

EWNNext Performance -HC

Electronic controllers compatible with flammable refrigerant gases

User Manual

06/2023



Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers.

© 2023 Eliwell. All rights reserved.



Safety information	7
About the book	9
Introduction	13
Introduction	14
Models	15
Accessories	16
Preliminary configurations	17
Introduction	18
EWNNext 961 P (230 Vac)	21
EWNNext 961 P/B (115 Vac - 230 Vac)	22
EWNNext 971 P (230 Vac)	23
EWNNext 971 P/B (115 Vac - 230 Vac)	24
EWNNext 974 P (230 Vac)	25
EWNNext 974 P/B (115 Vac - 230 Vac)	26
EWNNext 974 P/C (230 Vac)	27
EWNNext 974 P/CY (230 Vac)	28
EWNNext 978 P/BC (115 Vac - 230 Vac)	29
EWNNext 978 P/BCI (100...240 Vac)	30
Mechanical installation	31
Before starting	32
Power supply disconnection	32
Operating environment	33
Comments concerning installation	34
Installation	35
Electrical connections	36
Best wiring practices	37
Connections	39
EWNNext 961 P (230 Vac)	40
EWNNext 961 P/B (115 Vac - 230 Vac)	40
EWNNext 971 P (230 Vac)	41
EWNNext 971 P/B (115 Vac - 230 Vac)	41
EWNNext 974 P (230 Vac)	42
EWNNext 974 P/B (115 Vac - 230 Vac)	42
EWNNext 974 P/C (230 Vac)	43
EWNNext 974 P/CY (230 Vac)	43
EWNNext 978 P/BC (115 Vac - 230 Vac)	44
EWNNext 978 P/BCI (100...240 Vac)	45
Technical characteristics	46
Technical data	47
Power supply and power draw	47
Output characteristics	48
Input characteristics	50
Further Information	50
User interface and operation	51
User interface	52

Using the controller	54
Setting the probes	58
Setting the displayed values	59
Defrost	61
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
Functions	91
Door switch	92
Stand-by	93
Copy parameters (UNICARD)	94
Boot loader firmware	95
Reset TelevisAir diagnostic counters	96
Regulators	97
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	109
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
Diagnostics	132
Alarms and indications	133
Minimum and maximum temperature alarm	135
Low refrigerant alarm	137
Parameters EWNNext Performance -HC	138
Parameters EWNNext 961 P	139
Parameters EWNNext 961 P/B	147
Parameters EWNNext 971 P	155
Parameters EWNNext 971 P/B	167
Parameters EWNNext 974 P	179
Parameters EWNNext 974 P/B	191

Parameters EWNnext 974 P/C	203
Parameters EWNnext 974 P/CY	217
Parameters EWNnext 978 P/BC	231
Parameters EWNnext 978 P/BCI	245
Modbus MSK 780 functions and resources	260
Setting parameters via Modbus	261
Modbus table content	262
Table of Modbus Parameters	264
Visibility table for folders relating to applications	290
Table of Modbus Resources	292



Important information

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 toolled 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 **EWNNext 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 EWNNext 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 mm² (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.

California Proposition 65



WARNING: This product can expose you to chemicals including lead and lead compounds which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to:

www.P65Warnings.ca.gov.

Flammable refrigerant gases

The use of flammable gas refrigerants is dependent on many 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

Contents

This section includes the following topics:

Introduction	14
Models	15
Accessories	16

Introduction

General Description

EWNnext 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 **EWNNext Performance -HC** models:

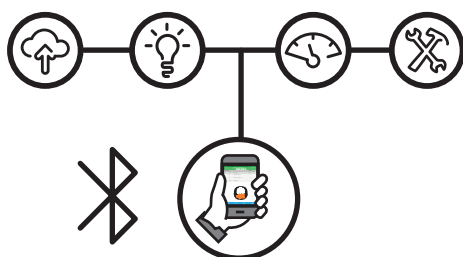
Product	Description
EWNNext 961 P	EWNNext 961 P NTC 2Hp 230 Vac AIR -HC
	EWNNext 961 P NTC 2Hp 230 Vac PH AIR -HC
EWNNext 961 P/B	EWNNext 961 P NTC 1Hp 115 Vac BUZ AIR -HC
	EWNNext 961 P NTC 1Hp 115 Vac BUZ PH AIR -HC
	EWNNext 961 P NTC 2Hp 230 Vac BUZ AIR -HC
	EWNNext 961 P NTC 2Hp 230 Vac BUZ PH AIR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

AIR - Applicazione mobile per Dongle BTLE



'Eliwell AIR' App, available on Google Play and Apple Store, is used to connect via Bluetooth to EWNNext controllers compatible with Dongle Bluetooth. 'Eliwell AIR' App:

- a smart user interface to customize resources, read/write the configuration parameters, enable datalogging on specific resources and viewing in the form of table or chart the saved values
- real time controller management
- simplified settings and maintenance

For further information, refer to controller and 'Eliwell AIR' App user manual on the Eliwell website: www.eliwell.com

Accessories

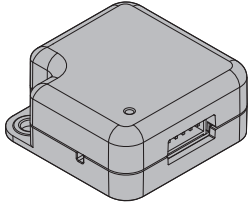
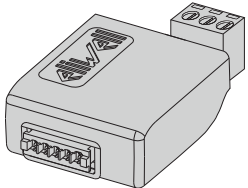
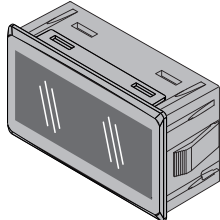

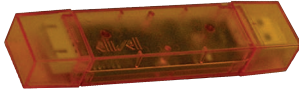
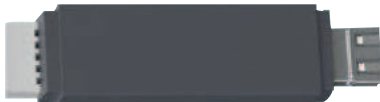

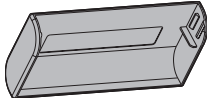
DANGER

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
	<p>BTLE Dongle: TTL/Bluetooth communication interface</p>
	<p>BusAdapter 150 Dongle: Non-opto-isolated TTL/RS485 communication interface</p>
	<p>ECNext 5 Vdc per EWNNext: Display for remote display purposes</p>
	<p>BusAdapter: Opto-isolated TTL/RS485 communication interface</p>
	<p>UNICARD: Programming key</p>
	<p>DMI: Programming interface</p>
	<p>Probes: NTC</p>
	<p>Protection: Dripping protection for connections</p>

Preliminary configurations

Contents

This section includes the following topics:

Introduction	18
EWNNext 961 P (230 Vac)	21
EWNNext 961 P/B (115 Vac - 230 Vac)	22
EWNNext 971 P (230 Vac)	23
EWNNext 971 P/B (115 Vac - 230 Vac)	24
EWNNext 974 P (230 Vac)	25
EWNNext 974 P/B (115 Vac - 230 Vac)	26
EWNNext 974 P/C (230 Vac)	27
EWNNext 974 P/CY (230 Vac)	28
EWNNext 978 P/BC (115 Vac - 230 Vac)	29
EWNNext 978 P/BCI (100...240 Vac)	30

Introduction

Overview

EWNnext 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.

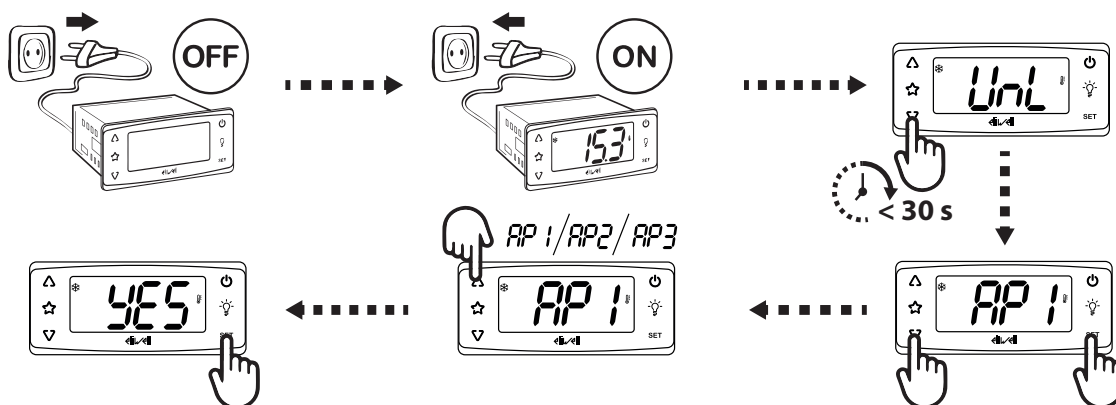
At the first startup:

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 Δ and ∇
 6. Confirm the selected preset application using SET.
- Note:** The process can be canceled by pressing O 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**.

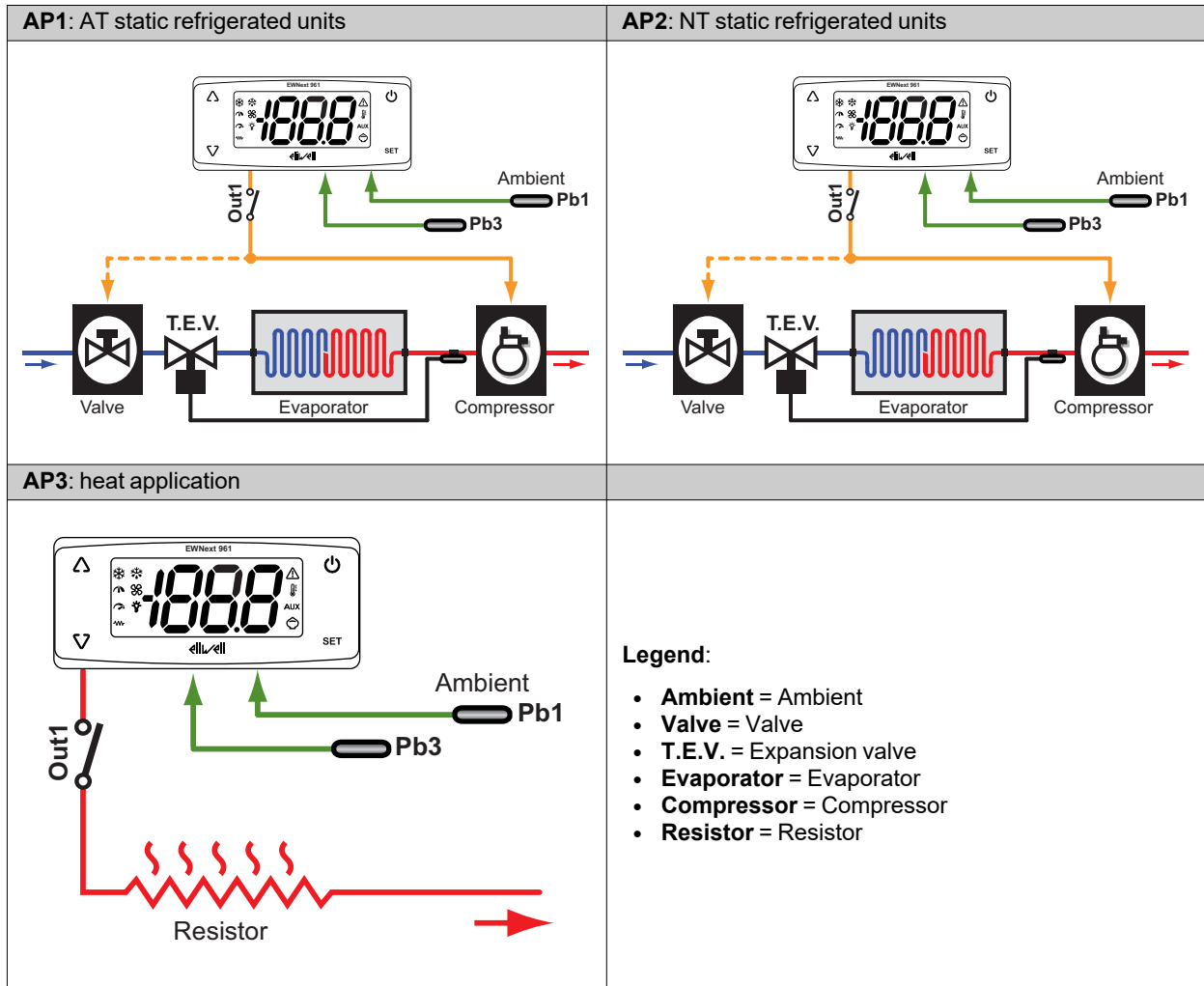
View Preset applications

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**

EWNNext 961 P (230 Vac)

Application overview

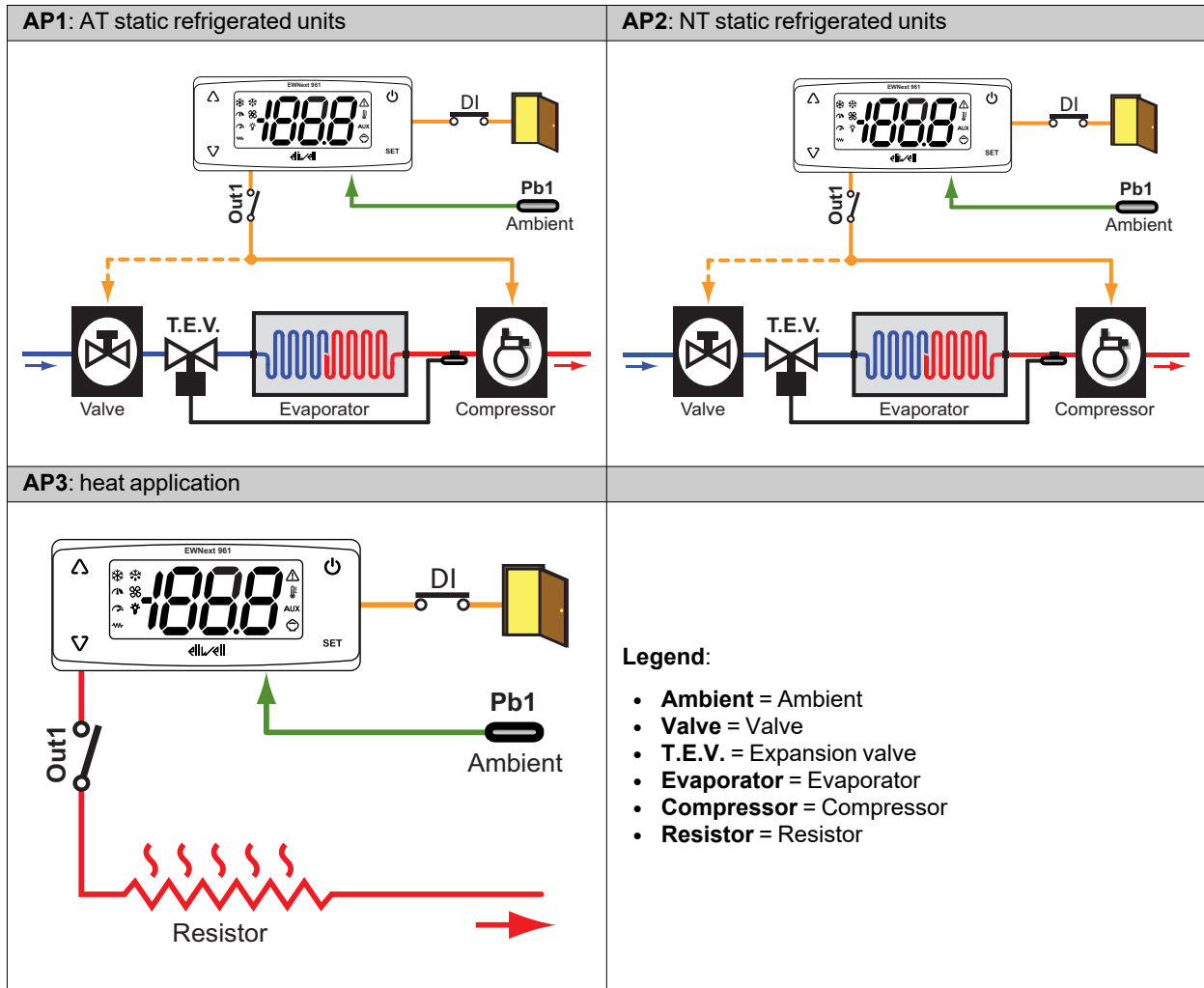


Application details

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	Δ: manual defrost (H31 = 1) ∇: not set (H32 = 0) Ⓞ: stand-by (H33 = 4)

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

Application overview

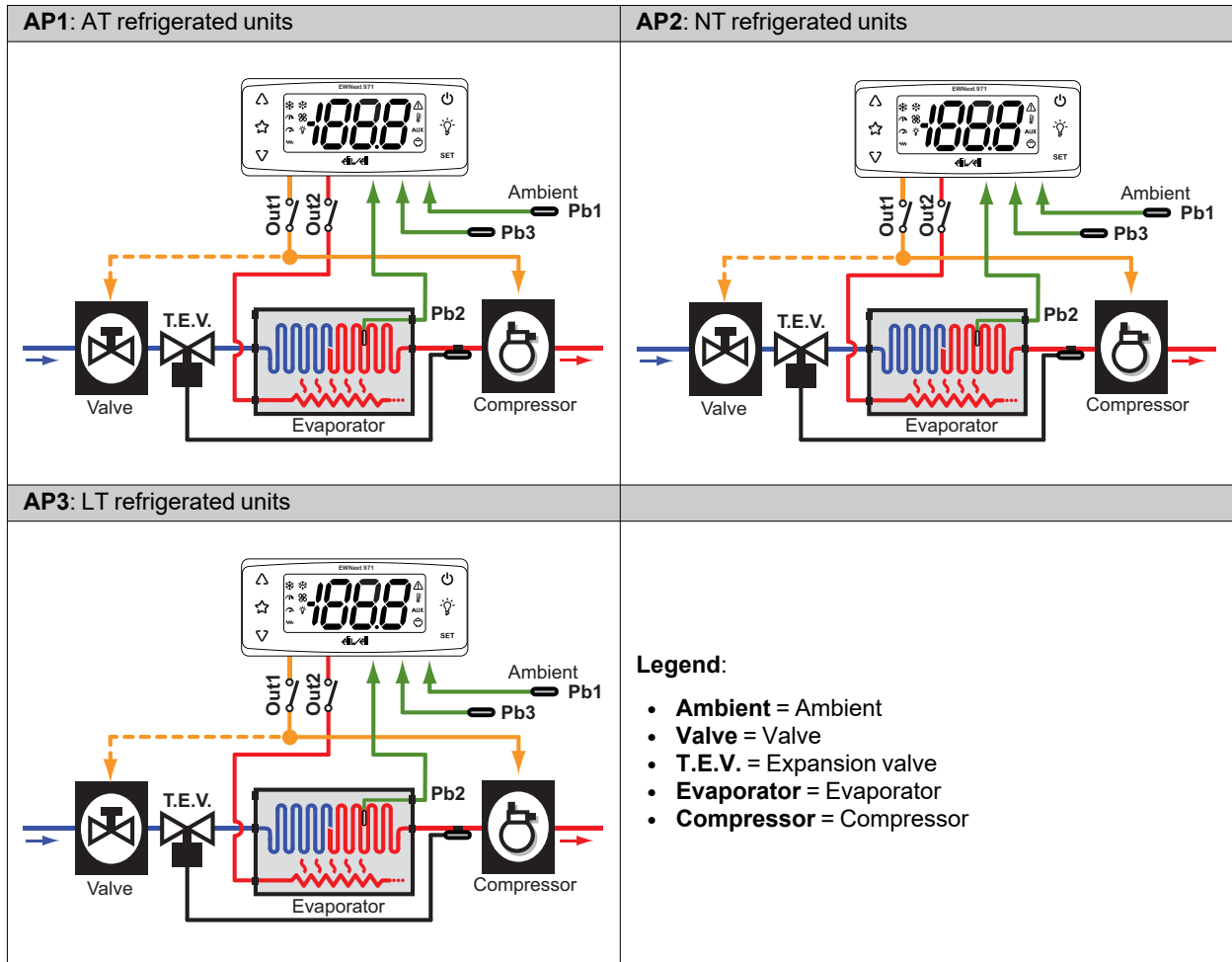


Application details

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)

EWNNext 971 P (230 Vac)

Application overview

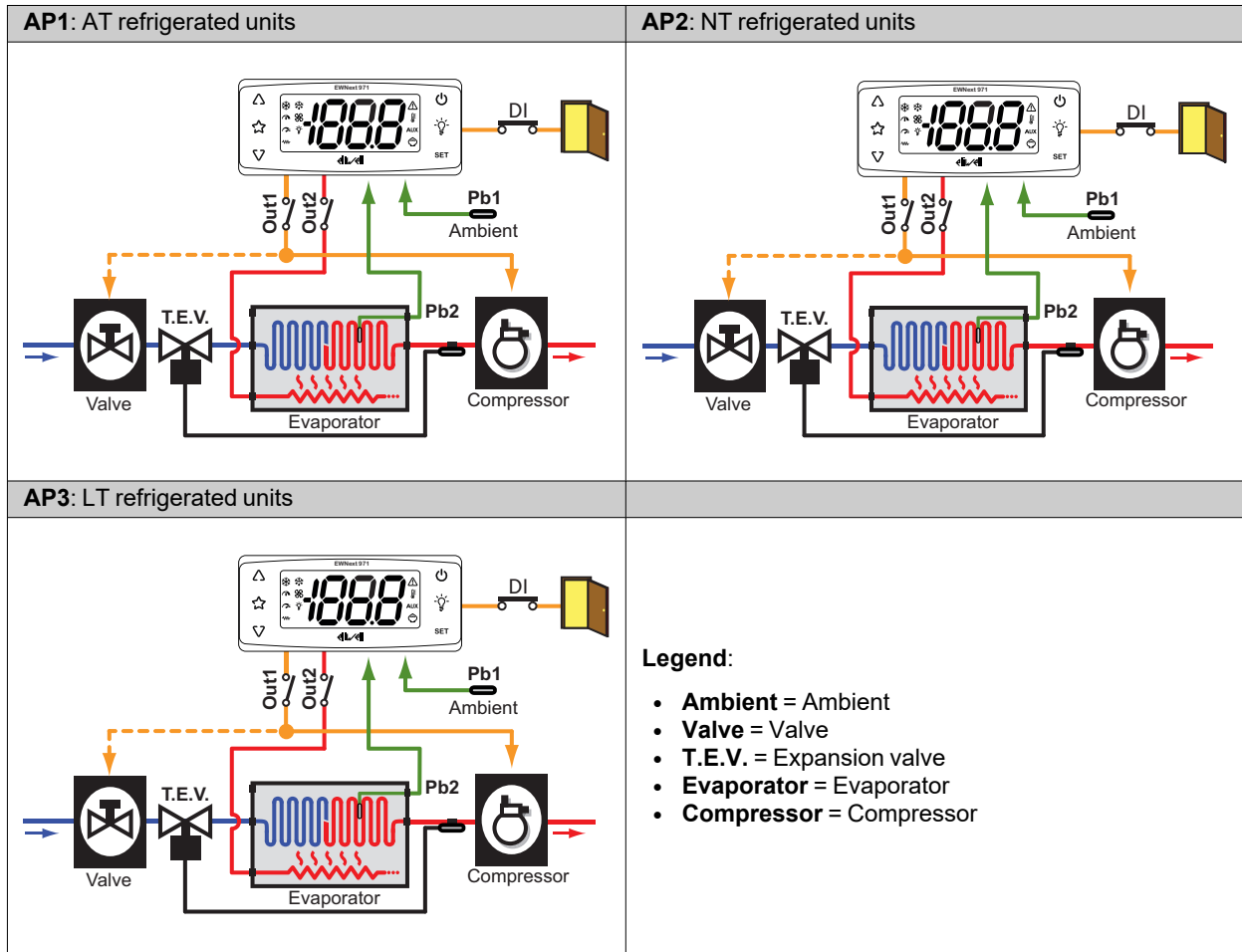


Application details

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)

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

Application overview

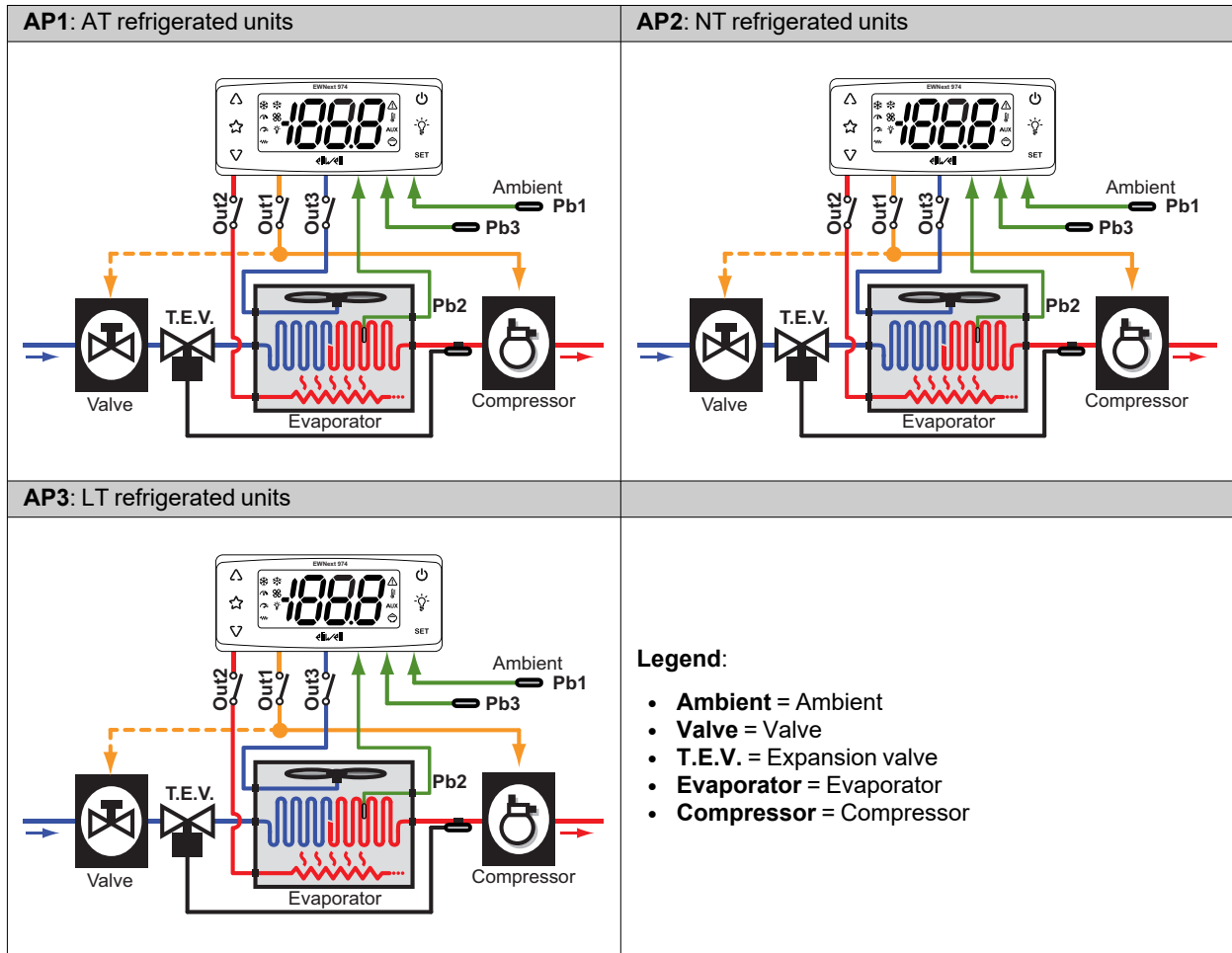


Application details

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)

EWNnext 974 P (230 Vac)

Application overview

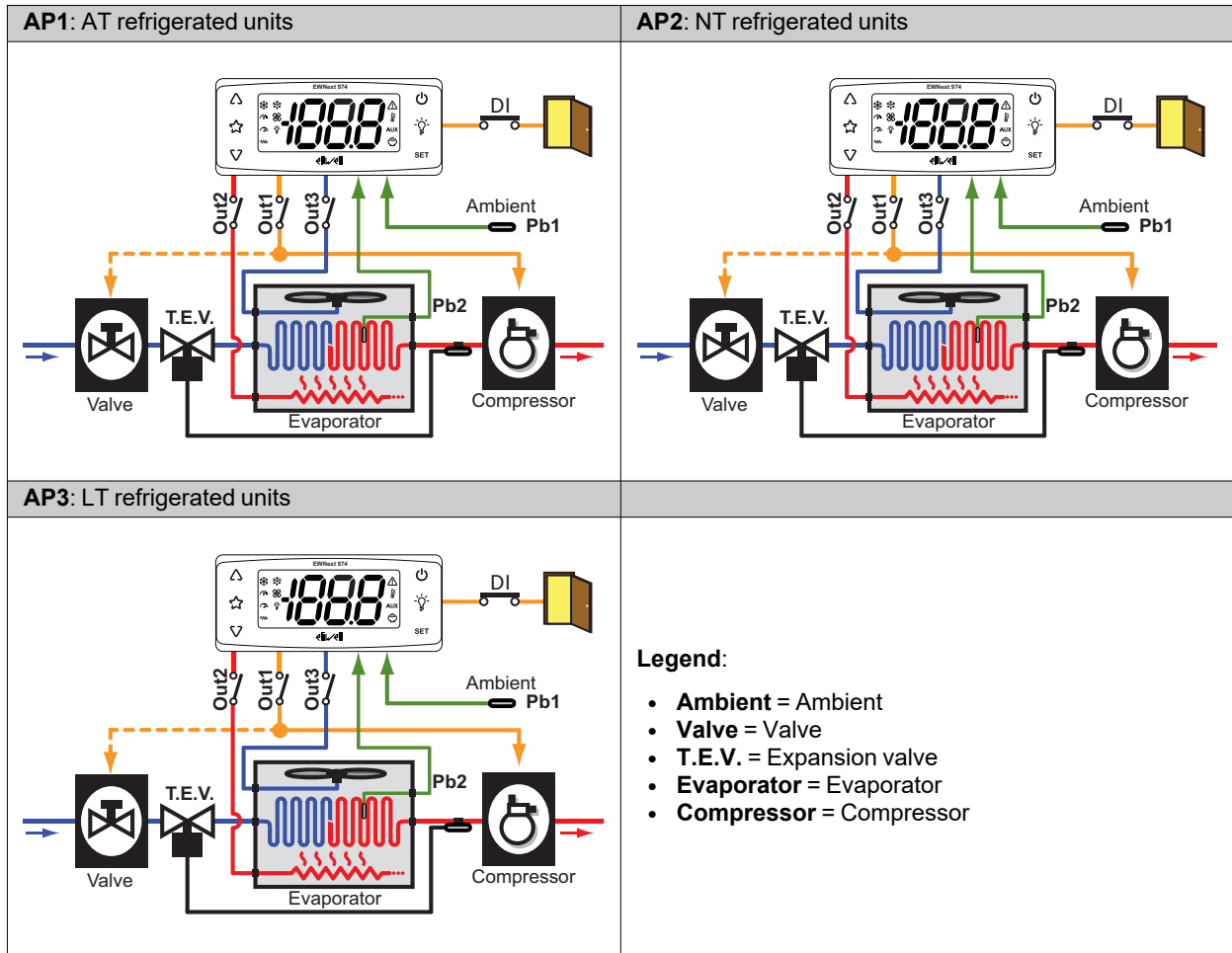


Application details

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)

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

Application overview

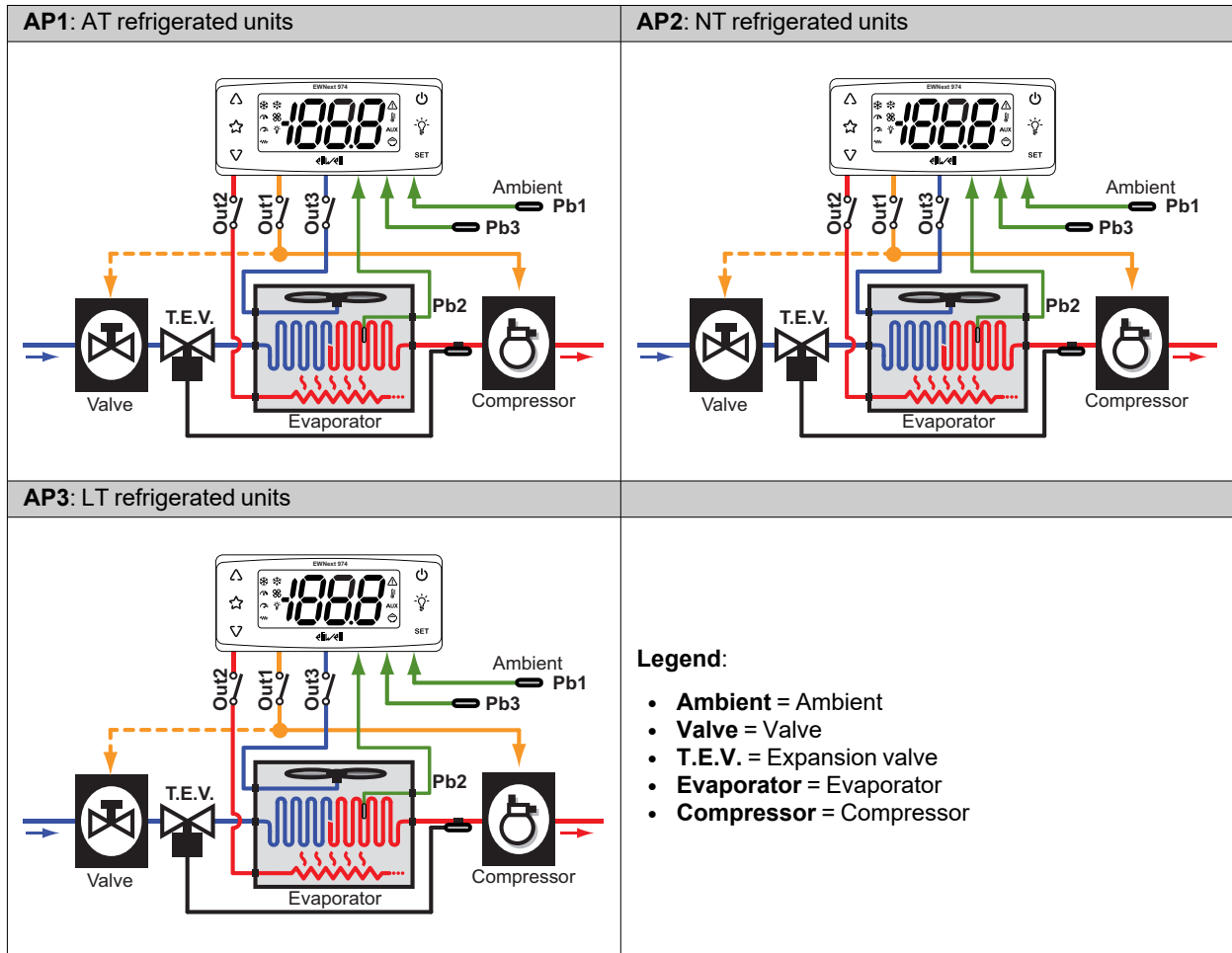


Application details

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)

EWNnext 974 P/C (230 Vac)

Application overview

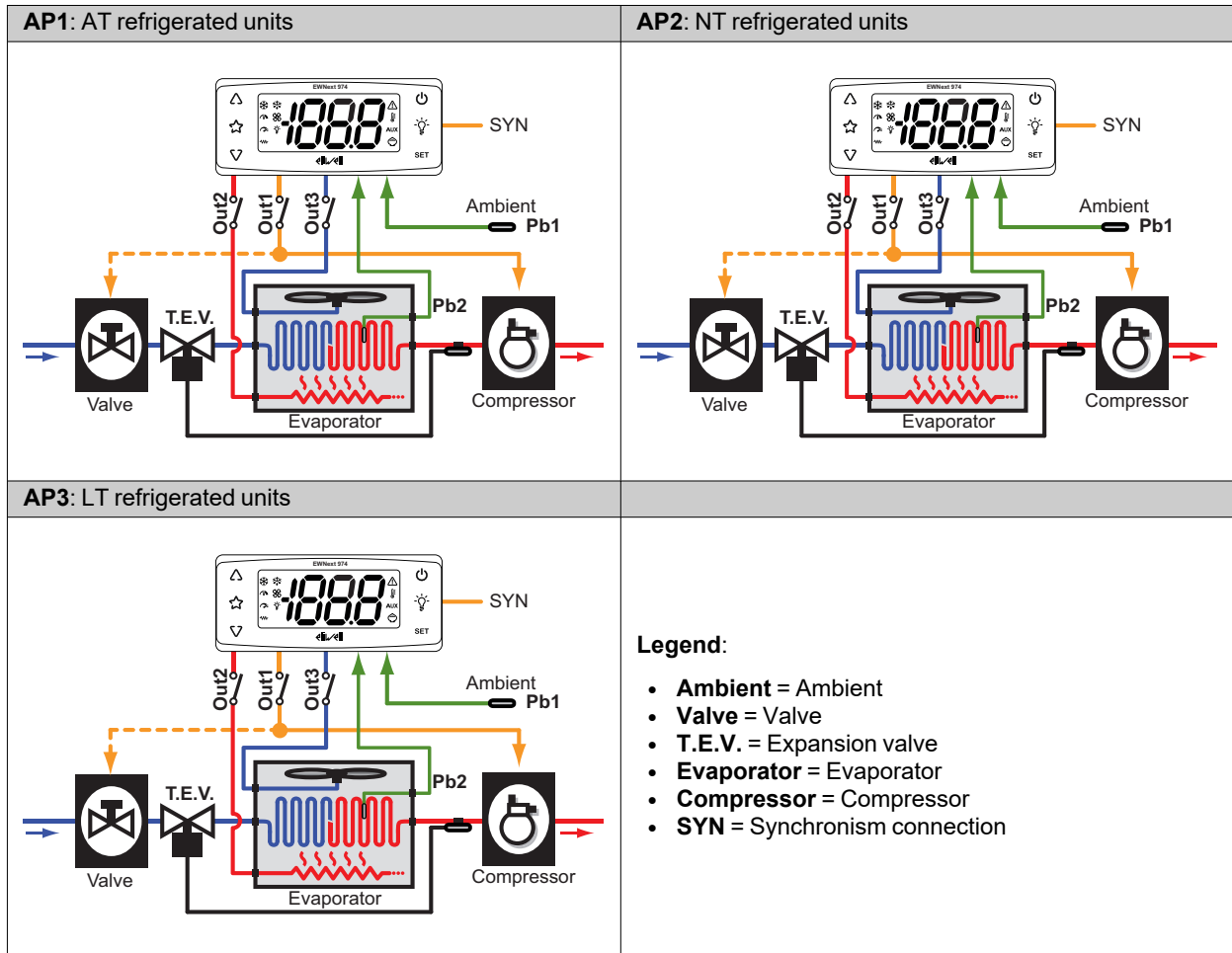


Application details

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)

EWNnext 974 P/CY (230 Vac)

Application overview

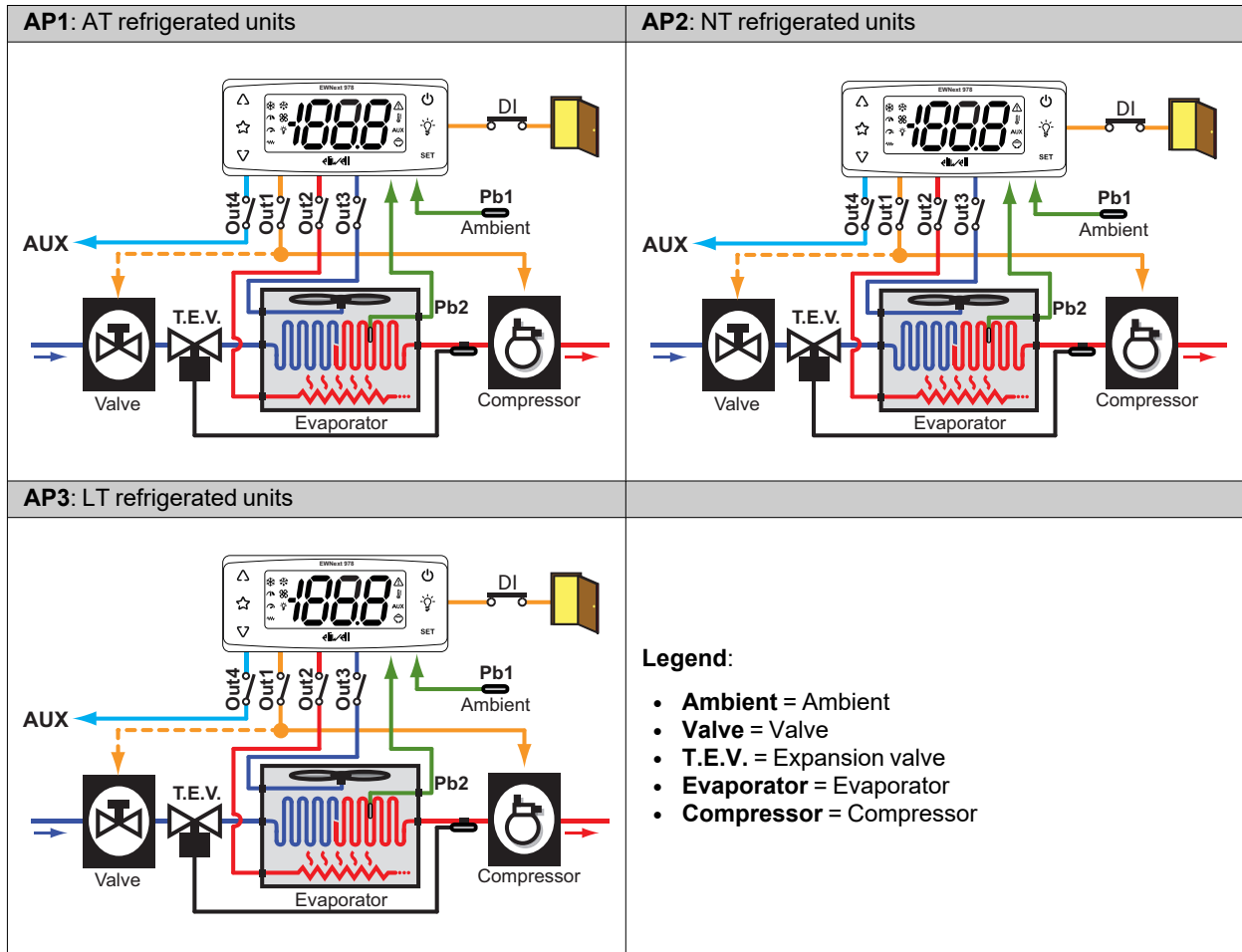


Application details

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)

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

Application overview

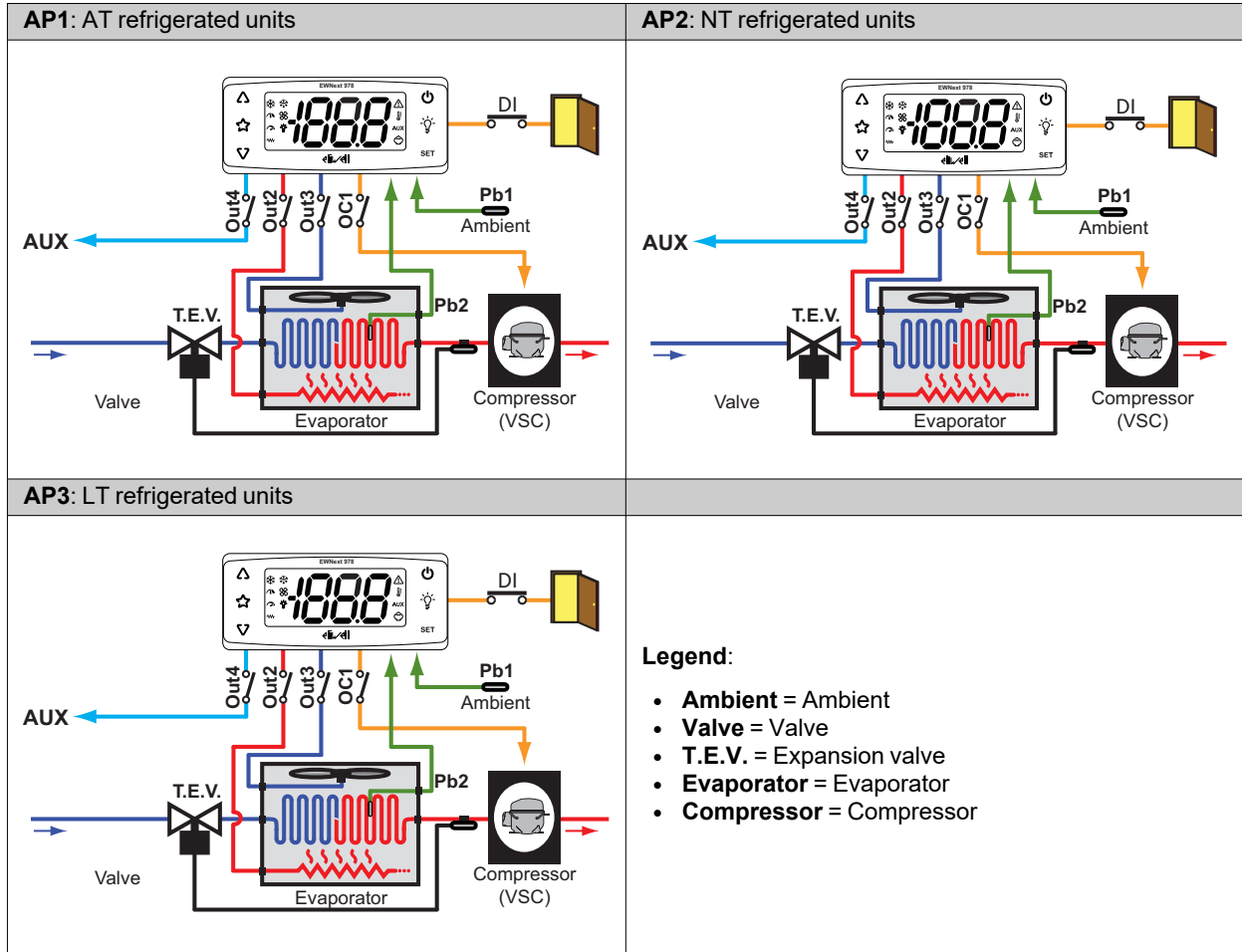


Application details

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)

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

Application overview



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	Δ: 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 many 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.

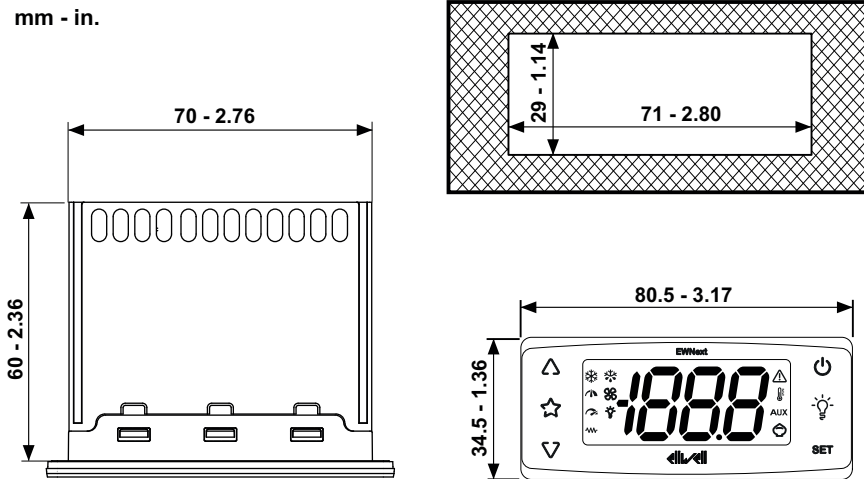
WARNING

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:

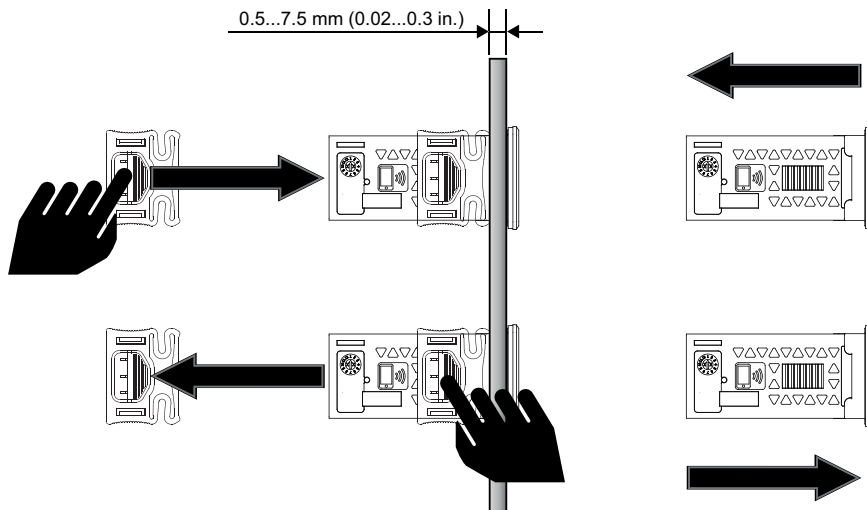
1. Make a hole measuring 71 x 29 mm (2.80 x 1.14 in.)
2. Introducing the controller
3. Secure it by inserting the brackets in the relevant rails at the 2 sides of the controller, until it clicks into place

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 mm² (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



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 ²	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
		N•m		0.5...0.6				
Ø 3.5 mm (0.14 in.)		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 ²		0.05...2.50	.05...1.5	
AWG		30...14	30...16	
		N•m		0.5
Ø 3.5 mm (0.14 in.)		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 ²	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
		N•m		0.5...0.6				
Ø 3.5 mm (0.14 in.)		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.

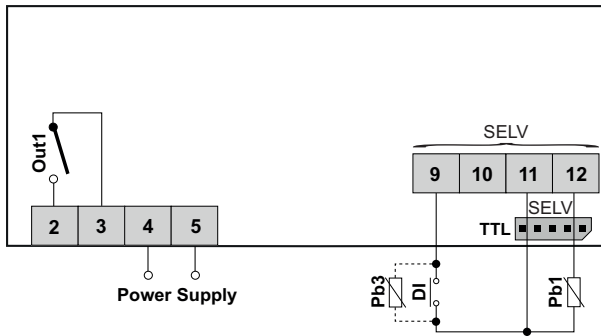
Connections

Wiring diagrams

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

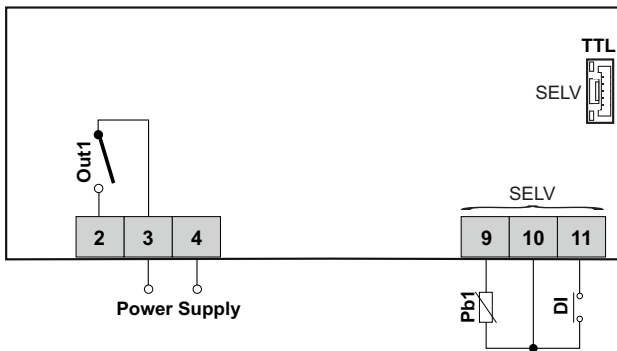
- **EWNnext 961 P**
- **EWNnext 961 P/B**
- **EWNnext 971 P**
- **EWNnext 971 P/B**
- **EWNnext 974 P**
- **EWNnext 974 P/B**
- **EWNnext 974 P/C**
- **EWNnext 974 P/CY**
- **EWNnext 978 P/BC**
- **EWNnext 978 P/BCI**

EWNNext 961 P (230 Vac)



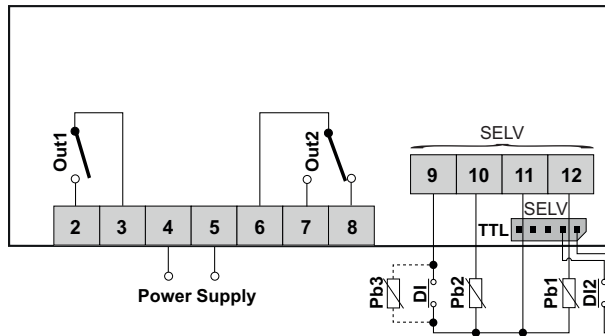
Terminals	Description
2-3	Compressor relay (Out1)
4-5	Power supply input 230 Vac
9-11	Digital input DI (H11 ≠0 and H43 =n) / probe Pb3 (H11 =0 and H43 =y)
12-11	Probe Pb1
SELV	SELV terminals
TTL	TTL serial port

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



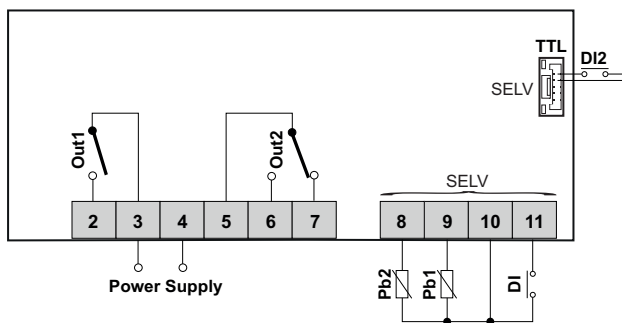
Terminals	Description
2-3	Compressor relay (Out1)
4-3	Power supply input 115 Vac or 230 Vac (depending on the model)
9-10	Probe Pb1
11-10	Digital input DI
SELV	SELV terminals
TTL	TTL serial port

EWNnext 971 P (230 Vac)



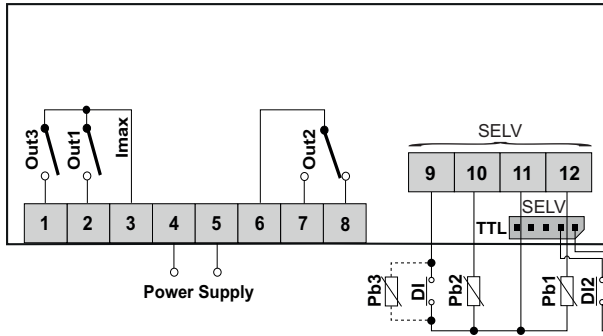
Terminals	Description
2-3	Compressor relay (Out1)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (Out2)
9-11	Digital input DI (H11 ≠0 and H43 =n) / probe Pb3 (H11 =0 and H43 =y)
10-11	Probe Pb2
12-11	Probe Pb1
SELV	SELV terminals
TTL	TTL serial port or DI2 (if H12 ≠0)

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



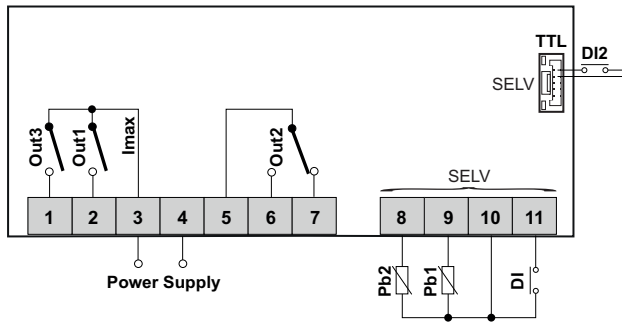
Terminals	Description
2-3	Compressor relay (Out1)
4-5	Power supply input 115 Vac or 230 Vac (depending on the model)
5-6-7	Defrost relay (Out2)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	Digital input DI
SELV	SELV terminals
TTL	TTL serial port or DI2 (if H12 ≠0)

EWNNext 974 P (230 Vac)



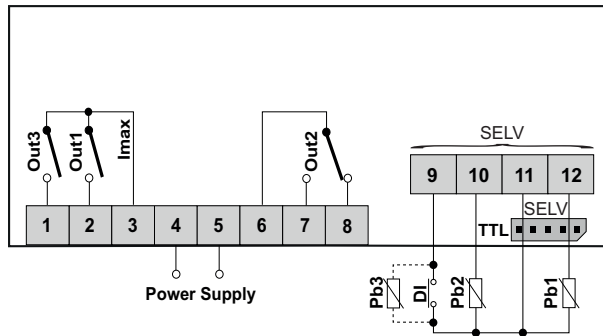
Terminals	Description
1-3	Evaporator fans relay (Out3)
2-3	Compressor relay (Out1)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (Out2)
9-11	Digital input DI (H11 ≠0 and H43 =n) / probe Pb3 (H11 =0 and H43 =y)
10-11	Probe Pb2
12-11	Probe Pb1
Imax	Screw terminals: 17 A maximum Disconnectable terminals: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

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



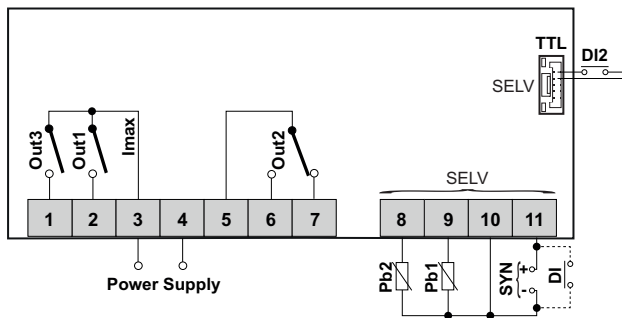
Terminals	Description
1-3	Evaporator fans relay (Out3)
2-3	Compressor relay (Out1)
4-3	Power supply input 115 Vac or 230 Vac (depending on the model)
5-6-7	Defrost relay (Out2)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	Digital input DI
Imax	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum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

EWNNext 974 P/C (230 Vac)



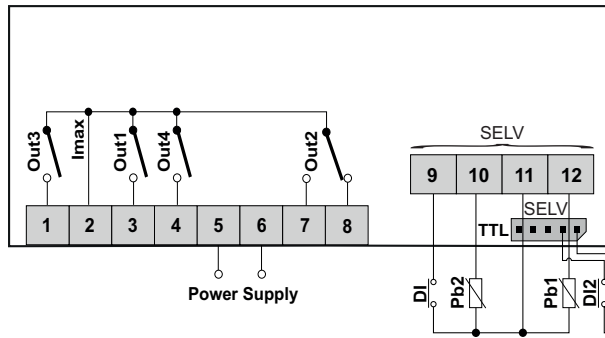
Terminals	Description
1-3	Evaporator fans relay (Out3)
2-3	Compressor relay (Out1)
4-5	Power supply input 230 Vac
6-7-8	Defrost relay (Out2)
9-11	Digital input DI (H11 ≠0 and H43 =n) / probe Pb3 (H11 =0 and H43 =y)
10-11	Probe Pb2
12-11	Probe Pb1
Imax	Screw terminals: 17 A maximum Disconnectable terminals: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

EWNNext 974 P/CY (230 Vac)



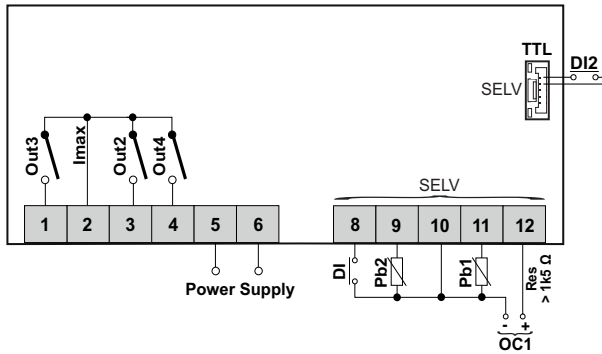
Terminals	Description
1-3	Evaporator fans relay (Out3)
2-3	Compressor relay (Out1)
4-3	Power supply input 230 Vac
5-6-7	Defrost relay (Out2)
8-10	Probe Pb2
9-10	Probe Pb1
11-10	SYN (11 = "+"; 10 = "-") for synchronized defrosts (if H11 =±13) or DI (if H11 ≠±13)
Imax	17 A maximum
SELV	SELV terminals
TTL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

EWNNext 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)

EWNNext 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 \pm 5 % - Load impedance \geq 1500 Ω
I _{max}	Screw terminals: 17 A maximum Disconnectable terminals: 12 A maximum
SELV	SELV terminals
TTL	TTL serial port or DI2 (if H12 \neq 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 $\pm 10\%$)
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)
EWNnext 961 P	230 Vac ($\pm 10\%$) 50/60 Hz	5.5 VA
EWNnext 961 P/B	115 Vac or 230 Vac ($\pm 10\%$) 50/60 Hz (depending on the model)	5.5 VA
EWNnext 971 P	230 Vac ($\pm 10\%$) 50/60 Hz	5.5 VA
EWNnext 971 P/B	115 Vac or 230 Vac ($\pm 10\%$) 50/60 Hz (depending on the model)	5.5 VA
EWNnext 974 P	230 Vac ($\pm 10\%$) 50/60 Hz	5.5 VA
EWNnext 974 P/B	115 Vac or 230 Vac ($\pm 10\%$) 50/60 Hz (depending on the model)	5.5 VA
EWNnext 974 P/C	230 Vac ($\pm 10\%$) 50/60 Hz	5.5 VA
EWNnext 974 P/CY	230 Vac ($\pm 10\%$) 50/60 Hz	5.5 VA
EWNnext 978 P/BC	115 Vac or 230 Vac ($\pm 10\%$) 50/60 Hz (depending on the model)	5.5 VA
EWNnext 978 P/BCI	100...240 Vac ($\pm 10\%$) 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)
EWNnext 961 P	Out1	12(8) A	12FLA 72LRA
EWNnext 961 P/B	Out1	12(8) A	12FLA 72LRA
EWNnext 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
EWNnext 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
EWNnext 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
	I_{max} = Maximum current on common pole (Out1 + Out3) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		
EWNnext 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
	I_{max} = Maximum current on common pole (Out1 + Out3) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		
EWNnext 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
	I_{max} = Maximum current on common pole (Out1 + Out3) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		
EWNnext 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
	I_{max} = Maximum current 17 A on common pole (Out1 + Out3).		
EWNnext 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
	I_{max} = Maximum current on common pole (Out1 + Out2 + Out3 + Out4) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		

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

115 Vac models	Output	EU (115 Vac)	USA (115 Vac)
EWNnext 961 P/B	Out1	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
	Out1	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
EWNnext 971 P/B	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
	Out1	12(8) A	V*: 16FLA 96LRA - S**: 12FLA 72LRA
EWNnext 974 P/B	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
	I _{max} = Maximum current on common pole (Out1 + Out3) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		
	Out1	10(6) A	10FLA 60LRA
EWNnext 978 P/BC	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
	I _{max} = Maximum current on common pole (Out1 + Out2 + Out3 + Out4) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		
100...240 Vac models	Output	EU (230 Vac)	USA (115 Vac)
EWNnext 978 P/BCI	Out2	10(6) A	10FLA 60LRA
	Out3	5(2) A	5 A resistive - 2FLA 12LRA
	Out4	10(6) A	10FLA 60LRA
	I _{max} = Maximum current on common pole (Out2 + Out3 + Out4) - V*: I _{max} = 17 A - S**: I _{max} = 12 A.		

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

Input characteristics

Analog inputs	<ul style="list-style-type: none"> • EWNnext 961 P: 2 NTC inputs (Pb1 and Pb3**) • EWNnext 961 P/B: 1 NTC input (Pb1) • EWNnext 971 P: 3 NTC inputs (Pb1, Pb2 and Pb3**) • EWNnext 971 P/B: 2 NTC inputs (Pb1 and Pb2) • EWNnext 974 P: 3 NTC inputs (Pb1, Pb2 and Pb3**) • EWNnext 974 P/B: 2 NTC inputs (Pb1 and Pb2) • EWNnext 974 P/C: 3 NTC inputs (Pb1, Pb2 and Pb3**) • EWNnext 974 P/CY: 2 NTC inputs (Pb1 and Pb2) • EWNnext 978 P/BC: 2 NTC inputs (Pb1 and Pb2) • EWNnext 978 P/BCI: 2 NTC inputs (Pb1 and Pb2)
Digital inputs	<ul style="list-style-type: none"> • EWNnext 961 P: 1 voltage free digital input (DI**). • EWNnext 961 P/B: 1 voltage free digital input (DI). • EWNnext 971 P: 2 voltage free digital inputs (DI** and DI2*). • EWNnext 971 P/B: 2 voltage free digital inputs (DI and DI2*). • EWNnext 974 P: 2 voltage free digital inputs (DI** and DI2*). • EWNnext 974 P/B: 2 voltage free digital inputs (DI and DI2*). • EWNnext 974 P/C: 1 voltage free digital inputs (DI**). • EWNnext 974 P/CY: 1 voltage free digital input (DI) or SYN connection for defrost synchronization + 1 voltage free digital input (DI2*). • EWNnext 978 P/BC: 2 voltage free digital inputs (DI and DI2*). • EWNnext 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

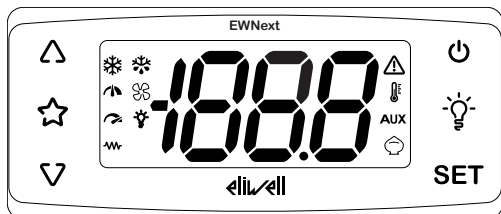
Contents

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
	<ul style="list-style-type: none"> 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.	---
	<ul style="list-style-type: none"> Scroll through the menu options. Decrease the values. 	<ul style="list-style-type: none"> From outside the menus only. Can be configured by the user (parameter H32) Unlock keypad (press and hold for at least 3 seconds)
	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Access the "Machine Status" menu. Display alarms (if present). 	<ul style="list-style-type: none"> 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: $V_{min} \leq \text{required speed} < 90\% V_{max}$ Off: $0\% \leq \text{required speed} < V_{min}$
	Maximum VSC speed	On steadily: required speed $\geq 90\% V_{max}$ Off: required speed $< 90\% V_{max}$
	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 ($^{\circ}\text{C}$ or $^{\circ}\text{F}$) Flashing: PID autotuning active 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: V_{min} = minimum compressor speed; V_{max} = maximum compressor speed.

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

Note: If the value of the parameter $CuS \neq 0$, 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.

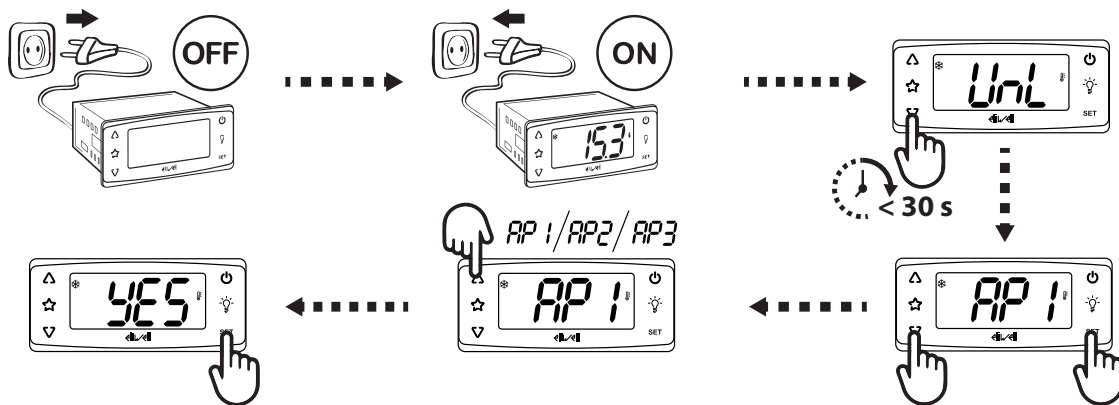
At the first startup:

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 Δ and ∇
 6. Confirm the selected preset application using SET.
- Note:** The process can be canceled by pressing OFF 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 Δ and ∇ until you find the label "PA2"
4. Press and release **SET**
5. Set the value "15" using the keys Δ and ∇
6. Confirm the value by pressing **SET** (the first folder will be displayed)
7. Scroll through the folders with Δ and ∇ until you find the label "diS"
8. Press and release **SET**
9. Scroll through the parameters with Δ 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 Φ , 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 Δ 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 Φ , or let a timeout occur (15 seconds).

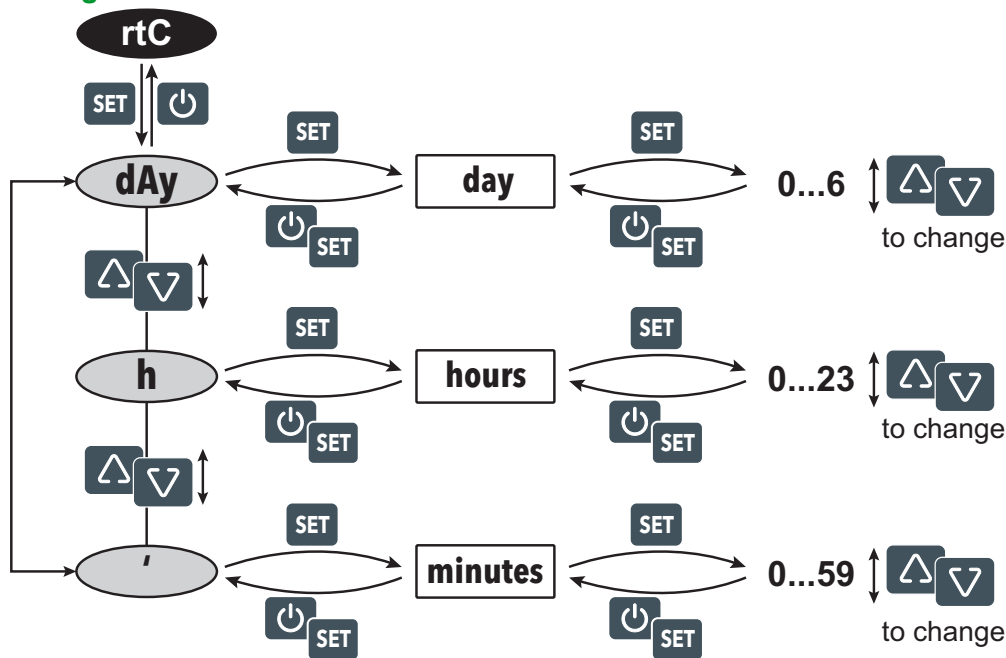
List of folders:

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
- **PEr**: 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:

- To unlock the keypad, press and hold ∇ for at least 3 seconds, until the label "UnL" appears
- 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.

- Scroll through the parameters with keys Δ and ∇ until you find the label for the parameter you want to change
- Press and release **SET**
- Set the desired value using the keys Δ and ∇
- To confirm the value press **SET** or ϕ , or let a timeout occur (15 seconds).

Installer parameters (Inst):

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

- Scroll through the folders with keys Δ and ∇ until you find the label for the desired folder
- Press and release **SET**
- Scroll through the parameters with keys Δ and ∇ until you find the label for the parameter you want to change
- Press and release **SET**
- Set the desired value using the keys Δ and ∇
- To confirm the value press **SET** or ϕ , or let a timeout occur (15 seconds).

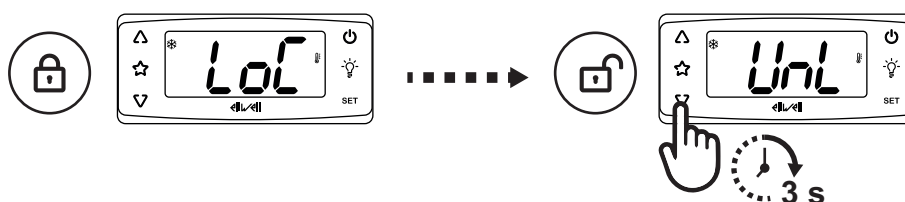
Note: Switch the device off and on again every time you change the parameter configuration.

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 Δ 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 Δ and ∇ until you find the folder **SEt**
4. Press **SET** to view the current setpoint value.
5. Change the setpoint value using Δ 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
Δ	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 ECNext module display (via Modbus)

The controller can manage a **ECNext** 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	ECNext 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:

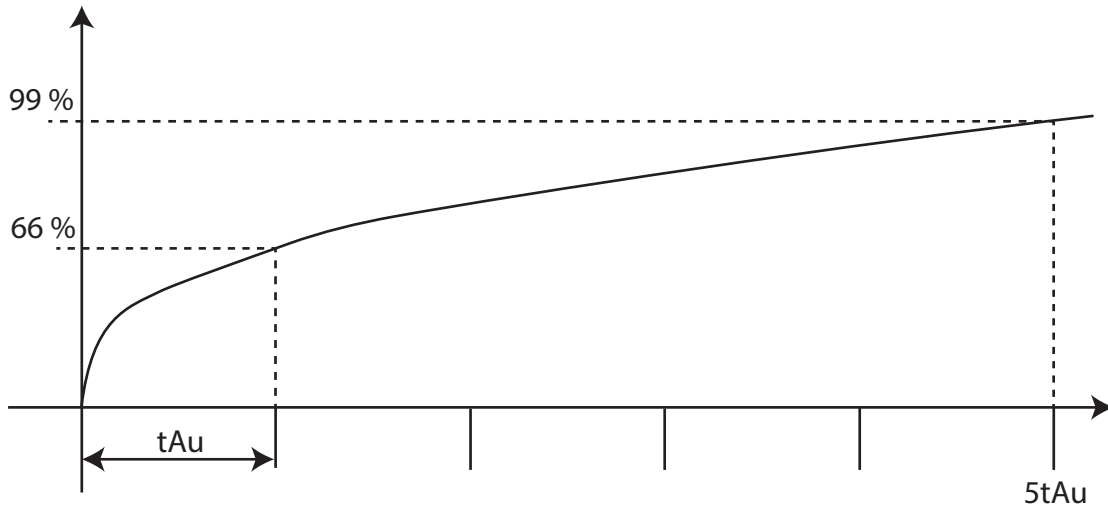
- **FiS=0**: the filter is disabled
- **FiS=1**: the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit**.
- **FiS=2**: the temperature value shown changes by 1°C/°F every **tAu** minutes

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:

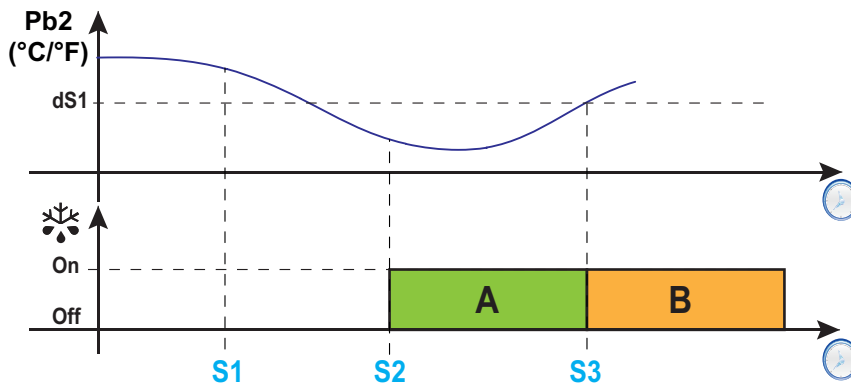
- the temperature of the evaporator is lower than the defrost end setpoint **dS1*** (**dS2**** for defrost on the second evaporator).
- the defrost activation timer has elapsed and the temperature of the evaporator 1 is lower than the defrost end setpoint **dS1*** (**dS2**** for defrost on the evaporator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

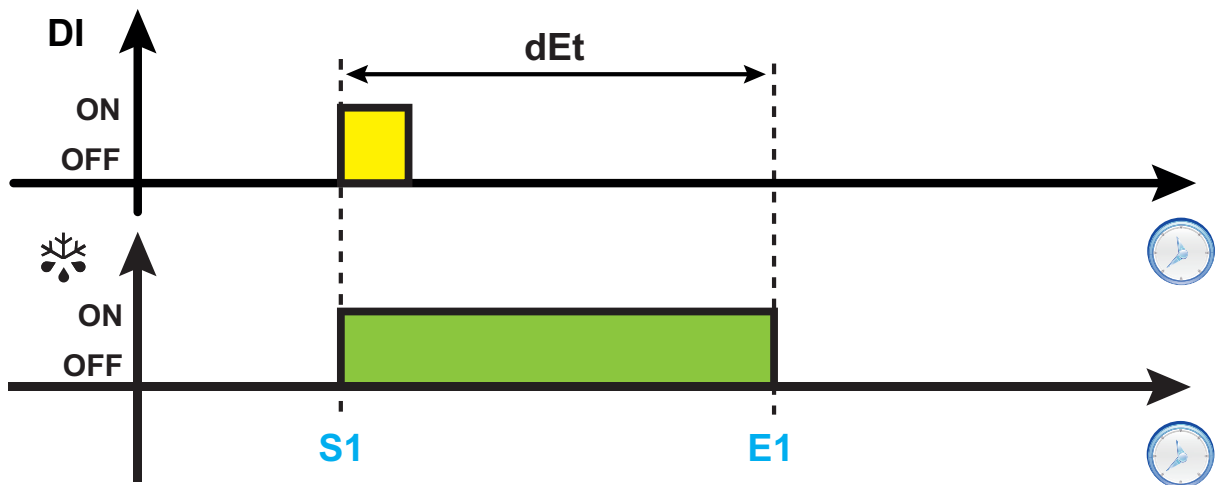
(*): only models that manage probe Pb2.

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

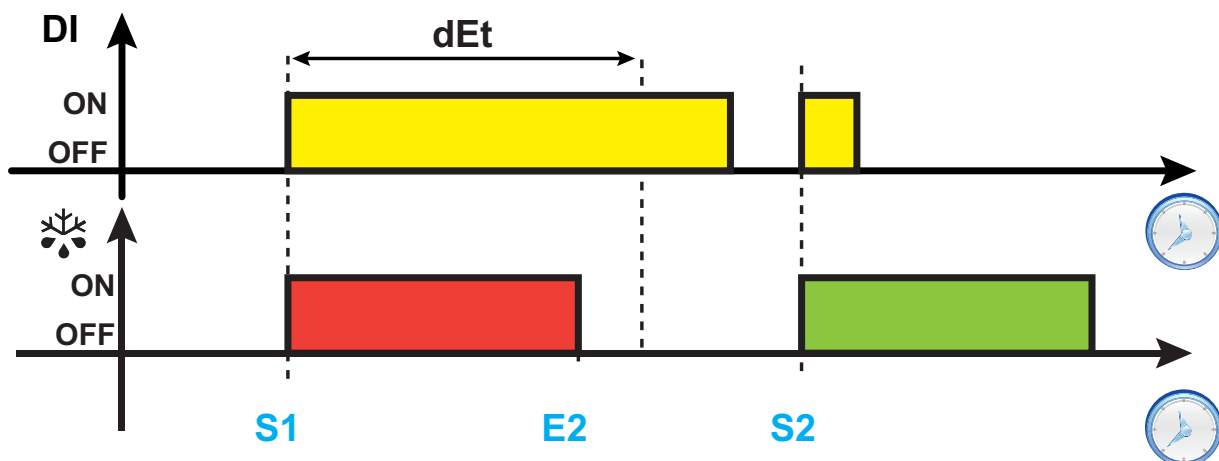
Note: defrost activation takes place upon closure (**H1x**=1) or opening (**H1x**=-1) of the digital input DI (if activated). You can only activate a defrost, not end an active one. Any defrost or dripping cycle in progress and the defrost or dripping time cannot be suspended.

Regulation examples

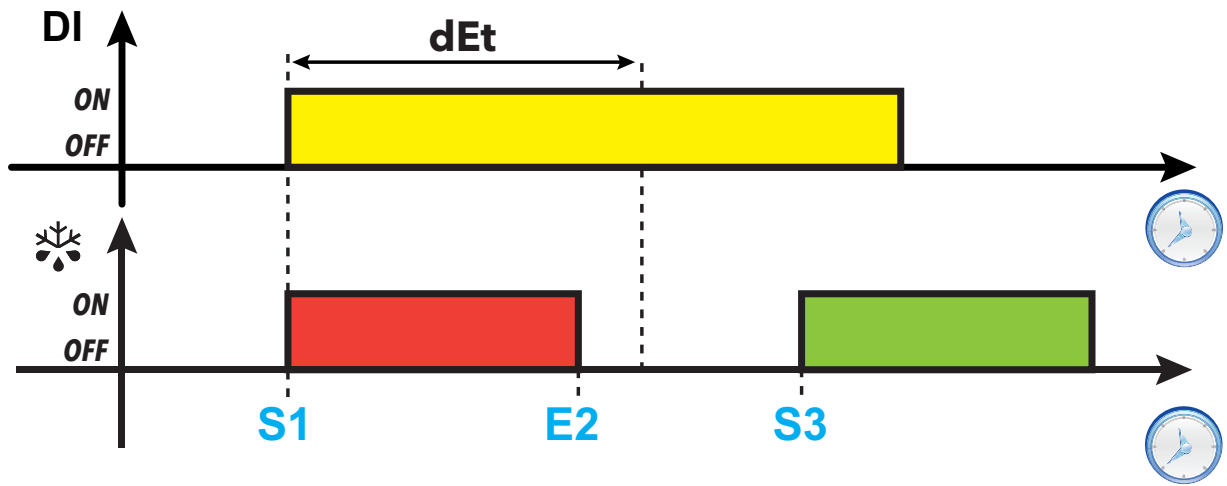
Example 1:



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:

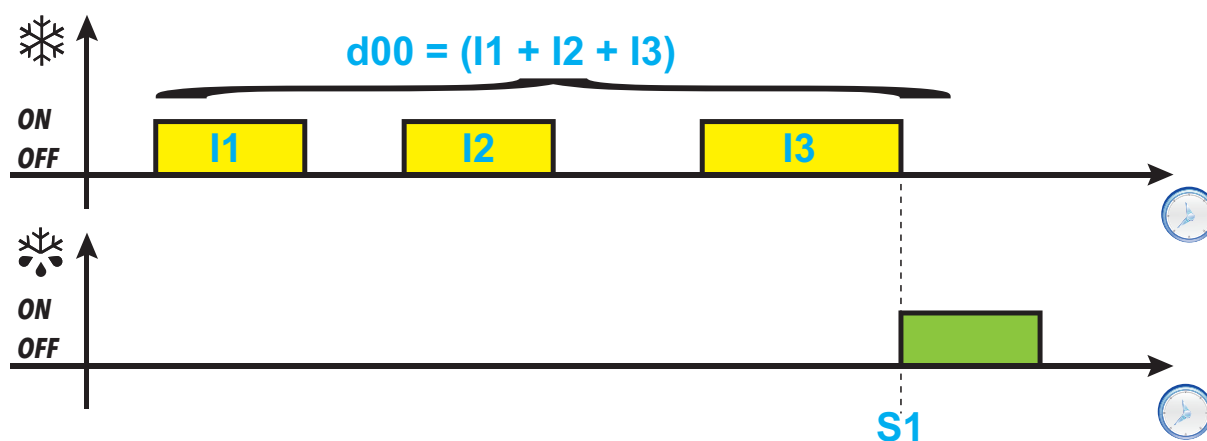
Activation method	Parameters
Compressor running time The defrost is activated when the sum of compressor operating period durations reaches the value d00 .	d00/d01
Instrument running time The defrost is activated when the instrument operating period duration reaches the value dit .	dit/d11
Compressor 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: <ul style="list-style-type: none"> • 0 = hours • 1 = minutes • 2 = seconds

Regulation diagram



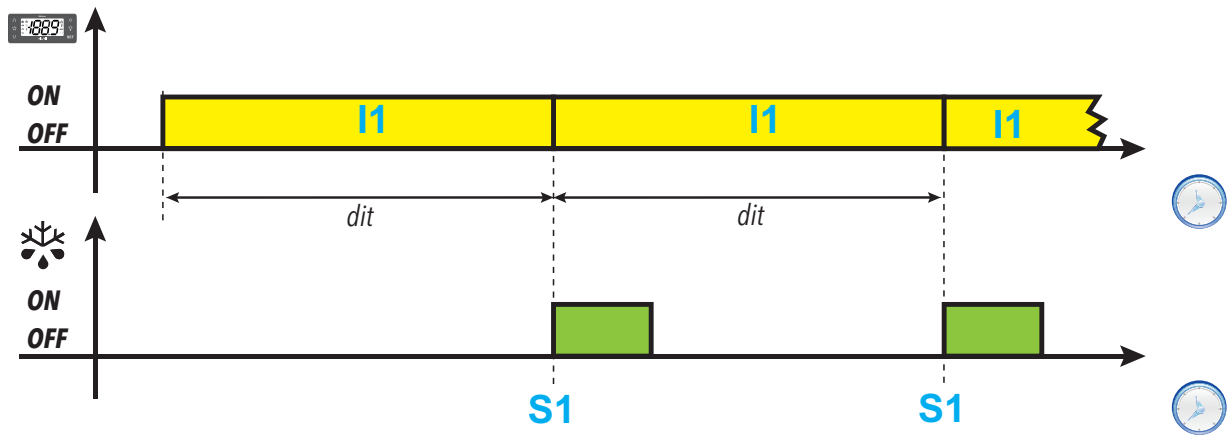
Legend: I1, I2, I3 = Compressor on times; S1 = Defrost start.

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: <ul style="list-style-type: none"> • 0 = hours • 1 = minutes • 2 = seconds

Regulation diagram



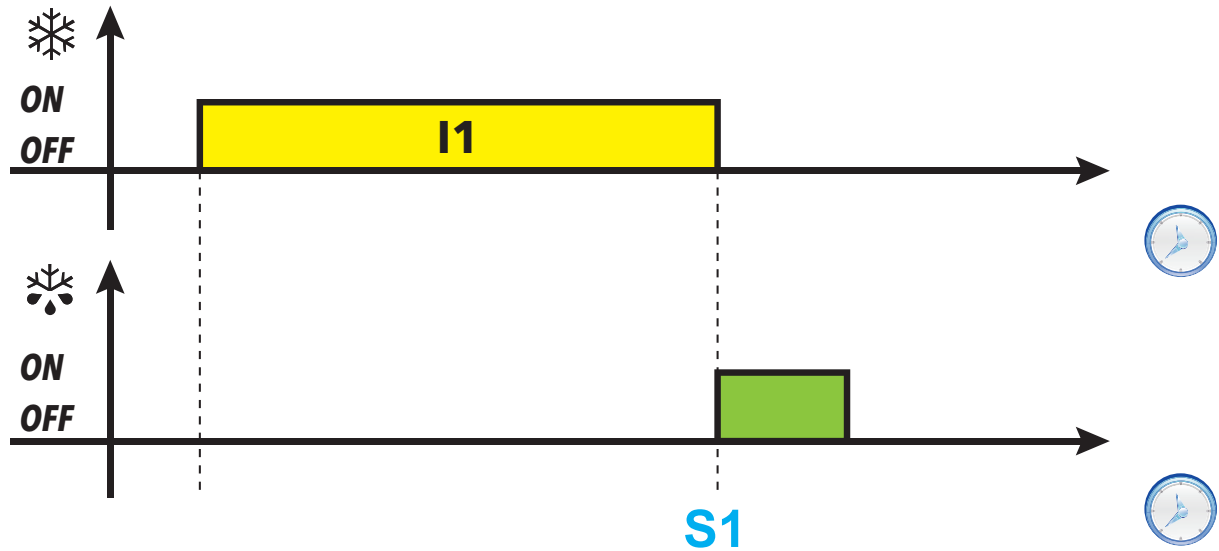
Legend: I1 = Controller on time (equal to dit); S1 = Defrost start.

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. <ul style="list-style-type: none"> 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

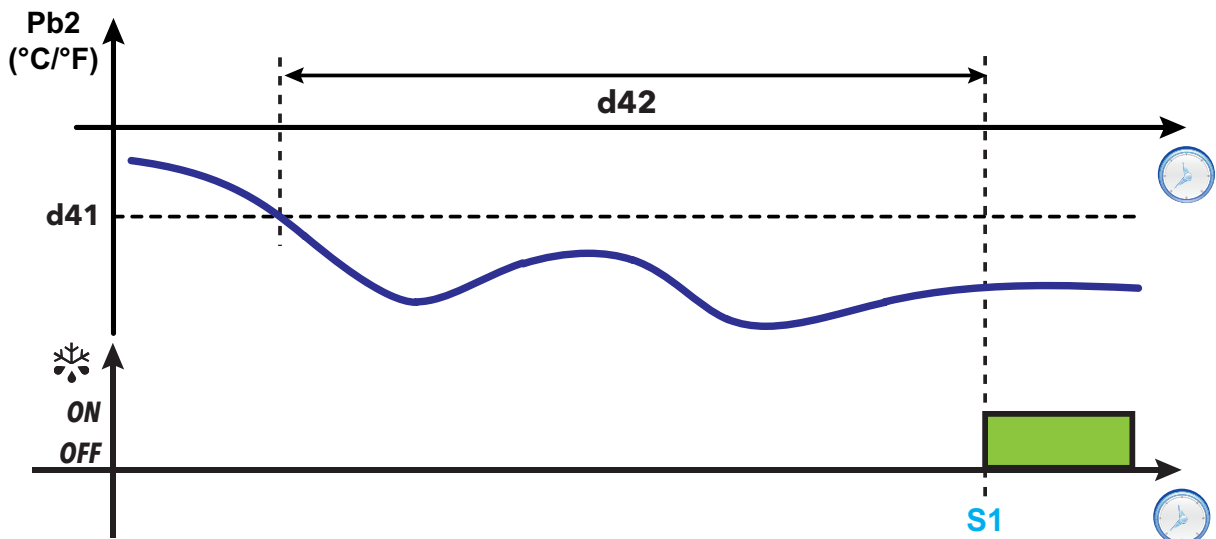
This defrost can be configured via the following parameters:

Parameter	Description
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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.

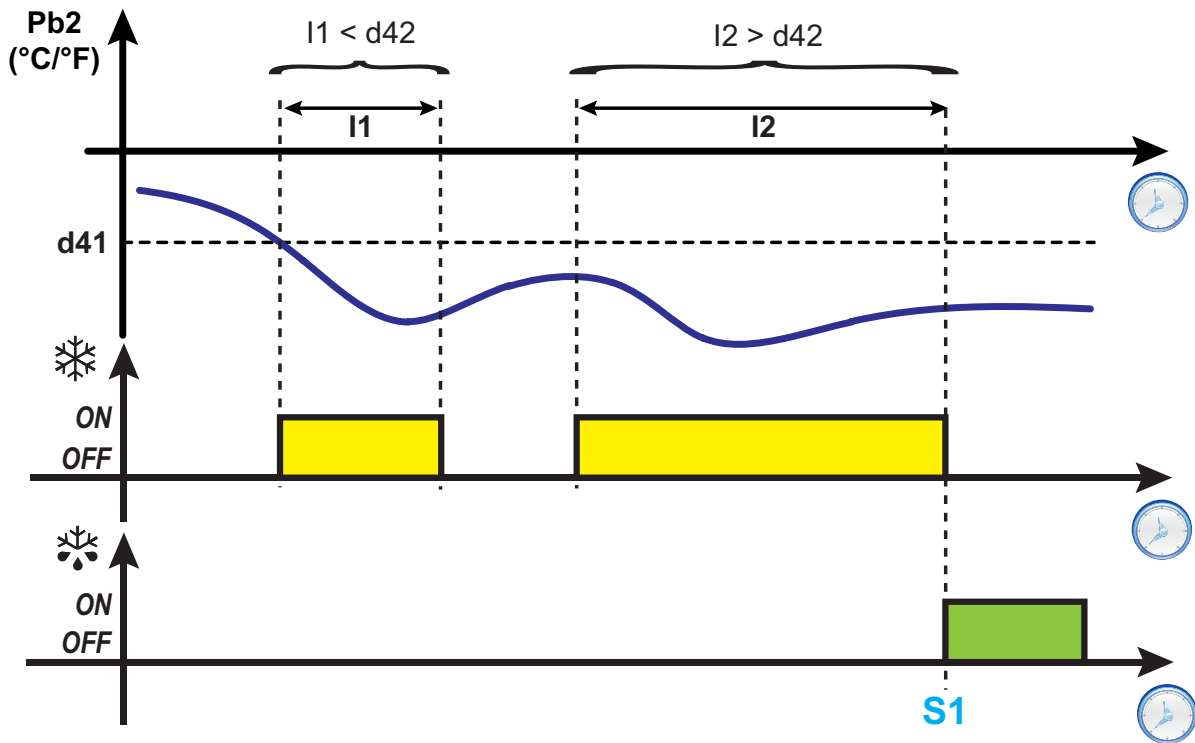
Note: this function can only be activated in models which manage probe Pb2 (as long as the conditions are correct to do so).

Regulation diagrams

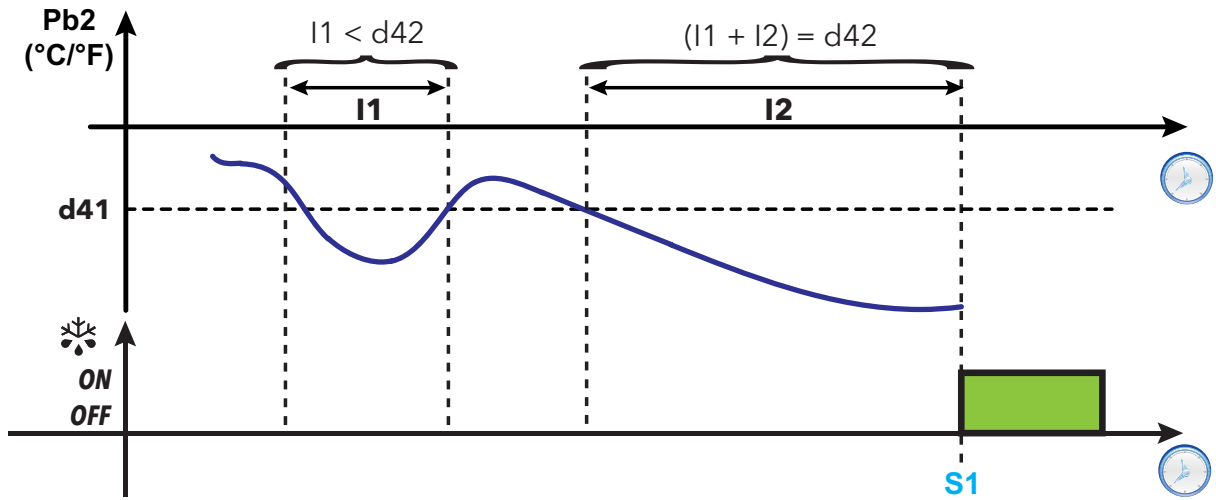
d43 = 0: count independent of the compressor status



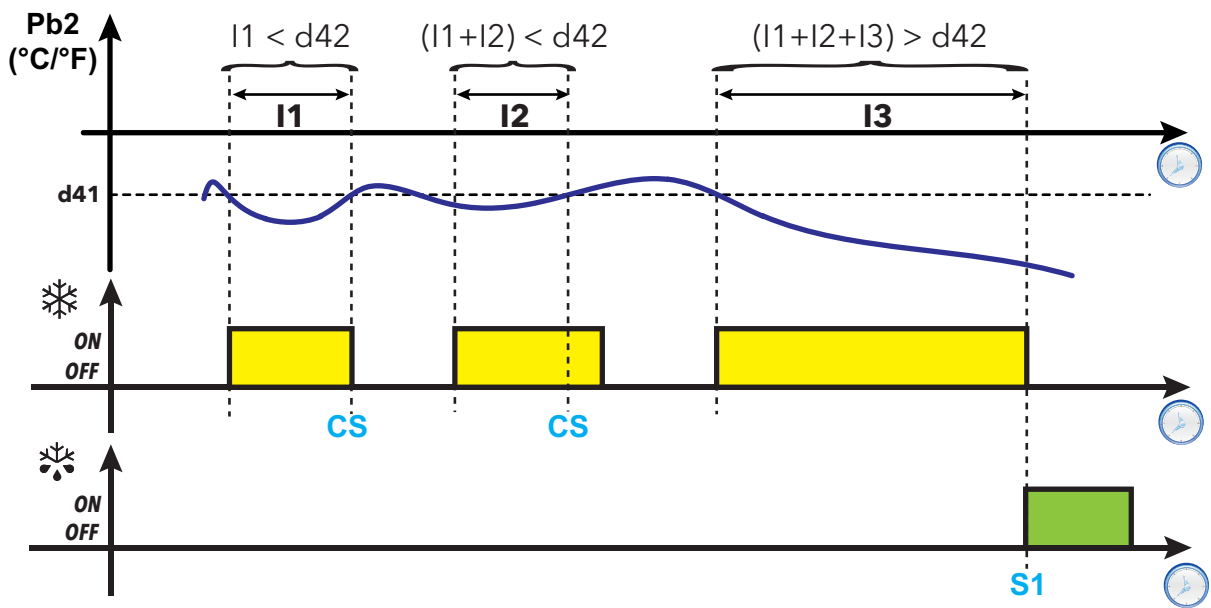
d43 = 1 : count with compressor on



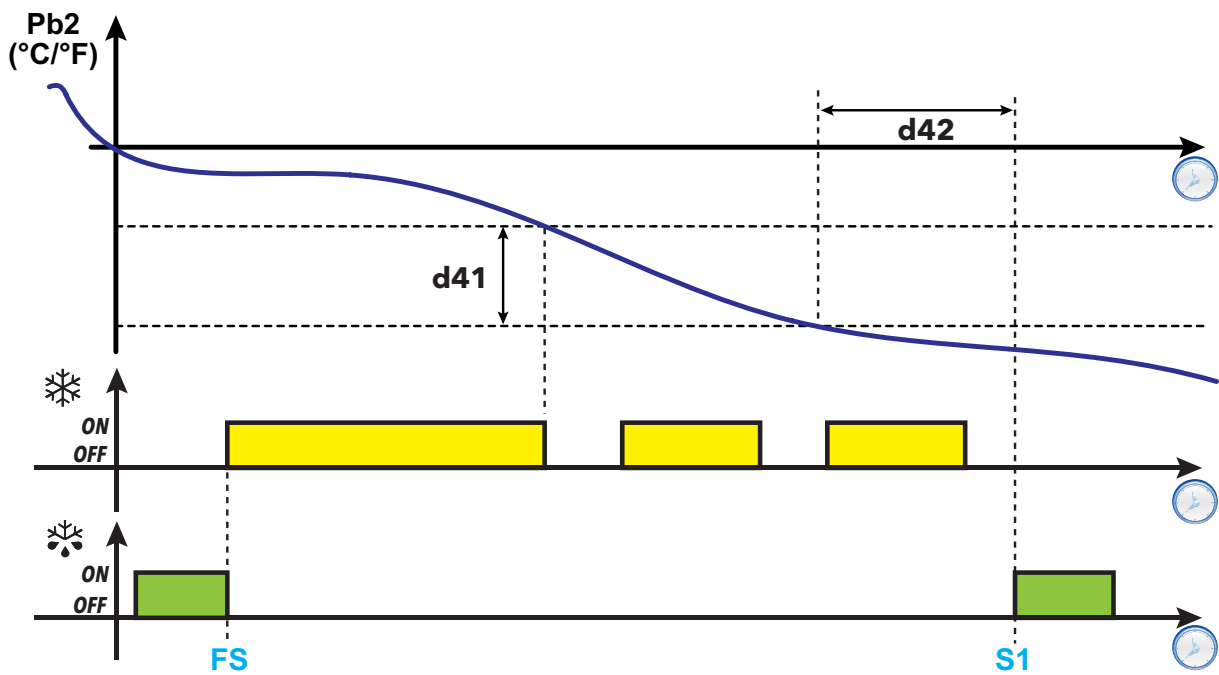
d43 = 2 : count independent of compressor status, count active for Pb2 values below threshold d41



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

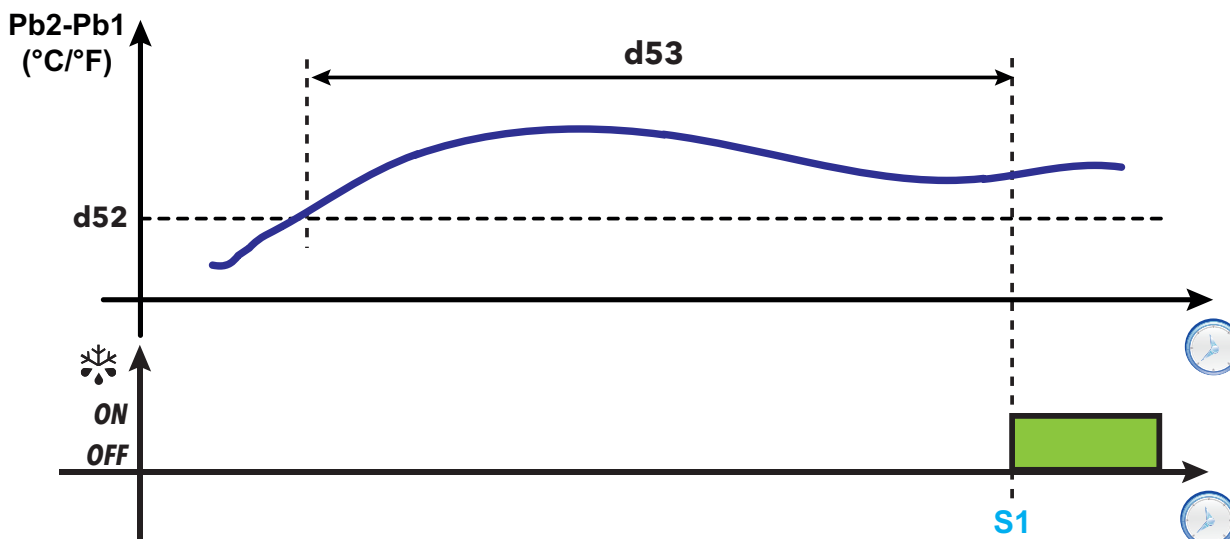
This defrost can be configured via the following parameters:

Parameter	Description
d50	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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 . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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).

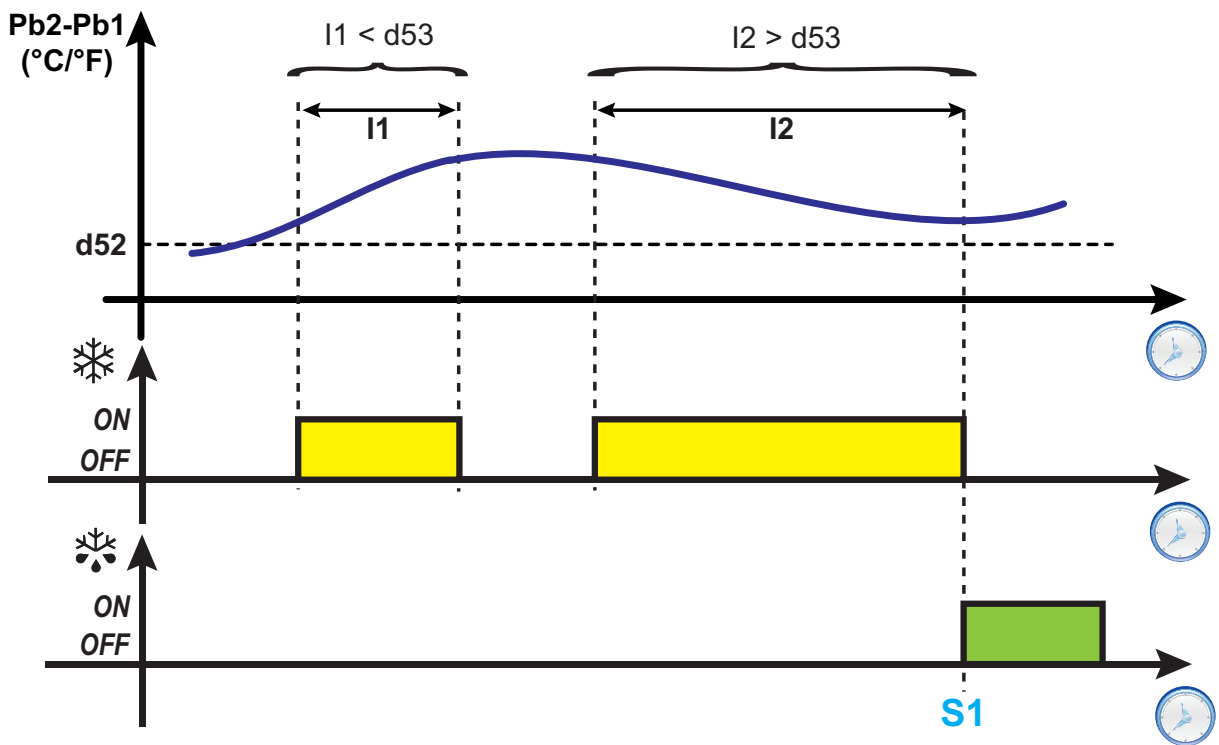
Note: this function can only be activated in models which manage probe Pb2 (as long as the conditions are correct to do so).

Regulation diagrams

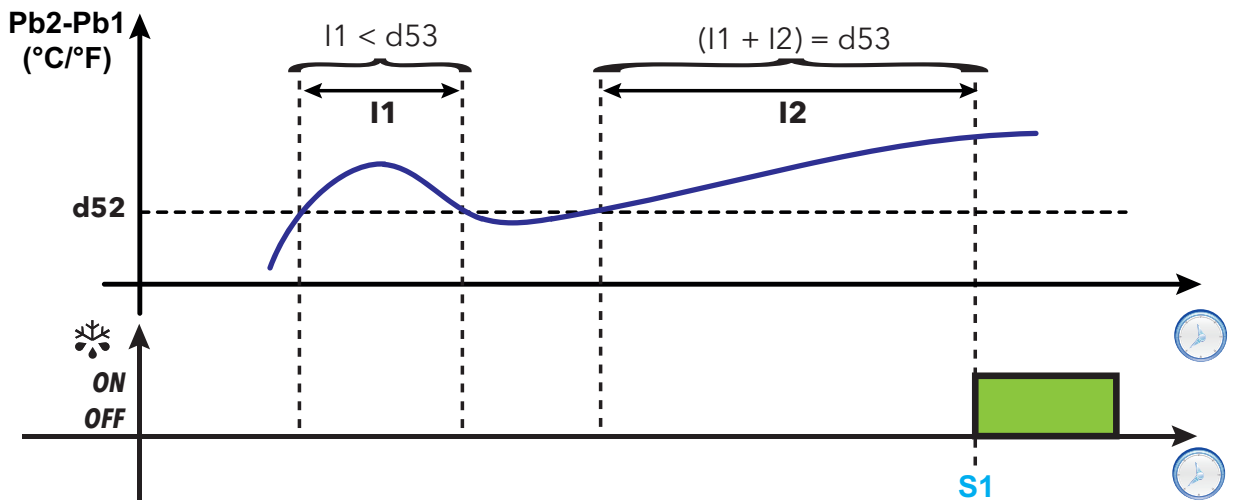
d54 = 0: count independent of the compressor status



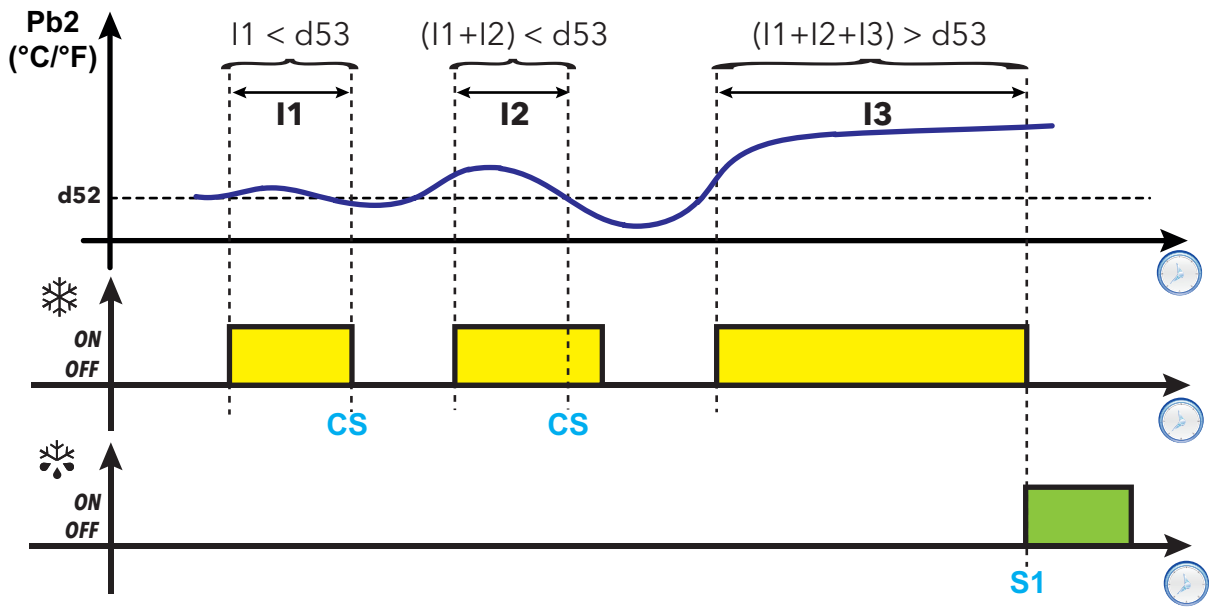
d54 = 1: count with compressor on



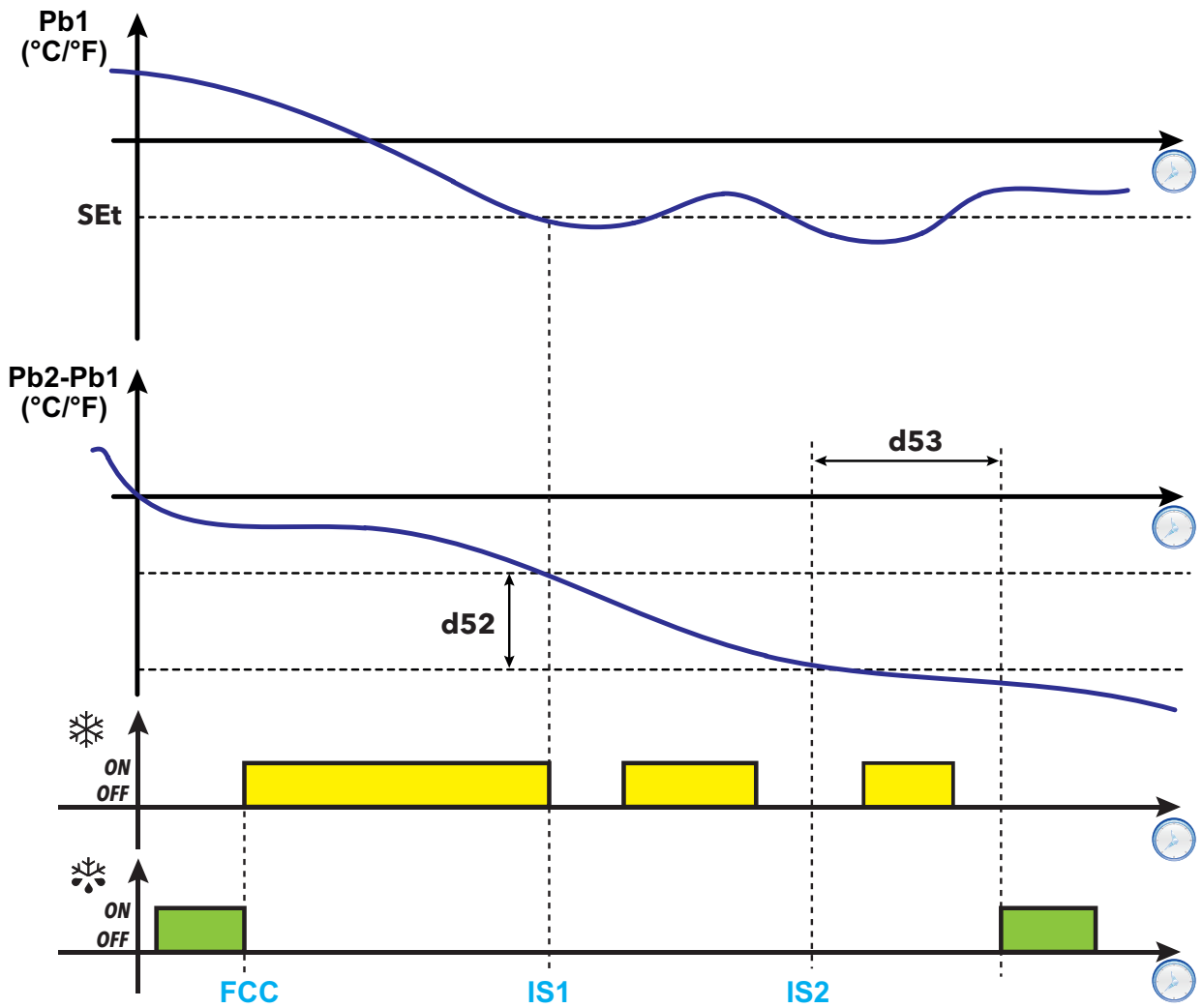
d54 = 2: count independent of the compressor status, count stop below the threshold



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. <ul style="list-style-type: none"> • 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) <ul style="list-style-type: none"> • 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 $24 \text{ h}/\mathbf{d91}$ (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

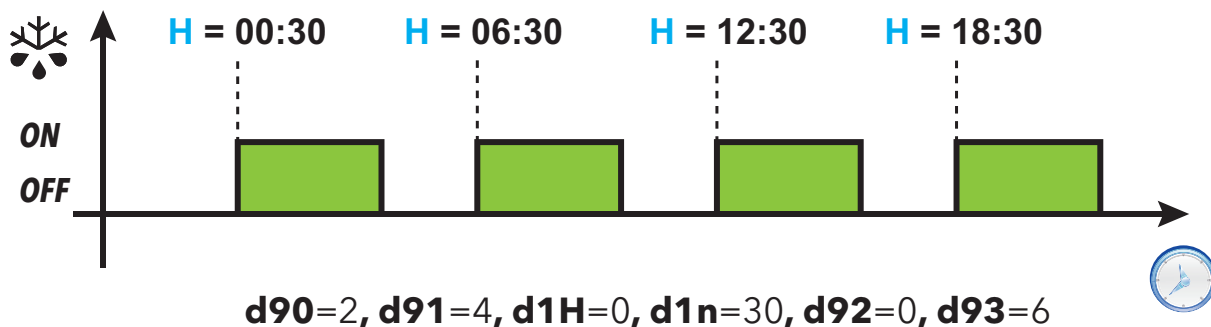
If regular interval RTC is selected (**d90=3**), the first defrost begins at the time programmed using parameters **d1H**, **d1n** (**F1H** and **F1n** are not taken into account).

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.

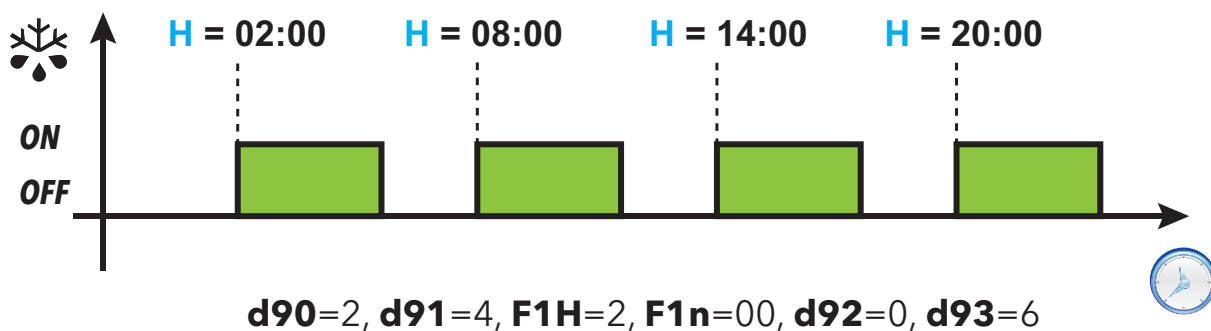
Note: No distinction is made between weekdays and weekends/holidays. The value of parameter **d92** is not important.

Regulation diagrams

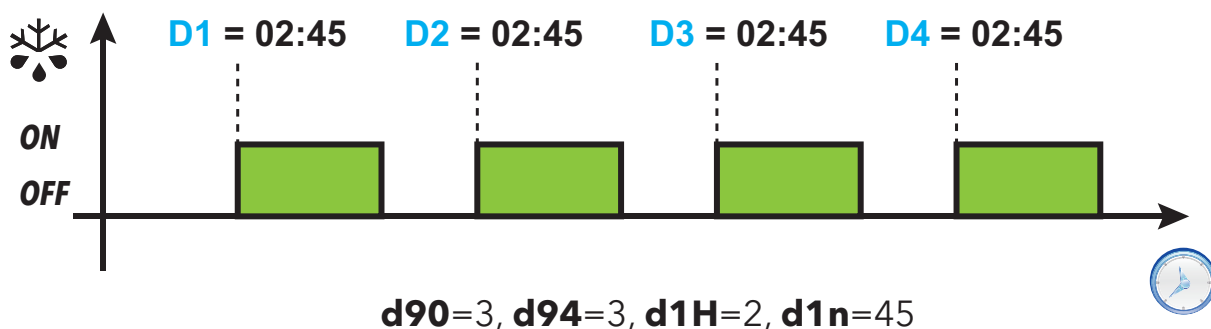
a) Example of defrost at fixed intervals during the week (Monday...Friday)



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



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



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 **dtv** (defrost type).

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

dtv 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 ($dt_y = 0$):

- 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 $dt \neq 0$ 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:

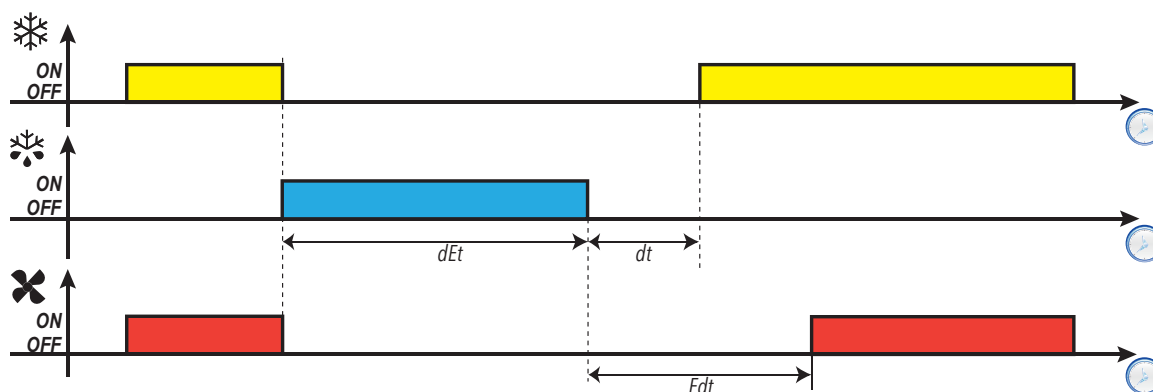
Condition	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter dEt .	0	Not managed
Defrost end setpoint set using parameter dS1 reached or due to timeout if the setpoint is not reached within the time period dEt .	1	Managed

Notes:

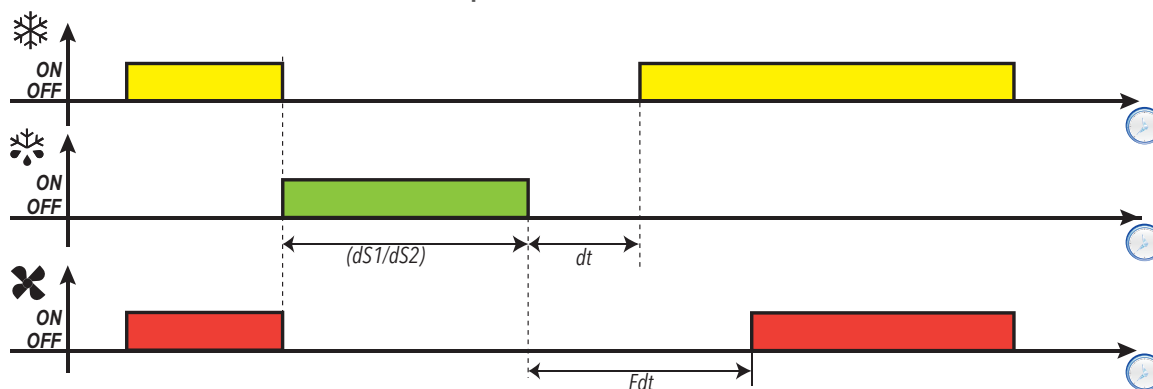
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1** intervention
- If **Fdt < dt** **Fdt = dt** is set
- During the defrost the fans are off if **dFdt = 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 ($dt_y = 0$),

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

End of defrost

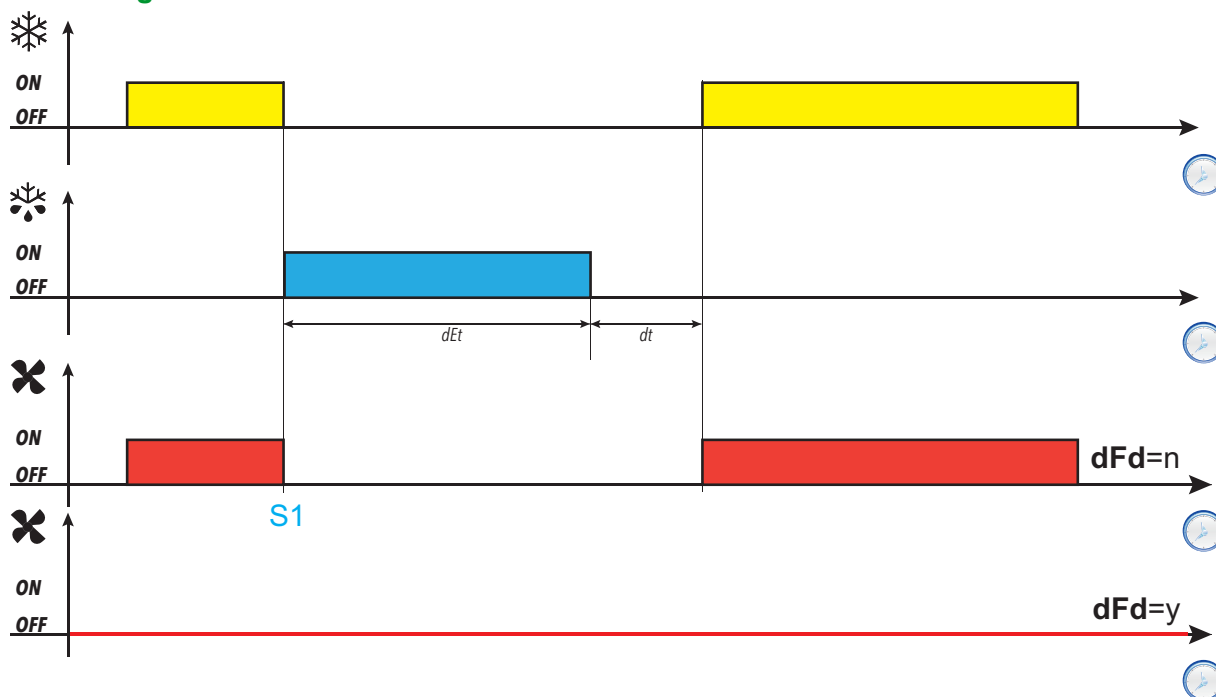
Defrost ends in the following conditions:

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 $dt \neq 0$, 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
dt_y	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 (**dt**= 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:

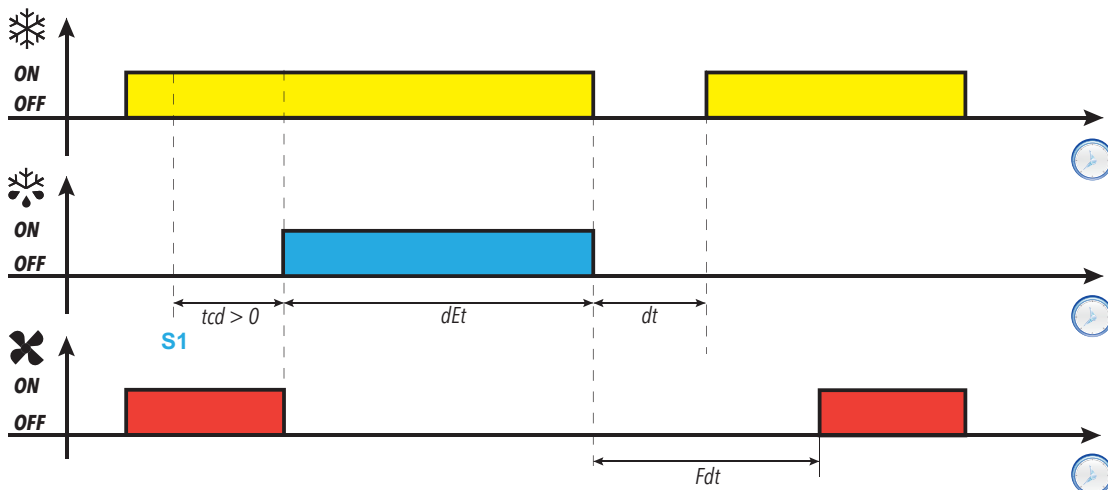
Condition	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter dEt	0	Not managed
Defrost end setpoint set using parameter dS1 reached or due to timeout if the setpoint is not reached within the time period dEt .	1	Managed

Notes:

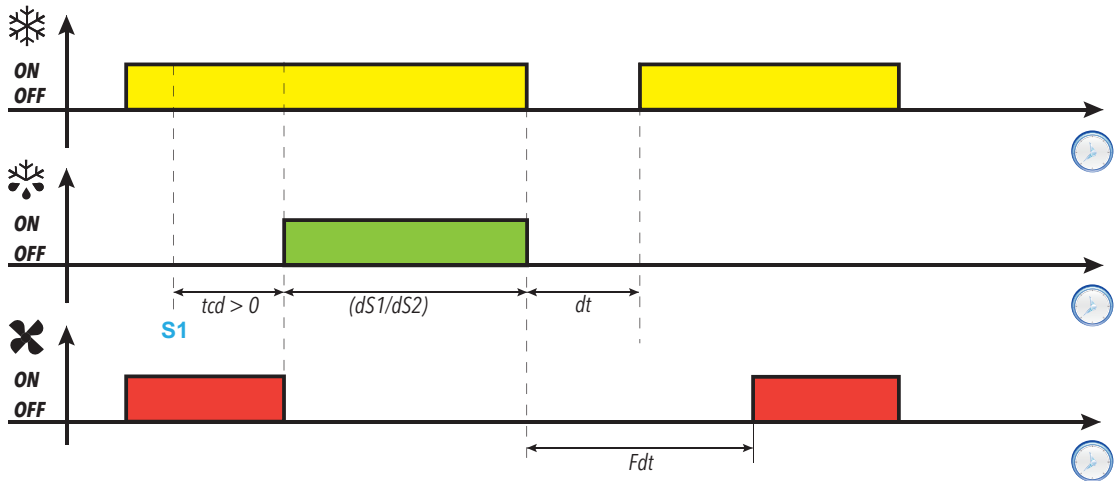
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- The compressor safety timings (managed by parameters **don**, **doF** and **dbi**) take priority over defrost
- If **dS1** intervenes before **dEt**, dripping (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

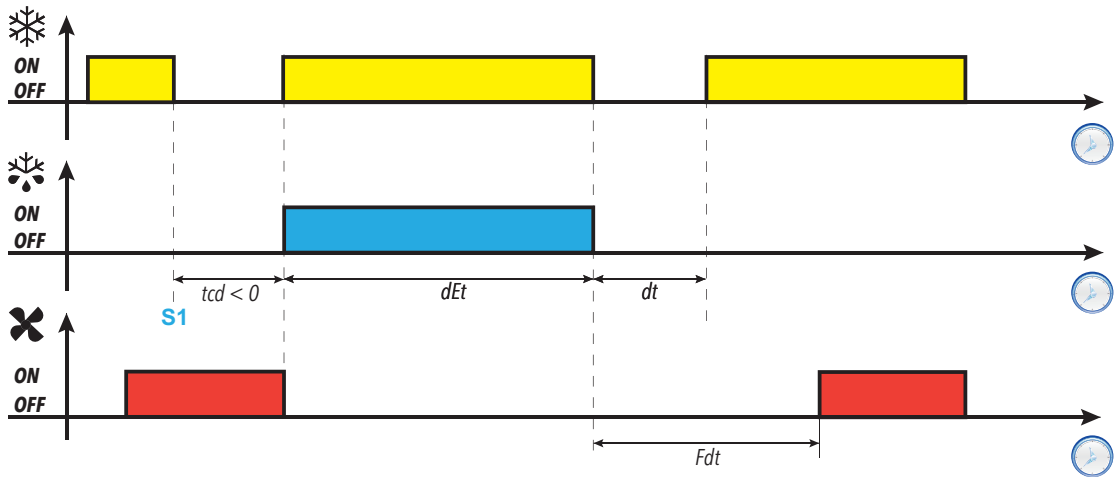
End of hot gas defrost due to timeout, with $tcd > 0$



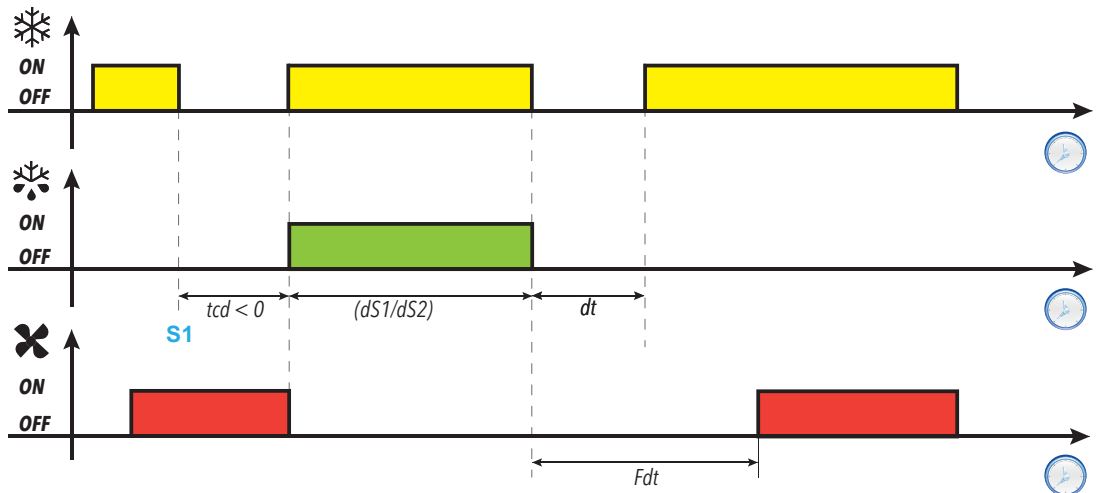
End of hot gas defrost due to temperature, with $tcd > 0$



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.
dy	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 (**dt**= 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	H42 value	Evaporator probe (Pb2)
End of timeout period set using parameter dEt	0	Not managed
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.	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 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
dt	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)

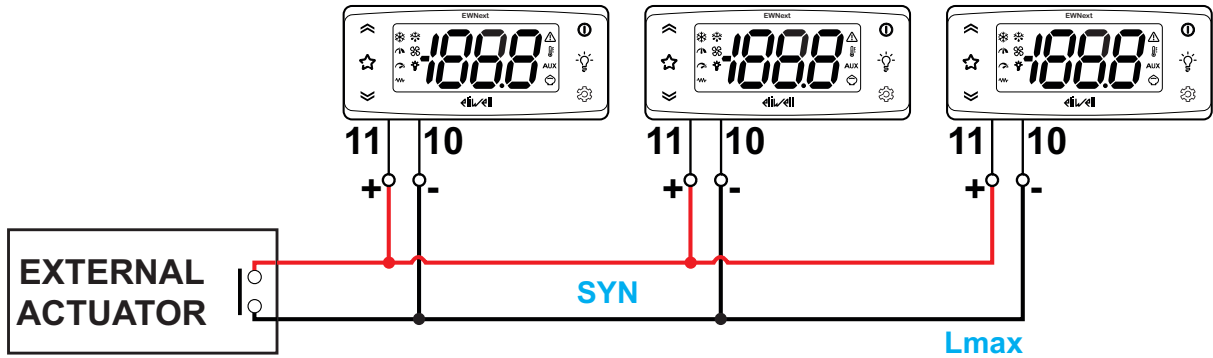
The start of a synchronized defrost can be enabled by means of an external actuator or via one of the EWNNext devices that share the synchronism connection.

NOTICE

INOPERABLE DEVICE

- The external actuator should be voltage free.
- Use a maximum of 8 EWNNext devices in the network.
- For defrost synchronization line connection, use cables no longer than 10 m (32.80 ft).

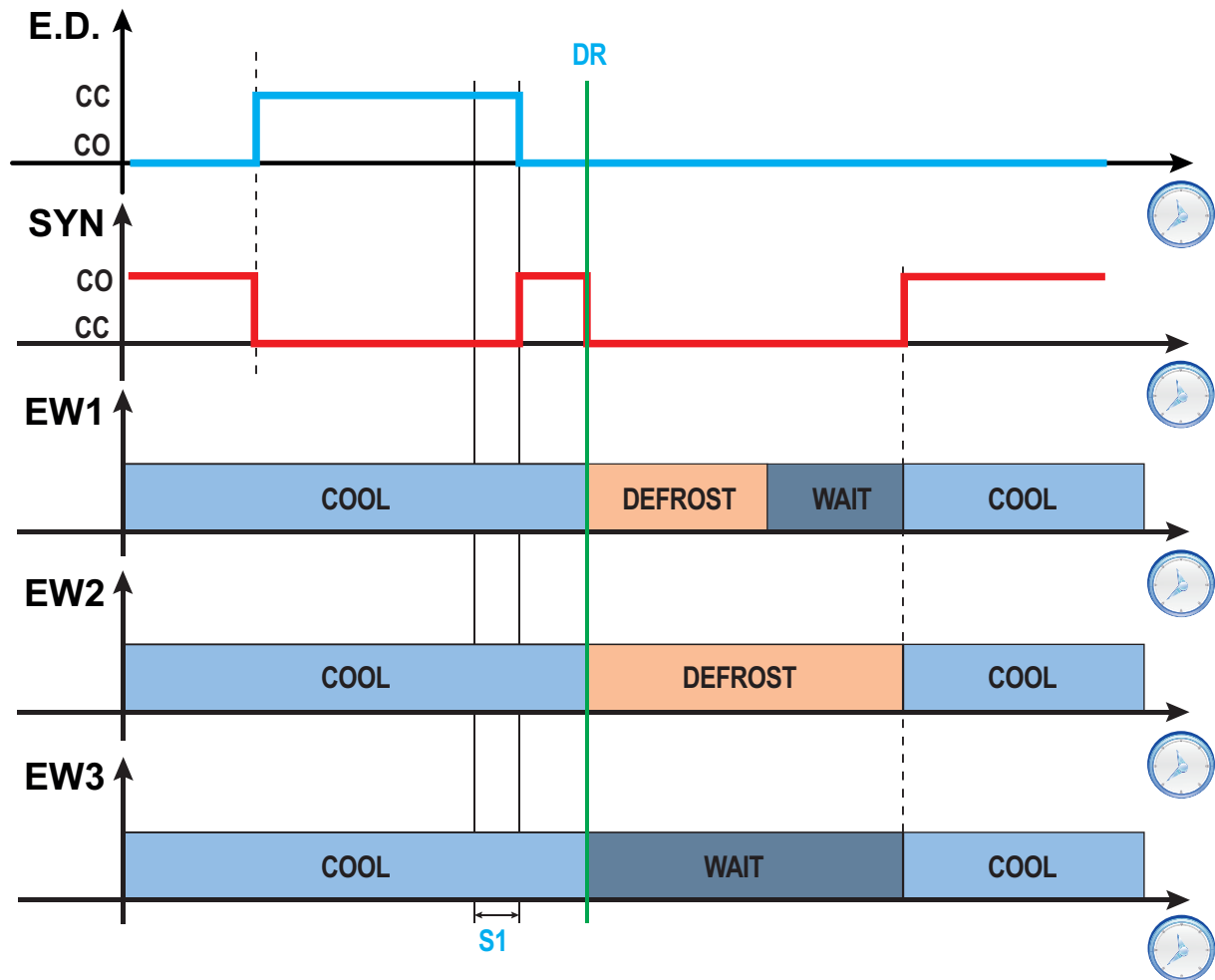
Failure to follow these instructions can result in equipment damage.



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 synchronized controllers have completed the defrost sequence, they will begin regulating normally again.



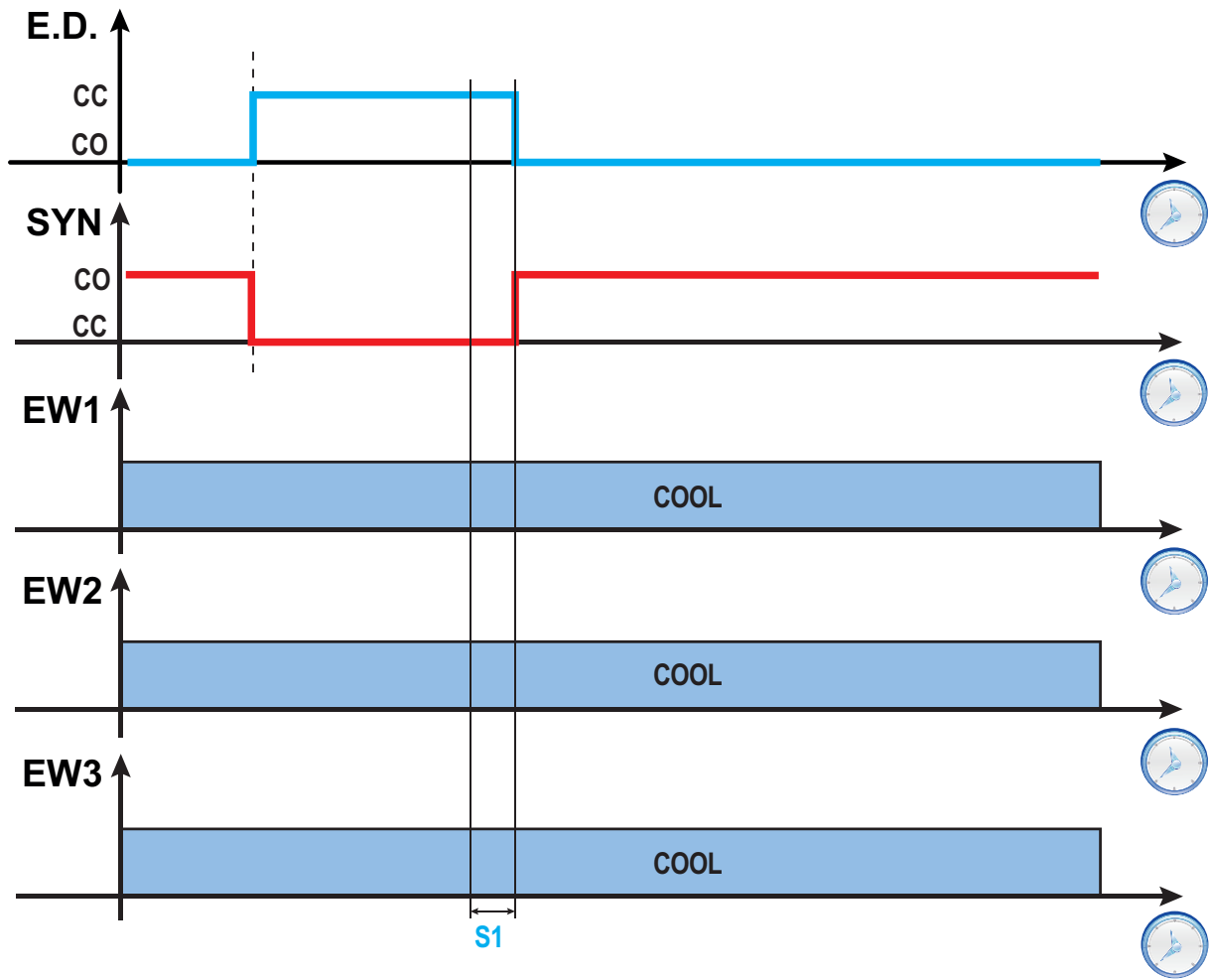
Legend: E.D. = External device; SYN = Synchronization line; CC = Closed contact; CO = Open contact; EW1...EW3 = Synchronization network tools; DR = Defrost request; S1 = Time period of 0.5 seconds; COOL = Normal regulation; WAIT = Command wait time; DEFROST = Defrost.

The defrost sequence will be:

1. The external device activates the synchronization line, closing the circuit 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	<ul style="list-style-type: none"> Pb2<dS1 if H45=0 Pb2<dS1 if H45=1 Pb2<dS1 & Pb3<dS2* if H45=2 	<ul style="list-style-type: none"> Pb2>dS1 or Timeout if Pb2<dS1 or Timeout if Pb2 in error
Defrost on Evaporator 2	<ul style="list-style-type: none"> Pb2<dS1 if H45=0: Pb3<dS2 if H45=1: Pb2<dS1 & Pb3<dS2* if H45=2 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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:

Door switch	92
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 Δ and ∇ until you find the folder **FPr**
3. Press **SET** to confirm
4. Scroll through the parameters using Δ 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 Δ and ∇ until you find the folder **FPr**
3. Press **SET** to confirm
4. Scroll through the parameters using Δ 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 TelevisAir 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	109
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)

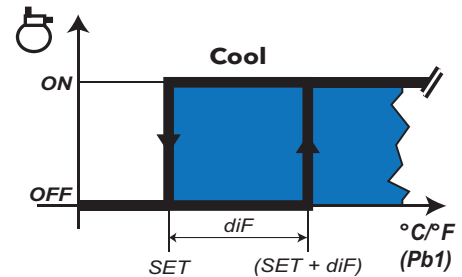
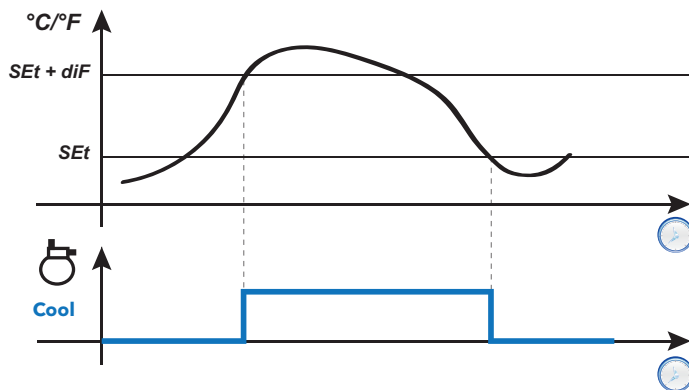
If an offset is activated on the setpoint (**oSP**) and on the differential (**odF**), then:

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

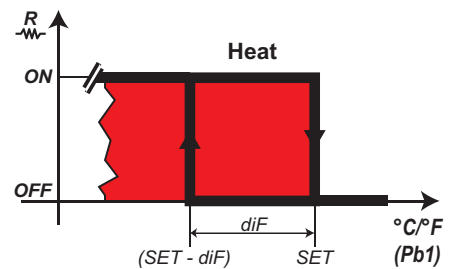
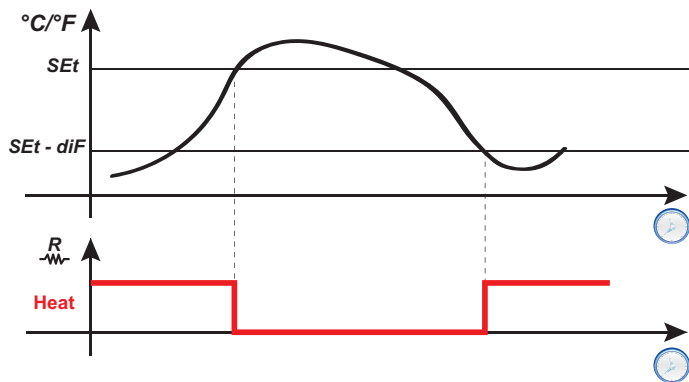
Note: **oSP** can assume both positive and negative values.

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

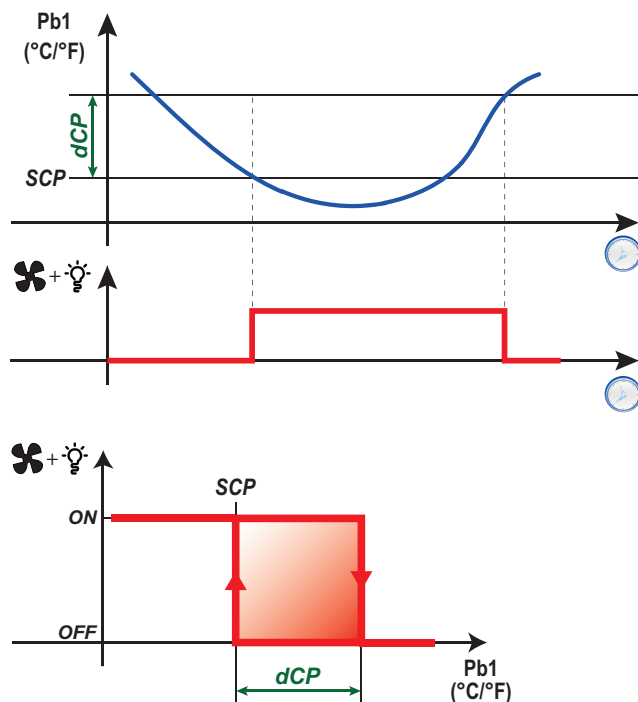
Low ambient temperature protection

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.

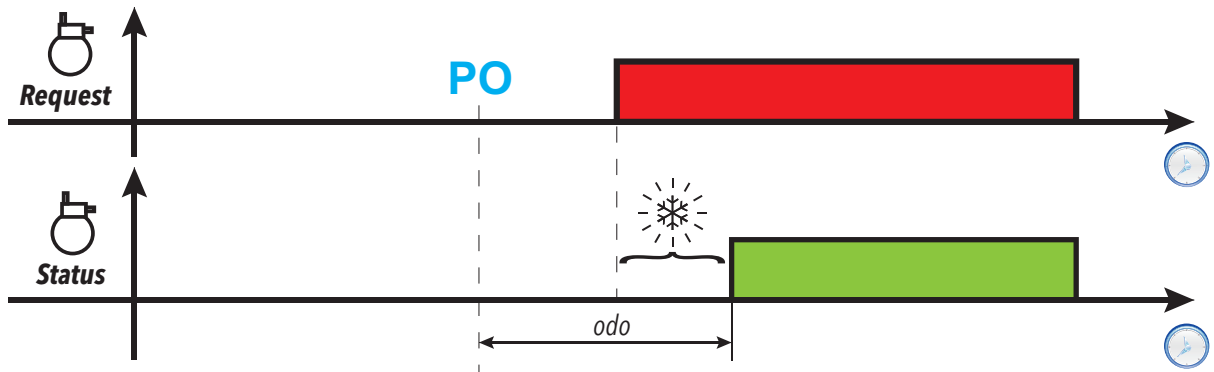
Compressor protections

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

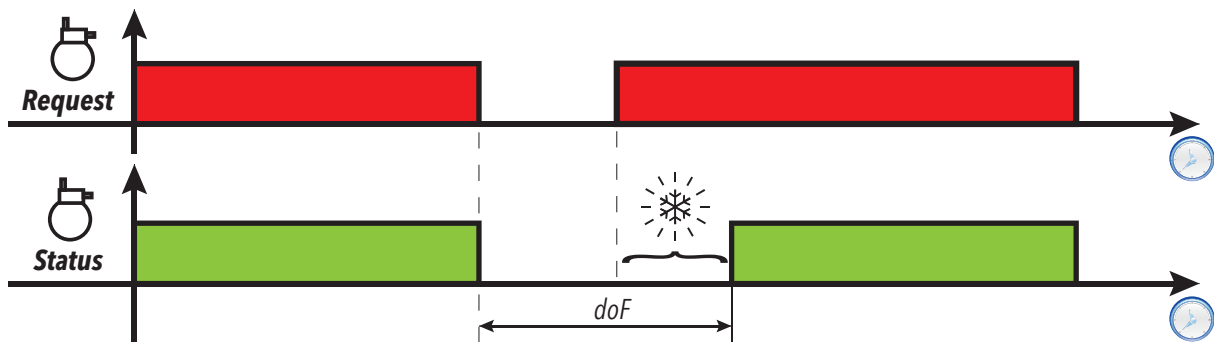
- a delay **doF** between compressor relay switch-off and the next switch-on. If a new activation request arises during the delay **doF**, the compressor icon will flash on the display.
- a delay **dbi** between one compressor startup and the next. The delay **dbi** is calculated from the previous compressor 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

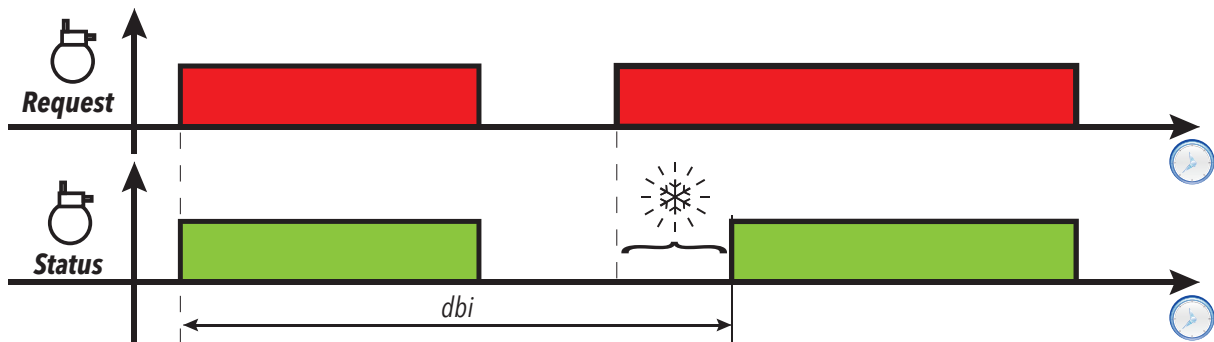
Compressor activation delay from controller power-on



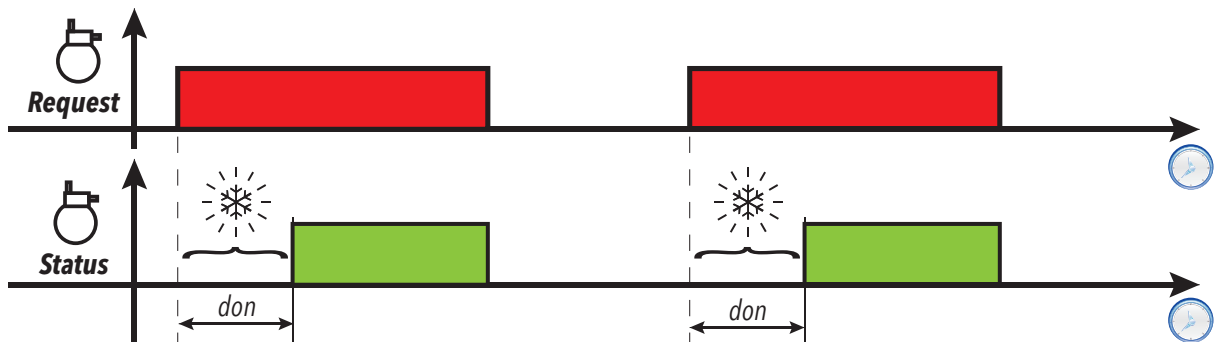
Compressor output activation delay from switch-off



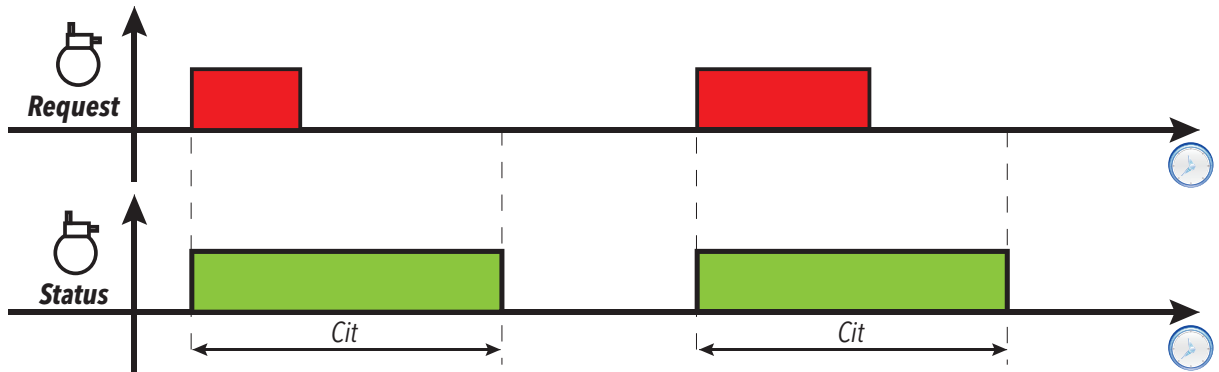
Delay between two consecutive compressor output activations



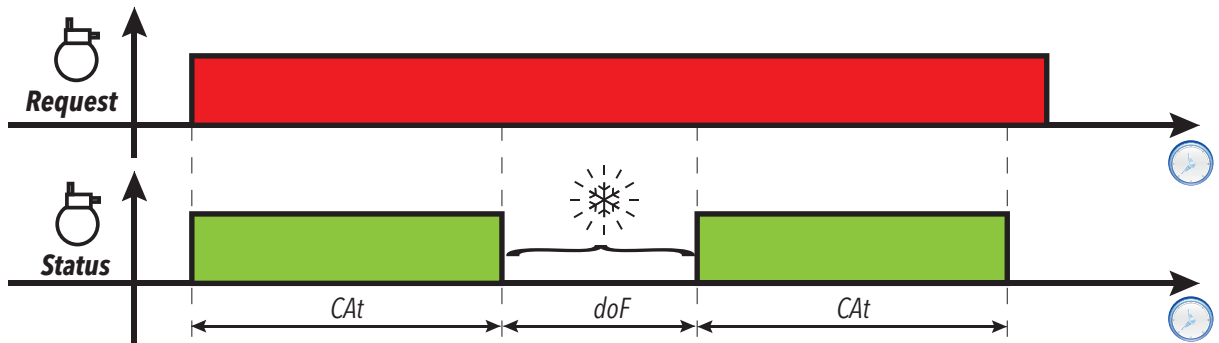
Compressor activation delay from request



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).

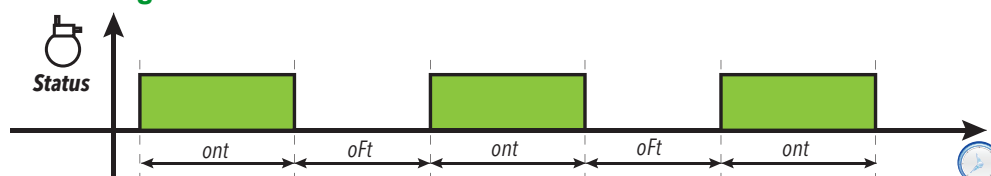
Functioning conditions

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:

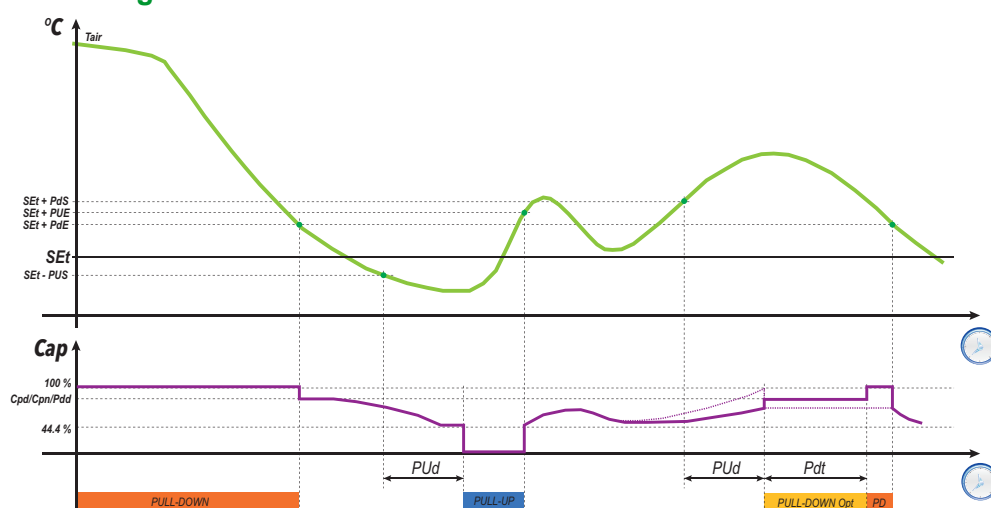
- **Pull-Down:** when an optimized pull-down is activated, the compressor capacity is forced to the value **Pdd** for a time period **Pdt**. When the time period **Pdt** has elapsed, the capacity should be forced to 100% until the temperature reaches the value (**SP1** + **PdE**).
- **Pull-Up:** when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

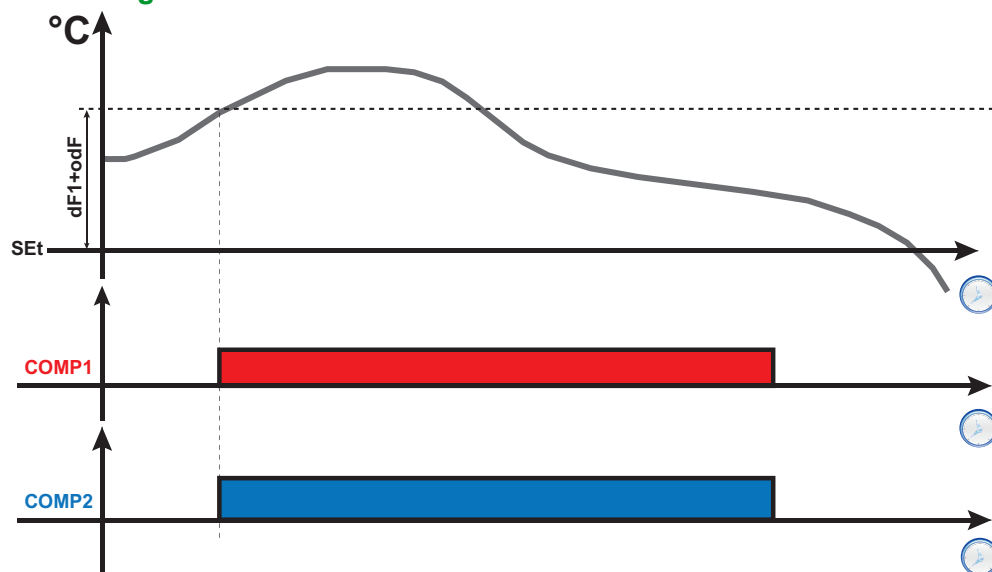
The first step follows all the rules of the main compressor regulator (delays, safety settings, behavior in the event of an inoperable / missing probe).

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.

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

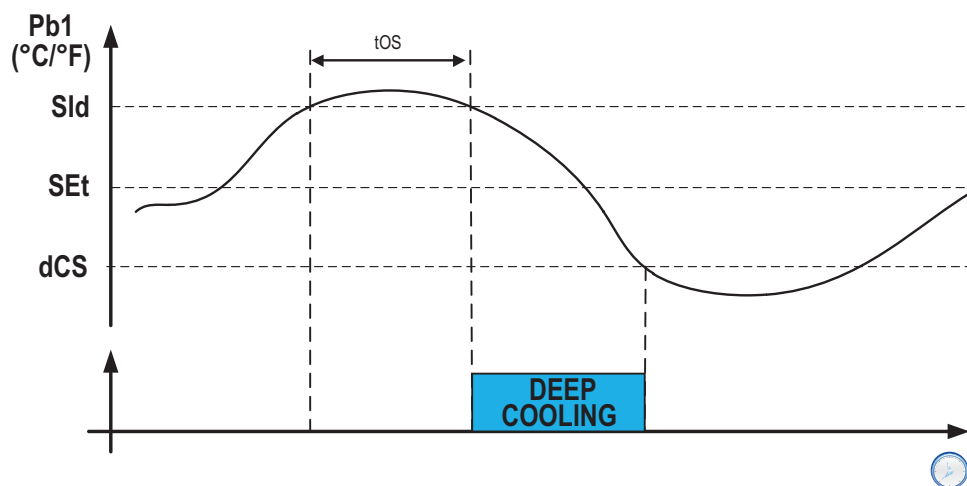
The regulator is activated if the value read by regulation probe **Pb1** remains above the temperature **Sld** for a period of time **toS**.

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

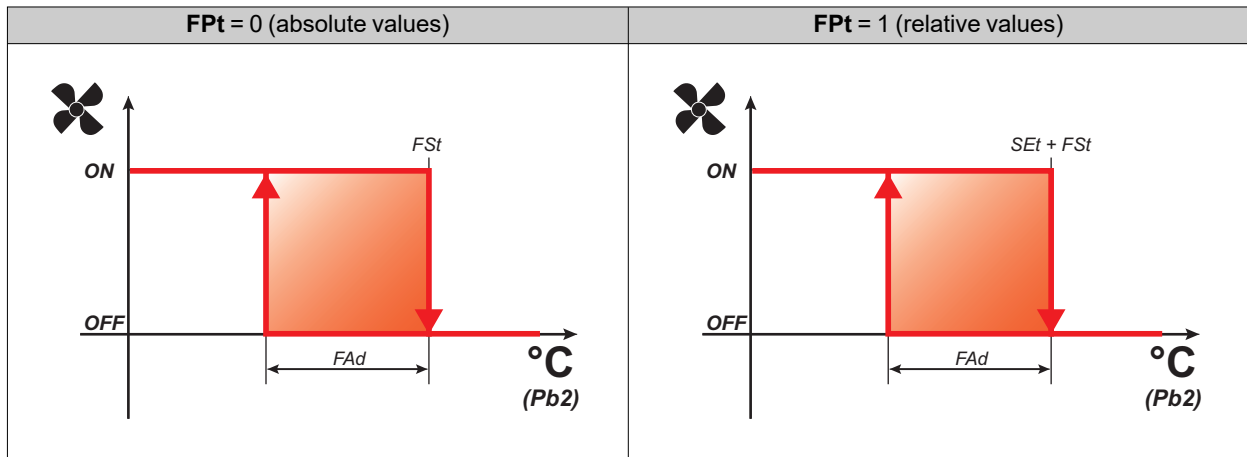
Probe Pb2	H42	FCo	Day		Night	
			Compressor ON	Compressor OFF	Compressor ON	Compressor OFF
Present	y	0	Thermostat controlled	Off	Thermostat controlled	Off
		1	Thermostat controlled	Thermostat controlled	Thermostat controlled	Thermostat controlled
		2	Thermostat controlled	Day duty cycle	Thermostat controlled	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:



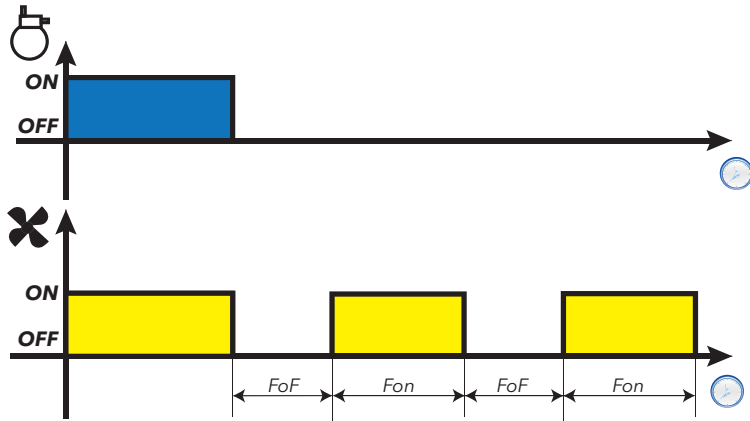
Fan operation in duty cycle

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

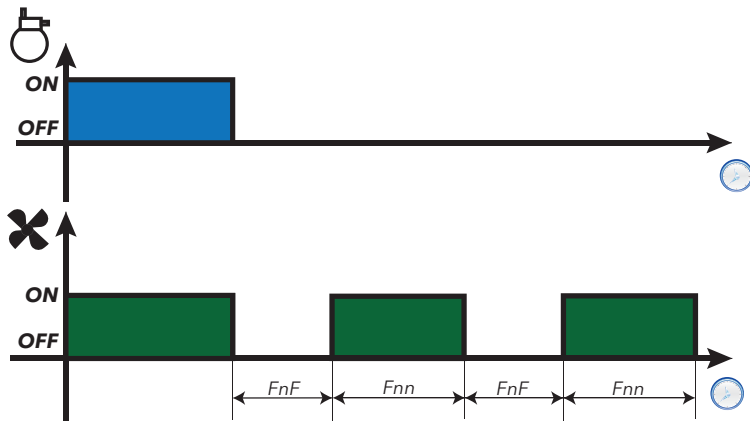
Depending on whether the controller is in day or night mode, fan operation is based on parameters **Fon** and **FoF** (day) or **Fnn** and **FnF** (night):

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:

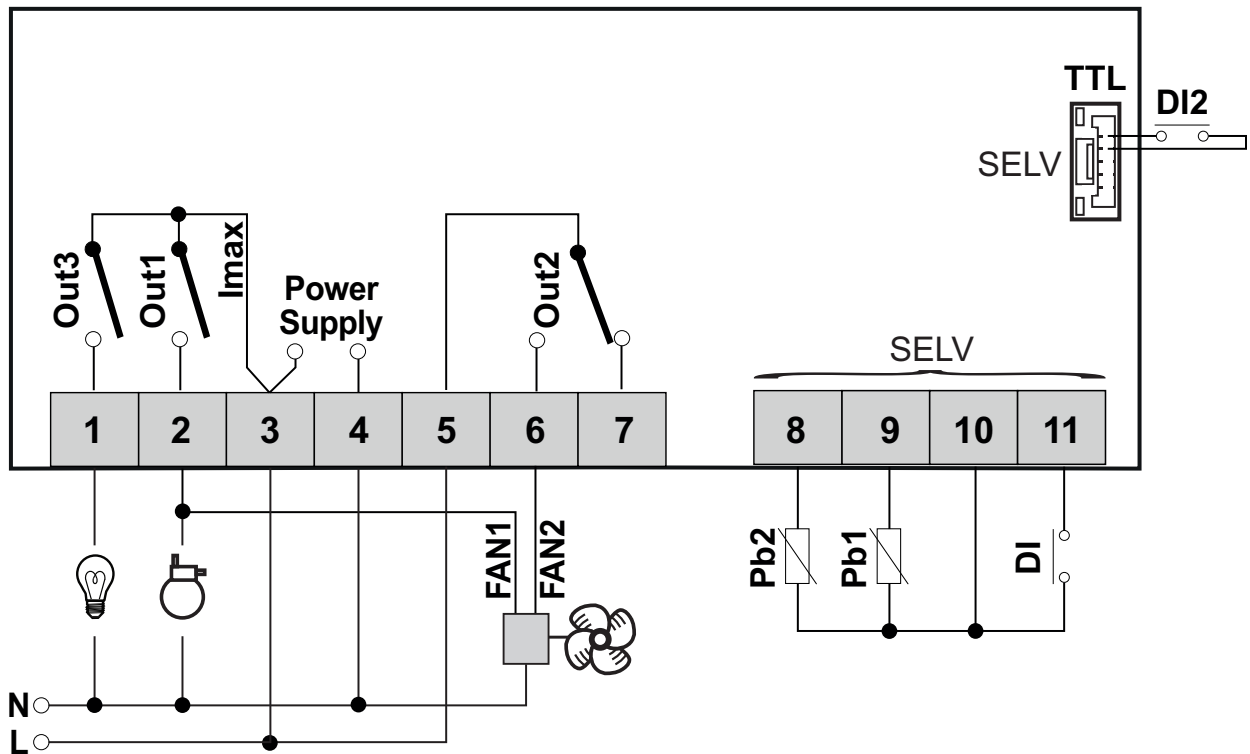
- A digital output is set as "Condenser fan inversion" (**H2x** = 11)
- Defrost is configured as "Defrost due to stoppage" (**dt**y = 0)

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.

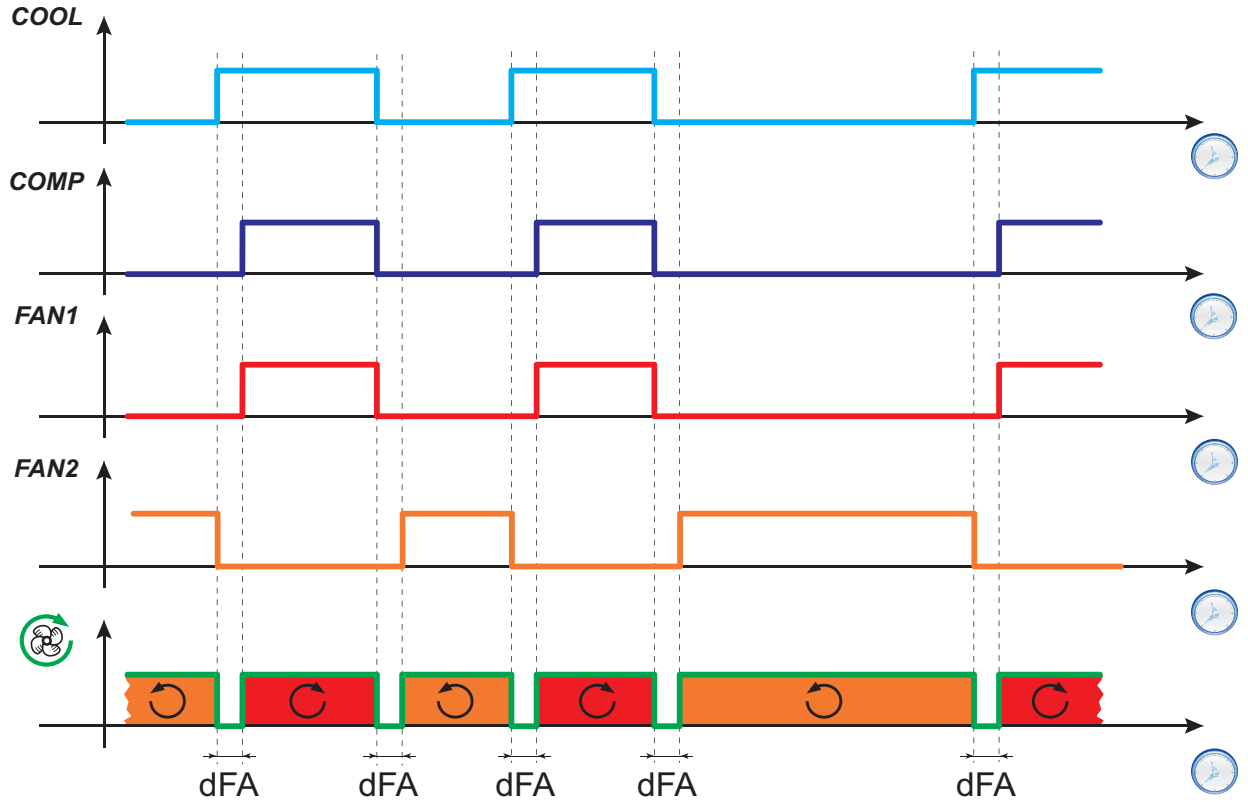
Note: If the compressor and condenser fan activation delay time after the call (**dFA**) and the compressor relay activation delay time after the call (**don**) are both configured, the larger of the two parameters will be taken into account.

Wiring diagram

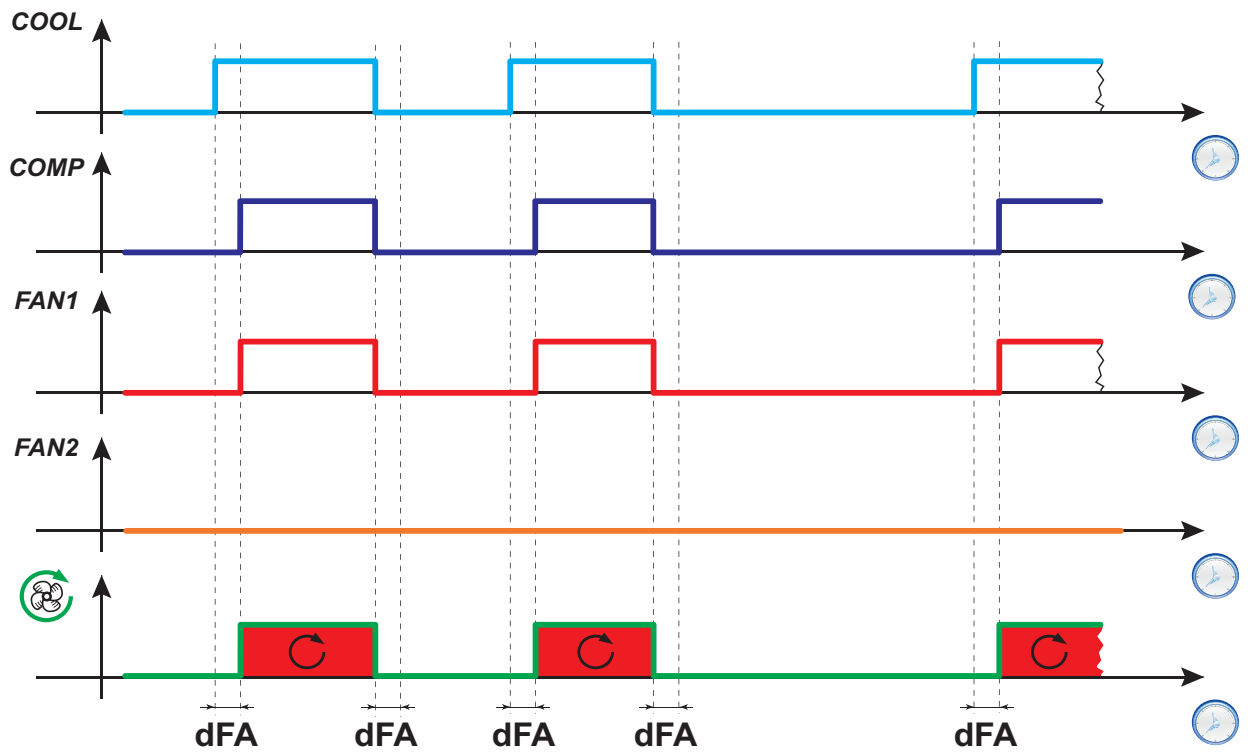



Regulation diagrams

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 reaches 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.

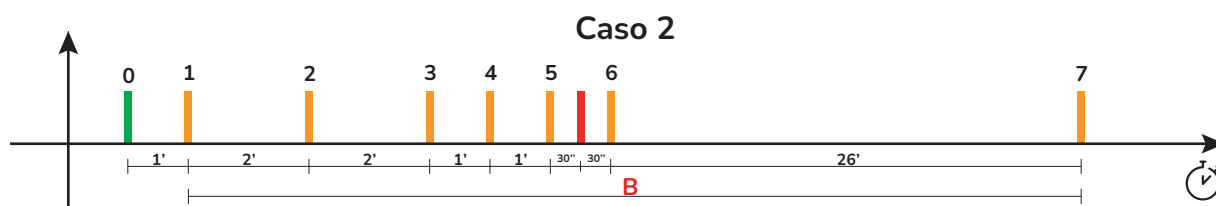
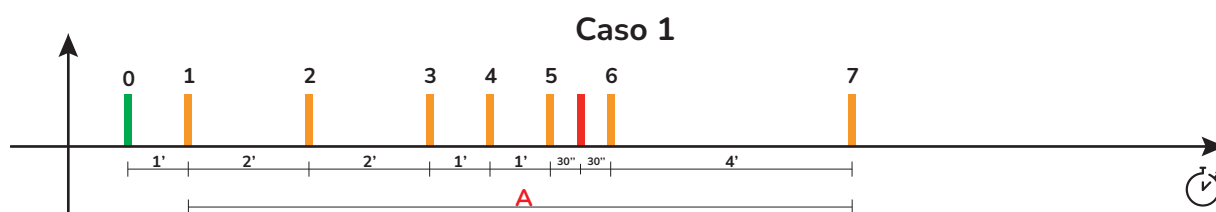
Note: The defrost interval count is independent of any pressure switch alarms.

Regulation diagrams

Examples

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

PEn = 7



Legend:

- **Case 1** = The time **A** between the 1st and the 7th activation is 11 minutes < PEI (32 minutes)
- **Case 2** = The time **B** between the 1st and the 7th activation is 33 minutes > PEI (32 minutes).

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

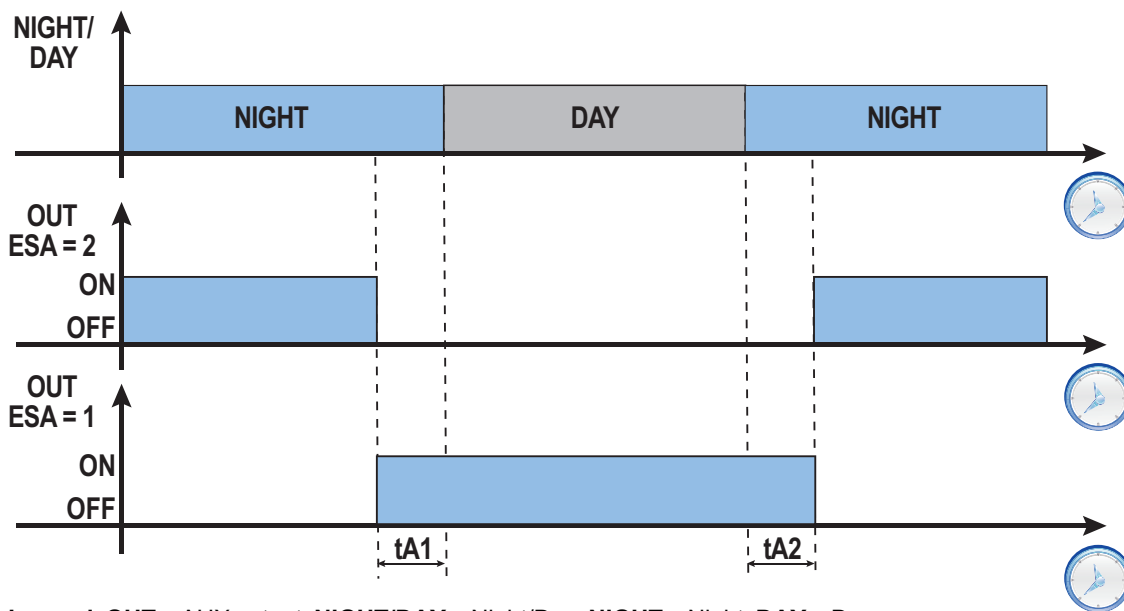
The status of the **AUX** output during Energy Saving is managed by parameter **ESA**:

- **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.

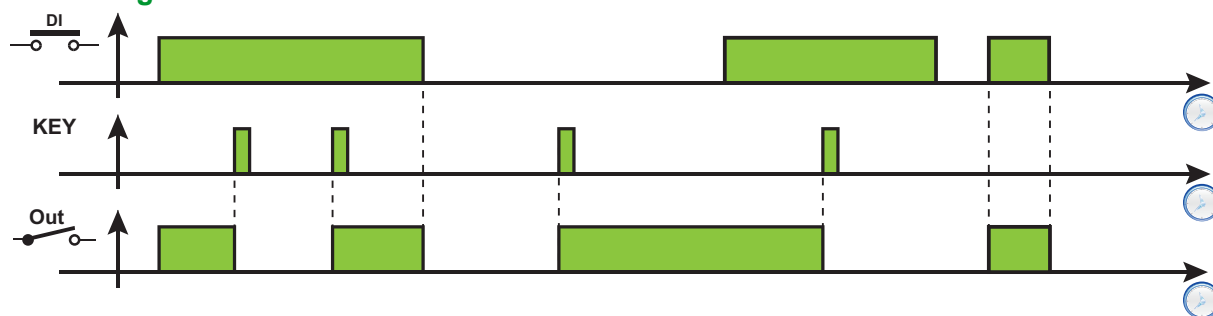
Controlling the auxiliary output via key

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	DI digital input/polarity configuration.
H12	DI2 digital input/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	⓪ 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

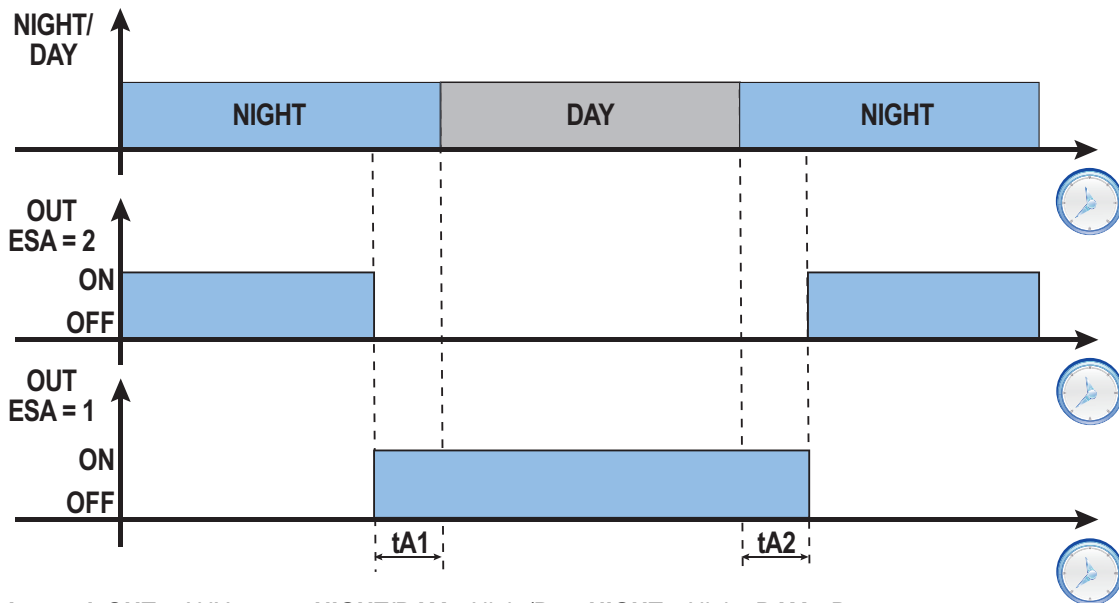
The status of the **Light** output during Energy Saving is managed by parameter **ESA**:

- **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.

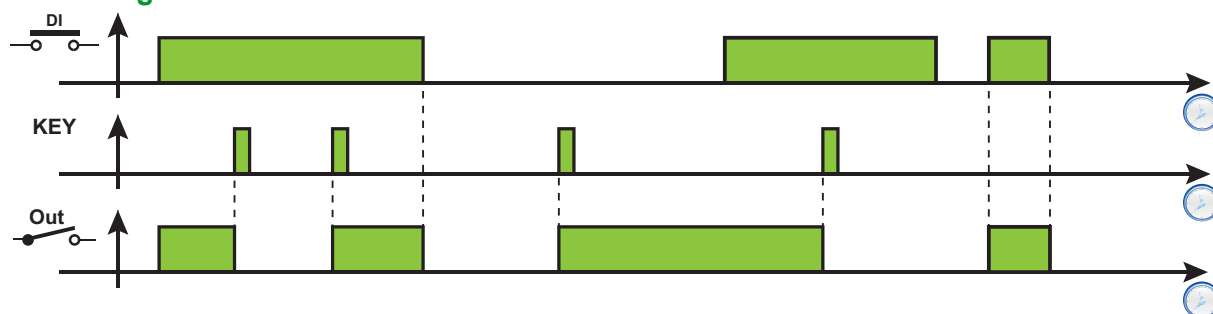
Controlling the light output via key

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	DI digital input/polarity configuration.
H12	DI2 digital input/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	⓪ 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

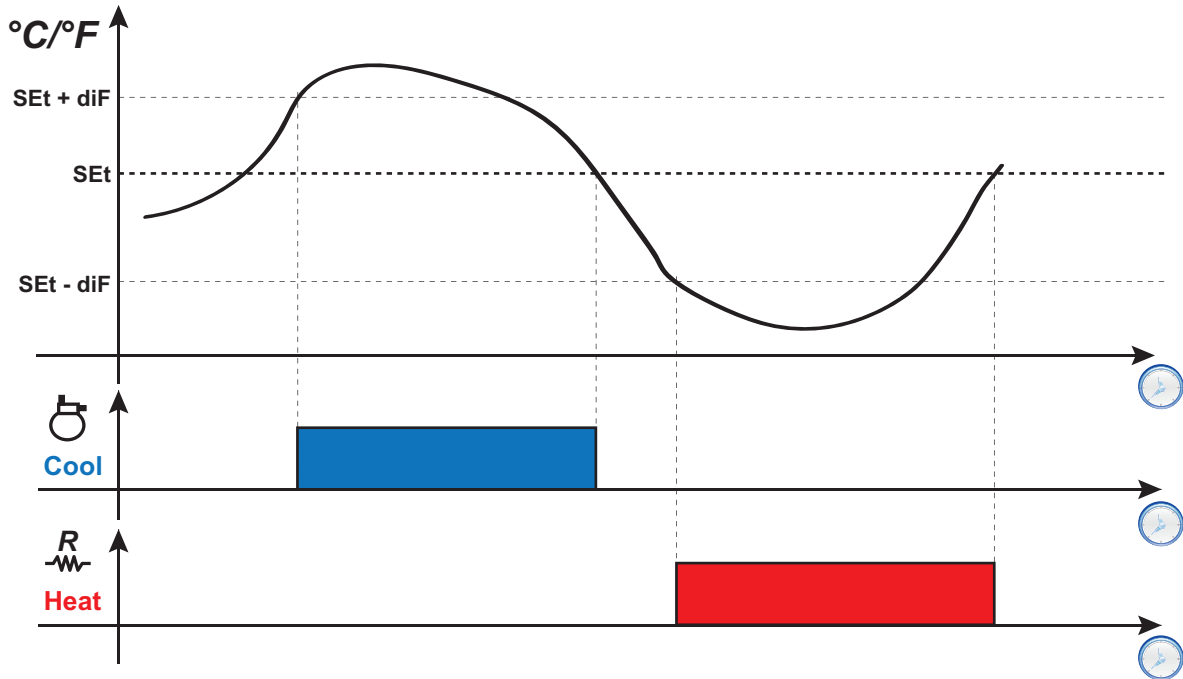
This function should be used when you want the controlled temperature to remain around the value of the setpoint **SEt**. To do so:

- 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.

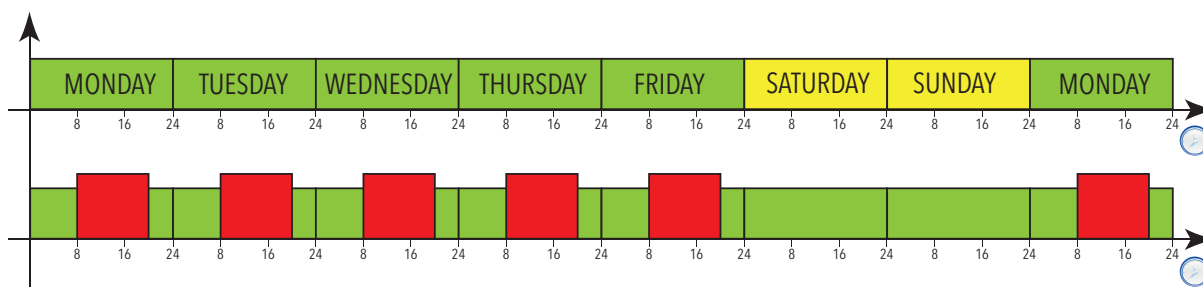
You can set the type of each of the two events using parameters **E15** (Event 1) and **E25** (Event 2):

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

Regulation diagrams

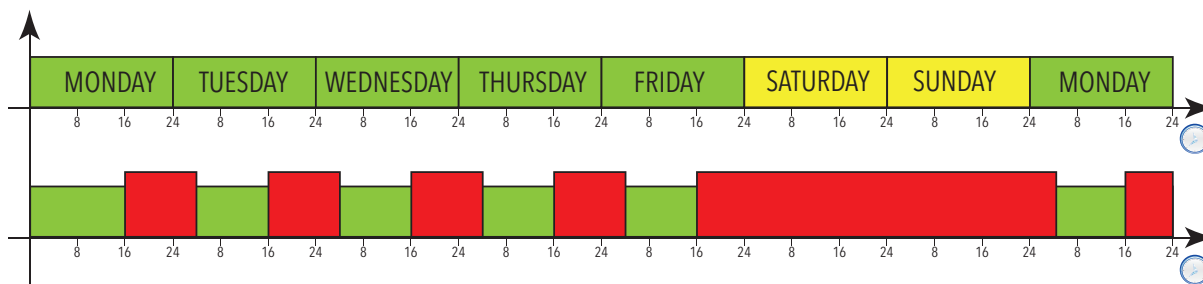
Example 1: The event starts and ends on the same day (E11/E12 < E13/E14)

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 **SLr** 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 **ES**t=4 , **H1**x=±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.

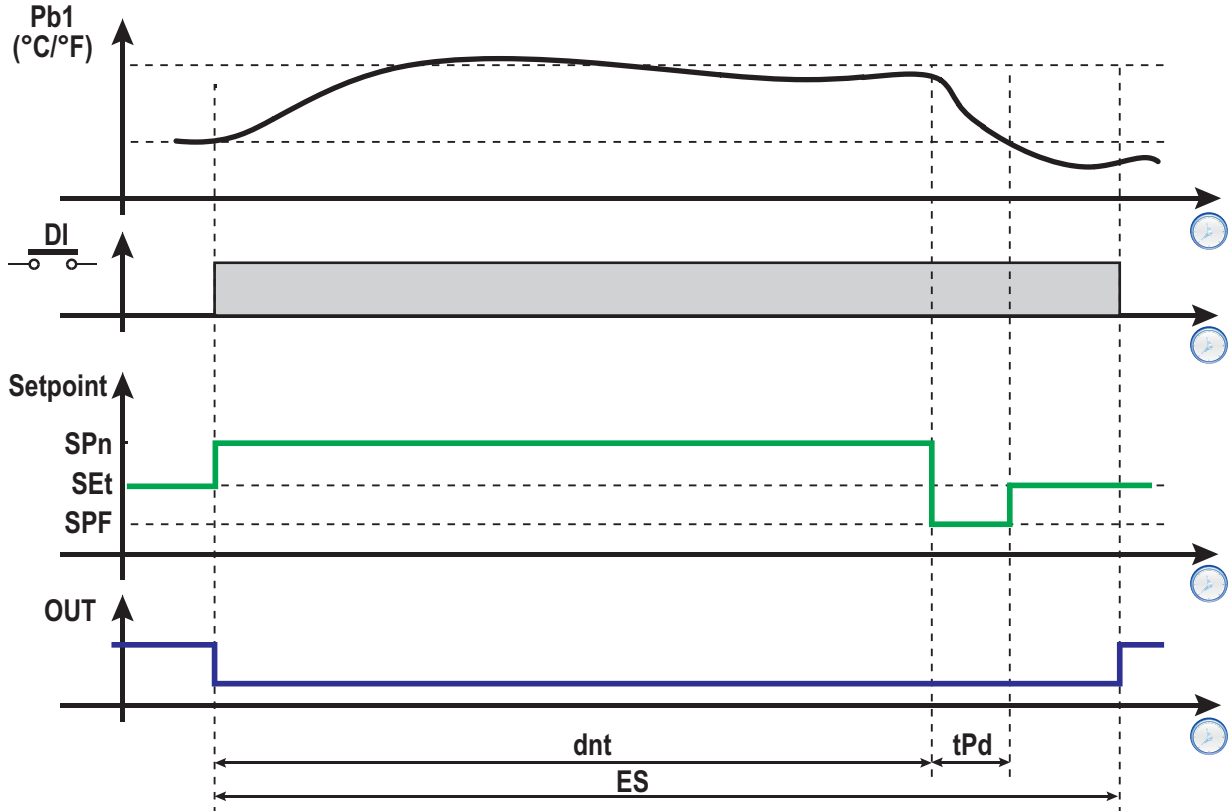
Once the energy saving phase has finished, the rapid cooling phase start for a time period **tPd**.

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.

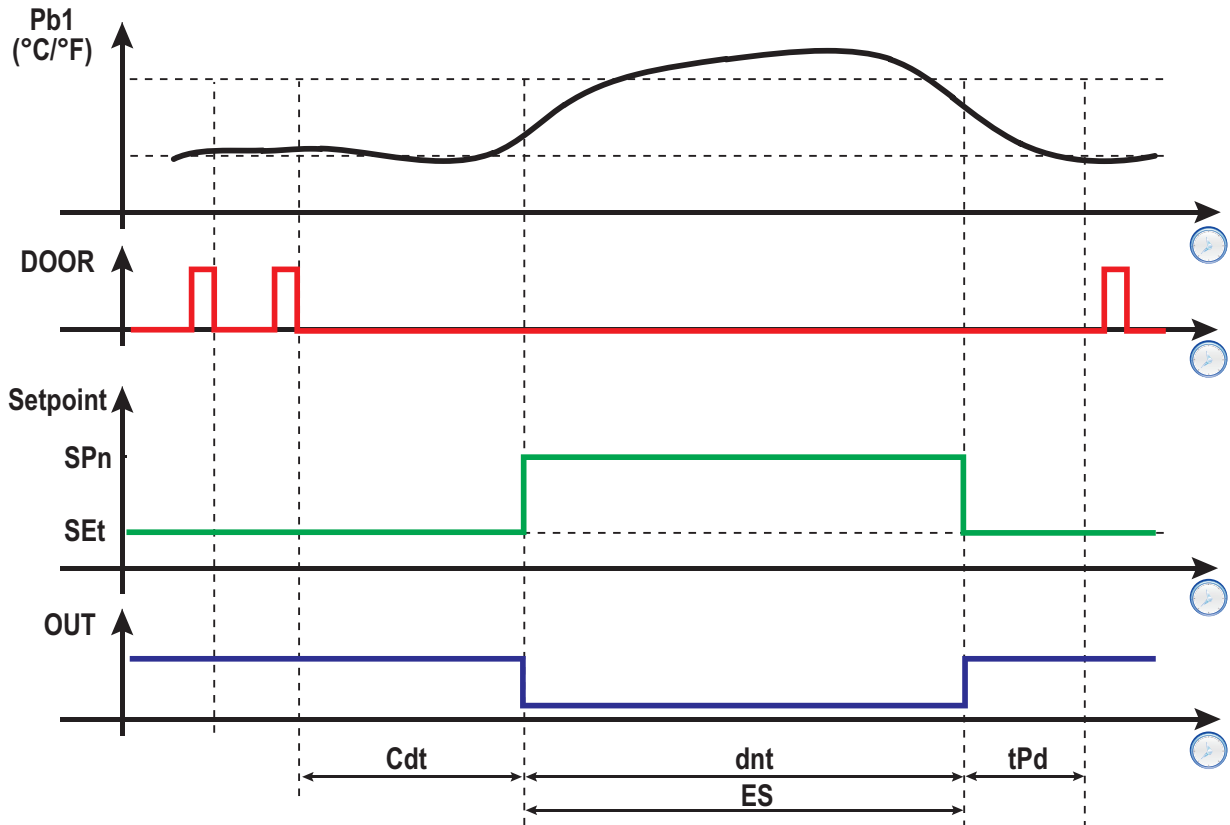
Bottle cooler with door

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-down phase will be started. If **dnt=0**, pull-down is disabled while energy saving will be disabled the first time the door is opened.

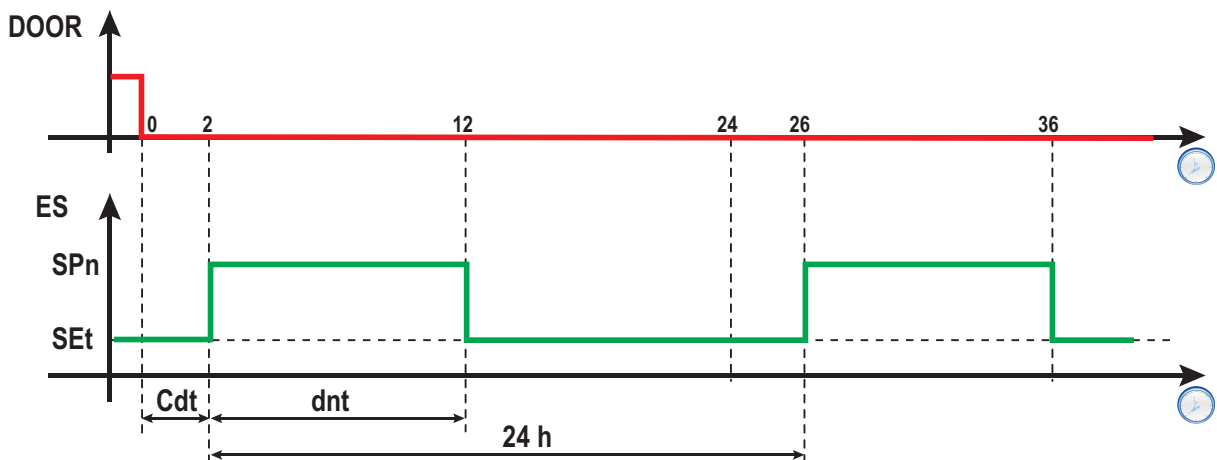
An example of this operation is shown below (in this example **ESA=1**):



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.

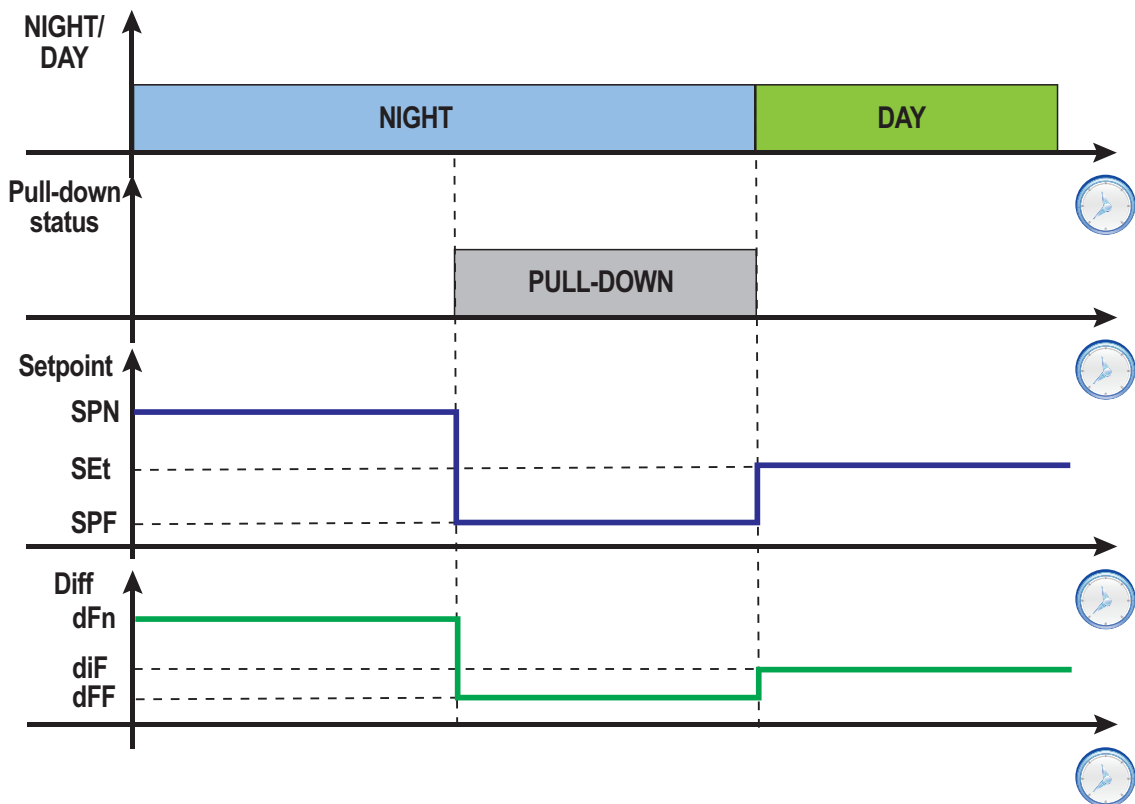
Parameter **PdC** can be used to select the pull-down type:

- **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;

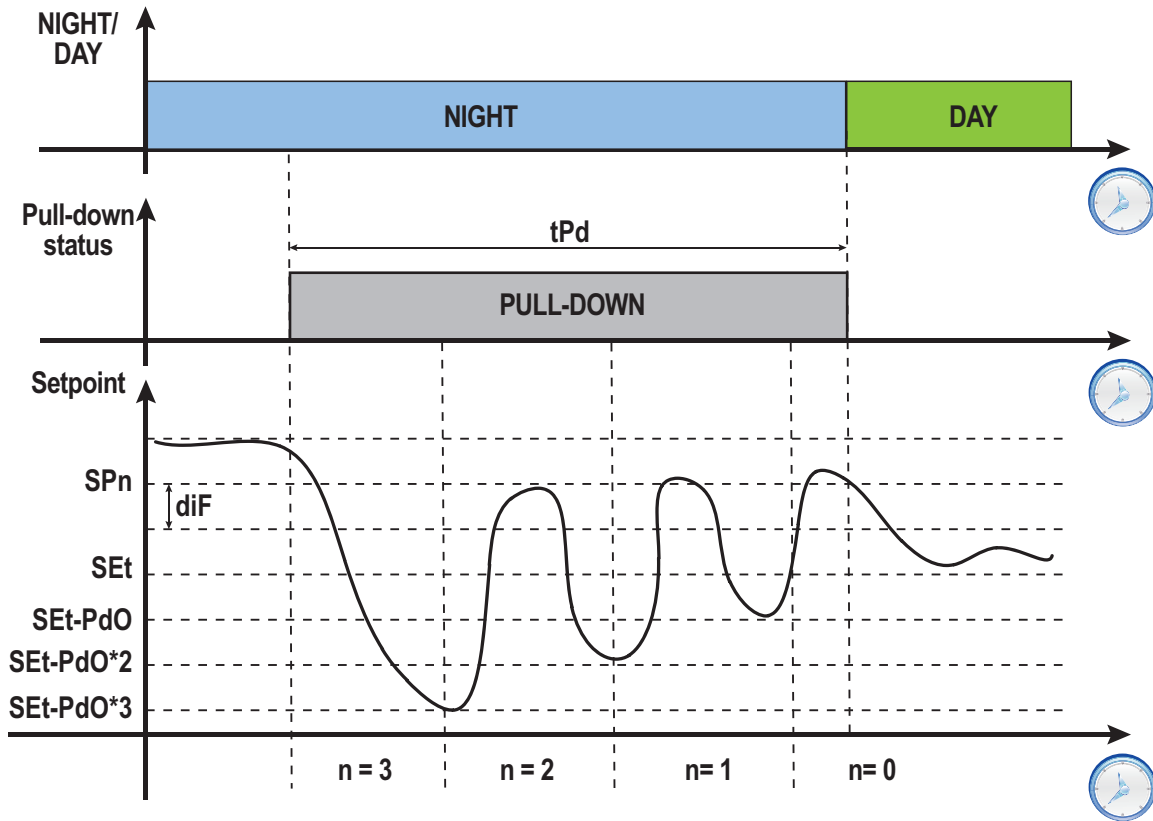
Automatic Pull-down

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

- **Setpoint = SEt - Pdo*n**
- **Differential = 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
Low refrigerant alarm	137

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	Reset	Cause	Effects	Solutions
E1	Probe Pb1 error	Active	Automatic Reset	<ul style="list-style-type: none"> Reading of values outside the operating interval Probe or corresponding wiring in short-circuit or open circuit 	<ul style="list-style-type: none"> E1 shown Steady alarm icon  Maximum/minimum alarm regulator disabled Compressor operation based on parameters Ont and OFt 	<ul style="list-style-type: none"> 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	Automatic Reset	<ul style="list-style-type: none"> Reading of values outside the operating interval Probe or corresponding wiring in short-circuit or open circuit 	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> 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	Automatic Reset	<ul style="list-style-type: none"> Reading of values outside the operating interval Probe or corresponding wiring in short-circuit or open circuit 	<ul style="list-style-type: none"> E3 shown Steady alarm icon  No effect on regulation 	<ul style="list-style-type: none"> Verify the type of probe (default NTC) Verify the probe wiring Replace probe.
AH1	Alarm due to Pb1 HIGH Temperature	Active	Automatic Reset	Value read by Pb1 > HAL for longer than time tAo (see section "Minimum and maximum temperature alarm" on page 135)	<ul style="list-style-type: none"> 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	Automatic Reset	Value read by Pb1 < LAL for longer than time tAo (see section "Minimum and maximum temperature alarm" on page 135)	<ul style="list-style-type: none"> 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	Automatic Reset	Activation of the digital input (H1x = ±5)	<ul style="list-style-type: none"> 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.

Code	Description	Buzzer and alarm relay	Reset	Cause	Effects	Solutions
oPd	Open door alarm	Active	Automatic Reset	Digital input activation (H1x = ± 4) for a time greater than tdo	<ul style="list-style-type: none"> Alarm oPd added to folder AL Steady alarm icon  Regulator inhibited, on the basis of parameter dod 	<ul style="list-style-type: none"> Close the door Increase the value of parameter oAo
Ad2	Defrost due to timeout Note: only models that manage probe Pb2	Not active	Automatic Reset	End of defrost due to timeout, instead of the defrost end temperature being detected by Pb2	<ul style="list-style-type: none"> Alarm Ad2 added to folder AL Steady alarm icon  	Wait for the next defrost for automatic deactivation.
CoH	Overheating alarm	Active	Automatic Reset	Value set by parameter SA3 exceeded	<ul style="list-style-type: none"> 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	Automatic Reset	Clock alarm or battery low	<ul style="list-style-type: none"> 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	Automatic Reset	Even with the compressor on, the temperature trend does not fall within the interval set by rFt .	<ul style="list-style-type: none"> 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	Automatic Reset	Pressure switch alarm activation caused by the external pressure switch.	<p>If the number n of pressure switch activations is lower than PEn:</p> <ul style="list-style-type: none"> 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	Manual Reset	Pressure switch alarm activation caused by the external pressure switch.	<p>If the number N of pressure switch activations is N = PEn in a time period < PEi:</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

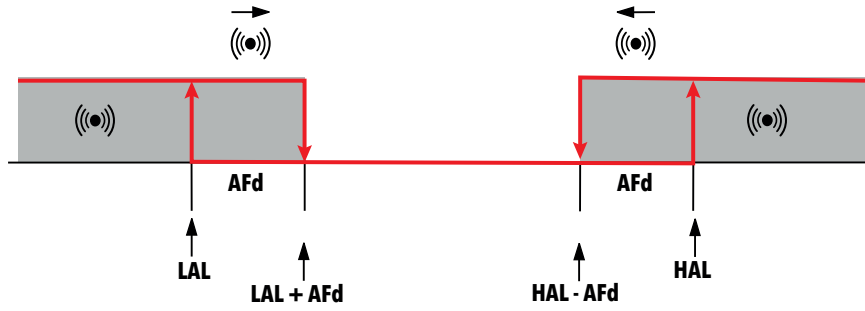
Att value	Temperature read by Pb1	Alarm generated
0	$\geq \text{HAL}$	Maximum temperature
	$\leq \text{LAL}$	Minimum temperature
1	$\geq (\text{SEt} + \text{HAL})$	Maximum temperature
	$\leq (\text{SEt} + \text{LAL})$	Minimum temperature

Conditions for alarm deactivation

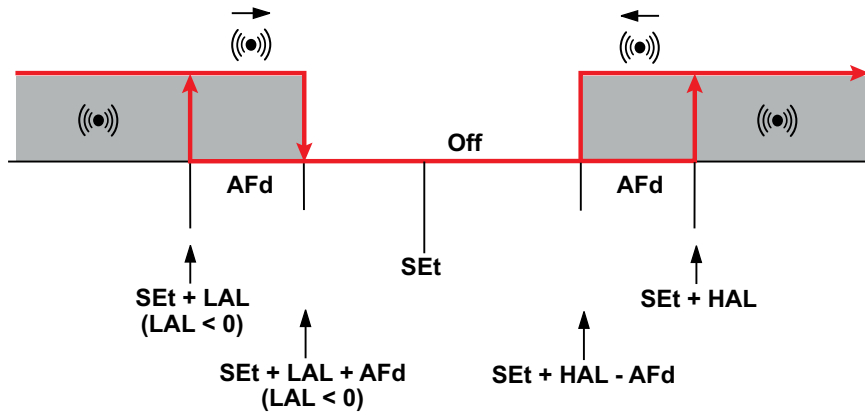
Att value	Temperature read by Pb1	Alarm generated
0	$\leq (\text{HAL} - \text{AFd})$	Maximum temperature
	$\geq (\text{LAL} + \text{AFd})$	Minimum temperature
1	$\leq (\text{SEt} + \text{HAL} - \text{AFd})$	Maximum temperature
	$\geq (\text{SEt} + \text{LAL} + \text{AFd})$	Minimum temperature

Operating diagrams

Operation with Att=0 (absolute values)



Operation with 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

Low refrigerant alarm

Description

When the compressor is running, the trend of the regulation probe temperature is monitored.

If the trend of the temperature probe does not decrease within an interval given by **rFt**, the alarm icon turns on steady and the alarm **rFA** is added to folder **AL**.

You can silence the alarm with the normal alarm silence procedure.

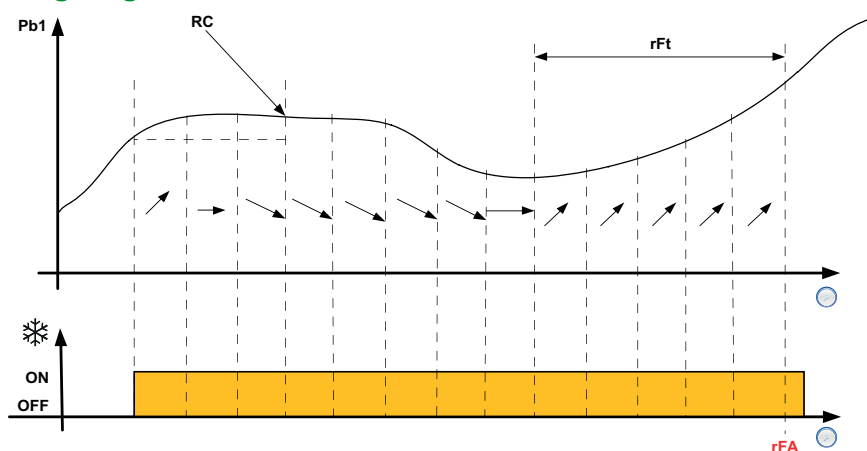
Once this alarm has been detected, the device has to be switched off and on again to cancel it.

The diagnostic is disabled if **rFt = 0**.

Alarm codes

Code	Description
rFA	Low refrigerant alarm

Operating diagrams



Legend: RC = reset counter; rFt = monitored time interval; rFA = alarm activation.

Parameters

Parameter	Description
rFT	Low refrigerant alarm signaling delay.

Parameters EWNNext Performance -HC

Contents

This section includes the following topics:

Parameters EWNNext 961 P	139
Parameters EWNNext 961 P/B	147
Parameters EWNNext 971 P	155
Parameters EWNNext 971 P/B	167
Parameters EWNNext 974 P	179
Parameters EWNNext 974 P/B	191
Parameters EWNNext 974 P/C	203
Parameters EWNNext 974 P/CY	217
Parameters EWNNext 978 P/BC	231
Parameters EWNNext 978 P/BCI	245

Parameters EWNNext 961 P

User parameters EWNNext 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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	-
AL (Alarms)							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> • AbS (0) = absolute value • rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> • 0 = does not inhibit the regulators • 1 = compressor and defrost inhibited • 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
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. <ul style="list-style-type: none"> • 0 = No effect on the status of the AUX/Light output • 1 = Output disabled • 2 = Output enabled 	0/1/2	num	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> • 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	-
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	no	no
dCd	Fans activation delay after door closed.	0...250	s	0	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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> diS (0) = disabled Std (1) = with fixed setpoint AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> 96 (0) = 9600 baud 192 (1) = 19200 baud 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> n(0) = none E(1) = even o(2) = odd. 	n/E/o	num	E (not in applications)			
diS (Display)							

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dro	Selects the unit of measure used when displaying the temperature read by the probes. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 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 ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
CnF (Configuration)							
H08	Stand-by operating mode. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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). <ul style="list-style-type: none"> • 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 Δ key. <ul style="list-style-type: none"> • 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 \cup key. Same as H31 .	0...10	num	4	4	4	4
H43	Probe Pb3 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present • 2EP(2) = second evaporator. 	no/yES/2EP	flag	no	no	no	no

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H45	Defrost input mode for applications with dual evaporator. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • SP = Activates the reduced set • oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> • Aon = Activates the AUX output • AoF = Deactivates the AUX output 	/	/	/ (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". <ul style="list-style-type: none"> • 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 961 P/B

User parameters EWNNext 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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> 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	d10 unit of measure. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no (0) = disabled. Defrost is not activated. yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	-
AL (Alarms)							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	0	0	0	0
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	no	no
dCd	Fans activation delay after door closed.	0...250	s	0	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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> diS (0) = disabled Std (1) = with fixed setpoint AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> 96 (0) = 9600 baud 192 (1) = 19200 baud 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> n(0) = none E(1) = even o(2) = odd. 	n/E/o	num	E (not in applications)			
diS (Display)							

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
dro	Selects the unit of measure used when displaying the temperature read by the probes. <ul style="list-style-type: none"> C(0) = °C F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> 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 ECNext . <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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)							

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H08	Stand-by operating mode. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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). <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no (0) = disabled yES (1) = enabled. 	no/yES	flag	yES	yES	yES	yES
H31	Configuration of Δ key. <ul style="list-style-type: none"> 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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H60	Display selected application. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • SP = Activates the reduced set • oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> • Aon = Activates the AUX output • AoF = Deactivates the AUX output 	/	/	/ (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". <ul style="list-style-type: none"> • 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 971 P

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no (0) = disabled. Defrost is not activated. yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	-
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> 0 (0) = disabled. Defrost does not take Pb2 into account Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) rEL (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) 	AbS/rEL	flag	-	-	-	-
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> 0 (0) = disabled Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	-	-	-	-
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> 0 (0) = disabled Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	flag	-	-	-	-
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	<p>Sets the type of incremental time count in which the evaporator temperature remains above the threshold value d52.</p> <ul style="list-style-type: none"> 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	<p>Sets the threshold management mode.</p> <ul style="list-style-type: none"> 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	<p>Sets whether parameter FSt is expressed as an absolute temperature value or as a value relative to the Setpoint.</p> <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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	<p>Used to select or deselect the exclusion of the evaporator fans during defrosting.</p> <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																
	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td rowspan="6">ok</td> <td rowspan="6">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 rowspan="6">ko</td> <td rowspan="6">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 rowspan="6">no</td> <td rowspan="6">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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																								
								Cn	Cf	Cn			Cf																																																																																																										
	ok							y	0	T	Off	T	Off																																																																																																										
									1	T	T	T	T																																																																																																										
									2	T	DCd	T	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	T	Off	T	Off																																																																																																										
									5	T	T	T	T																																																																																																										
	ko							y	0	DCd	Off	DCn	Off																																																																																																										
									1	DCd	DCd	DCn	DCn																																																																																																										
									2	DCd	DCd	DCn	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
									5	On	Off	On	Off																																																																																																										
	no							n	0	On	Off	On	Off																																																																																																										
									1	On	DCd	On	DCn																																																																																																										
									2	On	DCd	On	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
5		On	Off	On	Off																																																																																																																		
6	DCd	DCd	DCn	DCn																																																																																																																			
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.																																																																																																																							
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																
AL (Alarms)																																																																																																																							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																
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																																																																																																																

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUT (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 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 ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 1 (DI)/ polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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). <ul style="list-style-type: none"> • 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 Δ key. <ul style="list-style-type: none"> • 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 \odot key. Same as H31 .	0...10	num	4	4	4	4
H34	Configuration of \otimes key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	0	0	0	0
H42	Probe Pb2 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H43	Probe Pb3 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present • 2EP(2) = second evaporator. 	no/yES/2EP	flag	no	no	no	no
H45	Defrost input mode for applications with dual evaporator. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> SP = Activates the reduced set oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> Aon = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (not in applications)			
rAP	Reset pressure switch alarms	/	/	/ (not in applications)			
Cnt	Reset TelevisAir diagnostic counters (see Reset TelevisAir diagnostic counters)	/	/	/ (not in applications)			
CPPr (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". <ul style="list-style-type: none"> 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 971 P/B

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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	<p>Sets the type of incremental time count in which the evaporator temperature remains above the threshold value d52.</p> <ul style="list-style-type: none"> 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	<p>Sets the threshold management mode.</p> <ul style="list-style-type: none"> 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	<p>Sets whether parameter FSt is expressed as an absolute temperature value or as a value relative to the Setpoint.</p> <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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	<p>Used to select or deselect the exclusion of the evaporator fans during defrosting.</p> <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																										
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																										
	<table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	6	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																																		
								Cn	Cf	Cn			Cf																																																																																																																				
	ok							y	0	T	Off	T	Off																																																																																																																				
									1	T	T	T	T																																																																																																																				
									2	T	DCd	T	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	T	Off	T	Off																																																																																																																				
									5	T	T	T	T																																																																																																																				
									6	T	T	T	T																																																																																																																				
	ko							y	0	DCd	Off	DCn	Off																																																																																																																				
									1	DCd	DCd	DCn	DCn																																																																																																																				
									2	DCd	DCd	DCn	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	On	Off	On	Off																																																																																																																				
									5	On	Off	On	Off																																																																																																																				
									6	DCd	DCd	DCn	DCn																																																																																																																				
	no							n	0	On	Off	On	Off																																																																																																																				
									1	On	DCd	On	DCn																																																																																																																				
									2	On	DCd	On	DCn																																																																																																																				
3		DCd	DCd	DCn	DCn																																																																																																																												
4		On	Off	On	Off																																																																																																																												
5		On	Off	On	Off																																																																																																																												
6		DCd	DCd	DCn	DCn																																																																																																																												
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.																																																																																																																																	
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																										
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																										
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																										
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																										
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																										
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																										
AL (Alarms)																																																																																																																																	
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																										
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																																																																																																																										

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 0 = setpoint • 1 = Pb1 probe • 2 = Pb2 probe • 3 = reserved 	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 ECNNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 1 (DI)/ polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H22	Configuration of digital output 2 (Out2). <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no (0) = disabled yES (1) = enabled. 	no/yES	flag	yES	yES	yES	yES
H31	Configuration of Δ key. <ul style="list-style-type: none"> 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 \cup key. Same as H31.	0...10	num	4	4	4	4
H34	Configuration of \otimes key. Same as H31.	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31.	0...10	num	0	0	0	0
H42	Probe Pb2 present. <ul style="list-style-type: none"> no(0) = not present yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> SP = Activates the reduced set oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> AoN = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
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". <ul style="list-style-type: none"> • 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 974 P

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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	<p>Sets the type of incremental time count in which the evaporator temperature remains above the threshold value d52.</p> <ul style="list-style-type: none"> 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	<p>Sets the threshold management mode.</p> <ul style="list-style-type: none"> 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	<p>Sets whether parameter FSt is expressed as an absolute temperature value or as a value relative to the Setpoint.</p> <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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	<p>Used to select or deselect the exclusion of the evaporator fans during defrosting.</p> <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																
	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td rowspan="6">ok</td> <td rowspan="6">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 rowspan="6">ko</td> <td rowspan="6">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 rowspan="6">no</td> <td rowspan="6">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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																								
								Cn	Cf	Cn			Cf																																																																																																										
	ok							y	0	T	Off	T	Off																																																																																																										
									1	T	T	T	T																																																																																																										
									2	T	DCd	T	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	T	Off	T	Off																																																																																																										
									5	T	T	T	T																																																																																																										
	ko							y	0	DCd	Off	DCn	Off																																																																																																										
									1	DCd	DCd	DCn	DCn																																																																																																										
									2	DCd	DCd	DCn	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
									5	On	Off	On	Off																																																																																																										
	no							n	0	On	Off	On	Off																																																																																																										
									1	On	DCd	On	DCn																																																																																																										
									2	On	DCd	On	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
5		On	Off	On	Off																																																																																																																		
6	DCd	DCd	DCn	DCn																																																																																																																			
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.																																																																																																																							
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																
AL (Alarms)																																																																																																																							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																
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																																																																																																																

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> diS (0) = disabled Std (1) = with fixed setpoint AUT (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> 96 (0) = 9600 baud 192 (1) = 19200 baud 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> C(0) = °C F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> 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 ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 1 (DI)/ polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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). <ul style="list-style-type: none"> • 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 Δ key. <ul style="list-style-type: none"> • 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 \cup key. Same as H31 .	0...10	num	4	4	4	4
H34	Configuration of \varnothing key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	0	0	0	0
H42	Probe Pb2 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H43	Probe Pb3 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present • 2EP(2) = second evaporator. 	no/yES/2EP	flag	no	no	no	no
H45	Defrost input mode for applications with dual evaporator. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> SP = Activates the reduced set oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> Aon = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (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". <ul style="list-style-type: none"> 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 974 P/B

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddL	Display mode during defrosting. <ul style="list-style-type: none"> 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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	<p>Sets the type of incremental time count in which the evaporator temperature remains above the threshold value d52.</p> <ul style="list-style-type: none"> 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	<p>Sets the threshold management mode.</p> <ul style="list-style-type: none"> 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	<p>Sets whether parameter FSt is expressed as an absolute temperature value or as a value relative to the Setpoint.</p> <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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	<p>Used to select or deselect the exclusion of the evaporator fans during defrosting.</p> <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																										
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																										
	<table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	6	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																																		
								Cn	Cf	Cn			Cf																																																																																																																				
	ok							y	0	T	Off	T	Off																																																																																																																				
									1	T	T	T	T																																																																																																																				
									2	T	DCd	T	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	T	Off	T	Off																																																																																																																				
									5	T	T	T	T																																																																																																																				
									6	T	T	T	T																																																																																																																				
	ko							y	0	DCd	Off	DCn	Off																																																																																																																				
									1	DCd	DCd	DCn	DCn																																																																																																																				
									2	DCd	DCd	DCn	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	On	Off	On	Off																																																																																																																				
									5	On	Off	On	Off																																																																																																																				
									6	DCd	DCd	DCn	DCn																																																																																																																				
	no							n	0	On	Off	On	Off																																																																																																																				
									1	On	DCd	On	DCn																																																																																																																				
									2	On	DCd	On	DCn																																																																																																																				
3		DCd	DCd	DCn	DCn																																																																																																																												
4		On	Off	On	Off																																																																																																																												
5		On	Off	On	Off																																																																																																																												
6		DCd	DCd	DCn	DCn																																																																																																																												
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.																																																																																																																																	
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																										
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																										
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																										
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																										
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																										
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																										
AL (Alarms)																																																																																																																																	
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																										
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																																																																																																																										

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 0 = setpoint • 1 = Pb1 probe • 2 = Pb2 probe • 3 = reserved 	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 ECNNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 1 (DI)/ polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H22	Configuration of digital output 2 (Out2). <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled • yES (1) = enabled. 	no/yES	flag	yES	yES	yES	yES
H31	Configuration of Δ key. <ul style="list-style-type: none"> • 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 \cup key. Same as H31 .	0...10	num	4	4	4	4
H34	Configuration of \otimes key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	2	2	2	2
H42	Probe Pb2 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • SP = Activates the reduced set • oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> Aon = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (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". <ul style="list-style-type: none"> 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** are changed, the controller must be switched off and then on again to make sure it works properly.

Parameters EWNNext 974 P/C

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddl	Display mode during defrosting. <ul style="list-style-type: none"> • 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
Cod	Time with the compressor OFF before defrost is activated	0...250	min	0	0	0	0
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
d00	Compressor running time before defrost is activated	0...250	hours	0	0	0	0
d01	d00 unit of measure. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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	<p>Sets the type of incremental time count in which the evaporator temperature remains above the threshold value d52.</p> <ul style="list-style-type: none"> 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	<p>Sets the threshold management mode.</p> <ul style="list-style-type: none"> 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	<p>Sets the defrost mode with RTC.</p> <ul style="list-style-type: none"> 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	<p>Sets the first weekend/holiday day.</p> <ul style="list-style-type: none"> 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	<p>1st weekday defrost start hour.</p> <ul style="list-style-type: none"> 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	<p>2nd weekday defrost start hour.</p> <ul style="list-style-type: none"> 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	<p>3rd weekday defrost start hour.</p> <ul style="list-style-type: none"> 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	<p>4th weekday defrost start hour.</p> <ul style="list-style-type: none"> 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	<p>5th weekday defrost start hour.</p> <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES


Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																
	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td rowspan="6">ok</td> <td rowspan="6">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 rowspan="6">ko</td> <td rowspan="6">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 rowspan="6">no</td> <td rowspan="6">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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																								
								Cn	Cf	Cn			Cf																																																																																																										
	ok							y	0	T	Off	T	Off																																																																																																										
									1	T	T	T	T																																																																																																										
									2	T	DCd	T	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	T	Off	T	Off																																																																																																										
									5	T	T	T	T																																																																																																										
	ko							y	0	DCd	Off	DCn	Off																																																																																																										
									1	DCd	DCd	DCn	DCn																																																																																																										
									2	DCd	DCd	DCn	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
									5	On	Off	On	Off																																																																																																										
	no							n	0	On	Off	On	Off																																																																																																										
									1	On	DCd	On	DCn																																																																																																										
									2	On	DCd	On	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
5		On	Off	On	Off																																																																																																																		
6	DCd	DCd	DCn	DCn																																																																																																																			
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.																																																																																																																							
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																
AL (Alarms)																																																																																																																							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																
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																																																																																																																

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	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. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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)							

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 0 = setpoint • 1 = Pb1 probe • 2 = Pb2 probe • 3 = Pb3 probe. 	0...3	num	1	1	1	1
ddE	Selects the type of value to show on the module ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 1 (DI)/ polarity.</p> <ul style="list-style-type: none"> • 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 + door switch • ±13 = reserved <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 2 (Out2).</p> <ul style="list-style-type: none"> • 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	<p>Configuration of Δ key.</p> <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> no(0) = not present yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H43	Probe Pb3 present. <ul style="list-style-type: none"> no(0) = not present yES(1) = present 2EP(2) = second evaporator. 	no/yES/2EP	flag	no	no	no	no
H45	Defrost input mode for applications with dual evaporator. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> SP = Activates the reduced set oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> Aon = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (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 not active; 2 = AUX active; 3 = Stand-by; 4 = Light on; 5 = Light off.	0...5	num	0 (not in applications)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
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". <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 0 = daily • 1 = weekly. 	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	days	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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • no (0) = enabled • yES (1) = disabled 	no/yES	flag	no	no	no	no

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

Parameters EWNNext 974 P/CY

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddl	Display mode during defrosting. <ul style="list-style-type: none"> • 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
Cod	Time with the compressor OFF before defrost is activated	0...250	min	0	0	0	0
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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 . <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																
	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td rowspan="6">ok</td> <td rowspan="6">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 rowspan="6">ko</td> <td rowspan="6">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 rowspan="6">no</td> <td rowspan="6">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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																								
								Cn	Cf	Cn			Cf																																																																																																										
	ok							y	0	T	Off	T	Off																																																																																																										
									1	T	T	T	T																																																																																																										
									2	T	DCd	T	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	T	Off	T	Off																																																																																																										
									5	T	T	T	T																																																																																																										
	ko							y	0	DCd	Off	DCn	Off																																																																																																										
									1	DCd	DCd	DCn	DCn																																																																																																										
									2	DCd	DCd	DCn	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
									5	On	Off	On	Off																																																																																																										
	no							n	0	On	Off	On	Off																																																																																																										
									1	On	DCd	On	DCn																																																																																																										
									2	On	DCd	On	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
5		On	Off	On	Off																																																																																																																		
6	DCd	DCd	DCn	DCn																																																																																																																			
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.																																																																																																																							
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																
AL (Alarms)																																																																																																																							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																
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																																																																																																																

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 0 = setpoint • 1 = Pb1 probe • 2 = Pb2 probe • 3 = reserved 	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 ECNext . <ul style="list-style-type: none"> • 0 = module not connected • 1 = Pb1 probe • 2 = Pb2 probe • 4 = setpoint. 	0...4	num	0	0	0	0
ddL	Display mode during defrosting. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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 + door switch • ±13 = synchronized defrost. Note: <ul style="list-style-type: none"> • 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> 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 + door switch <p>Note:</p> <ul style="list-style-type: none"> 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> 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	<p>Configuration of digital output 2 (Out2).</p> <ul style="list-style-type: none"> 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	<p>Configuration of Δ key.</p> <ul style="list-style-type: none"> 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 \ominus key. Same as H31.	0...10	num	4	4	4	4

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H34	Configuration of \star key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	2	2	2	2
H42	Probe Pb2 present. <ul style="list-style-type: none"> no(0) = not present yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> SP = Activates the reduced set oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> Aon = Activates the AUX output AoF = Deactivates the AUX output 	/	/	/ (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 not active; 2 = AUX active; 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". <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 0 = daily 1 = weekly. 	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	days	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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> no (0) = enabled yES (1) = disabled 	no/yES	flag	no	no	no	no

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

Parameters EWNNext 978 P/BC

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddl	Display mode during defrosting. <ul style="list-style-type: none"> • 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
Cod	Time with the compressor OFF before defrost is activated	0...250	min	0	0	0	0
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no (0) = disabled. Defrost is not activated. • yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> • 0 (0) = disabled. Defrost does not take Pb2 into account • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) • rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> • 0 (0) = disabled • Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> • 0 (0) = disabled • Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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 . <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																										
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																										
	<table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	6	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																																		
								Cn	Cf	Cn			Cf																																																																																																																				
	ok							y	0	T	Off	T	Off																																																																																																																				
									1	T	T	T	T																																																																																																																				
									2	T	DCd	T	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	T	Off	T	Off																																																																																																																				
									5	T	T	T	T																																																																																																																				
									6	T	T	T	T																																																																																																																				
	ko							y	0	DCd	Off	DCn	Off																																																																																																																				
									1	DCd	DCd	DCn	DCn																																																																																																																				
									2	DCd	DCd	DCn	DCn																																																																																																																				
									3	DCd	DCd	DCn	DCn																																																																																																																				
									4	On	Off	On	Off																																																																																																																				
									5	On	Off	On	Off																																																																																																																				
									6	DCd	DCd	DCn	DCn																																																																																																																				
	no							n	0	On	Off	On	Off																																																																																																																				
									1	On	DCd	On	DCn																																																																																																																				
2		On	DCd	On	DCn																																																																																																																												
3		DCd	DCd	DCn	DCn																																																																																																																												
4		On	Off	On	Off																																																																																																																												
5		On	Off	On	Off																																																																																																																												
6		DCd	DCd	DCn	DCn																																																																																																																												
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.																																																																																																																																	
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																										
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																										
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																										
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																										
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																										
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																										
AL (Alarms)																																																																																																																																	
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																										
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																																																																																																																										

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	1	1	1	1
dOr (Door switch)							
dOd	Digital input shuts off utilities. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 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 ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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 + door switch ±13 = reserved Note: <ul style="list-style-type: none"> 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 + door switch <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (Out1).</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 2 (Out2).</p> <ul style="list-style-type: none"> • 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	<p>Enables/disables the buzzer.</p> <ul style="list-style-type: none"> • no (0) = disabled • yES (1) = enabled. 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H31	Configuration of Δ key. <ul style="list-style-type: none"> • 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 \cup key. Same as H31 .	0...10	num	4	4	4	4
H34	Configuration of \otimes key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	2	2	2	2
H42	Probe Pb2 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • SP = Activates the reduced set • oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> • Aon = Activates the AUX output • AoF = Deactivates the AUX output 	/	/	/ (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 not active; 2 = AUX active; 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". <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 0 = daily 1 = weekly. 	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	days	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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> no (0) = enabled yES (1) = disabled 	no/yES	flag	no	no	no	no

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

Parameters EWNNext 978 P/BCI

User parameters EWNNext 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES
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. <ul style="list-style-type: none"> no(0) = Keypad lock disabled yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
ddl	Display mode during defrosting. <ul style="list-style-type: none"> • 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** 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 EWNNext 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 probe in error: <ul style="list-style-type: none"> 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 probe in error: <ul style="list-style-type: none"> 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
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dty	Type of defrost. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
Cod	Time with the compressor OFF before defrost is activated	0...250	min	0	0	0	0
dMr	Enables the defrost count reset in the case of manual defrosting. <ul style="list-style-type: none"> no (0) = count reset does not take place yES (1) = count reset takes place 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> no (0) = disabled. Defrost is not activated. yES (1) = enabled. Defrost is activated when the compressor is off. 	no/yES	flag	no	no	no	no
d40	Enables/disables use of probe Pb2. <ul style="list-style-type: none"> 0 (0) = disabled. Defrost does not take Pb2 into account Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute value (for example: d41 = -25°C means that the threshold temperature is exactly -25°C) rEL (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) 	AbS/rEL	flag	AbS	AbS	AbS	AbS
d50	Enables/disables use of probe Pb2 ('differential' mode). <ul style="list-style-type: none"> 0 (0) = disabled Pb2 (1) = enabled. Defrost runs according to the value read by Pb2 (only refers to defrost with threshold) 	0/Pb2	flag	0	0	0	0
d51	Enables/disables use of probe Pb1. <ul style="list-style-type: none"> 0 (0) = disabled Pb1 (1) = enabled. Defrost runs according to the value read by Pb1 (only refers to defrost with threshold) 	0/Pb1	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 . <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> AbS (0) = absolute rEL (1) = relative. 	AbS/rEL	flag	AbS	AbS	AbS	AbS
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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes (fan excluded - off). 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3																																																																																																																
FCo	Evaporator fan operating mode.	0...6	num	5	5	5	5																																																																																																																
	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td rowspan="6">ok</td> <td rowspan="6">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 rowspan="6">ko</td> <td rowspan="6">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 rowspan="6">no</td> <td rowspan="6">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> </tbody> </table>							Pb2	H42	FCo	day		night		Cn	Cf	Cn	Cf	ok	y	0	T	Off	T	Off	1	T	T	T	T	2	T	DCd	T	DCn	3	DCd	DCd	DCn	DCn	4	T	Off	T	Off	5	T	T	T	T	ko	y	0	DCd	Off	DCn	Off	1	DCd	DCd	DCn	DCn	2	DCd	DCd	DCn	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	no	n	0	On	Off	On	Off	1	On	DCd	On	DCn	2	On	DCd	On	DCn	3	DCd	DCd	DCn	DCn	4	On	Off	On	Off	5	On	Off	On	Off	6	DCd	DCd	DCn	DCn
	Pb2										H42	FCo	day		night																																																																																																								
								Cn	Cf	Cn			Cf																																																																																																										
	ok							y	0	T	Off	T	Off																																																																																																										
									1	T	T	T	T																																																																																																										
									2	T	DCd	T	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	T	Off	T	Off																																																																																																										
									5	T	T	T	T																																																																																																										
	ko							y	0	DCd	Off	DCn	Off																																																																																																										
									1	DCd	DCd	DCn	DCn																																																																																																										
									2	DCd	DCd	DCn	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
									5	On	Off	On	Off																																																																																																										
	no							n	0	On	Off	On	Off																																																																																																										
									1	On	DCd	On	DCn																																																																																																										
									2	On	DCd	On	DCn																																																																																																										
									3	DCd	DCd	DCn	DCn																																																																																																										
									4	On	Off	On	Off																																																																																																										
5		On	Off	On	Off																																																																																																																		
6	DCd	DCd	DCn	DCn																																																																																																																			
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.																																																																																																																							
FdC	Evaporator fan shutoff delay after compressor deactivation.	0...250	min	1	1	1	1																																																																																																																
Fon	Day duty cycle: time with fans on.	0...250	min	12	12	12	12																																																																																																																
FoF	Day duty cycle: time with fans off.	0...250	min	6	6	6	6																																																																																																																
Fnn	Night duty cycle: time with fans on.	0...250	min	1	1	1	1																																																																																																																
FnF	Night duty cycle: time with fans off.	0...250	min	12	12	12	12																																																																																																																
ESF	"Night" mode activation. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no																																																																																																																
AL (Alarms)																																																																																																																							
Att	Sets the absolute or relative value for parameters HAL and LAL . <ul style="list-style-type: none"> AbS (0) = absolute value rEL (1) = relative value 	AbS/rEL	flag	AbS	AbS	AbS	AbS																																																																																																																
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																																																																																																																

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. <ul style="list-style-type: none"> no(0) = alarm not activated yES(1) = alarm activated. 	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. <ul style="list-style-type: none"> 0 = does not inhibit the regulators 1 = compressor and defrost inhibited 2 = fans, compressor and defrost inhibited; 	0/1/2	num	0	0	0	0
AoP	Alarm output polarity. <ul style="list-style-type: none"> nC (0) = NC (Normally closed) nO (1) = NO (Normally open). 	nC/nO	flag	nO	nO	nO	nO
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. <ul style="list-style-type: none"> 0 = No effect on the status of the AUX/Light output 1 = Output disabled 2 = Output enabled 	0/1/2	num	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. <ul style="list-style-type: none"> 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
AUP	Auxiliary (AUX) output activation when the door is opened. <ul style="list-style-type: none"> no(0) = disabled yES(1) = AUX output activation 	no/yES	flag	no	no	yES	no
dCd	Fans activation delay after door closed.	0...250	s	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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • diS (0) = disabled • Std (1) = with fixed setpoint • AUt (2) = automatic 	diS/ Std/ 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. <ul style="list-style-type: none"> • 96 (0) = 9600 baud • 192 (1) = 19200 baud • 384 (2) = 38400 baud 	96/192/384	num	96 (not in applications)			
Pty	Modbus parity bit. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • C(0) = °C • F(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).	C/F	flag	C	C	C	C
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. <ul style="list-style-type: none"> • no(0) = Keypad lock disabled • yES(1) = Keypad lock enabled (on startup or when 30 seconds have passed since the last action carried out on the user interface) 	no/yES	flag	yES	yES	yES	yES
ddd	Selects the type of value to show on the display. <ul style="list-style-type: none"> • 0 = setpoint • 1 = Pb1 probe • 2 = Pb2 probe • 3 = reserved 	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 ECNext . <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • no(0) = no • yES(1) = yes. 	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
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
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. <ul style="list-style-type: none"> Aut (0) = automatic FiH (1) = manual. 	Aut/FiH	flag	Aut	Aut	Aut	Aut
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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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 + door switch ±13 = reserved Note: <ul style="list-style-type: none"> 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	<p>Configuration of digital input 2 (DI2) / polarity.</p> <ul style="list-style-type: none"> • 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 + door switch <p>Note:</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 1 (OC1).</p> <ul style="list-style-type: none"> • 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	<p>Configuration of digital output 2 (Out2).</p> <ul style="list-style-type: none"> • 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	<p>Enables/disables the buzzer.</p> <ul style="list-style-type: none"> • no (0) = disabled • yES (1) = enabled. 	no/yES	flag	yES	yES	yES	yES

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
H31	Configuration of Δ key. <ul style="list-style-type: none"> • 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 \ominus key. Same as H31 .	0...10	num	4	4	4	4
H34	Configuration of \otimes key. Same as H31 .	0...10	num	0	0	0	0
H35	Configuration of \star key. Same as H31 .	0...10	num	2	2	2	2
H42	Probe Pb2 present. <ul style="list-style-type: none"> • no(0) = not present • yES(1) = present. 	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • SP = Activates the reduced set • oSP = Deactivates the reduced set 	/	/	/ (not in applications)			
dEF	Activate defrost	/	/	/ (not in applications)			
AUX	AUX output activation / deactivation. The labels displayed will be: <ul style="list-style-type: none"> • Aon = Activates the AUX output • AoF = Deactivates the AUX output 	/	/	/ (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)			

Parameter	Description	Range	MU	Default	AP1	AP2	AP3
E14	Event 1 end minute.	0...59	min	0 (not in applications)			
E15	Sets Event 1 type. 0 = Energy Saving; 1 = AUX not active; 2 = AUX active; 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". <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 0 = daily 1 = weekly. 	0/1	flag	0	0	0	0
SL1	Self-learning duration in daily mode.	1...30	days	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. <ul style="list-style-type: none"> no(0) = no yES(1) = yes. 	no/yES	flag	no	no	no	no
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. <ul style="list-style-type: none"> no (0) = enabled yES (1) = disabled 	no/yES	flag	no	no	no	no

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

Modbus MSK 780 functions and resources

Contents

This section includes the following topics:

Setting parameters via Modbus	261
Modbus table content	262
Table of Modbus Parameters	264
Visibility table for folders relating to applications	290
Table of Modbus Resources	292

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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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






Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
SEt	Regulation setpoint	-	32769	0	32931	49152	R/W	Word	Y	LSE...HSE	°C/°F
diF	Setpoint differential	CP	32770	0	32928	768	R/W	Word	-	0,1...30,0	°C/°F
LSE	Minimum setpoint value that can be set	CP	32771	0	32928	3072	R/W	Word	Y	-67,0... HSE	°C/°F
HSE	Maximum setpoint value that can be set	CP	32773	0	32928	12288	R/W	Word	Y	LSE ...302	°C/°F
HC	Operating mode (Heating/Cooling)	CP	32968	256	32928	49152	R/W	Byte	-	0/1	flag
ont	Compressor output ON time if regulation probe is faulty	CP	32768	0	32929	3	R/W	Byte	-	0...250	min
oFt	Compressor output OFF time if regulation probe is faulty	CP	32772	0	32929	12	R/W	Byte	-	0...250	min
don	Compressor output activation delay from call	CP	32776	0	32929	48	R/W	Byte	-	0...250	s
doF	Compressor output activation delay from switch-off	CP	32780	0	32929	192	R/W	Byte	-	0...250	min
dbi	Delay between two consecutive compressor output power-ons	CP	32784	0	32929	768	R/W	Byte	-	0...250	min
Cit	Minimum compressor output activation time	CP	32800	0	32930	3	R/W	Byte	-	0...250	min
CAt	Maximum compressor output activation time	CP	32804	0	32930	12	R/W	Byte	-	0...250	min
odo	Output activation delay at startup	CP	32788	0	32929	3072	R/W	Byte	-	0...250	min
dFA	Condenser fan and compressor activation delay from the call	CP	32895	0	32930	3072	R/W	Byte	-	0...250	s
dty	Compressor 2 activation delay.	dEF	32908	61440	32930	768	R/W	Byte	-	0/1/2	num
doH	Sets the type of regulation	dEF	32820	0	32931	3	R/W	Byte	-	0...250	min
dEt	Ice sensor differential	dEF	32816	0	32930	12288	R/W	Byte	-	1...250	min
dS1	Compressor 1 start-up mode	dEF	32774	0	32931	12	R/W	Word	Y	-67,0...302	°C/°F
dS2	Compressor 2 activation delay.	dEF	32775	0	32931	48	R/W	Word	Y	-67,0...302	°C/°F
dPo	Sets the type of regulation	dEF	32968	1024	32931	768	R/W	Byte	-	0/1	flag
dMr	Compressor 1 start-up mode	dEF	32969	2048	32961	12	R/W	Byte	-	0/1	flag
d00	Compressor 2 activation delay.	dEF	32889	0	32949	12	R/W	Byte	-	0...250	hours
d01	Sets the type of regulation	dEF	32925	12	32951	12	R/W	Byte	-	0/1/2	num
dit	Threshold (Setpoint) for ice sensor	dEF	32812	0	32949	49152	R/W	Byte	-	0...250	hours
d11	Ice sensor differential	dEF	32925	48	32951	48	R/W	Byte	-	0/1/2	num
d20	Compressor 1 start-up mode	dEF	32969	256	32951	768	R/W	Byte	-	0/1	flag
d40	Compressor 2 activation delay.	dEF	32913	240	32950	3	R/W	Byte	-	0/1	flag
d41	Sets the type of regulation	dEF	32837	0	32947	49152	R/W	Word	Y	-67,0...302	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
d42	Threshold (Setpoint) for ice sensor	dEF	32839	0	32947	12288	R/W	Byte	-	0...250	min
d43	Ice sensor differential	dEF	32913	3840	32950	12	R/W	Byte	-	0...3	num
d44	Compressor 1 start-up mode	dEF	32913	61440	32950	48	R/W	Byte	-	0/1	flag
d50	Sets the type of regulation	dEF	32916	61440	32958	3	R/W	Byte	-	0/1	flag
d51	Threshold (Setpoint) for ice sensor	dEF	32917	15	32958	12	R/W	Byte	-	0/1	flag
d52	Ice sensor differential	dEF	32849	0	32953	48	R/W	Byte	-	0,0...302	°C/°F
d53	Compressor 1 start-up mode	dEF	32853	0	32953	12288	R/W	Byte	-	0...999	min
d54	Compressor 2 activation delay.	dEF	32917	240	32958	48	R/W	Byte	-	0...3	num
d55	Sets the type of regulation	dEF	32917	3840	32958	192	R/W	Byte	-	0/1	flag
d90	Clock defrost mode	dEF	32914	3840	32950	3072	R/W	Byte	-	0...3	num
d91	Number of daily defrosts	dEF	32890	255	32949	48	R/W	Byte	-	0...255	num
d92	1st weekend/holiday day	dEF	32914	15	32950	192	R/W	Byte	-	0...7	num
d93	2nd weekend/holiday day	dEF	32914	240	32950	768	R/W	Byte	-	0...7	num
d94	Regular defrost interval duration	dEF	32914	61440	32950	12288	R/W	Byte	-	1...7	num
d1H	Weekday defrost no. 1 start hour	dEF	32972	0	32993	3	R/W	Byte	-	0...24	hours
d1n	Weekday defrost no. 1 start minute	dEF	32976	0	32993	12	R/W	Byte	-	0...59	min
d2H	Weekday defrost no. 2 start hour	dEF	32980	0	32993	48	R/W	Byte	-	d1H...24	hours
d2n	Weekday defrost no. 2 start minute	dEF	32996	0	32993	192	R/W	Byte	-	0...59	min
d3H	Weekday defrost no. 3 start hour	dEF	33028	0	32993	768	R/W	Byte	-	d2H...24	hours
d3n	Weekday defrost no. 3 start minute	dEF	33029	255	32993	3072	R/W	Byte	-	0...59	min
d4H	Weekday defrost no. 4 start hour	dEF	33029	0	32993	12288	R/W	Byte	-	d3H...24	hours
d4n	Weekday defrost no. 4 start minute	dEF	33030	255	32993	49152	R/W	Byte	-	0...59	min
d5H	Weekday defrost no. 5 start hour	dEF	33030	0	32994	3	R/W	Byte	-	d4H...24	hours
d5n	Weekday defrost no. 5 start minute	dEF	33031	255	32994	12	R/W	Byte	-	0...59	min
d6H	Weekday defrost no. 6 start hour	dEF	33031	0	32994	48	R/W	Byte	-	d5H...24	hours
d6n	Weekday defrost no. 6 start minute	dEF	33032	0	32994	192	R/W	Byte	-	0...59	min
F1H	Weekend/holiday defrost no. 1 start hour	dEF	33033	255	32994	768	R/W	Byte	-	0...24	hours
F1n	Weekend/holiday defrost no. 1 start minute	dEF	33033	0	32994	3072	R/W	Byte	-	0...59	min
F2H	Weekend/holiday defrost no. 2 start hour	dEF	33034	255	32994	12288	R/W	Byte	-	F1H...24	hours
F2n	Weekend/holiday defrost no. 2 start minute	dEF	33034	0	32994	49152	R/W	Byte	-	0...59	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
F3H	Weekend/holiday defrost no. 3 start hour	dEF	33035	255	32995	3	R/W	Byte	-	F2H...24	hours
F3n	Weekend/holiday defrost no. 3 start minute	dEF	33035	0	32995	12	R/W	Byte	-	0...59	min
F4H	Weekend/holiday defrost no. 4 start hour	dEF	33036	0	32995	48	R/W	Byte	-	F3H...24	hours
F4n	Weekend/holiday defrost no. 4 start minute	dEF	33037	255	32995	192	R/W	Byte	-	0...59	min
F5H	Weekend/holiday defrost no. 5 start hour	dEF	33037	0	32995	768	R/W	Byte	-	F4H...24	hours
F5n	Weekend/holiday defrost no. 5 start minute	dEF	33038	255	32995	3072	R/W	Byte	-	0...59	min
F6H	Weekend/holiday defrost no. 6 start hour	dEF	33038	0	32995	12288	R/W	Byte	-	F5H...24	hours
F6n	Weekend/holiday defrost no. 6 start minute	dEF	33039	255	32995	49152	R/W	Byte	-	0...59	min
FPt	FSt parameter mode (absolute or relative)	FAn	32968	4096	32933	3	R/W	Byte	-	0/1	flag
FSt	Evaporator fan disabling temperature	FAn	32778	0	32933	12	R/W	Word	Y	-67,0...302	°C/°F
Fot	Evaporator fan activation temperature	FAn	32838	0	32948	768	R/W	Word	Y	-67,0...302	°C/°F
FAd	Evaporator fan trigger differential	FAn	32869	0	32933	48	R/W	Word	-	0,1...25,0	°C/°F
Fdt	Evaporator fan activation delay time after a defrost cycle	FAn	32832	0	32947	48	R/W	Byte	-	0...250	min
dt	Dripping time	FAn	32870	255	32933	192	R/W	Byte	-	0...250	min
dFd	Evaporator fan cut-out during defrost	FAn	32968	8192	32933	768	R/W	Byte	-	0/1	flag
FCo	Evaporator fan status with compressor output Off	FAn	32909	15	32932	49152	R/W	Byte	-	0...3	num
FdC	Evaporator fan shutoff delay after compressor deactivation	FAn	32870	0	32933	3072	R/W	Byte	-	0...250	min
Fon	Evaporator fan On time in cyclical regulator mode	FAn	32871	255	32933	12288	R/W	Byte	-	0...250	min
FoF	Evaporator fan Off time in cyclical regulator mode	FAn	32871	0	32933	49152	R/W	Byte	-	0...250	min
Fnn	Evaporator fan ON time in night mode (duty cycle)	FAn	32868	0	32932	3072	R/W	Byte	-	0...250	num
FnF	Evaporator fan OFF time in night mode (duty cycle)	FAn	32869	255	32932	12288	R/W	Byte	-	0...250	num
ESF	Night mode activation (Energy Saving)	FAn	32969	512	32951	3072	R/W	Byte	-	0/1	flag
Att	Alarm mode (absolute or relative)	AL	32968	32768	32934	12	R/W	Byte	-	0/1	flag
AFd	Alarm activation differential	AL	32872	0	32934	48	R/W	Word	-	0,1...25,0	°C/°F
HAL	Maximum alarm threshold	AL	32779	0	32934	192	R/W	Word	Y	LAL ...302	°C/°F
LAL	Minimum alarm threshold	AL	32781	0	32934	768	R/W	Word	Y	-67,0... HAL	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
PAo	Temperature alarm exclusion time from power-on	AL	32873	255	32934	3072	R/W	Byte	-	0...10	min*10
dAo	Exclusion time for temperature alarms after a defrost cycle	AL	32841	0	32934	12288	R/W	Word	-	0...250	min
oAo	High and low temperature alarms exclusion time after closing the door	AL	32874	255	32934	49152	R/W	Byte	-	0...10	hours
tdo	Door open alarm exclusion time	AL	32875	255	32935	49152	R/W	Byte	-	0...250	min
tAo	Temperature alarm signaling delay time	AL	32874	0	32935	3	R/W	Byte	-	0...250	min
dAt	Defrost ended due to timeout alarm signaling	AL	32782	0	32935	12	R/W	Byte	-	0/1	flag
EAL	Regulators inhibited by external alarm	AL	32915	3840	32935	48	R/W	Byte	-	0/1/2	num
AoP	Alarm output polarity	AL	32969	1	32935	768	R/W	Byte	-	0/1	flag
SA3	Alarm setpoint for probe 3	AL	32831	0	32947	12	R/W	Word	Y	-67,0...302	°C/°F
dA3	Probe 3 alarm tripping differential	AL	32833	0	32947	192	R/W	Word	-	0,1...30,0	°C/°F
rFt	Refrigerant level alarm bypass	AL	33051	0	32985	12288	R/W	Byte	-	0...250	min
ESA	AUX status during Energy Saving	Lit	32925	768	32959	3072	R/W	Byte	-	0/1/2	num
tA1	Bring Aux/light switch-on before night/day transition forward	Lit	32866	255	32956	12288	R/W	Byte	-	0...250	min
tA2	Delay Aux/light switch-off after night/day transition	Lit	32866	0	32956	49152	R/W	Byte	-	0...250	min
dod	Enable utility shutoff upon door switch activation	dOr	32909	3840	32935	12288	R/W	Byte	-	0...3	num
dAd	D.I. activation indication delay time 1/2	dOr	32882	255	32940	3072	R/W	Byte	-	0...250	min
dCo	Compressor activation delay from acknowledgment	dOr	32840	0	32931	3072	R/W	Byte	-	0...250	min
tn1	Energy Saving mode activation delay	dOr	32848	0	32953	12	R/W	Byte	-	0...250	min
dCd	Fans activation delay after door closed.	dOr	32875	0	32936	3072	R/W	Byte	-	0...250	s
AUP	Associate aux relay with door switch	dOr	32909	240	32935	192	R/W	Byte	-	0/1	flag
PEn	Number of errors permitted per minimum/maximum pressure switch input	PrE	32894	255	32946	12288	R/W	Byte	-	0...15	num
PEi	Minimum/maximum pressure switch error calculation interval	PrE	32894	0	32946	49152	R/W	Byte	-	1...99	min
PEt	Compressor activation delay after pressure switch deactivation	PrE	32895	255	32947	3	R/W	Byte	-	0...255	min
SPn	Night mode setpoint	EnS	32854	0	32953	49152	R/W	Word	Y	-67,0...302	°C/°F
dFn	Night mode offset	EnS	32855	0	32954	3	R/W	Word	-	0,1...30,0	°C/°F
oSP	Offset on setpoint	EnS	32783	0	32936	49152	R/W	Word	Y	-30,0...30,0	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
odF	Trigger differential correction	EnS	32785	0	32937	48	R/W	Word	-	0,1...30,0	°C/°F
ESt	Type of action for the Energy Saving function	EnS	32918	3840	32958	49152	R/W	Byte	-	0...5	num
dnt	Night mode duration	EnS	32877	255	32937	3	R/W	Byte	-	0...24	hours
Cdt	Door closing time	EnS	32877	0	32937	12	R/W	Byte	-	0...250	min*10
PdC	Pull-Down mode	PLd	32915	61440	32963	3	R/W	Byte	-	0/1/2	num
tPd	Fast cooling mode duration	PLd	32836	0	32962	768	R/W	Byte	-	0...250	min
SPF	Fast cooling setpoint	PLd	32845	0	32952	12288	R/W	Word	Y	-67,0...302	°C/°F
dFF	Fast cooling offset	PLd	32842	0	32951	49152	R/W	Word	-	0,1...30,0	°C/°F
Pdo	Step value for fast cooling setpoint	PLd	32843	0	32952	768	R/W	Word	-	0,1...30,0	°C/°F
Pdn	Step number for fast cooling setpoint	PLd	32916	3840	32957	49152	R/W	Byte	-	1...10	num
Adr	Modbus protocol controller address	Add	33048	0	32984	768	R/W	Byte	-	0...247	num
bAU	Baudrate selection	Add	33051	255	32984	3072	R/W	Byte	-	0/1/2	num
PtY	MODBUS parity bit	Add	33049	255	32984	12288	R/W	Byte	-	0/1/2	num
dro	Select °C / °F	diS	32969	8	32937	192	R/W	Byte	-	0/1	flag
CA1	Analog input 1 calibration	diS	32786	0	32937	768	R/W	Word	Y	-30,0...30,0	°C/°F
CA2	Analog input 2 calibration	diS	32787	0	32937	3072	R/W	Word	Y	-30,0...30,0	°C/°F
CA3	Analog input 3 calibration	diS	32789	0	32937	12288	R/W	Word	Y	-30,0...30,0	°C/°F
LoC	Disable keypad	diS	32969	16	32938	48	R/W	Byte	-	0/1	flag
ddd	Select main display value	diS	32909	61440	32938	192	R/W	Byte	-	0...3	num
ddE	Display on eco device	diS	32918	240	32958	12288	R/W	Byte	-	0...4	num
ddL	Display lock mode during a defrost	diS	32910	15	32938	768	R/W	Byte	-	0/1/2	num
Ldd	Display lock timeout from end of defrost	diS	32878	255	32938	3072	R/W	Byte	-	0...250	min
ndt	Display with decimal point	diS	32969	32	32938	12288	R/W	Byte	-	0/1	flag
FIS	Select display filter	diS	33053	255	32990	3	R/W	Byte	-	0/1/2	num
tAu	Display filter time constant	diS	33053	0	32990	12	R/W	Byte	-	0...250	min
Fit	Display filter mode	diS	33054	255	32990	48	R/W	Byte	-	0/1	flag
PS1	Password 1 value	diS	32879	0	32939	192	R/W	Byte	-	0...250	num
PS2	Password 2 value	diS	32880	0	32939	768	R/W	Byte	-	0...250	num
CEr	Probe error capacity	VSC	32795	0	32942	768	R/W	Byte	-	0...100	%
PdS	Pull Down forced startup differential	VSC	32797	0	32942	3072	R/W	Word	Y	-50,0...50,0	K/°R
PUS	Pull Up forced startup differential	VSC	32798	0	32942	12288	R/W	Word	Y	-50,0...50,0	K/°R
PUd	Temperature outside range timeout	VSC	32799	0	32942	49152	R/W	Byte	-	0...1000	min
PdE	Pull Down end differential	VSC	32801	0	32943	3	R/W	Word	Y	-50,0...50,0	K/°R
PUE	Pull Up end differential	VSC	32802	0	32943	12	R/W	Word	Y	-50,0...50,0	K/°R
Pdt	Optimized Pull Down timeout	VSC	32803	0	32943	48	R/W	Byte	-	0...1000	min
Pdd	Optimized Pull Down capacity	VSC	32805	0	32943	192	R/W	Byte	-	0...100	%

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
CPd	Capacity after Pull Down day	VSC	32806	0	32943	768	R/W	Byte	-	0...100	%
CPn	Capacity after Pull Down night	VSC	32807	0	32943	3072	R/W	Byte	-	0...100	%
CPb	Compressor PID proportional band	VSC	32810	0	32943	49152	R/W	Word	Y	0,1...3200	K/°R
Cti	Compressor PID integral time	VSC	32811	0	32944	768	R/W	Word	-	0...65535	s
Ctd	Compressor PID derivative time	VSC	32813	0	32944	3072	R/W	Word	-	0...65535	s
CSd	Compressor startup duration	VSC	32814	0	32944	12288	R/W	Word	-	0...900	s
CSC	Capacity during compressor startup	VSC	32815	0	32944	49152	R/W	Word	-	44,4...100	%
CAU	Select PID automatic or manual mode	VSC	32882	0	32945	12	R/W	Byte	-	0/1	flag
CdU	PID duty cycle in manual mode	VSC	32818	0	32945	48	R/W	Byte	-	0...100	num
F_1	Maximum frequency	VSC	32827	0	32946	192	R/W	Byte	-	0...250	Hz
F_2	Minimum frequency	VSC	32829	0	32946	768	R/W	Byte	-	0...250	Hz
H08	Stand-by operating mode	CnF	32925	3	32939	12288	R/W	Byte	-	0/1/2	num
H11	Configurability of digital input 1	CnF	32881	255	32939	49152	R/W	Word	Y	-13...13	num
H12	Configurability of digital input 2	CnF	32881	0	32940	768	R/W	Word	Y	-12...12	num
H21	Configurability of digital output Out1/OC1	CnF	32884	0	32940	12288	R/W	Byte	-	0...13	num
H22	Configurability of digital output Out2	CnF	32885	255	32940	49152	R/W	Byte	-	0...12	num
H23	Configurability of digital output Out3	CnF	32885	0	32941	3	R/W	Byte	-	0...12	num
H24	Configurability of digital output Out4	CnF	32886	255	32941	12	R/W	Byte	-	0...12	num
H25	Configurability of digital output 5 (buzzer)	CnF	32897	255	32931	12288	R/W	Byte	-	0/1	num
H31	Key configuration 	CnF	32910	61440	32941	48	R/W	Byte	-	0...10	num
H32	Key configuration 	CnF	32911	15	32941	192	R/W	Byte	-	0...10	num
H33	Key configuration 	CnF	32911	240	32941	768	R/W	Byte	-	0...10	num
H34	Key configuration 	CnF	32911	3840	32941	3072	R/W	Byte	-	0...10	num
H35	Key configuration 	CnF	32911	61440	32941	12288	R/W	Byte	-	0...10	num
H42	Configuration of analog input Pb2	CnF	32912	61440	32942	3	R/W	Byte	-	0/1	flag
H43	Configuration of analog input Pb3	CnF	32913	15	32942	12	R/W	Byte	-	0/1/2	num
H45	Defrost input mode for applications with dual evaporator	CnF	32915	15	32950	49152	R/W	Byte	-	0...3	num
H60	Parameter vector selector	CnF	33043	0	32987	192	R	Byte	-	0...3	num
tAb	Map code	CnF	32997	0	32985	12	R	Word	-	0...999	num
CuS	Customer model reference	CnF	33689	0	32990	192	RW	Word	-	0...999	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
UL	Visibility of the function transferring the programming parameters from the controller to the UNICARD	FPr	-	-	32985	48	R/W	2 bit	-	0...3	num
Fr	UNICARD formatting function visibility	FPr	-	-	32985	768	R/W	2 bit	-	0...3	num
oSP	Reduced set activation	FnC	-	-	32988	768	R/W	2 bit	-	0...3	num
dEF	Activate defrost	FnC	-	-	32987	768	R/W	2 bit	-	0...3	num
AUX	AUX output activation / deactivation	FnC	-	-	32987	49152	R/W	2 bit	-	0...3	num
rAP	Pressure switch alarm reset visibility	FnC	-	-	32985	3072	R/W	2 bit	-	0...3	num
tUn	Autotuning activation	FnC	-	-	32988	3072	R/W	2 bit	-	0...3	num
nPL	Preliminary Autotuning procedure activation	FnC	-	-	32988	12288	R/W	2 bit	-	0...3	num
E10	Event 1 profile	nAd	33040	0	32985	49152	R/W	Byte	-	0...11	num
E11	Event 1 start hour	nAd	33041	0	32986	3	R/W	Byte	-	0...23	hours
E12	Event 1 start minute	nAd	33042	255	32986	12	R/W	Byte	-	0...59	min
E13	Event 1 end hour	nAd	33042	0	32986	48	R/W	Byte	-	0...23	hours
E14	Event 1 end minute	nAd	33043	255	32986	192	R/W	Byte	-	0...59	min
E15	Enable functions during event 1	nAd	33041	255	32986	768	R/W	Byte	-	0...5	num
E20	Event 2 profile	nAd	33044	0	32986	3072	R/W	Byte	-	0...11	num
E21	Event 2 start hour	nAd	33045	0	32986	12288	R/W	Byte	-	0...23	hours
E22	Event 2 start minute	nAd	33046	255	32986	49152	R/W	Byte	-	0...59	min
E23	Event 2 end hour	nAd	33046	0	32987	3	R/W	Byte	-	0...23	hours
E24	Event 2 end minute	nAd	33047	255	32987	12	R/W	Byte	-	0...59	min
E25	Enable functions during event 2	nAd	33045	255	32987	48	R/W	Byte	-	0...5	num
tCP	Time temperature remains below the cool protection setpoint	CPr	32844	0	32952	3072	R/W	Byte	-	0...250	min
SCP	Cool protection setpoint	CPr	32846	0	32952	49152	R/W	Word	Y	-67,0...302	°C/°F
dCP	Cool protection differential	CPr	32847	0	32953	3	R/W	Word	-	0,1...30,0	°C/°F
dCA	Enable deep cooling	dEC	32925	3072	32959	12288	R/W	Byte	-	0/1/2	num
dCS	Deep cooling setpoint	dEC	32834	0	32947	768	R/W	Word	Y	-67,0...302	°C/°F
tdC	Deep cooling duration	dEC	32886	0	32948	12288	R/W	Byte	-	0...250	min
dCC	Defrost delay after deep cooling	dEC	32883	0	32948	3072	R/W	Byte	-	0...250	min
Sid	Deep cooling start threshold	dEC	32857	0	32962	48	R/W	Word	Y	-67,0...302	°C/°F
toS	Time above the threshold for deep cooling start	dEC	32867	255	32957	3	R/W	Byte	-	0...250	min
SLP	Daily or weekly mode	SL	32969	8192	32961	192	R/W	Byte	-	0/1	flag
SL1	Self-Learning duration in daily mode	SL	32865	255	32956	768	R/W	Byte	-	1...30	days
SL2	Self-Learning duration in weekly mode	SL	32865	0	32956	3072	R/W	Byte	-	1...30	num
SLr	Enable continuous self-learning	SL	32969	16384	32961	768	R/W	Byte	-	0/1	flag






Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
SLB	Black-out period duration for automatic self-learning activation	SL	32852	0	32953	3072	R/W	Byte	-	0...250	days
SLE	Enable/Disable self-learning	SL	32969	32768	32961	3072	R/W	Byte	-	0/1	flag
Application 1 parameters											
V1-SEt	Regulation setpoint	V1	33073	0	33235	49152	R/W	Word	Y	LSE...HSE	°C/°F
V1-diF	Setpoint differential	V1	33074	0	33232	768	R/W	Word	-	0,1...30,0	°C/°F
V1-LSE	Minimum setpoint value that can be set	V1	33075	0	33232	3072	R/W	Word	Y	-67,0... HSE	°C/°F
V1-HSE	Maximum setpoint value that can be set	V1	33077	0	33232	12288	R/W	Word	Y	LSE ...302	°C/°F
V1-HC	Operating mode (Heating/Cooling)	V1	33272	256	33232	49152	R/W	Byte	-	0/1	flag
V1-ont	Compressor output ON time if regulation probe is faulty	V1	33072	0	33233	3	R/W	Byte	-	0...250	min
V1-oFt	Compressor output OFF time if regulation probe is faulty	V1	33076	0	33233	12	R/W	Byte	-	0...250	min
V1-don	Compressor output activation delay from call	V1	33080	0	33233	48	R/W	Byte	-	0...250	s
V1-doF	Compressor output activation delay from switch-off	V1	33084	0	33233	192	R/W	Byte	-	0...250	min
V1-dbi	Delay between two consecutive compressor output power-ons	V1	33088	0	33233	768	R/W	Byte	-	0...250	min
V1-Cit	Minimum compressor output activation time	V1	33104	0	33234	3	R/W	Byte	-	0...250	min
V1-CAt	Maximum compressor output activation time	V1	33108	0	33234	12	R/W	Byte	-	0...250	min
V1-odo	Output activation delay at startup	V1	33092	0	33233	3072	R/W	Byte	-	0...250	min
V1-dFA	Condenser fan and compressor activation delay from the call	V1	33199	0	33234	3072	R/W	Byte	-	0...250	s
V1-dty	Type of defrost	V1	33212	61440	33234	768	R/W	Byte	-	0/1/2	num
V1-doH	Defrost cycle activation delay from the call	V1	33124	0	33235	3	R/W	Byte	-	0...250	min
V1-dEt	Defrost timeout	V1	33120	0	33234	12288	R/W	Byte	-	1...250	min
V1-dS1	Evaporator 1 defrost end temperature	V1	33078	0	33235	12	R/W	Word	Y	-67,0...302	°C/°F
V1-dS2	Evaporator 2 defrost end temperature	V1	33079	0	33235	48	R/W	Word	Y	-67,0...302	°C/°F
V1-dPo	Defrost activation request at power-on	V1	33272	1024	33235	768	R/W	Byte	-	0/1	flag
V1-dMr	Enable defrost timer reset with manual defrost	V1	33273	2048	33265	12	R/W	Byte	-	0/1	flag
V1-d00	Cumulative time for defrost activation	V1	33193	0	33253	12	R/W	Byte	-	0...250	hours
V1-d01	Parameter d00 unit of measure	V1	33229	12	33255	12	R/W	Byte	-	0/1/2	num
V1-dit	Device time for defrost activation	V1	33116	0	33253	49152	R/W	Byte	-	0...250	hours

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-d11	Parameter dit unit of measure	V1	33229	48	33255	48	R/W	Byte	-	0/1/2	num
V1-d20	Enable defrost at compressor stop	V1	33273	256	33255	768	R/W	Byte	-	0/1	flag
V1-d40	Select defrost probe 1	V1	33217	240	33254	3	R/W	Byte	-	0/1	flag
V1-d41	Temperature threshold for starting defrost	V1	33141	0	33251	49152	R/W	Word	Y	-67,0...302	°C/°F
V1-d42	Time the evaporator temperature must remain below the threshold	V1	33143	0	33251	12288	R/W	Byte	-	0...250	min
V1-d43	Time count mode for temperature below threshold	V1	33217	3840	33254	12	R/W	Byte	-	0...3	num
V1-d44	Threshold management mode	V1	33217	61440	33254	48	R/W	Byte	-	0/1	flag
V1-d50	Defrost probe Pb2 selection	V1	33220	61440	33262	3	R/W	Byte	-	0/1	flag
V1-d51	Defrost probe Pb1 selection	V1	33221	15	33262	12	R/W	Byte	-	0/1	flag
V1-d52	Temperature threshold for starting defrost	V1	33153	0	33257	48	R/W	Byte	-	0,0...302	°C/°F
V1-d53	Time the temperature differential must remain above the threshold	V1	33157	0	33257	12288	R/W	Byte	-	0...999	min
V1-d54	Time count mode for temperature differential above threshold	V1	33221	240	33262	48	R/W	Byte	-	0...3	num
V1-d55	Threshold management mode	V1	33221	3840	33262	192	R/W	Byte	-	0/1	flag
V1-d90	Clock defrost mode	V1	33218	3840	33254	3072	R/W	Byte	-	0...3	num
V1-d91	Number of daily defrosts	V1	33194	255	33253	48	R/W	Byte	-	0...255	num
V1-d92	1st weekend/holiday day	V1	33218	15	33254	192	R/W	Byte	-	0...7	num
V1-d93	2nd weekend/holiday day	V1	33218	240	33254	768	R/W	Byte	-	0...7	num
V1-d94	Regular defrost interval duration	V1	33218	61440	33254	12288	R/W	Byte	-	1...7	num
V1-FPt	FSt parameter mode (absolute or relative)	V1	33272	4096	33237	3	R/W	Byte	-	0/1	flag
V1-FSt	Evaporator fan disabling temperature	V1	33082	0	33237	12	R/W	Word	Y	-67,0...302	°C/°F
V1-Fot	Evaporator fan activation temperature	V1	33142	0	33252	768	R/W	Word	Y	-67,0...302	°C/°F
V1-FAd	Evaporator fan trigger differential	V1	33173	0	33237	48	R/W	Word	-	0,1...25,0	°C/°F
V1-Fdt	Evaporator fan activation delay time after a defrost cycle	V1	33136	0	33251	48	R/W	Byte	-	0...250	min
V1-dt	Dripping time	V1	33174	255	33237	192	R/W	Byte	-	0...250	min
V1-dFd	Evaporator fan cut-out during defrost	V1	33272	8192	33237	768	R/W	Byte	-	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-FCo	Evaporator fan status with compressor output Off	V1	33213	15	33236	49152	R/W	Byte	-	0...3	num
V1-FdC	Evaporator fan shutoff delay after compressor deactivation	V1	33174	0	33237	3072	R/W	Byte	-	0...250	min
V1-Fon	Evaporator fan On time in cyclical regulator mode	V1	33175	255	33237	12288	R/W	Byte	-	0...250	min
V1-FoF	Evaporator fan Off time in cyclical regulator mode	V1	33175	0	33237	49152	R/W	Byte	-	0...250	min
V1-Fnn	Evaporator fan ON time in night mode (duty cycle)	V1	33172	0	33236	3072	R/W	Byte	-	0...250	num
V1-FnF	Evaporator fan OFF time in night mode (duty cycle)	V1	33173	255	33236	12288	R/W	Byte	-	0...250	num
V1-ESF	Night mode activation (Energy Saving)	V1	33273	512	33255	3072	R/W	Byte	-	0/1	flag
V1-Att	Alarm mode (absolute or relative)	V1	33272	32768	33238	12	R/W	Byte	-	0/1	flag
V1-AFd	Alarm activation differential	V1	33176	0	33238	48	R/W	Word	-	0,1...25,0	°C/°F
V1-HAL	Maximum alarm threshold	V1	33083	0	33238	192	R/W	Word	Y	LAL...302	°C/°F
V1-LAL	Minimum alarm threshold	V1	33085	0	33238	768	R/W	Word	Y	-67,0...HAL	°C/°F
V1-PAo	Temperature alarm exclusion time from power-on	V1	33177	255	33238	3072	R/W	Byte	-	0...10	min*10
V1-dAo	Exclusion time for temperature alarms after a defrost cycle	V1	33145	0	33238	12288	R/W	Word	-	0...250	min
V1-oAo	High and low temperature alarms exclusion time after closing the door	V1	33178	255	33238	49152	R/W	Byte	-	0...10	hours
V1-tdo	Door open alarm exclusion time	V1	33179	255	33239	49152	R/W	Byte	-	0...250	min
V1-tAo	Temperature alarm signaling delay time	V1	33178	0	33239	3	R/W	Byte	-	0...250	min
V1-dAt	Defrost ended due to timeout alarm signaling	V1	33086	0	33239	12	R/W	Byte	-	0/1	flag
V1-EAL	Regulators inhibited by external alarm	V1	33219	3840	33239	48	R/W	Byte	-	0/1/2	num
V1-AoP	Alarm output polarity	V1	33273	1	33239	768	R/W	Byte	-	0/1	flag
V1-SA3	Alarm setpoint for probe 3	V1	33135	0	33251	12	R/W	Word	Y	-67,0...302	°C/°F
V1-dA3	Probe 3 alarm tripping differential	V1	33137	0	33251	192	R/W	Word	-	0,1...30,0	°C/°F
V1-ESA	AUX status during Energy Saving	V1	33229	768	33263	3072	R/W	Byte	-	0/1/2	num
V1-tA1	Bring Aux/light switch-on before night/day transition forward	V1	33170	255	33260	12288	R/W	Byte	-	0...250	min
V1-tA2	Delay Aux/light switch-off after night/day transition	V1	33170	0	33260	49152	R/W	Byte	-	0...250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-dod	Enable utility shutoff upon door switch activation	V1	33213	3840	33239	12288	R/W	Byte	-	0...3	num
V1-dAd	D.I. activation indication delay time 1/2	V1	33186	255	33244	3072	R/W	Byte	-	0...250	min
V1-dCo	Compressor activation delay from acknowledgment	V1	33144	0	33235	3072	R/W	Byte	-	0...250	min
V1-tn1	Energy Saving mode activation delay	V1	33152	0	33257	12	R/W	Byte	-	0...250	min
V1-dCd	Fans activation delay after door closed.	V1	33179	0	33240	3072	R/W	Byte	-	0...250	s
V1-AUP	Associate aux relay with door switch	V1	33213	240	33239	192	R/W	Byte	-	0/1	flag
V1-PEn	Number of errors permitted per minimum/maximum pressure switch input	V1	33198	255	33250	12288	R/W	Byte	-	0...15	num
V1-PEi	Minimum/maximum pressure switch error calculation interval	V1	33198	0	33250	49152	R/W	Byte	-	1...99	min
V1-PEt	Compressor activation delay after pressure switch deactivation	V1	33199	255	33251	3	R/W	Byte	-	0...255	min
V1-SPn	Night mode setpoint	V1	33158	0	33257	49152	R/W	Word	Y	-67,0...302	°C/°F
V1-dFn	Night mode offset	V1	33159	0	33258	3	R/W	Word	-	0,1...30,0	°C/°F
V1-oSP	Offset on setpoint	V1	33087	0	33240	49152	R/W	Word	Y	-30,0...30,0	°C/°F
V1-odF	Trigger differential correction	V1	33089	0	33241	48	R/W	Word	-	0,1...30,0	°C/°F
V1-ESt	Type of action for the Energy Saving function	V1	33222	3840	33262	49152	R/W	Byte	-	0...5	num
V1-dnt	Night mode duration	V1	33181	255	33241	3	R/W	Byte	-	0...24	hours
V1-Cdt	Door closing time	V1	33181	0	33241	12	R/W	Byte	-	0...250	min*10
V1-PdC	Pull-Down mode	V1	33219	61440	33267	3	R/W	Byte	-	0/1/2	num
V1-tPd	Fast cooling mode duration	V1	33140	0	33266	768	R/W	Byte	-	0...250	min
V1-SPF	Fast cooling setpoint	V1	33149	0	33256	12288	R/W	Word	Y	-67,0...302	°C/°F
V1-dFF	Fast cooling offset	V1	33146	0	33255	49152	R/W	Word	-	0,1...30,0	°C/°F
V1-Pdo	Step value for fast cooling setpoint	V1	33147	0	33256	768	R/W	Word	-	0,1...30,0	°C/°F
V1-Pdn	Step number for fast cooling setpoint	V1	33220	3840	33261	49152	R/W	Byte	-	1...10	num
V1-dro	Select °C / °F	V1	33273	8	33241	192	R/W	Byte	-	0/1	flag
V1-CA1	Probe Pb1 calibration	V1	33090	0	33241	768	R/W	Word	Y	-30,0...30,0	°C/°F
V1-CA2	Probe Pb2 calibration	V1	33091	0	33241	3072	R/W	Word	Y	-30,0...30,0	°C/°F
V1-CA3	Probe Pb3 calibration	V1	33093	0	33241	12288	R/W	Word	Y	-30,0...30,0	°C/°F
V1-LoC	Enable keypad lock	V1	33273	16	33242	48	R/W	Byte	-	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-ddd	Select main display value	V1	33213	61440	33242	192	R/W	Byte	-	0...3	num
V1-ddE	Display on eco device	V1	33222	240	33262	12288	R/W	Byte	-	0...4	num
V1-ddL	Inhibit resources at the end of defrost	V1	33214	15	33242	768	R/W	Byte	-	0/1/2	num
V1-Ldd	Display lock timeout from end of defrost	V1	33182	255	33242	3072	R/W	Byte	-	0...250	min
V1-ndt	Display with decimal point	V1	33273	32	33242	12288	R/W	Byte	-	0/1	flag
V1-PS1	Password 1 value	V1	33183	0	33243	192	R/W	Byte	-	0...250	num
V1-PS2	Password 2 value	V1	33184	0	33243	768	R/W	Byte	-	0...250	num
V1-CEr	Probe error capacity	V1	33099	0	33246	768	R/W	Byte	-	0...100	%
V1-PdS	Pull Down forced startup differential	V1	33101	0	33246	3072	R/W	Word	Y	-50,0...50,0	K°R
V1-PUS	Pull Up forced startup differential	V1	33102	0	33246	12288	R/W	Word	Y	-50,0...50,0	K°R
V1-PUD	Temperature outside range timeout	V1	33103	0	33246	49152	R/W	Byte	-	0...1000	min
V1-PdE	Pull Down end differential	V1	33105	0	33247	3	R/W	Word	Y	-50,0...50,0	K°R
V1-PUE	Pull Up end differential	V1	33106	0	33247	12	R/W	Word	Y	-50,0...50,0	K°R
V1-Pdt	Optimized Pull Down timeout	V1	33107	0	33247	48	R/W	Byte	-	0...1000	min
V1-Pdd	Optimized Pull Down capacity	V1	33109	0	33247	192	R/W	Byte	-	0...100	%
V1-CPd	Capacity after Pull Down day	V1	33110	0	33247	768	R/W	Byte	-	0...100	%
V1-CPn	Capacity after Pull Down night	V1	33111	0	33247	3072	R/W	Byte	-	0...100	%
V1-CPb	Compressor PID proportional band	V1	33114	0	33247	49152	R/W	Word	Y	0,1...3200	K°R
V1-Cti	Compressor PID integral time	V1	33115	0	33248	768	R/W	Word	-	0...65535	s
V1-Ctd	Compressor PID derivative time	V1	33117	0	33248	3072	R/W	Word	-	0...65535	s
V1-CSd	Compressor startup duration	V1	33118	0	33248	12288	R/W	Word	-	0...900	s
V1-CSC	Capacity during compressor startup	V1	33119	0	33248	49152	R/W	Word	-	44,4...100	%
V1-CAU	Select PID automatic or manual mode	V1	33186	0	33249	12	R/W	Byte	-	0/1	flag
V1-CdU	PID duty cycle in manual mode	V1	33122	0	33249	48	R/W	Byte	-	0...100	num
V1-F ₁	Maximum frequency	V1	33131	0	33250	192	R/W	Byte	-	0...250	Hz
V1-F ₂	Minimum frequency	V1	33133	0	33250	768	R/W	Byte	-	0...250	Hz
V1-H08	Stand-by operating mode	V1	33229	3	33243	12288	R/W	Byte	-	0/1/2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-H11	Configurability of digital input 1	V1	33185	255	33243	49152	R/W	Word	Y	-13...13	num
V1-H12	Configurability of digital input 2	V1	33185	0	33244	768	R/W	Word	Y	-12...12	num
V1-H21	Configurability of digital output Out1/OC1	V1	33188	0	33244	12288	R/W	Byte	-	0...13	num
V1-H22	Configurability of digital output Out2	V1	33189	255	33244	49152	R/W	Byte	-	0...12	num
V1-H23	Configurability of digital output Out3	V1	33189	0	33245	3	R/W	Byte	-	0...12	num
V1-H24	Configurability of digital output Out4	V1	33190	255	33245	12	R/W	Byte	-	0...12	num
V1-H25	Configurability of digital output 5 (buzzer)	V1	33201	255	33235	12288	R/W	Byte	-	0/1	num
V1-H31	Key configuration 	V1	33214	61440	33245	48	R/W	Byte	-	0...10	num
V1-H32	Key configuration 	V1	33215	15	33245	192	R/W	Byte	-	0...10	num
V1-H33	Key configuration 	V1	33215	240	33245	768	R/W	Byte	-	0...10	num
V1-H34	Key configuration 	V1	33215	3840	33245	3072	R/W	Byte	-	0...10	num
V1-H35	Key configuration 	V1	33215	61440	33245	12288	R/W	Byte	-	0...10	num
V1-H42	Configuration of analog input Pb2	V1	33216	61440	33246	3	R/W	Byte	-	0/1	flag
V1-H43	Configuration of analog input Pb3	V1	33217	15	33246	12	R/W	Byte	-	0/1/2	num
V1-H45	Defrost input mode for applications with dual evaporator	V1	33219	15	33254	49152	R/W	Byte	-	0...3	num
V1-tCP	Time temperature remains below the cool protection setpoint	V1	33148	0	33256	3072	R/W	Byte	-	0...250	min
V1-SCP	Cool protection setpoint	V1	33150	0	33256	49152	R/W	Word	Y	-67,0...302	°C/°F
V1-dCP	Cool protection differential	V1	33151	0	33257	3	R/W	Word	-	0,1...30,0	°C/°F
V1-dCA	Enable deep cooling	V1	33229	3072	33263	12288	R/W	Byte	-	0/1/2	num
V1-dCS	Deep cooling setpoint	V1	33138	0	33251	768	R/W	Word	Y	-67,0...302	°C/°F
V1-tdC	Deep cooling duration	V1	33190	0	33252	12288	R/W	Byte	-	0...250	min
V1-dCC	Defrost delay after deep cooling	V1	33187	0	33252	3072	R/W	Byte	-	0...250	min
V1-Sid	Deep cooling start threshold	V1	33161	0	33266	48	R/W	Word	Y	-67,0...302	°C/°F
V1-toS	Time above the threshold for deep cooling start	V1	33171	255	33261	3	R/W	Byte	-	0...250	min
V1-SLP	Daily or weekly mode	V1	33273	8192	33265	192	R/W	Byte	-	0/1	flag
V1-SL1	Self-Learning duration in daily mode	V1	33169	255	33260	768	R/W	Byte	-	1...30	days
V1-SL2	Self-Learning duration in weekly mode	V1	33169	0	33260	3072	R/W	Byte	-	1...30	num
V1-SLr	Enable continuous self-learning	V1	33273	16384	33265	768	R/W	Byte	-	0/1	flag






Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-SLB	Black-out period duration for automatic self-learning activation	V1	33156	0	33257	3072	R/W	Byte	-	0...250	days
V1-SLE	Enable/Disable self-learning	V1	33273	32768	33265	3072	R/W	Byte	-	0/1	flag
Application 2 parameters											
V2-SEt	Regulation setpoint	V2	33281	0	33443	49152	R/W	Word	Y	LSE...HSE	°C/°F
V2-diF	Setpoint differential	V2	33282	0	33440	768	R/W	Word	-	0,1...30,0	°C/°F
V2-LSE	Minimum setpoint value that can be set	V2	33283	0	33440	3072	R/W	Word	Y	-67,0...HSE	°C/°F
V2-HSE	Maximum setpoint value that can be set	V2	33285	0	33440	12288	R/W	Word	Y	LSE...302	°C/°F
V2-HC	Operating mode (Heating/Cooling)	V2	33480	256	33440	49152	R/W	Byte	-	0/1	flag
V2-ont	Compressor output ON time if regulation probe is faulty	V2	33280	0	33441	3	R/W	Byte	-	0...250	min
V2-oFt	Compressor output OFF time if regulation probe is faulty	V2	33284	0	33441	12	R/W	Byte	-	0...250	min
V2-don	Compressor output activation delay from call	V2	33288	0	33441	48	R/W	Byte	-	0...250	s
V2-doF	Compressor output activation delay from switch-off	V2	33292	0	33441	192	R/W	Byte	-	0...250	min
V2-dbi	Delay between two consecutive compressor output power-ons	V2	33296	0	33441	768	R/W	Byte	-	0...250	min
V2-Cit	Minimum compressor output activation time	V2	33312	0	33442	3	R/W	Byte	-	0...250	min
V2-CAt	Maximum compressor output activation time	V2	33316	0	33442	12	R/W	Byte	-	0...250	min
V2-odo	Output activation delay at startup	V2	33300	0	33441	3072	R/W	Byte	-	0...250	min
V2-dFA	Condenser fan and compressor activation delay from the call	V2	33407	0	33442	3072	R/W	Byte	-	0...250	s
V2-dty	Type of defrost	V2	33420	61440	33442	768	R/W	Byte	-	0/1/2	num
V2-doH	Defrost cycle activation delay from the call	V2	33332	0	33443	3	R/W	Byte	-	0...250	min
V2-dEt	Defrost timeout	V2	33328	0	33442	12288	R/W	Byte	-	1...250	min
V2-dS1	Evaporator 1 defrost end temperature	V2	33286	0	33443	12	R/W	Word	Y	-67,0...302	°C/°F
V2-dS2	Evaporator 2 defrost end temperature	V2	33287	0	33443	48	R/W	Word	Y	-67,0...302	°C/°F
V2-dPo	Defrost activation request at power-on	V2	33480	1024	33443	768	R/W	Byte	-	0/1	flag
V2-dMr	Enable defrost timer reset with manual defrost	V2	33481	2048	33473	12	R/W	Byte	-	0/1	flag
V2-d00	Cumulative time for defrost activation	V2	33401	0	33461	12	R/W	Byte	-	0...250	ore
V2-d01	Parameter d00 unit of measure	V2	33437	12	33463	12	R/W	Byte	-	0/1/2	num
V2-dit	Device time for defrost activation	V2	33324	0	33461	49152	R/W	Byte	-	0...250	ore

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-d11	Parameter dit unit of measure	V2	33437	48	33463	48	R/W	Byte	-	0/1/2	num
V2-d20	Enable defrost at compressor stop	V2	33481	256	33463	768	R/W	Byte	-	0/1	flag
V2-d40	Select defrost probe 1	V2	33425	240	33462	3	R/W	Byte	-	0/1	flag
V2-d41	Temperature threshold for starting defrost	V2	33349	0	33459	49152	R/W	Word	Y	-67,0...302	°C/°F
V2-d42	Time the evaporator temperature must remain below the threshold	V2	33351	0	33459	12288	R/W	Byte	-	0...250	min
V2-d43	Time count mode for temperature below threshold	V2	33425	3840	33462	12	R/W	Byte	-	0...3	num
V2-d44	Threshold management mode	V2	33425	61440	33462	48	R/W	Byte	-	0/1	flag
V2-d50	Defrost probe Pb2 selection	V2	33428	61440	33470	3	R/W	Byte	-	0/1	flag
V2-d51	Defrost probe Pb1 selection	V2	33429	15	33470	12	R/W	Byte	-	0/1	flag
V2-d52	Temperature threshold for starting defrost	V2	33361	0	33465	48	R/W	Byte	-	0,0...302	°C/°F
V2-d53	Time the temperature differential must remain above the threshold	V2	33365	0	33465	12288	R/W	Byte	-	0...999	min
V2-d54	Time count mode for temperature differential above threshold	V2	33429	240	33470	48	R/W	Byte	-	0...3	num
V2-d55	Threshold management mode	V2	33429	3840	33470	192	R/W	Byte	-	0/1	flag
V2-d90	Clock defrost mode	V2	33426	3840	33462	3072	R/W	Byte	-	0...3	num
V2-d91	Number of daily defrosts	V2	33402	255	33461	48	R/W	Byte	-	0...255	num
V2-d92	1st weekend/holiday day	V2	33426	15	33462	192	R/W	Byte	-	0...7	num
V2-d93	2nd weekend/holiday day	V2	33426	240	33462	768	R/W	Byte	-	0...7	num
V2-d94	Regular defrost interval duration	V2	33426	61440	33462	12288	R/W	Byte	-	1...7	num
V2-FPt	FSt parameter mode (absolute or relative)	V2	33480	4096	33445	3	R/W	Byte	-	0/1	flag
V2-FSt	Evaporator fan disabling temperature	V2	33290	0	33445	12	R/W	Word	Y	-67,0...302	°C/°F
V2-Fot	Evaporator fan activation temperature	V2	33350	0	33460	768	R/W	Word	Y	-67,0...302	°C/°F
V2-FAd	Evaporator fan trigger differential	V2	33381	0	33445	48	R/W	Word	-	0,1...25,0	°C/°F
V2-Fdt	Evaporator fan activation delay time after a defrost cycle	V2	33344	0	33459	48	R/W	Byte	-	0...250	min
V2-dt	Dripping time	V2	33382	255	33445	192	R/W	Byte	-	0...250	min
V2-dFd	Evaporator fan cut-out during defrost	V2	33480	8192	33445	768	R/W	Byte	-	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-FCo	Evaporator fan status with compressor output Off	V2	33421	15	33444	49152	R/W	Byte	-	0...3	num
V2-FdC	Evaporator fan shutoff delay after compressor deactivation	V2	33382	0	33445	3072	R/W	Byte	-	0...250	min
V2-Fon	Evaporator fan On time in cyclical regulator mode	V2	33383	255	33445	12288	R/W	Byte	-	0...250	min
V2-FoF	Evaporator fan Off time in cyclical regulator mode	V2	33383	0	33445	49152	R/W	Byte	-	0...250	min
V2-Fnn	Evaporator fan ON time in night mode (duty cycle)	V2	33380	0	33444	3072	R/W	Byte	-	0...250	num
V2-FnF	Evaporator fan OFF time in night mode (duty cycle)	V2	33381	255	33444	12288	R/W	Byte	-	0...250	num
V2-ESF	Night mode activation (Energy Saving)	V2	33481	512	33463	3072	R/W	Byte	-	0/1	flag
V2-Att	Alarm mode (absolute or relative)	V2	33480	32768	33446	12	R/W	Byte	-	0/1	flag
V2-AFd	Alarm activation differential	V2	33384	0	33446	48	R/W	Word	-	0,1...25,0	°C/°F
V2-HAL	Maximum alarm threshold	V2	33291	0	33446	192	R/W	Word	Y	LAL...302	°C/°F
V2-LAL	Minimum alarm threshold	V2	33293	0	33446	768	R/W	Word	Y	-67,0...HAL	°C/°F
V2-PAo	Temperature alarm exclusion time from power-on	V2	33385	255	33446	3072	R/W	Byte	-	0...10	min*10
V2-dAo	Exclusion time for temperature alarms after a defrost cycle	V2	33353	0	33446	12288	R/W	Word	-	0...250	min
V2-oAo	High and low temperature alarms exclusion time after closing the door	V2	33386	255	33446	49152	R/W	Byte	-	0...10	hours
V2-tdo	Door open alarm exclusion time	V2	33387	255	33447	49152	R/W	Byte	-	0...250	min
V2-tAo	Temperature alarm signaling delay time	V2	33386	0	33447	3	R/W	Byte	-	0...250	min
V2-dAt	Defrost ended due to timeout alarm signaling	V2	33294	0	33447	12	R/W	Byte	-	0/1	flag
V2-EAL	Regulators inhibited by external alarm	V2	33427	3840	33447	48	R/W	Byte	-	0/1/2	num
V2-AoP	Alarm output polarity	V2	33481	1	33447	768	R/W	Byte	-	0/1	flag
V2-SA3	Alarm setpoint for probe 3	V2	33343	0	33459	12	R/W	Word	Y	-67,0...302	°C/°F
V2-dA3	Probe 3 alarm tripping differential	V2	33345	0	33459	192	R/W	Word	-	0,1...30,0	°C/°F
V2-ESA	AUX status during Energy Saving	V2	33437	768	33471	3072	R/W	Byte	-	0/1/2	num
V2-tA1	Bring Aux/light switch-on before night/day transition forward	V2	33378	255	33468	12288	R/W	Byte	-	0...250	min
V2-tA2	Delay Aux/light switch-off after night/day transition	V2	33378	0	33468	49152	R/W	Byte	-	0...250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-dod	Enable utility shutoff upon door switch activation	V2	33421	3840	33447	12288	R/W	Byte	-	0...3	num
V2-dAd	D.I. activation indication delay time 1/2	V2	33394	255	33452	3072	R/W	Byte	-	0...250	min
V2-dCo	Compressor activation delay from acknowledgment	V2	33352	0	33443	3072	R/W	Byte	-	0...250	min
V2-tn1	Energy Saving mode activation delay	V2	33360	0	33465	12	R/W	Byte	-	0...250	min
V2-dCd	Fans activation delay after door closed.	V2	33387	0	33448	3072	R/W	Byte	-	0...250	s
V2-AUP	Associate aux relay with door switch	V2	33421	240	33447	192	R/W	Byte	-	0/1	flag
V2-PEn	Number of errors permitted per minimum/maximum pressure switch input	V2	33406	255	33458	12288	R/W	Byte	-	0...15	num
V2-PEi	Minimum/maximum pressure switch error calculation interval	V2	33406	0	33458	49152	R/W	Byte	-	1...99	min
V2-PEt	Compressor activation delay after pressure switch deactivation	V2	33407	255	33459	3	R/W	Byte	-	0...255	min
V2-SPn	Night mode setpoint	V2	33366	0	33465	49152	R/W	Word	Y	-67,0...302	°C/°F
V2-dFn	Night mode offset	V2	33367	0	33466	3	R/W	Word	-	0,1...30,0	°C/°F
V2-oSP	Offset on setpoint	V2	33295	0	33448	49152	R/W	Word	Y	-30,0...30,0	°C/°F
V2-odF	Trigger differential correction	V2	33297	0	33449	48	R/W	Word	-	0,1...30,0	°C/°F
V2-ESt	Type of action for the Energy Saving function	V2	33430	3840	33470	49152	R/W	Byte	-	0...5	num
V2-dnt	Night mode duration	V2	33389	255	33449	3	R/W	Byte	-	0...24	ore
V2-Cdt	Door closing time	V2	33389	0	33449	12	R/W	Byte	-	0...250	min*10
V2-PdC	Pull-Down mode	V2	33427	61440	33475	3	R/W	Byte	-	0/1/2	num
V2-tPd	Fast cooling mode duration	V2	33348	0	33474	768	R/W	Byte	-	0...250	min
V2-SPF	Fast cooling setpoint	V2	33357	0	33464	12288	R/W	Word	Y	-67,0...302	°C/°F
V2-dFF	Fast cooling offset	V2	33354	0	33463	49152	R/W	Word	-	0,1...30,0	°C/°F
V2-Pdo	Step value for fast cooling setpoint	V2	33355	0	33464	768	R/W	Word	-	0,1...30,0	°C/°F
V2-Pdn	Step number for fast cooling setpoint	V2	33428	3840	33469	49152	R/W	Byte	-	1...10	num
V2-dro	Select °C / °F	V2	33481	8	33449	192	R/W	Byte	-	0/1	flag
V2-CA1	Probe Pb1 calibration	V2	33298	0	33449	768	R/W	Word	Y	-30,0...30,0	°C/°F
V2-CA2	Probe Pb2 calibration	V2	33299	0	33449	3072	R/W	Word	Y	-30,0...30,0	°C/°F
V2-CA3	Probe Pb3 calibration	V2	33301	0	33449	12288	R/W	Word	Y	-30,0...30,0	°C/°F
V2-LoC	Enable keypad lock	V2	33481	16	33450	48	R/W	Byte	-	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-ddd	Select main display value	V2	33421	61440	33450	192	R/W	Byte	-	0...3	num
V2-ddE	Display on eco device	V2	33430	240	33470	12288	R/W	Byte	-	0...4	num
V2-ddL	Inhibit resources at the end of defrost	V2	33422	15	33450	768	R/W	Byte	-	0/1/2	num
V2-Ldd	Display lock timeout from end of defrost	V2	33390	255	33450	3072	R/W	Byte	-	0...250	min
V2-ndt	Display with decimal point	V2	33481	32	33450	12288	R/W	Byte	-	0/1	flag
V2-PS1	Password 1 value	V2	33391	0	33451	192	R/W	Byte	-	0...250	num
V2-PS2	Password 2 value	V2	33392	0	33451	768	R/W	Byte	-	0...250	num
V2-CEr	Probe error capacity	V2	33307	0	33454	768	R/W	Byte	-	0...100	%
V2-PdS	Pull Down forced startup differential	V2	33309	0	33454	3072	R/W	Word	Y	-50,0...50,0	K°R
V2-PUS	Pull Up forced startup differential	V2	33310	0	33454	12288	R/W	Word	Y	-50,0...50,0	K°R
V2-PUd	Temperature outside range timeout	V2	33311	0	33454	49152	R/W	Byte	-	0...1000	min
V2-PdE	Pull Down end differential	V2	33313	0	33455	3	R/W	Word	Y	-50,0...50,0	K°R
V2-PUE	Pull Up end differential	V2	33314	0	33455	12	R/W	Word	Y	-50,0...50,0	K°R
V2-Pdt	Optimized Pull Down timeout	V2	33315	0	33455	48	R/W	Byte	-	0...1000	min
V2-Pdd	Optimized Pull Down capacity	V2	33317	0	33455	192	R/W	Byte	-	0...100	%
V2-CPd	Capacity after Pull Down day	V2	33318	0	33455	768	R/W	Byte	-	0...100	%
V2-CPn	Capacity after Pull Down night	V2	33319	0	33455	3072	R/W	Byte	-	0...100	%
V2-CPb	Compressor PID proportional band	V2	33322	0	33455	49152	R/W	Word	Y	0,1...3200	K°R
V2-Cti	Compressor PID integral time	V2	33323	0	33456	768	R/W	Word	-	0...65535	s
V2-Ctd	Compressor PID derivative time	V2	33325	0	33456	3072	R/W	Word	-	0...65535	s
V2-CSd	Compressor startup duration	V2	33326	0	33456	12288	R/W	Word	-	0...900	s
V2-CSC	Capacity during compressor startup	V2	33327	0	33456	49152	R/W	Word	-	44,4...100	%
V2-CAU	Select PID automatic or manual mode	V2	33394	0	33457	12	R/W	Byte	-	0/1	flag
V2-CdU	PID duty cycle in manual mode	V2	33330	0	33457	48	R/W	Byte	-	0...100	num
V2-F ₁	Maximum frequency	V2	33339	0	33458	192	R/W	Byte	-	0...250	Hz
V2-F ₂	Minimum frequency	V2	33341	0	33458	768	R/W	Byte	-	0...250	Hz
V2-H08	Stand-by operating mode	V2	33437	3	33451	12288	R/W	Byte	-	0/1/2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-H11	Configurability of digital input 1	V2	33393	255	33451	49152	R/W	Word	Y	-13...13	num
V2-H12	Configurability of digital input 2	V2	33393	0	33452	768	R/W	Word	Y	-12...12	num
V2-H21	Configurability of digital output Out1/OC1	V2	33396	0	33452	12288	R/W	Byte	-	0...13	num
V2-H22	Configurability of digital output Out2	V2	33397	255	33452	49152	R/W	Byte	-	0...12	num
V2-H23	Configurability of digital output Out3	V2	33397	0	33453	3	R/W	Byte	-	0...12	num
V2-H24	Configurability of digital output Out4	V2	33398	255	33453	12	R/W	Byte	-	0...12	num
V2-H25	Configurability of digital output 5 (buzzer)	V2	33409	255	33443	12288	R/W	Byte	-	0/1	num
V2-H31	Key configuration 	V2	33422	61440	33453	48	R/W	Byte	-	0...10	num
V2-H32	Key configuration 	V2	33423	15	33453	192	R/W	Byte	-	0...10	num
V2-H33	Key configuration 	V2	33423	240	33453	768	R/W	Byte	-	0...10	num
V2-H34	Key configuration 	V2	33423	3840	33453	3072	R/W	Byte	-	0...10	num
V2-H35	Key configuration 	V2	33423	61440	33453	12288	R/W	Byte	-	0...10	num
V2-H42	Configuration of analog input Pb2	V2	33424	61440	33454	3	R/W	Byte	-	0/1	flag
V2-H43	Configuration of analog input Pb3	V2	33425	15	33454	12	R/W	Byte	-	0/1/2	num
V2-H45	Defrost input mode for applications with dual evaporator	V2	33427	15	33462	49152	R/W	Byte	-	0...3	num
V2-tCP	Time temperature remains below the cool protection setpoint	V2	33356	0	33464	3072	R/W	Byte	-	0...250	min
V2-SCP	Cool protection setpoint	V2	33358	0	33464	49152	R/W	Word	Y	-67,0...302	°C/°F
V2-dCP	Cool protection differential	V2	33359	0	33465	3	R/W	Word	-	0,1...30,0	°C/°F
V2-dCA	Enable deep cooling	V2	33437	3072	33471	12288	R/W	Byte	-	0/1/2	num
V2-dCS	Deep cooling setpoint	V2	33346	0	33459	768	R/W	Word	Y	-67,0...302	°C/°F
V2-tdC	Deep cooling duration	V2	33398	0	33460	12288	R/W	Byte	-	0...250	min
V2-dCC	Defrost delay after deep cooling	V2	33395	0	33460	3072	R/W	Byte	-	0...250	min
V2-Sid	Deep cooling start threshold	V2	33369	0	33474	48	R/W	Word	Y	-67,0...302	°C/°F
V2-toS	Time above the threshold for deep cooling start	V2	33379	255	33469	3	R/W	Byte	-	0...250	min
V2-SLP	Daily or weekly mode	V2	33481	8192	33473	192	R/W	Byte	-	0/1	flag
V2-SL1	Self-Learning duration in daily mode	V2	33377	255	33468	768	R/W	Byte	-	1...30	days
V2-SL2	Self-Learning duration in weekly mode	V2	33377	0	33468	3072	R/W	Byte	-	1...30	num
V2-SLr	Enable continuous self-learning	V2	33481	16384	33473	768	R/W	Byte	-	0/1	flag






Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-SLB	Black-out period duration for automatic self-learning activation	V2	33364	0	33465	3072	R/W	Byte	-	0...250	days
V2-SLE	Enable/Disable self-learning	V2	33481	32768	33473	3072	R/W	Byte	-	0/1	flag
Application 3 parameters											
V3-SEt	Regulation setpoint	V3	33485	0	33647	49152	R/W	Word	Y	LSE...HSE	°C/°F
V3-diF	Setpoint differential	V3	33486	0	33644	768	R/W	Word	-	0,1...30,0	°C/°F
V3-LSE	Minimum setpoint value that can be set	V3	33487	0	33644	3072	R/W	Word	Y	-67,0... HSE	°C/°F
V3-HSE	Maximum setpoint value that can be set	V3	33489	0	33644	12288	R/W	Word	Y	LSE ...302	°C/°F
V3-HC	Operating mode (Heating/Cooling)	V3	33684	256	33644	49152	R/W	Byte	-	0/1	flag
V3-ont	Compressor output ON time if regulation probe is faulty	V3	33484	0	33645	3	R/W	Byte	-	0...250	min
V3-oFt	Compressor output OFF time if regulation probe is faulty	V3	33488	0	33645	12	R/W	Byte	-	0...250	min
V3-don	Compressor output activation delay from call	V3	33492	0	33645	48	R/W	Byte	-	0...250	s
V3-doF	Compressor output activation delay from switch-off	V3	33496	0	33645	192	R/W	Byte	-	0...250	min
V3-dbi	Delay between two consecutive compressor output power-ons	V3	33500	0	33645	768	R/W	Byte	-	0...250	min
V3-Cit	Minimum compressor output activation time	V3	33516	0	33646	3	R/W	Byte	-	0...250	min
V3-CAt	Maximum compressor output activation time	V3	33520	0	33646	12	R/W	Byte	-	0...250	min
V3-odo	Output activation delay at startup	V3	33504	0	33645	3072	R/W	Byte	-	0...250	min
V3-dFA	Condenser fan and compressor activation delay from the call	V3	33611	0	33646	3072	R/W	Byte	-	0...250	s
V3-dty	Type of defrost	V3	33624	61440	33646	768	R/W	Byte	-	0/1/2	num
V3-doH	Defrost cycle activation delay from the call	V3	33536	0	33647	3	R/W	Byte	-	0...250	min
V3-dEt	Defrost timeout	V3	33532	0	33646	12288	R/W	Byte	-	1...250	min
V3-dS1	Evaporator 1 defrost end temperature	V3	33490	0	33647	12	R/W	Word	Y	-67,0...302	°C/°F
V3-dS2	Evaporator 2 defrost end temperature	V3	33491	0	33647	48	R/W	Word	Y	-67,0...302	°C/°F
V3-dPo	Defrost activation request at power-on	V3	33684	1024	33647	768	R/W	Byte	-	0/1	flag
V3-dMr	Enable defrost timer reset with manual defrost	V3	33685	2048	33677	12	R/W	Byte	-	0/1	flag
V3-d00	Cumulative time for defrost activation	V3	33605	0	33665	12	R/W	Byte	-	0...250	hours
V3-d01	Parameter d00 unit of measure	V3	33641	12	33667	12	R/W	Byte	-	0/1/2	num
V3-dit	Device time for defrost activation	V3	33528	0	33665	49152	R/W	Byte	-	0...250	hours

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-d11	Parameter dit unit of measure	V3	33641	48	33667	48	R/W	Byte	-	0/1/2	num
V3-d20	Enable defrost at compressor stop	V3	33685	256	33667	768	R/W	Byte	-	0/1	flag
V3-d40	Select defrost probe 1	V3	33629	240	33666	3	R/W	Byte	-	0/1	flag
V3-d41	Temperature threshold for starting defrost	V3	33553	0	33663	49152	R/W	Word	Y	-67,0...302	°C/°F
V3-d42	Time the evaporator temperature must remain below the threshold	V3	33555	0	33663	12288	R/W	Byte	-	0...250	min
V3-d43	Time count mode for temperature below threshold	V3	33629	3840	33666	12	R/W	Byte	-	0...3	num
V3-d44	Threshold management mode	V3	33629	61440	33666	48	R/W	Byte	-	0/1	flag
V3-d50	Defrost probe Pb2 selection	V3	33632	61440	33674	3	R/W	Byte	-	0/1	flag
V3-d51	Defrost probe Pb1 selection	V3	33633	15	33674	12	R/W	Byte	-	0/1	flag
V3-d52	Temperature threshold for starting defrost	V3	33565	0	33669	48	R/W	Byte	-	0,0...302	°C/°F
V3-d53	Time the temperature differential must remain above the threshold	V3	33569	0	33669	12288	R/W	Byte	-	0...999	min
V3-d54	Time count mode for temperature differential above threshold	V3	33633	240	33674	48	R/W	Byte	-	0...3	num
V3-d55	Threshold management mode	V3	33633	3840	33674	192	R/W	Byte	-	0/1	flag
V3-d90	Clock defrost mode	V3	33630	3840	33666	3072	R/W	Byte	-	0...3	num
V3-d91	Number of daily defrosts	V3	33606	255	33665	48	R/W	Byte	-	0...255	num
V3-d92	1st weekend/holiday day	V3	33630	15	33666	192	R/W	Byte	-	0...7	num
V3-d93	2nd weekend/holiday day	V3	33630	240	33666	768	R/W	Byte	-	0...7	num
V3-d94	Regular defrost interval duration	V3	33630	61440	33666	12288	R/W	Byte	-	1...7	num
V3-FPt	FSt parameter mode (absolute or relative)	V3	33684	4096	33649	3	R/W	Byte	-	0/1	flag
V3-FSt	Evaporator fan disabling temperature	V3	33494	0	33649	12	R/W	Word	Y	-67,0...302	°C/°F
V3-Fot	Evaporator fan activation temperature	V3	33554	0	33664	768	R/W	Word	Y	-67,0...302	°C/°F
V3-FAd	Evaporator fan trigger differential	V3	33585	0	33649	48	R/W	Word	-	0,1...25,0	°C/°F
V3-Fdt	Evaporator fan activation delay time after a defrost cycle	V3	33548	0	33663	48	R/W	Byte	-	0...250	min
V3-dt	Dripping time	V3	33586	255	33649	192	R/W	Byte	-	0...250	min
V3-dFd	Evaporator fan cut-out during defrost	V3	33684	8192	33649	768	R/W	Byte	-	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-FCo	Evaporator fan status with compressor output Off	V3	33625	15	33648	49152	R/W	Byte	-	0...3	num
V3-FdC	Evaporator fan shutoff delay after compressor deactivation	V3	33586	0	33649	3072	R/W	Byte	-	0...250	min
V3-Fon	Evaporator fan On time in cyclical regulator mode	V3	33587	255	33649	12288	R/W	Byte	-	0...250	min
V3-FoF	Evaporator fan Off time in cyclical regulator mode	V3	33587	0	33649	49152	R/W	Byte	-	0...250	min
V3-Fnn	Evaporator fan ON time in night mode (duty cycle)	V3	33584	0	33648	3072	R/W	Byte	-	0...250	num
V3-FnF	Evaporator fan OFF time in night mode (duty cycle)	V3	33585	255	33648	12288	R/W	Byte	-	0...250	num
V3-ESF	Night mode activation (Energy Saving)	V3	33685	512	33667	3072	R/W	Byte	-	0/1	flag
V3-Att	Alarm mode (absolute or relative)	V3	33684	32768	33650	12	R/W	Byte	-	0/1	flag
V3-AFd	Alarm activation differential	V3	33588	0	33650	48	R/W	Word	-	0,1...25,0	°C/°F
V3-HAL	Maximum alarm threshold	V3	33495	0	33650	192	R/W	Word	Y	LAL...302	°C/°F
V3-LAL	Minimum alarm threshold	V3	33497	0	33650	768	R/W	Word	Y	-67,0...HAL	°C/°F
V3-PAo	Temperature alarm exclusion time from power-on	V3	33589	255	33650	3072	R/W	Byte	-	0...10	min*10
V3-dAo	Exclusion time for temperature alarms after a defrost cycle	V3	33557	0	33650	12288	R/W	Word	-	0...250	min
V3-oAo	High and low temperature alarms exclusion time after closing the door	V3	33590	255	33650	49152	R/W	Byte	-	0...10	hours
V3-tdo	Door open alarm exclusion time	V3	33591	255	33651	49152	R/W	Byte	-	0...250	min
V3-tAo	Temperature alarm signaling delay time	V3	33590	0	33651	3	R/W	Byte	-	0...250	min
V3-dAt	Defrost ended due to timeout alarm signaling	V3	33498	0	33651	12	R/W	Byte	-	0/1	flag
V3-EAL	Regulators inhibited by external alarm	V3	33631	3840	33651	48	R/W	Byte	-	0/1/2	num
V3-AoP	Alarm output polarity	V3	33685	1	33651	768	R/W	Byte	-	0/1	flag
V3-SA3	Alarm setpoint for probe 3	V3	33547	0	33663	12	R/W	Word	Y	-67,0...302	°C/°F
V3-dA3	Probe 3 alarm tripping differential	V3	33549	0	33663	192	R/W	Word	-	0,1...30,0	°C/°F
V3-ESA	AUX status during Energy Saving	V3	33641	768	33675	3072	R/W	Byte	-	0/1/2	num
V3-tA1	Bring Aux/light switch-on before night/day transition forward	V3	33582	255	33672	12288	R/W	Byte	-	0...250	min
V3-tA2	Delay Aux/light switch-off after night/day transition	V3	33582	0	33672	49152	R/W	Byte	-	0...250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-dod	Enable utility shutoff upon door switch activation	V3	33625	3840	33651	12288	R/W	Byte	-	0...3	num
V3-dAd	D.I. activation indication delay time 1/2	V3	33598	255	33656	3072	R/W	Byte	-	0...250	min
V3-dCo	Compressor activation delay from acknowledgment	V3	33556	0	33647	3072	R/W	Byte	-	0...250	min
V3-tn1	Energy Saving mode activation delay	V3	33564	0	33669	12	R/W	Byte	-	0...250	min
V3-dCd	Fans activation delay after door closed.	V3	33591	0	33652	3072	R/W	Byte	-	0...250	s
V3-AUP	Associate aux relay with door switch	V3	33625	240	33651	192	R/W	Byte	-	0/1	flag
V3-PEn	Number of errors permitted per minimum/maximum pressure switch input	V3	33610	255	33662	12288	R/W	Byte	-	0...15	num
V3-PEi	Minimum/maximum pressure switch error calculation interval	V3	33610	0	33662	49152	R/W	Byte	-	1...99	min
V3-PEt	Compressor activation delay after pressure switch deactivation	V3	33611	255	33663	3	R/W	Byte	-	0...255	min
V3-SPn	Night mode setpoint	V3	33570	0	33669	49152	R/W	Word	Y	-67,0...302	°C/°F
V3-dFn	Night mode offset	V3	33571	0	33670	3	R/W	Word	-	0,1...30,0	°C/°F
V3-oSP	Offset on setpoint	V3	33499	0	33652	49152	R/W	Word	Y	-30,0...30,0	°C/°F
V3-odF	Trigger differential correction	V3	33501	0	33653	48	R/W	Word	-	0,1...30,0	°C/°F
V3-ESt	Type of action for the Energy Saving function	V3	33634	3840	33674	49152	R/W	Byte	-	0...5	num
V3-dnt	Night mode duration	V3	33593	255	33653	3	R/W	Byte	-	0...24	hours
V3-Cdt	Door closing time	V3	33593	0	33653	12	R/W	Byte	-	0...250	min*10
V3-PdC	Pull-Down mode	V3	33631	61440	33679	3	R/W	Byte	-	0/1/2	num
V3-tPd	Fast cooling mode duration	V3	33552	0	33678	768	R/W	Byte	-	0...250	min
V3-SPF	Fast cooling setpoint	V3	33561	0	33668	12288	R/W	Word	Y	-67,0...302	°C/°F
V3-dFF	Fast cooling offset	V3	33558	0	33667	49152	R/W	Word	-	0,1...30,0	°C/°F
V3-Pdo	Step value for fast cooling setpoint	V3	33559	0	33668	768	R/W	Word	-	0,1...30,0	°C/°F
V3-Pdn	Step number for fast cooling setpoint	V3	33632	3840	33673	49152	R/W	Byte	-	1...10	num
V3-dro	Select °C / °F	V3	33685	8	33653	192	R/W	Byte	-	0/1	flag
V3-CA1	Probe Pb1 calibration	V3	33502	0	33653	768	R/W	Word	Y	-30,0...30,0	°C/°F
V3-CA2	Probe Pb2 calibration	V3	33503	0	33653	3072	R/W	Word	Y	-30,0...30,0	°C/°F
V3-CA3	Probe Pb3 calibration	V3	33505	0	33653	12288	R/W	Word	Y	-30,0...30,0	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-LoC	Enable keypad lock	V3	33685	16	33654	48	R/W	Byte	-	0/1	flag
V3-ddd	Select main display value	V3	33625	61440	33654	192	R/W	Byte	-	0...3	num
V3-ddE	Display on eco device	V3	33634	240	33674	12288	R/W	Byte	-	0...4	num
V3-ddL	Inhibit resources at the end of defrost	V3	33626	15	33654	768	R/W	Byte	-	0/1/2	num
V3-Ldd	Display lock timeout from end of defrost	V3	33594	255	33654	3072	R/W	Byte	-	0...250	min
V3-ndt	Display with decimal point	V3	33685	32	33654	12288	R/W	Byte	-	0/1	flag
V3-PS1	Password 1 value	V3	33595	0	33655	192	R/W	Byte	-	0...250	num
V3-PS2	Password 2 value	V3	33596	0	33655	768	R/W	Byte	-	0...250	num
V3-CER	Probe error capacity	V3	33511	0	33658	768	R/W	Byte	-	0...100	%
V3-PdS	Pull Down forced startup differential	V3	33513	0	33658	3072	R/W	Word	Y	-50,0...50,0	K°R
V3-PUS	Pull Up forced startup differential	V3	33514	0	33658	12288	R/W	Word	Y	-50,0...50,0	K°R
V3-PUd	Temperature outside range timeout	V3	33515	0	33658	49152	R/W	Byte	-	0...1000	min
V3-PdE	Pull Down end differential	V3	33517	0	33659	3	R/W	Word	Y	-50,0...50,0	K°R
V3-PUE	Pull Up end differential	V3	33518	0	33659	12	R/W	Word	Y	-50,0...50,0	K°R
V3-Pdt	Optimized Pull Down timeout	V3	33519	0	33659	48	R/W	Byte	-	0...1000	min
V3-Pdd	Optimized Pull Down capacity	V3	33521	0	33659	192	R/W	Byte	-	0...100	%
V3-CPd	Capacity after Pull Down day	V3	33522	0	33659	768	R/W	Byte	-	0...100	%
V3-CPn	Capacity after Pull Down night	V3	33523	0	33659	3072	R/W	Byte	-	0...100	%
V3-CPb	Compressor PID proportional band	V3	33526	0	33659	49152	R/W	Word	Y	0,1...3200	K°R
V3-Cti	Compressor PID integral time	V3	33527	0	33660	768	R/W	Word	-	0...65535	s
V3-Ctd	Compressor PID derivative time	V3	33529	0	33660	3072	R/W	Word	-	0...65535	s
V3-CSd	Compressor startup duration	V3	33530	0	33660	12288	R/W	Word	-	0...900	s
V3-CSC	Capacity during compressor startup	V3	33531	0	33660	49152	R/W	Word	-	44,4...100	%
V3-CAU	Select PID automatic or manual mode	V3	33598	0	33661	12	R/W	Byte	-	0/1	flag
V3-CdU	PID duty cycle in manual mode	V3	33534	0	33661	48	R/W	Byte	-	0...100	num
V3-F ₁	Maximum frequency	V3	33543	0	33662	192	R/W	Byte	-	0...250	Hz
V3-F ₂	Minimum frequency	V3	33545	0	33662	768	R/W	Byte	-	0...250	Hz

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-H08	Stand-by operating mode	V3	33641	3	33655	12288	R/W	Byte	-	0/1/2	num
V3-H11	Configurability of digital input 1	V3	33597	255	33655	49152	R/W	Word	Y	-13...13	num
V3-H12	Configurability of digital input 2	V3	33597	0	33656	768	R/W	Word	Y	-12...12	num
V3-H21	Configurability of digital output Out1/OC1	V3	33600	0	33656	12288	R/W	Byte	-	0...13	num
V3-H22	Configurability of digital output Out2	V3	33601	255	33656	49152	R/W	Byte	-	0...12	num
V3-H23	Configurability of digital output Out3	V3	33601	0	33657	3	R/W	Byte	-	0...12	num
V3-H24	Configurability of digital output Out4	V3	33602	255	33657	12	R/W	Byte	-	0...12	num
V3-H25	Configurability of digital output 5 (buzzer)	V3	33613	255	33647	12288	R/W	Byte	-	0/1	num
V3-H31	Key configuration 	V3	33626	61440	33657	48	R/W	Byte	-	0...10	num
V3-H32	Key configuration 	V3	33627	15	33657	192	R/W	Byte	-	0...10	num
V3-H33	Key configuration 	V3	33627	240	33657	768	R/W	Byte	-	0...10	num
V3-H34	Key configuration 	V3	33627	3840	33657	3072	R/W	Byte	-	0...10	num
V3-H35	Key configuration 	V3	33627	61440	33657	12288	R/W	Byte	-	0...10	num
V3-H42	Configuration of analog input Pb2	V3	33628	61440	33658	3	R/W	Byte	-	0/1	flag
V3-H43	Configuration of analog input Pb3	V3	33629	15	33658	12	R/W	Byte	-	0/1/2	num
V3-H45	Defrost input mode for applications with dual evaporator	V3	33631	15	33666	49152	R/W	Byte	-	0...3	num
V3-tCP	Time temperature remains below the cool protection setpoint	V3	33560	0	33668	3072	R/W	Byte	-	0...250	min
V3-SCP	Cool protection setpoint	V3	33562	0	33668	49152	R/W	Word	Y	-67,0...302	°C/°F
V3-dCP	Cool protection differential	V3	33563	0	33669	3	R/W	Word	-	0,1...30,0	°C/°F
V3-dCA	Enable deep cooling	V3	33641	3072	33675	12288	R/W	Byte	-	0/1/2	num
V3-dCS	Deep cooling setpoint	V3	33550	0	33663	768	R/W	Word	Y	-67,0...302	°C/°F
V3-tdC	Deep cooling duration	V3	33602	0	33664	12288	R/W	Byte	-	0...250	min
V3-dCC	Defrost delay after deep cooling	V3	33599	0	33664	3072	R/W	Byte	-	0...250	min
V3-Sid	Deep cooling start threshold	V3	33573	0	33678	48	R/W	Word	Y	-67,0...302	°C/°F
V3-toS	Time above the threshold for deep cooling start	V3	33583	255	33673	3	R/W	Byte	-	0...250	min
V3-SLP	Daily or weekly mode	V3	33685	8192	33677	192	R/W	Byte	-	0/1	flag
V3-SL1	Self-Learning duration in daily mode	V3	33581	255	33672	768	R/W	Byte	-	1...30	days

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-SL2	Self-Learning duration in weekly mode	V3	33581	0	33672	3072	R/W	Byte	-	1...30	num
V3-SLr	Enable continuous self-learning	V3	33685	16384	33677	768	R/W	Byte	-	0/1	flag
V3-SLb	Black-out period duration for automatic self-learning activation	V3	33568	0	33669	3072	R/W	Byte	-	0...250	days
V3-SLE	Enable/Disable self-learning	V3	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						
CP	Visibility of folder CP (compressor)	32954	192	2 bit	0...3	num
dEF	Visibility of folder dEF (defrost)	32954	768	2 bit	0...3	num
FAn	Visibility of folder FAn (fans)	32954	3072	2 bit	0...3	num
AL	Visibility of folder AL (alarms)	32954	12288	2 bit	0...3	num
Lit	Visibility of folder Lit (lights and digital inputs)	32954	49152	2 bit	0...3	num
dor	Visibility of folder dor (door switch)	32962	3072	2 bit	0...3	num
PrE	Visibility of folder PrE (pressure switch)	32955	3	2 bit	0...3	num
ENS	Visibility of folder EnS (energy saving)	32955	12	2 bit	0...3	num
PLd	Visibility of folder PLd (pull-down)	32962	49152	2 bit	0...3	num
Add	Visibility of folder Add (communication)	32955	48	2 bit	0...3	num
diS	Visibility of folder diS (display)	32955	192	2 bit	0...3	num
VSC	Visibility of folder VSC (VSC compressor)	32955	768	2 bit	0...3	num
CnF	Visibility of folder CnF (configuration)	32955	3072	2 bit	0...3	num
FPr	Visibility of folder FPr (UNICARD)	32955	12288	2 bit	0...3	num
FnC	Visibility of folder FnC (functions)	32955	49152	2 bit	0...3	num
nAd	Visibility of folder nAd (night/day)	32954	48	2 bit	0...3	num
CPr	Visibility of folder CPr (low ambient temperature protection)	32954	12	2 bit	0...3	num
dEC	Visibility of folder dEC (Deep Cooling cycle)	32962	12	2 bit	0...3	num
SL	Visibility of folder SL (Self-Learning cycle)	32962	12288	2 bit	0...3	num
Visibility of folders for AP1 application						
V1-CP	Visibility of folder CP (compressor)	33258	192	2 bit	0...3	num
V1-dEF	Visibility of folder dEF (defrost)	33258	768	2 bit	0...3	num
V1-FAn	Visibility of folder FAn (fans)	33258	3072	2 bit	0...3	num
V1-AL	Visibility of folder AL (alarms)	33258	12288	2 bit	0...3	num
V1-Lit	Visibility of folder Lit (lights and digital inputs)	33258	49152	2 bit	0...3	num
V1-dor	Visibility of folder dor (door switch)	33266	3072	2 bit	0...3	num
V1-PrE	Visibility of folder PrE (pressure switch)	33259	3	2 bit	0...3	num
V1-ENS	Visibility of folder EnS (energy saving)	33259	12	2 bit	0...3	num
V1-PLd	Visibility of folder PLd (pull-down)	33266	49152	2 bit	0...3	num
V1-Add	Visibility of folder Add (communication)	33259	48	2 bit	0...3	num
V1-diS	Visibility of folder diS (display)	33259	192	2 bit	0...3	num
V1-VSC	Visibility of folder VSC (VSC compressor)	33259	768	2 bit	0...3	num
V1-CnF	Visibility of folder CnF (configuration)	33259	3072	2 bit	0...3	num
V1-FPr	Visibility of folder FPr (UNICARD)	33259	12288	2 bit	0...3	num
V1-FnC	Visibility of folder FnC (functions)	33259	49152	2 bit	0...3	num
V1-nAd	Visibility of folder nAd (night/day)	33258	48	2 bit	0...3	num
V1-CPr	Visibility of folder CPr (low ambient temperature protection)	33258	12	2 bit	0...3	num
V1-dEC	Visibility of folder dEC (Deep Cooling cycle)	33266	12	2 bit	0...3	num
V1-SL	Visibility of folder SL (Self-Learning cycle)	33266	12288	2 bit	0...3	num
Visibility of folders for AP2 application						
V2-CP	Visibility of folder CP (compressor)	33466	192	2 bit	0...3	num
V2-dEF	Visibility of folder dEF (defrost)	33466	768	2 bit	0...3	num
V2-FAn	Visibility of folder FAn (fans)	33466	3072	2 bit	0...3	num
V2-AL	Visibility of folder AL (alarms)	33466	12288	2 bit	0...3	num
V2-Lit	Visibility of folder Lit (lights and digital inputs)	33466	49152	2 bit	0...3	num
V2-dor	Visibility of folder dor (door switch)	33474	3072	2 bit	0...3	num
V2-PrE	Visibility of folder PrE (pressure switch)	33467	3	2 bit	0...3	num

Label	Description	Address	Filter	Data size	Range	MU
V2-ENS	Visibility of folder EnS (energy saving)	33467	12	2 bit	0...3	num
V2-PLd	Visibility of folder PLd (pull-down)	33474	49152	2 bit	0...3	num
V2-Add	Visibility of folder Add (communication)	33467	48	2 bit	0...3	num
V2-diS	Visibility of folder diS (display)	33467	192	2 bit	0...3	num
V2-VSC	Visibility of folder VSC (VSC compressor)	33467	768	2 bit	0...3	num
V2-CnF	Visibility of folder CnF (configuration)	33467	3072	2 bit	0...3	num
V2-FPr	Visibility of folder FPr (UNICARD)	33467	12288	2 bit	0...3	num
V2-FnC	Visibility of folder FnC (functions)	33467	49152	2 bit	0...3	num
V2-nAd	Visibility of folder nAd (night/day)	33466	48	2 bit	0...3	num
V2-CPr	Visibility of folder CPr (low ambient temperature protection)	33466	12	2 bit	0...3	num
V2-dEC	Visibility of folder dEC (Deep Cooling cycle)	33474	12	2 bit	0...3	num
V2-SL	Visibility of folder SL (Self-Learning cycle)	33474	12288	2 bit	0...3	num
Visibility of folders for AP3 application						
V3-CP	Visibility of folder CP (compressor)	33670	192	2 bit	0...3	num
V3-dEF	Visibility of folder dEF (defrost)	33670	768	2 bit	0...3	num
V3-FAn	Visibility of folder FAn (fans)	33670	3072	2 bit	0...3	num
V3-AL	Visibility of folder AL (alarms)	33670	12288	2 bit	0...3	num
V3-Lit	Visibility of folder Lit (lights and digital inputs)	33670	49152	2 bit	0...3	num
V3-dor	Visibility of folder dor (door switch)	33678	3072	2 bit	0...3	num
V3-PrE	Visibility of folder PrE (pressure switch)	33671	3	2 bit	0...3	num
V3-ENS	Visibility of folder EnS (energy saving)	33671	12	2 bit	0...3	num
V3-PLd	Visibility of folder PLd (pull-down)	33678	49152	2 bit	0...3	num
V3-Add	Visibility of folder Add (communication)	33671	48	2 bit	0...3	num
V3-diS	Visibility of folder diS (display)	33671	192	2 bit	0...3	num
V3-VSC	Visibility of folder VSC (VSC compressor)	33671	768	2 bit	0...3	num
V3-CnF	Visibility of folder CnF (configuration)	33671	3072	2 bit	0...3	num
V3-FPr	Visibility of folder FPr (UNICARD)	33671	12288	2 bit	0...3	num
V3-FnC	Visibility of folder FnC (functions)	33671	49152	2 bit	0...3	num
V3-nAd	Visibility of folder nAd (night/day)	33670	48	2 bit	0...3	num
V3-CPr	Visibility of folder CPr (low ambient temperature protection)	33670	12	2 bit	0...3	num
V3-dEC	Visibility of folder dEC (Deep Cooling cycle)	33678	12	2 bit	0...3	num
V3-SL	Visibility of folder SL (Self-Learning cycle)	33678	12288	2 bit	0...3	num

Table of Modbus Resources

Label	Description	Address	Filter	R/W	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
PEr	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	R/W	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
onAIIRL	Enables output	206	15	W	Word	-	0...255	num
oFFAIIRL	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

Eliwell Controls srl

Via dell'Industria, 15 Z.I. Paludi

32016 Alpago (BL) Italy

Phone +39 (0) 437 986 111

www.eliwell.com

Customers Technical Service

Phone+39 (0) 437 986 300

E techsuppeliwell@se.com

Ufficio commerciale

Phone+39 (0) 437 986 100 (Italy)

Phone+39 (0) 437 986 200 (other countries)

E saleseliwell@se.com