	-	0...250	min
CP	**Cit**	Minimum compressor output activation time	32800	0	32930	3	R/W	Byte	-	0...250	min
CP	**CAt**	Maximum compressor output activation time	32804	0	32930	12	R/W	Byte	-	0...250	min
CP	**odo**	Output activation delay at startup	32788	0	32929	3072	R/W	Byte	-	0...250	min
CP	**dFA**	Condenser fan and compressor activation delay from the call	32895	0	32930	3072	R/W	Byte	-	0...250	s
dEF	**dty**	Type of defrost	32908	61440	32930	768	R/W	Byte	-	0/1/2	num
dEF	**doH**	Defrost cycle activation delay from the call	32820	0	32931	3	R/W	Byte	-	0...250	min
dEF	**dEt**	Defrost timeout	32816	0	32930	12288	R/W	Byte	-	1...250	min
dEF	**dS1**	Evaporator 1 defrost end temperature	32774	0	32931	12	R/W	Word	Y	-67.0...302	°C/°F
dEF	**dS2**	Evaporator 2 defrost end temperature	32775	0	32931	48	R/W	Word	Y	-67.0...302	°C/°F
dEF	**dPo**	Defrost activation request at power-on	32968	1024	32931	768	R/W	Byte	-	0/1	flag
dEF	**dMr**	Enable defrost timer reset with manual defrost	32969	2048	32961	12	R/W	Byte	-	0/1	flag
dEF	**d00**	Cumulative time for defrost activation	32889	0	32949	12	R/W	Byte	-	0...250	hours
dEF	**d01**	Parameter d00 unit of measure	32925	12	32951	12	R/W	Byte	-	0/1/2	num
dEF	**dit**	Device time for defrost activation	32812	0	32949	49152	R/W	Byte	-	0...250	hours
dEF	**d11**	Parameter dit unit of measure	32925	48	32951	48	R/W	Byte	-	0/1/2	num
dEF	**d20**	Enable defrost at compressor stop	32969	256	32951	768	R/W	Byte	-	0/1	flag
dEF	**d40**	Select defrost probe 1	32913	240	32950	3	R/W	Byte	-	0/1	flag

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
dEF	**d41**	Temperature threshold for starting defrost	32837	0	32947	49152	R/W	Word	Y	-67.0...302	°C/°F
dEF	**d42**	Time the evaporator temperature must remain below the threshold	32839	0	32947	12288	R/W	Byte	-	0...250	min
dEF	**d43**	Time count mode for temperature below threshold	32913	3840	32950	12	R/W	Byte	-	0...3	num
dEF	**d44**	Threshold management mode	32913	61440	32950	48	R/W	Byte	-	0/1	flag
dEF	**d50**	Defrost probe Pb2 selection	32916	61440	32958	3	R/W	Byte	-	0/1	flag
dEF	**d51**	Defrost probe Pb1 selection	32917	15	32958	12	R/W	Byte	-	0/1	flag
dEF	**d52**	Temperature threshold for starting defrost	32849	0	32953	48	R/W	Byte	-	0.0...302	°C/°F
dEF	**d53**	Time the temperature differential must remain above the threshold	32853	0	32953	12288	R/W	Byte	-	0...999	min
dEF	**d54**	Time count mode for temperature differential above threshold	32917	240	32958	48	R/W	Byte	-	0...3	num
dEF	**d55**	Threshold management mode	32917	3840	32958	192	R/W	Byte	-	0/1	flag
dEF	**d90**	Clock defrost mode	32914	3840	32950	3072	R/W	Byte	-	0...3	num
dEF	**d91**	Number of daily defrosts	32890	255	32949	48	R/W	Byte	-	0...255	num
dEF	**d92**	1st weekend/holiday day	32914	15	32950	192	R/W	Byte	-	0...7	num
dEF	**d93**	2nd weekend/holiday day	32914	240	32950	768	R/W	Byte	-	0...7	num
dEF	**d94**	Regular defrost interval duration	32914	61440	32950	12288	R/W	Byte	-	1...7	num
dEF	**d1H**	Weekday defrost no. 1 start hour	32972	0	32993	3	R/W	Byte	-	0...24	hours
dEF	**d1n**	Weekday defrost no. 1 start minute	32976	0	32993	12	R/W	Byte	-	0...59	min
dEF	**d2H**	Weekday defrost no. 2 start hour	32980	0	32993	48	R/W	Byte	-	d1H...24	hours
dEF	**d2n**	Weekday defrost no. 2 start minute	32996	0	32993	192	R/W	Byte	-	0...59	min
dEF	**d3H**	Weekday defrost no. 3 start hour	33028	0	32993	768	R/W	Byte	-	d2H...24	hours
dEF	**d3n**	Weekday defrost no. 3 start minute	33029	255	32993	3072	R/W	Byte	-	0...59	min
dEF	**d4H**	Weekday defrost no. 4 start hour	33029	0	32993	12288	R/W	Byte	-	d3H...24	hours
dEF	**d4n**	Weekday defrost no. 4 start minute	33030	255	32993	49152	R/W	Byte	-	0...59	min
dEF	**d5H**	Weekday defrost no. 5 start hour	33030	0	32994	3	R/W	Byte	-	d4H...24	hours
dEF	**d5n**	Weekday defrost no. 5 start minute	33031	255	32994	12	R/W	Byte	-	0...59	min
dEF	**d6H**	Weekday defrost no. 6 start hour	33031	0	32994	48	R/W	Byte	-	d5H...24	hours
dEF	**d6n**	Weekday defrost no. 6 start minute	33032	0	32994	192	R/W	Byte	-	0...59	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
dEF	**F1H**	Weekend/holiday defrost no. 1 start hour	33033	255	32994	768	R/W	Byte	-	0...24	hours
dEF	**F1n**	Weekend/holiday defrost no. 1 start minute	33033	0	32994	3072	R/W	Byte	-	0...59	min
dEF	**F2H**	Weekend/holiday defrost no. 2 start hour	33034	255	32994	12288	R/W	Byte	-	F1H...24	hours
dEF	**F2n**	Weekend/holiday defrost no. 2 start minute	33034	0	32994	49152	R/W	Byte	-	0...59	min
dEF	**F3H**	Weekend/holiday defrost no. 3 start hour	33035	255	32995	3	R/W	Byte	-	F2H...24	hours
dEF	**F3n**	Weekend/holiday defrost no. 3 start minute	33035	0	32995	12	R/W	Byte	-	0...59	min
dEF	**F4H**	Weekend/holiday defrost no. 4 start hour	33036	0	32995	48	R/W	Byte	-	F3H...24	hours
dEF	**F4n**	Weekend/holiday defrost no. 4 start minute	33037	255	32995	192	R/W	Byte	-	0...59	min
dEF	**F5H**	Weekend/holiday defrost no. 5 start hour	33037	0	32995	768	R/W	Byte	-	F4H...24	hours
dEF	**F5n**	Weekend/holiday defrost no. 5 start minute	33038	255	32995	3072	R/W	Byte	-	0...59	min
dEF	**F6H**	Weekend/holiday defrost no. 6 start hour	33038	0	32995	12288	R/W	Byte	-	F5H...24	hours
dEF	**F6n**	Weekend/holiday defrost no. 6 start minute	33039	255	32995	49152	R/W	Byte	-	0...59	min
FAn	**FPt**	FSt parameter mode (absolute or relative)	32968	4096	32933	3	R/W	Byte	-	0/1	flag
FAn	**FSt**	Evaporator fan disabling temperature	32778	0	32933	12	R/W	Word	Y	-67.0...302	°C/°F
FAn	**Fot**	Evaporator fan activation temperature	32838	0	32948	768	R/W	Word	Y	-67.0...302	°C/°F
FAn	**FAd**	Evaporator fan trigger differential	32869	0	32933	48	R/W	Word	-	0.1...25.0	°C/°F
FAn	**Fdt**	Evaporator fan activation delay time after a defrost cycle	32832	0	32947	48	R/W	Byte	-	0...250	min
FAn	**dt**	Dripping time	32870	255	32933	192	R/W	Byte	-	0...250	min
FAn	**dFd**	Evaporator fan cut-out during defrost	32968	8192	32933	768	R/W	Byte	-	0/1	flag
FAn	**FCo**	Evaporator fan status with compressor output Off	32909	15	32932	49152	R/W	Byte	-	0...3	num
FAn	**FdC**	Evaporator fan shutoff delay after compressor deactivation	32870	0	32933	3072	R/W	Byte	-	0...250	min
FAn	**Fon**	Evaporator fan On time in cyclical regulator mode	32871	255	32933	12288	R/W	Byte	-	0...250	min
FAn	**FoF**	Evaporator fan Off time in cyclical regulator mode	32871	0	32933	49152	R/W	Byte	-	0...250	min
FAn	**Fnn**	Evaporator fan ON time in night mode (duty cycle)	32868	0	32932	3072	R/W	Byte	-	0...250	num
FAn	**FnF**	Evaporator fan OFF time in night mode (duty cycle)	32869	255	32932	12288	R/W	Byte	-	0...250	num

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
FAn	**ESF**	Night mode activation (Energy Saving)	32969	512	32951	3072	R/W	Byte	-	0/1	flag
AL	**Att**	Alarm mode (absolute or relative)	32968	32768	32934	12	R/W	Byte	-	0/1	flag
AL	**AFd**	Alarm activation differential	32872	0	32934	48	R/W	Word	-	0.1...25.0	°C/°F
AL	**HAL**	Maximum alarm threshold	32779	0	32934	192	R/W	Word	Y	**LAL**...302	°C/°F
AL	**LAL**	Minimum alarm threshold	32781	0	32934	768	R/W	Word	Y	-67.0...**HAL**	°C/°F
AL	**PAo**	Temperature alarm exclusion time from power-on	32873	255	32934	3072	R/W	Byte	-	0...10	min*10
AL	**dAo**	Exclusion time for temperature alarms after a defrost cycle	32841	0	32934	12288	R/W	Word	-	0...250	min
AL	**oAo**	High and low temperature alarms exclusion time after closing the door	32874	255	32934	49152	R/W	Byte	-	0...10	hours
AL	**tdo**	Door open alarm exclusion time	32875	255	32935	49152	R/W	Byte	-	0...250	min
AL	**tAo**	Temperature alarm signaling delay time	32874	0	32935	3	R/W	Byte	-	0...250	min
AL	**dAt**	Defrost ended due to timeout alarm signaling	32782	0	32935	12	R/W	Byte	-	0/1	flag
AL	**EAL**	Regulators inhibited by external alarm	32915	3840	32935	48	R/W	Byte	-	0/1/2	num
AL	**AoP**	Alarm output polarity	32969	1	32935	768	R/W	Byte	-	0/1	flag
AL	**SA3**	Alarm setpoint for probe 3	32831	0	32947	12	R/W	Word	Y	-67.0...302	°C/°F
AL	**dA3**	Probe 3 alarm tripping differential	32833	0	32947	192	R/W	Word	-	0.1...30.0	°C/°F
AL	**rFt**	Refrigerant level alarm bypass	33051	0	32985	12288	R/W	Byte	-	0...250	min
Lit	**ESA**	AUX status during Energy Saving	32925	768	32959	3072	R/W	Byte	-	0/1/2	num
Lit	**tA1**	Bring Aux/light switch-on before night/day transition forward	32866	255	32956	12288	R/W	Byte	-	0...250	min
Lit	**tA2**	Delay Aux/light switch-off after night/day transition	32866	0	32956	49152	R/W	Byte	-	0...250	min
dOr	**dod**	Enable utility shutoff upon door switch activation	32909	3840	32935	12288	R/W	Byte	-	0...3	num
dOr	**dAd**	D.I. activation indication delay time 1/2	32882	255	32940	3072	R/W	Byte	-	0...250	min
dOr	**dCo**	Compressor activation delay from acknowledgment	32840	0	32931	3072	R/W	Byte	-	0...250	min
dOr	**tn1**	Energy Saving mode activation delay	32848	0	32953	12	R/W	Byte	-	0...250	min
PrE	**PEn**	Number of errors permitted per minimum/maximum pressure switch input	32894	255	32946	12288	R/W	Byte	-	0...15	num
PrE	**PEi**	Minimum/maximum pressure switch error calculation interval	32894	0	32946	49152	R/W	Byte	-	1...99	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
PrE	**PEt**	Compressor activation delay after pressure switch deactivation	32895	255	32947	3	R/W	Byte	-	0...255	min
EnS	**SPn**	Night mode setpoint	32854	0	32953	49152	R/W	Word	Y	-67.0...302	°C/°F
EnS	**dFn**	Night mode offset	32855	0	32954	3	R/W	Word	-	0.1...30.0	°C/°F
EnS	**oSP**	Offset on setpoint	32783	0	32936	49152	R/W	Word	Y	-30.0...30.0	°C/°F
EnS	**odF**	Trigger differential correction	32785	0	32937	48	R/W	Word	-	0.1...30.0	°C/°F
EnS	**ESt**	Type of action for the Energy Saving function	32918	3840	32958	49152	R/W	Byte	-	0...5	num
EnS	**dnt**	Night mode duration	32877	255	32937	3	R/W	Byte	-	0...24	hours
EnS	**Cdt**	Door closing time	32877	0	32937	12	R/W	Byte	-	0...250	min*10
PLd	**PdC**	Pull-Down mode	32915	61440	32963	3	R/W	Byte	-	0/1/2	num
PLd	**tPd**	Fast cooling mode duration	32836	0	32962	768	R/W	Byte	-	0...250	min
PLd	**SPF**	Fast cooling setpoint	32845	0	32952	12288	R/W	Word	Y	-67.0...302	°C/°F
PLd	**dFF**	Fast cooling offset	32842	0	32951	49152	R/W	Word	-	0.1...30.0	°C/°F
PLd	**Pdo**	Step value for fast cooling setpoint	32843	0	32952	768	R/W	Word	-	0.1...30.0	°C/°F
PLd	**Pdn**	Step number for fast cooling setpoint	32916	3840	32957	49152	R/W	Byte	-	1...10	num
Add	**Adr**	Modbus protocol controller address	33048	0	32984	768	R/W	Byte	-	0...247	num
Add	**bAU**	Baudrate selection	33051	255	32984	3072	R/W	Byte	-	0/1/2	num
Add	**PtY**	MODBUS parity bit	33049	255	32984	12288	R/W	Byte	-	0/1/2	num
diS	**dro**	Select °C / °F	32969	8	32937	192	R/W	Byte	-	0/1	flag
diS	**CA1**	Analog input 1 calibration	32786	0	32937	768	R/W	Word	Y	-30.0...30.0	°C/°F
diS	**CA2**	Analog input 2 calibration	32787	0	32937	3072	R/W	Word	Y	-30.0...30.0	°C/°F
diS	**CA3**	Analog input 3 calibration	32789	0	32937	12288	R/W	Word	Y	-30.0...30.0	°C/°F
diS	**LoC**	Disable keypad	32969	16	32938	48	R/W	Byte	-	0/1	flag
diS	**ddd**	Select main display value	32909	61440	32938	192	R/W	Byte	-	0...3	num
diS	**ddE**	Display on eco device	32918	240	32958	12288	R/W	Byte	-	0...4	num
diS	**ddL**	Display lock mode during a defrost	32910	15	32938	768	R/W	Byte	-	0/1/2	num
diS	**Ldd**	Display lock timeout from end of defrost	32878	255	32938	3072	R/W	Byte	-	0...250	min
diS	**ndt**	Display with decimal point	32969	32	32938	12288	R/W	Byte	-	0/1	flag
diS	**FiS**	Select display filter	33053	255	32990	3	R/W	Byte	-	0/1/2	num
diS	**tAu**	Display filter time constant	33053		32990	12	R/W	Byte	-	0...250	min
diS	**Fit**	Display filter mode	33054	255	32990	48	R/W	Byte	-	0/1	flag
diS	**PS1**	Password 1 value	32879		32939	192	R/W	Byte	-	0...250	num
diS	**PS2**	Password 2 value	32880		32939	768	R/W	Byte	-	0...250	num
VSC	**CEr**	Probe error capacity	32795	0	32942	768	R/W	Byte	-	0...100	%
VSC	**PdS**	Pull Down forced startup differential	32797	0	32942	3072	R/W	Word	Y	-50.0...50.0	K/°R
VSC	**PUS**	Pull Up forced startup differential	32798	0	32942	12288	R/W	Word	Y	-50.0...50.0	K/°R
VSC	**PUd**	Temperature outside range timeout	32799	0	32942	49152	R/W	Byte	-	0...1000	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
VSC	**PdE**	Pull Down end differential	32801	0	32943	3	R/W	Word	Y	-50.0...50.0	K/°R
VSC	**PUE**	Pull Up end differential	32802	0	32943	12	R/W	Word	Y	-50.0...50.0	K/°R
VSC	**Pdt**	Optimized Pull Down timeout	32803	0	32943	48	R/W	Byte	-	0...1000	min
VSC	**Pdd**	Optimized Pull Down capacity	32805	0	32943	192	R/W	Byte	-	0...100	%
VSC	**CPd**	Capacity after Pull Down day	32806	0	32943	768	R/W	Byte	-	0...100	%
VSC	**CPn**	Capacity after Pull Down night	32807	0	32943	3072	R/W	Byte	-	0...100	%
VSC	**CPb**	Compressor PID proportional band	32810	0	32943	49152	R/W	Word	Y	0.1...3200	K/°R
VSC	**Cti**	Compressor PID integral time	32811	0	32944	768	R/W	Word	-	0...65535	s
VSC	**Ctd**	Compressor PID derivative time	32813	0	32944	3072	R/W	Word	-	0...65535	s
VSC	**CSd**	Compressor startup duration	32814	0	32944	12288	R/W	Word	-	0...900	s
VSC	**CSC**	Capacity during compressor startup	32815	0	32944	49152	R/W	Word	-	44.4...100	%
VSC	**CAU**	Select PID automatic or manual mode	32882	0	32945	12	R/W	Byte	-	0/1	flag
VSC	**CdU**	PID duty cycle in manual mode	32818	0	32945	48	R/W	Byte	-	0...100	num
VSC	**F_1**	Maximum frequency	32827	0	32946	192	R/W	Byte	-	0...250	Hz
VSC	**F_2**	Minimum frequency	32829	0	32946	768	R/W	Byte	-	0...250	Hz
CnF	**H08**	Stand-by operating mode	32925	3	32939	12288	R/W	Byte	-	0/1/2	num
CnF	**H11**	Configurability of digital input 1	32881	255	32939	49152	R/W	Word	Y	-13...13	num
CnF	**H12**	Configurability of digital input 2	32881	0	32940	768	R/W	Word	Y	-12...12	num
CnF	**H21**	Configurability of digital output Out1/OC1	32884	0	32940	12288	R/W	Byte	-	0...13	num
CnF	**H22**	Configurability of digital output Out2	32885	255	32940	49152	R/W	Byte	-	0...12	num
CnF	**H23**	Configurability of digital output Out3	32885	0	32941	3	R/W	Byte	-	0...12	num
CnF	**H24**	Configurability of digital output Out4	32886	255	32941	12	R/W	Byte	-	0...12	num
CnF	**H25**	Configurability of digital output 5 (buzzer)	32897	255	32931	12288	R/W	Byte	-	0/1	num
CnF	**H31**	Key configuration	32910	61440	32941	48	R/W	Byte	-	0...10	num
CnF	**H32**	Key configuration	32911	15	32941	192	R/W	Byte	-	0...10	num
CnF	**H33**	Key configuration	32911	240	32941	768	R/W	Byte	-	0...10	num
CnF	**H34**	Key configuration	32911	3840	32941	3072	R/W	Byte	-	0...10	num
CnF	**H35**	Key configuration	32911	61440	32941	12288	R/W	Byte	-	0...10	num
CnF	**H42**	Configuration of analog input Pb2	32912	61440	32942	3	R/W	Byte	-	0/1	flag
CnF	**H43**	Configuration of analog input Pb3	32913	15	32942	12	R/W	Byte	-	0/1/2	num
CnF	**H45**	Defrost input mode for applications with dual evaporator	32915	15	32950	49152	R/W	Byte	-	0...3	num

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
CnF	**H60**	Parameter vector selector	33043	0	32987	192	R	Byte	-	0...3	num
CnF	**tAb**	Map code	32997	0	32985	12	R	Word	-	0...999	num
CnF	**CuS**	Customer model reference	33689	0	32990	192	RW	Word	-	0...999	num
FPr	**UL**	Visibility of the function transferring the programming parameters from the controller to the UNICARD	-	-	32985	48	R/W	2 bit	-	0...3	num
FPr	**Fr**	UNICARD formatting function visibility	-	-	32985	768	R/W	2 bit	-	0...3	num
FnC	**oSP**	Reduced set activation	-	-	32988	768	R/W	2 bit	-	0...3	num
FnC	**dEF**	Activate defrost	-	-	32987	768	R/W	2 bit	-	0...3	num
FnC	**AUX**	AUX output activation / deactivation	-	-	32987	49152	R/W	2 bit	-	0...3	num
FnC	**rAP**	Pressure switch alarm reset visibility	-	-	32985	3072	R/W	2 bit	-	0...3	num
FnC	**tUn**	Autotuning activation	-	-	32988	3072	R/W	2 bit	-	0...3	num
FnC	**nPL**	Preliminary Autotuning procedure activation	-	-	32988	12288	R/W	2 bit	-	0...3	num
nAd	**E10**	Event 1 profile	33040	0	32985	49152	R/W	Byte	-	0...11	num
nAd	**E11**	Event 1 start hour	33041	0	32986	3	R/W	Byte	-	0...23	hours
nAd	**E12**	Event 1 start minute	33042	255	32986	12	R/W	Byte	-	0...59	min
nAd	**E13**	Event 1 end hour	33042	0	32986	48	R/W	Byte	-	0...23	hours
nAd	**E14**	Event 1 end minute	33043	255	32986	192	R/W	Byte	-	0...59	min
nAd	**E15**	Enable functions during event 1	33041	255	32986	768	R/W	Byte	-	0...5	num
nAd	**E20**	Event 2 profile	33044	0	32986	3072	R/W	Byte	-	0...11	num
nAd	**E21**	Event 2 start hour	33045	0	32986	12288	R/W	Byte	-	0...23	hours
nAd	**E22**	Event 2 start minute	33046	255	32986	49152	R/W	Byte	-	0...59	min
nAd	**E23**	Event 2 end hour	33046	0	32987	3	R/W	Byte	-	0...23	hours
nAd	**E24**	Event 2 end minute	33047	255	32987	12	R/W	Byte	-	0...59	min
nAd	**E25**	Enable functions during event 2	33045	255	32987	48	R/W	Byte	-	0...5	num
CPr	**tCP**	Time temperature remains below the cool protection setpoint	32844	0	32952	3072	R/W	Byte	-	0...250	min
CPr	**SCP**	Cool protection setpoint	32846	0	32952	49152	R/W	Word	Y	-67.0...302	°C/°F
CPr	**dCP**	Cool protection differential	32847	0	32953	3	R/W	Word	-	0.1...30.0	°C/°F
dEC	**dCA**	Enable deep cooling	32925	3072	32959	12288	R/W	Byte	-	0/1/2	num
dEC	**dCS**	Deep cooling setpoint	32834	0	32947	768	R/W	Word	Y	-67.0...302	°C/°F
dEC	**tdC**	Deep cooling duration	32886	0	32948	12288	R/W	Byte	-	0...250	min
dEC	**dCC**	Defrost delay after deep cooling	32883	0	32948	3072	R/W	Byte	-	0...250	min
dEC	**Sid**	Deep cooling start threshold	32857	0	32962	48	R/W	Word	Y	-67.0...302	°C/°F
dEC	**toS**	Time above the threshold for deep cooling start	32867	255	32957	3	R/W	Byte	-	0...250	min
SL	**SLP**	Daily or weekly mode	32969	8192	32961	192	R/W	Byte	-	0/1	flag

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
SL	**SL1**	Self-Learning duration in daily mode	32865	255	32956	768	R/W	Byte	-	1...30	min
SL	**SL2**	Self-Learning duration in weekly mode	32865	0	32956	3072	R/W	Byte	-	1...30	min
SL	**SLr**	Enable continuous self-learning	32969	16384	32961	768	R/W	Byte	-	0/1	flag
SL	**SLB**	Black-out period duration for automatic self-learning activation	32852	0	32953	3072	R/W	Byte	-	0...250	days
SL	**SLE**	Enable/Disable self-learning	32969	32768	32961	3072	R/W	Byte	-	0/1	flag
Application 1 parameters											
V1	**V1-SEt**	Regulation setpoint	33073	0	33235	49152	R/W	Word	Y	**LSE**...**HSE**	°C/°F
V1	**V1-diF**	Setpoint differential	33074	0	33232	768	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-LSE**	Minimum setpoint value that can be set	33075	0	33232	3072	R/W	Word	Y	-67.0...**HSE**	°C/°F
V1	**V1-HSE**	Maximum setpoint value that can be set	33077	0	33232	12288	R/W	Word	Y	**LSE**...302	°C/°F
V1	**V1-HC**	Operating mode (Heating/Cooling)	33272	256	33232	49152	R/W	Byte	-	0/1	flag
V1	**V1-ont**	Compressor output ON time if regulation probe is faulty	33072	0	33233	3	R/W	Byte	-	0...250	min
V1	**V1-oFt**	Compressor output OFF time if regulation probe is faulty	33076	0	33233	12	R/W	Byte	-	0...250	min
V1	**V1-don**	Compressor output activation delay from call	33080	0	33233	48	R/W	Byte	-	0...250	s
V1	**V1-doF**	Compressor output activation delay from switch-off	33084	0	33233	192	R/W	Byte	-	0...250	min
V1	**V1-dbi**	Delay between two consecutive compressor output power-ons	33088	0	33233	768	R/W	Byte	-	0...250	min
V1	**V1-Cit**	Minimum compressor output activation time	33104	0	33234	3	R/W	Byte	-	0...250	min
V1	**V1-CAt**	Maximum compressor output activation time	33108	0	33234	12	R/W	Byte	-	0...250	min
V1	**V1-odo**	Output activation delay at startup	33092	0	33233	3072	R/W	Byte	-	0...250	min
V1	**V1-dFA**	Condenser fan and compressor activation delay from the call	33199	0	33234	3072	R/W	Byte	-	0...250	s
V1	**V1-dty**	Type of defrost	33212	61440	33234	768	R/W	Byte	-	0/1/2	num
V1	**V1-doH**	Defrost cycle activation delay from the call	33124	0	33235	3	R/W	Byte	-	0...250	min
V1	**V1-dEt**	Defrost timeout	33120	0	33234	12288	R/W	Byte	-	1...250	min
V1	**V1-dS1**	Evaporator 1 defrost end temperature	33078	0	33235	12	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dS2**	Evaporator 2 defrost end temperature	33079	0	33235	48	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dPo**	Defrost activation request at power-on	33272	1024	33235	768	R/W	Byte	-	0/1	flag
V1	**V1-dMr**	Enable defrost timer reset with manual defrost	33273	2048	33265	12	R/W	Byte	-	0/1	flag

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-d00**	Cumulative time for defrost activation	33193	0	33253	12	R/W	Byte	-	0...250	hours
V1	**V1-d01**	Parameter d00 unit of measure	33229	12	33255	12	R/W	Byte	-	0/1/2	num
V1	**V1-dit**	Device time for defrost activation	33116	0	33253	49152	R/W	Byte	-	0...250	hours
V1	**V1-d11**	Parameter dit unit of measure	33229	48	33255	48	R/W	Byte	-	0/1/2	num
V1	**V1-d20**	Enable defrost at compressor stop	33273	256	33255	768	R/W	Byte	-	0/1	flag
V1	**V1-d40**	Select defrost probe 1	33217	240	33254	3	R/W	Byte	-	0/1	flag
V1	**V1-d41**	Temperature threshold for starting defrost	33141	0	33251	49152	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-d42**	Time the evaporator temperature must remain below the threshold	33143	0	33251	12288	R/W	Byte	-	0...250	min
V1	**V1-d43**	Time count mode for temperature below threshold	33217	3840	33254	12	R/W	Byte	-	0...3	num
V1	**V1-d44**	Threshold management mode	33217	61440	33254	48	R/W	Byte	-	0/1	flag
V1	**V1-d50**	Defrost probe Pb2 selection	33220	61440	33262	3	R/W	Byte	-	0/1	flag
V1	**V1-d51**	Defrost probe Pb1 selection	33221	15	33262	12	R/W	Byte	-	0/1	flag
V1	**V1-d52**	Temperature threshold for starting defrost	33153	0	33257	48	R/W	Byte	-	0.0...302	°C/°F
V1	**V1-d53**	Time the temperature differential must remain above the threshold	33157	0	33257	12288	R/W	Byte	-	0...999	min
V1	**V1-d54**	Time count mode for temperature differential above threshold	33221	240	33262	48	R/W	Byte	-	0...3	num
V1	**V1-d55**	Threshold management mode	33221	3840	33262	192	R/W	Byte	-	0/1	flag
V1	**V1-d90**	Clock defrost mode	33218	3840	33254	3072	R/W	Byte	-	0...3	num
V1	**V1-d91**	Number of daily defrosts	33194	255	33253	48	R/W	Byte	-	0...255	num
V1	**V1-d92**	1st weekend/holiday day	33218	15	33254	192	R/W	Byte	-	0...7	num
V1	**V1-d93**	2nd weekend/holiday day	33218	240	33254	768	R/W	Byte	-	0...7	num
V1	**V1-d94**	Regular defrost interval duration	33218	61440	33254	12288	R/W	Byte	-	1...7	num
V1	**V1-FPt**	FSt parameter mode (absolute or relative)	33272	4096	33237	3	R/W	Byte	-	0/1	flag
V1	**V1-FSt**	Evaporator fan disabling temperature	33082	0	33237	12	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-Fot**	Evaporator fan activation temperature	33142	0	33252	768	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-FAd**	Evaporator fan trigger differential	33173	0	33237	48	R/W	Word	-	0.1...25.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-Fdt**	Evaporator fan activation delay time after a defrost cycle	33136	0	33251	48	R/W	Byte	-	0...250	min
V1	**V1-dt**	Dripping time	33174	255	33237	192	R/W	Byte	-	0...250	min
V1	**V1-dFd**	Evaporator fan cut-out during defrost	33272	8192	33237	768	R/W	Byte	-	0/1	flag
V1	**V1-FCo**	Evaporator fan status with compressor output Off	33213	15	33236	49152	R/W	Byte	-	0...3	num
V1	**V1-FdC**	Evaporator fan shutoff delay after compressor deactivation	33174	0	33237	3072	R/W	Byte	-	0...250	min
V1	**V1-Fon**	Evaporator fan On time in cyclical regulator mode	33175	255	33237	12288	R/W	Byte	-	0...250	min
V1	**V1-FoF**	Evaporator fan Off time in cyclical regulator mode	33175	0	33237	49152	R/W	Byte	-	0...250	min
V1	**V1-Fnn**	Evaporator fan ON time in night mode (duty cycle)	33172	0	33236	3072	R/W	Byte	-	0...250	num
V1	**V1-FnF**	Evaporator fan OFF time in night mode (duty cycle)	33173	255	33236	12288	R/W	Byte	-	0...250	num
V1	**V1-ESF**	Night mode activation (Energy Saving)	33273	512	33255	3072	R/W	Byte	-	0/1	flag
V1	**V1-Att**	Alarm mode (absolute or relative)	33272	32768	33238	12	R/W	Byte	-	0/1	flag
V1	**V1-AFd**	Alarm activation differential	33176	0	33238	48	R/W	Word	-	0.1...25.0	°C/°F
V1	**V1-HAL**	Maximum alarm threshold	33083	0	33238	192	R/W	Word	Y	**LAL**...302	°C/°F
V1	**V1-LAL**	Minimum alarm threshold	33085	0	33238	768	R/W	Word	Y	-67.0...**HAL**	°C/°F
V1	**V1-PAo**	Temperature alarm exclusion time from power-on	33177	255	33238	3072	R/W	Byte	-	0...10	min*10
V1	**V1-dAo**	Exclusion time for temperature alarms after a defrost cycle	33145	0	33238	12288	R/W	Word	-	0...250	min
V1	**V1-oAo**	High and low temperature alarms exclusion time after closing the door	33178	255	33238	49152	R/W	Byte	-	0...10	hours
V1	**V1-tdo**	Door open alarm exclusion time	33179	255	33239	49152	R/W	Byte	-	0...250	min
V1	**V1-tAo**	Temperature alarm signaling delay time	33178	0	33239	3	R/W	Byte	-	0...250	min
V1	**V1-dAt**	Defrost ended due to timeout alarm signaling	33086	0	33239	12	R/W	Byte	-	0/1	flag
V1	**V1-EAL**	Regulators inhibited by external alarm	33219	3840	33239	48	R/W	Byte	-	0/1/2	num
V1	**V1-AoP**	Alarm output polarity	33273	1	33239	768	R/W	Byte	-	0/1	flag
V1	**V1-SA3**	Alarm setpoint for probe 3	33135	0	33251	12	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dA3**	Probe 3 alarm tripping differential	33137	0	33251	192	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-ESA**	AUX status during Energy Saving	33229	768	33263	3072	R/W	Byte	-	0/1/2	num

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-tA1**	Bring Aux/light switch-on before night/day transition forward	33170	255	33260	12288	R/W	Byte	-	0...250	min
V1	**V1-tA2**	Delay Aux/light switch-off after night/day transition	33170	0	33260	49152	R/W	Byte	-	0...250	min
V1	**V1-dod**	Enable utility shutoff upon door switch activation	33213	3840	33239	12288	R/W	Byte	-	0...3	num
V1	**V1-dAd**	D.I. activation indication delay time 1/2	33186	255	33244	3072	R/W	Byte	-	0...250	min
V1	**V1-dCo**	Compressor activation delay from acknowledgment	33144	0	33235	3072	R/W	Byte	-	0...250	min
V1	**V1-tn1**	Energy Saving mode activation delay	33152	0	33257	12	R/W	Byte	-	0...250	min
V1	**V1-PEn**	Number of errors permitted per minimum/maximum pressure switch input	33198	255	33250	12288	R/W	Byte	-	0...15	num
V1	**V1-PEi**	Minimum/maximum pressure switch error calculation interval	33198	0	33250	49152	R/W	Byte	-	1...99	min
V1	**V1-PEt**	Compressor activation delay after pressure switch deactivation	33199	255	33251	3	R/W	Byte	-	0...255	min
V1	**V1-SPn**	Night mode setpoint	33158	0	33257	49152	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dFn**	Night mode offset	33159	0	33258	3	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-oSP**	Offset on setpoint	33087	0	33240	49152	R/W	Word	Y	-30.0...30.0	°C/°F
V1	**V1-odF**	Trigger differential correction	33089	0	33241	48	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-ESt**	Type of action for the Energy Saving function	33222	3840	33262	49152	R/W	Byte	-	0...5	num
V1	**V1-dnt**	Night mode duration	33181	255	33241	3	R/W	Byte	-	0...24	hours
V1	**V1-Cdt**	Door closing time	33181	0	33241	12	R/W	Byte	-	0...250	min*10
V1	**V1-PdC**	Pull-Down mode	33219	61440	33267	3	R/W	Byte	-	0/1/2	num
V1	**V1-tPd**	Fast cooling mode duration	33140	0	33266	768	R/W	Byte	-	0...250	min
V1	**V1-SPF**	Fast cooling setpoint	33149	0	33256	12288	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dFF**	Fast cooling offset	33146	0	33255	49152	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-Pdo**	Step value for fast cooling setpoint	33147	0	33256	768	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-Pdn**	Step number for fast cooling setpoint	33220	3840	33261	49152	R/W	Byte	-	1...10	num
V1	**V1-dro**	Select °C / °F	33273	8	33241	192	R/W	Byte	-	0/1	flag
V1	**V1-CA1**	Probe Pb1 calibration	33090	0	33241	768	R/W	Word	Y	-30.0...30.0	°C/°F
V1	**V1-CA2**	Probe Pb2 calibration	33091	0	33241	3072	R/W	Word	Y	-30.0...30.0	°C/°F
V1	**V1-CA3**	Probe Pb3 calibration	33093	0	33241	12288	R/W	Word	Y	-30.0...30.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-LoC**	Enable keypad lock	33273	16	33242	48	R/W	Byte	-	0/1	flag
V1	**V1-ddd**	Select main display value	33213	61440	33242	192	R/W	Byte	-	0...3	num
V1	**V1-ddE**	Display on eco device	33222	240	33262	12288	R/W	Byte	-	0...4	num
V1	**V1-ddL**	Inhibit resources at the end of defrost	33214	15	33242	768	R/W	Byte	-	0/1/2	num
V1	**V1-Ldd**	Display lock timeout from end of defrost	33182	255	33242	3072	R/W	Byte	-	0...250	min
V1	**V1-ndt**	Display with decimal point	33273	32	33242	12288	R/W	Byte	-	0/1	flag
V1	**V1-PS1**	Password 1 value	33183	0	33243	192	R/W	Byte	-	0...250	num
V1	**V1-PS2**	Password 2 value	33184	0	33243	768	R/W	Byte	-	0...250	num
V1	**V1-CEr**	Probe error capacity	33099	0	33246	768	R/W	Byte	-	0...100	%
V1	**V1-PdS**	Pull Down forced startup differential	33101	0	33246	3072	R/W	Word	Y	-50.0...50.0	K/°R
V1	**V1-PUS**	Pull Up forced startup differential	33102	0	33246	12288	R/W	Word	Y	-50.0...50.0	K/°R
V1	**V1-PUd**	Temperature outside range timeout	33103	0	33246	49152	R/W	Byte	-	0...1000	min
V1	**V1-PdE**	Pull Down end differential	33105	0	33247	3	R/W	Word	Y	-50.0...50.0	K/°R
V1	**V1-PUE**	Pull Up end differential	33106	0	33247	12	R/W	Word	Y	-50.0...50.0	K/°R
V1	**V1-Pdt**	Optimized Pull Down timeout	33107	0	33247	48	R/W	Byte	-	0...1000	min
V1	**V1-Pdd**	Optimized Pull Down capacity	33109	0	33247	192	R/W	Byte	-	0...100	%
V1	**V1-CPd**	Capacity after Pull Down day	33110	0	33247	768	R/W	Byte	-	0...100	%
V1	**V1-CPn**	Capacity after Pull Down night	33111	0	33247	3072	R/W	Byte	-	0...100	%
V1	**V1-CPb**	Compressor PID proportional band	33114	0	33247	49152	R/W	Word	Y	0.1...3200	K/°R
V1	**V1-Cti**	Compressor PID integral time	33115	0	33248	768	R/W	Word	-	0...65535	s
V1	**V1-Ctd**	Compressor PID derivative time	33117	0	33248	3072	R/W	Word	-	0...65535	s
V1	**V1-CSd**	Compressor startup duration	33118	0	33248	12288	R/W	Word	-	0...900	s
V1	**V1-CSC**	Capacity during compressor startup	33119	0	33248	49152	R/W	Word	-	44.4...100	%
V1	**V1-CAU**	Select PID automatic or manual mode	33186	0	33249	12	R/W	Byte	-	0/1	flag
V1	**V1-CdU**	PID duty cycle in manual mode	33122	0	33249	48	R/W	Byte	-	0...100	num
V1	**V1-F_1**	Maximum frequency	33131	0	33250	192	R/W	Byte	-	0...250	Hz
V1	**V1-F_2**	Minimum frequency	33133	0	33250	768	R/W	Byte	-	0...250	Hz

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-H08**	Stand-by operating mode	33229	3	33243	12288	R/W	Byte	-	0/1/2	num
V1	**V1-H11**	Configurability of digital input 1	33185	255	33243	49152	R/W	Word	Y	-13...13	num
V1	**V1-H12**	Configurability of digital input 2	33185	0	33244	768	R/W	Word	Y	-12...12	num
V1	**V1-H21**	Configurability of digital output Out1/OC1	33188	0	33244	12288	R/W	Byte	-	0...13	num
V1	**V1-H22**	Configurability of digital output Out2	33189	255	33244	49152	R/W	Byte	-	0...12	num
V1	**V1-H23**	Configurability of digital output Out3	33189	0	33245	3	R/W	Byte	-	0...12	num
V1	**V1-H24**	Configurability of digital output Out4	33190	255	33245	12	R/W	Byte	-	0...12	num
V1	**V1-H25**	Configurability of digital output 5 (buzzer)	33201	255	33235	12288	R/W	Byte	-	0/1	num
V1	**V1-H31**	Key configuration	33214	61440	33245	48	R/W	Byte	-	0...10	num
V1	**V1-H32**	Key configuration	33215	15	33245	192	R/W	Byte	-	0...10	num
V1	**V1-H33**	Key configuration	33215	240	33245	768	R/W	Byte	-	0...10	num
V1	**V1-H34**	Key configuration	33215	3840	33245	3072	R/W	Byte	-	0...10	num
V1	**V1-H35**	Key configuration	33215	61440	33245	12288	R/W	Byte	-	0...10	num
V1	**V1-H42**	Configuration of analog input Pb2	33216	61440	33246	3	R/W	Byte	-	0/1	flag
V1	**V1-H43**	Configuration of analog input Pb3	33217	15	33246	12	R/W	Byte	-	0/1/2	num
V1	**V1-H45**	Defrost input mode for applications with dual evaporator	33219	15	33254	49152	R/W	Byte	-	0...3	num
V1	**V1-tCP**	Time temperature remains below the cool protection setpoint	33148	0	33256	3072	R/W	Byte	-	0...250	min
V1	**V1-SCP**	Cool protection setpoint	33150	0	33256	49152	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-dCP**	Cool protection differential	33151	0	33257	3	R/W	Word	-	0.1...30.0	°C/°F
V1	**V1-dCA**	Enable deep cooling	33229	3072	33263	12288	R/W	Byte	-	0/1/2	num
V1	**V1-dCS**	Deep cooling setpoint	33138	0	33251	768	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-tdC**	Deep cooling duration	33190	0	33252	12288	R/W	Byte	-	0...250	min
V1	**V1-dCC**	Defrost delay after deep cooling	33187	0	33252	3072	R/W	Byte	-	0...250	min
V1	**V1-Sid**	Deep cooling start threshold	33161	0	33266	48	R/W	Word	Y	-67.0...302	°C/°F
V1	**V1-toS**	Time above the threshold for deep cooling start	33171	255	33261	3	R/W	Byte	-	0...250	min
V1	**V1-SLP**	Daily or weekly mode	33273	8192	33265	192	R/W	Byte	-	0/1	flag
V1	**V1-SL1**	Self-Learning duration in daily mode	33169	255	33260	768	R/W	Byte	-	1...30	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V1	**V1-SL2**	Self-Learning duration in weekly mode	33169	0	33260	3072	R/W	Byte	-	1...30	min
V1	**V1-SLr**	Enable continuous self-learning	33273	16384	33265	768	R/W	Byte	-	0/1	flag
V1	**V1-SLB**	Black-out period duration for automatic self-learning activation	33156	0	33257	3072	R/W	Byte	-	0...250	days
V1	**V1-SLE**	Enable/Disable self-learning	33273	32768	33265	3072	R/W	Byte	-	0/1	flag
Application 2 parameters											
V2	**V2-SEt**	Regulation setpoint	33281	0	33443	49152	R/W	Word	Y	**LSE**...**HSE**	°C/°F
V2	**V2-diF**	Setpoint differential	33282	0	33440	768	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-LSE**	Minimum setpoint value that can be set	33283	0	33440	3072	R/W	Word	Y	-67.0...**HSE**	°C/°F
V2	**V2-HSE**	Maximum setpoint value that can be set	33285	0	33440	12288	R/W	Word	Y	**LSE**...302	°C/°F
V2	**V2-HC**	Operating mode (Heating/Cooling)	33480	256	33440	49152	R/W	Byte	-	0/1	flag
V2	**V2-ont**	Compressor output ON time if regulation probe is faulty	33280	0	33441	3	R/W	Byte	-	0...250	min
V2	**V2-oFt**	Compressor output OFF time if regulation probe is faulty	33284	0	33441	12	R/W	Byte	-	0...250	min
V2	**V2-don**	Compressor output activation delay from call	33288	0	33441	48	R/W	Byte	-	0...250	s
V2	**V2-doF**	Compressor output activation delay from switch-off	33292	0	33441	192	R/W	Byte	-	0...250	min
V2	**V2-dbi**	Delay between two consecutive compressor output power-ons	33296	0	33441	768	R/W	Byte	-	0...250	min
V2	**V2-Cit**	Minimum compressor output activation time	33312	0	33442	3	R/W	Byte	-	0...250	min
V2	**V2-CAt**	Maximum compressor output activation time	33316	0	33442	12	R/W	Byte	-	0...250	min
V2	**V2-odo**	Output activation delay at startup	33300	0	33441	3072	R/W	Byte	-	0...250	min
V2	**V2-dFA**	Condenser fan and compressor activation delay from the call	33407	0	33442	3072	R/W	Byte	-	0...250	s
V2	**V2-dty**	Type of defrost	33420	61440	33442	768	R/W	Byte	-	0/1/2	num
V2	**V2-doH**	Defrost cycle activation delay from the call	33332	0	33443	3	R/W	Byte	-	0...250	min
V2	**V2-dEt**	Defrost timeout	33328	0	33442	12288	R/W	Byte	-	1...250	min
V2	**V2-dS1**	Evaporator 1 defrost end temperature	33286	0	33443	12	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dS2**	Evaporator 2 defrost end temperature	33287	0	33443	48	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dPo**	Defrost activation request at power-on	33480	1024	33443	768	R/W	Byte	-	0/1	flag
V2	**V2-dMr**	Enable defrost timer reset with manual defrost	33481	2048	33473	12	R/W	Byte	-	0/1	flag
V2	**V2-d00**	Cumulative time for defrost activation	33401	0	33461	12	R/W	Byte	-	0...250	hours

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-d01**	Parameter d00 unit of measure	33437	12	33463	12	R/W	Byte	-	0/1/2	num
V2	**V2-dit**	Device time for defrost activation	33324	0	33461	49152	R/W	Byte	-	0...250	hours
V2	**V2-d11**	Parameter dit unit of measure	33437	48	33463	48	R/W	Byte	-	0/1/2	num
V2	**V2-d20**	Enable defrost at compressor stop	33481	256	33463	768	R/W	Byte	-	0/1	flag
V2	**V2-d40**	Select defrost probe 1	33425	240	33462	3	R/W	Byte	-	0/1	flag
V2	**V2-d41**	Temperature threshold for starting defrost	33349	0	33459	49152	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-d42**	Time the evaporator temperature must remain below the threshold	33351	0	33459	12288	R/W	Byte	-	0...250	min
V2	**V2-d43**	Time count mode for temperature below threshold	33425	3840	33462	12	R/W	Byte	-	0...3	num
V2	**V2-d44**	Threshold management mode	33425	61440	33462	48	R/W	Byte	-	0/1	flag
V2	**V2-d50**	Defrost probe Pb2 selection	33428	61440	33470	3	R/W	Byte	-	0/1	flag
V2	**V2-d51**	Defrost probe Pb1 selection	33429	15	33470	12	R/W	Byte	-	0/1	flag
V2	**V2-d52**	Temperature threshold for starting defrost	33361	0	33465	48	R/W	Byte	-	0.0...302	°C/°F
V2	**V2-d53**	Time the temperature differential must remain above the threshold	33365	0	33465	12288	R/W	Byte	-	0...999	min
V2	**V2-d54**	Time count mode for temperature differential above threshold	33429	240	33470	48	R/W	Byte	-	0...3	num
V2	**V2-d55**	Threshold management mode	33429	3840	33470	192	R/W	Byte	-	0/1	flag
V2	**V2-d90**	Clock defrost mode	33426	3840	33462	3072	R/W	Byte	-	0...3	num
V2	**V2-d91**	Number of daily defrosts	33402	255	33461	48	R/W	Byte	-	0...255	num
V2	**V2-d92**	1st weekend/holiday day	33426	15	33462	192	R/W	Byte	-	0...7	num
V2	**V2-d93**	2nd weekend/holiday day	33426	240	33462	768	R/W	Byte	-	0...7	num
V2	**V2-d94**	Regular defrost interval duration	33426	61440	33462	12288	R/W	Byte	-	1...7	num
V2	**V2-FPt**	FSt parameter mode (absolute or relative)	33480	4096	33445	3	R/W	Byte	-	0/1	flag
V2	**V2-FSt**	Evaporator fan disabling temperature	33290	0	33445	12	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-Fot**	Evaporator fan activation temperature	33350	0	33460	768	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-FAd**	Evaporator fan trigger differential	33381	0	33445	48	R/W	Word	-	0.1...25.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-Fdt**	Evaporator fan activation delay time after a defrost cycle	33344	0	33459	48	R/W	Byte	-	0...250	min
V2	**V2-dt**	Dripping time	33382	255	33445	192	R/W	Byte	-	0...250	min
V2	**V2-dFd**	Evaporator fan cut-out during defrost	33480	8192	33445	768	R/W	Byte	-	0/1	flag
V2	**V2-FCo**	Evaporator fan status with compressor output Off	33421	15	33444	49152	R/W	Byte	-	0...3	num
V2	**V2-FdC**	Evaporator fan shutoff delay after compressor deactivation	33382	0	33445	3072	R/W	Byte	-	0...250	min
V2	**V2-Fon**	Evaporator fan On time in cyclical regulator mode	33383	255	33445	12288	R/W	Byte	-	0...250	min
V2	**V2-FoF**	Evaporator fan Off time in cyclical regulator mode	33383	0	33445	49152	R/W	Byte	-	0...250	min
V2	**V2-Fnn**	Evaporator fan ON time in night mode (duty cycle)	33380	0	33444	3072	R/W	Byte	-	0...250	num
V2	**V2-FnF**	Evaporator fan OFF time in night mode (duty cycle)	33381	255	33444	12288	R/W	Byte	-	0...250	num
V2	**V2-ESF**	Night mode activation (Energy Saving)	33481	512	33463	3072	R/W	Byte	-	0/1	flag
V2	**V2-Att**	Alarm mode (absolute or relative)	33480	32768	33446	12	R/W	Byte	-	0/1	flag
V2	**V2-AFd**	Alarm activation differential	33384	0	33446	48	R/W	Word	-	0.1...25.0	°C/°F
V2	**V2-HAL**	Maximum alarm threshold	33291	0	33446	192	R/W	Word	Y	**LAL**...302	°C/°F
V2	**V2-LAL**	Minimum alarm threshold	33293	0	33446	768	R/W	Word	Y	-67.0...**HAL**	°C/°F
V2	**V2-PAo**	Temperature alarm exclusion time from power-on	33385	255	33446	3072	R/W	Byte	-	0...10	min*10
V2	**V2-dAo**	Exclusion time for temperature alarms after a defrost cycle	33353	0	33446	12288	R/W	Word	-	0...250	min
V2	**V2-oAo**	High and low temperature alarms exclusion time after closing the door	33386	255	33446	49152	R/W	Byte	-	0...10	hours
V2	**V2-tdo**	Door open alarm exclusion time	33387	255	33447	49152	R/W	Byte	-	0...250	min
V2	**V2-tAo**	Temperature alarm signaling delay time	33386	0	33447	3	R/W	Byte	-	0...250	min
V2	**V2-dAt**	Defrost ended due to timeout alarm signaling	33294	0	33447	12	R/W	Byte	-	0/1	flag
V2	**V2-EAL**	Regulators inhibited by external alarm	33427	3840	33447	48	R/W	Byte	-	0/1/2	num
V2	**V2-AoP**	Alarm output polarity	33481	1	33447	768	R/W	Byte	-	0/1	flag
V2	**V2-SA3**	Alarm setpoint for probe 3	33343	0	33459	12	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dA3**	Probe 3 alarm tripping differential	33345	0	33459	192	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-ESA**	AUX status during Energy Saving	33437	768	33471	3072	R/W	Byte	-	0/1/2	num

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-tA1**	Bring Aux/light switch-on before night/day transition forward	33378	255	33468	12288	R/W	Byte	-	0...250	min
V2	**V2-tA2**	Delay Aux/light switch-off after night/day transition	33378	0	33468	49152	R/W	Byte	-	0...250	min
V2	**V2-dod**	Enable utility shutoff upon door switch activation	33421	3840	33447	12288	R/W	Byte	-	0...3	num
V2	**V2-dAd**	D.I. activation indication delay time 1/2	33394	255	33452	3072	R/W	Byte	-	0...250	min
V2	**V2-dCo**	Compressor activation delay from acknowledgment	33352	0	33443	3072	R/W	Byte	-	0...250	min
V2	**V2-tn1**	Energy Saving mode activation delay	33360	0	33465	12	R/W	Byte	-	0...250	min
V2	**V2-PEn**	Number of errors permitted per minimum/maximum pressure switch input	33406	255	33458	12288	R/W	Byte	-	0...15	num
V2	**V2-PEi**	Minimum/maximum pressure switch error calculation interval	33406	0	33458	49152	R/W	Byte	-	1...99	min
V2	**V2-PEt**	Compressor activation delay after pressure switch deactivation	33407	255	33459	3	R/W	Byte	-	0...255	min
V2	**V2-SPn**	Night mode setpoint	33366	0	33465	49152	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dFn**	Night mode offset	33367	0	33466	3	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-oSP**	Offset on setpoint	33295	0	33448	49152	R/W	Word	Y	-30.0...30.0	°C/°F
V2	**V2-odF**	Trigger differential correction	33297	0	33449	48	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-ESt**	Type of action for the Energy Saving function	33430	3840	33470	49152	R/W	Byte	-	0...5	num
V2	**V2-dnt**	Night mode duration	33389	255	33449	3	R/W	Byte	-	0...24	hours
V2	**V2-Cdt**	Door closing time	33389	0	33449	12	R/W	Byte	-	0...250	min*10
V2	**V2-PdC**	Pull-Down mode	33427	61440	33475	3	R/W	Byte	-	0/1/2	num
V2	**V2-tPd**	Fast cooling mode duration	33348	0	33474	768	R/W	Byte	-	0...250	min
V2	**V2-SPF**	Fast cooling setpoint	33357	0	33464	12288	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dFF**	Fast cooling offset	33354	0	33463	49152	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-Pdo**	Step value for fast cooling setpoint	33355	0	33464	768	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-Pdn**	Step number for fast cooling setpoint	33428	3840	33469	49152	R/W	Byte	-	1...10	num
V2	**V2-dro**	Select °C / °F	33481	8	33449	192	R/W	Byte	-	0/1	flag
V2	**V2-CA1**	Probe Pb1 calibration	33298	0	33449	768	R/W	Word	Y	-30.0...30.0	°C/°F
V2	**V2-CA2**	Probe Pb2 calibration	33299	0	33449	3072	R/W	Word	Y	-30.0...30.0	°C/°F
V2	**V2-CA3**	Probe Pb3 calibration	33301	0	33449	12288	R/W	Word	Y	-30.0...30.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-LoC**	Enable keypad lock	33481	16	33450	48	R/W	Byte	-	0/1	flag
V2	**V2-ddd**	Select main display value	33421	61440	33450	192	R/W	Byte	-	0...3	num
V2	**V2-ddE**	Display on eco device	33430	240	33470	12288	R/W	Byte	-	0...4	num
V2	**V2-ddL**	Inhibit resources at the end of defrost	33422	15	33450	768	R/W	Byte	-	0/1/2	num
V2	**V2-Ldd**	Display lock timeout from end of defrost	33390	255	33450	3072	R/W	Byte	-	0...250	min
V2	**V2-ndt**	Display with decimal point	33481	32	33450	12288	R/W	Byte	-	0/1	flag
V2	**V2-PS1**	Password 1 value	33391	0	33451	192	R/W	Byte	-	0...250	num
V2	**V2-PS2**	Password 2 value	33392	0	33451	768	R/W	Byte	-	0...250	num
V2	**V2-CEr**	Probe error capacity	33307	0	33454	768	R/W	Byte	-	0...100	%
V2	**V2-PdS**	Pull Down forced startup differential	33309	0	33454	3072	R/W	Word	Y	-50.0...50.0	K/°R
V2	**V2-PUS**	Pull Up forced startup differential	33310	0	33454	12288	R/W	Word	Y	-50.0...50.0	K/°R
V2	**V2-PUd**	Temperature outside range timeout	33311	0	33454	49152	R/W	Byte	-	0...1000	min
V2	**V2-PdE**	Pull Down end differential	33313	0	33455	3	R/W	Word	Y	-50.0...50.0	K/°R
V2	**V2-PUE**	Pull Up end differential	33314	0	33455	12	R/W	Word	Y	-50.0...50.0	K/°R
V2	**V2-Pdt**	Optimized Pull Down timeout	33315	0	33455	48	R/W	Byte	-	0...1000	min
V2	**V2-Pdd**	Optimized Pull Down capacity	33317	0	33455	192	R/W	Byte	-	0...100	%
V2	**V2-CPd**	Capacity after Pull Down day	33318	0	33455	768	R/W	Byte	-	0...100	%
V2	**V2-CPn**	Capacity after Pull Down night	33319	0	33455	3072	R/W	Byte	-	0...100	%
V2	**V2-CPb**	Compressor PID proportional band	33322	0	33455	49152	R/W	Word	Y	0.1...3200	K/°R
V2	**V2-Cti**	Compressor PID integral time	33323	0	33456	768	R/W	Word	-	0...65535	s
V2	**V2-Ctd**	Compressor PID derivative time	33325	0	33456	3072	R/W	Word	-	0...65535	s
V2	**V2-CSd**	Compressor startup duration	33326	0	33456	12288	R/W	Word	-	0...900	s
V2	**V2-CSC**	Capacity during compressor startup	33327	0	33456	49152	R/W	Word	-	44.4...100	%
V2	**V2-CAU**	Select PID automatic or manual mode	33394	0	33457	12	R/W	Byte	-	0/1	flag
V2	**V2-CdU**	PID duty cycle in manual mode	33330	0	33457	48	R/W	Byte	-	0...100	num
V2	**V2-F_1**	Maximum frequency	33339	0	33458	192	R/W	Byte	-	0...250	Hz
V2	**V2-F_2**	Minimum frequency	33341	0	33458	768	R/W	Byte	-	0...250	Hz

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-H08**	Stand-by operating mode	33437	3	33451	12288	R/W	Byte	-	0/1/2	num
V2	**V2-H11**	Configurability of digital input 1	33393	255	33451	49152	R/W	Word	Y	-13...13	num
V2	**V2-H12**	Configurability of digital input 2	33393	0	33452	768	R/W	Word	Y	-12...12	num
V2	**V2-H21**	Configurability of digital output Out1/OC1	33396	0	33452	12288	R/W	Byte	-	0...13	num
V2	**V2-H22**	Configurability of digital output Out2	33397	255	33452	49152	R/W	Byte	-	0...12	num
V2	**V2-H23**	Configurability of digital output Out3	33397	0	33453	3	R/W	Byte	-	0...12	num
V2	**V2-H24**	Configurability of digital output Out4	33398	255	33453	12	R/W	Byte	-	0...12	num
V2	**V2-H25**	Configurability of digital output 5 (buzzer)	33409	255	33443	12288	R/W	Byte	-	0/1	num
V2	**V2-H31**	Key configuration	33422	61440	33453	48	R/W	Byte	-	0...10	num
V2	**V2-H32**	Key configuration	33423	15	33453	192	R/W	Byte	-	0...10	num
V2	**V2-H33**	Key configuration	33423	240	33453	768	R/W	Byte	-	0...10	num
V2	**V2-H34**	Key configuration	33423	3840	33453	3072	R/W	Byte	-	0...10	num
V2	**V2-H35**	Key configuration	33423	61440	33453	12288	R/W	Byte	-	0...10	num
V2	**V2-H42**	Configuration of analog input Pb2	33424	61440	33454	3	R/W	Byte	-	0/1	flag
V2	**V2-H43**	Configuration of analog input Pb3	33425	15	33454	12	R/W	Byte	-	0/1/2	num
V2	**V2-H45**	Defrost input mode for applications with dual evaporator	33427	15	33462	49152	R/W	Byte	-	0...3	num
V2	**V2-tCP**	Time temperature remains below the cool protection setpoint	33356	0	33464	3072	R/W	Byte	-	0...250	min
V2	**V2-SCP**	Cool protection setpoint	33358	0	33464	49152	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-dCP**	Cool protection differential	33359	0	33465	3	R/W	Word	-	0.1...30.0	°C/°F
V2	**V2-dCA**	Enable deep cooling	33437	3072	33471	12288	R/W	Byte	-	0/1/2	num
V2	**V2-dCS**	Deep cooling setpoint	33346	0	33459	768	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-tdC**	Deep cooling duration	33398	0	33460	12288	R/W	Byte	-	0...250	min
V2	**V2-dCC**	Defrost delay after deep cooling	33395	0	33460	3072	R/W	Byte	-	0...250	min
V2	**V2-Sid**	Deep cooling start threshold	33369	0	33474	48	R/W	Word	Y	-67.0...302	°C/°F
V2	**V2-toS**	Time above the threshold for deep cooling start	33379	255	33469	3	R/W	Byte	-	0...250	min
V2	**V2-SLP**	Daily or weekly mode	33481	8192	33473	192	R/W	Byte	-	0/1	flag
V2	**V2-SL1**	Self-Learning duration in daily mode	33377	255	33468	768	R/W	Byte	-	1...30	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V2	**V2-SL2**	Self-Learning duration in weekly mode	33377	0	33468	3072	R/W	Byte	-	1...30	min
V2	**V2-SLr**	Enable continuous self-learning	33481	16384	33473	768	R/W	Byte	-	0/1	flag
V2	**V2-SLB**	Black-out period duration for automatic self-learning activation	33364	0	33465	3072	R/W	Byte	-	0...250	days
V2	**V2-SLE**	Enable/Disable self-learning	33481	32768	33473	3072	R/W	Byte	-	0/1	flag
Application 3 parameters											
V3	**V3-SEt**	Regulation setpoint	33485	0	33647	49152	R/W	Word	Y	**LSE**...**HSE**	°C/°F
V3	**V3-diF**	Setpoint differential	33486	0	33644	768	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-LSE**	Minimum setpoint value that can be set	33487	0	33644	3072	R/W	Word	Y	-67.0...**HSE**	°C/°F
V3	**V3-HSE**	Maximum setpoint value that can be set	33489	0	33644	12288	R/W	Word	Y	**LSE**...302	°C/°F
V3	**V3-HC**	Operating mode (Heating/Cooling)	33684	256	33644	49152	R/W	Byte	-	0/1	flag
V3	**V3-ont**	Compressor output ON time if regulation probe is faulty	33484	0	33645	3	R/W	Byte	-	0...250	min
V3	**V3-oFt**	Compressor output OFF time if regulation probe is faulty	33488	0	33645	12	R/W	Byte	-	0...250	min
V3	**V3-don**	Compressor output activation delay from call	33492	0	33645	48	R/W	Byte	-	0...250	s
V3	**V3-doF**	Compressor output activation delay from switch-off	33496	0	33645	192	R/W	Byte	-	0...250	min
V3	**V3-dbi**	Delay between two consecutive compressor output power-ons	33500	0	33645	768	R/W	Byte	-	0...250	min
V3	**V3-Cit**	Minimum compressor output activation time	33516	0	33646	3	R/W	Byte	-	0...250	min
V3	**V3-CAt**	Maximum compressor output activation time	33520	0	33646	12	R/W	Byte	-	0...250	min
V3	**V3-odo**	Output activation delay at startup	33504	0	33645	3072	R/W	Byte	-	0...250	min
V3	**V3-dFA**	Condenser fan and compressor activation delay from the call	33611	0	33646	3072	R/W	Byte	-	0...250	s
V3	**V3-dty**	Type of defrost	33624	61440	33646	768	R/W	Byte	-	0/1/2	num
V3	**V3-doH**	Defrost cycle activation delay from the call	33536	0	33647	3	R/W	Byte	-	0...250	min
V3	**V3-dEt**	Defrost timeout	33532	0	33646	12288	R/W	Byte	-	1...250	min
V3	**V3-dS1**	Evaporator 1 defrost end temperature	33490	0	33647	12	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dS2**	Evaporator 2 defrost end temperature	33491	0	33647	48	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dPo**	Defrost activation request at power-on	33684	1024	33647	768	R/W	Byte	-	0/1	flag
V3	**V3-dMr**	Enable defrost timer reset with manual defrost	33685	2048	33677	12	R/W	Byte	-	0/1	flag
V3	**V3-d00**	Cumulative time for defrost activation	33605	0	33665	12	R/W	Byte	-	0...250	hours

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-d01**	Parameter d00 unit of measure	33641	12	33667	12	R/W	Byte	-	0/1/2	num
V3	**V3-dit**	Device time for defrost activation	33528	0	33665	49152	R/W	Byte	-	0...250	hours
V3	**V3-d11**	Parameter dit unit of measure	33641	48	33667	48	R/W	Byte	-	0/1/2	num
V3	**V3-d20**	Enable defrost at compressor stop	33685	256	33667	768	R/W	Byte	-	0/1	flag
V3	**V3-d40**	Select defrost probe 1	33629	240	33666	3	R/W	Byte	-	0/1	flag
V3	**V3-d41**	Temperature threshold for starting defrost	33553	0	33663	49152	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-d42**	Time the evaporator temperature must remain below the threshold	33555	0	33663	12288	R/W	Byte	-	0...250	min
V3	**V3-d43**	Time count mode for temperature below threshold	33629	3840	33666	12	R/W	Byte	-	0...3	num
V3	**V3-d44**	Threshold management mode	33629	61440	33666	48	R/W	Byte	-	0/1	flag
V3	**V3-d50**	Defrost probe Pb2 selection	33632	61440	33674	3	R/W	Byte	-	0/1	flag
V3	**V3-d51**	Defrost probe Pb1 selection	33633	15	33674	12	R/W	Byte	-	0/1	flag
V3	**V3-d52**	Temperature threshold for starting defrost	33565	0	33669	48	R/W	Byte	-	0.0...302	°C/°F
V3	**V3-d53**	Time the temperature differential must remain above the threshold	33569	0	33669	12288	R/W	Byte	-	0...999	min
V3	**V3-d54**	Time count mode for temperature differential above threshold	33633	240	33674	48	R/W	Byte	-	0...3	num
V3	**V3-d55**	Threshold management mode	33633	3840	33674	192	R/W	Byte	-	0/1	flag
V3	**V3-d90**	Clock defrost mode	33630	3840	33666	3072	R/W	Byte	-	0...3	num
V3	**V3-d91**	Number of daily defrosts	33606	255	33665	48	R/W	Byte	-	0...255	num
V3	**V3-d92**	1st weekend/holiday day	33630	15	33666	192	R/W	Byte	-	0...7	num
V3	**V3-d93**	2nd weekend/holiday day	33630	240	33666	768	R/W	Byte	-	0...7	num
V3	**V3-d94**	Regular defrost interval duration	33630	61440	33666	12288	R/W	Byte	-	1...7	num
V3	**V3-FPt**	FSt parameter mode (absolute or relative)	33684	4096	33649	3	R/W	Byte	-	0/1	flag
V3	**V3-FSt**	Evaporator fan disabling temperature	33494	0	33649	12	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-Fot**	Evaporator fan activation temperature	33554	0	33664	768	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-FAd**	Evaporator fan trigger differential	33585	0	33649	48	R/W	Word	-	0.1...25.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-Fdt**	Evaporator fan activation delay time after a defrost cycle	33548	0	33663	48	R/W	Byte	-	0...250	min
V3	**V3-dt**	Dripping time	33586	255	33649	192	R/W	Byte	-	0...250	min
V3	**V3-dFd**	Evaporator fan cut-out during defrost	33684	8192	33649	768	R/W	Byte	-	0/1	flag
V3	**V3-FCo**	Evaporator fan status with compressor output Off	33625	15	33648	49152	R/W	Byte	-	0...3	num
V3	**V3-FdC**	Evaporator fan shutoff delay after compressor deactivation	33586	0	33649	3072	R/W	Byte	-	0...250	min
V3	**V3-Fon**	Evaporator fan On time in cyclical regulator mode	33587	255	33649	12288	R/W	Byte	-	0...250	min
V3	**V3-FoF**	Evaporator fan Off time in cyclical regulator mode	33587	0	33649	49152	R/W	Byte	-	0...250	min
V3	**V3-Fnn**	Evaporator fan ON time in night mode (duty cycle)	33584	0	33648	3072	R/W	Byte	-	0...250	num
V3	**V3-FnF**	Evaporator fan OFF time in night mode (duty cycle)	33585	255	33648	12288	R/W	Byte	-	0...250	num
V3	**V3-ESF**	Night mode activation (Energy Saving)	33685	512	33667	3072	R/W	Byte	-	0/1	flag
V3	**V3-Att**	Alarm mode (absolute or relative)	33684	32768	33650	12	R/W	Byte	-	0/1	flag
V3	**V3-AFd**	Alarm activation differential	33588	0	33650	48	R/W	Word	-	0.1...25.0	°C/°F
V3	**V3-HAL**	Maximum alarm threshold	33495	0	33650	192	R/W	Word	Y	**LAL**...302	°C/°F
V3	**V3-LAL**	Minimum alarm threshold	33497	0	33650	768	R/W	Word	Y	-67.0...**HAL**	°C/°F
V3	**V3-PAo**	Temperature alarm exclusion time from power-on	33589	255	33650	3072	R/W	Byte	-	0...10	min*10
V3	**V3-dAo**	Exclusion time for temperature alarms after a defrost cycle	33557	0	33650	12288	R/W	Word	-	0...250	min
V3	**V3-oAo**	High and low temperature alarms exclusion time after closing the door	33590	255	33650	49152	R/W	Byte	-	0...10	hours
V3	**V3-tdo**	Door open alarm exclusion time	33591	255	33651	49152	R/W	Byte	-	0...250	min
V3	**V3-tAo**	Temperature alarm signaling delay time	33590	0	33651	3	R/W	Byte	-	0...250	min
V3	**V3-dAt**	Defrost ended due to timeout alarm signaling	33498	0	33651	12	R/W	Byte	-	0/1	flag
V3	**V3-EAL**	Regulators inhibited by external alarm	33631	3840	33651	48	R/W	Byte	-	0/1/2	num
V3	**V3-AoP**	Alarm output polarity	33685	1	33651	768	R/W	Byte	-	0/1	flag
V3	**V3-SA3**	Alarm setpoint for probe 3	33547	0	33663	12	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dA3**	Probe 3 alarm tripping differential	33549	0	33663	192	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-ESA**	AUX status during Energy Saving	33641	768	33675	3072	R/W	Byte	-	0/1/2	num

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-tA1**	Bring Aux/light switch-on before night/day transition forward	33582	255	33672	12288	R/W	Byte	-	0...250	min
V3	**V3-tA2**	Delay Aux/light switch-off after night/day transition	33582	0	33672	49152	R/W	Byte	-	0...250	min
V3	**V3-dod**	Enable utility shutoff upon door switch activation	33625	3840	33651	12288	R/W	Byte	-	0...3	num
V3	**V3-dAd**	D.I. activation indication delay time 1/2	33598	255	33656	3072	R/W	Byte	-	0...250	min
V3	**V3-dCo**	Compressor activation delay from acknowledgment	33556	0	33647	3072	R/W	Byte	-	0...250	min
V3	**V3-tn1**	Energy Saving mode activation delay	33564	0	33669	12	R/W	Byte	-	0...250	min
V3	**V3-PEn**	Number of errors permitted per minimum/maximum pressure switch input	33610	255	33662	12288	R/W	Byte	-	0...15	num
V3	**V3-PEi**	Minimum/maximum pressure switch error calculation interval	33610	0	33662	49152	R/W	Byte	-	1...99	min
V3	**V3-PEt**	Compressor activation delay after pressure switch deactivation	33611	255	33663	3	R/W	Byte	-	0...255	min
V3	**V3-SPn**	Night mode setpoint	33570	0	33669	49152	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dFn**	Night mode offset	33571	0	33670	3	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-oSP**	Offset on setpoint	33499	0	33652	49152	R/W	Word	Y	-30.0...30.0	°C/°F
V3	**V3-odF**	Trigger differential correction	33501	0	33653	48	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-ESt**	Type of action for the Energy Saving function	33634	3840	33674	49152	R/W	Byte	-	0...5	num
V3	**V3-dnt**	Night mode duration	33593	255	33653	3	R/W	Byte	-	0...24	hours
V3	**V3-Cdt**	Door closing time	33593	0	33653	12	R/W	Byte	-	0...250	min*10
V3	**V3-PdC**	Pull-Down mode	33631	61440	33679	3	R/W	Byte	-	0/1/2	num
V3	**V3-tPd**	Fast cooling mode duration	33552	0	33678	768	R/W	Byte	-	0...250	min
V3	**V3-SPF**	Fast cooling setpoint	33561	0	33668	12288	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dFF**	Fast cooling offset	33558	0	33667	49152	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-Pdo**	Step value for fast cooling setpoint	33559	0	33668	768	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-Pdn**	Step number for fast cooling setpoint	33632	3840	33673	49152	R/W	Byte	-	1...10	num
V3	**V3-dro**	Select °C / °F	33685	8	33653	192	R/W	Byte	-	0/1	flag
V3	**V3-CA1**	Probe Pb1 calibration	33502	0	33653	768	R/W	Word	Y	-30.0...30.0	°C/°F
V3	**V3-CA2**	Probe Pb2 calibration	33503	0	33653	3072	R/W	Word	Y	-30.0...30.0	°C/°F

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-CA3**	Probe Pb3 calibration	33505	0	33653	12288	R/W	Word	Y	-30.0...30.0	°C/°F
V3	**V3-LoC**	Enable keypad lock	33685	16	33654	48	R/W	Byte	-	0/1	flag
V3	**V3-ddd**	Select main display value	33625	61440	33654	192	R/W	Byte	-	0...3	num
V3	**V3-ddE**	Display on eco device	33634	240	33674	12288	R/W	Byte	-	0...4	num
V3	**V3-ddL**	Inhibit resources at the end of defrost	33626	15	33654	768	R/W	Byte	-	0/1/2	num
V3	**V3-Ldd**	Display lock timeout from end of defrost	33594	255	33654	3072	R/W	Byte	-	0...250	min
V3	**V3-ndt**	Display with decimal point	33685	32	33654	12288	R/W	Byte	-	0/1	flag
V3	**V3-PS1**	Password 1 value	33595	0	33655	192	R/W	Byte	-	0...250	num
V3	**V3-PS2**	Password 2 value	33596	0	33655	768	R/W	Byte	-	0...250	num
V3	**V3-CEr**	Probe error capacity	33511	0	33658	768	R/W	Byte	-	0...100	%
V3	**V3-PdS**	Pull Down forced startup differential	33513	0	33658	3072	R/W	Word	Y	-50.0...50.0	K/°R
V3	**V3-PUS**	Pull Up forced startup differential	33514	0	33658	12288	R/W	Word	Y	-50.0...50.0	K/°R
V3	**V3-PUd**	Temperature outside range timeout	33515	0	33658	49152	R/W	Byte	-	0...1000	min
V3	**V3-PdE**	Pull Down end differential	33517	0	33659	3	R/W	Word	Y	-50.0...50.0	K/°R
V3	**V3-PUE**	Pull Up end differential	33518	0	33659	12	R/W	Word	Y	-50.0...50.0	K/°R
V3	**V3-Pdt**	Optimized Pull Down timeout	33519	0	33659	48	R/W	Byte	-	0...1000	min
V3	**V3-Pdd**	Optimized Pull Down capacity	33521	0	33659	192	R/W	Byte	-	0...100	%
V3	**V3-CPd**	Capacity after Pull Down day	33522	0	33659	768	R/W	Byte	-	0...100	%
V3	**V3-CPn**	Capacity after Pull Down night	33523	0	33659	3072	R/W	Byte	-	0...100	%
V3	**V3-CPb**	Compressor PID proportional band	33526	0	33659	49152	R/W	Word	Y	0.1...3200	K/°R
V3	**V3-Cti**	Compressor PID integral time	33527	0	33660	768	R/W	Word	-	0...65535	s
V3	**V3-Ctd**	Compressor PID derivative time	33529	0	33660	3072	R/W	Word	-	0...65535	s
V3	**V3-CSd**	Compressor startup duration	33530	0	33660	12288	R/W	Word	-	0...900	s
V3	**V3-CSC**	Capacity during compressor startup	33531	0	33660	49152	R/W	Word	-	44.4...100	%
V3	**V3-CAU**	Select PID automatic or manual mode	33598	0	33661	12	R/W	Byte	-	0/1	flag
V3	**V3-CdU**	PID duty cycle in manual mode	33534	0	33661	48	R/W	Byte	-	0...100	num
V3	**V3-F–1**	Maximum frequency	33543	0	33662	192	R/W	Byte	-	0...250	Hz

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-F_2**	Minimum frequency	33545	0	33662	768	R/W	Byte	-	0...250	Hz
V3	**V3-H08**	Stand-by operating mode	33641	3	33655	12288	R/W	Byte	-	0/1/2	num
V3	**V3-H11**	Configurability of digital input 1	33597	255	33655	49152	R/W	Word	Y	-13...13	num
V3	**V3-H12**	Configurability of digital input 2	33597	0	33656	768	R/W	Word	Y	-12...12	num
V3	**V3-H21**	Configurability of digital output Out1/OC1	33600	0	33656	12288	R/W	Byte	-	0...13	num
V3	**V3-H22**	Configurability of digital output Out2	33601	255	33656	49152	R/W	Byte	-	0...12	num
V3	**V3-H23**	Configurability of digital output Out3	33601	0	33657	3	R/W	Byte	-	0...12	num
V3	**V3-H24**	Configurability of digital output Out4	33602	255	33657	12	R/W	Byte	-	0...12	num
V3	**V3-H25**	Configurability of digital output 5 (buzzer)	33613	255	33647	12288	R/W	Byte	-	0/1	num
V3	**V3-H31**	Key configuration	33626	61440	33657	48	R/W	Byte	-	0...10	num
V3	**V3-H32**	Key configuration	33627	15	33657	192	R/W	Byte	-	0...10	num
V3	**V3-H33**	Key configuration	33627	240	33657	768	R/W	Byte	-	0...10	num
V3	**V3-H34**	Key configuration	33627	3840	33657	3072	R/W	Byte	-	0...10	num
V3	**V3-H35**	Key configuration	33627	61440	33657	12288	R/W	Byte	-	0...10	num
V3	**V3-H42**	Configuration of analog input Pb2	33628	61440	33658	3	R/W	Byte	-	0/1	flag
V3	**V3-H43**	Configuration of analog input Pb3	33629	15	33658	12	R/W	Byte	-	0/1/2	num
V3	**V3-H45**	Defrost input mode for applications with dual evaporator	33631	15	33666	49152	R/W	Byte	-	0...3	num
V3	**V3-tCP**	Time temperature remains below the cool protection setpoint	33560	0	33668	3072	R/W	Byte	-	0...250	min
V3	**V3-SCP**	Cool protection setpoint	33562	0	33668	49152	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-dCP**	Cool protection differential	33563	0	33669	3	R/W	Word	-	0.1...30.0	°C/°F
V3	**V3-dCA**	Enable deep cooling	33641	3072	33675	12288	R/W	Byte	-	0/1/2	num
V3	**V3-dCS**	Deep cooling setpoint	33550	0	33663	768	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-tdC**	Deep cooling duration	33602	0	33664	12288	R/W	Byte	-	0...250	min
V3	**V3-dCC**	Defrost delay after deep cooling	33599	0	33664	3072	R/W	Byte	-	0...250	min
V3	**V3-Sid**	Deep cooling start threshold	33573	0	33678	48	R/W	Word	Y	-67.0...302	°C/°F
V3	**V3-toS**	Time above the threshold for deep cooling start	33583	255	33673	3	R/W	Byte	-	0...250	min

Folders	Label	Description	Val. Par. Address	Filter Val.	Vis. Par. Address	Filter Vis.	R/W	Data Size	CPL	Range	MU
V3	**V3-SLP**	Daily or weekly mode	33685	8192	33677	192	R/W	Byte	-	0/1	flag
V3	**V3-SL1**	Self-Learning duration in daily mode	33581	255	33672	768	R/W	Byte	-	1...30	min
V3	**V3-SL2**	Self-Learning duration in weekly mode	33581	0	33672	3072	R/W	Byte	-	1...30	min
V3	**V3-SLr**	Enable continuous self-learning	33685	16384	33677	768	R/W	Byte	-	0/1	flag
V3	**V3-SLb**	Black-out period duration for automatic self-learning activation	33568	0	33669	3072	R/W	Byte	-	0...250	days
V3	**V3-SLE**	Enable/Disable self-learning	33685	32768	33677	3072	R/W	Byte	-	0/1	flag

Visibility table for folders relating to applications

Label	Description	Address	Filter	Data size	Range	MU
Visibility of folders for loaded application						
vis_CP	Visibility of folder **CP** (compressor)	32954	192	2 bit	0...3	num
vis_dEF	Visibility of folder **dEF** (defrost)	32954	768	2 bit	0...3	num
vis_FAn	Visibility of folder **FAn** (fans)	32954	3072	2 bit	0...3	num
vis_AL	Visibility of folder **AL** (alarms)	32954	12288	2 bit	0...3	num
vis_Lit	Visibility of folder **Lit** (lights and digital inputs)	32954	49152	2 bit	0...3	num
vis_dor	Visibility of folder **dor** (door switch)	32962	3072	2 bit	0...3	num
vis_PrE	Visibility of folder **PrE** (pressure switch)	32955	3	2 bit	0...3	num
vis_ENS	Visibility of folder **EnS** (energy saving)	32955	12	2 bit	0...3	num
vis_PLd	Visibility of folder **PLd** (pull-down)	32962	49152	2 bit	0...3	num
vis_Add	Visibility of folder **Add** (communication)	32955	48	2 bit	0...3	num
vis_diS	Visibility of folder **diS** (display)	32955	192	2 bit	0...3	num
vis_VSC	Visibility of folder **VSC** (VSC compressor)	32955	768	2 bit	0...3	num
vis_CnF	Visibility of folder **CnF** (configuration)	32955	3072	2 bit	0...3	num
vis_FPr	Visibility of folder **FPr** (UNICARD)	32955	12288	2 bit	0...3	num
vis_FnC	Visibility of folder **FnC** (functions)	32955	49152	2 bit	0...3	num
vis_nAd	Visibility of folder **nAd** (night/day)	32954	48	2 bit	0...3	num
vis_CPr	Visibility of folder **CPr** (low ambient temperature protection)	32954	12	2 bit	0...3	num
vis_dEC	Visibility of folder **dEC** (Deep Cooling cycle)	32962	12	2 bit	0...3	num
vis_SL	Visibility of folder **SL** (Self-Learning cycle)	32962	12288	2 bit	0...3	num
Visibility of folders for AP1 application						
V1-vis_CP	Visibility of folder **CP** (compressor)	33258	192	2 bit	0...3	num
V1-vis_dEF	Visibility of folder **dEF** (defrost)	33258	768	2 bit	0...3	num
V1-vis_FAn	Visibility of folder **FAn** (fans)	33258	3072	2 bit	0...3	num
V1-vis_AL	Visibility of folder **AL** (alarms)	33258	12288	2 bit	0...3	num
V1-vis_Lit	Visibility of folder **Lit** (lights and digital inputs)	33258	49152	2 bit	0...3	num
V1-vis_dor	Visibility of folder **dor** (door switch)	33266	3072	2 bit	0...3	num
V1-vis_PrE	Visibility of folder **PrE** (pressure switch)	33259	3	2 bit	0...3	num
V1-vis_ENS	Visibility of folder **EnS** (energy saving)	33259	12	2 bit	0...3	num
V1-vis_PLd	Visibility of folder **PLd** (pull-down)	33266	49152	2 bit	0...3	num
V1-vis_Add	Visibility of folder **Add** (communication)	33259	48	2 bit	0...3	num
V1-vis_diS	Visibility of folder **diS** (display)	33259	192	2 bit	0...3	num
V1-vis_VSC	Visibility of folder **VSC** (VSC compressor)	33259	768	2 bit	0...3	num
V1-vis_CnF	Visibility of folder **CnF** (configuration)	33259	3072	2 bit	0...3	num

Label	Description	Address	Filter	Data size	Range	MU
V1-vis_FPr	Visibility of folder **FPr** (UNICARD)	33259	12288	2 bit	0...3	num
V1-vis_FnC	Visibility of folder **FnC** (functions)	33259	49152	2 bit	0...3	num
V1-vis_nAd	Visibility of folder **nAd** (night/day)	33258	48	2 bit	0...3	num
V1-vis_CPr	Visibility of folder **CPr** (low ambient temperature protection)	33258	12	2 bit	0...3	num
V1-vis_dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33266	12	2 bit	0...3	num
V1-vis_SL	Visibility of folder **SL** (Self-Learning cycle)	33266	12288	2 bit	0...3	num
Visibility of folders for AP2 application						
V2-vis_CP	Visibility of folder **CP** (compressor)	33466	192	2 bit	0...3	num
V2-vis_dEF	Visibility of folder **dEF** (defrost)	33466	768	2 bit	0...3	num
V2-vis_FAn	Visibility of folder **FAn** (fans)	33466	3072	2 bit	0...3	num
V2-vis_AL	Visibility of folder **AL** (alarms)	33466	12288	2 bit	0...3	num
V2-vis_Lit	Visibility of folder **Lit** (lights and digital inputs)	33466	49152	2 bit	0...3	num
V2-vis_dor	Visibility of folder **dor** (door switch)	33474	3072	2 bit	0...3	num
V2-vis_PrE	Visibility of folder **PrE** (pressure switch)	33467	3	2 bit	0...3	num
V2-vis_ENS	Visibility of folder **EnS** (energy saving)	33467	12	2 bit	0...3	num
V2-vis_PLd	Visibility of folder **PLd** (pull-down)	33474	49152	2 bit	0...3	num
V2-vis_Add	Visibility of folder **Add** (communication)	33467	48	2 bit	0...3	num
V2-vis_diS	Visibility of folder **diS** (display)	33467	192	2 bit	0...3	num
V2-vis_VSC	Visibility of folder **VSC** (VSC compressor)	33467	768	2 bit	0...3	num
V2-vis_CnF	Visibility of folder **CnF** (configuration)	33467	3072	2 bit	0...3	num
V2-vis_FPr	Visibility of folder **FPr** (UNICARD)	33467	12288	2 bit	0...3	num
V2-vis_FnC	Visibility of folder **FnC** (functions)	33467	49152	2 bit	0...3	num
V2-vis_nAd	Visibility of folder **nAd** (night/day)	33466	48	2 bit	0...3	num
V2-vis_CPr	Visibility of folder **CPr** (low ambient temperature protection)	33466	12	2 bit	0...3	num
V2-vis_dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33474	12	2 bit	0...3	num
V2-vis_SL	Visibility of folder **SL** (Self-Learning cycle)	33474	12288	2 bit	0...3	num
Visibility of folders for AP3 application						
V3-vis_CP	Visibility of folder **CP** (compressor)	33670	192	2 bit	0...3	num
V3-vis_dEF	Visibility of folder **dEF** (defrost)	33670	768	2 bit	0...3	num
V3-vis_FAn	Visibility of folder **FAn** (fans)	33670	3072	2 bit	0...3	num
V3-vis_AL	Visibility of folder **AL** (alarms)	33670	12288	2 bit	0...3	num
V3-vis_Lit	Visibility of folder **Lit** (lights and digital inputs)	33670	49152	2 bit	0...3	num
V3-vis_dor	Visibility of folder **dor** (door switch)	33678	3072	2 bit	0...3	num
V3-vis_PrE	Visibility of folder **PrE** (pressure switch)	33671	3	2 bit	0...3	num
V3-vis_ENS	Visibility of folder **EnS** (energy saving)	33671	12	2 bit	0...3	num
V3-vis_PLd	Visibility of folder **PLd** (pull-down)	33678	49152	2 bit	0...3	num
V3-vis_Add	Visibility of folder **Add** (communication)	33671	48	2 bit	0...3	num
V3-vis_diS	Visibility of folder **diS** (display)	33671	192	2 bit	0...3	num
V3-vis_VSC	Visibility of folder **VSC** (VSC compressor)	33671	768	2 bit	0...3	num
V3-vis_CnF	Visibility of folder **CnF** (configuration)	33671	3072	2 bit	0...3	num
V3-vis_FPr	Visibility of folder **FPr** (UNICARD)	33671	12288	2 bit	0...3	num
V3-vis_FnC	Visibility of folder **FnC** (functions)	33671	49152	2 bit	0...3	num
V3-vis_nAd	Visibility of folder **nAd** (night/day)	33670	48	2 bit	0...3	num
V3-vis_CPr	Visibility of folder **CPr** (low ambient temperature protection)	33670	12	2 bit	0...3	num
V3-vis_dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33678	12	2 bit	0...3	num
V3-vis_SL	Visibility of folder **SL** (Self-Learning cycle)	33678	12288	2 bit	0...3	num

Table of Modbus Resources

Label	Description	Address	Filter	Type	Data_Size	CPL	Range	MU
AI1	Regulation probe	4109	0	R	Word	Y	-67.0...302	°C/°F
AI2	Defrost probe	4110	0	R	Word	Y	-67.0...302	°C/°F
AI3_a	Second evaporator defrost probe	4111	0	R	Word	Y	-67.0...302	°C/°F
AI3_b	Compressor temperature probe	4111	0	R	Word	Y	-67.0...302	°C/°F
SET	Regulation setpoint 1 value	4114	0	R	Word	Y	-67.0...302	°C/°F
Cap	Power generated by compressor 1	4125	0	R	Word	-	0.0...100	
DI	Digital input 1	4118	1	R	1 bit	-	0...1	flag
DI2	Digital input 2	4118	2	R	1 bit	-	0...1	flag
E1	Analog input 1 fault	4121	1	R	1 bit	-	0...1	flag
E2	Analog input 2 fault	4121	2	R	1 bit	-	0...1	flag
E3	Analog input 3 fault	4121	4	R	1 bit	-	0...1	flag
oPd	Door open	4121	8	R	1 bit	-	0...1	flag
EA	External	4121	16	R	1 bit	-	0...1	flag
AL1	Analog input 1 lower limit exceeded	4121	32	R	1 bit	-	0...1	flag
AH1	Analog input 1 higher limit exceeded	4121	64	R	1 bit	-	0...1	flag
Ad2	Defrost end due to timeout	4121	128	R	1 bit	-	0...1	flag
E10	RTC error	4121	256	R	1 bit	-	0...1	flag
COH	Overtemperature alarm	4121	512	R	1 bit	-	0...1	flag
rCA	Low liquid refrigerant level	4121	1024	R	1 bit	-	0...1	flag
nPA	Pressure switch	4121	2048	R	1 bit	-	0...1	flag
PA	Critical pressure	4121	4096	R	1 bit	-	0...1	flag
ALM	Alarm	4115	256	R	1 bit	-	0...1	flag
RL1	Control output 1	4120	1	R	1 bit	-	0...1	flag
RL2	Control output 2	4120	2	R	1 bit	-	0...1	flag
RL3	Control output 3	4120	4	R	1 bit	-	0...1	flag
RL4	Control output 4	4120	8	R	1 bit	-	0...1	flag
BUZ	Buzzer	4120	256	R	1 bit	-	0...1	flag
CP1	Compressor 1	4115	2	R	1 bit	-	0...1	flag
CP2	Compressor 2	4115	4	R	1 bit	-	0...1	flag
DEF1	Defrost 1	4115	16	R	1 bit	-	0...3	flag
DEF2	Defrost 2	4115	32	R	1 bit	-	0...3	flag
FAN	Evaporator fans	4115	64	R	1 bit	-	0...1	flag
FAN_C	Condenser fans	4115	128	R	1 bit	-	0...1	flag
LIGHT	Light	4115	1024	R	1 bit	-	0...1	flag
AUX	Auxiliary	4115	512	R	1 bit	-	0...1	flag
STD-BY	Stand-by	4115	1	R	1 bit	-	0...1	flag
ENS	Energy saving	4115	16384	R	1 bit	-	0...1	flag
ECo	Reduced set	4115	8192	R	1 bit	-	0...1	flag
DEEP	Deep Cooling	4115	2048	R	1 bit	-	0...1	flag
Do	Door status	4115	32768	R	1 bit	-	0...1	flag
RonAux	Activates auxiliary output	4123	1	W	1 bit	-	0...1	flag
RoFFAux	Deactivates auxiliary output	4123	2	W	1 bit	-	0...1	flag
Ronon	Device on	4123	4	W	1 bit	-	0...1	flag
RoFFoFF	Device off	4123	8	W	1 bit	-	0...1	flag
AttEnSav	Activates energy saving function	4123	16	W	1 bit	-	0...1	flag
DisattEnSav	Deactivates energy saving function	4123	32	W	1 bit	-	0...1	flag
Att_SetR	Activates economy mode	4123	64	W	1 bit	-	0...1	flag
Disatt_SetR	Deactivates economy mode	4123	128	W	1 bit	-	0...1	flag
RonLoC	Keyboard lock	4123	1024	W	1 bit	-	0...1	flag
RoFFLoC	Keyboard unlock	4123	2048	W	1 bit	-	0...1	flag

Label	Description	Address	Filter	Type	Data_Size	CPL	Range	MU
RonLight	Switches lights on	4123	256	W	1 bit	-	0...1	flag
RoFFLight	Switches lights off	4123	512	W	1 bit	-	0...1	flag
Att_Sbr	Manual Defrost activation	4123	4096	W	1 bit	-	0...1	flag
DCon	Deep Cooling regulator activation	4124	2	W	1 bit	-	0...1	flag
RTCUp	Updates clock	4124	4	W	1 bit	-	0...1	flag
Teston	Enables autotest	0	2	W	1 bit	-	0...1	flag
TestoFF	Resets test request	0	2	W	1 bit	-	0...1	flag
oFFRL1	Disables output 1	206	1	W	1 bit	-	0...1	flag
onRL2	Enables output 2	206	2	W	1 bit	-	0...1	flag
oFFRL2	Disables output 2	206	2	W	1 bit	-	0...1	flag
onRL3	Enables output 3	206	4	W	1 bit	-	0...1	flag
oFFRL3	Disables output 3	206	4	W	1 bit	-	0...1	flag
onRL4	Enables output 4	206	8	W	1 bit	-	0...1	flag
oFFRL4	Disables output 4	206	8	W	1 bit	-	0...1	flag
onBuzz	Enables output 5	0	64	W	1 bit	-	0...1	flag
oFFBuzz	Disables output 5	0	64	W	1 bit	-	0...1	flag
onAllRL	Enables output	206	15	W	Word	-	0...255	num
oFFAllRL	Disables output	206	15	W	Word	-	0...255	num
tim_CP1	Compressor 1 running time	4171	0	R	Word	-	0...65535	hours*10
cnt_CP1	Compressor 1 number of activations	4172	0	R	Word	-	0...65535	num
tim_DEF1	Defrost 1 activation time	4173	0	R	Word	-	0...65535	min
cnt_DEF1	Defrost 1 number of activations	4175	0	R	Word	-	0...65535	num
tim_Door	Door opening time	4176	0	R	Word	-	0...65535	min
cnt_Door	Door opening count	4177	0	R	Word	-	0...65535	num
tim_DEF2	Defrost 2 activation time	4179	0	R	Word	-	0...65535	min
cnt_DEF2	Defrost 2 number of activations	4180	0	R	Word	-	0...65535	num
cnt_PoWEr	Number of instrument power-ons	4181	0	R	Word	-	0...65535	num
tim_CP2	Compressor 2 run time	4183	0	R	Word	-	0...65535	hours*10
cnt_CP2	Compressor 2 number of activations	4184	0	R	Word	-	0...65535	num

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