IDNext 1000

Electronic controllers compatible with flammable refrigerant gases

User Guide

IDNX1_00EN

01/2026

eliwell
by Schneider Electric

Legal Information

The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

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

Schneider Electric reserves the right to make changes or updates with respect to or in the content of this document or the format thereof, at any time 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 document, as well as any non-intended use or misuse of the content thereof.

Index

Safety information

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 should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric and Eliwell for any consequences arising out of the use of this material. An authorized person is someone in possession of the skills and knowledge applicable to the structure, to the operation of the electrical equipment and to its installation, and who has received safety training in order to recognize and avoid the risks involved.

Personnel qualification

Only personnel with suitable training and an in-depth knowledge and understanding of the contents of this manual and any other documentation relevant to the product are authorized to work on and with this product.
Qualified personnel must be capable of identifying any dangers which may arise from the parameterization or changing of parameter values, and from the use of mechanical, electric and electronic equipment in general. Plus, they must be familiar with the personal safety laws, provisions and regulations which must be observed during system planning and implementation.

Permitted use

This product is used to control refrigerated cabinets, display units and refrigerated units.
The controller must be installed and used in accordance with the provided instructions and in particular, in normal conditions, dangerous energized parts must not be accessible.
The controller should be suitably protected from water and dust. Access to the various product parts from the front should involve the use of a keyed or tooled locking mechanism.
The controller is suitable for integration into equipment for controlling refrigerated cabinets, display units and refrigerated units, and has been checked on the basis of the harmonized European standards of reference.
Only use the product with the specified cables and accessories. Only use genuine accessories and spare parts.

Prohibited use

Any use other than that indicated in the above paragraph 'Permitted use' is strictly prohibited.
The relay contacts supplied are electromechanical and are subject to wear. The functional safety protection devices, specified by international or local laws, must be installed outside this device.

Liability and residual risks

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

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

Disposal

For security reasons, before removing the controller, we recommend to reset the controller to the default value (see 'Restore default values').

NOTICE
DISCLOSURE OF APPLICATION DATA Reset the controller to the default values to help prevent data disclosure. **Failure to follow these instructions can result in equipment damage.**

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

About the document

Document Scope

The **IDNext 1000** user guide covers the installation, configuration, and operation of electronic controllers for refrigerated units. It includes descriptions of models, accessories, cybersecurity measures, and preliminary configurations. The guide details mechanical and electrical installation, wiring practices, and technical characteristics. It explains the user interface, defrost functions, diagnostics, and alarm management. Parameters for various functions like compressors, fans and defrost cycles modes are provided. The document also includes Modbus functions and resources for remote communication, help ensuring comprehensive guidance for users and installers.

Validity Note

This document is valid for the **IDNext 1000** devices.
The characteristics of the products described in this document are intended to match the characteristics that are available on www.eliwell.com. As part of our corporate strategy for constant improvement, we may revise the content over time to enhance clarity and accuracy. If you see a difference between the characteristics in this document and the characteristics on www.eliwell.com, consider www.eliwell.com to contain the latest information.

General Cybersecurity Information

In recent years, the growing number of networked machines and production plants has seen a corresponding increase in the potential for cyber threats, such as unauthorized access, data breaches, and operational disruptions. You must, therefore, consider all possible cybersecurity measures to help protect assets and systems against such threats.
To help keep your Schneider Electric products secure and protected, it is in your best interest to implement the cybersecurity best practices as described in the Cybersecurity Best Practices (English document).
Schneider Electric provides additional information and assistance:

- Subscribe to the Schneider Electric security newsletter.
- Visit the Cybersecurity Support Portal to:
  - Find Security Notifications
  - Report vulnerabilities and incidents
- Visit the Schneider Electric Cybersecurity and Data Protection Posture to:
  - Access the "cybersecurity posture"
  - Learn more about cybersecurity in the cybersecurity academy
  - Explore the cybersecurity services from Schneider Electric

Available Languages of this Document

This document is available in these languages:

- Italian (IDNX1_00IT)
- English (IDNX1_00EN)

Related Documents

Title of documentation	Reference Number
Instruction Sheet IDNext 1000	9IS54944**xx** (**xx** = language)
Cybersecurity Best Practices	Refer to Cybersecurity Best Practices (English document)

To find documents online, visit the Eliwell website: www.eliwell.com

Environmental Data

For product compliance and environmental information refer to the Schneider Electric Environmental Data Program.

Information on non-inclusive or insensitive terminology

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

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 except under the specific conditions specified in this user guide.
- 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 equipment 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.
- Do not connect wires to unused terminals and/or terminals indicated as “Reserved”.

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

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, FIRE AND/OR UNINTENDED EQUIPMENT OPERATION

- 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 "Wiring Diagrams" section).
- 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” section).
- Only use the specified plug-in terminals (see “Best wiring practices” section)
- All network components (controllers, sensors and actuators) must be powered by separate SELV power supplies/transformers except under the specific conditions specified in this user guide.
- No network component (controllers, sensors and actuators) can be earthed.

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

⚠ ⚠ DANGER

LOOSE WIRING WILL 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.
- For non-inrush outputs, make sure the application has not been designed with the instrument outputs connected directly to instruments that generate a frequently activated capacitive load (1).
- For inrush outputs, make sure that no loads exceeding the ratings specified in the technical data are connected. (2).
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay output, including the shared pole, using cables with a cross-section of 2.5 mm^2 (14 AWG) and a length of at least 200 mm (7.87 in.).

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

(1) Even if your application not apply a frequently operated capacitive load on the relay, capacitive loads will reduce the life of any electromechanical relay, and installation of a contactor or an external relay, that is sized and maintained according the ratings and characteristics of the capacitive load, will help minimize the consequence of relay degradation.

(2) Although the highest performance relays have been selected for the inrush outputs and loads are declared in accordance with standard IEC 61810-1 D.3, It is end user responsibility that instrument outputs guarantee the proper operation of the application in relation to the expected lifecycle of the machine.

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

- Store the equipment in the protective packaging until ready for installation.
- 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.

Take the suitable care and precautions when using this product as a control device, to avoid unforeseen consequences resulting from the operation of the controlled machine, variations in controller status or changes to the machine data memory or operating parameters.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Before attempting to control the application remotely, you must be perfectly familiar with the application and the machine.
- Take the necessary precautions to guarantee that you are working on the anticipated machine remotely by using clear identification documentation within the application and the corresponding remote connection.

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

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

NOTICE

REDUCTION OF RELAY ENDURANCE

- Do not enable zero-crossing to control inductive loads such as contactors and iron-core transformers.
- Use same mains phase to supply both load and controller.

Failure to follow these instructions can result in equipment damage.

NOTICE

UNINTENDED EQUIPMENT OPERATION

- Help 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.

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 until the Unicard is removed and the controller is power cycled (after that the former applicative restart).

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

NOTICE
UNINTENDED EQUIPMENT OPERATION • The load equivalent to all the bus RS485 bus should not exceed 8 Unit Load (For the definition of Unit Load refer to standard TIA/EIA-485-A). • Do not fit the termination resistors inside the RS485 network. • For the connection with the supervision system, use a shielded “twisted pair” cable specific (for example: BELDEN cable model 8762). • The length of an RS485 network is directly related to the baudrate used. At a baud rate of 9600 baud, the maximum cable length is approximately 800 mt (2,625 ft). At 19200 baud, the maximum length is reduced to approximately 400 mt (1,312 ft). **Failure to follow these instructions can result in equipment damage.**

NOTICE
UNINTENDED EQUIPMENT OPERATION SELV wiring must be kept separate from other wiring (see "Wiring Diagram" 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 TTL serial line connection, use cables shorter than 1 m (3.28 ft). **Failure to follow these instructions can result in equipment damage.**

The temperature 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.

Power supply models 12 Vac

⚠ ⚠ DANGER
HAZARD OF ELECTRIC SHOCK, OVERHEATING AND/OR FIRE • Do not connect the equipment power supply directly to line voltage. • Use only isolating SELV, Class 2 power supplies/transformers to supply the equipment. **Failure to follow these instructions will result in death or serious injury.**

Flammable refrigerant gases

For use with flammable gases:

- This device has been evaluated in accordance with chapter 22.112 of the IEC 60335-2-89 standard with reference to annex BB prescription 9 (sealed relays).
- This device has been evaluated with a surface temperature not exceeding 200 °C (392 °F), as per prescription 22.114 of the IEC 60335-2-89 standard, according to the criteria of chapter 11 (normal operation).

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 used equipments and designed systems 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

General Description

The **IDNext 1000** user guide covers the installation, configuration, and operation of electronic controllers for refrigerated units. It includes descriptions of models, accessories, cybersecurity measures, and preliminary configurations. The manual details mechanical and electrical installation, wiring practices, and technical characteristics. It explains the user interface, defrost functions, diagnostics, and alarm management. Parameters for various functions like compressors, fans and defrost cycles modes are provided. The document also includes Modbus functions and resources for remote communication, help ensuring comprehensive guidance for users and installers.

In this user guide, 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 **IDNext 1000** models:

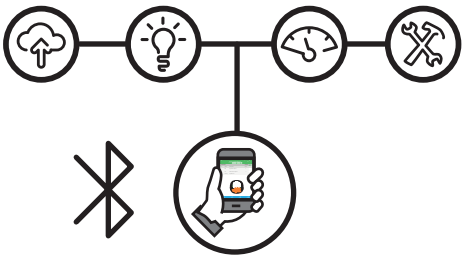
Product	Description
IDNext 1485 SBCL	IDNext 1485 NTC 1,5Hp/1,5Hp /8/5 12V SBCL AIR HC
	IDNext 1485 NTC 1,5Hp/1,5Hp/8/5 12V SBCL PH AIR HC
IDNext 1385 SBCL	IDNext 1385 NTC 1,5/1,5Hp/8/5 SMPS SBCL AIR HC
	IDNext 1385 NTC 1,5/1,5Hp/8/5 SMPS SBCL PH AIR HC
IDNext 1385 SBCIL	IDNext 1385 NTC 1,5/1,5Hp/8/5 SMPS SBCIL AIR HC
	IDNext 1385 NTC 1,5/1,5Hp/8/5 SMPS SBCIL 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 plug-in terminals
- **BUZ** (/**B**) = controller with Buzzer
- **RTC** (/**C**) = controller with RTC
- **VSC** (/**I**) = controller with Open Collector output for connecting a variable-speed compressor.
- **FB** (/**L**) = controller with Field Bus communication.

AIR - Mobile application for Dongle BTLE



'Eliwell AIR' App, available on Google Play and Apple Store, is used to connect via Bluetooth to IDNext 1000 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

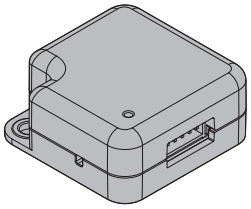
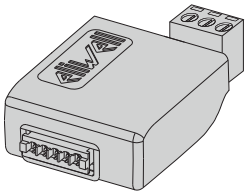
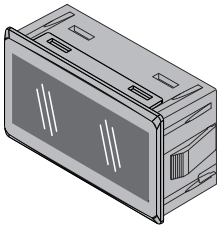
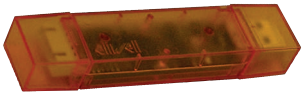
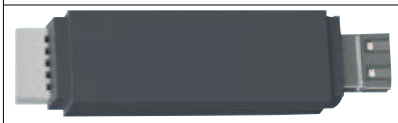
For further information, refer to controller and 'Eliwell AIR' App user manual on the Eliwell website: www.eliwell.com

Accessories

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, FIRE OR ARC FLASH
Only connect compatible accessories to the instrument.
Failure to follow these instructions will result in death or serious injury.

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

Accessory	Description
	**BTLE Dongle**: TTL/Bluetooth communication interface
	**BusAdapter 150 Dongle**: Non-opto-isolated TTL/RS485 communication interface
	**ECNext 5 Vdc for IDNext**: Remote display to be connected to TTL serial port
	**BusAdapter**: Opto-isolated TTL/RS485 communication interface
	**UNICARD**: Programming key
	**DMI**: Programming interface
	**Probes**: NTC, PTC, Pt1000

Cybersecurity

Contents

This section includes the following topics:

Overview

This Eliwell product includes functions that enable Information security.
These functions come as default and can be configured according to your own installation requirements.

NOTE: deactivating or changing the settings for these individual functions can positively or negatively affect the overall posture of the device security.

It is also necessary to observe best practices in order to guarantee advanced system protection and help ensure the security of the system as a whole.
For more information, please refer to: “Cybersecurity Best Practices” (English language only).

Eliwell adheres to industry best practices in the development and implementation of control systems. This includes a Defense-in-Depth approach which protects the controller by limiting access exclusively to authorized personnel and protocols.

⚠ WARNING

UNAUTHORIZED ACCESS AND SUBSEQUENT NETWORK INTRUSION

- Assess whether the ambient or the machines are connected to a critical infrastructure and, if so, take suitable preventative measures, based on 'Defense-In-Depth' strategy, before connecting the automation system to any network.
- Monitor activity within the systems.
- Help prevent direct access or direct connection to the devices by unauthorized individuals or unauthorized actions.

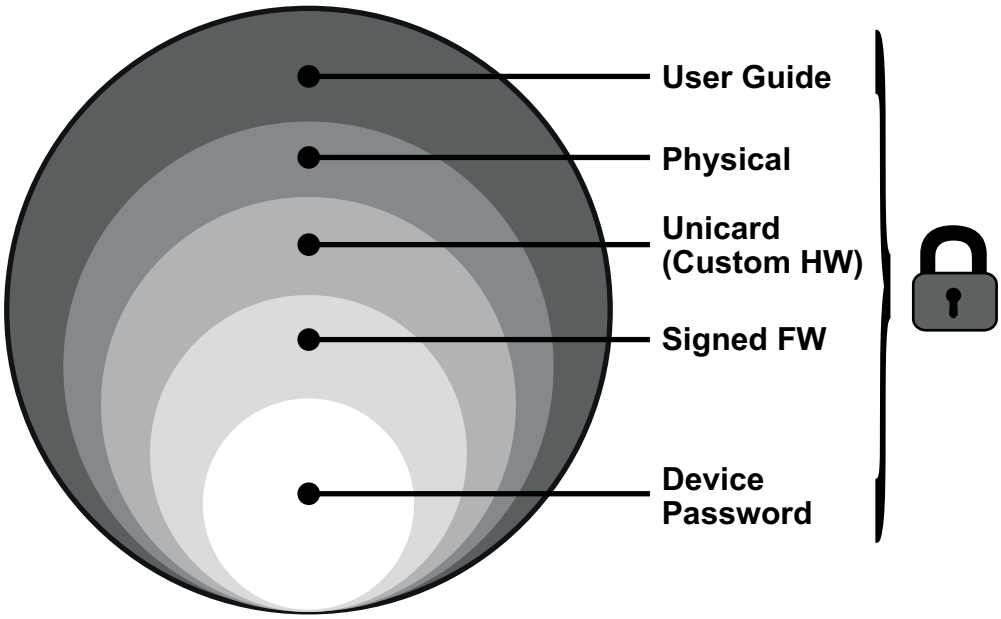
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Defense in Depth

Overview

The protection levels of the device are:

1. User Guide
2. Physical
3. UNICARD (Custom Hardware)
4. Signed firmware
5. Device password



1. User Guide

This document with their Safety Messages, Recommendations, etc.

2. Physical

Make sure to install the device in a box accessible only by authorized personnel and protect the access to the communication ports.

3. UNICARD (Custom proprietary hardware)

The UNICARD (a custom proprietary hardware) is the only one that can be connected to the TTL port for Firmware upgrade.

4. Signed firmware

The device can only be update using Schneider Electric or Eliwell signed firmware (see 'Security hardening guidelines' section).

5. Device password

The device provides two passwords (**PA1** and **PA2**) to access User and Installer parameters.
Change them immediately (see 'Password' section)

Security hardening guidelines

Recommendations

- Install the device inside the machine with only the front panel accessible.
- Permit access to the device only to authorized and Qualified personnel (see '**Personnel qualification**' section)

Secure disposal guidelines

Procedure

The guidelines for removing the device and help prevent potential data disclosure are:

1. Restore default value (see '**Restore default values**' section)
2. Remove the device (component/system) from its intended environment
3. Recycle the device properly (see '**Disposal**' section)

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**.

The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters which are not 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.**

Disposal

For security reasons, before removing the controller, we recommend to reset the controller to the default value (see 'Restore default values' paragraph).

NOTICE
DISCLOSURE OF APPLICATION DATA Reset the controller to the default values to help prevent data disclosure. **Failure to follow these instructions can result in equipment damage.**

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

Secure operation guidelines

Device upgrade

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 until the Unicard is removed and the controller is power cycled (after that the former applicative restart).

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

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.

Account management guidelines

Recommendations

Protect the device access by changing the PA1 and PA2 password (see '**Password**' section)

Password

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

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

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

For security reasons, on first access we recommend to change the **PA1** and **PA2** passwords.

Carefully consider the implications of giving access to other people.

⚠ **WARNING**
UNAUTHORISED ACCESS • Change the default passwords PA1 and PA2 immediately. • Do not share the password to unauthorized individuals or non-qualified personnel. **Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Preliminary configurations

Contents

This section includes the following topics:

Introduction

Overview

IDNext 1000 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 can only be edited via Device Manager, an Eliwell proprietary software.

Switching on for the first time

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

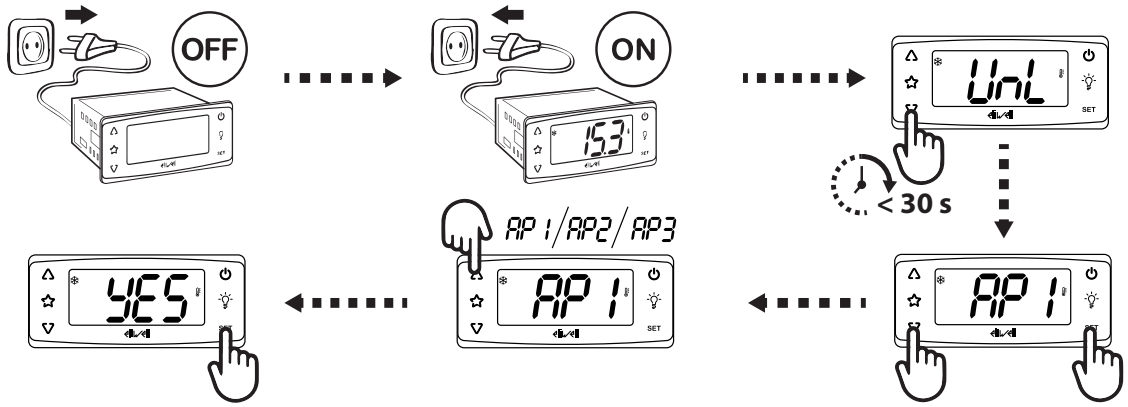
During the first startup, at the end of the lamp test:

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 5 seconds, until the keypad unlock label **UnL** appears
4. Within 30 seconds since the device power-on, press and hold (**SET** + ∇) for at least 5 seconds, until the label **AP1** appears
5. Scroll through applications **AP1**, **AP2** and **AP3** using ∆ and ∇
6. Confirm the selected preset application using **SET**.
   Note: The process can be canceled by pressing ⏻ or letting a timeout occur (15 seconds)
7. If the procedure completes successfully, the display will show "**yES**"; otherwise it will show "**Err**"
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 not 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**.

The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters which are not 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.**

View Preset applications

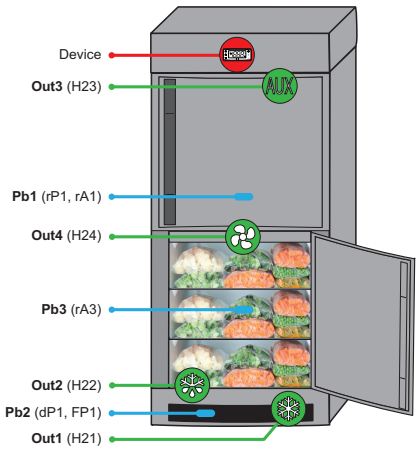
Click on the controller model purchased to access the corresponding Preset applications:

- **IDNext 1485 SBCL**
- **IDNext 1385 SBCL**
- **IDNext 1385 SBCIL**

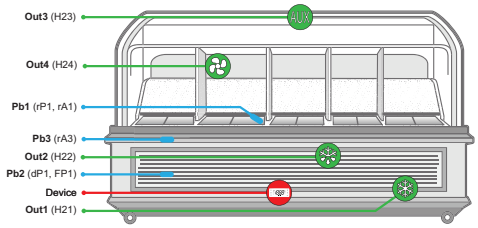
IDNext 1485 SBCL (12 Vac SELV)

Application overview

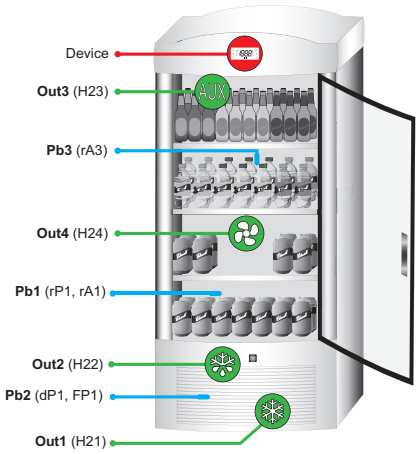
AP1: NT refrigerated units



AP2: NT refrigerated units



AP3: LT refrigerated units



Legend:

- **Device** = Controller
- **Out1** = Compressor 1
- **Out2** = Defrost 1
- **Out3** = Auxiliary
- **Out4** = Evaporator fans
- **Pb1** = Room and Temperature alarm probe
- **Pb2** = Evaporator and Fans probe
- **Pb3** = Temperature alarm probe

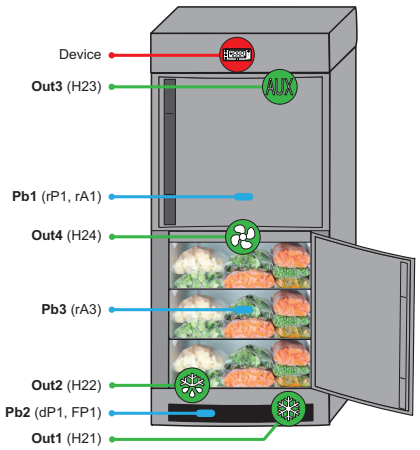
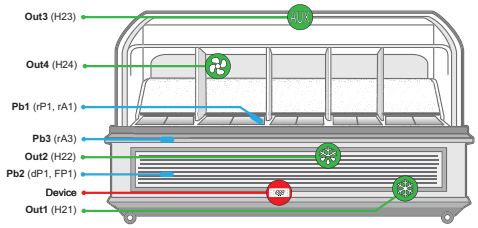
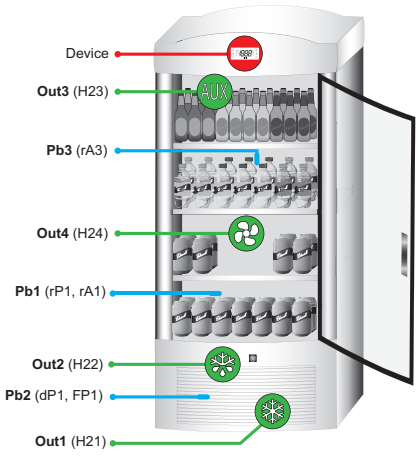
Application details

Setpoint	**AP1** = 0.0 °C (32.0 °F); **AP2** = -18.0 °C (-0.4 °F); **AP3** = 3.5 °C (38.3 °F)
Analog inputs	**Pb1**, **Pb2**, **Pb3** = NTC; **Pb4**: not configured
Digital inputs	**DI3**, **DI4**, **DI5** = not configured
Digital outputs	**Out1** relay (default: Compressor 1) **Out2** relay (default: Defrost 1) **Out3** relay (default: Auxiliary) **Out4** relay (default: Evaporator fans)
Buzzer	YES
RTC	YES
FIELD BUS	YES
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0 °C (46.4 °F) and **dS2** = 8.0 °C (46.4 °F)

Active alarms	Pb1: Maximum/minimum temperature (**HAL** and **LAL**) Pb3: Overheating alarm (**COH**)
Key configuration	: manual defrost (**H31** = 1) : not configured (**H32** = 0) : stand-by (**H33** = 4) : light (**H34** = 8) : not configured (**H35** = 0)

IDNext 1385 SBCL (SMPS 100...240 Vac)

Application overview

AP1: NT refrigerated units	**AP2**: NT refrigerated units
	
AP3: LT refrigerated units	
	**Legend**: • **Device** = Controller • **Out1** = Compressor 1 • **Out2** = Defrost 1 • **Out3** = Auxiliary • **Out4** = Evaporator fans • **Pb1** = Room and Temperature alarm probe • **Pb2** = Evaporator and Fans probe • **Pb3** = Temperature alarm probe

Application details

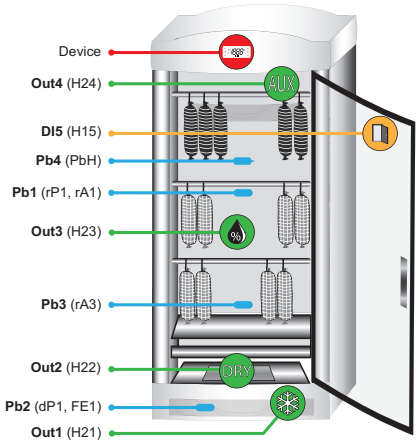
Setpoint	**AP1** = 0.0 °C (32.0 °F); **AP2** = -18.0 °C (-0.4 °F); **AP3** = 3.5 °C (38.3 °F)
Analog inputs	**Pb1**, **Pb2**, **Pb3** = NTC; **Pb4**: not configured
Digital inputs	**DI3**, **DI4**, **DI5** = not configured
Digital outputs	**Out1** relay (default: Compressor 1) **Out2** relay (default: Defrost 1) **Out3** relay (default: Auxiliary) **Out4** relay (default: Evaporator fans)
Buzzer	YES
RTC	YES
FIELD BUS	YES
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0 °C (46.4 °F) and **dS2** = 8.0 °C (46.4 °F)

Active alarms	Pb1: Maximum/minimum temperature (**HAL** and **LAL**) Pb3: Overheating alarm (**COH**)
Key configuration	: manual defrost (**H31** = 1) : not configured (**H32** = 0) : stand-by (**H33** = 4) : light (**H34** = 8) : not configured (**H35** = 0)

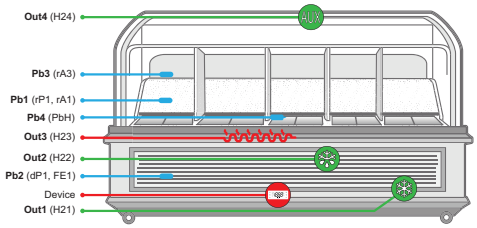
IDNext 1385 SBCIL (SMPS 100...240 Vac)

Application overview

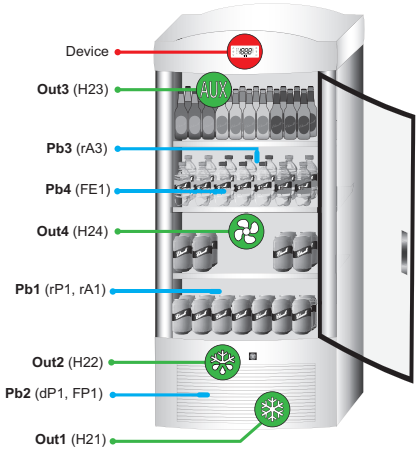
AP1: Bottle cooler sub-zero



AP2: Cold cuts aging cabinets



AP3: Ice cream display case



Legend:

- **Device** = Controller
- **Out1** = Compressor 1
- **Out2** = Defrost 1 (**AP1**, **AP3**) or de-humidify (**AP2**)
- **Out3** = Auxiliary (**AP1**) or humidify (**AP2**) or de-humidify with resistor (**AP3**)
- **Out4** = Evaporator fans (**AP1**) or Auxiliary (**AP2**, **AP3**)
- **DI5** = Door switch
- **Pb1** = Room and Temperature alarm probe
- **Pb2** = Evaporator and Fans probe or Variable Speed Fans
- **Pb3** = Temperature alarm probe
- **Pb4** = Humidity probe or Variable Speed Fans

Application details

Setpoint	**AP1** = 3.5 °C (38.3 °F); **AP2** = -18.0 °C (-0.4 °F); **AP3** = 3.5 °C (38.3 °F)
Analog inputs	**Pb1**, **Pb2**, **Pb3** = NTC; **Pb4**: NTC (**AP1**) or 4...20 mA (**AP2**, **AP3**)
Digital inputs	**DI1**, **DI2**, **DI3**, **DI4** = not configured **DI5** = not configured (**AP1**, **AP3**) or Door switch (**AP2**)
Digital outputs	**Out1** relay (default: Compressor 1) **Out2** relay (default: Defrost 1 (**AP1**, **AP3**) or de-humidify (**AP2**)) **Out3** relay (default: Auxiliary (**AP1**) or humidify (**AP2**) or de-humidify with resistor (**AP3**)) **Out4** relay (default: Evaporator fans (**AP1**) or Auxiliary (**AP2**, **AP3**))
Buzzer	YES
RTC	YES
FIELD BUS	YES
Type of defrost	Electric heater defrost
End of defrost	Due to temperature **dS1** = 8.0 °C (46.4 °F) and **dS2** = 8.0 °C (46.4 °F)

Active alarms	Pb1: Maximum/minimum temperature (**HAL** and **LAL**) Pb3: Overheating alarm (**COH**)
Key configuration	⏢: manual defrost (**H31** = 1) ▽: not configured (**H32** = 0) ⏻: stand-by (**H33** = 4) 💡: not configured (**H34** = 0) ☆: not configured (**H35** = 0)

Mechanical installation

Contents

This section includes the following topics:

Before starting

Read and understand this chapter before beginning the installation of your system.
Pay particular attention in conforming to any safety information, different electrical requirements, and normative standards that would apply to your machine or process in the use of this equipment.
The use and application of the information contained herein require expertise in the design and programming of automated control systems. Only you, the user, machine builder or integrator, can be aware of all the conditions and factors present during installation and setup, operation, and maintenance of the machine or process, and can therefore determine the automation and associated equipment and the related safeties and interlocks which can be effectively and properly used.
When selecting automation and control equipment, and any other related equipment or software, for a particular application, you must also consider any applicable local, regional or national standards and/or regulations.

⚠ WARNING

REGULATORY INCOMPATIBILITY
Be sure that all used equipments and designed systems 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.

Disconnecting Power

All options and modules should be assembled and installed before installing the control system on a mounting rail, onto a mounting plate or in a panel. Remove the control system from its mounting rail, mounting plate or panel before disassembling the equipment.

⚠ ⚠ 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 except under the specific conditions specified in this user guide.
- 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 equipment 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.
- Do not connect wires to unused terminals and/or terminals indicated as “Reserved”.

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

Operating environment

For use with flammable gases:

- This device has been evaluated in accordance with chapter 22.112 of the IEC 60335-2-89 standard with reference to annex BB prescription 9 (sealed relays).
- This device has been evaluated with a surface temperature not exceeding 200 °C (392 °F), as per prescription 22.114 of the IEC 60335-2-89 standard, according to the criteria of chapter 11 (normal operation).

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 used equipments and designed systems 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.

Installation Considerations

⚠ ⚠ 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 except under the specific conditions specified in this user guide.
- 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 equipment 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.
- Do not connect wires to unused terminals and/or terminals indicated as “Reserved”.

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

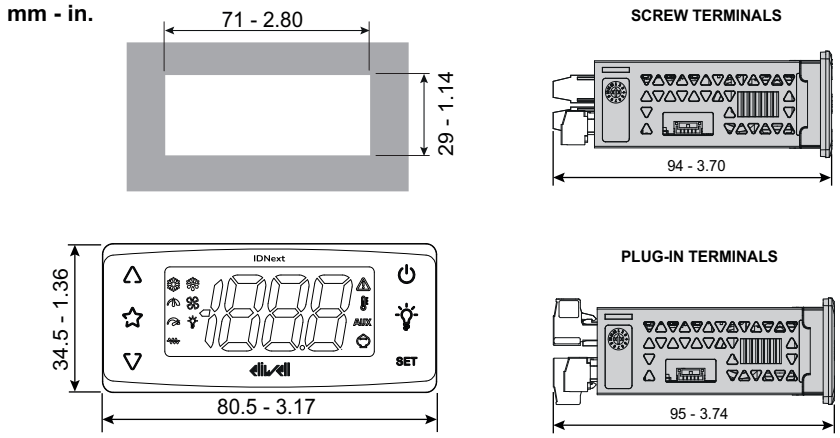
UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE

- Store the equipment in the protective packaging until ready for installation.
- 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 installation

Mechanical dimensions



Installing/uninstalling the controller

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

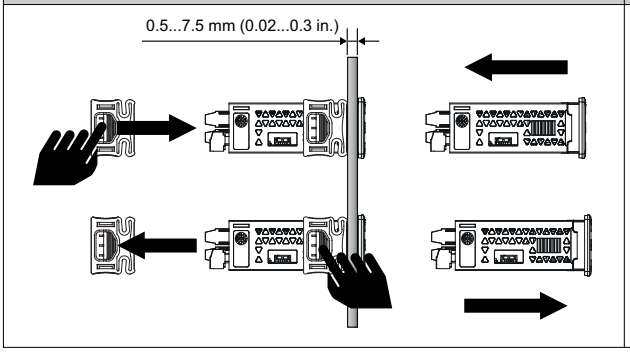
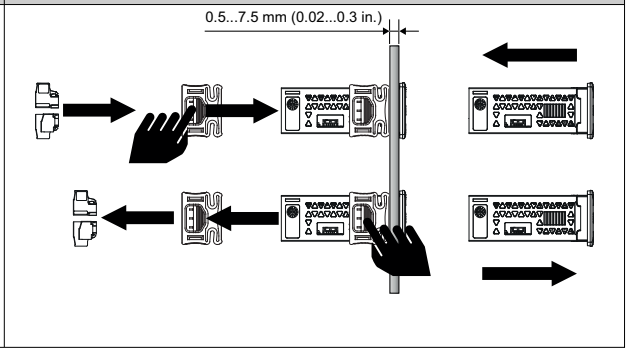
1. Make a hole measuring 71 x 29 mm (2.80 x 1.14 in.)
2. Introducing the controller
3. Secure it by inserting the brackets in the relevant rails at the 2 sides of the controller, until it clicks into place

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.

Screw terminals	Plug-in terminals
	

Electrical connections

Contents

This section includes the following topics:

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 except under the specific conditions specified in this user guide.
- 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 equipment 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.
- Do not connect wires to unused terminals and/or terminals indicated as “Reserved”.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, FIRE AND/OR UNINTENDED EQUIPMENT OPERATION

- 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 "Wiring Diagrams" section).
- 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” section).
- Only use the specified plug-in terminals (see “Best wiring practices” section)
- All network components (controllers, sensors and actuators) must be powered by separate SELV power supplies/transformers except under the specific conditions specified in this user guide.
- No network component (controllers, sensors and actuators) can be earthed.

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.
- For non-inrush outputs, make sure the application has not been designed with the instrument outputs connected directly to instruments that generate a frequently activated capacitive load (1).
- For inrush outputs, make sure that no loads exceeding the ratings specified in the technical data are connected. (2).
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay output, including the shared pole, using cables with a cross-section of 2.5 mm^2 (14 AWG) and a length of at least 200 mm (7.87 in.).

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

(1) Even if your application not apply a frequently operated capacitive load on the relay, capacitive loads will reduce the life of any electromechanical relay, and installation of a contactor or an external relay, that is sized and maintained according the ratings and characteristics of the capacitive load, will help minimize the consequence of relay degradation.

(2) Although the highest performance relays have been selected for the inrush outputs and loads are declared in accordance with standard IEC 61810-1 D.3, It is end user responsibility that instrument outputs guarantee the proper operation of the application in relation to the expected lifecycle of the machine.

⚠ WARNING

REGULATORY INCOMPATIBILITY
Be sure that all used equipments and designed systems comply with all applicable local, regional and national regulations and standards.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Wiring guidelines

⚠ ⚠ DANGER

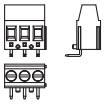
LOOSE WIRING WILL RESULT IN ELECTRIC SHOCK AND/OR FIRE

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 conductors only

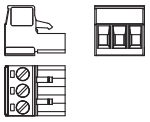
The table below shows the type and size of permitted cables for screw terminals and the torque values:



mm / in. 6.2 / 0.24		
mm²	0.2...4.0	0.2...2.5
AWG	30...12	30...12

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

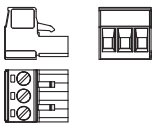
The table below shows the type and size of permitted cables for plug-in terminals pitch 5.0 mm (0.197 in.) and the torque values.



mm / in. 7.0 / 0.28								
mm²	0.2…2.5	0.2…2.5	0.25…2.5	0.25…2.5	2 x 0.2…1.0	2 x 0.2…1.5	2 x 0.25…0.75	2 x 0.5...1.5
AWG	24…12	24…12	---	---	---	---	---	---

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

The table below shows the type and size of permitted cables for plug-in terminals pitch 3.5 mm (0.138 in.) and the torque values.



mm / in. 9.0 / 0.35								
mm²	0.14...1.5	0.14...1.5	0.25...1.5	0.25...0.5	2x 0.08...0.5	2x 0.08...0.75	2x 0.25...0.34	2x 0.5
AWG	26...16	26...16	22...16	22...20	2x 28...20	2x 28…20	2x 24...22	2x 20

Ø 2.5 mm (0.10 in.)		N•m	0.22...0.25
		lb-in	1.95...2.21

Only use the plug-in terminals supplied with the product (only with specific models) or purchased directly from Eliwell; otherwise, be sure you are using terminals that are suitable for operation with the Eliwell controller in the conditions specific to its application.

NOTICE

UNINTENDED EQUIPMENT OPERATION
SELV wiring must be kept separate from other wiring (see "Wiring Diagram" 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 TTL serial line connection, use cables shorter than 1 m (3.28 ft).

Failure to follow these instructions can result in equipment damage.

The temperature 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.

Special Handling Considerations

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

- Store the equipment in the protective packaging until ready for installation.
- 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.

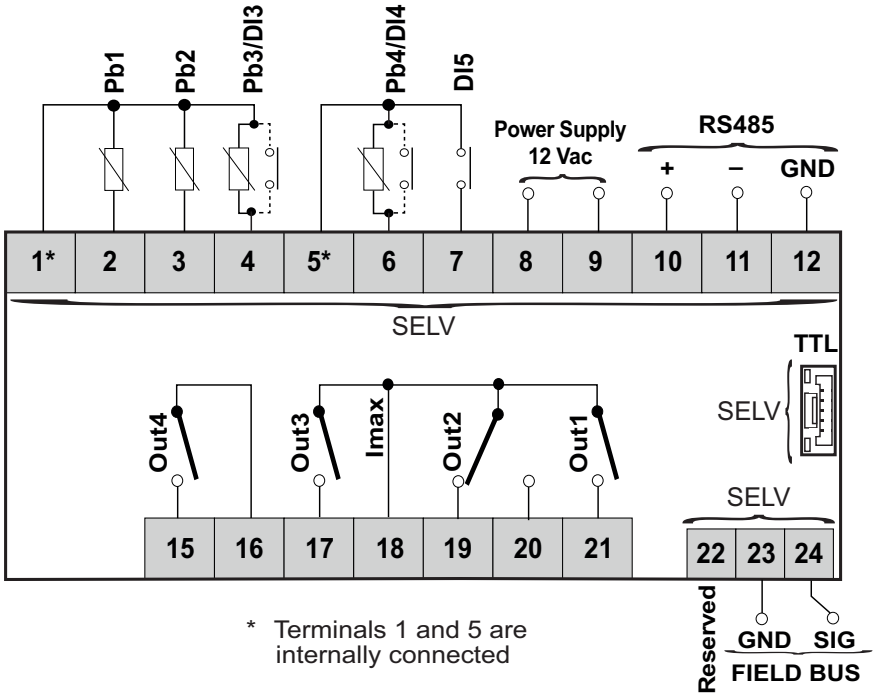
Wiring diagram

Wiring diagrams

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

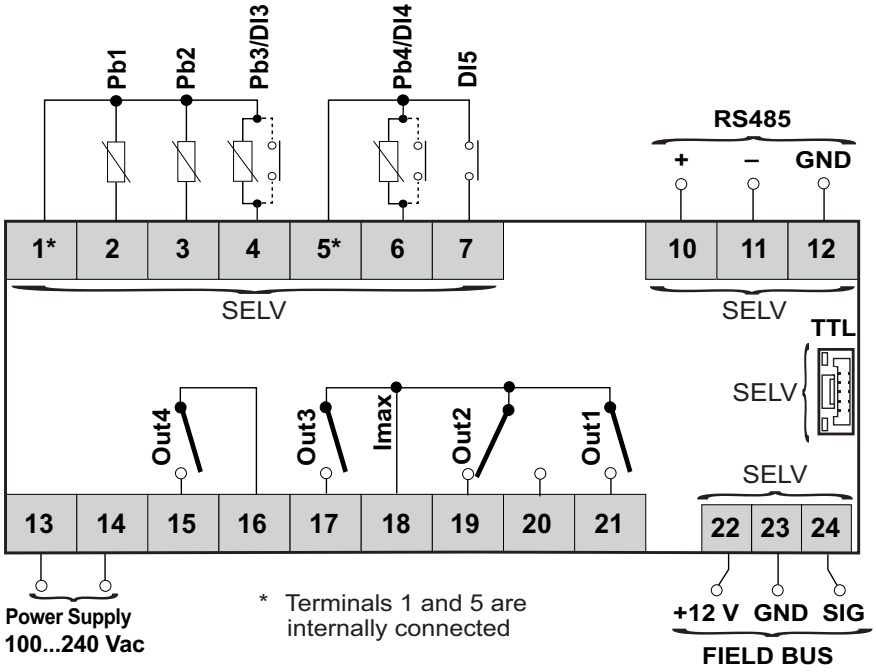
- **IDNext 1485 SBCL**
- **IDNext 1385 SBCL**
- **IDNext 1385 SBCIL**

IDNext 1485 SBCL (12 Vac SELV)



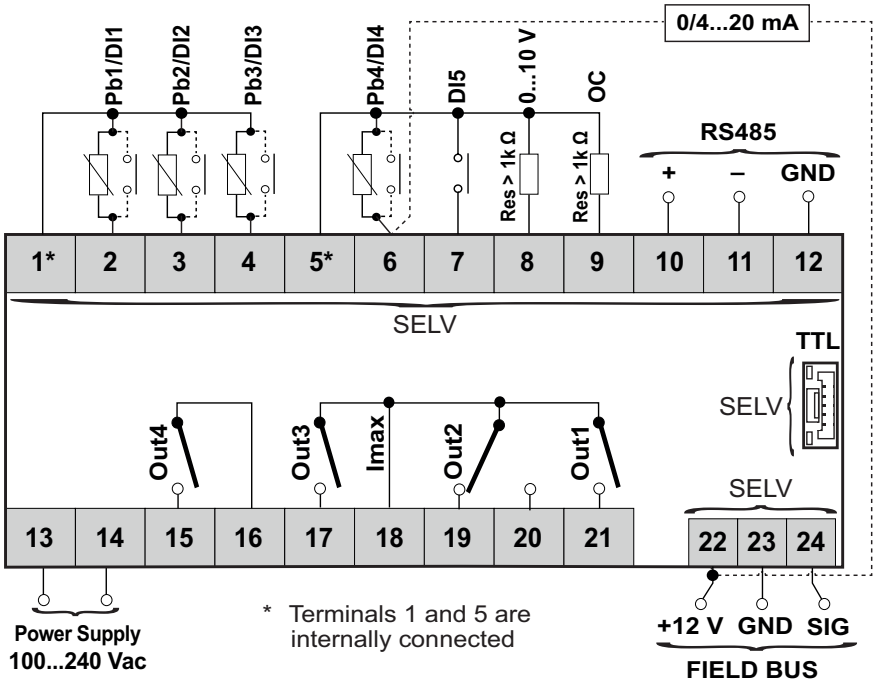
Terminals	Description
1-2	Probe **Pb1**
1-3	Probe **Pb2**
1-4	Probe **Pb3** (H13=0 and P03≠DIG) or Digital input **DI3** (H13≠0 and P03=DIG)
5-6	Probe **Pb4** (H14=0 and P04≠DIG) or Digital input **DI4** (H14≠0 and P04=DIG)
5-7	Digital input **DI5**
8-9	Power supply input: 12 Vac SELV
10-11-12	RS485. Supervision Gateway Connection (NOT ISOLATED)
15-16	SPST relay **Out4** (Default: Evaporator fans)
17-18	SPST relay **Out3** (Default: Auxiliary)
18-19-20	SPDT relay **Out2** (Default: Defrost 1)
18-21	SPST relay **Out1** (Default: Compressor 1)
22-23-24	Field Bus (**22** = Reserved, **23** = GND, **24** = SIG) Only for **IDNext SBCL** / **SBCIL** models interconnection.
Imax	Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A
TTL	**TTL** serial port
SELV	SELV connections

IDNext 1385 SBCL (SMPS 100...240 Vac)



Terminals	Description
1-2	Probe **Pb1**
1-3	Probe **Pb2**
1-4	Probe **Pb3** (H13=0 and P03≠DIG) or Digital input **DI3** (H13≠0 and P03=DIG)
5-6	Probe **Pb4** (H14=0 and P04≠DIG) or Digital input **DI4** (H14≠0 and P04=DIG)
5-7	Digital input **DI5**
10-11-12	RS485. Supervision Gateway Connection (NOT ISOLATED)
13-14	Power supply input: SMPS 100...240 Vac
15-16	SPST relay **Out4** (Default: Evaporator fans)
17-18	SPST relay **Out3** (Default: Auxiliary)
18-19-20	SPDT relay **Out2** (Default: Defrost 1)
18-21	SPST relay **Out1** (Default: Compressor 1)
22-23-24	Field Bus (**22** = 12 V, **23** = GND, **24** = SIG) Only for **IDNext SBCL** / **SBCIL** models interconnection.
Imax	Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A
TTL	**TTL** serial port
SELV	SELV connections

IDNext 1385 SBCIL (SMPS 100...240 Vac)



Terminals	Description
1-2	Probe **Pb1** (H11=0 and P01≠DIG) or Digital input **DI1** (H11≠0 and P01=DIG)
1-3	Probe **Pb2** (H12=0 and P02≠DIG) or Digital input **DI2** (H12≠0 and P02=DIG)
1-4	Probe **Pb3** (H13=0 and P03≠DIG) or Digital input **DI3** (H13≠0 and P03=DIG)
5-6	Probe **Pb4** (H14=0 and P04≠DIG/420/020) or Digital input **DI4** (H14≠0 and P04=DIG) or input **0/4...20 mA** (H14=0 and P04=420/020)
5-7	Digital input **DI5**
5-8	Output **0...10 V** - Load impedance ≥ 1 kΩ (**01n**≠0)
5-9	Open Collector Output (**OC**): 12 Vdc ±5 % - Load impedance ≥ 1 kΩ (**02n**≠0)
10-11-12	RS485. Supervision Gateway Connection (NOT ISOLATED)
13-14	Power supply input: SMPS 100...240 Vac
15-16	SPST relay **Out4** (Default: Evaporator fans)
17-18	SPST relay **Out3** (Default: Auxiliary)
18-19-20	SPDT relay **Out2** (Default: Defrost 1)
18-21	SPST relay **Out1** (Default: Compressor 1)
22-23-24	Field Bus (22 = 12 V (1), 23 = GND, 24 = SIG) Only for **IDNext SBCL** / **SBCIL** models interconnection.
Imax	Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A
TTL	**TTL** serial port
SELV	SELV connections

(1) Maximum current available on +12 V connection for 0/4...20 mA external transducer could be up to 20 mA (maximum one transducer).

Remote Communication

IDNext 1000 has the following communication ports:

- 1x TTL serial port
- 1x RS485 serial port (NOT ISOLATED)
- 1x Field Bus

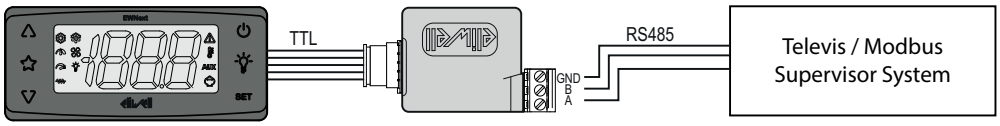
Take extra care when performing serial line connections.
Incorrect wiring may lead to faulty operation or damage of the equipment.

TTL serial port

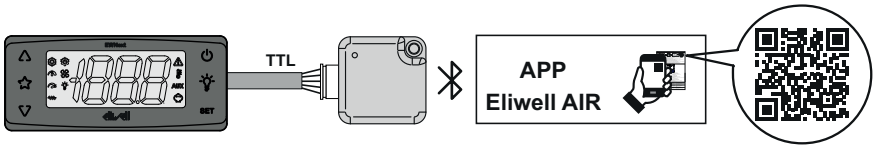
Overview

This serial port is a 5 V not isolated bus with a Modbus RTU protocol.

Example 1: Additional RS485 serial port



Example 2: Bluetooth communication



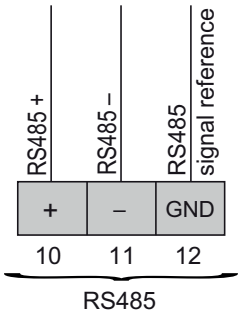
RS485 serial port

Overview

This serial port offers the user communication between controllers by means of a Modbus RTU protocol.

Connectors

IDNext 1000 is equipped with an RS485 serial port (NOT ISOLATED):



RS485 serial port connection

Description

When you connect a device with a not isolated RS485 serial port to the network, please consider:

- Start connecting only the '+' and '-' terminals of the device
- If the functioning is not good or is not stable, connect also the GND terminal to the network. Verify that the connection do not create a earth loop on the serial port to help prevent equipment damage.

NOTICE

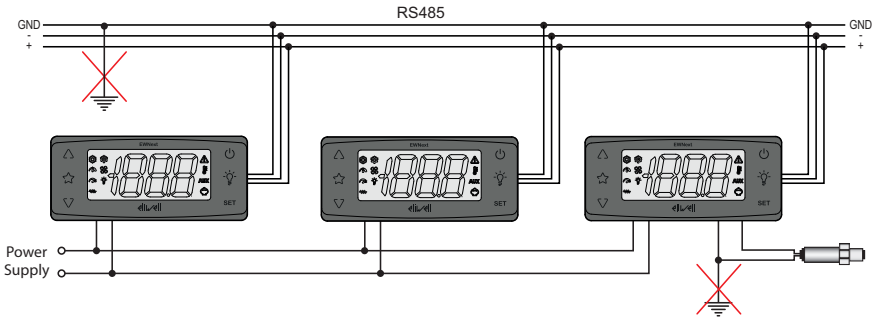
UNINTENDED EQUIPMENT OPERATION

- The load equivalent to all the bus RS485 bus should not exceed 8 Unit Load (For the definition of Unit Load refer to standard TIA/EIA-485-A).
- Do not fit the termination resistors inside the RS485 network.
- For the connection with the supervision system, use a shielded “twisted pair” cable specific (for example: BELDEN cable model 8762).
- The length of an RS485 network is directly related to the baudrate used. At a baud rate of 9600 baud, the maximum cable length is approximately 800 mt (2,625 ft). At 19200 baud, the maximum length is reduced to approximately 400 mt (1,312 ft).

Failure to follow these instructions can result in equipment damage.

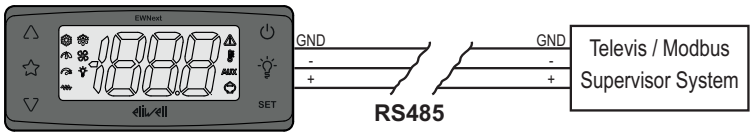
Connection Example 1 (Network)

The devices can be connected to a RS485 network as illustrated:



Connection Example 2 (Supervisor)

The device can be connected to an external supervisor via RS485 as indicated in the picture below:

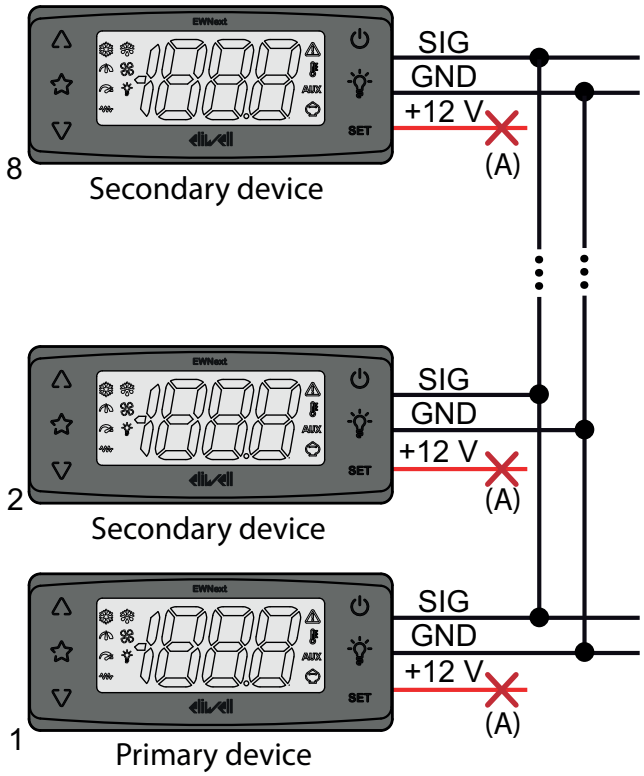


Field Bus connection

Overview

A Field Bus is a serial bus system used to connect devices to each other and to only one primary device (see Field Bus - Introduction section).

Field Bus connection example



(A) Do not connect (to be used only for future extensions)

NOTICE
UNINTENDED EQUIPMENT OPERATION • A maximum of eight IDNext 1000 devices can be connected together in a network (using only the GND and SIG connections). • Do not use +12 V connection. **Failure to follow these instructions can result in equipment damage.**

Technical characteristics

Contents

This section includes the following topics:

Technical data

The product complies with the following harmonized Standards: EN 60730-1 and EN 60730-2-9	
Construction of control:	Electronic automatic incorporated Control
Purpose of control:	Operating control (non-safety related)
Type of action:	1.C
Degree of protection by enclosure:	IP00 rear side IP20 front panel only IP65 front panel only (with a steel sheet 2 mm (0.08 in.) thick ±10 % - Tested in accordance with EN 60529)
Pollution degree:	2
Overvoltage category:	II
Rated impulse voltage:	2500 V
Power supply:	See 'Power supply and Power draw' table
Power draw (maximum):	See 'Power supply and Power draw' table
Ambient operating conditions:	Temperature: -20...55°C (-4...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
Environmental front panel rating:	Open Type
Equivalent RS485 bus load:	0.1 Unit Load
Number of device on Field Bus (Maximum):	8

Power supply and Power draw

Model	Power supply	Power draw (maximum)
IDNext 1485 SBCL	12 Vac (±10%) 50/60 Hz SELV	3.0 W / 4.5 VA
IDNext 1385 SBCL	SMPS 100...240 Vac (±10%) 50/60 Hz	3.5 W / 8.5 VA
IDNext 1385 SBCIL	SMPS 100...240 Vac (±10%) 50/60 Hz	3.5 W / 8.5 VA

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

Power supply models 12 Vac SELV

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, OVERHEATING AND/OR FIRE

- Do not connect the equipment power supply directly to line voltage.
- Use only isolating SELV, Class 2 power supplies/transformers to supply the equipment.

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

Output characteristics

12 Vac SELV models	Output	Inrush	EU (230 Vac)	USA (230 Vac)
IDNext 1485 SBCL	**Out1**	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out2	NO	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6 FLA 21.6 LRA
	Out3	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out4	YES	5(2) A 1 A (25 A inrush, 2.5 ms) (1).	5 A resistive - 2 FLA 12 LRA 1 A (25 A inrush, 2.5 ms) (1).
	Imax = Maximum current on common pole (**Out1+Out2+Out3**) - **V***: Imax = 17 A - **S****: Imax = 12 A.			

SMPS 100...240 Vac models	Output	Inrush	EU (100...240 Vac)	USA (100...240 Vac)
IDNext 1385 SBCL	**Out1**	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out2	NO	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6 FLA 21.6 LRA
	Out3	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out4	YES	5(2) A 1 A (25 A inrush, 2.5 ms) (1).	5 A resistive - 2 FLA 12 LRA 1 A (25 A inrush, 2.5 ms) (1).
	Imax = Maximum current on common pole (**Out1+Out2+Out3**) - **V***: Imax = 17 A - **S****: Imax = 12 A.			
IDNext 1385 SBCIL	**Out1**	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out2	NO	NO 8(4) A - NC 6(3) A - CO 6 A resistive	NO 8 A - NC 6 A - CO 6 A resistive NO 3.6 FLA 21.6 LRA
	Out3	YES	10(6) A 5 A (70 A inrush, 2.5 ms) (1).	10 A resistive - 10 FLA 60 LRA 5 A (70 A inrush, 2.5 ms)(1).
	Out4	YES	5(2) A 1 A (25 A inrush, 2.5 ms) (1).	5 A resistive - 2 FLA 12 LRA 1 A (25 A inrush, 2.5 ms) (1).
	Imax = Maximum current on common pole (**Out1+Out2+Out3**) - **V***: Imax = 17 A - **S****: Imax = 12 A.			
	1x **0...10 V**: Load impedance ≥ 1 kΩ			
	1x **Open Collector Output** (**OC**): 12 Vdc ±5 % - Load impedance ≥ 1 kΩ			

(1) load expressed in compliance with Standard IEC/UL61810-1, Clause D.3 Special loads with inrush current.

V* = models with screw terminals - **S**** = models with plug-in terminals.

Input characteristics

Analog inputs	• **IDNext 1485 SBCL**: 4x NTC/PTC/Pt1000 inputs (Pb1, Pb2, Pb3(3) and Pb4(4)) • **IDNext 1385 SBCL**: 4x NTC/PTC/Pt1000 inputs (Pb1, Pb2, Pb3(3) and Pb4(4)) • **IDNext 1385 SBCIL**: 3x NTC/PTC/Pt1000 inputs (Pb1(1), Pb2(2) and Pb3(3)) + 1x NTC/PTC/Pt1000 or 0/4…20 mA(5) input
Digital inputs	• **IDNext 1485 SBCL**: 3x voltage free digital inputs (DI3(3), DI4(4) and DI5 • **IDNext 1385 SBCL**: 3x voltage free digital inputs (DI3(3), DI4(4) and DI5 • **IDNext 1385 SBCIL**: 5x voltage free digital inputs (DI1(1), DI2(2), DI3(3), DI4(4) and DI5)

(1) analog input **Pb1** (**H11**=0 and **P01**≠DIG) can also be configured as digital input **DI1** (if **H11**≠0 and **P01**=DIG)

(2) analog input **Pb2** (**H12**=0 and **P02**≠DIG) can also be configured as digital input **DI2** (if **H12**≠0 and **P02**=DIG)

(3) analog input **Pb3** (**H13**=0 and **P03**≠DIG) can also be configured as digital input **DI3** (if **H13**≠0 and **P03**=DIG)

(4) analog input **Pb4** (**H14**=0 and **P04**≠DIG) can also be configured as digital input **DI4** (if **H14**≠0 and **P04**=DIG)

(5) analog input **Pb4** (**H14**=0 and **P04**≠DIG/420/020) can also be configured as digital input **DI4** (if **H14**≠0 and **P04**=DIG) or current input 0/4...20 mA (**H14**=0 and **P04**=420/020)

Further Information

Probe values

Display ranges	-199.9…199.9 or -1999…1999
Measurement range	**NTC**: -50...110°C (-58...230°F) - on display with 3 digits + sign **PTC**: -55...140 °C (-67...284 °F) - on 3-digit display with +/- sign **Pt1000**: -80...150 °C (-112...302 °F) - on 3-digit display with +/- sign **Current**: 0...20 mA / 4...20 mA
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. **PTC**: -55...140 °C (-67...284 °F) → better than ±2.0 °C (±3.5 °F) ±1 digit **Pt1000**: -80...-55 °C (-112...-67 °F) → better than ±1.2 °C (±2.2 °F) ±1 digit -55...150 °C (-67...302 °F) → better than ±2.3 °C (±4.1 °F) ±1 digit **Current**: ±0.2 mA
Resolution	1°C/°F or 0.1°C/°F (depending on the display range setting)

Mechanical characteristics

Dimensions	Front panel 80.5 x 34.5 mm (3.17 x 1.36 in.) Depth 94 mm (3.70 in.) for models with screw terminals Depth 95 mm (3.74 in.) for models with plug-in terminals
Mounting panel thickness	0.5...7.5 mm (0.02...0.3 in.)
Terminals	Screw / Plug-in terminals

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.

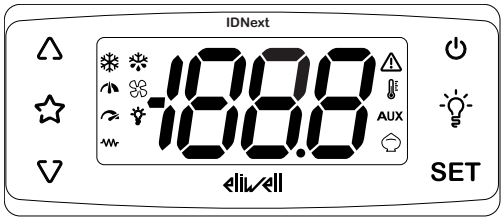
User interface and operation

Contents

This section includes the following topics:

User interface

Interface



Keys

Keys	press and release	press for at least 5 seconds
△	• Scroll through the menu options. • Increase the values.	From outside the menus only. Can be configured by the user (parameter **H31**) Default: Activate manual defrost.
☆	From outside the menus only. Can be configured by the user (parameter **H35**) Default: Activates AUX output.	---
▽	• Scroll through the menu options. • Decrease the values.	• From outside the menus only. Can be configured by the user (parameter **H32**) Default: not configured. • Unlock keypad
⏻	• 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.
💡	From outside the menus only. Can be configured by the user (parameter **H34**) Default: not configured.	---
▽ + SET	---	Press both simultaneously within 30 seconds after device power-on, or after stand-by to load the preset applications (only after unlocking the keypad).
Keys	**press and release**	**press for at least 3 seconds**
SET	• Access the "Machine Status" menu. • Display alarms (if present). • Confirm commands	Access the "Programming" menu.

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 5 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 on Off: fans off
	Medium VSC speed (only **IDNext 1385 SBCIL**)	On steadily: Vmin ≤ required speed < 90% Vmax Off: 0% ≤ required speed < Vmin
	Maximum VSC speed (only **IDNext 1385 SBCIL**)	On steadily: required speed ≥ 90% Vmax Off: required speed < 90% Vmax
	Light	On steadily: light on Off: light off
	Heating	On steadily: Heating regulator active Slow flashing: Humidity output active (if **H2x** = 16) Fast flashing: Dehumidify output with (**H2x** = 18) or without (**H2x** = 17) resistor Off: Heating regulator inactive
	Alarm	On steadily: alarm present Flashing: alarm silenced Off: No alarm active
	Temperature	On steadily: a temperature is displayed (**°C** or **°F**) Flashing: PID autotuning active (only **IDNext 1385 SBCIL**) Off: a value not relating to temperature or a label is displayed
AUX	AUX	On steadily: AUX output active Flashing: Deep cooling active Off: AUX output off
	Energy saving	On steadily: Energy saving active Flashing: reduced set active Off: Energy saving inactive

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

Note: Some icons may be associated with unavailable functions, depending on the model (in that cases those icons will never light on).

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

Using the controller

Switching on for the first time

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

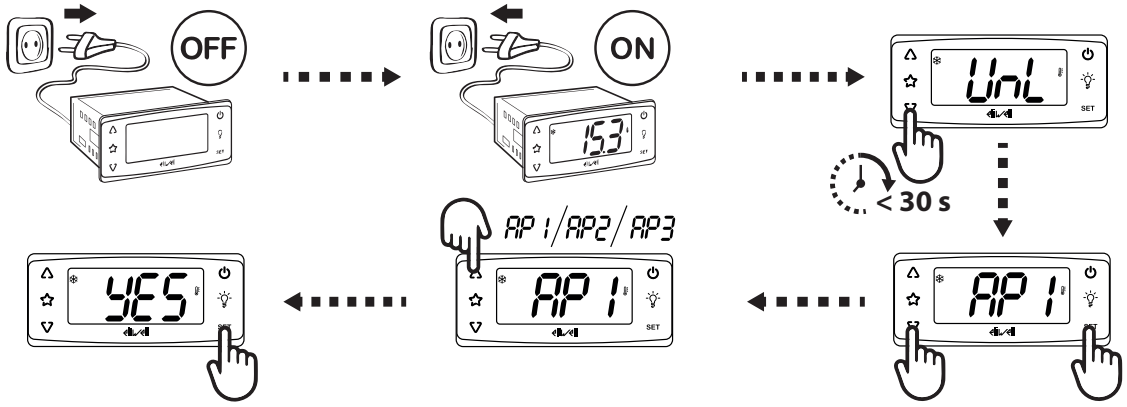
During the first startup, at the end of the lamp test:

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 5 seconds, until the keypad unlock label **UnL** appears
4. Within 30 seconds since the device power-on, press and hold (**SET** + ▽) for at least 5 seconds, until the label **AP1** appears
5. Scroll through applications **AP1**, **AP2** and **AP3** using △ and ▽
6. Confirm the selected preset application using **SET**.
   Note: The process can be canceled by pressing ⏻ or letting a timeout occur (15 seconds)
7. If the procedure completes successfully, the display will show "**yES**"; otherwise it will show "**Err**"
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 not 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**.

The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters which are not 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 **PA1** and **PA2** passwords 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 5 seconds, until the label "**UnL**" appears
2. Press and hold for at least 3 seconds **SET**
3. Scroll through the parameters with △ and ▽ until you find the label "PA2"
4. Press and release **SET**
5. Set the "**PA2**" value using the keys △ and ▽
6. Confirm the value by pressing **SET** (the first folder will be displayed)
7. Scroll through the folders with △ and ▽ until you find the label "diS"
8. Press and release **SET**
9. Scroll through the parameters with △ and ▽ until you find the label "PS1" or "PS2", depending on whether you want to change access password **PA1** or **PA2**
10. To confirm the value press **SET** or ⏻, or let a timeout occur (15 seconds).

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

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

For security reasons, on first access we recommend to change the **PA1** and **PA2** passwords.
Carefully consider the implications of giving access to other people.

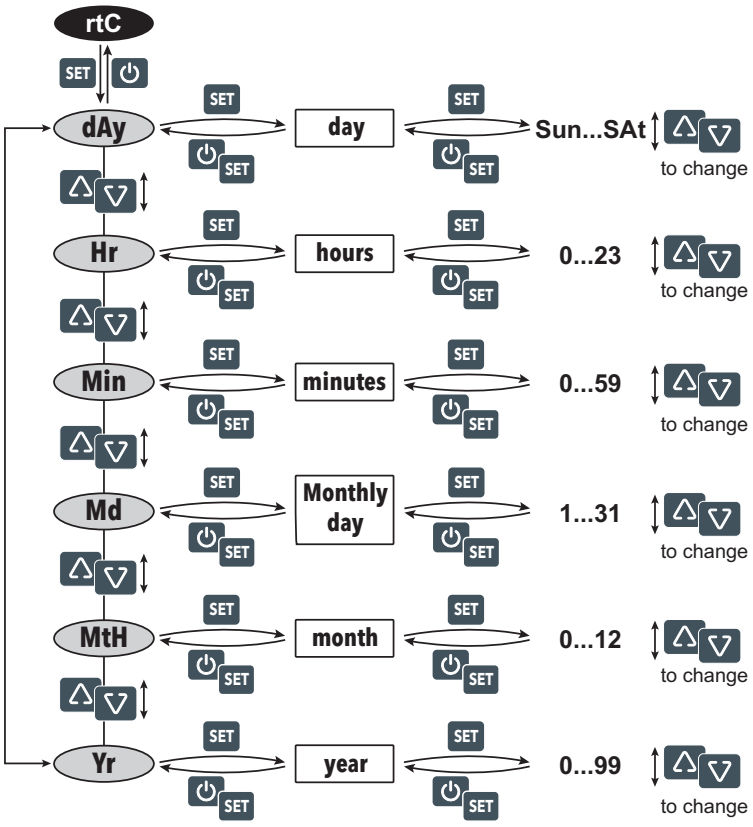
⚠ WARNING

UNAUTHORISED ACCESS

- Change the default passwords PA1 and PA2 immediately.
- Do not share the password to unauthorized individuals or non-qualified personnel.

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

RTC setting



Machine Status Menu

To enter the Machine Status menu:

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

List of folders:

The folders shown are as follows:

- **SEt**: setpoint setting folder
- **SEH**: humidity setpoint setting folder (only visible if the function is active)
- **ALr**: alarms folder (only visible if there are active alarms)
- **rtC**: clock parameters folder
  - **dAy**: day
  - **Hr**: hour
  - **Min**: minutes
  - **Md**: monthly day
  - **MtH**: month
  - **Yr**: year
- **Pb1**: Pb1 probe value folder
- **Pb2**: Pb2 probe value folder
- **Pb3**: Pb3 probe value folder
- **Pb4**: Pb4 probe value folder
- **APP**: uploaded application (**AP1**, **AP2** or **AP3**)
- **idF**: firmware mask value folder
- **rEL**: firmware release value folder
- **nAM**: product name folder
- **PEr**: VSC value folder (if available)
- **FAn**: Fan value folder (if available)

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

Programming Menu

To enter the Programming menu:

a. To unlock the keypad, press and hold ▽ for at least 5 seconds, until the label "**UnL**" appears
b. Press and hold for at least 3 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 (**diF**) will be shown.

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

Installer parameters (Inst):

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

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

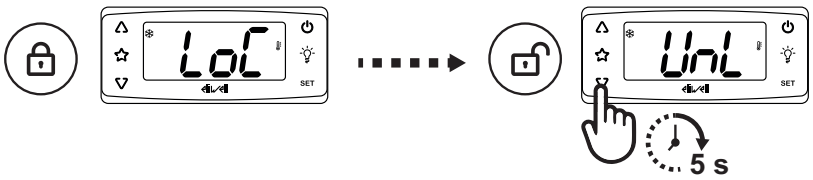
Note: Switch the device off and on again every time you change the parameter configuration.

Locking/unlocking the keypad

The keypad locks automatically in the following situations:

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

To unlock the keypad, press and hold ▽ for at least 5 seconds, until the label '**UnL**' appears.



Viewing the probe values

1. Unlock the keypad by pressing and holding ▽ for at least 5 seconds, until the label "**UnL**" appears
2. Press and release **SET** to access the 'Machine status' menu
3. Scroll through the folders with △ and ▽ until you find the folder **Pb1**, **Pb2**, **Pb3** or **Pb4**
   Note: folders can only be viewed if relative probe is active (**P01**/**P02**/**P03**/**P04**≠diS)
4. Press **SET** to view the value measured by the corresponding probe.
   Note: the displayed value cannot be changed.

Setting the setpoint

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

Setting frequently used functions

Some frequently used functions may be paired with the keys by suitably configuring the corresponding parameters; they can then be activated by pressing and holding the paired key.
Note: if the functions set are 'AUX' (**H3x**=2) or 'Light' (**H3x**=8) , press and release the key to activate the function. In all other cases, press the key for at least 5 seconds.

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

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

Setting the main parameters

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

Setting the probes

Introduction

Each probe can be set independently (one from another) as NTC, PTC or Pt1000.

Probe inputs

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

IDNext 1485 SBCL

- 2 analog inputs (**Pb1** and **Pb2**)
- 2 analog/digital multifunctional inputs that can be configured as digital inputs **DI3/DI4** (**H13/H14**≠0 and **P03/P04**=DIG) or as analog probes **Pb3/Pb4** (**H13/H14**=0 and **P03/P04**≠DIG)

IDNext 1385 SBCL

- 2 analog inputs (**Pb1** and **Pb2**)
- 2 analog/digital multifunctional input that can be configured as digital inputs **DI3/DI4** (**H13/H14**≠0 and **P03/P04**=DIG) or as analog probes **Pb3/Pb4** (**H13/H14**=0 and **P03/P04**≠DIG)

IDNext 1385 SBCIL

- 3 analog/digital multifunctional inputs that can be configured as digital inputs **DI1/DI2/DI3** (**H11/H12/H13**≠0 and **P01/P02/P03**=DIG) or as analog probes **Pb1/Pb2/Pb3** (**H11/H12/H13**=0 and **P01/P02/P03**≠DIG)
- 1 analog/digital multifunctional inputs that can be configured as digital input **DI4** (**H14**≠0 and **P04**=DIG), as analog probe **Pb4** (**H14**=0 and **P04**≠DIG/420/020) or **0...20/4...20 mA** input (**H14**=0 and **P04**=420/020)

Probe calibration

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

- **CA1** (probe Pb1)
- **CA2** (probe Pb2)
- **CA3** (probe Pb3)
- **CA4** (probe Pb4)

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

Virtual probe / changing the probe

The device, in addition to regulating the values detected by the individual probes, can also regulate according to a weighted average of the value read by two probes (regulation probe and virtual probe):

- Virtual probe in Day mode:
  $$Pbi(Virtualprobe) = [(probe1) * H72 + (probe2) * (100 - H72)]/100$$

Parameters

Parameter	Description
H70	1st probe to use as a virtual probe.
H71	2nd probe to use as a virtual probe.
H72	% calculation used by the virtual probe for daytime.

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	Description
yES	Display with decimal point and resolution to tenths of a degree
no	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	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
4	Display the value read by Pb4
5	Display the value read by Virtual probe
6	Display the value read by Remote probe
7	Display the value read by Field Bus probe

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 "Primary" device.
To enable viewing, set parameter **ddE**:

ddE	Description
0	**ECNext** module not connected
1	Display the value read by Pb1 and alarm.
2	Display the value read by Pb2 and alarm.
3	Display the value read by Pb3 and alarm.
4	Display the value read by Pb4 and alarm.
5	Display the value read by Virtual probe.
6	Display the value read by Remote probe
7	Display the value read by Field Bus probe
8	Display 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	Description
0	Display the values read by the selected probe
1	Display the value read by the selected probe at the start of defrosting until the setpoint is reached
2	Display the label **dEF** during defrosting until the setpoint is reached

Filter displayed value

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

FIS parameter:

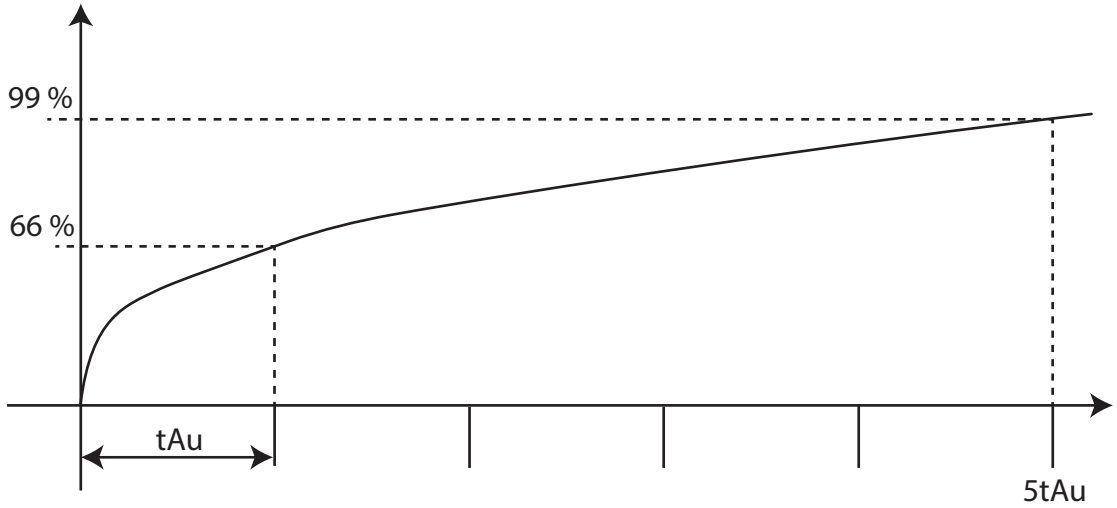
- **FiS**=0: the filter is disabled
- **FiS**=1: the filter is set based on time values **tAu** and **5tAu** (see picture below), and is applied to the displayed information according to the value of parameter **Fit**.
- **FiS**=2: the temperature value shown changes by 1°C/°F every **tAu** minutes

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	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).

Field Bus

Contents

This section includes the following topics:

Introduction

Description

A Field Bus network is a serial bus system used to connect devices to each other and to only one Primary device.
Field Bus network configuration takes place using the same addresses as the supervision system. No limitation is applied to the addresses (they may also be non-contiguous).
The Field Bus is managed by a set of parameters that allows commands and values sharing over the network.
It can be available on Field Bus port. To enables the functionality, using Device Manager, set parameter F-DATA_LAYER_LAN to value “2”.
Up to 8 devices can be connected on the Field Bus network, but only one of them have to be set as 'Primary' (**SC2** = 1) to share information between the other ones.
Only devices with Field Bus enabled can share data.
If the Field Bus network is enabled, at every start-up the 'Primary' device scans the network looking for connected "Secondary" devices. During the network discovery, the label "**ndi**" will flash on the display.

Important

If you decide to create a Field Bus network, is necessary to remember that:

- All the devices connected to the network required the Field Bus is active (**F-DATA_LAYER_LAN** = 2)
- Only one device of the network is set as 'Primary' (**SC2** = 1)
- On the 'Primary' device is set the number of devices present in the network (set **L11**= 1 (Primary) + **n** (number of 'Secondary' devices))

Activation Field Bus

The parameter to activate Field Bus is **F-DATA_LAYER_LAN** and can be update only via Device Manager. It is enabled by default.
The values that can be set are:

- **0**: Field Bus disabled
- **1**: Reserved
- **2**: Field Bus enabled

Definitions

In the Field Bus network, is necessary to know the differentiation between:

- **Primary**: This role is mandatory on the network and is responsible for dispatching information among connected devices. Only one device in the network can assume this role (**SC2** = 1).
- **Secondary**: All devices in the network that are configured to operate as non-Primary nodes (**SC2** = 0). These devices must not initiate communication requests.
- **Main**: The device that starts data sharing in a network implementing Field Bus. It may be different from the Primary device.
- **Remote**: All devices that receive data shared by the **Main** device. This role should be considered different from the Secondary device.

Note: Only one device on the Field Bus network can be configured as the ‘**Main**’ device.

Parameters description

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

Sharing probe value (L00)

L00	Description
diS (0)	Probe sharing disabled (default value)
Pb1 (1)	Probe '1'
Pb2 (2)	Probe '2'
Pb3 (3)	Probe '3'
Pb4 (4)	Probe '4'
Pbi (5)	Virtual Probe
Pbr (6)	Remote Probe

Only one '**Main**' device (either 'Primary' or 'Secondary') on the network can share the physical or virtual probes value; all other devices can only receive them.
Note: To avoid unexpected behavior, the probe to be shared must be connected to the current device model.

Displayed value sharing (L01)

L01	Description
0	Help prevents sending the displayed value from the device to the Field Bus network (default value)
1	Enables sending the displayed value from the device to the Field Bus network
2	Displays the value of the device with setting **L01** = 1 ('**Main**' device)

Only one '**Main**' device (either 'Primary' or 'Secondary') on the network can share either the physical or virtual probes value, the other ones only can receive it.
Note: Only numerical values or setpoint can be shared (other information such as alarms, errors, etc., are ignored).

Setpoint sharing (L02)

L02	Description
no (0)	Does not send the Setpoint value to the Field Bus network when it is changed. (default value)
yES (1)	Sends the Setpoint value to the Field Bus network when it is changed.

Defrost start request sharing (L03)

L03	Description
0	Sends defrost request disabled (default value)
1	'Primary' device for sending simultaneous start defrost
2	'Primary' device for sending sequential start defrost

The parameter has to be set on 'Primary' device only (**L03** = 1 or 2) to enable defrost command send over the network.
The 'Secondary' devices, upon receiving the command, will start defrosting based on their configuration parameters.

End Defrost mode sharing (L04)

L04	Description
ind (0)	Independent defrost ending (default value)
dEP (1)	Dependent defrost ending

The parameter has to be set on 'Primary' device only.
At the end of a defrost cycle, triggered by the 'Primary' device, the 'Secondary' devices will resume normal operation depending on **L04** value:
• **L04** = **ind** (0): (independent defrost ending): each Secondary start regulation as soon as his defrost is ended.
• **L04** = **dEP** (1): (dependent defrost ending): each 'Secondary' deviice waits (with regulation locked) until the other defrost cycles are ended for all devices, or the timeout set by parameter **L10** has expired.

Stand-by synchronization (L05)

L05	Description
no (0)	Stand-by command synchronization disabled (default value)
yES (1)	Stand-by command synchronization enabled

If a defrost cycle is in progress, the stand-by command, with **H08** = 1 or **H08** = 2, forces defrost cycle to end.
If the defrost command is sent over the network by a 'Primary' device with **L03** = 1 or **L03** = 2, it is recommended to also set **L05** = yES (1) on that device to ensure that all devices enter in stand-by mode and terminate their own defrost cycles.
Note: To avoid unexpected behavior, wait for the command to propagate across the network before toggling it again.

Light synchronization (L06)

L06	Description
no (0)	Light command synchronization disabled (default value)
yES (1)	Light command synchronization enabled

Only devices with **L06** = yES (1) are capable of synchronizing light state transitions (On/Off) across the Field Bus network.
Note: Light management has to be properly configured on each device (see Light Regulator).
Note: To avoid unexpected behavior, wait for the command to propagate across the network before toggling it again.

Energy saving synchronization (L07)

L07	Description
no (0)	Energy saving synchronization disabled (default value)
yES (1)	Energy saving synchronization enabled

Only devices with **L07** = yES (1) are capable of synchronizing Energy Saving state transitions (On/Off) across the Field Bus network.
Note: Energy saving management has to be properly configured on each device (see Energy saving).
Note: To avoid unexpected behavior, wait for the command to propagate across the network before toggling it again.

AUX synchronization (L08)

L08	Description
no (0)	Auxiliary output synchronization disabled (default value)
yES (1)	Auxiliary output synchronization enabled

Only devices with **L08** = yES (1) are capable of synchronizing Auxiliary output state transitions (On/Off) across the Field Bus network.
Note: The Auxiliary output management has to be properly configured on each device (see Auxiliary output).
Note: To avoid unexpected behavior, wait for the command to propagate across the network before toggling it again.

Dependent defrost end timeout (L10)

L10	Description
1...250	Timeout value

In dependent defrost end mode with **L04** = dEP (1), regulation is still forced to resume if, within the **L10** timeout, the 'Primary' device does not reactivate it (for example, if the network connection is interrupted during an ongoing defrost cycle).
Note: For optimal performance **L10** should be greater than (**dEt + dt**)

Number of connected devices (L11)

L11	Description
0...8	Number of devices connected to Field Bus

If the number of detected devices after network discovery differs from the set value (**L11**), a “No-Link” (**ELi**) alarm will be triggered.

Alarm relay sharing (L12)

L12	Description
0	Function disabled (default value)
1	Primary alarm relay (the relay is activated from local alarm relay or secondary alarm relay)
2	Secondary alarm relay

This parameter allows the alarm relay of one device to be shared with the other devices connected on the network.
If a device is configured as the '**Main**' device, it will activate its alarm relay and display the alarm icon both for its own alarms and for alarms detected on other devices in the Field Bus configured as 'remote'.
Note: The alarm relay output must be configured on the '**Main**' device. Only one device on the network can be configured as the '**Main**' device.

Buzzer and Alarm mute sharing (L15)

L15	Description
0	Function disabled (default value)
1	'Main' device
2	'Remote' device (shares buzzer and alarm silenced command with 'Main' device).

With this parameter, it is possible to share the alarm buzzer and alarm icon of a remote device with the 'Main' device.
If a device is configured as the '**Main**' device (**L15** = 1), it will activate its own alarm buzzer and alarm icon both for its own alarms and for alarms present on other devices in the Field Bus configured as '**Remote**' (**L15** = 2).
If alarm silencing is enabled on the '**Main**' device, it will deactivate its buzzer, make the alarm icon flash, and automatically silence the alarm status on the connected **'Remote'** devices.
Note: Even when configured on the '**Main**' device, the alarm relay output is not affected.
Note: Only one device on the Field Bus network can be configured as the '**Main**' device.

Synchronized Defrost

Description

Defrost synchronization on a Field Bus network is performed with respect to the actual defrost phase; therefore, the dripping phase and all functions that occur after defrost are not taken into account.
The 'Primary' device (device with **SC2** = 1) simply issues enable commands at the start of a defrost or upon thermostat activation, without interfering with the normal protections or delays of each device, such as the drip phase.

If the 'Secondary' devices connected to the Field Bus network are configured to accept defrost and network function commands from the 'Primary' device, any defrosts and/or functions triggered by events generated locally by the 'Secondary' device will not be executed, except for:

- manual defrosts
- supervisor initiated remote defrosts
- defrosts triggered by a deep cooling cycle.

Associated defrosts and/or functions will only be carried out by the secondary devices if a “no link” alarm is present (**Eli**).

Operating conditions:

- In a local network, defrost commands and activation of the functions associated with the events are controlled exclusively by the 'Primary' device (only if 'Secondary' devices are configured accordingly).
- If there is no communication, every element in the network works individually for the cooling chain.

A safety mechanism can be set on 'Secondary' devices that locally forces a defrost if they do not receive a defrost command from the 'Primary' device within the **dit** timeout period (with **dit** ≠ 0). The timeout is reset after each defrost.

Note: If **dit**=0 this safety mechanism is disabled.

There are two types of defrost, setting with **L03** value:

- **L03** = 1: simultaneous defrost
- **L03** = 2: sequential defrost

Parameter **L04** can be used to indicate whether, once defrost is complete, the device waits for all the others to finish before being able to reactivate regulation.

This means there is still a timeout that forces reactivation of regulation once a time period set with **L10** elapses (for example the Field Bus network line is interrupted while a defrost is in progress).
Only one 'Main' device (either 'Primary' or 'Secondary') on the network can share either the physical or virtual probes value, the other ones only can receive it.
Note: To avoid unexpected behavior, the probe to share must be available on the current device model.

Simultaneous Defrost (L03 = 1)

In a Field Bus network it is possible to activate defrosts simultaneously, coordinated by the 'Primary' device, by setting **L03**=1.

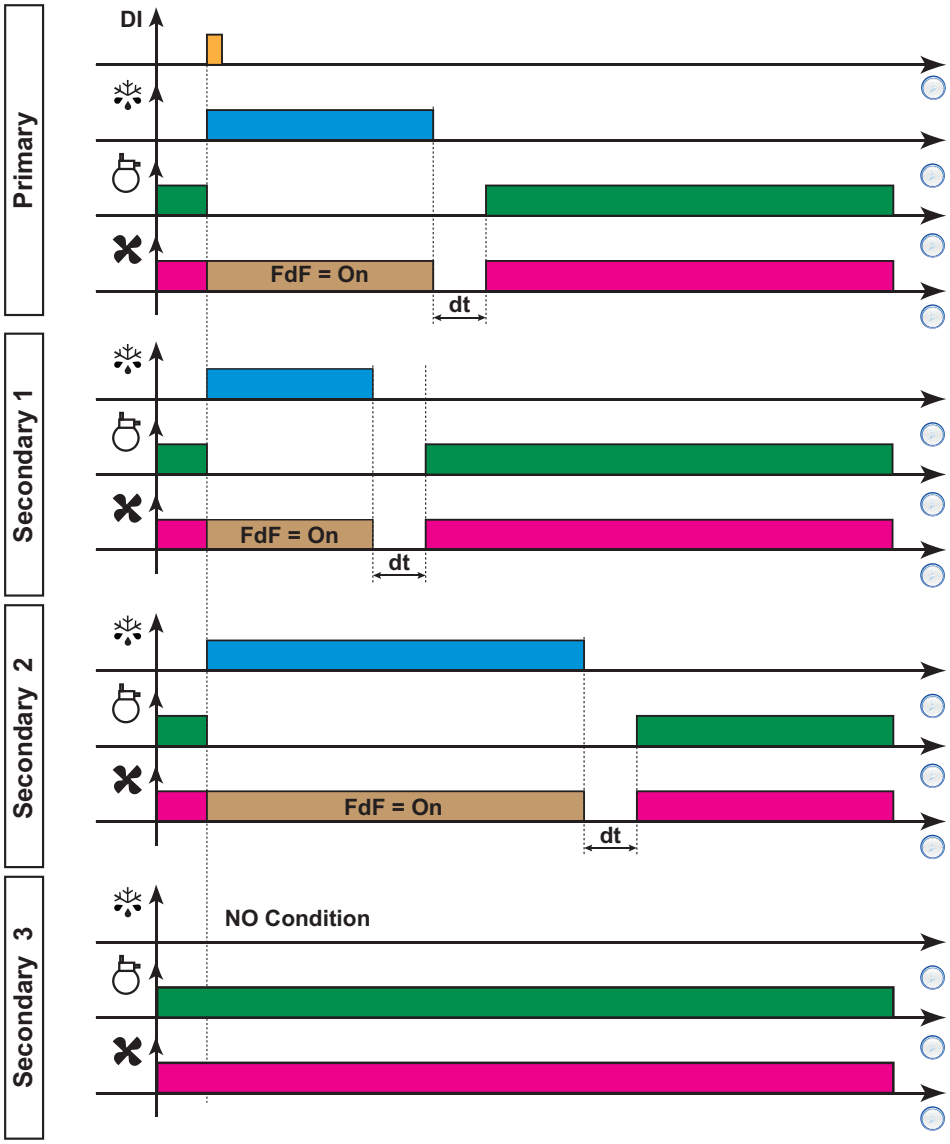
The 'Primary' device will send a defrost request to all devices defined as 'Secondary' devices simultaneously. Defrosting on the 'Secondary' devices will start immediately, regardless of the value of the **doH** parameter, if the conditions for defrosting are met.

At the end of the defrost, temperature control will be activated based on parameter **L04**:

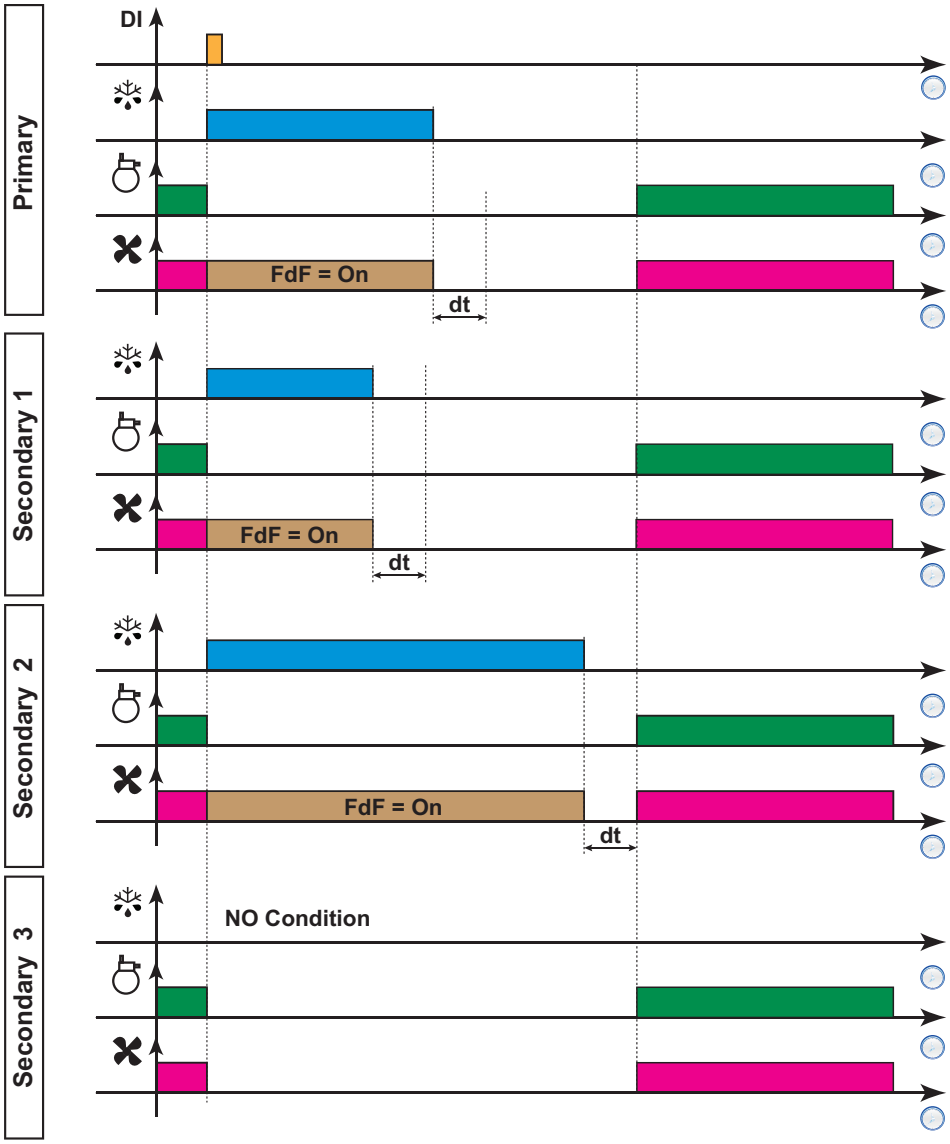
- if **L04**=ind it will resume after every defrost and corresponding period **dit** has ended
- if **L04**=dEP it will resume after all defrosts and corresponding periods **dit** have ended.

Operating diagrams

Independent simultaneous defrost (L04 = ind)



Dependent simultaneous defrost (L04 = dEP)



Legend:

- **DI** = Digital Input
- ❄ = Defrost
- = Compressor
- = Fans
- **NO Condition** = The conditions for defrosting are not met
- **Primary** = Primary device
- **Secondary** = Secondary device

Sequential Defrost (L03 = 2)

In a Field Bus network it is possible to activate defrosts sequentially, coordinated by the 'Primary' device, by setting **L03**=2.

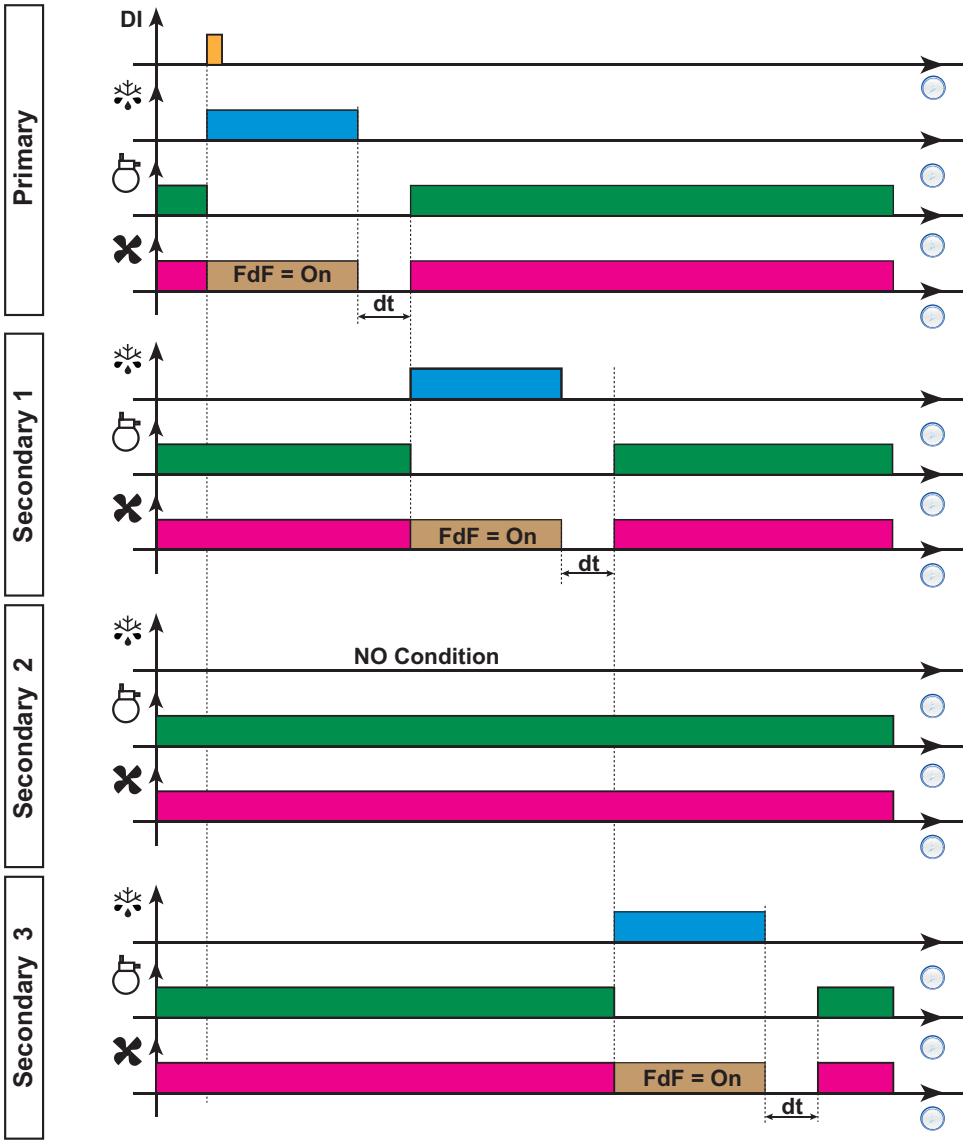
The 'Primary' device will send a sequential defrost request to all devices defined as 'Secondary' devices.
The defrosting order depends on the sequence in which the devices were recognized at the last power-on. The sequence may change at every power-on.

At the end of the defrost, temperature control will be activated based on parameter **L04**:

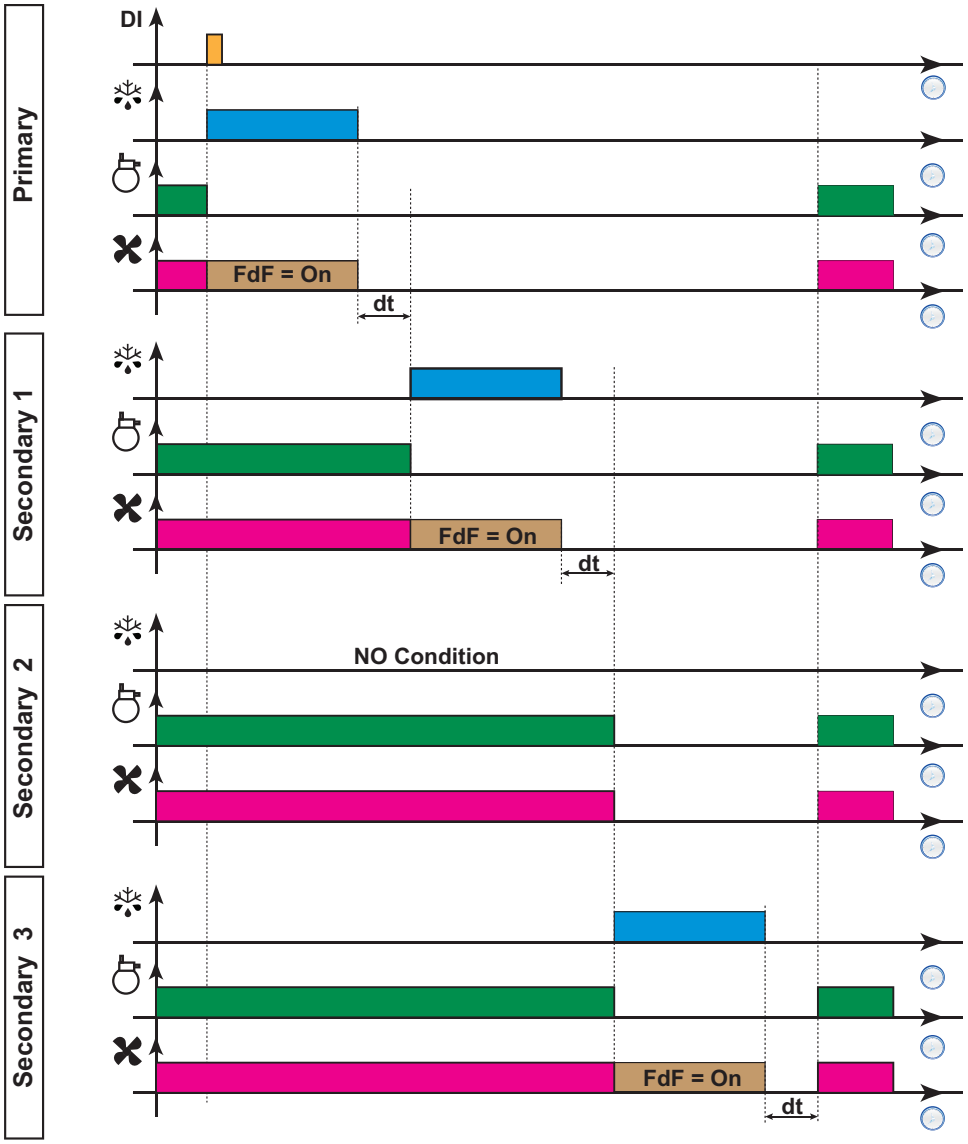
- if **L04**=ind it will resume after every defrost and corresponding period **dit** has ended
- if **L04**=dEP it will resume after all defrosts and corresponding periods **dit** have ended.

Operating diagrams

Independent sequential defrost (L04 = ind)



Dependent sequential defrost (L04 = dEP)



Legend:

- **DI** = Digital Input
- ❄ = Defrost
- = Compressor
- = Fans
- **NO Condition** = The conditions for defrosting are not met
- **Primary** = Primary device
- **Secondary** = Secondary device

Defrost

Contents

This section includes the following topics:

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 evaporator 2 probe (see **dP2**), 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:

- Modular defrost
- Standard defrost
- Double evaporator defrost
- Defrost forced management (Drop defrost)

Functioning conditions

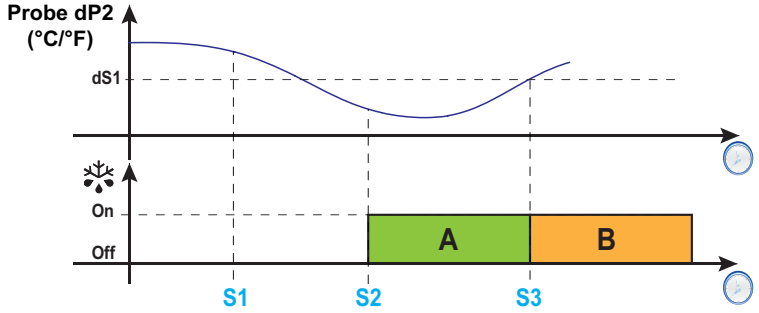
Defrosting removes ice from the surface of the evaporator. If **dt**≠0, once defrost is complete, a dripping cycle takes place to help prevent the water left on the evaporator from freezing again.
Defrost is triggered automatically if:

- 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.

(*) only models with evaporator 1 probe present (setting with parameter **dP1**).
(**) only models with evaporator 2 probe present (setting with parameter **dP2**).



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 evaporator 1 probe (see **dP1**) and that can control the evaporator fans.

Parameters

Parameter	Description
dP1	Sets evaporator 1 probe.
dP2	Sets evaporator 2 probe.
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 146).

In the event of a regulation probe 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 evaporator 1 probe (see **dP1**)
- **ddL** = 1: display the temperature read by the evaporator 1 probe (see **dP1**) 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
dP1	Sets evaporator 1 probe.
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)
- via menu function using **dEF**
- 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

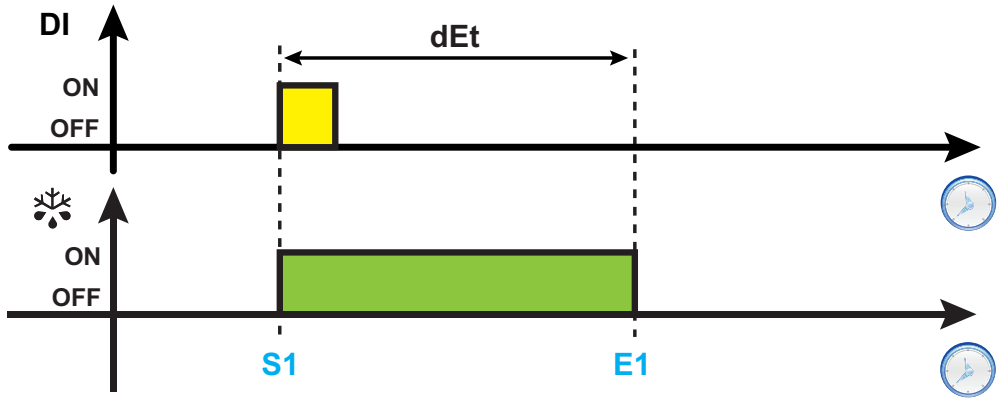
If manual defrost is activated, depending on the value of parameter **dMr**, the defrost interval count (**dit** time):

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

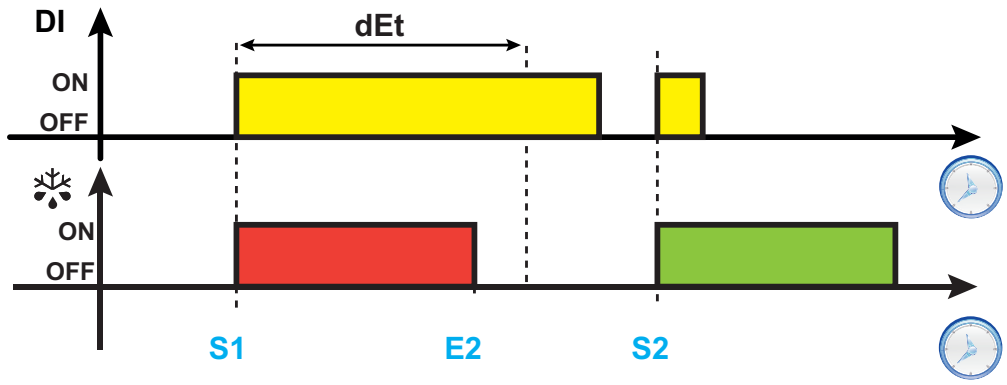
If the **odo** count is in progress and the evaporator temperature is greater than the value of parameter **dS1*** (evaporator 1) or **dS2**** (evaporator 2), the defrost will not be activated and the display will flash three times.
(*): only models with evaporator 1 probe present (setting with parameter **dP1**).
(**): only models with evaporator 2 probe present (setting with parameter **dP2**).
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

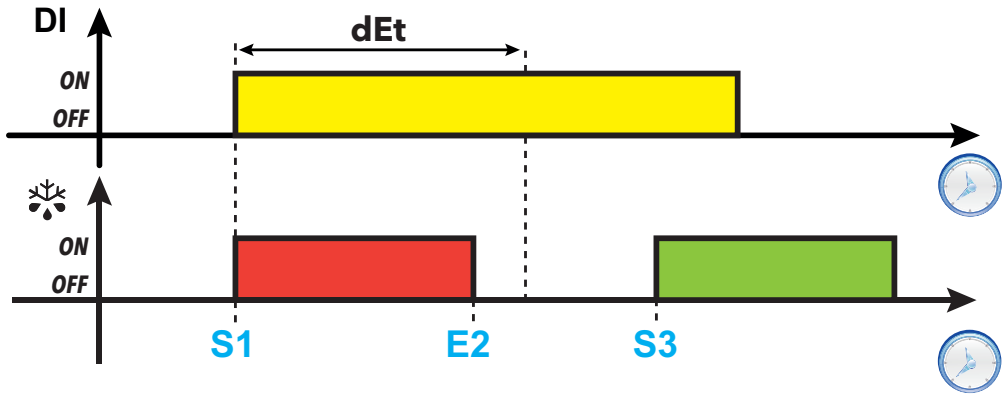
Example 1:



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	**DI1** digital input/polarity configuration.
H12	**DI2** digital input/polarity configuration.
H13	**DI3** digital input/polarity configuration.
H14	**DI4** digital input/polarity configuration.
H15	**DI5** digital input/polarity configuration.
H31	△ key configuration.
H32	▽ key configuration.
H33	⏻ key configuration.
H34	💡 key configuration.
H35	☆ key configuration.

Modular Defrost

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

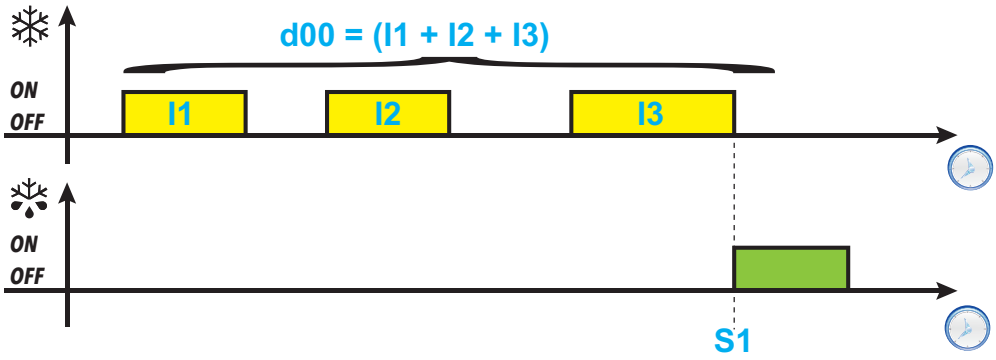
Activation method	Parameters
Compressor running time The defrost is activated when the sum of compressor operating period durations reaches the value **d00**.	**d00/d01**
device running time The defrost is activated when the instrument operating period duration reaches the value **dit**.	**dit/d11**
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...d45**
RTC (Real Time Clock) The defrost will be activated at preset intervals and on specified days (RTC with fixed or regular intervals)	**d90...d94**

Compressor running time

This defrost can be configured via the following parameters:

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

Regulation diagram



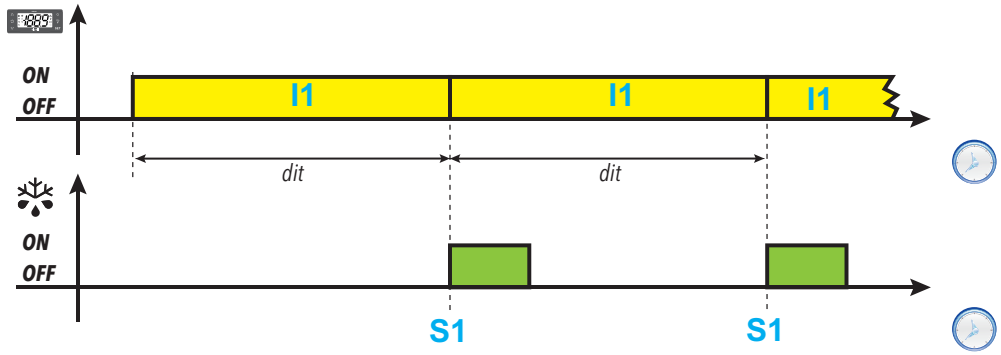
Legend: **I1, I2, I3** = Compressor on times; **S1** = Defrost start.

Instrument running time

This defrost can be configured via the following parameters:

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

Regulation diagram



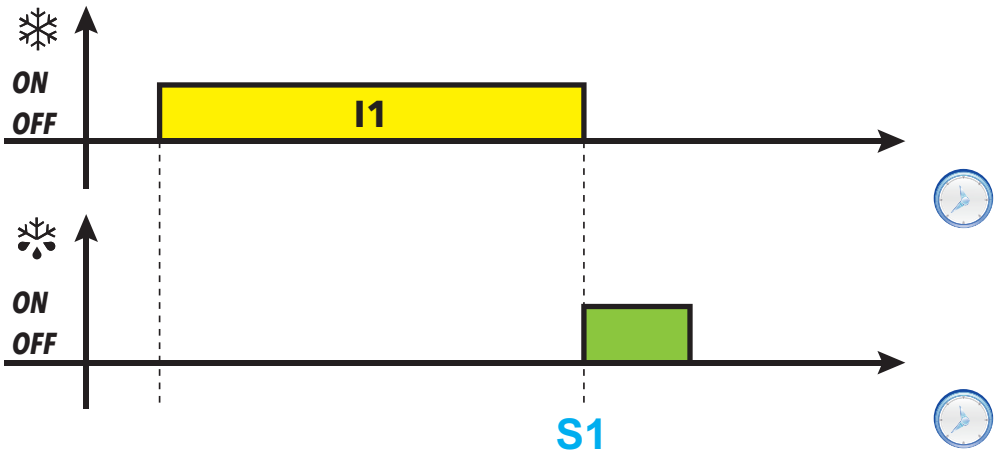
Legend: **I1** = Controller on time (equal to **dit**); **S1** = Defrost start.

Compressor stop

This defrost can be configured via the following parameters:

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

Regulation diagram



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

Evaporator temperature

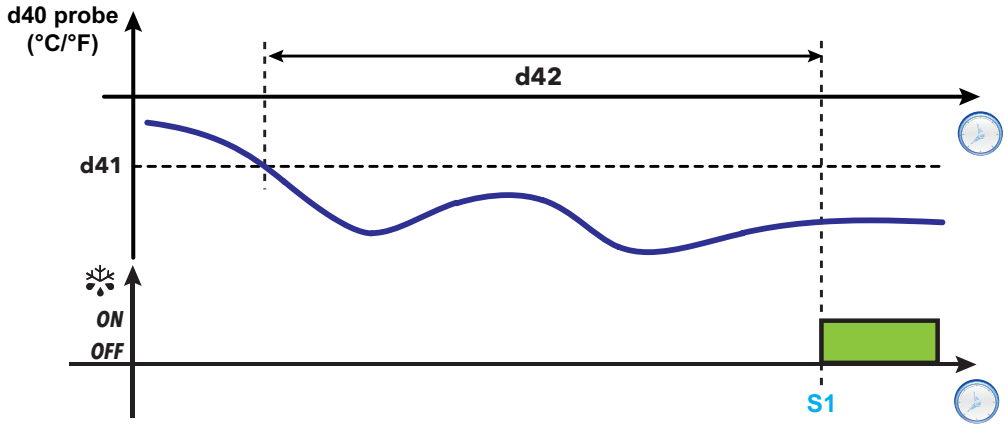
This defrost can be configured via the following parameters:

Parameter	Description
d40	Selects evaporator 1 probe (see **dP1**) (only refers to defrost with threshold). • **diS** (0) = disabled • **Pb1** (1) = defrost runs according to the value read by probe Pb1 • **Pb2** (2) = defrost runs according to the value read by probe Pb2 • **Pb3** (3) = defrost runs according to the value read by probe Pb3 • **Pb4** (4) = defrost runs according to the value read by probe Pb4 • **Pbi** (5) = defrost runs according to the value read by virtual probe • **Pbr** (6) = defrost runs according to the value read by remote probe • **PbL** (7) = defrost runs according to the value read by remote probe (Field Bus)
d41	Sets the defrost activation threshold (on the value read by evaporator 1 probe)
d42	Sets the maximum time for which the evaporator can remain under the threshold **d41**
d43	Sets the type of incremental time count in which the evaporator temperature remains under the threshold value. • **0** = incremental count independent of the compressor status • **1** = incremental count with compressor on (when the compressor is off the incremental count is reset) • **2** = incremental count independent of the compressor status. The incremental count stops when the temperature rises above the threshold **d41** • **3** = incremental count with compressor on and until the temperature rises above the threshold **d41**
d44	Sets the threshold management mode. • **AbS** (0) = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **rEL** (1) = relative value (offset **d41** negative, compared to the temperature of defrost probe **d40** at the end of first thermostatation cycle) • **AdP** (2) = Adaptive defrost : absolute referred to **d45** or relative threshold (negative offset **d41**, comparated to the temperature of defrost probe **d40** at the end of first thermostatation cycle).
d45	Evaporator 2 defrost activation threshold (if **H45** > 0, counting is active when the probe is under the threshold value)

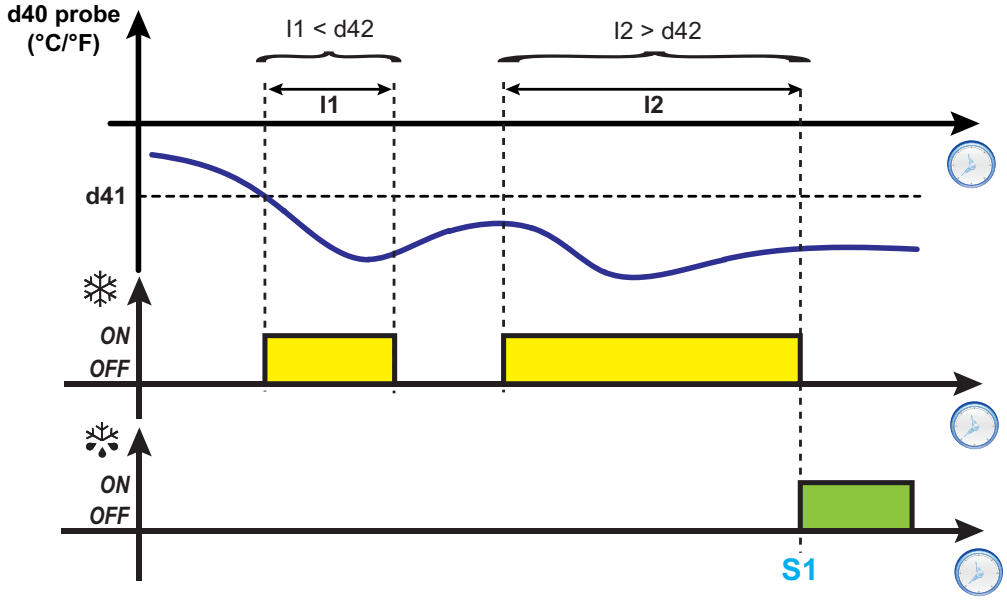
Note: this function can only be activated in models which manage probe **d40** (as long as the conditions are correct to do so).

Regulation diagrams

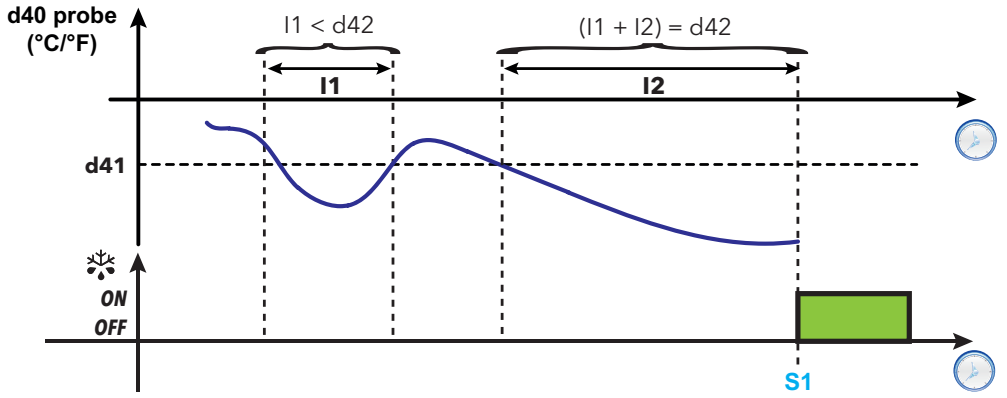
d43 = 0: count independent of the compressor status



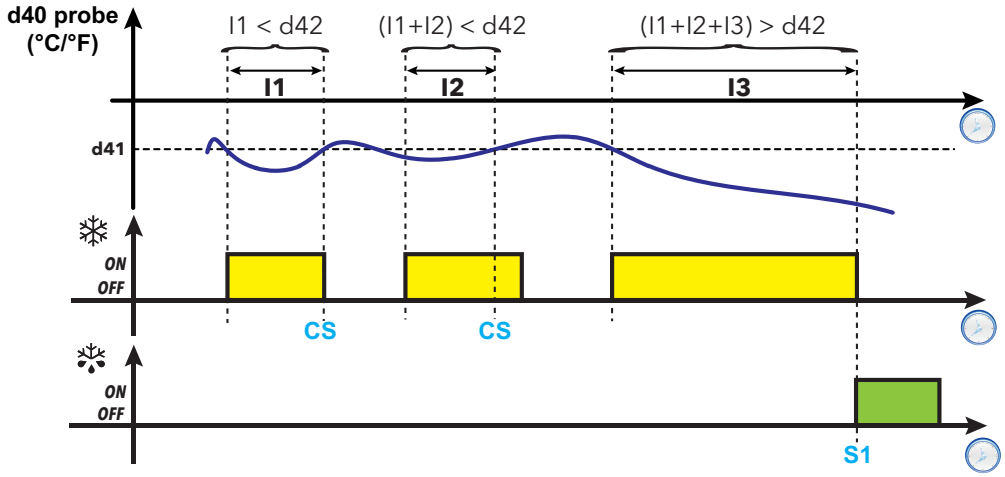
d43 = 1: count with compressor on



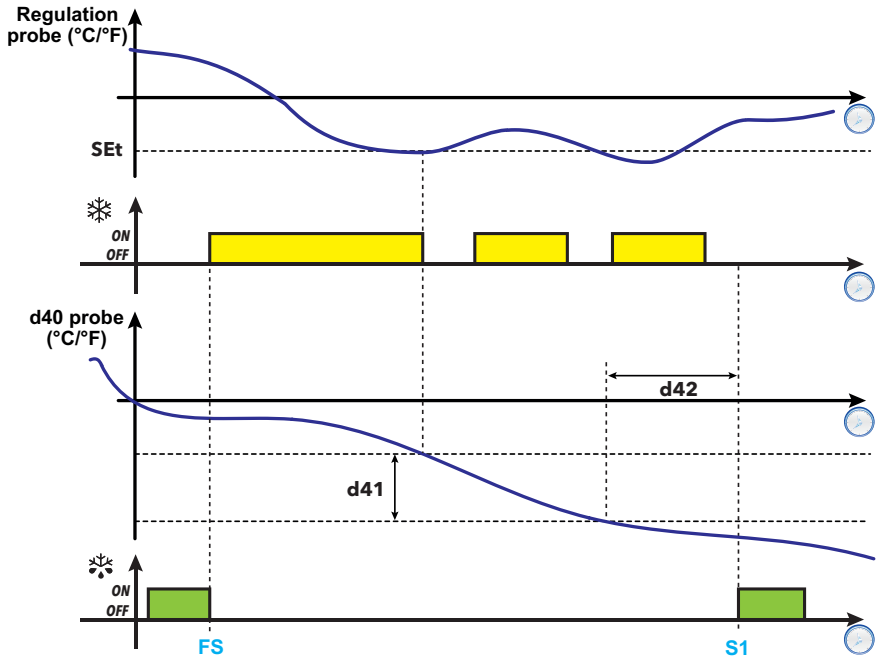
d43 = 2 : count independent of compressor status, count active for d40 probe values below threshold d41



d43 = 3 : count with compressor on, count active for d40 probe values below threshold d41



d44 = rEL: Threshold in relative value



Legend: **I1, I2, I3** = Times with count active; **FS** = End of defrost; **S1** = Defrost start; **CS** = Count stop (d40 probe > **d41**).

RTC (Real Time Clock)

This defrost can be configured via the following parameters:

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

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

RTC operation at time intervals

If RTC at time intervals mode is selected (**d90**=1), up to 6 different defrost intervals can be programmed. The intervals can be customized to different schedules for weekdays (**dxH**, **dxn**) or weekends/holidays (**FxH**, **Fxn**).
Note: it is not possible to set the maximum duration or the defrost end temperature for a single defrost event.

RTC operation at fixed intervals

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

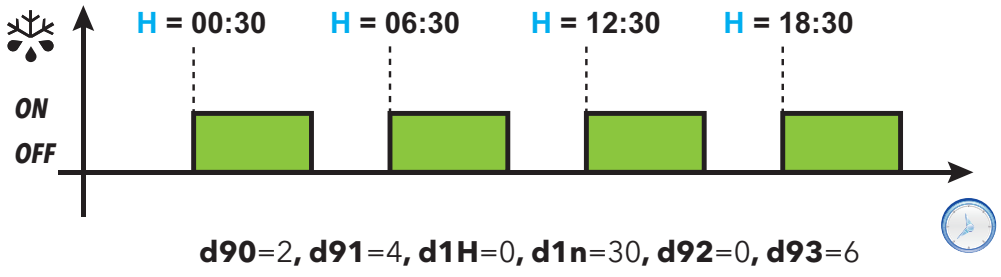
- **d1H** (weekday start hour)
- **d1n** (weekday start minute)
- **F1H** (weekend/holiday start hour)
- **F1n** (weekend/holiday start minute).

Regular RTC operation

If regular interval RTC is selected (**d90**=3), the first defrost begins at the time programmed using parameters **d1H**, **d1n** (**F1H** and **F1n** are not taken into account).
After **d94** days from the first defrost, at the time **d1H** & **d1n**, a new defrost begins. After **d94** days from the second defrost, at the time **d1H** & **d1n**, a new defrost begins and so on.
Note: No distinction is made between weekdays and weekends/holidays. The value of parameter **d92** is not important.

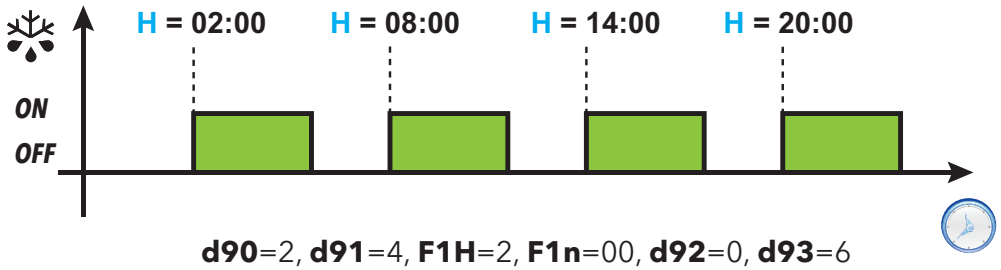
Regulation diagrams

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



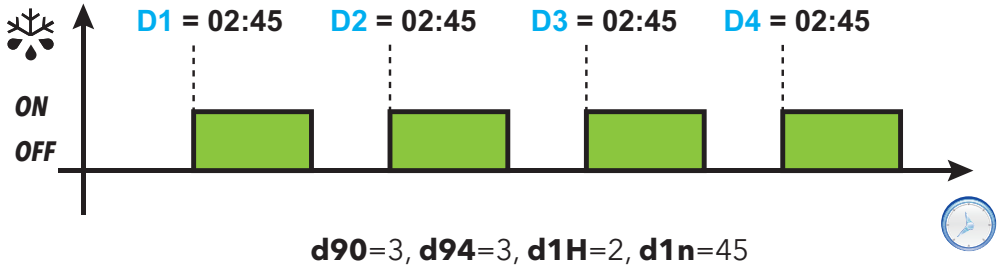
d90=2, **d91**=4, **d1H**=0, **d1n**=30, **d92**=0, **d93**=6

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



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

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



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

Legend:

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

Standard defrost

To select this defrost mode, set parameter **dty** (defrost type).
Defrost takes place due to the evaporator heating up, in one of the following ways:

dty value	Defrost mode
0	Electric heater defrost (with dedicated relay for heating resistance)
	Defrost due to compressor stoppage (without dedicated relay for defrost)
1	Cycle inversion (hot gas) defrost
2	Free defrost

Electric heater defrost

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

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

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

End of defrost

Defrost ends in the following conditions:

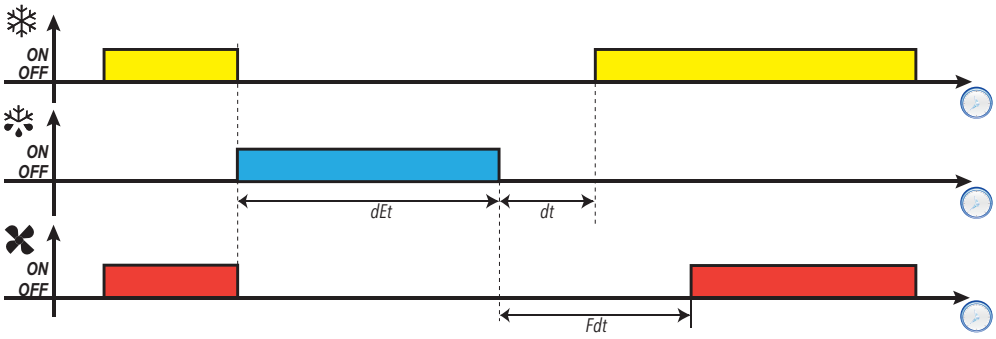
Condition	dP1	Evaporator probe
End of timeout period set using parameter **dEt**.	diS	Not managed
Defrost end setpoint set using parameter **dS1** reached or due to timeout if the setpoint is not reached within the time period **dEt**.	≠diS	Managed

Notes:

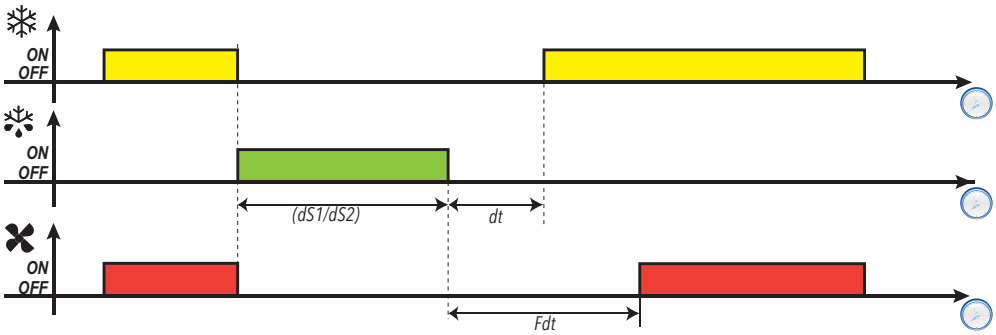
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dS1** intervenes before **dEt**, dripping (managed by parameters **dt** and **Fdt**) is activated in correspondence with **dS1** intervention
- If **Fdt** < **dt**, **Fdt** = **dt** is set
- During the defrost the fans are off if **dFd** = y, otherwise they follow the other settings for the fan regulator
- The programmed defrost is carried out independently of the evaporator probe status (see **dP1**)
- 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.
dP1	Sets evaporator 1 probe.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
d40	Selects Evaporator 1 probe.
Fdt	Fan activation delay after a defrost.
dFd	Evaporator fan exclusion during defrost.
dt	Dripping duration.

Defrost due to compressor stoppage

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

- The compressor stops
- The defrost can stop only for timeout (condition defined by **dEt** parameter)

End of defrost

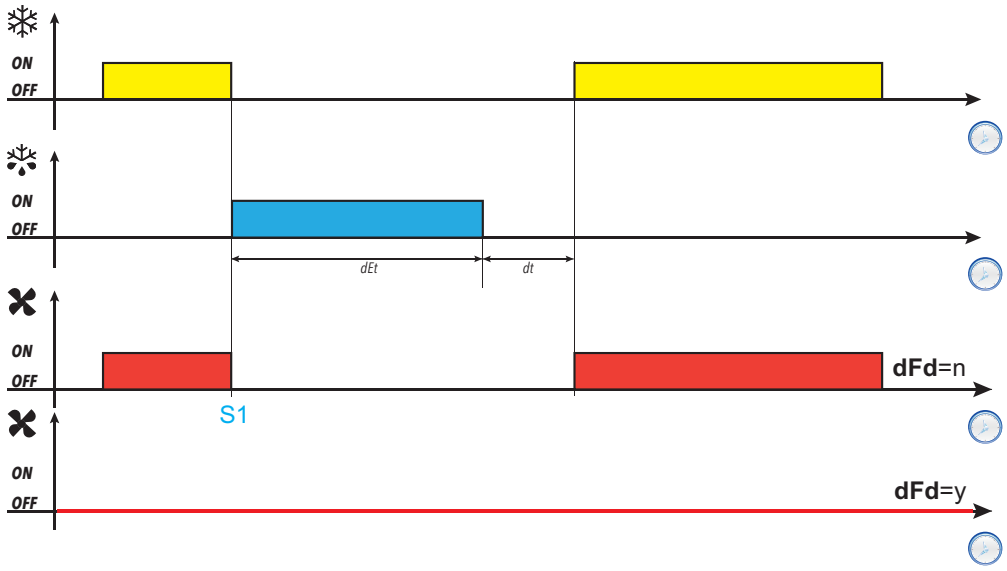
Defrost ends in the following conditions:

Condition	dP1	Evaporator probe
End of timeout period set using parameter **dEt**.	diS	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**.	≠diS	Managed

Notes:

- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- If **dt** ≠ 0, at the end of defrost the compressor and fans remain off for the time period **dt** (dripping time)
- During the defrost the fans are off if **dFd** = y, otherwise they follow the other settings for the fan regulator
- The programmed defrost is carried out independently of the evaporator probe status (see **dP1**)
- Defrost and dripping are carried out independently of the door switch activation or not

Regulation diagram



Legend: **S1** = Start of defrost

Parameters

Parameter	Description
dP1	Sets evaporator 1 probe.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dFd	Evaporator fan exclusion during defrost.
dt	Dripping duration.

Cycle inversion (hot gas) defrost

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

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

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

End of defrost

Defrost ends in the following conditions:

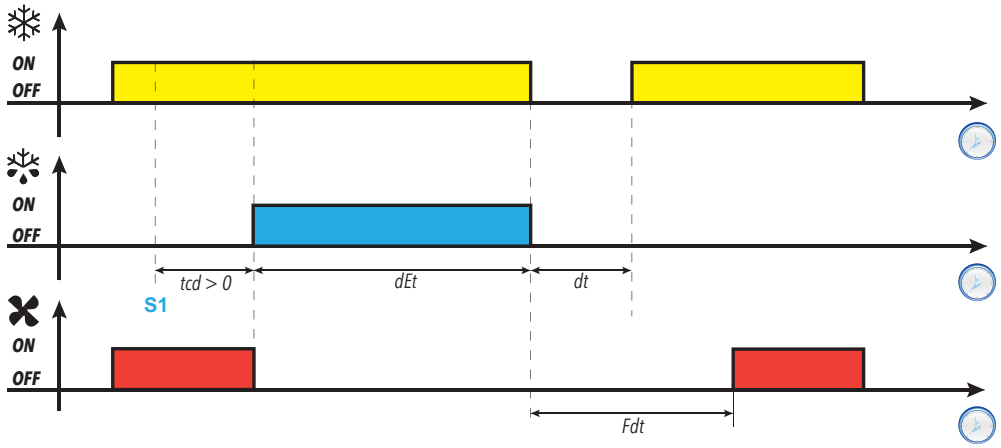
Condition	dP1	Evaporator probe
End of timeout period set using parameter **dEt**	diS	Not managed
Defrost end setpoint set using parameter **dS1** reached or due to timeout if the setpoint is not reached within the time period **dEt**.	≠diS	Managed

Notes:

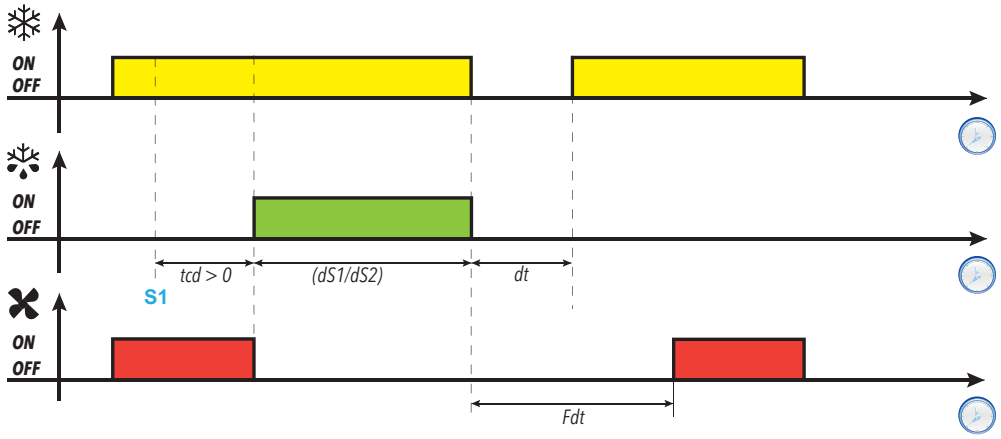
- To end defrost manually, switch the controller off and on again or use Stand-by function
- Temperature alarms are excluded during defrost
- The compressor safety timings (managed by parameters **don**, **doF** and **dbi**) take priority over defrost
- If **dS1** intervenes before **dEt**, dripping (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 evaporator probe status (see **dP1**)
- Defrost and dripping are carried out independently of the door switch activation or not

Regulation diagrams

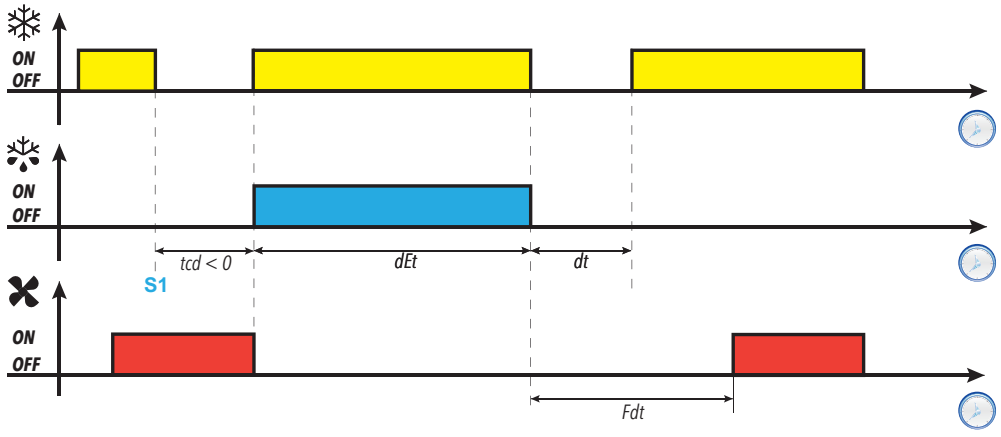
End of hot gas defrost due to timeout, with tcd > 0



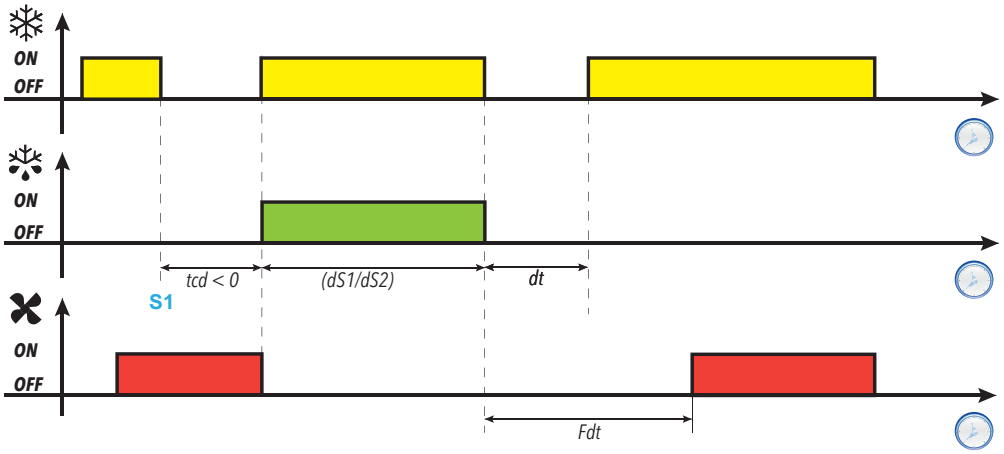
End of hot gas defrost due to temperature, with tcd > 0



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.
dP1	Sets evaporator 1 probe.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dFd	Evaporator fan exclusion during defrost.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Free defrost

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

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

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

End of defrost

Defrost ends in the following conditions:

Condition	dP1	Evaporator probe
End of timeout period set using parameter **dEt**	diS	Not managed
End of defrost temperature setpoint, set using parameter **dS1**, reached. **Note**: If the setpoint is not reached within the time set using parameter **dEt** (defrost timeout), the defrost ends in any case due to timeout.	≠diS	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 evaporator probe status (see **dP1**)
- Defrost and dripping are carried out independently of the door switch activation or not

Parameters

Parameter	Description
dP1	Sets evaporator 1 probe.
dty	Type of defrost.
dEt	Defrost timeout. Determines the maximum duration of the defrost.
dS1	Evaporator 1 defrost end temperature.
Fdt	Fan activation delay after a defrost.
dt	Dripping duration.

Double evaporator defrost

Introduction

To activate this function:

- Configure a relay output as a second evaporator using parameter **H2x** = 10 (if **H45** ≠ 4 only)
- Configure the type of double defrost management using parameter **H45**
- Configure evaporator 2 probe using parameter **dP2**.

Functioning conditions

Defrost in dual evaporator mode can be carried out in 4 different ways:

H45	Description
0	Evaporator 1 defrost probe value (**dP1**) under the threshold **dS1**. **Note**: The evaporator 2 is not taken into account.
1	At least one evaporator has the conditions for defrosting: • Evaporator 1 defrost probe value (**dP1**) under the threshold **dS1** or • Evaporator 2 defrost probe value (**dP2**) under the threshold **dS2**
2	Both evaporators have the conditions for defrosting: • Evaporator 1 defrost probe value (**dP1**) under the threshold **dS1** and • Evaporator 2 defrost probe value (**dP2**) under the threshold **dS2**
3	Defrost is activated on Evaporator 1 and Evaporator 2 alternately.
4	End of defrost using two probes (**dP1** e **dP2**).

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 defrost end temperature (**dS1** and **dS2**) or when a timeout takes place. If a probe error is detected, the end of the defrost will be for timeout depending on **dEt** parameter.

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 (**dS1**) 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 **dP2** probe is not configured as an Evaporator 2 probe (**dP2** = diS) 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

In the below table, the following assumption are takes:

- **dP1** is the evaporator 1 probe
- **dP2** is the evaporator 2 probe

H45	Function	Start of defrost	End of defrost
0	Defrost on Evaporator 1	**dP1** probe < **dS1**	**Evaporator 1** • **dP1** probe > **dS1** or • Timeout if **dP1** probe < **dS1** or • Timeout if **dP1** probe in error **Evaporator 2** • **dP2** probe > **dS2** or • Timeout if **dP2** probe< **dS2** or • Timeout if **dP2** probe in error
	Defrost on Evaporator 2	**dP1** probe < **dS1**	
1	Defrost on Evaporator 1	**dP1** probe < **dS1**	
	Defrost on Evaporator 2	**dP2** probe < **dS2**	
2	Defrost on Evaporator 1	**dP1** probe < **dS1** and **dP2** probe < **dS2***	
	Defrost on Evaporator 2	**dP1** probe< **dS1** and **dP2** probe < **dS2***	
3	Defrost is activated on Evaporator 1 and Evaporator 2 alternately.		
4	End of defrost using two probes.		
H45	**Function**	**Start of dripping**	**End of dripping**
-	Dripping	• If **H45** ≠ 3: it is activated when both evaporators have finished defrosting. • If **H45** = 3: it is activated on the evaporator that was active when it finishes defrosting.	As for defrost with single evaporator

(*): If **dP2** probe is in error or not setting and a digital output is configured as Evaporator 2, the condition **dP2** probe <**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.
dP1	Sets evaporator 1 probe.
dP2	Sets evaporator 2 probe.
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.
H21	Digital output Out1 configuration.
H22	Digital output Out2 configuration.
H23	Digital output Out3 configuration.
H24	Digital output Out4 configuration.
H45	Defrost input mode for applications with dual evaporator.

Drop defrost

Introduction

This function can only be activated in models which manage evaporator 1 probe (as long as the conditions are correct to do so).

Preliminary

The “Drop defrost” algorithm, when enabled by **d60** > 0, help prevents defrost cycles from being executed if the evaporator conditions do not re quire them: in any case, the algorithm cannot skip several defrosts greater than **d60** value.
A counter keeps the number of defrost to skip.

Functioning conditions (see example)

At startup, the first **d63** defrost cycles (system ramp-up) are always executed without incrementing the skip counter (steps 1, 2, 3).

Starting from the (**d63 + 1**) defrost cycles, the skip counter begins to update (step 4).

The threshold for evaporator 1 (**SE1**) is calculated as follows: **SE1** = (**d61** / 100) x **dEt**.

After start-up, if the defrost cycle ends before reaching **SE1** time, the skip defrost counter is incremented by ‘1’ (steps 4, 7, 11, 16).

When the counter reaches ‘1’, a defrost is performed and the next one is skipped.

If the next executed defrost ends before **SE1** (step 7), the counter increases to ‘2’, a defrost is performed (step 8), and the next two defrosts are skipped (steps 9, 10).

If the following defrost again ends before **SE1** (step 11), the counter increases to ‘3’, a defrost is performed, and the next 3 defrosts are skipped.

Once the counter reaches the maximum value **d60** skipped defrosts (for example **d60** = 4), it is reset, and the algorithm restarts.

If at any point a defrost cycle ends after **SE1**, the next defrost is executed normally, and the counter is reset.

Optimized defrosting resumes as soon as a defrost cycle ends before **SE1**.

Manual defrosts is triggered via keypad, digital input, deep cooling, or supervisor commands and are always executed and do not affect the skip counter, except when they occur before a mandatory defrost following skipped cycles (steps 5, 8, 12, 17, 23). In this specific case, the skip counter is incremented by ‘1’ after the manual defrost is completed or triggered. If a manual defrost ends after **SE1**, the skip counter is reset.
Optimized defrosting will resume once a defrost cycle ends before **SE1**.

Example

In the below example, the following assumption are takes:

- **d60** = 4
- **d63** = 3

	STEPS																									
DS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Time < SE1	-	-	-	Y	-	-	Y	-	-	-	Y	-	-	-	-	Y	-	-	-	-	-	Y	-	-	Y	-
Counter	0	0	0	1	1	1	2	2	2	2	3	3	3	3	3	4	4	4	4	4	4	1	1	1	2	2
Skipped	N	N	N	N	N	Y	N	N	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	Y	N	N
																						RESTART				

Legend: **DS** = Defrost Steps; **Time** = Indicate if defrost duration is less then **d61** value (Y = yes; N = no); **Counter** = Value of the counter; **Skipped** = Indicate if the defrost is skipped (Y = yes; N = no).

Parameters

Parameter	Description
d60	Maximum number of defrost to skip. **0** = disabled.
d61	Nominal defrost duration percentage 1.
d63	Number of defrost cycles at start-up for system ramp-up (without incrementing the counter).
dEt	Defrost timeout. Determines the maximum duration of the defrost.

Functions

Contents

This section includes the following topics:

Door switch

Description

By setting **H1x** = ±4, it is possible to connect a door switch to the digital input. When activated, it can:

- disabled the compressor either immediately or after a delay defined by parameter **dCo**.
- enabled the fans either immediately or after a delay defined by parameter **dFo**.

It's also possible to associate an auxiliary (AUX) output relay.

Operating mode

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

1) IDNext 1485 SBCL e IDNext 1385 SBCL

dod	dCo	dFo	Action	Compressor	VSC	Fans
0	---	---	Door switch disabled	ON	ON	ON
1	---	0	Fans disabled	ON	ON	OFF
	---	>0		ON	ON	OFF after **dFo**
2	0	---	Compressor and VSC disabled	OFF	OFF	ON
	>0	---		OFF after **dCo**	OFF after **dCo**	ON
3	0	0	Fans, Compressor and VSC disabled	OFF	OFF	OFF
	>0	>0		OFF after **dCo**	OFF after **dCo**	OFF after **dFo**
4	**RESERVED**					
5	**RESERVED**					
6	**RESERVED**					
7	**RESERVED**					
8	**RESERVED**					
9	**RESERVED**					
10	**RESERVED**					

2) IDNext 1385 SBCIL

dod	dCo	dFo	Action	Compressor	VSC	Fans
0	---	---	Door switch disabled	ON	ON	ON
1	---	0	Fans disabled	ON	ON	OFF
	---	>0		ON	ON	OFF after **dFo**
2	0	---	Compressor and VSC disabled	OFF	OFF	ON
	>0	---		OFF after **dCo**	OFF after **dCo**	ON
3	0	0	Fans, Compressor and VSC disabled	OFF	OFF	OFF
	>0	>0		OFF after **dCo**	OFF after **dCo**	OFF after **dFo**
4	0	0	Compressor disabled, VSC min speed	OFF	MS	ON
	>0	>0		OFF after **dCo**	MS after **dCo**	ON
5	0	0	Fans and Compressor disabled, VSC min speed	OFF	MS	OFF
	>0	>0		OFF after **dCo**	MS after **dCo**	OFF after **dFo**
6	---	0	Fans enabled	ON	ON	ON
	---	>0		ON	ON	**(3)**
7	0	---	Compressor and VSC enabled	ON	ON	ON
	>0	---		**(1)**	**(1)**	ON
8	0	0	Fans, compressor and VSC enabled	ON	ON	ON
	>0	>0		**(1)**	**(1)**	**(3)**
9	0	---	Compressor enabled, VSC min speed	ON	ON	ON
	>0	---		**(1)**	**(2)**	ON
10	0	0	Fans and Compressor enabled, VSC min speed	ON	ON	ON
	>0	>0		**(1)**	**(2)**	**(3)**

Legend: **ON** = enabled; **OFF** = disabled; **MS** = VSC Minimum speed; **VSC** = VSC compressor.

(1) Compressor or VSC disabled when the door is opened and enabled after the **dCo** time

(2) VSC compressor at minimum speed when the door is opened and enabled after the **dCo** time

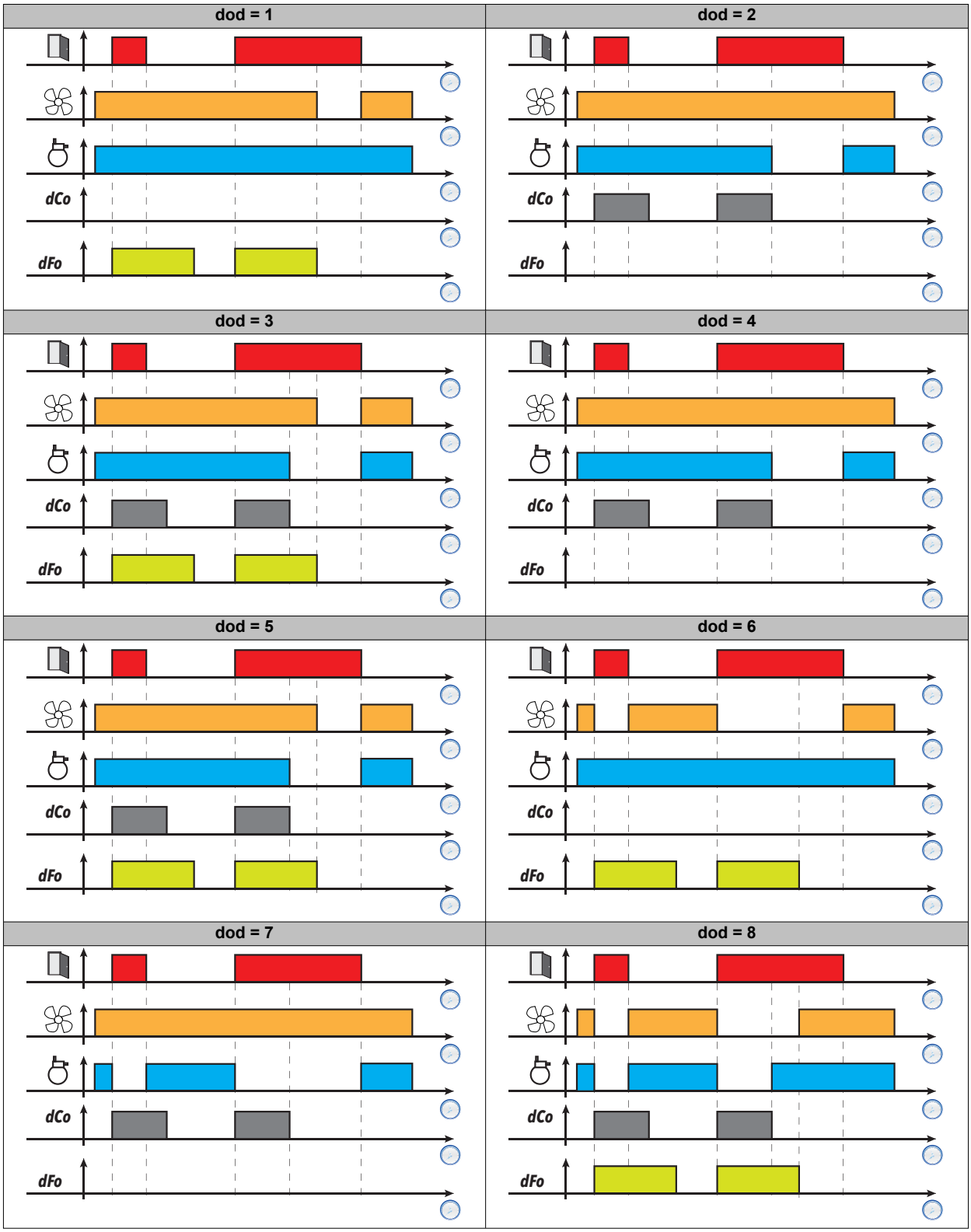
(3) Fans disabled when the door is opened and enabled after the **dFo** time

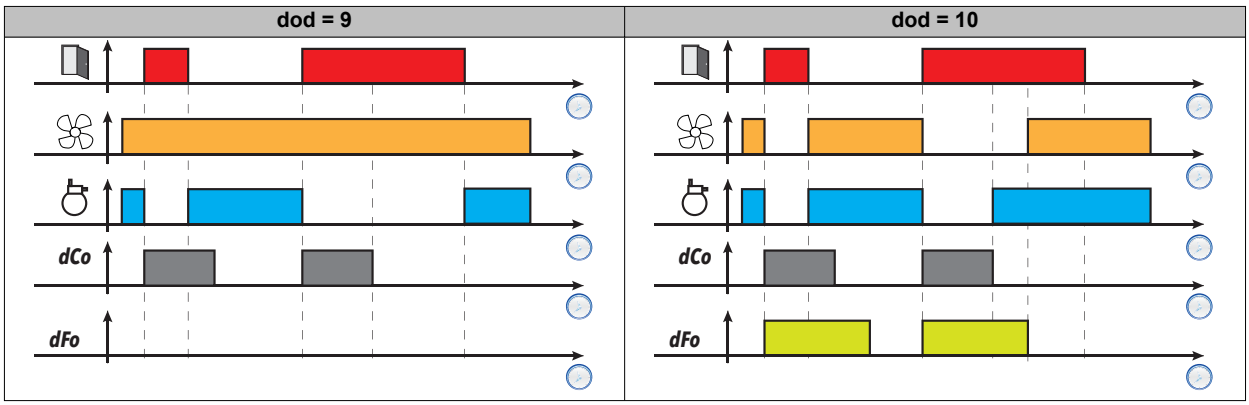
Note: If the door is opened during a defrost cycle, the defrost continues normally.

Other parameters involved in the operation of the door regulator are: **dAd**, **oAo**, **tdo**, **AuP** and **dCd**.
When the door is closed, the fans remain off for a time period equal to **dCd**. The door opening generates an 'Open Door Alarm'.

Regulation diagrams

Depending on parameter **dod**, the following behavior are considered:





Parameters

Parameter	Description
dod	Utilities switched off upon activation of the digital input set for the micro 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.
dCd	Fan activation delay after closing door.
H11	**DI1** digital input/polarity configuration.
H12	**DI2** digital input/polarity configuration.
H13	**DI3** digital input/polarity configuration.
H14	**DI4** digital input/polarity configuration.
H15	**DI5** digital input/polarity configuration.

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 Field Bus (configured with **L05** = 1)
- 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.

If **H06** = **1**, the "AUX" and "Light" regulators remain active during stand-by, and the output state can be Set/Reset through either keypad or digital input.

Parameters

Parameter	Description
PAo	Alarm exclusion time when switching on the controller, after a power failure
odo	Output activation delay after startup
L05	Stand-by synchronization
H08	Stand-by operating mode
H11	**DI1** digital input/polarity configuration.
H12	**DI2** digital input/polarity configuration (on TTL port).
H13	**DI3** digital input/polarity configuration
H14	**DI4** digital input/polarity configuration
H15	**DI5** digital input/polarity configuration
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 the controller during the upload/download phases.

Formatting the UNICARD

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

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

Uploading parameters from the controller to the UNICARD

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

Downloading parameters from the UNICARD to the controller

Connect the UNICARD when the controller is switched off. When the controller is switched on, the data is downloaded automatically from the UNICARD to the controller. On the display shows **dLy** if the operation was successful, otherwise it will show **dLn**.
Note: after downloading the data, the instrument will work with the settings for the loaded map straight away.

Bootloader firmware

Description

The device comes with bootloader, which makes it possible to update the firmware directly on site. Updating takes place via UNICARD.
If the UNICARD is detected, the bootloader checks its contents for a valid Firmware update and, if yES, it starts the Firmware update.

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 not authenticated, 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 until the Unicard is removed and the controller is power cycled (after that the former applicative restart).

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

Display

During the application update, the display shows:

- **Bright pattern** (sequence of display segments): during firmware verification
- **Display off**: during firmware update
- **Err**: when an error occurs during firmware updating. Restart the device manually
- **display active**: When firmware updating successful and device automatically restarts.

Regulators

Contents

This section includes the following topics:

Single Thermostat - Heat/Cool (rE=0)

Description

The regulator can work with an absolute or relative differential, both in Heat and Cool modes, and is controlled by the value of Regulation 1 probe (see **rP1**).

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 1 probe is not in error (see **rP1**)
- 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)

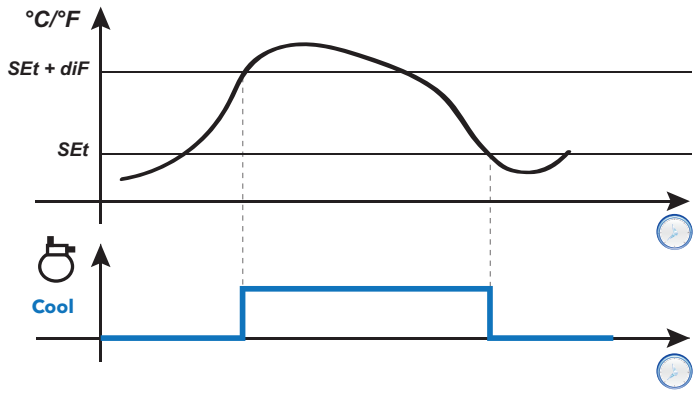
If an offset is activated on the setpoint (**oSP**) and on the differential, then:

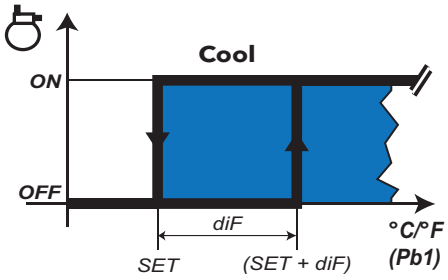
- **SEt** will be replaced by the value (**SEt + oSP**)
- **diF** will be replaced by the value (**diF + 4.0**)

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

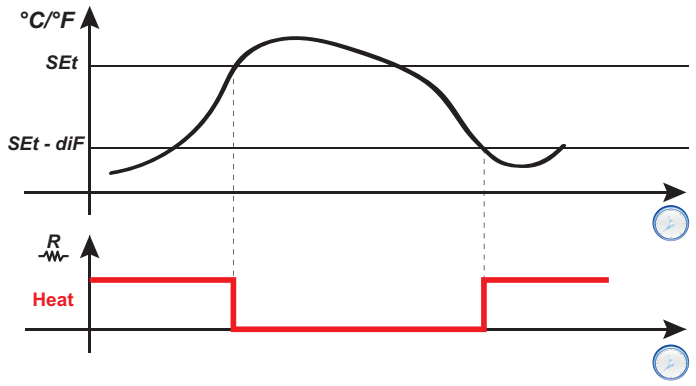
Regulation diagrams

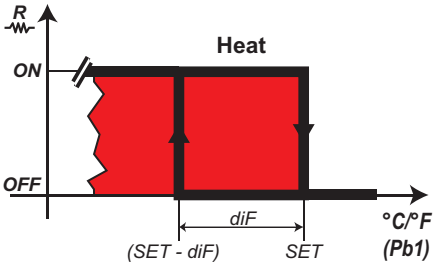
Cooling Regulation (**HC**(0) = C)





Heating Regulation (**HC**(1) = H)





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

Parameters

Parameter	Description
rE	Sets the temperature control type to perform
rP1	Regulation 1 probe selection
SEt	Regulation setpoint 1
diF	Regulator 1 activation differential

Parameter	Description
oSP	Offset on setpoint 1
HC	Select regulation 1 mode (**C**(0) = Cool; **H**(1) = Heat)
odo	Output activation delay after startup

Dual Thermostat in series (rE=1)(IDNext 1385 SBCIL only)

Description

The regulator, when set to **rE**=1, activates heating/cooling production based on the condition of two separate thermostats (cabinet with 2 probes: one inlet and one outlet).
The regulation requires configuring the two desired probes via parameters **rP1** and **rP2**.

Functioning conditions

The regulator:

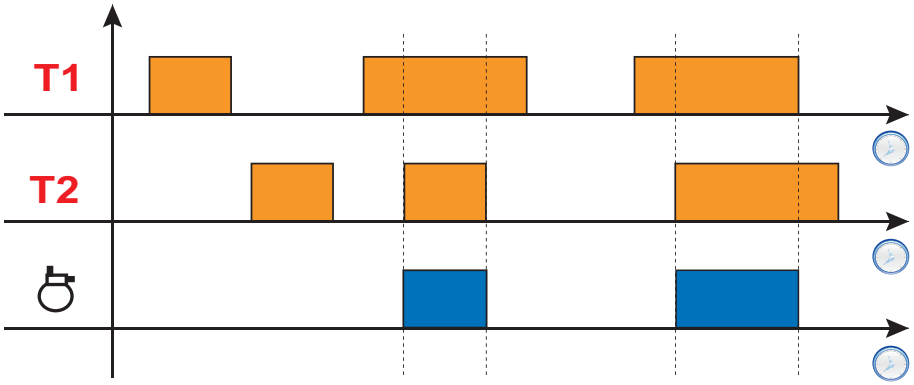
- Activates heating/cooling production only if both thermostats are calling
- Deactivates heating/cooling production if at least one of the two thermostats is satisfied

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 1 probe is not in error (see **rP1**)
- 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)

In the event of a probe error on one or both thermostats, regulation will use the probe error parameters.

Regulation diagram



Legend: **T1** = Progress of Thermostat 1 probe (**rP1**); **T2** = Progress of Thermostat 2 probe (**rP2**).

Parameters

Parameter	Description
rE	Sets the temperature control type to perform
rP1	Regulation 1 probe selection
SEt	Regulation setpoint 1
diF	Regulator 1 activation differential
oSP	Offset on setpoint 1
HC	Select regulation 1 mode (**C**(0) = Cool; **H**(1) = Heat)
rP2	Regulation 2 probe selection
SP2	Regulation setpoint 2
dF2	Regulator 2 activation differential
HC2	Select regulation 2 mode (**C**(0) = Cool; **H**(1) = Heat)
ont	Compressor output ON time if thermostat 1 probe is not functioning
oFt	Compressor output OFF time if thermostat 1 probe is not functioning
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Dual Thermostat in parallel (rE=2)(IDNext 1385 SBCIL only)

Description

The regulator, when set to **rE**=2, activates heating/cooling production based on the condition of two separate thermostats (combined cabinet: island and upright).
The regulation requires configuring the two desired probes via parameters **rP1** and **rP2**.

Functioning conditions

The regulator:

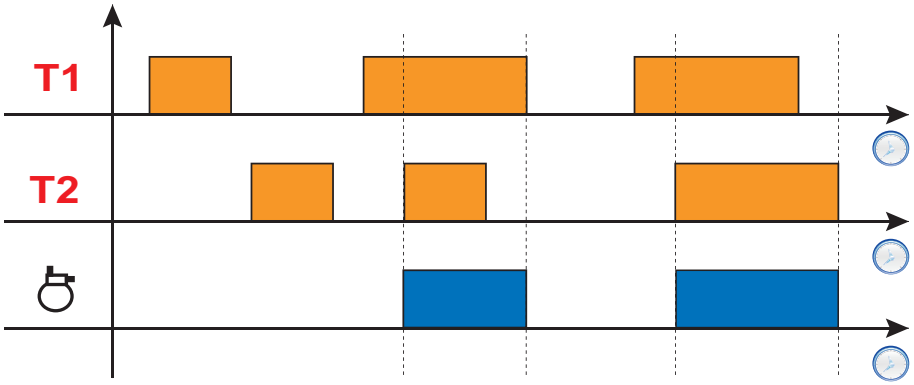
- Activates heating/cooling production only if both thermostats are calling
- Deactivates heating/cooling production only if both thermostats are satisfied

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 1 probe is not in error (see **rP1**)
- 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)

In the event of a probe error on one or both thermostats, regulation will use the probe error parameters.

Regulation diagram



Legend: **T1** = Progress of Thermostat 1 probe (**rP1**); **T2** = Progress of Thermostat 2 probe (**rP2**).

Parameters

Parameter	Description
rE	Sets the temperature control type to perform
rP1	Regulation 1 probe selection
SEt	Regulation setpoint 1
diF	Regulator 1 activation differential
oSP	Offset on setpoint 1
HC	Select regulation 1 mode (**C**(0) = Cool; **H**(1) = Heat)
rP2	Regulation 2 probe selection
SP2	Regulation setpoint 2
dF2	Regulator 2 activation differential
HC2	Select regulation 2 mode (**C**(0) = Cool; **H**(1) = Heat)
ont	Compressor output ON time if thermostat 1 probe is not functioning
oFt	Compressor output OFF time if thermostat 1 probe is not functioning
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Neutral zone (rE=3)(IDNext 1385 SBCIL only)

Description

The regulator, when set to **rE**=3, operates in Neutral Zone mode, managing a temperature range around the setpoint where neither heating nor cooling is active. This function helps prevent the “hunting” phenomenon (continuous switching between heating and cooling) when the ambient temperature fluctuates near the desired value.

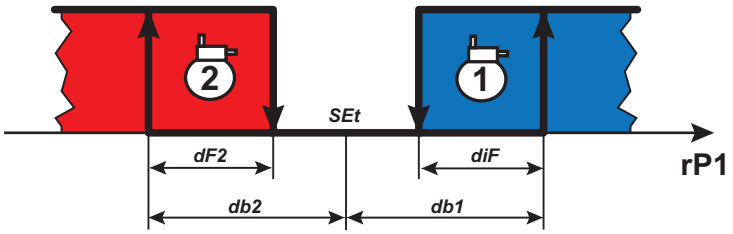
Functioning conditions

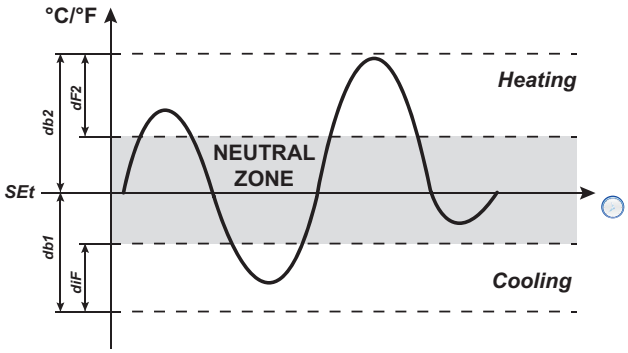
The neutral band is set by defining a range around the setpoint in which the system does not activate either heating or cooling.

The configuration requires setting the following parameters:

- **rE**: Temperature control type
- **SEt**: Regulation 1 temperature
- **rP1**: Reference probe 1
- **HC**: Regulation 1 mode - cooling
- **HC2**: Regulation 2 mode - heating
- **db1**: Response band above setpoint 1
- **db2**: Response band above setpoint 2
- **diF**: Compressor relay intervention differential 1
- **dF2**: Compressor relay intervention differential 2

Regulation diagram





Parameters

Parameter	Description
rE	Sets the temperature control type to perform
rP1	Regulation 1 probe selection
SEt	Regulation setpoint 1
diF	Regulator 1 activation differential
db1	Response band above setpoint 1
oSP	Offset on setpoint 1
HC	Select regulation 1 mode (**C**(0) = Cool; **H**(1) = Heat)
dF2	Regulator 2 activation differential
db2	Response band above setpoint 2
HC2	Select regulation 2 mode (**C**(0) = Cool; **H**(1) = Heat)
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Proportional Band (rE=4)(IDNext 1385 SBCIL only)

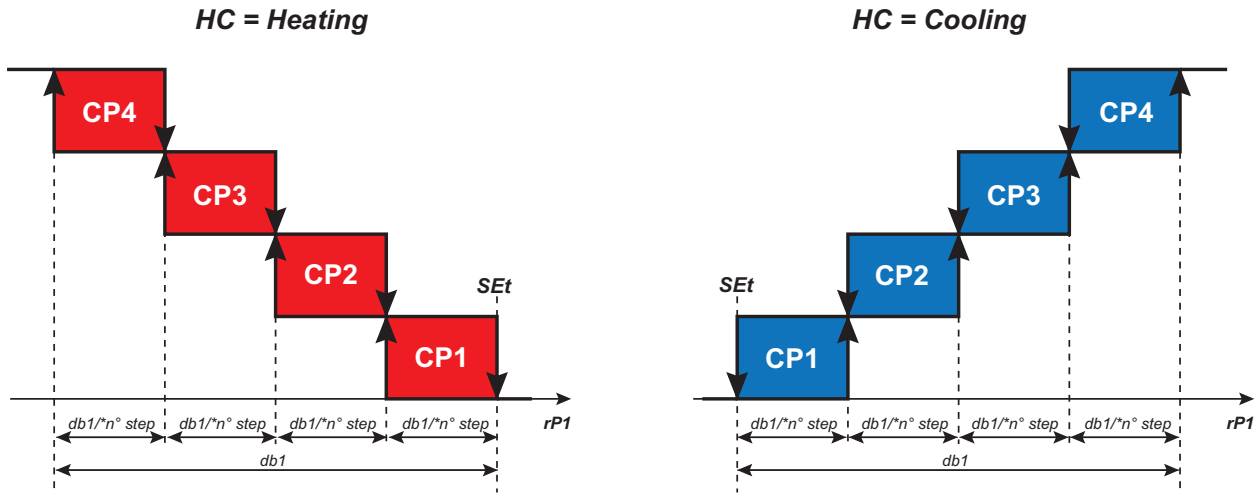
Description

The regulator, when set to **rE**=4, operates in Proportional Band mode, using a temperature range around the setpoint where the system modulates power proportionally to the deviation.

Functioning conditions

Activation/deactivation of power steps require compliance with the activation and release times **tSu** and **tSd**.
In an alarm condition (for example, during a compressor lockout), any power reduction is calculated immediately.
In case of a regulation probe error, the number of active power steps is calculated as a percentage (set by parameter **PPE**) of the total number of steps.

Regulation diagram



Parameters

Parameter	Description
rE	Sets the temperature control type to perform
rP1	Regulation 1 probe selection
SEt	Regulation setpoint 1
db1	Response band above setpoint 1
oSP	Offset on setpoint 1
HC	Select regulation 1 mode (**C**(0) = Cool; **H**(1) = Heat)
PPE	Default power for non-allocated probe/probe error
tSu	Time between increments in refrigeration power
tSd	Time between decrements in refrigeration power
H21	Digital output Out1 configuration
H22	Digital output Out2 configuration
H23	Digital output Out3 configuration
H24	Digital output Out4 configuration

Compressor

Description

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

- the temperature value measured by regulation 1 probe (see **rP1**)
- 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)
- Thermostat 1 probe is not in error (see **rP1**)
- 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.

Parameter **Cod** makes it possible to avoid regulator activation near a defrost cycle. Before activating the compressor, the controller checks whether the next defrost is scheduled after a time period that is less than the value of parameter **Cod**.

Regulator activations is possible also near a defrost cycle.

If the next defrost is scheduled after a time period...	Then the compressor...
less than the value of parameter **Cod**	it is not activated and the icon ❄ flashes.
greater than the value of parameter **Cod**	it is activated.

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

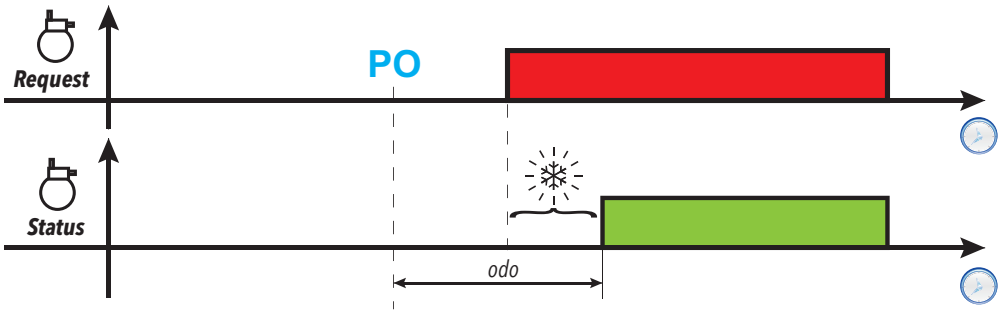
Compressor protections

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

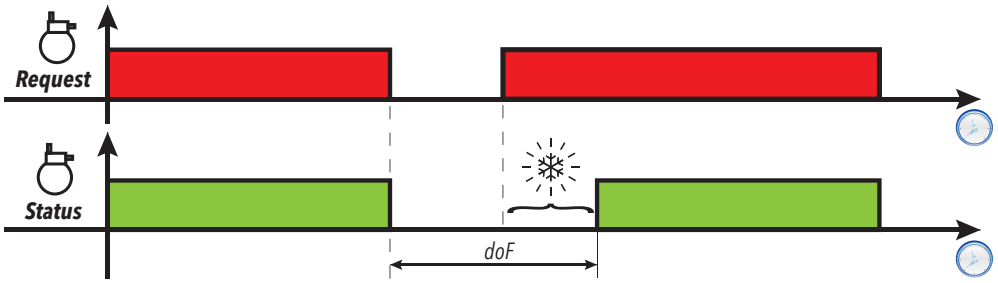
- a delay **doF** between compressor relay switch-off and the next switch-on. If a new activation request arises during the delay **doF**, the compressor icon will flash on the display.
- a delay **dbi** between one compressor startup and the next. The delay **dbi** is calculated from the previous compressor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

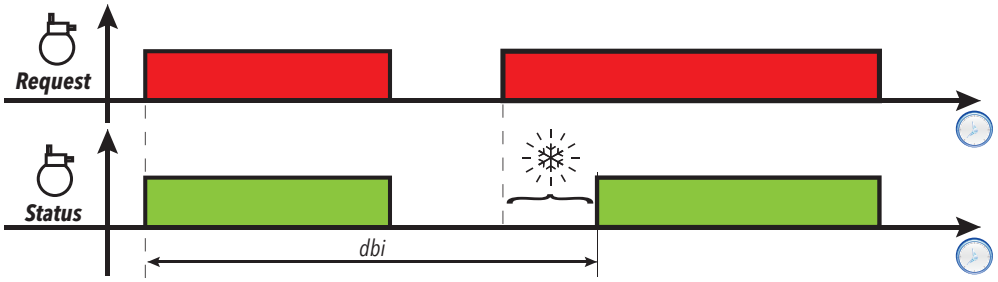
Compressor activation delay from controller power-on



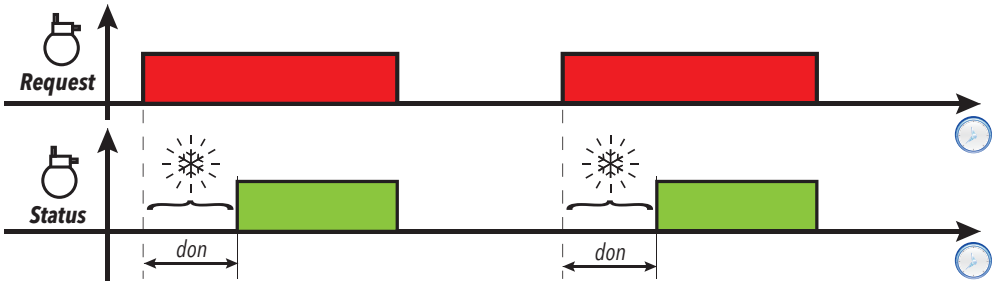
Compressor output activation delay from switch-off



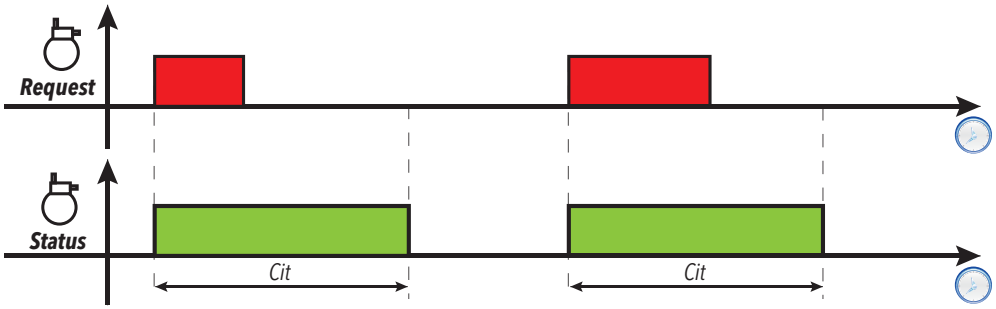
Delay between two consecutive compressor output activations



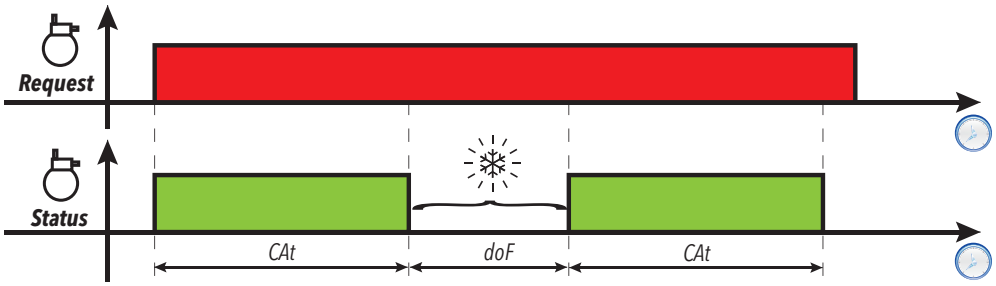
Compressor activation delay from request



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
rP1	Regulation 1 probe selection
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
Cod	Time compressor remains off before a defrost

Managing the compressor with the probe in error

Description

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

- Regulation 1 probe (see **rP1**) is in error
- The display shows **Ex** (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).

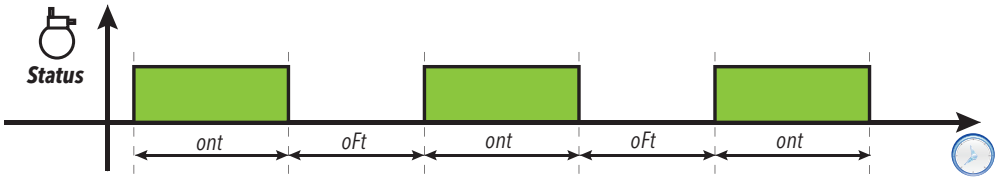
Functioning conditions

Ont	OFt	Compressor output
0	0	inactive
0	>0	inactive
>0	0	active
>0	>0	Duty cycle, regardless of the probe values (regulation 1 probe not working) and requests from other utilities

Note: if regulation 1 probe 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
rP1	Regulation 1 probe selection
ont	Compressor output ON time if thermostat 1 probe is not functioning
oFt	Compressor output OFF time if thermostat 1 probe 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 (IDNext 1385 SBCIL only)

Description

The VSC (Variable Speed Compressor) regulator can only be activated on models equipped with the output **OC**, by setting parameter **02n** = 2.
The regulator is active only in cooling mode by setting **HC** = 0.
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**.

Prior to commissioning, compressors units must be evaluated based on the specifications provided in the manufacturer's datasheet.

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Verify the compressor characteristics in its datasheet to be compatible (1) with our controller before commissioning.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) for any doubt contact Eliwell Technical Support.

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 'wake-up' 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% (wake-up) until the temperature **SEt** + **PdE** is reached.
At the end of a 'wake-up' 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 thermostat 1 probe is greater than **SEt** + **PdS** or less than **SEt** + **PUS**, a countdown of **PUd** begins. When the time has elapsed, an optimized pull-up / wake-up 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.

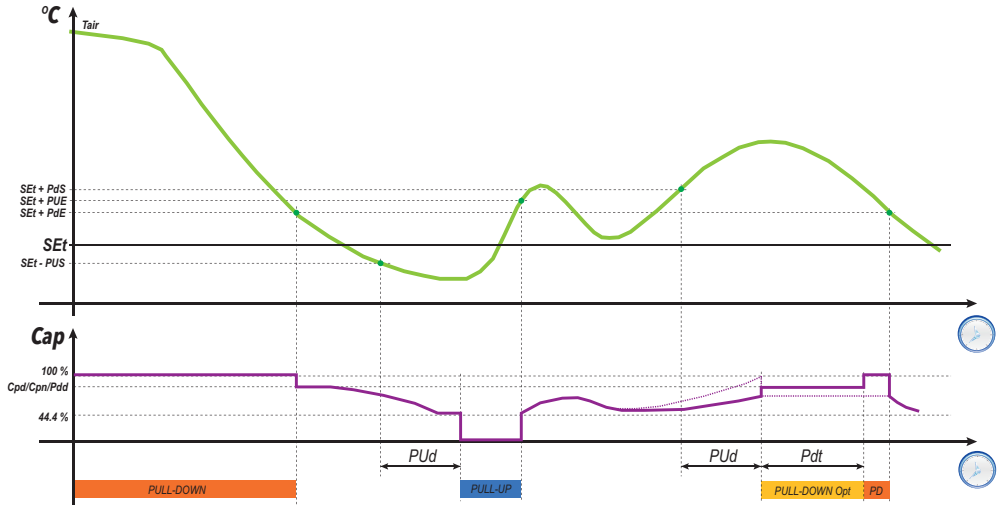
Wake-up/pull-up operation:
- **Wake-up**: when an optimized wake-up is activated, the compressor capacity is forced to the value **Pdd** for a time period **Pdt**. When the time period **Pdt** has elapsed, the capacity should be forced to 100% until the temperature reaches the value (**SP1** + **PdE**).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

When the 'wake-up/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 'wake-up'/'pull-up' cycles are not active), the compressor can be set to a fixed capacity value by setting **CAU** = 1 ('FiH') and setting the value using parameter **CdU** (%).

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

Regulation diagram



Legend: **Tair** = Value read by Thermostat 1 probe; **Cap** = Compressor capacity value; **Pull-Down Opt** = Optimized wake-up; **PD** = Wake-up cycle

Parameters

Parameter	Description
rP1	Regulation 1 probe selection
SEt	Regulation setpoint
don	Compressor relay activation delay from call
doF	Delay between compressor relay switch-off and the next switch-on
HC	Select regulation mode (**C**(0) = Cool; **H**(1) = Heat)
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 wake-up
PUS	Differential for forced activation of a pull-up
PUd	Temperature outside range timeout
PdE	Wake-up end differential
PUE	Pull-up end differential
Pdt	Optimized wake-up timeout
Pdd	Controlled capacity value, if a wake-up is activated, when the time period **PUd** has elapsed
CPd	Controlled capacity after a wake-up in day mode
CPn	Controlled capacity after a wake-up in night mode
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.

Double compressor

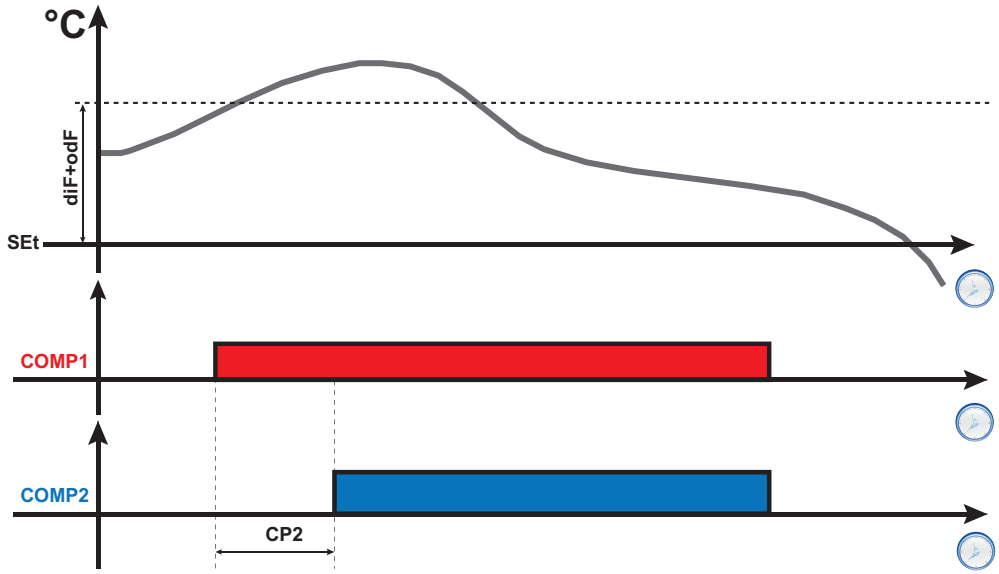
Description

If the regulation mode parameter **rE** = **0**, **1** or **2**) and a digital output is set as compressor 2 (**H2x** = **9**), the controller will manage 2 power steps. Activation of the second step is conditioned at the activation of the first step.
The first step follows all the rules of the main compressor regulator (delays, safety settings, behavior in the event of an inoperable / missing probe).

Functioning conditions

If activated, compressor 2 will use the same setpoint and differential as compressor 1.
Offsets, differentials, etc. relating to the first compressor also apply to the second compressor.
Compressor 2 will be activated once the delay **CP2** has elapsed.

Regulation diagram



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

Deep cooling cycle

Description

The Deep Cooling Cycle (DCC) type can be set using parameter **dCA**.
After deep cooling cycle activation, the interval between 2 programmed defrosts is reset and the defrost disabled.

Operating condition

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

- **dCA**(0) = **dis**: Deep cooling cycle disabled
- **dCA**(1) = **Std**: Manual deep cooling cycle
- **dCA**(2) = **Aut**: Automatic deep cooling cycle

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

- a defrost is forced
- the defrost counters 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 (dCA = Std)

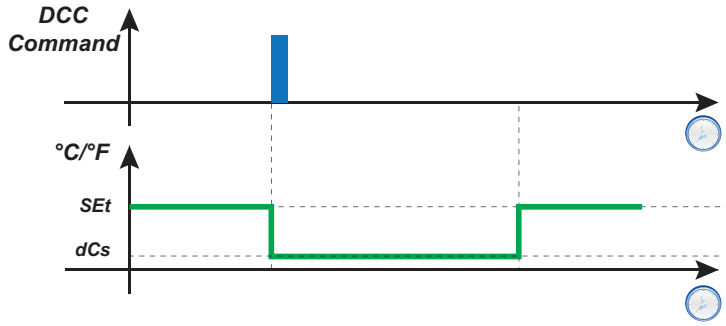
The regulator can be activated manually in one of the following ways:

- 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)

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 (dCA = Aut)

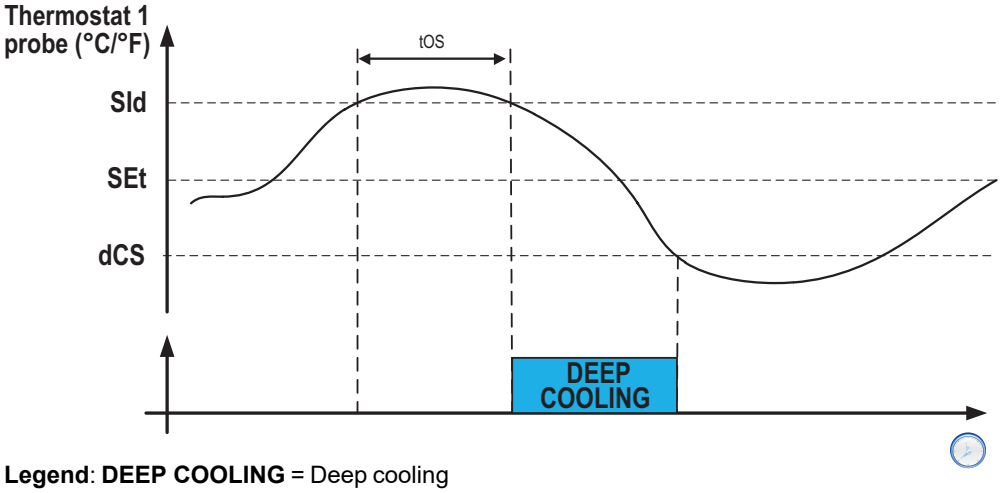
The regulator is activated if the value read by regulation 1 probe remains above the temperature **SId** for a period of time **toS**.

During automatic deep cooling cycle the regulation will work:

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

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

- if **tdC** = 0: it will end when the temperature read by regulation 1 probe 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 fans probe (see **FP1**) is lower than the value of parameter **FSt**.
- The fans regulator is not deactivated from parameter **dFd** during the defrost (**dFd** = yES).
- Dripping is not active (**dt**).
- Fan delay after defrost is not active (**Fdt**).

Regulator activation

The request for fan activation or deactivation can come:

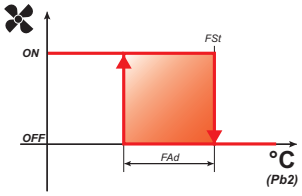
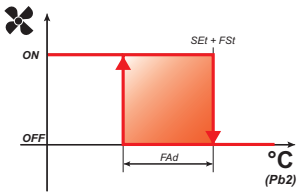
- from the compressor regulator (temperature control mode)
- from the defrost regulator, to control and/or limit the circulation of warm air.

Fan operating modes

			Day		Night	
FP1 probe	**FP1 probe active**	**FCo**	**Compressor ON**	**Compressor OFF**	**Compressor ON**	**Compressor OFF**
Present	YES	0	Thermostat controlled	Off	Thermostat controlled	Off
		1	Thermostat controlled	Thermostat controlled	Thermostat controlled	Thermostat controlled
		2	Thermostat controlled	Duty cycle day	Thermostat controlled	Duty cycle night
		3	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
		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	YES	0	Duty cycle day	Off	Duty cycle night	Off
		1	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
		2	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
		3	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
		4	On	Off	On	Off
		5	On	Off	On	Off
		6	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
Absent	NO	0	On	Off	On	Off
		1	On	Duty cycle day	On	Duty cycle night
		2	On	Duty cycle day	On	Duty cycle night
		3	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night
		4	On	Off	On	Off
		5	On	Off	On	Off
		6	Duty cycle day	Duty cycle day	Duty cycle night	Duty cycle night

Fan operation in regulation mode

During cooling, fan regulation is carried out based on values **FSt** (fan disabling temperature) and **FAd** (fan differential). Parameter **FPt** can be used to select whether the set temperature values are absolute or relative to the setpoint.
Note: around the fan start temperature **Fot**, the differential will always be specified by **FAd** but with the sign inverted.
Regulation diagrams based on whether the values are absolute or relative are shown below:

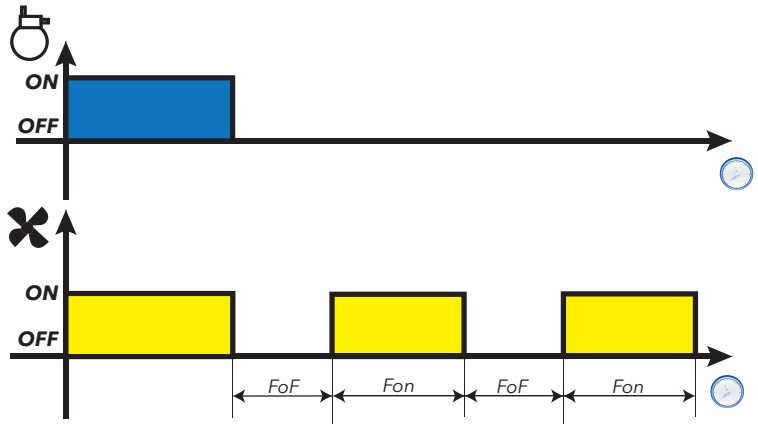
FPt = 0 (absolute values)	**FPt** = 1 (relative values)
	

Fan operation in duty cycle

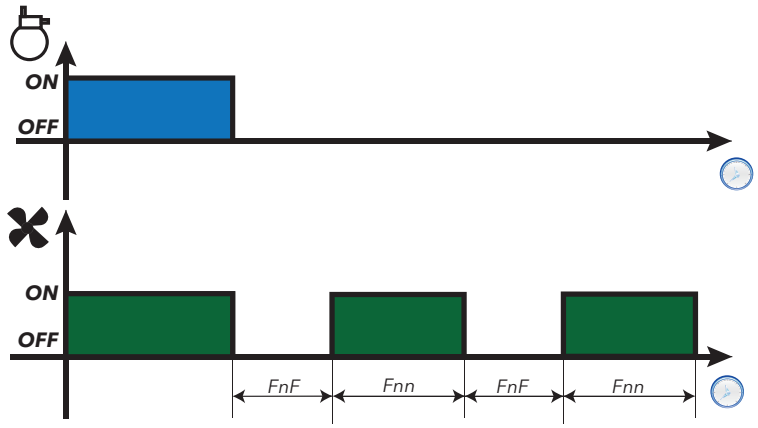
The fans run in duty cycle mode when the compressor is off and this mode is specified by parameter **FCo**.
Depending on whether the controller is in day or night mode, fan operation is based on parameters **Fon** and **FoF** (day) or **Fnn** and **FnF** (night):

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

Regulation diagram for Day duty cycle with compressor off



Regulation diagram for Night duty cycle with compressor off



Fan operation in defrost mode

Operation depends on parameter **dFd**:

dFd	Fans
no	Regulation or duty cycle
yES	Off

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

Fan operation in dripping mode

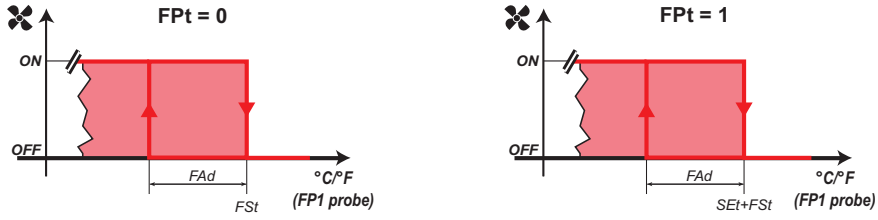
During dripping the fans remain stopped for the time set using parameter **dt**.
Note: if **Fdt** is greater than **dt** the fans remain off for the time set in **Fdt**.

Post-ventilation

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

Post-ventilation has no priority over the delay set by the **dCd** parameter.

The **FSt** parameter is always considered with sign. The measurement unit of **Fon**, **FoF**, **Fnn** e **FnF** is minutes.



Parameters

Parameter	Description
SEt	Regulation setpoint
odo	Output activation delay from startup
FP1	Evaporator fans probe
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
FAd	Evaporator fan trigger differential
Fdt	Evaporator fan activation delay time after a defrosting cycle
dt	Dripping time
dFd	Evaporator fan exclusion during a defrost cycle
FCo	Evaporator fan operating mode
FdC	Evaporator fan shutoff delay after compressor deactivation
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
dCd	Evaporator fans delay activation after door close

Variable speed fans (VSF) (IDNext 1385 SBCIL only)

Description

This analog regulator is used to manage the modulated fans applied to the evaporator or condenser and provides an implementation percentage to be applied to the analog output 0...10 V.
Regulation is activated by using **FE1** to set the desired probe (temperature probe or pressure transducer)
The regulation setpoint can be absolute or relative:

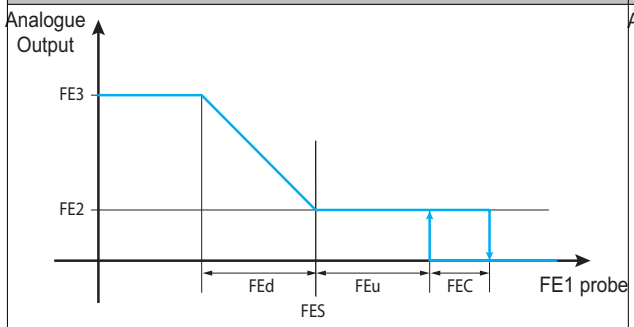
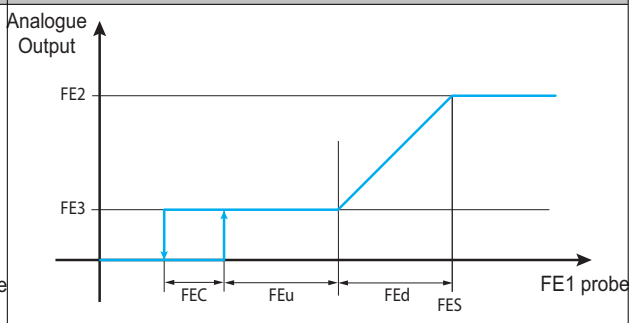
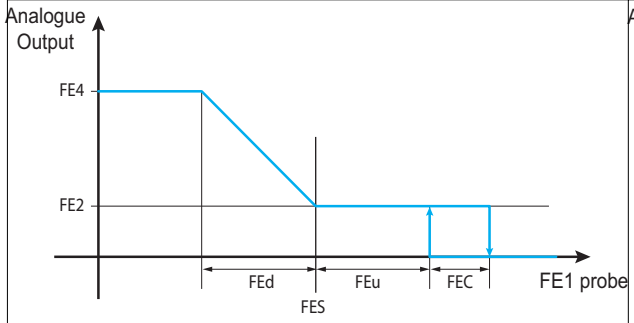
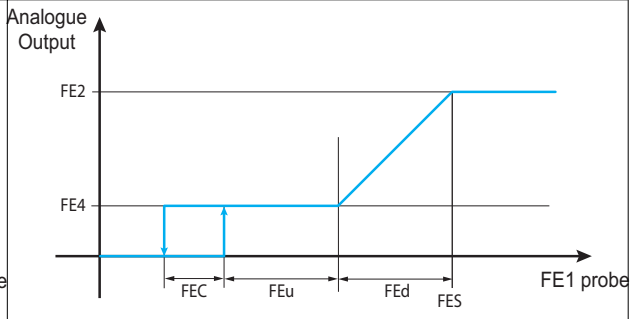
- Absolute if **FEt** = AbS and the setpoint will be the value of: **FES**
- Relative if **FEt** = rEL and the setpoint will be the value of: **FES** + **SEt** (Regulator 1)

Note: the activation of this analog regulator do not activate any icon.

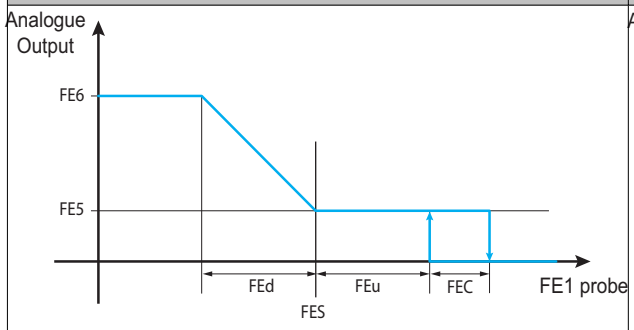
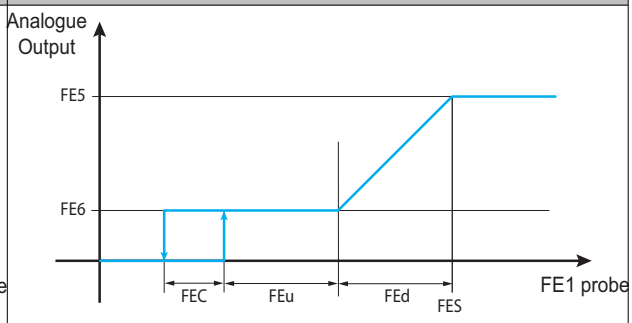
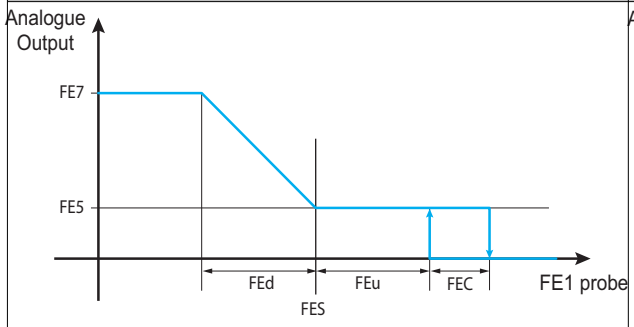
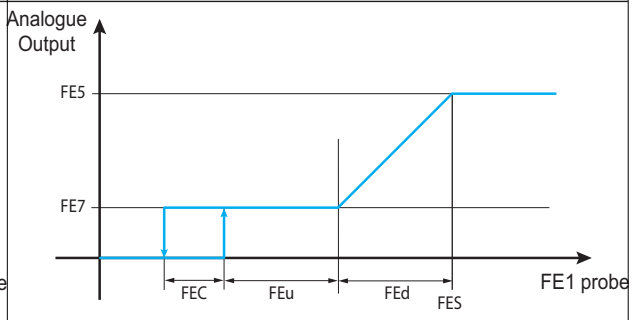
Operation examples

In below example, **FEt** = AbS is considered.

Day mode:

<table>
<tr><td>Cooling mode active and FE3 > FE2</td><td>Cooling mode active and FE3 < FE2</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Cooling mode not active and FE4 > FE2</td><td>Cooling mode not active and FE4 < FE2</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td colspan="2">Cooling mode not active and FE4= 0%:
• The analog output will be fixed at 0%, regardless of the value of probe FE1.</td></tr>
</table>

Night mode:

Cooling mode active and **FE6 > FE5**	Cooling mode active and **FE6 < FE5**
	
Cooling mode not active and FE4 > FE2	**Cooling mode not active and FE7 < FE5**
	

Cooling mode not active and **FE7**= 0%:

- The analog output will be fixed at 0%, regardless of the value of probe **FE1**.

Regulation with probe error

In the event of a probe error, the analog output will assume the following values:

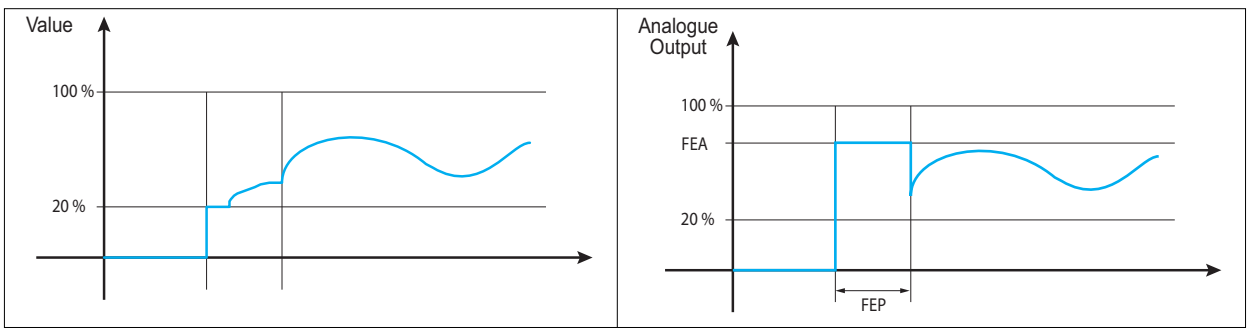
Condition	Day		Night (Energy Saving)	
	Cooling ON	Cooling OFF	Cooling ON	Cooling OFF
FE4 > 0%	FE9	FE9	---	---
FE4 = 0%	FE9	0%	---	---
FE7 > 0%	---	---	FE9	FE9
FE7 = 0%	---	---	FE9	0%

During defrost, the analog output will assume the value set by parameter **FE8**.

During dripping (with a duration **dt**) the output will be set to 0%.

If the 0% analog output mode with cooling OFF has been selected (**FE4** = 0% and/or **FE7** = 0%), it is possible to keep the analog output active for the **FEr** post-ventilation time if the analog output is > 0% when cooling goes OFF, otherwise if it was at 0% it remains at 0%. During the **FEr** time the cut-off is disabled.

When the regulator requires modulation, it is possible to activate the pick-up mode:



Periodically it is possible to activate the pick-up procedure. The period is set by **FEP** parameter.

During “Counter cleaning“ mode, the modulated fans are forced to percentage **FE3**.

Parameters

Parameter	Description
FE1	Sets the probe used by the modulated fans.
FEt	Sets the **FES** differential management mode.
FES	Modulated fan disabling temperature.
FEd	Tripping differential for “modulated fans” regulator.
FEu	Cut-OFF (**0** = disabled)
FEC	Cut-OFF differential
FEr	Fan deactivation delay time from compressor stoppage.
FE2	Minimum day percentage
FE3	Maximum day percentage with compressor on
FE4	Maximum day percentage with compressor off
FE5	Minimum night percentage
FE6	Maximum night percentage with compressor on
FE7	Maximum night percentage with compressor off
FE8	Percentage during defrost
FE9	Percentage in the event of probe error
FEA	Maximum pick-up speed percentage (**0** = mode disabled)
FEb	Fan pick-up time
FEP	Fan forcing period at pick-up speed (**0** = mode disabled)

Condenser fans

This regulator is active if there’s an output configured as 'condenser fans' (**H2x** = 13) and digital compressor is active or VSC Output is > 0.

Condenser Fans with probe

Regulator is active if there’s an output configured as 'condenser fan with probe' (**H2x** = 14).

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 **ALR** with an indication of the number of pressure switch activations

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

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

Effects of reaching the maximum number of pressure switch activations

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

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

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

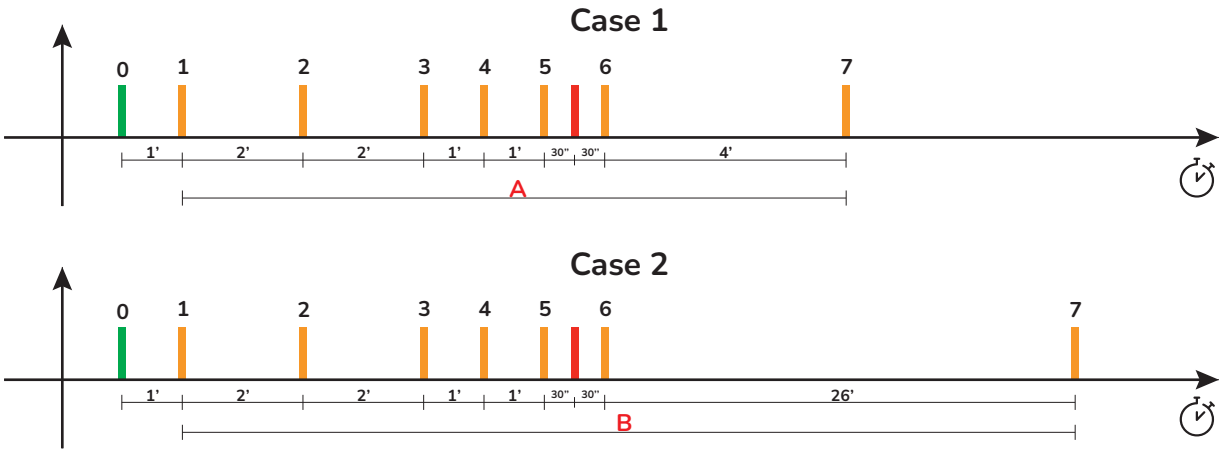
Operating mode

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
H11	**DI1** digital input/polarity configuration
H12	**DI2** digital input/polarity configuration
H13	**DI3** digital input/polarity configuration
H14	**DI4** digital input/polarity configuration
H15	**DI5** digital input/polarity configuration

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:

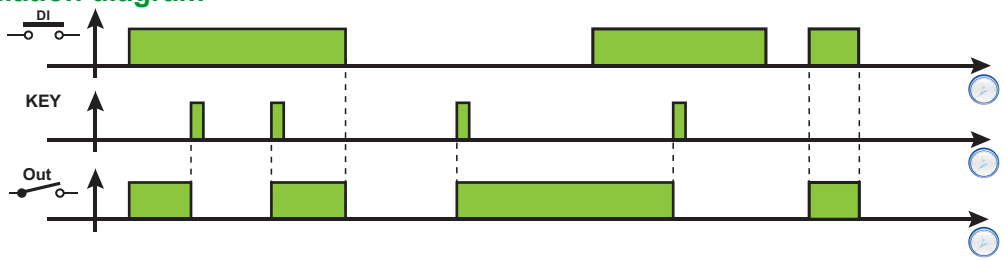
- press and hold a key (configured with **H3x** = 2)
- digital input (only if **H1x** = ±3)
- using a Supervisor, via Modbus command (serial)
- via Field Bus (configured with **L08** = 1)
- via APP (if the BTLE Dongle is present. See accessories section)
- RTC activation (models with RTC only)

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.

Controlling the auxiliary output via key

To control the output (relay opening/closing) via key, set **H3x** = 2.
Note: the relay status is restored after a blackout.

Regulation diagram



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

Parameters

Parameter	Description
L08	Auxiliary synchronization
H08	Stand-by operating mode
H11	**DI1** digital input/polarity configuration
H12	**DI2** digital input/polarity configuration
H13	**DI3** digital input/polarity configuration
H14	**DI4** digital input/polarity configuration
H15	**DI5** 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	⏻ 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** = ±9)
- using a Supervisor, via Modbus command (serial)
- via Field Bus (configured with **L06** = 1)
- via APP (if the BTLE Dongle is present. See accessories section)

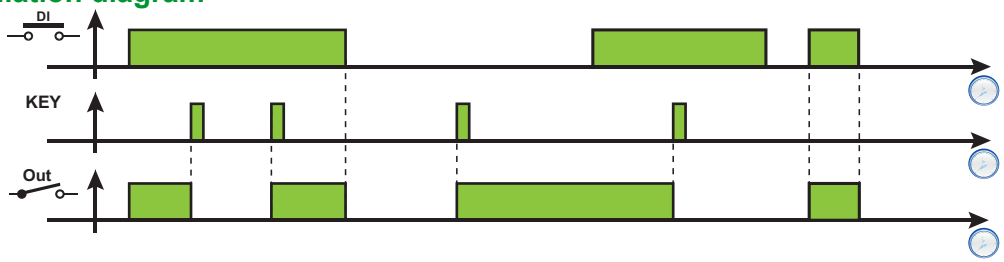
Note: every time a key associated to the Light function is pressed the output changes (inverts) status; the digital input, if associated to the Light function, changes the status of the output in correspondence with its variations.

Controlling the light output via key

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

Note: the relay status is restored after a blackout.

Regulation diagram



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

Parameters

Parameter	Description
L06	Light synchronization
H08	Stand-by operating mode
H11	**DI1** digital input/polarity configuration
H12	**DI2** digital input/polarity configuration
H13	**DI3** digital input/polarity configuration
H14	**DI4** digital input/polarity configuration
H15	**DI5** 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	⏻ key configuration.
H34	💡 key configuration.
H35	☆ key configuration.

Anti-sweater heaters (Frame heater) (IDNext 1385 SBCIL only)

Description

This regulator can activate the anti-sweater heaters for a display unit or a chiller cabinet.
Regulation can be:

- with fixed Duty cycle (only if **FH**=dc)
- on glass sensor
- on glass sensor with remote Dew Point.

The device is used to control anti-sweater heaters by means of:

- external SSR relay controlled with Open Collector output
- external module with analog input controlled with 0...10 V analogue output.

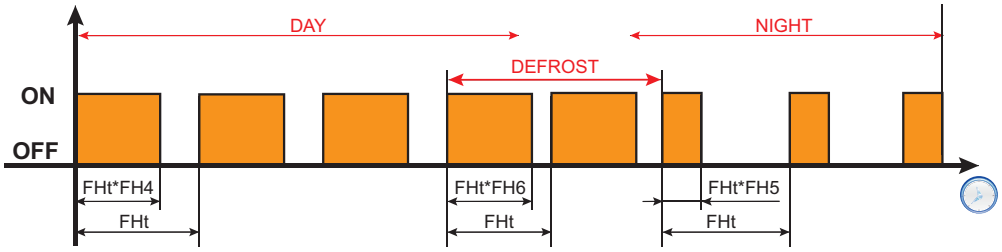
Fixed duty cycle regulation

Fixed duty cycle regulation is activated by setting parameter **FH** = dc and forces a fixed implementation percentage as follows:

- Parameter value **FH4** for day mode
- Parameter value **FH5** for energy saving - night mode
- Parameter value **FH6** during defrost (day / night)

Open Collector output: parameter **FHt** defines the modulation period.

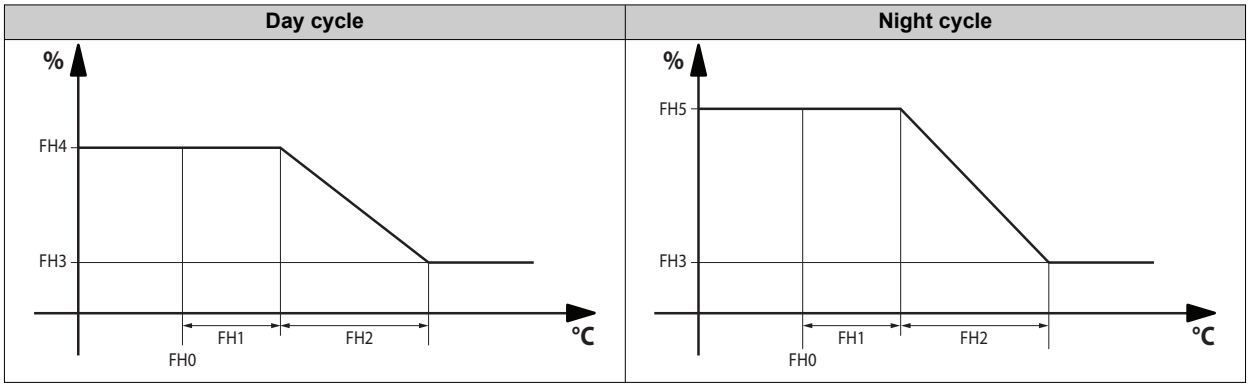
Analog output 0...10 V: fixed regulation percentage.



Legend: **DAY** = Day; **NIGHT** = Night; **DEFROST** = Defrost.

Regulation on probe

Regulation on probe is activated by using **FH** to set the desired probe (Pb1, Pb2, Pb3, Pb4 or Pb5).
The output value depends on the value assumed by the probe according to the following graph:



The output modulation is a function of the Dewpoint value (ambient) set by parameter **FH0**.
During the defrost phase the output will be set to the fixed value indicated by parameter **FH6**.
If a probe error is detected, the output is forced to:

- **FH4** during day cycle
- **FH5** during night cycle

The regulator can modulate the analog output 0…10 V, or it can modulate the Open Collector output (in this case the period is set by parameter **FHt**).

Note: The analog output 0…10 V does not use parameter **FHt**.

Note: The counter controlling the timings of parameter **FHt** (on the basis of **FH4**, **FH5** and **FH6**) is not restored as soon as the status changes (Day, Night, Defrost), but waits for the current countdown to be completed.

Regulation on glass sensor with dewpoint

Regulation is largely the same as for the previous section; the only difference is in the setpoint value **FH0** which is changed remotely (remote dew point) and managed by the Supervisor by means of serial commands.
When it is switched on, the regulator loads the setpoint value indicated by parameter **FH0**. This regulation setpoint value can be changed and saved remotely.
Note: remote setpoint updating should be submitted within 60 minutes, otherwise the regulator will restore the value of parameter **FH0**.

Parameters

Parameter	Description
FH	Anti-sweater heaters probe.
FHt	Anti-sweater heaters operating period duration (FH), only used if the OC output is used with SSR relay.
FH0	Setpoint corresponding to the anti-sweater heaters
FH1	Offset corresponding to the anti-sweater heaters
FH2	Band corresponding to the anti-sweater heaters
FH3	Minimum percentage for the anti-sweater heaters
FH4	Maximum percentage for the duty cycle day.
FH5	Maximum percentage for the duty cycle night.
FH6	Anti-sweater heaters percentage during defrost.

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
- **HC** parameter is set to cooling (**HC** = C).

Operation

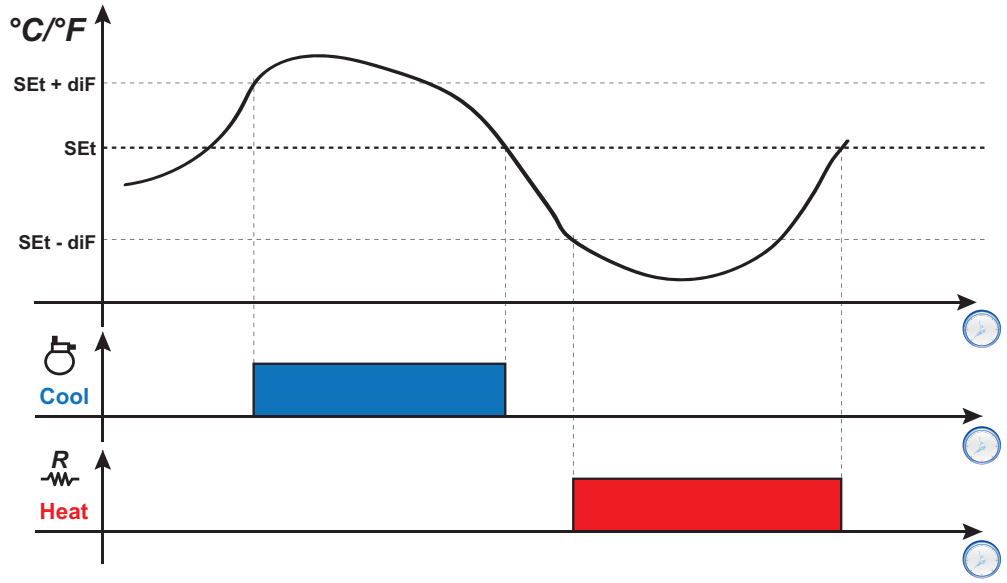
This function should be used when you want the controlled temperature to remain around the value of the setpoint **SEt**. To do so:

- the heating output is activated when the temperature measured by regulation 1 probe drops below the threshold (**SEt-diF**)
- the cooling output is activated when the temperature measured by regulation 1 probe 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
SEt	Regulation setpoint
diF	Regulator activation differential
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 (NaD)

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.

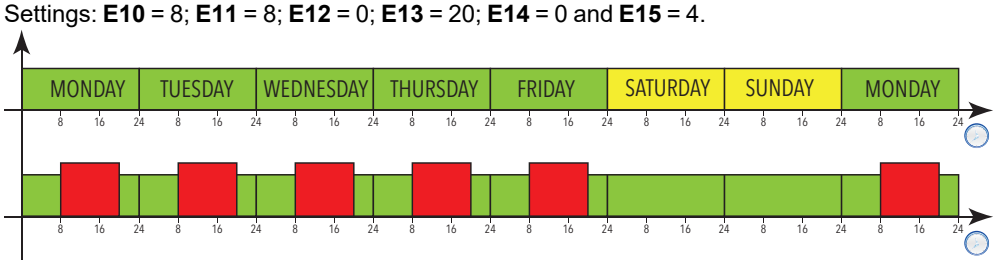
You can set the type of each of the two events using parameters **E15** (Event 1) and **E25** (Event 2):

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

Regulation diagrams

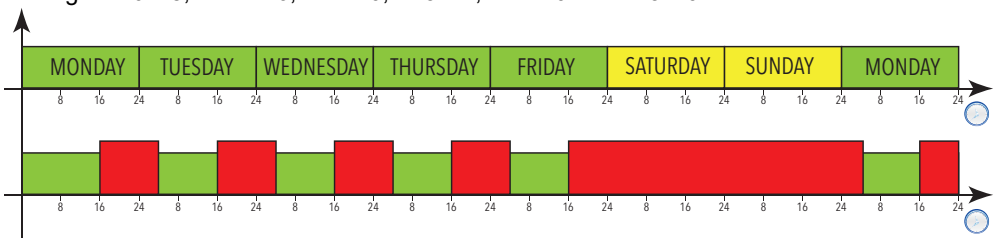
Example 1: The event starts and ends on the same day (E11/E12 < E13/E14)

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

HACCP regulator

Description

This regulator allows the storage and archiving of high and low temperature alarms from the HACCP probe (set with **HCP** parameter), as well as any blackouts experienced by the instrument (minimum HACCP requirements).
These data are visible on the display (under the alarm folder '**ALr**').

Normal Behavior

When the temperature value measured by the HACCP probe exits the **SLH...SHH** band (linked to the absolute-relative **Att** parameter) for a time exceeding the **drA** parameter, an HACCP alarm is signaled and displayed in the '**ALr**' folder.
Each HACCP alarm creates two folders:

- '**HCn**' = contains the maximum or minimum temperature value reached beyond the band limits
- '**tCn**' = contains the time elapsed with the probe temperature value outside the band (minimum resolution of one minute)

Note: '**n**' (from 1 to 8) indicate the number of times the HACCP probe has exited beyond the limits. So there may be up to 8 folders for temperature (**HC1...HC8**) and time (**tC1...tC8**) storage.

In addition to '**HCn**' and '**tCn**' folders, the alarm LED will also come on. By pressing any key, the alarm will be silenced and the alarm LED start flashing to confirm the alarm has been read by the user. Once the probe value returns within the **SLH...SHH** band, the alarm LED will remain in its previous state (steady on or flashing) to signal the event.

The first 8 HACCP alarms are sequentially stored with the appearance of folders **HC1...HC8** and **tC1...tC8**, after which other events will overwrite the previous ones starting from HC1, tC1, and the exceedance of 8 events is signaled by the flashing of the HC8 folder.
To avoid false HACCP alarm signals, the signal is inhibited for the time:

- **dAO** = after a defrost cycle
- **HCT** = after activation/deactivation of Digital Input (depending on the sign of the **H1x** parameter) and/or after pressing a key (**H3x** parameter)

If the alarm is already present upon entering defrost, opening the Digital Input or pressing a key, the storage of the maximum or minimum temperature reached and the time elapsed, continues until the HACCP probe value, returns within the band.

Post blackout behavior

Upon returning from a blackout event (reset), the function creates two folders in the '**ALr**' folder.
Depending on the temperature value the content of the two folders is:

A. The value of the HACCP probe is within the band limits SLH...SHH

- '**bCn**' = contains the temperature value upon returning from the blackout
- '**btn**' = contains zero value

B. The value of the HACCP probe is outside the band limits SLH...SHH

- '**bCn**' = contains the maximum or minimum temperature value reached beyond the band limits
- '**btn**' = contains the time elapsed with the probe temperature value outside the band (minimum resolution of one minute)

Note: '**n**' (from 1 to 8) indicate the number of times the HACCP probe has exited beyond the limits. So there may be up to 8 folders for temperature (**bC1...bC8**) and time (**bt1...bt8**) storage.

The first 8 HACCP alarms are sequentially stored with the appearance of folders **bC1...bC8** and **bt1...bt8**, after which other events will overwrite the previous ones starting from bC1, bt1, and the exceedance of 8 events is signaled by the flashing of the bC8 folder.

Reset

The HACCP alarms can be manually reset:

- by using the '**rES**' function (inside the '**FnC**' folder)
- by pressing a key (sets with **H3x** = 12) after a delay of 5 seconds.

Manually reset clears the folders **HC1…HC8**, **tC1...tC8**, **bC1...bC8**, **bt1...bt8**, and resets **drH** value (the counter is reinitialized).

The alarm LED will turn off and stop flashing if no other alarms are present.

If the counter **drH** = 0, from the last reset, all HACCP alarms are automatically cleared.

Parameters

Parameter	Description
HCP	Sets probe used for HACCP alarms.
SHH	Maximum HACCP alarm threshold.
SLH	Minimum HACCP alarm threshold.
drA	Minimum period time in critical area before alarm signalling.
drH	HACCP alarm reset time from last manual reset.
HCE	Enable HACCP alarms storage with/without alarm relay enabling.
HCt	HACCP alarms storage disabling time (key or digital input).
dAo	Temperature alarm exclusion time after defrosting.

Humidity regulator (IDNext 1385 SBCIL only)

Description

The humidity function works either with probe (**PbH** ≠ 0) or without probe (**PbH** = 0) selected.

A humidity probe can be set with **PbH** parameter:

PbH	Description
diS (0)	the humidity control works without probes
Pb1 (1)	the humidity control works with probe Pb1
Pb2 (2)	the humidity control works with probe Pb2
Pb3 (3)	the humidity control works with probe Pb3
Pb4 (4)	the humidity control works with probe Pb4
Pbi (5)	the humidity control works with virtual probe
Pbr (6)	the humidity control works with remote probe
PbL (7)	the humidity control works with remote probe (Field Bus)
P1A (8)	probe Pb1 displayed alternate with **ddd** probe
P2A (9)	probe Pb2 displayed alternate with **ddd** probe
P3A (10)	probe Pb3 displayed alternate with **ddd** probe
P4A (11)	probe Pb4 displayed alternate with **ddd** probe
PIA (12)	virtual probe displayed alternate with **ddd** probe
PrA (13)	remote probe displayed alternate with **ddd** probe
PLA (14)	Field Bus probe displayed alternate with **ddd** probe

The humidity regulation can be either “active” or “inactive” (relay OFF), depending on **dEH** parameter.

The humidity output is always off in case of an alarm that requires the immediate shutdown of the compressor.

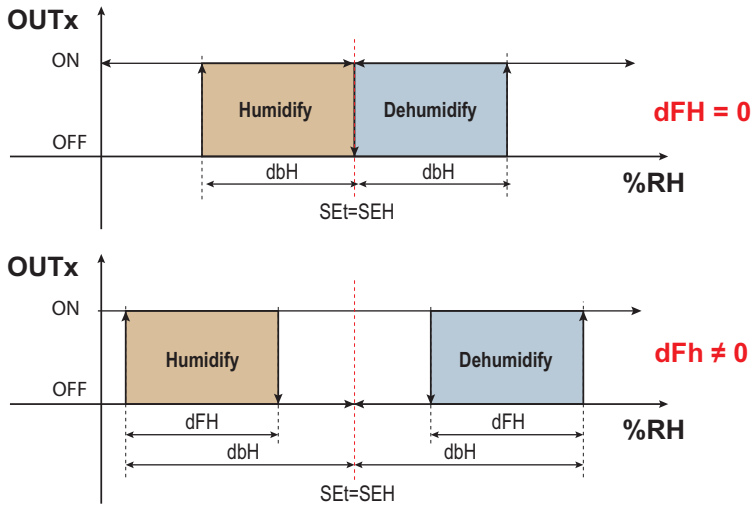
If the humidity probe is in error, both the “humidify” and “de-humidify” outputs work in duty cycle mode, whose ON (**CHn**) and OFF (**CHF**) values. If both outputs are configured (neutral zone), they remain off.

Humidify/Dehumidify with neutral zone

The neutral zone regulation, required that **dFH**, **dbH**, and relay output are properly configured.

Functioning:

- The setpoint is set with **SEH** parameter and the semi-band is set with **dbH** parameter.
- The dehumidify relay is turned ON when the humidity is greater or equal to **SEH+dbH** and is turned OFF when the humidity is lower than **SEH**.
- The humidify relay is turned ON when the humidity is lower or equal to **SEH+dbH** and is turned OFF when the humidity is greater than **SEH**.
- The differential is set with **dFH** parameter. If **dFH** = 0, it is excluded (**dFH = dbH**), and deactivation occurs at the **SEH** value.

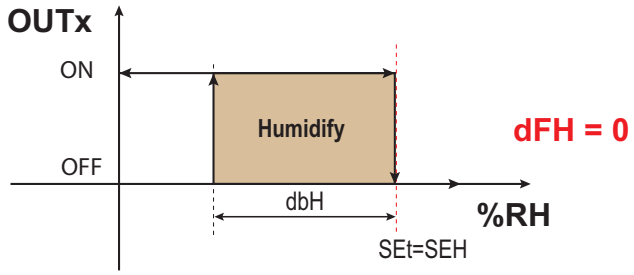


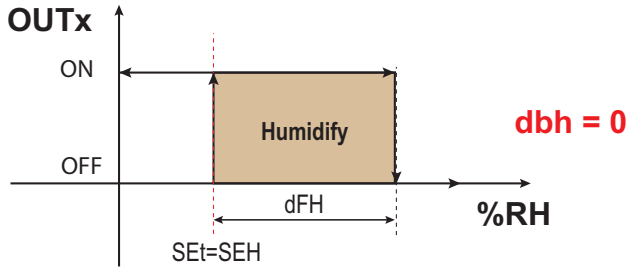
Humidify

This regulation required a dedicated humidify relay

Functioning:

- The setpoint is set with **SEH** parameter and the semi-band is set with **dbH** parameter.
- The humidify relay is turned ON when the humidity is lower or equal to **SEH+dbH** and is turned OFF when the humidity is greater than **SEH**.
- The differential is set with **dFH** parameter. If **dFH** = 0, it is excluded (**dFH = dbH**), and deactivation occurs at the **SEH** value.



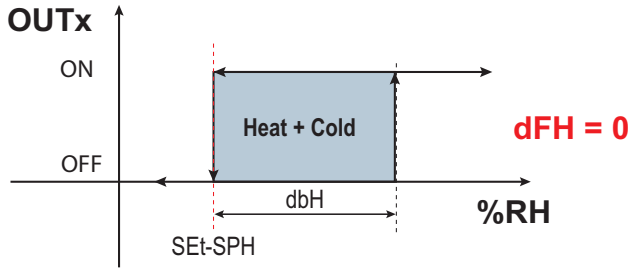


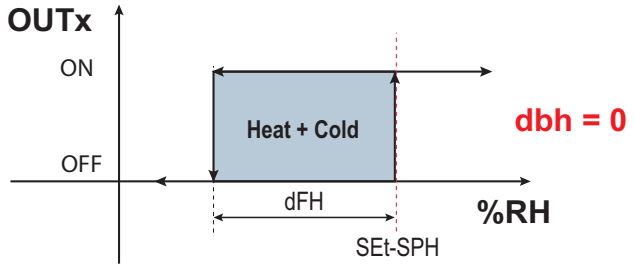
Dehumidify without dehumidify relay (CHC not considered)

This regulation not required a dedicated dehumidify relay: in that case a resistor and the compressor (cooling) should be activated.

Functioning:

- The setpoint is set with **SEH** parameter and the semi-band is set with **dbH** parameter.
- The relay connected to the resistance and the compressor are turned ON when the humidity is greater or equal than **SEH + dbH** and they are turned OFF when lower than **SEH**.
- The differential is set with **dFH** parameter. If **dFH** = 0, it is excluded (**dFH = dbH**), and deactivation occurs at the **SEH** value.
- If a simultaneous request for dehumidify and cooling is incoming, cooling takes priority: when the setpoint (**SEH**) is reached, the heating output will be also activated.
- If a simultaneous request for heating (**HC** = H) and dehumidify is incoming, dehumidify takes priority, so both relay for heating and cooling will be active until **SEH** is reached and then only the heating output stay active.



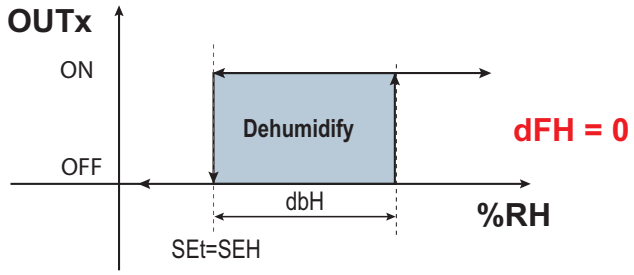


Dehumidify with dehumidify relay (H2x = 17)

This regulation required a dedicated dehumidify relay (**CHC** = 0).

Functioning:

- The setpoint is set with **SEH** parameter and the semi-band is set with **dbH** parameter.
- The humidify relay is turned ON when the humidity is greater or equal to **SEH+dbH** and it is turned OFF when the humidity is lower than **SEH**.
- The differential is set with **dFH** parameter. If **dFH** = 0, it is excluded (**dFH = dbH**), and deactivation occurs at the **SEH** value.

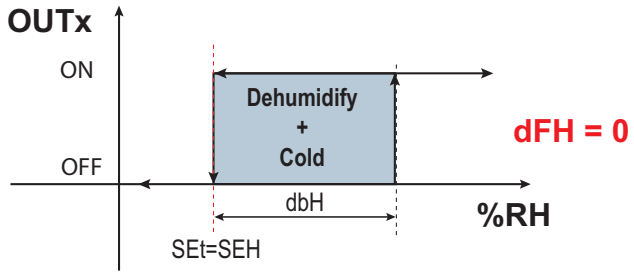


Dehumidify with dehumidify relay (H2x = 17) and Cooling relay

This regulation required different dehumidify and cooling relays (**CHC** = 1).

Functioning:

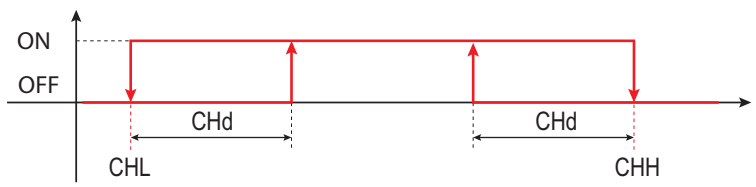
- The setpoint is set with **SEH** parameter and the semi-band is set with **dbH** parameter.
- Both dehumidify and cooling relays are turned ON when the humidity is greater or equal to **SEH+dbH** and they are turned OFF when the humidity is lower than **SEH**.
- The differential is set with **dFH** parameter. If **dFH** = 0, it is excluded (**dFH = dbH**), and deactivation occurs at the **SEH** value.
- When a simultaneous request for dehumidify and cooling is incoming, cooling takes priority: when the set point is reached, the dehumidify output will be also activated.



Humidity control And Temperature

This regulator use **CHL**, **CHH** and **CHd** parameters to define a work temperature range.
Humidity-Temperature control type can be set with **CHt** parameter:

CHt	Description
0	no temperature control
1	control minimum temperature
2	control maximum temperature
3	control both minimum and maximum temperature



Humidity control with evaporator fan (PbH = 0):

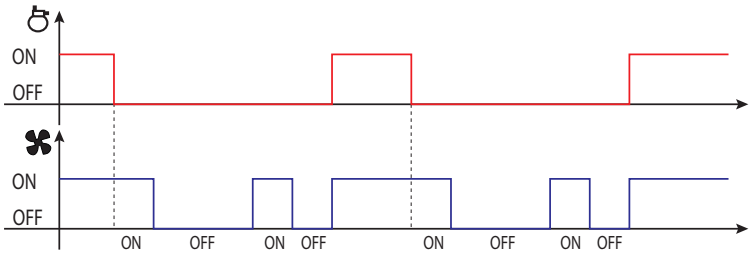
This regulator is enabled with:

- Compressor OFF
- **FCO** = 0 or 4: considering OFF state with compressor OFF
- **FCO** = 5: if the evaporator fan is not configured
- **HUL** greater than '0'

Only the fan is considered, not the humidify relais.
The regulator works in duty cycle mode if the compressor is OFF and **FCO** have to considers the fan OFF.

Note: The modulation always starts ON.
The humidity level can be set with **HUL** parameter:

HUL	Description
0	disabled
1	humidity level '1'. With this setting, the duty cycle of the evaporator fans, use the following values: • **HU1** = ON time about humidity level '1' • **HU2** = OFF time about humidity level '1'
2	humidity level '2'. With this setting, the duty cycle of the evaporator fans, use the following values: • **HU3** = ON time about humidity level '2' • **HU4** = OFF time about humidity level '2'
3	humidity level '3'. With this setting, the duty cycle of the evaporator fans, use the following values: • **HU5** = ON time about humidity level '3' • **HU6** = OFF time about humidity level '3'



Parameters

Parameter	Description
PbH	Humidity probe selection.
SEH	Humidity setpoint.
dFH	Humidity differential.
dbH	Humidity intervention semi-band.
dEH	Humidity regulation during defrost.
CHC	Dehumidification control type.
CHt	Humidity/Temperature control mode.
CHL	Minimum temperature value to enable humidity control.
CHH	Maximum temperature value to enable humidity control.
CHd	Humidity control differential enable.
CHn	“On time” Humidify/De-Humidify.
CHF	“Off time” Humidify/De-Humidify.
FCo	Evaporator fan operating mode.
HUL	Humidity level selection.
HU1	Evaporator fans “on time” for humidity level 1.
HU2	Evaporator fans “off time” for humidity level 1.
HU3	Evaporator fans “on time” for humidity level 2.
HU4	Evaporator fans “off time” for humidity level 2.
HU5	Evaporator fans “on time” for humidity level 3.
HU6	Evaporator fans “off time” for humidity level 3.

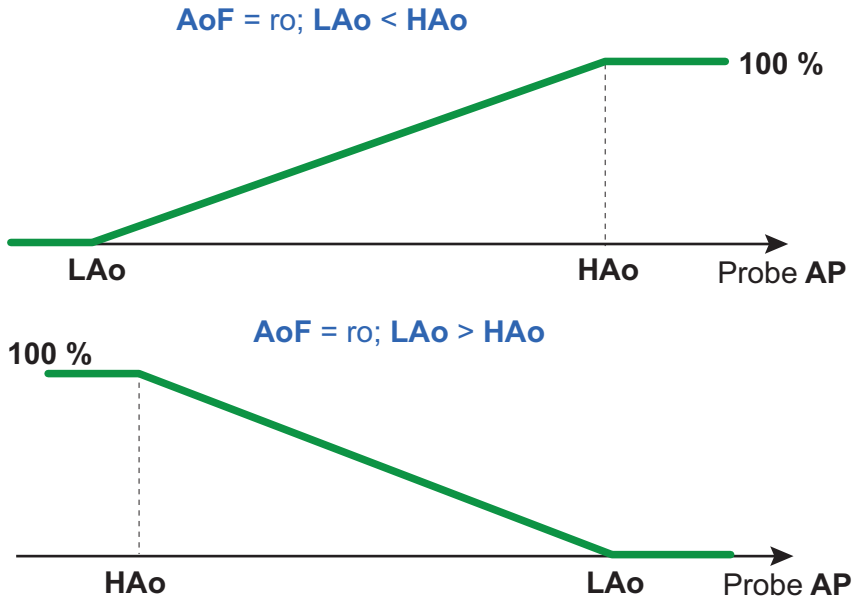
General analog output (IDNext 1385 SBCIL only)

Description

The general analog output function, selected with parameters **01n** and **02n**, can be associated to a probe setting with parameter **AP**.

AoF	Description
ro (0)	Output proportional to probe reading, within the range set by parameters **LAo** and **HAo**
Er (1)	Output proportional to error between setpoint 1 and the value read on the probe, within the range set by parameters **LAo** and **HAo**

Regulation diagrams



Parameters

Parameter	Description
AP	Sets probe used for Analogue output.
AoF	Analogue output mode.
LAo	Analog output lower limit.
HAo	Analog output upper limit.
AoS	Probe error value.
01n	Analogue output 1 configurability (Output **0...10 V**).
02n	Analogue output 2 configurability (Output **OC**).

Zero-Crossing

Description

Zero-crossing control mode is intended to extend the **Out1** relay life time when used to switch resistive and motor loads.

Due to their electromechanical nature, relays are affected by aging and environmental conditions, furthermore certain inductive loads like contactors and iron-core transformers are not suitable to be driven in zero-crossing mode.

For those reasons you are invited to check when this feature fits with your specific application before enabling it.

NOTICE
REDUCTION OF RELAY ENDURANCE • Do not enable zero-crossing to control inductive loads such as contactors and iron-core transformers. • Use same mains phase to supply both load and controller. **Failure to follow these instructions can result in equipment damage.**

Activation

The zero crossing activation is managed by parameter **ZCE**:

- **0**: Zero-Crossing is disabled (default)
- **1**: Zero-Crossing is enabled.

NOTE: The **ZCE** value can be changed only on models **IDNext 1385 SBCL** and **IDNext 1385 SBCIL**.

Parameters

Parameter	Description
ZCE	It enables/disables the zero-crossing feature.

Diagnostics

Contents

This section includes the following topics:

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 (if present), the alarm icon ⚠ flashes and the alarm relay is de-energized.

Alarms legend

Code	Description	Reset	Buzzer and alarm relay	Cause	Effects	Solutions
E1	Probe Pb1 in error	Automatic	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E1** shown • Steady alarm icon ⚠	• Verify the probe type (**P01**) • Verify the probe wiring • Replace probe.
E2	Probe Pb2 in error	Automatic	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E2** shown • Steady alarm icon ⚠	• Verify the probe type (**P02**) • Verify the probe wiring • Replace probe.
E3	Probe Pb3 in error	Automatic	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E3** shown • Steady alarm icon ⚠	• Verify the probe type (**P03**) • Verify the probe wiring • Replace probe.
E4	Probe Pb4 in error	Automatic	Active	• Reading of values outside the operating interval • Probe or corresponding wiring in short-circuit or open circuit	• **E4** shown • Steady alarm icon ⚠	• Verify the probe type (**P04**) • Verify the probe wiring • Replace probe.
Ei	Virtual probe in error	Automatic	Active	• Reading of values outside the operating interval • Individual physical probes in error	• **Ei** shown • Steady alarm icon ⚠	Verify settings and behaviour of individual physical probes
Er	Remote probe in error	Automatic	Active	• Reading of values outside the operating interval • Supervisor not sending correct virtual probe value	• **Er** shown • Steady alarm icon ⚠	Verify supervisor system
EL	Remote probe (Field Bus) in error	Automatic	Active	• Reading of values outside the operating interval • Wrong probe value from Field Bus connected devices and/or wrong Field Bus communication	• **EL** shown • Steady alarm icon ⚠	• Verify Field Bus connected devices probes behavior and sharing configurations • Verify Field Bus devices wiring
LnA	Generic alarm from network	Automatic	Active	• Devices connected to the Field Bus not properly working or configured • Not proper or properly working Field Bus wiring	• **LnA** shown • Steady alarm icon ⚠	• Verify Field Bus connected devices behavior and configurations • Verify Field Bus devices wiring

Code	Description	Reset	Buzzer and alarm relay	Cause	Effects	Solutions
AH1	High temperature alarm 1	Automatic	Active	Value read by probe selected with **rA1** > **HAL** for longer than time **tAo** (see section "Minimum and maximum temperature alarm" on page 150)	• Alarm **AH1** added to folder AL • No effect on regulation	Wait for the temperature read by the probe selected with **rA1** to drop below the alarm threshold (**HAL-AFd**)
AL1	Low temperature alarm 1	Automatic	Active	Value read by probe selected with **rA1** < **LAL** for longer than time **tAo** (see section "Minimum and maximum temperature alarm" on page 150)	• Alarm **AL1** added to folder AL • No effect on regulation	Wait for the temperature read by the probe selected with **rA1** to rise above the alarm threshold (**LAL+AFd**)
AH2	High temperature alarm 2	Automatic	Active	Value read by probe selected with **rA2** > **HA2** for longer than time **2tA** (see section "Minimum and maximum temperature alarm" on page 150)	• Alarm **AH2** added to folder AL • No effect on regulation	Wait for the temperature read by the probe selected with **rA2** to drop below the alarm threshold (**HA2-AFd**)
AL2	Low temperature alarm 2	Automatic	Active	Value read by probe selected with **rA2** < **LA2** for longer than time **2tA** (see section "Minimum and maximum temperature alarm" on page 150)	• Alarm **AL2** added to folder AL • No effect on regulation	Wait for the temperature read by the probe selected with **rA2** to rise above the alarm threshold (**LA2+AFd**)
EA	External alarm	Automatic	Active	Activation of the digital input (**H1x** = ±5)	• Alarm **EA** added to folder AL • Steady alarm icon ⚠ • Regulation inhibited, on the basis of parameter **EAL**	Verify and remove the external cause that caused the alarm on the digital input.
oPd	Open door alarm	Automatic	Active	Digital input activation for a time greater than **tdo** (**H1x** = ±4).	• Alarm **oPd** added to folder AL • Steady alarm icon ⚠ • Regulator inhibited, on the basis of parameter **dod**	• Close the door • Increase the value of parameter **oAo**
Ad2	Defrost due to timeout	Automatic	Not active	End of defrost due to timeout, instead of the defrost end temperature being reached.	• Alarm **Ad2** added to folder AL • Steady alarm icon ⚠	Wait for the next defrost for automatic deactivation.
CoH	Compressor Overheating alarm	Automatic	Active	Value set by parameter **SA3** exceeded	• Alarm **COH** added to folder AL • Steady alarm icon ⚠ • Compressor regulation inhibited	Wait for the temperature read by alarm probe selected by **rA3** to drop below the alarm threshold (**SA3-dA3**)
E10	Clock alarm	Automatic	Not active	Clock alarm or battery low	• Alarm **E10** added to folder AL • Communication with the RTC is not present	Set the correct time. If the error persists, replace the instrument (RTC battery low)
ELi	No-Link alarm	Automatic	Active	No-Link alarm. The alarm is triggered when communication on either Field Bus Primary or Secondaries is absent.	• Alarm **ELi** added to folder AL • Steady alarm icon ⚠	Restore communication between Primary and Secondaries.

Code	Description	Reset	Buzzer and alarm relay	Cause	Effects	Solutions
PAn	Panic alarm	Automatic	Active	Activated by the properly configured digital input (**H1x** = ±15). **Note**: Buzzer and relay cannot be silenced.	• **PAn** shown • Steady alarm icon ⚠	Deactivate the digital input.
rFA	Low refrigerant alarm	Automatic	Not active	Even with the compressor on, the temperature trend does not fall within the interval set by **rFt**.	• Alarm **rFA** added to folder AL • Steady alarm icon ⚠	Switch the instrument off and on again (alarm deactivated if **rFt** = 0)
nPA	Pressure switch alarm	Automatic	Not active	Pressure switch alarm activation caused by the external pressure switch.	If the number **n** of pressure switch activations is lower than **PEn**: • **nPA** alarm is added to the folder **AL** with the number of pressure switch activations • Compressor regulation inhibited	Verify and remove the cause that triggered the alarm on the digital input (automatic reset) (see Pressure switch)
PAL	Pressure switch alarm	Manual	Active	Pressure switch alarm activation caused by the external pressure switch.	If the number **n** of pressure switch activations is **n** = **PEn** in a time period < **PEi**: • **PAL** is shown • Alarm **PA** is added to the folder **AL** and alarm **nPA** is removed from the folder **AL** • Steady alarm icon ⚠ • Compressor regulation and defrost are inhibited	• Switch the controller off and on again • Select **rAP** (manual reset) in the functions folder to reset the alarms.
HC n	Max/Min HCP probe value when out of range (SLH...SHH)	Manual	Not active	Logs the Max/Min value recorded by HCP probe when it exceeds the range SLH...SHH. **n** represents the sequential number of times the range is exceeded	• Alarm **HC n** added to the folder AL • Steady alarm icon ⚠ • No effect on regulation	**Note**: **n** can assume the values 1 to 8. If **n** > 8, folder HC8 will flash and the system will overwrite folders where **n**=1.
tC n	HCP probe out of range dwell time (SLH...SHH)	Manual	Not active	Stores the dwell time of the HCP probe value outside of the range SLH...SHH. **n** represents the sequential number of times the range is exceeded.	• Alarm **tC n** added to the folder AL • Steady alarm icon ⚠ • No effect on regulation	**Note**: **n** can assume the values 1 to 8. If **n** > 8, folder tC8 will flash and the system will overwrite folders where **n**=1.
bC n	Value recorded by HCP probe on return from blackout	Manual	Not active	Logs the value recorded by HCP probe on return from a blackout. **n** represents the sequential number of blackouts that have occurred.	• Alarm **bC n** added to the folder AL • No effect on regulation	**Note**: **n** can assume the values 1 to 8. If **n** > 8, folder bC8 will flash and the system will overwrite folders where **n**=1.
bt n	HCP probe out of range dwell time during blackout	Manual	Not active	Stores the out-of-range dwell time of the HCP probe value during a blackout. **n** represents the sequential number of blackouts that have occurred.	• Alarm **bt n** added to the folder AL • No effect on regulation	**Note**: **n** can assume the values 1 to 8. If **n** > 8, folder bt8 will flash and the system will overwrite folders where **n**=1.

Note: to delete folders “**HC n**”, “**tC n**”, “**bC n**” and “**bt n**” from folder AL, start function **rES** in folder FnC.

Minimum and maximum temperature alarm

Description

The alarms operate according to the temperature read by thermostat 1 probe (see **rA1**). The accepted temperature interval limits are set using parameters **HAL** and **LAL**.

Alarm codes

Code	Description
AH1	High temperature 1 alarm
AL1	Low temperature 1 alarm
AH2	High temperature 2 alarm
AL2	Low temperature 2 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**/**HA2** and **LAL**/**LA2** values must have a sign.
1	**rE**	Relative values. **HAL**/**HA2** > 0 and **LAL**/**LA2** < 0.

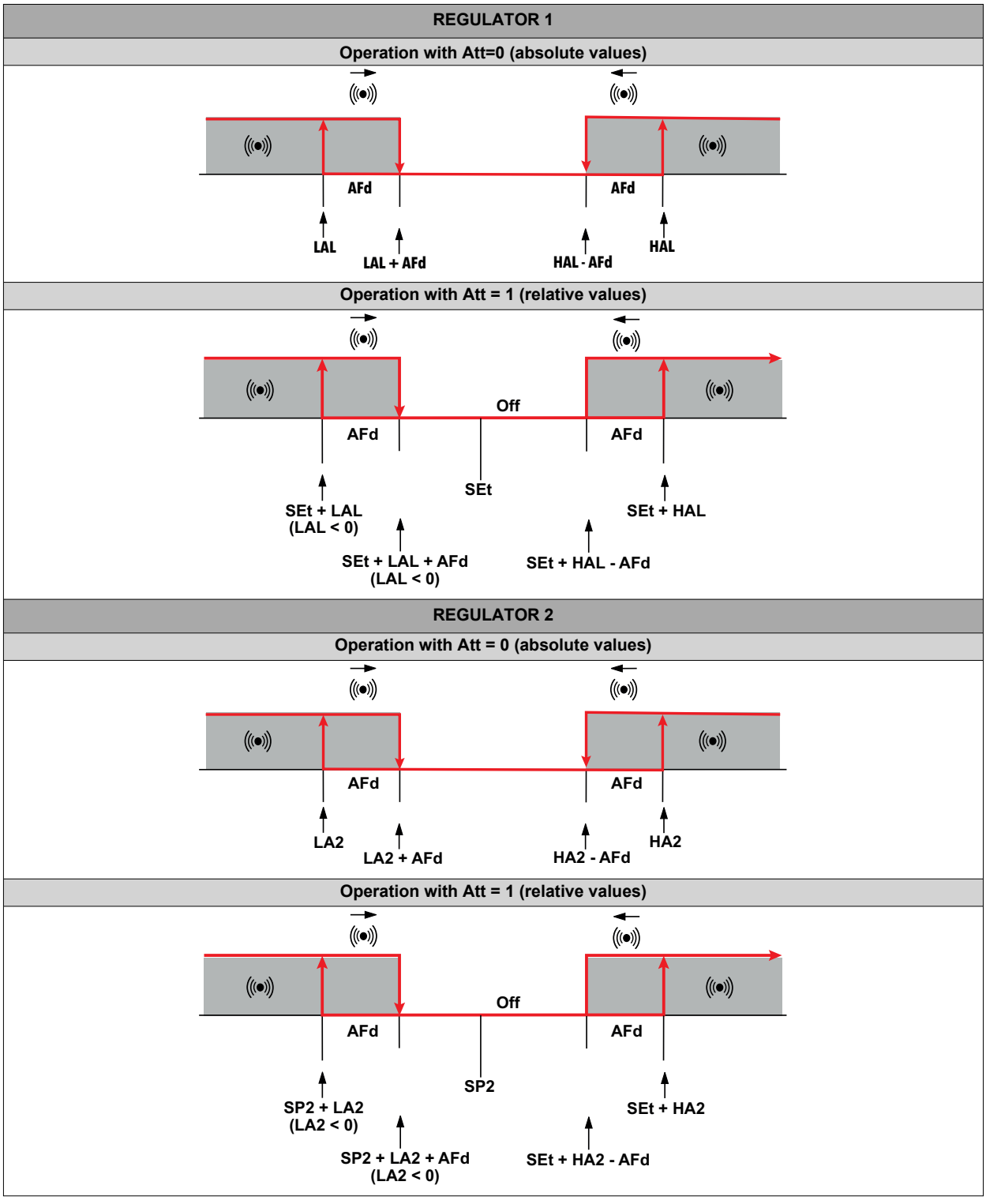
Alarm conditions

Att value	Temperature read by Regulator 1 probe	Alarm generated
0	≥ **HAL**	Maximum temperature
	≤ **LAL**	Minimum temperature
1	≥ (**SEt** + **HAL**)	Maximum temperature
	≤ (**SEt** + **LAL**)	Minimum temperature
Att value	**Temperature read by Regulator 2 probe**	**Alarm generated**
0	≥ **HA2**	Maximum temperature
	≤ **LA2**	Minimum temperature
1	≥ (**SP2** + **HA2**)	Maximum temperature
	≤ (**SP2** + **LA2**	Minimum temperature

Conditions for alarm deactivation

Att value	Temperature read by Regulator 1 probe	Alarm generated
0	≤ (**HAL** - **AFd**)	Maximum temperature
	≥ (**LAL** + **AFd**)	Minimum temperature
1	≤ (**SEt** + **HAL** - **AFd**)	Maximum temperature
	≥ (**SEt** + **LAL** + **AFd**)	Minimum temperature
Att value	**Temperature read by Regulator 2 probe**	**Alarm generated**
0	≤ (**HA2** - **AFd**)	Maximum temperature
	≥ (**LA2** + **AFd**)	Minimum temperature
1	≤ (**SP2** + **HA2** - **AFd**)	Maximum temperature
	≥ (**SP2** + **LA2** + **AFd**)	Minimum temperature

Operating diagrams



Parameters

Parameter	Description
Att	Expression mode for **HAL**/**HA2** and **LAL**/**LA2** values (absolute or relative)
AFd	Alarm activation differential
HAL	Maximum temperature 1 limit
LAL	Minimum temperature 1 limit
HA2	Maximum temperature 2 limit

Parameter	Description
LA2	Minimum temperature 2 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.

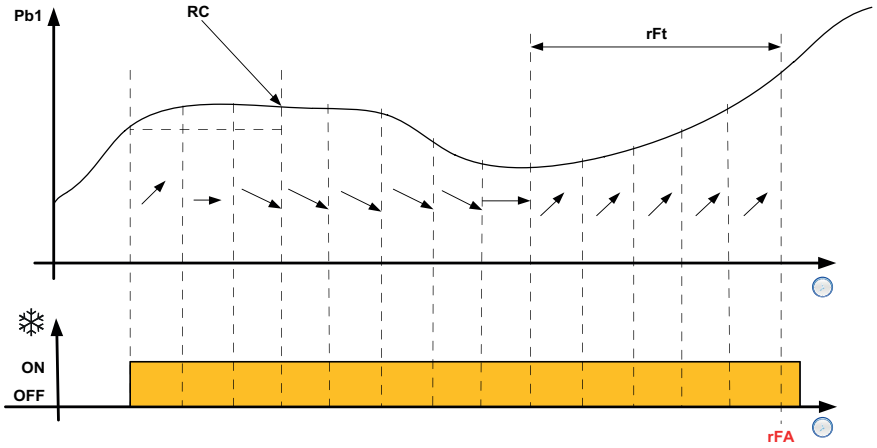
Once this alarm has been detected, the device have to be switched off and on again to cancel it.

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 IDNext 1000

Contents

This section includes the following topics:

Parameters IDNext 1485 SBCL

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

User parameters IDNext 1485 SBCL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
SEt	Regulation setpoint 1 with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint 1 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 1; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SP1+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-67.0	-67.0	-67.0	-67.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dt	Dripping time.	0...250	min	0	0	0	0
HAL	High temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Low temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time on probe 1.	0...250	min	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by the selected probe • **1** = stop the reading of the value read by the selected probe at the start of defrosting until the setpoint is reached (or until the expiration of **Ldd**) • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (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

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 IDNext 1485 SBCL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
CP (Compressor)							
rP1	Sets the probe used by regulator 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
SEt	Regulation 1 setpoint. The value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	0.0	0.0	-18.0	3.5
diF	Regulation 1 differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SEt+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-112.0	-112.0	-112.0	-112.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
HC	The regulator 1 will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	C	C	C	C
ont	Regulator switch-on time for probe in error: • 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: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	0	0	0	0
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	10	10	10	10
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dP1	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	Pb2
dP2	Sets the probe used by defrost 2. Same as **dP1**.	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS

PAR	Description	Range	MU	Value	AP1	AP2	AP3
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dt2	Unit of measure for defrost duration (**dEt** parameter). • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	1	1	1	1
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	no	no	no	no
tCd	Minimum period of time with the compressor ON or OFF before defrost is activated.	-127...127	min	0	0	0	0
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. • **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	see **d01**	0	0	0	0
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	see **d11**	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **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	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	flag	diS	diS	diS	diS
d41	Sets the defrost 1 activation threshold	-199.9...1999	°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...255	min	0	0	0	0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **AbS** (0) = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **rEL** (1) = relative value (negative offset **d41**, compared to defrost temperature probe recorded at the end of the first cooling cycle) • **AdP** (2) = Adaptive defrost : absolute referred to **d45** or relative threshold (negative offset **d41**, comparated to the temperature of defrost probe d40 at the end of first thermostation cycle).	AbS/rEL/AdP	flag	AbS	AbS	AbS	AbS
d45	Sets the Evaporator 2 defrost activation threshold.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
d60	Maximum number of defrost to skip. **0** = disabled.	0...10	num	0	0	0	0
d61	Nominal defrost duration percentage 1.	0...100.0	%RH	0.0	0.0	0.0	0.0
d63	Number of defrost cycles at start-up for system ramp-up (without incrementing the counter).	0...10	num	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	0	0	0	0
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	24 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	24 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	24 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
FAn (Fans)							
FP1	Sets the probe used by the evaporator fans during normal operation. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	Pb2
FPt	Parameter **Fst** management mode. • **AbS** (0) = absolute value • **rEL** (1) = relative value	AbS/rEL	flag	AbS	AbS	AbS	AbS
FSt	Fan disabling temperature. If the value read is greater than **FSt**, the fans will be stopped. The value is positive or negative (only if **FP1**≠diS).	-199.9...1999	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature (only if **FP1**≠dis).	-199.9...1999	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan activation differential (only if **FP1**≠dis).	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Evaporator fan activation delay after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>dFd</td><td>Evaporator fan operating mode during a defrost.
no(0) = Fans not excluded (see FCO, Fon, FoF, Fnn, FnF)
yES(1) = Exclude fan during defrost</td><td>no/yES</td><td>flag</td><td>yES</td><td>yES</td><td>yES</td><td>yES</td></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table>
<tr><th rowspan="2">FP1 Status</th><th rowspan="2">FP1 probe</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr>
<tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr>
<tr><td rowspan="7">ok</td><td rowspan="7">≠diS</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>DC</td><td>T</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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">≠diS</td><td>0</td><td>DC</td><td>Off</td><td>DC</td><td>Off</td></tr>
<tr><td>1</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>2</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td rowspan="7">no</td><td rowspan="7">diS</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>DC</td><td>On</td><td>DC</td></tr>
<tr><td>2</td><td>On</td><td>DC</td><td>On</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
</table>
Headings legend:
FP1 Status = probe FP1 status (ok = present; ko = in error and no = absent); FP1 probe = evaporator 1 probe (see FP1); day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; dC = Duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FOn</td><td>Fans on time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FOF</td><td>Fans off time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Fans on time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Fans off time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
FC1	Sets the probe used by the condenser fans. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
SCF	Condenser fan enabling setpoint.	-50.0...150.0	°C/°F	0.0	0.0	0.0	0.0
dCF	Condenser fan enabling differential.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
tCF	Condenser fan enabling delay after defrost.	0...255	min	0	0	0	0
CFd	Condenser fans disabling during defrost. • **no** (0) = disabled • **yES** (1) = enabled if energy saving mode is active (only if **ESt**≠0 and **ESt**≠4).	no/yES	flag	no	no	no	no
AL (Alarms)							
rA1	Sets probe 1 used for temperature alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
Att	Sets the absolute or relative value for parameters **HAL** and **LAL**. • **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 probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**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...250	min	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 on probe 1.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **no**(0) = alarm not activated • **yES**(1) = alarm activated.	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = lock compressor and defrost • **2** = lock fans, compressor and defrost • **3** = reserved • **4** = reserved	0...4	num	0	0	0	0
AoP	Alarm output polarity. • **nC** (0) = NC (Normally closed) • **nO** (1) = NO (Normally open).	nC/nO	flag	nO	nO	nO	nO

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>rA3</td><td>Sets probe used for temperature alarms.
diS (0) = disabled
Pb1 (1) = probe Pb1
Pb2 (2) = probe Pb2
Pb3 (3) = probe Pb3
Pb4 (4) = probe Pb4
Pbi (5) = virtual probe
Pbr (6) = remote probe
PbL (7) = reserved</td><td>diS, Pb1...Pb4
Pbi, Pbr, PbL</td><td>num</td><td>Pb3</td><td>Pb3</td><td>Pb3</td><td>Pb3</td></tr>
<tr><td>SA3</td><td>Compressor overheating setpoint.</td><td>LdL...HdL</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
<tr><td>dA3</td><td>Compressor overheating differential.</td><td>0.1...30.0</td><td>°C/°F</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td></tr>
<tr><td>rFt</td><td>Low refrigerant alarm signaling delay.</td><td>0...250</td><td>min</td><td colspan="4">0 (not in applications)</td></tr>
<tr><td colspan="8">HAC (HACCP)</td></tr>
<tr><td>HCP</td><td>Sets probe used for HACCP alarms.
diS (0) = disabled
Pb1 (1) = probe Pb1
Pb2 (2) = probe Pb2
Pb3 (3) = probe Pb3
Pb4 (4) = probe Pb4
Pbi (5) = virtual probe
Pbr (6) = remote probe
PbL (7) = reserved</td><td>diS, Pb1...Pb4
Pbi, Pbr, PbL</td><td>num</td><td>diS</td><td>diS</td><td>diS</td><td>diS</td></tr>
<tr><td>SHH</td><td>Maximum HACCP alarm threshold.</td><td>SLH...1999</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
<tr><td>SLH</td><td>Minimum HACCP alarm threshold.</td><td>-199.9...SHH</td><td>°C/°F</td><td>-50.0</td><td>-50.0</td><td>-50.0</td><td>-50.0</td></tr>
<tr><td>drA</td><td>Minimum period time in critical area before alarm signalling.</td><td>0...250</td><td>min</td><td>10</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td>drH</td><td>HACCP alarm reset time from last manual reset.</td><td>0...250</td><td>min</td><td>10</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td>HCE</td><td>Enable HACCP alarms storage with/without alarm relay enabling.
0 = HACCP alarms storage NOT enabled
1 = HACCP alarms storage enabled and alarm relay NOT enabled
2 = HACCP alarms storage enabled and alarm relay enabled</td><td>0/1/2</td><td>num</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>HCt</td><td>HACCP alarms storage disabling time (key or digital input).</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="8">dOr (Door switch)</td></tr>
<tr><td>dOd</td><td>Digital input shuts off utilities.<table><tr><th>dod</th><th>dCo</th><th>Fan</th><th>Compressor</th></tr><tr><td>0</td><td>---</td><td>ON</td><td>ON</td></tr><tr><td>1</td><td>---</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>0</td><td>ON</td><td>OFF</td></tr><tr><td>2</td><td>> 0</td><td>ON</td><td>OFF after dCo is expired</td></tr><tr><td>3</td><td>0</td><td>OFF</td><td>OFF</td></tr><tr><td>3</td><td>> 0</td><td>OFF</td><td>OFF after dCo is expired</td></tr><tr><td>4</td><td colspan="3">Reserved</td></tr><tr><td>5</td><td colspan="3">Reserved</td></tr><tr><td>6</td><td colspan="3">Reserved</td></tr><tr><td>7</td><td colspan="3">Reserved</td></tr><tr><td>8</td><td colspan="3">Reserved</td></tr><tr><td>9</td><td colspan="3">Reserved</td></tr><tr><td>10</td><td colspan="3">Reserved</td></tr></table></td><td>0...10</td><td>num</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>dAd</td><td>Digital input activation delay</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dCo</td><td>Compressor switch-off delay from door opening.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dFo</td><td>Fan enabling delay from acknowledgment.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
AuP	Auxiliary (AUX) output activation when the door is opened. • **no**(0) = disabled • **yES**(1) = AUX output activation	no/yES	flag	yES	yES	yES	yES
dCd	Fans enabling delay after door closed.	0...250	s	0	0	0	0
Lin (Field Bus)							
L00	Sets probe shared via Field Bus. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe	diS, Pb1...Pb4 Pbi, Pbr	num	diS	diS	diS	diS
L01	Shares the displayed value with the Field Bus network. • **0** = help prevents sending the displayed value from the device to the Field Bus network • **1** = enables sending the displayed value from the device to the Field Bus network • **2** = displays the value of the device with setting **L01** = 1.	0/1/2	num	0	0	0	0
L02	Sends the Setpoint value to the Field Bus network when it is changed. • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L03	Enables the sending of the defrost request to the Field Bus network. • **0** = send defrost request disabled • **1** = primary device for sending simultaneous defrost request • **2** = primary device for sending sequential defrost request.	0/1/2	num	no	no	no	no
L04	Defrost end method. • **ind** (0) = independent • **dEP** (1) = dependent. Waits for all controllers to have finished defrosting.	ind/dEP	flag	ind	ind	ind	ind
L05	Enables stand-by command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L06	Enables light command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L07	Enables energy saving command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L08	Enables AUX command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L10	Dependent defrost end timeout.	1...250	min	15	15	15	15
L11	Number of devices connected to Field Bus. If the number of devices differs from the set value, a Field Bus alarm will be activated (**ELi**).	0...8	num	0	0	0	0
L12	Alarm relay sharing method via Field Bus. • **0** = function disabled • **1** = primary alarm relay (The relay is activated from local alarm relay or secondary alarm relay) • **2** = secondary alarm relay.	0/1/2	num	no	no	no	no

PAR	Description	Range	MU	Value	AP1	AP2	AP3
L15	Share buzzer and alarm silenced command via Field Bus. • **0** = function disabled • **1** = main board • **2** = remote board (shares buzzer and alarm silenced command with main board).	0/1/2	num	no	no	no	no
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...255	min	0	0	0	0
EnS (Energy Saving)							
oSP	Temperature value to be added to the setpoint 1 in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
Add (Communication)							
Ad1	On Board Address 1 (RS485).	1...247	num	1 (not in applications)			
br1	On Board baudrate 1 (RS485). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt1	On Board parity bit 1 (RS485). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
Ad2	On Board Address 2 (Field Bus).	1...247	num	1 (not in applications)			
br2	On Board baudrate 2 (Field Bus). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt2	On Board parity bit 2 (Field Bus). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
SC2	Primary/Secondary selection serial port 2 (Field Bus). • **CLi**(0) = Primary • **SEr**(1) = Secondary	CLi/SEr	flag	SEr	SEr	SEr	SEr
Po2	Serial 2 polling time (only visible if **SC2** = 0).	0...1000	s/100	100	100	100	100
to2	Serial 2 timeout (only visible if **SC2** = 0).	0...1000	s/100	50	50	50	50
Ad3	On Board Address 3 (TTL).	1...247	num	1 (not in applications)			
br3	On Board baudrate 3 (TTL). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt3	On Board parity bit 3 (TTL). • **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. • **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

PAR	Description	Range	MU	Value	AP1	AP2	AP3
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
CA4	Positive or negative temperature value to be added to the value of Pb4.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CAi	Activation of the calibration value. • **0** = Adds the value to the temperature value displayed • **1** = Adds the value to the temperature used by the regulators and not to the one displayed • **2** = Adds the value to the temperature used by the regulators and to the temperature displayed.	0/1/2	num	2	2	2	2
LdL	Minimum value that can be displayed by the device.	-199.9...**HdL**	°C/°F	-112.0	-112.0	-112.0	-112.0
HdL	Maximum value that can be displayed by the device.	**LdL**...1999	°C/°F	302	302	302	302
LoC	Keypad lock. • **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. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = virtual probe • **6** = remote probe • **7** = reserved	0...7	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECNext**. • **0** = Module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = Setpoint • **6** = virtual probe • **7** = remote probe • **8** = reserved	0...8	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (label **dEF**).	0...250	min	30	30	30	30
ndt	Display with decimal point. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			

PAR	Description	Range	MU	Value	AP1	AP2	AP3
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H13	Configuration of digital input 3 (**DI3**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = reserved • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved • **±14** = load application AP1 and AP2 • **±15** = panic alarm • **±16** = HACCP alarms disable **Notes**: • 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.	-16...+16	num	0	0	0	0
H14	Configuration of digital input 4 (**DI4**) / polarity. Same as **H13**.	-16...+16	num	0	0	0	0
H15	Configuration of digital input 5 (**DI5**) / polarity.Same as **H13**..	-16...+16	num	4	4	4	4

PAR	Description	Range	MU	Value	AP1	AP2	AP3
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor 1 • **2** = defrost 1 • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = defrost 2 • **11** = fans 2 (condenser fans inversion function) • **12** = heater dead band control • **13** = fans 3 (condenser fans function) • **14** = condenser fans with probe • **15** = indipendent on/off regulator • **16** = reserved • **17** = reserved • **18** = reserved • **19** = compressor 3 • **20** = compressor 4	0...20	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). Same as **H21**.	0...20	num	2	2	2	3
H23	Configuration of digital output 3 (**Out3**). Same as **H21**.	0...20	num	5	5	4	4
H24	Configuration of digital output 4 (**Out4**). Same as **H21**.	0...20	num	3	3	3	5
H25	Enables/disables the buzzer. • **no** (0) = disabled • **yES** (1) = enabled.	no/yES	flag	yES	yES	yES	yES
H31	Configuration of ⌃ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset	0...12	num	1	1	1	1
H32	Configuration of ⌄ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset • **13** = summer/winter	0...13	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...12	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...12	num	8	8	0	8
H35	Configuration of ☆ key. Same as **H31**.	0...12	num	0	0	0	0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
P01	Probe Pb1 present. • **diS** (0) = disable • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC	diS/ntC/Pt1/PtC	num	ntC	ntC	ntC	ntC
P02	Probe Pb2 present. Same as **P01**.	diS/ntC/Pt1/PtC	num	ntC	ntC	ntC	ntC
P03	Probe Pb3 present. • **diS** (0) = disable • **diG** (1) = digital input • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC	diS/diG/ntC/ Pt1/PtC	num	ntC	ntC	ntC	ntC
P04	Probe Pb4 present. Same as **P03**.	diS/diG/ntC Pt1/PtC	num	diS	diS	diS	diS
H45	Defrost input mode for applications with dual evaporator. • **0** = first evaporator only • **1** = if at least one of the evaporators is below its defrost end temperature • **2** = only if both evaporators are under the respective defrost end temperature • **3** = evaporator 1 and evaporator 2 alternately • **4** = end of defrost using two probes.	0...4	num	0	0	0	0
H48	RTC (Real Time Clock) present. • **no** (0) = no RTC • **yES** (1) = RTC present.	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
H70	1st probe to use as a virtual probe. • **0** = disabled • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe.	0...4	num	0	0	0	0
H71	2nd probe to use as a virtual probe. Same as **H70**.	0...4	num	0	0	0	0
H72	% calculation used by the virtual probe for daytime.	0.0...100.0	num	0	0	0	0
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.	/	/	/	/	/	/
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.	/	/	/	/	/	/
FnC (Functions)							
oSP	Reduced set activation / deactivation. The labels displayed will be: • **SP** = the reduced set is not active • **oSP** = the reduced set is active	/	/	/	/	/	/
dEF	Activate defrost	/	/	/	/	/	/
AUX	AUX output activation / deactivation. The labels displayed will be: • **AoF** = Deactivates the AUX output • **Aon** = Activates the AUX output	/	/	/	/	/	/
rAP	Reset pressure switch alarms	/	/	/	/	/	/
rES	Reset HACCP alarms	/	/	/	/	/	/

PAR	Description	Range	MU	Value	AP1	AP2	AP3
nAd (Night and Day)							
E10	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	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	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	Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
dEC (Deep Cooling Cycle)							
dCA	Enable Deep cooling cycle. • **diS**(0) = disabled • **Std**(1) = manual • **Aut**(2) = automatic	diS/ Std/ Aut	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	**LdL**...**HdL**	°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”	**LdL**...**HdL**	°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 IDNext 1385 SBCL

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

User parameters IDNext 1385 SBCL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
SEt	Regulation setpoint 1 with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint 1 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 1; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SP1+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-67.0	-67.0	-67.0	-67.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dt	Dripping time.	0...250	min	0	0	0	0
HAL	High temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Low temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time on probe 1.	0...250	min	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by the selected probe • **1** = stop the reading of the value read by the selected probe at the start of defrosting until the setpoint is reached (or until the expiration of **Ldd**) • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (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

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 IDNext 1385 SBCL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
CP (Compressor)							
rP1	Sets the probe used by regulator 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
SEt	Regulation 1 setpoint. The value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	0.0	0.0	-18.0	3.5
diF	Regulation 1 differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SEt+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-112.0	-112.0	-112.0	-112.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
HC	The regulator 1 will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	C	C	C	C
ont	Regulator switch-on time for probe in error: • 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: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	0	0	0	0
don	Compressor relay activation delay time from call	0...250	s	0	0	0	0
doF	Delay time after switch-off; the indicated time must elapse between compressor relay switch-off and a subsequent switch-on.	0...250	min	0	0	0	0
dbi	Delay time between switch-ons; the indicated time must elapse between two consecutive compressor switch-ons.	0...250	min	0	0	0	0
Cit	Minimum compressor activation time before it can be deactivated. If **Cit** = 0 it is not active.	0...250	min	0	0	0	0
CAt	Maximum compressor activation time before it can be deactivated. If **CAt** = 0 it is not active.	0...250	min	0	0	0	0
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	10	10	10	10
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
dEF (Defrost)							
dP1	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	Pb2
dP2	Sets the probe used by defrost 2. Same as **dP1**.	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS

PAR	Description	Range	MU	Value	AP1	AP2	AP3
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dt2	Unit of measure for defrost duration (**dEt** parameter). • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	1	1	1	1
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	no	no	no	no
tCd	Minimum period of time with the compressor ON or OFF before defrost is activated.	-127...127	min	0	0	0	0
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. • **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	see **d01**	0	0	0	0
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	see **d11**	24	24	24	24
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **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	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	flag	diS	diS	diS	diS
d41	Sets the defrost 1 activation threshold	-199.9...1999	°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...255	min	0	0	0	0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **AbS** (0) = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **rEL** (1) = relative value (negative offset **d41**, compared to defrost temperature probe recorded at the end of the first cooling cycle) • **AdP** (2) = Adaptive defrost : absolute referred to **d45** or relative threshold (negative offset **d41**, comparated to the temperature of defrost probe d40 at the end of first thermostation cycle).	AbS/rEL/AdP	flag	AbS	AbS	AbS	AbS
d45	Sets the Evaporator 2 defrost activation threshold.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
d60	Maximum number of defrost to skip. **0** = disabled.	0...10	num	0	0	0	0
d61	Nominal defrost duration percentage 1.	0...100.0	%RH	0.0	0.0	0.0	0.0
d63	Number of defrost cycles at start-up for system ramp-up (without incrementing the counter).	0...10	num	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	0	0	0	0
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	24 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	24 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	24 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
FAn (Fans)							
FP1	Sets the probe used by the evaporator fans during normal operation. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	Pb2
FPt	Parameter **Fst** management mode. • **AbS** (0) = absolute value • **rEL** (1) = relative value	AbS/rEL	flag	AbS	AbS	AbS	AbS
FSt	Fan disabling temperature. If the value read is greater than **FSt**, the fans will be stopped. The value is positive or negative (only if **FP1**≠diS).	-199.9...1999	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature (only if **FP1**≠dis).	-199.9...1999	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan activation differential (only if **FP1**≠dis).	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Evaporator fan activation delay after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>dFd</td><td>Evaporator fan operating mode during a defrost.
• no(0) = Fans not excluded (see FCO, Fon, FoF, Fnn, FnF)
• yES(1) = Exclude fan during defrost</td><td>no/yES</td><td>flag</td><td>yES</td><td>yES</td><td>yES</td><td>yES</td></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table>
<tr><th rowspan="2">FP1 Status</th><th rowspan="2">FP1 probe</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr>
<tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr>
<tr><td rowspan="7">ok</td><td rowspan="7">≠diS</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>DC</td><td>T</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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">≠diS</td><td>0</td><td>DC</td><td>Off</td><td>DC</td><td>Off</td></tr>
<tr><td>1</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>2</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td rowspan="7">no</td><td rowspan="7">diS</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>DC</td><td>On</td><td>DC</td></tr>
<tr><td>2</td><td>On</td><td>DC</td><td>On</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
</table>
Headings legend:
FP1 Status = probe FP1 status (ok = present; ko = in error and no = absent); FP1 probe = evaporator 1 probe (see FP1); day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; dC = Duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FOn</td><td>Fans on time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FOF</td><td>Fans off time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Fans on time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Fans off time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
FC1	Sets the probe used by the condenser fans. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = reserved	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
SCF	Condenser fan enabling setpoint.	-50.0...150.0	°C/°F	0.0	0.0	0.0	0.0
dCF	Condenser fan enabling differential.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
tCF	Condenser fan enabling delay after defrost.	0...255	min	0	0	0	0
CFd	Condenser fans disabling during defrost. • **no** (0) = disabled • **yES** (1) = enabled if energy saving mode is active (only if **ESt**≠0 and **ESt**≠4).	no/yES	flag	no	no	no	no
AL (Alarms)							
rA1	Sets probe 1 used for temperature alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
Att	Sets the absolute or relative value for parameters **HAL** and **LAL**. • **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 probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**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...250	min	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 on probe 1.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **no**(0) = alarm not activated • **yES**(1) = alarm activated.	no/yES	flag	no	no	no	no
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = lock compressor and defrost • **2** = lock fans, compressor and defrost • **3** = reserved • **4** = reserved	0...4	num	0	0	0	0
AoP	Alarm output polarity. • **nC** (0) = NC (Normally closed) • **nO** (1) = NO (Normally open).	nC/nO	flag	nO	nO	nO	nO

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>rA3</td><td>Sets probe used for temperature alarms.
diS (0) = disabled
Pb1 (1) = probe Pb1
Pb2 (2) = probe Pb2
Pb3 (3) = probe Pb3
Pb4 (4) = probe Pb4
Pbi (5) = virtual probe
Pbr (6) = remote probe
PbL (7) = reserved</td><td>diS, Pb1...Pb4
Pbi, Pbr, PbL</td><td>num</td><td>Pb3</td><td>Pb3</td><td>Pb3</td><td>Pb3</td></tr>
<tr><td>SA3</td><td>Compressor overheating setpoint.</td><td>LdL...HdL</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
<tr><td>dA3</td><td>Compressor overheating differential.</td><td>0.1...30.0</td><td>°C/°F</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td></tr>
<tr><td>rFt</td><td>Low refrigerant alarm signaling delay.</td><td>0...250</td><td>min</td><td colspan="4">0 (not in applications)</td></tr>
<tr><td colspan="8">HAC (HACCP)</td></tr>
<tr><td>HCP</td><td>Sets probe used for HACCP alarms.
diS (0) = disabled
Pb1 (1) = probe Pb1
Pb2 (2) = probe Pb2
Pb3 (3) = probe Pb3
Pb4 (4) = probe Pb4
Pbi (5) = virtual probe
Pbr (6) = remote probe
PbL (7) = reserved</td><td>diS, Pb1...Pb4
Pbi, Pbr, PbL</td><td>num</td><td>diS</td><td>diS</td><td>diS</td><td>diS</td></tr>
<tr><td>SHH</td><td>Maximum HACCP alarm threshold.</td><td>SLH...1999</td><td>°C/°F</td><td>50.0</td><td>50.0</td><td>50.0</td><td>50.0</td></tr>
<tr><td>SLH</td><td>Minimum HACCP alarm threshold.</td><td>-199.9...SHH</td><td>°C/°F</td><td>-50.0</td><td>-50.0</td><td>-50.0</td><td>-50.0</td></tr>
<tr><td>drA</td><td>Minimum period time in critical area before alarm signalling.</td><td>0...250</td><td>min</td><td>10</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td>drH</td><td>HACCP alarm reset time from last manual reset.</td><td>0...250</td><td>min</td><td>10</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td>HCE</td><td>Enable HACCP alarms storage with/without alarm relay enabling.
0 = HACCP alarms storage NOT enabled
1 = HACCP alarms storage enabled and alarm relay NOT enabled
2 = HACCP alarms storage enabled and alarm relay enabled</td><td>0/1/2</td><td>num</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>HCt</td><td>HACCP alarms storage disabling time (key or digital input).</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="8">dOr (Door switch)</td></tr>
<tr><td>dOd</td><td>Digital input shuts off utilities.
<table>
<tr><th>dod</th><th>dCo</th><th>Fan</th><th>Compressor</th></tr>
<tr><td>0</td><td>---</td><td>ON</td><td>ON</td></tr>
<tr><td>1</td><td>---</td><td>OFF</td><td>ON</td></tr>
<tr><td>2</td><td>0</td><td>ON</td><td>OFF</td></tr>
<tr><td>2</td><td>> 0</td><td>ON</td><td>OFF after dCo is expired</td></tr>
<tr><td>3</td><td>0</td><td>OFF</td><td>OFF</td></tr>
<tr><td>3</td><td>> 0</td><td>OFF</td><td>OFF after dCo is expired</td></tr>
<tr><td>4</td><td colspan="3">Reserved</td></tr>
<tr><td>5</td><td colspan="3">Reserved</td></tr>
<tr><td>6</td><td colspan="3">Reserved</td></tr>
<tr><td>7</td><td colspan="3">Reserved</td></tr>
<tr><td>8</td><td colspan="3">Reserved</td></tr>
<tr><td>9</td><td colspan="3">Reserved</td></tr>
<tr><td>10</td><td colspan="3">Reserved</td></tr>
</table></td><td>0...10</td><td>num</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>dAd</td><td>Digital input activation delay</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dCo</td><td>Compressor switch-off delay from door opening.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dFo</td><td>Fan enabling delay from acknowledgment.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
AuP	Auxiliary (AUX) output activation when the door is opened. • **no**(0) = disabled • **yES**(1) = AUX output activation	no/yES	flag	yES	yES	yES	yES
dCd	Fans enabling delay after door closed.	0...250	s	0	0	0	0
Lin (Field Bus)							
L00	Sets probe shared via Field Bus. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe	diS, Pb1...Pb4 Pbi, Pbr	num	diS	diS	diS	diS
L01	Shares the displayed value with the Field Bus network. • **0** = help prevents sending the displayed value from the device to the Field Bus network • **1** = enables sending the displayed value from the device to the Field Bus network • **2** = displays the value of the device with setting **L01** = 1.	0/1/2	num	0	0	0	0
L02	Sends the Setpoint value to the Field Bus network when it is changed. • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L03	Enables the sending of the defrost request to the Field Bus network. • **0** = send defrost request disabled • **1** = primary device for sending simultaneous defrost request • **2** = primary device for sending sequential defrost request.	0/1/2	num	no	no	no	no
L04	Defrost end method. • **ind** (0) = independent • **dEP** (1) = dependent. Waits for all controllers to have finished defrosting.	ind/dEP	flag	ind	ind	ind	ind
L05	Enables stand-by command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L06	Enables light command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L07	Enables energy saving command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L08	Enables AUX command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L10	Dependent defrost end timeout.	1...250	min	15	15	15	15
L11	Number of devices connected to Field Bus. If the number of devices differs from the set value, a Field Bus alarm will be activated (**ELi**).	0...8	num	0	0	0	0
L12	Alarm relay sharing method via Field Bus. • **0** = function disabled • **1** = primary alarm relay (The relay is activated from local alarm relay or secondary alarm relay) • **2** = secondary alarm relay.	0/1/2	num	no	no	no	no

PAR	Description	Range	MU	Value	AP1	AP2	AP3
L15	Share buzzer and alarm silenced command via Field Bus. • **0** = function disabled • **1** = main board • **2** = remote board (shares buzzer and alarm silenced command with main board).	0/1/2	num	no	no	no	no
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...255	min	0	0	0	0
EnS (Energy Saving)							
oSP	Temperature value to be added to the setpoint 1 in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
Add (Communication)							
Ad1	On Board Address 1 (RS485).	1...247	num	1 (not in applications)			
br1	On Board baudrate 1 (RS485). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt1	On Board parity bit 1 (RS485). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
Ad2	On Board Address 2 (Field Bus).	1...247	num	1 (not in applications)			
br2	On Board baudrate 2 (Field Bus). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt2	On Board parity bit 2 (Field Bus). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
SC2	Primary/Secondary selection serial port 2 (Field Bus). • **CLi**(0) = Primary • **SEr**(1) = Secondary	CLi/SEr	flag	SEr	SEr	SEr	SEr
Po2	Serial 2 polling time (only visible if **SC2** = 0).	0...1000	s/100	100	100	100	100
to2	Serial 2 timeout (only visible if **SC2** = 0).	0...1000	s/100	50	50	50	50
Ad3	On Board Address 3 (TTL).	1...247	num	1 (not in applications)			
br3	On Board baudrate 3 (TTL). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt3	On Board parity bit 3 (TTL). • **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. • **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

PAR	Description	Range	MU	Value	AP1	AP2	AP3
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
CA4	Positive or negative temperature value to be added to the value of Pb4.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CAi	Activation of the calibration value. • **0** = Adds the value to the temperature value displayed • **1** = Adds the value to the temperature used by the regulators and not to the one displayed • **2** = Adds the value to the temperature used by the regulators and to the temperature displayed.	0/1/2	num	2	2	2	2
LdL	Minimum value that can be displayed by the device.	-199.9...**HdL**	°C/°F	-112.0	-112.0	-112.0	-112.0
HdL	Maximum value that can be displayed by the device.	**LdL**...1999	°C/°F	302	302	302	302
LoC	Keypad lock. • **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. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = virtual probe • **6** = remote probe • **7** = reserved	0...7	num	1	1	1	1
ddE	Selects the type of value to show on the module **ECNext**. • **0** = Module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = Setpoint • **6** = virtual probe • **7** = remote probe • **8** = reserved	0...8	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (label **dEF**).	0...250	min	30	30	30	30
ndt	Display with decimal point. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			

PAR	Description	Range	MU	Value	AP1	AP2	AP3
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2
H13	Configuration of digital input 3 (**DI3**) / polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = reserved • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved • **±14** = load application AP1 and AP2 • **±15** = panic alarm • **±16** = HACCP alarms disable **Notes**: • 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.	-16...+16	num	0	0	0	0
H14	Configuration of digital input 4 (**DI4**) / polarity. Same as **H13**.	-16...+16	num	0	0	0	0
H15	Configuration of digital input 5 (**DI5**) / polarity.Same as **H13**..	-16...+16	num	4	4	4	4

PAR	Description	Range	MU	Value	AP1	AP2	AP3
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor 1 • **2** = defrost 1 • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = defrost 2 • **11** = fans 2 (condenser fans inversion function) • **12** = heater dead band control • **13** = fans 3 (condenser fans function) • **14** = condenser fans with probe • **15** = indipendent on/off regulator • **16** = reserved • **17** = reserved • **18** = reserved • **19** = compressor 3 • **20** = compressor 4	0...20	num	1	1	1	1
H22	Configuration of digital output 2 (**Out2**). Same as **H21**.	0...20	num	2	2	2	3
H23	Configuration of digital output 3 (**Out3**). Same as **H21**.	0...20	num	5	5	4	4
H24	Configuration of digital output 4 (**Out4**). Same as **H21**.	0...20	num	3	3	3	5
H25	Enables/disables the buzzer. • **no** (0) = disabled • **yES** (1) = enabled.	no/yES	flag	yES	yES	yES	yES
H31	Configuration of △ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset	0...12	num	1	1	1	1
H32	Configuration of ▽ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = reserved • **6** = reserved • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset • **13** = summer/winter	0...13	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...12	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...12	num	8	8	0	8
H35	Configuration of ☆ key. Same as **H31**.	0...12	num	0	0	0	0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
P01	Probe Pb1 present. • **diS** (0) = disable • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC	diS/ntC/Pt1/PtC	num	ntC	ntC	ntC	ntC
P02	Probe Pb2 present. Same as **P01**.	diS/ntC/Pt1/PtC	num	ntC	ntC	ntC	ntC
P03	Probe Pb3 present. • **diS** (0) = disable • **diG** (1) = digital input • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC	diS/diG/ntC/ Pt1/PtC	num	ntC	ntC	ntC	ntC
P04	Probe Pb4 present. Same as **P03**.	diS/diG/ntC Pt1/PtC	num	diS	diS	diS	diS
H45	Defrost input mode for applications with dual evaporator. • **0** = first evaporator only • **1** = if at least one of the evaporators is below its defrost end temperature • **2** = only if both evaporators are under the respective defrost end temperature • **3** = evaporator 1 and evaporator 2 alternately • **4** = end of defrost using two probes.	0...4	num	0	0	0	0
H48	RTC (Real Time Clock) present. • **no** (0) = no RTC • **yES** (1) = RTC present.	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
H70	1st probe to use as a virtual probe. • **0** = disabled • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe.	0...4	num	0	0	0	0
H71	2nd probe to use as a virtual probe. Same as **H70**.	0...4	num	0	0	0	0
H72	% calculation used by the virtual probe for daytime.	0.0...100.0	num	0	0	0	0
ZCE	It enables/disables the zero crossing feature • **0** = disabled • **1** = enabled	0/1	flag	0	0	0	0
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.	/	/	/	/	/	/
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.	/	/	/	/	/	/
FnC (Functions)							
oSP	Reduced set activation / deactivation. The labels displayed will be: • **SP** = the reduced set is not active • **oSP** = the reduced set is active	/	/	/	/	/	/
dEF	Activate defrost	/	/	/	/	/	/

PAR	Description	Range	MU	Value	AP1	AP2	AP3
AUX	AUX output activation / deactivation. The labels displayed will be: • **AoF** = Deactivates the AUX output • **Aon** = Activates the AUX output	/	/	/	/	/	/
rAP	Reset pressure switch alarms	/	/	/	/	/	/
rES	Reset HACCP alarms	/	/	/	/	/	/
nAd (Night and Day)							
E10	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	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	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	Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
dEC (Deep Cooling Cycle)							
dCA	Enable Deep cooling cycle. • **diS**(0) = disabled • **Std**(1) = manual • **Aut**(2) = automatic	diS/ Std/ Aut	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	**LdL**...**HdL**	°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”	**LdL**...**HdL**	°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 IDNext 1385 SBCIL

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).
Failure to follow these instructions can result in death, serious injury, or equipment damage.

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

User parameters IDNext 1385 SBCIL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
SEt	Regulation setpoint 1 with range between the minimum setpoint **LSE** and the maximum setpoint **HSE**. The setpoint 1 value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	10.0	-18.0
diF	Compressor relay activation differential 1; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SP1+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-67.0	-67.0	-67.0	-67.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dt	Dripping time.	0...250	min	0	0	0	0
HAL	High temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Low temperature 1 alarm. Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
tAo	Temperature alarm signaling delay time on probe 1.	0...250	min	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by the selected probe • **1** = stop the reading of the value read by the selected probe at the start of defrosting until the setpoint is reached (or until the expiration of **Ldd**) • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (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

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 IDNext 1385 SBCIL

PAR	Description	Range	MU	Value	AP1	AP2	AP3
CP (Compressor)							
rE	Sets the temperature control type to perform. • **0**: single thermostat • **1**: dual thermostat in series • **2**: dual thermostat in parallel • **3**: neutral zone • **4**: proportional band	0...4	num	0	0	0	0
rP1	Sets the probe used by regulator 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
rP2	Sets the probe used by regulator 2 (only if **rE**≠0). Same as **rP1**.	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
SEt	Regulation 1 setpoint. The value is set in the "Machine status" menu.	**LSE**...**HSE**	°C/°F	3.5	3.5	-18.0	3.5
diF	Regulation 1 differential; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to **SEt+diF**.	0.0...30.0	°C/°F	2.0	2.0	2.0	2.0
db1	Response band above setpoint 1.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
SP2	Regulation 2 setpoint (only if **rE**≠0). The value is set in the "Machine status" menu.	**LS2**...**HS2**	°C/°F	0.0	0.0	0.0	0.0
dF2	Compressor relay activation differential 2 (only if **rE**≠0); the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 2) and restarts at a temperature value equal to **SP2+dF2**.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
db2	Response band above setpoint 2 (only if **rE**≠0).	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
LSE	Minimum value that can be assigned to setpoint 1.	**LdL**...**HSE**	°C/°F	-112.0	-112.0	-112.0	-112.0
HSE	Maximum value that can be assigned to setpoint 1.	**LSE**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
LS2	Minimum value that can be assigned to setpoint 2.	**LdL**...**HS2**	°C/°F	-112.0	-112.0	-112.0	-112.0
HS2	Maximum value that can be assigned to setpoint 2.	**LS2**...**HdL**	°C/°F	302.0	302.0	302.0	302.0
HC	The regulator 1 will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	C	C	C	C
HC2	The regulator 2 will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	C	C	C	C
ont	Regulator switch-on time for probe in error: • 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: • if **OFt** = 1 and **Ont** = 0 compressor always off • if **OFt** = 1 and **Ont** > 0 compressor in duty cycle	0...250	min	0	0	0	0
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

PAR	Description	Range	MU	Value	AP1	AP2	AP3
odo	Output activation delay time from switching on the controller or after a power failure. **0** = not active	0...250	min	0	0	0	0
CP2	Compressor 2 activation delay.	0...250	min	10	10	10	10
dFA	Condenser fan and compressor activation delay from the request	0...250	s	0	0	0	0
PPE	Default power for non-allocated probe/probe error.	0.0...100.0	%	0.0	0.0	0.0	0.0
tSu	Time between upward steps (increments in refrigeration power), suction section.	0...255	s	0	0	0	0
tSd	Time between downward steps (decrements in refrigeration power), suction section	0...255	s	0	0	0	0
rP3	Sets the probe used by regulator 3 (only if **rE**≠0). • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
HC3	The regulator 3 will execute operation for cooling (set "**C**(0)") or heating (set "**H**(1)")	C/H	flag	C	C	C	C
SP3	Regulation setpoint 3. The setpoint 3 value is set in the "Machine status" menu.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
dF3	Compressor relay activation differential 3; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 3) and restarts at a temperature value equal to **SP3+dF3**.	0.1...30.0	°C/°F	1.0	1.0	1.0	1.0
Hud (Humidity)							
PbH	Sets the probe used by humidity function. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus) • **P1A** (8) = probe Pb1 with alternating visualization of 'ddd' • **P2A** (9) = probe Pb2 with alternating visualization of 'ddd' • **P3A** (10) = probe Pb3 with alternating visualization of 'ddd' • **P4A** (11) = probe Pb4 with alternating visualization of 'ddd' • **PiA** (12) = virtual probe with alternating visualization of 'ddd' • **PrA** (13) = remote probe with alternating visualization of 'ddd' • **PLA** (14) = remote probe (Field Bus) with alternating visualization of 'ddd'	diS, Pb1...Pb4 Pbi, Pbr, PbL, P1A...P4A, PiA PrA, PLA	num	P4A	P4A	diS	diS
SEH	Humidity setpoint.	0.0...100.0	%RH	30.0	30.0	30.0	30.0
dFH	Humidity differential.	0.0...50.0	%RH	0.0	0.0	0.0	0.0
dbH	Humidity intervention semi-band.	0.0...50.0	%RH	0.0	0.0	0.0	0.0
dEH	Humidity regulation during defrost. • **no** (0) = disabled • **yES** (1) = probe PbH	no/yES	flag	no	no	no	no
CHC	Dehumidity control type. • **0** = no temperature control • **1** = control minimum temperature	0/1	flag	0.0	0.0	0.0	0.0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
CHt	Humidity-Temperature control type. • **0** = no temperature control • **1** = control minimum temperature • **2** = control maximum temperature • **3** = control both minimum and maximum temperature	0...3	num	0.0	0.0	0.0	0.0
CHL	Minimum temperature to enable humidity control.	-199.9...1999	°C/°F	-67.0	-67.0	-67.0	-67.0
CHH	Maximum temperature to enable humidity control.	-199.9...1999	°C/°F	302	302	302	302
CHd	Differential to enable humidity control.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CHn	ON time for humidity duty setting operation.	0...250	s	0	0	0	0
CHF	OFF time for humidity duty setting operation.	0...250	s	0	0	0	0
dEF (Defrost)							
dP1	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	diS
dP2	Sets the probe used by defrost 2. Same as **dP1**.	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
dty	Type of defrost. • **0** = electric defrost or due to stoppage - compressor OFF during defrost • **1** = cycle inversion (hot gas) defrost; compressor on during defrost • **2** = defrost with “Free” mode; defrost independent of compressor.	0/1/2	num	0	0	0	0
doH	Defrost cycle activation delay from the call	0...250	min	0	0	0	0
dt2	Unit of measure for defrost duration (**dEt** parameter). • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	1	1	1	1
dEt	Defrost 1 timeout. Maximum duration for defrosting evaporator 1.	1...250	min	30	30	30	30
dS1	Evaporator 1 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dS2	Evaporator 2 defrost end temperature.	-199.9...1999	°C/°F	8.0	8.0	8.0	8.0
dPo	Defrost activation request at power-on. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	no	no	no	no
tCd	Minimum period of time with the compressor ON or OFF before defrost is activated.	-127...127	min	0	0	0	0
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. • **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	see **d01**	0	0	0	0
d01	**d00** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
dit	Time interval between one defrost and the next	0...250	see **d11**	24	24	24	24

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d11	**dit** unit of measure. • **0** = hours • **1** = minutes • **2** = seconds.	0/1/2	num	0	0	0	0
d20	Can be used to activate the defrost when the compressor is off. • **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	Sets the probe used by defrost 1. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	flag	diS	diS	diS	diS
d41	Sets the defrost 1 activation threshold	-199.9...1999	°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...255	min	0	0	0	0
d43	Sets the type of time count in which the evaporator temperature remains under the threshold value. • **0** = count independent of the compressor status • **1** = count with compressor on (when the compressor is off the count begins again) • **2** = count independent of the compressor status. The count stops when the temperature rises above the threshold **d41** • **3** = count with compressor on and until the temperature rises above the threshold **d41**	0...3	num	0	0	0	0
d44	Sets the threshold management mode. • **AbS** (0) = absolute value (for example: **d41** = -25°C means that the threshold temperature is exactly -25°C) • **rEL** (1) = relative value (negative offset **d41**, compared to defrost temperature probe recorded at the end of the first cooling cycle) • **AdP** (2) = Adaptive defrost : absolute referred to **d45** or relative threshold (negative offset **d41**, comparated to the temperature of defrost probe d40 at the end of first thermostation cycle).	AbS/rEL/AdP	flag	AbS	AbS	AbS	AbS
d45	Sets the Evaporator 2 defrost activation threshold.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
d60	Maximum number of defrost to skip. **0** = disabled.	0...10	num	0	0	0	0
d61	Nominal defrost duration percentage 1.	0...100.0	%RH	0.0	0.0	0.0	0.0
d63	Number of defrost cycles at start-up for system ramp-up (without incrementing the counter).	0...10	num	0	0	0	0
d90	Sets the defrost mode with RTC. • **0** = RTC disabled • **1** = Reserved • **2** = RTC at fixed intervals (**d91**) • **3** = Regular RTC (**d94**)	0...3	num	0	0	0	0
d91	Sets the number of daily defrosts (only if **d90**=2)	0...255	num	0	0	0	0
d92	Sets the first weekend/holiday day. • **0** = Sunday • **1** = Monday • **2** = Tuesday • **3** = Wednesday • **4** = Thursday • **5** = Friday • **6** = Saturday • **7** = Disabled	0...7	num	7	7	7	7

PAR	Description	Range	MU	Value	AP1	AP2	AP3
d93	Sets the second weekend/holiday day. Same as **d92**.	0...7	num	7	7	7	7
d94	Sets the duration of the regular defrost in days (only if **d90**=3).	1...7	num	1	1	1	1
d1H	1st weekday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
d1n	1st weekday defrost start minutes.	0...59	min	0 (not in applications)			
d2H	2nd weekday defrost start hour. • **d1H...23** = start hour • **24** = disabled	d1H...24	hours	24 (not in applications)			
d2n	2nd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d3H	3rd weekday defrost start hour. • **d2H...23** = start hour • **24** = disabled	d2H...24	hours	24 (not in applications)			
d3n	3rd weekday defrost start minutes.	0...59	min	0 (not in applications)			
d4H	4th weekday defrost start hour. • **d3H...23** = start hour • **24** = disabled	d3H...24	hours	24 (not in applications)			
d4n	4th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d5H	5th weekday defrost start hour. • **d4H...23** = start hour • **24** = disabled	d4H...24	hours	24 (not in applications)			
d5n	5th weekday defrost start minutes.	0...59	min	0 (not in applications)			
d6H	6th weekday defrost start hour. • **d5H...23** = start hour • **24** = disabled	d5H...24	hours	24 (not in applications)			
d6n	6th weekday defrost start minutes.	0...59	min	0 (not in applications)			
F1H	1st weekend/holiday defrost start hour. • **0...23** = start hour • **24** = disabled	0...24	hours	24 (not in applications)			
F1n	1st weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F2H	2nd weekend/holiday defrost start hour. • **F1H...23** = start hour • **24** = disabled	F1H...24	hours	24 (not in applications)			
F2n	2nd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F3H	3rd weekend/holiday defrost start hour. • **F2H...23** = start hour • **24** = disabled	F2H...24	hours	24 (not in applications)			
F3n	3rd weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F4H	4th weekend/holiday defrost start hour. • **F3H...23** = start hour • **24** = disabled	F3H...24	hours	24 (not in applications)			
F4n	4th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F5H	5th weekend/holiday defrost start hour. • **F4H...23** = start hour • **24** = disabled	F4H...24	hours	24 (not in applications)			
F5n	5th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
F6H	6th weekend/holiday defrost start hour. • **F5H...23** = start hour • **24** = disabled	F5H...24	hours	24 (not in applications)			
F6n	6th weekend/holiday defrost start minutes.	0...59	min	0 (not in applications)			
FAn (Fans)							

PAR	Description	Range	MU	Value	AP1	AP2	AP3
FP1	Sets the probe used by the evaporator fans during normal operation. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb2	Pb2	Pb2	Pb2
FPt	Parameter **Fst** management mode. • **AbS** (0) = absolute value • **rEL** (1) = relative value	AbS/rEL	flag	AbS	AbS	AbS	AbS
FSt	Fan disabling temperature. If the value read is greater than **FSt**, the fans will be stopped. The value is positive or negative (only if **FP1**≠diS).	-199.9...1999	°C/°F	50.0	50.0	50.0	50.0
Fot	Evaporator fan activation temperature (only if **FP1**≠dis).	-199.9...1999	°C/°F	-50.0	-50.0	-50.0	-50.0
FAd	Evaporator fan activation differential (only if **FP1**≠dis).	0.1...30.0	°C/°F	2.0	2.0	2.0	2.0
Fdt	Evaporator fan activation delay after a defrost.	0...250	min	0	0	0	0
dt	Dripping time.	0...250	min	0	0	0	0
dFd	Evaporator fan operating mode during a defrost. • **no**(0) = Fans not excluded (see **FCO**, **Fon**, **FoF**, **Fnn**, **FnF**) • **yES**(1) = Exclude fan during defrost	no/yES	flag	yES	yES	yES	yES

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>FCo</td><td>Evaporator fan operating mode.
<table>
<tr><th rowspan="2">FP1 Status</th><th rowspan="2">FP1 probe</th><th rowspan="2">FCo</th><th colspan="2">day</th><th colspan="2">night</th></tr>
<tr><th>Cn</th><th>Cf</th><th>Cn</th><th>Cf</th></tr>
<tr><td rowspan="7">ok</td><td rowspan="7">≠diS</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>DC</td><td>T</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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">≠diS</td><td>0</td><td>DC</td><td>Off</td><td>DC</td><td>Off</td></tr>
<tr><td>1</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>2</td><td>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
<tr><td rowspan="7">no</td><td rowspan="7">diS</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>DC</td><td>On</td><td>DC</td></tr>
<tr><td>2</td><td>On</td><td>DC</td><td>On</td><td>DC</td></tr>
<tr><td>3</td><td>DC</td><td>DC</td><td>DC</td><td>DC</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>DC</td><td>DC</td><td>DC</td><td>DC</td></tr>
</table>
Headings legend:
FP1 Status = probe FP1 status (ok = present; ko = in error and no = absent); FP1 probe = evaporator 1 probe (see FP1); day = day mode; night = night mode; Cn = compressor on; Cf = compressor off.
Status legend:
T = thermostat controlled fans; On = fans on; Off= fans off; dC = Duty cycle.</td><td>0...6</td><td>num</td><td>5</td><td>5</td><td>5</td><td>5</td></tr>
<tr><td>FdC</td><td>Evaporator fan shutoff delay after compressor deactivation.</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FOn</td><td>Fans on time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FOF</td><td>Fans off time for day duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>6</td><td>6</td><td>6</td><td>6</td></tr>
<tr><td>Fnn</td><td>Fans on time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>FnF</td><td>Fans off time for night duty cycle. Applies when Duty cycle mode is active (see FCO).</td><td>0...250</td><td>min</td><td>12</td><td>12</td><td>12</td><td>12</td></tr>
<tr><td>FC1</td><td>Sets the probe used by the condenser fans.
diS (0) = disabled
Pb1 (1) = probe Pb1
Pb2 (2) = probe Pb2
Pb3 (3) = probe Pb3
Pb4 (4) = probe Pb4
Pbi (5) = virtual probe
Pbr (6) = remote probe
PbL (7) = remote probe (Field Bus)</td><td>diS, Pb1...Pb4
Pbi, Pbr, PbL</td><td>num</td><td>diS</td><td>diS</td><td>diS</td><td>diS</td></tr>
<tr><td>SCF</td><td>Condenser fan enabling setpoint.</td><td>-50.0...150.0</td><td>°C/°F</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
dCF	Condenser fan enabling differential.	0.0...30.0	°C/°F	0.0	0.0	0.0	0.0
tCF	Condenser fan enabling delay after defrost.	0...255	min	0	0	0	0
CFd	Condenser fans disabling during defrost. • **no** (0) = disabled • **yES** (1) = enabled if energy saving mode is active (only if **ESt**≠0 and **ESt**≠4).	no/yES	flag	no	no	no	no
HuL	Humidity level selection. • **0** = disabled • **1** = humidity level '1' • **2** = humidity level '2' • **3** = humidity level '3'.	0...3	num	0	0	0	0
Hu1	Evaporator fans “on time” for humidity level 1.	0...250	min	0	0	0	0
Hu2	Evaporator fans “off time” for humidity level 1.	0...250	min	0	0	0	0
Hu3	Evaporator fans “on time” for humidity level 2.	0...250	min	0	0	0	0
Hu4	Evaporator fans “off time” for humidity level 2.	0...250	min	0	0	0	0
Hu5	Evaporator fans “on time” for humidity level 3.	0...250	min	0	0	0	0
Hu6	Evaporator fans “off time” for humidity level 3.	0...250	min	0	0	0	0
FE (Modulated Fans)							
FE1	Sets the probe used by the modulated fans. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	---	---	Pb2	Pb2
FEt	Sets the **FES** differential management mode. • **AbS** (0) = absolute value • **rEL** (1) = relative value	AbS/rEL	flag	---	---	AbS	AbS
FES	'Modulated fans' regulator inhibiting temperature.	-199.9...1999	°C/°F	---	---	0.0	0.0
FEd	Tripping differential for “modulated fans” regulator (absolute or relative).	0.1...50.0	°C/°F	---	---	0.1	0.1
FEu	Threshold value (Cut-OFF) on “modulated fans” regulator.	0.0...25.0	°C/°F	---	---	2.0	2.0
FEC	Activation differential for the threshold value (Cut-OFF) on “modulated fans” regulator.	0.1...25.0	°C/°F	---	---	5.0	5.0
FEr	Fan deactivation delay time from compressor stoppage.	0...250	min	---	---	20	20
FE2	Minimum implementation percentage applied to the analog output in day mode.	0.0...100.0	%	---	---	0.0	0.0
FE3	Maximum implementation percentage applied to the analog output in day mode with the compressor running.	0.0...100.0	%	---	---	20.0	20.0
FE4	Maximum implementation percentage applied to the analog output in day mode with the compressor off.	0.0...100.0	%	---	---	100.0	100.0
FE5	Minimum implementation percentage applied to the analog output in night mode.	0.0...100.0	%	---	---	60.0	60.0
FE6	Maximum implementation percentage applied to the analog output in night mode with the compressor running.	0.0...100.0	%	---	---	20.0	20.0
FE7	Maximum implementation percentage applied to the analog output in night mode with the compressor off.	0.0...100.0	%	---	---	80.0	80.0
FE8	Implementation percentage applied to the analog output during defrosting.	0.0...100.0	%	---	---	60.0	60.0
FE9	Implementation percentage applied to the analog output in the event of a probe error.	0.0...100.0	%	---	---	0.0	0.0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
FEA	Modulated fans pick-up percentage. Used to overcome thermal inertia of the fans in the event of extended usage at low speed.	0.0...100.0	%	---	---	60.0	60.0
FEb	Modulated fans pick-up time.	0...250	s	---	---	100	100
FEP	Fan forcing procedure duration at pick-up speed.	0...250	min	---	---	60	60
AL (Alarms)							
rA1	Sets probe 1 used for temperature alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb1	Pb1	Pb1	Pb1
rA2	Sets probe 2 used for temperature alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
Att	Sets the absolute or relative value for parameters **HAL** and **LAL**. • **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 probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LAL**...1999	°C/°F	50.0	50.0	50.0	50.0
LAL	Minimum temperature alarm probe 1 (only if **rA1**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**HAL**	°C/°F	-50.0	-50.0	-50.0	-50.0
HA2	Maximum temperature alarm probe 2 (only if **rA2**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when exceeded, will lead to the activation of alarm signaling.	**LA2**...1999	°C/°F	50.0	50.0	50.0	50.0
LA2	Minimum temperature alarm probe 2 (only if **rA2**≠diS). Temperature value (in an absolute or relative value - see **Att**) which, when not reached, will lead to the activation of alarm signaling.	-199.9...**HA2**	°C/°F	-50.0	-50.0	-50.0	-50.0
PAo	Alarm exclusion time when switching on the controller, after a power failure.	0...250	min	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 on probe 1.	0...250	min	0	0	0	0
2tA	Temperature alarm signaling delay time on probe 2.	0...250	min	0	0	0	0
dAt	Defrost ended due to timeout alarm indication. • **no**(0) = alarm not activated • **yES**(1) = alarm activated.	no/yES	flag	no	no	no	no

PAR	Description	Range	MU	Value	AP1	AP2	AP3
EAL	An external alarm inhibits the regulators. • **0** = does not inhibit the regulators • **1** = lock compressor (VSC and on/off) and defrost • **2** = lock fans, compressor (VSC and on/off) and defrost • **3** = lock compressor on/off and defrost and VSC at minimum speed • **4** = lock fans, compressor on/off and defrost and VSC at minimum speed	0...4	num	0	0	0	0
AoP	Alarm output polarity. • **nC** (0) = NC (Normally closed) • **nO** (1) = NO (Normally open).	nC/nO	flag	nO	nO	nO	nO
rA3	Sets probe used for temperature alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	Pb3	Pb3	Pb3	Pb3
SA3	Compressor overheating setpoint.	**LdL**...**HdL**	°C/°F	50.0	50.0	50.0	50.0
dA3	Compressor overheating 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)			
HAC (HACCP)							
HCP	Sets probe used for HACCP alarms. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
SHH	Maximum HACCP alarm threshold.	**SLH**...1999	°C/°F	50.0	50.0	50.0	50.0
SLH	Minimum HACCP alarm threshold.	-199.9...**SHH**	°C/°F	-50.0	-50.0	-50.0	-50.0
drA	Minimum period time in critical area before alarm signalling.	0...250	min	10	10	10	10
drH	HACCP alarm reset time from last manual reset.	0...250	min	10	10	10	10
HCE	Enable HACCP alarms storage with/without alarm relay enabling. • **0** = HACCP alarms storage NOT enabled • **1** = HACCP alarms storage enabled and alarm relay NOT enabled • **2** = HACCP alarms storage enabled and alarm relay enabled	0/1/2	num	0	0	0	0
HCt	HACCP alarms storage disabling time (key or digital input).	0...250	min	0	0	0	0
dOr (Door switch)							

<table>
<tr><th>PAR</th><th>Description</th><th>Range</th><th>MU</th><th>Value</th><th>AP1</th><th>AP2</th><th>AP3</th></tr>
<tr><td>dOd</td><td>Digital input shuts off utilities.
<table>
<tr><th>dod</th><th>dCo</th><th>Fan</th><th>Compressor</th></tr>
<tr><td>0</td><td>---</td><td>ON</td><td>ON</td></tr>
<tr><td>1</td><td>---</td><td>OFF</td><td>ON</td></tr>
<tr><td>2</td><td>0</td><td>ON</td><td>OFF</td></tr>
<tr><td>2</td><td>> 0</td><td>ON</td><td>OFF after dCo is expired</td></tr>
<tr><td>3</td><td>0</td><td>OFF</td><td>OFF</td></tr>
<tr><td>3</td><td>> 0</td><td>OFF</td><td>OFF after dCo is expired</td></tr>
<tr><td>4</td><td>0</td><td>ON</td><td>OFF (VSC at minimum speed)</td></tr>
<tr><td>4</td><td>> 0</td><td>ON</td><td>OFF (VSC at minimum speed) after dCo is expired</td></tr>
<tr><td>5</td><td>0</td><td>OFF</td><td>OFF (VSC at minimum speed)</td></tr>
<tr><td>5</td><td>> 0</td><td>OFF</td><td>OFF (VSC at minimum speed) after dCo is expired</td></tr>
<tr><td>6</td><td colspan="3">Reserved</td></tr>
<tr><td>7</td><td colspan="3">Reserved</td></tr>
<tr><td>8</td><td colspan="3">Reserved</td></tr>
<tr><td>9</td><td colspan="3">Reserved</td></tr>
<tr><td>10</td><td colspan="3">Reserved</td></tr>
</table></td><td>0...10</td><td>num</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>dAd</td><td>Digital input activation delay</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dCo</td><td>Compressor switch-off delay from door opening.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>dFo</td><td>Fan enabling delay from acknowledgment.</td><td>0...250</td><td>min</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>AuP</td><td>Auxiliary (AUX) output activation when the door is opened.
• no(0) = disabled
• yES(1) = AUX output activation</td><td>no/yES</td><td>flag</td><td>yES</td><td>yES</td><td>yES</td><td>yES</td></tr>
<tr><td>dCd</td><td>Fans enabling delay after door closed.</td><td>0...250</td><td>s</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="8">Lin (Field Bus)</td></tr>
<tr><td>L00</td><td>Sets probe shared via Field Bus.
• diS (0) = disabled
• Pb1 (1) = probe Pb1
• Pb2 (2) = probe Pb2
• Pb3 (3) = probe Pb3
• Pb4 (4) = probe Pb4
• Pbi (5) = virtual probe
• Pbr (6) = remote probe</td><td>diS, Pb1...Pb4
Pbi, Pbr</td><td>num</td><td>diS</td><td>diS</td><td>diS</td><td>diS</td></tr>
<tr><td>L01</td><td>Shares the displayed value with the Field Bus network.
• 0 = help prevents sending the displayed value from the device to the Field Bus network
• 1 = enables sending the displayed value from the device to the Field Bus network
• 2 = displays the value of the device with setting L01 = 1.</td><td>0/1/2</td><td>num</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>L02</td><td>Sends the Setpoint value to the Field Bus network when it is changed.
• no (0) = no
• yES (1) = yes</td><td>no/yES</td><td>flag</td><td>no</td><td>no</td><td>no</td><td>no</td></tr>
<tr><td>L03</td><td>Enables the sending of the defrost request to the Field Bus network.
• 0 = send defrost request disabled
• 1 = primary device for sending simultaneous defrost request
• 2 = primary device for sending sequential defrost request.</td><td>0/1/2</td><td>num</td><td>no</td><td>no</td><td>no</td><td>no</td></tr>
</table>

PAR	Description	Range	MU	Value	AP1	AP2	AP3
L04	Defrost end method. • **ind** (0) = independent • **dEP** (1) = dependent. Waits for all controllers to have finished defrosting.	ind/dEP	flag	ind	ind	ind	ind
L05	Enables stand-by command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L06	Enables light command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L07	Enables energy saving command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L08	Enables AUX command synchronization • **no** (0) = no • **yES** (1) = yes	no/yES	flag	no	no	no	no
L10	Dependent defrost end timeout.	1...250	min	15	15	15	15
L11	Number of devices connected to Field Bus. If the number of devices differs from the set value, a Field Bus alarm will be activated (**ELi**).	0...8	num	0	0	0	0
L12	Alarm relay sharing method via Field Bus. • **0** = function disabled • **1** = primary alarm relay (The relay is activated from local alarm relay or secondary alarm relay) • **2** = secondary alarm relay.	0/1/2	num	no	no	no	no
L15	Share buzzer and alarm silenced command via Field Bus. • **0** = function disabled • **1** = main board • **2** = remote board (shares buzzer and alarm silenced command with main board).	0/1/2	num	no	no	no	no
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...255	min	0	0	0	0
EnS (Energy Saving)							
oSP	Temperature value to be added to the setpoint 1 in the case of an enabled reduced set (Economy function).	-30.0...30.0	°C/°F	0.5	0.5	0.5	0.5
Add (Communication)							
Ad1	On Board Address 1 (RS485).	1...247	num	1 (not in applications)			
br1	On Board baudrate 1 (RS485). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt1	On Board parity bit 1 (RS485). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
Ad2	On Board Address 2 (Field Bus).	1...247	num	1 (not in applications)			
br2	On Board baudrate 2 (Field Bus). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			

PAR	Description	Range	MU	Value	AP1	AP2	AP3
Pt2	On Board parity bit 2 (Field Bus). • **n**(0) = none • **E**(1) = even • **o**(2) = odd.	n/E/o	num	E (not in applications)			
SC2	Primary/Secondary selection serial port 2 (Field Bus). • **CLi**(0) = Primary • **SEr**(1) = Secondary	CLi/SEr	flag	SEr	SEr	SEr	SEr
Po2	Serial 2 polling time (only visible if **SC2** = 0).	0...1000	s/100	100	100	100	100
to2	Serial 2 timeout (only visible if **SC2** = 0).	0...1000	s/100	50	50	50	50
Ad3	On Board Address 3 (TTL).	1...247	num	1 (not in applications)			
br3	On Board baudrate 3 (TTL). • **96** (0) = 9600 baud • **192** (1) = 19200 baud • **384** (2) = 38400 baud	96/192/384	num	192 (not in applications)			
Pt3	On Board parity bit 3 (TTL). • **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. • **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
CA4	Positive or negative temperature value to be added to the value of Pb4.	-30.0...30.0	°C/°F	0.0	0.0	0.0	0.0
CAi	Activation of the calibration value. • **0** = Adds the value to the temperature value displayed • **1** = Adds the value to the temperature used by the regulators and not to the one displayed • **2** = Adds the value to the temperature used by the regulators and to the temperature displayed.	0/1/2	num	2	2	2	2
LdL	Minimum value that can be displayed by the device.	-199.9...**HdL**	°C/°F	-112.0	-112.0	-112.0	-112.0
HdL	Maximum value that can be displayed by the device.	**LdL**...1999	°C/°F	302	302	302	302
LoC	Keypad lock. • **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. • **0** = setpoint • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = virtual probe • **6** = remote probe • **7** = remote probe (Field Bus)	0...7	num	1	1	1	1

PAR	Description	Range	MU	Value	AP1	AP2	AP3
ddE	Selects the type of value to show on the module **ECNext**. • **0** = Module not connected • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe • **5** = Setpoint • **6** = virtual probe • **7** = remote probe • **8** = remote probe (Field Bus)	0...8	num	0	0	0	0
ddL	Display mode during defrosting. • **0** = display the temperature read by Pb1 • **1** = inhibits reading on the value of Pb1 at the start of defrost and until the setpoint is reached • **2** = displays label **dEF** during defrost until the setpoint is reached.	0/1/2	num	1	1	1	1
Ldd	Display unlock timeout value after defrost (label **dEF**).	0...250	min	30	30	30	30
ndt	Display with decimal point. • **no**(0) = no • **yES**(1) = yes.	no/yES	flag	yES	yES	yES	yES
FiS	Selects display filter. • **0** = disabled • **1** = the filter is set based on time values **tAu** and **5tAu**, and is applied to the displayed information according to the value of parameter **Fit** • **2** = the temperature value shown changes by 1°C/°F every **tAu** minutes.	0/1/2	num	0 (not in applications)			
tAU	Display filter time constant.	0...250	min	0 (not in applications)			
Fit	Display filter mode. • **0** = the filter is only enabled when the temperature increases • **1** = the filter is always enabled (both when the temperature increases and when it decreases)	0/1	flag	0 (not in applications)			
PS1	When enabled (**PS1**≠0) this is the access key for the user parameters.	0...250	num	0	0	0	0
PS2	When enabled (**PS2**≠0) this is the access key for the installer parameters.	0...250	num	15	15	15	15
VSC (Variable-speed compressor)							
CEr	Controlled capacity value in the event of regulation probe error.	0.0...100.0	%	50.0	50.0	50.0	50.0
PdS	Differential for forced activation of a wake-up.	-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 wake-up) or less than **SEt+PuS** (for pull-up). When the timer runs out, a wake-up 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...999	min	4	4	4	4
PdE	Wake-up 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 wake-up timeout.	0...999	min	10	10	10	10

PAR	Description	Range	MU	Value	AP1	AP2	AP3
Pdd	Controlled capacity value, if a pull-down is activated, when the time period **PUd** has elapsed, that will be maintained: • for a time period **Pdt** at the end of which the capacity will be forced to 100% until **SEt+PdE** is reached. • until the temperature **SEt+PdE** is reached (if the time < Pdt).	0.0...100.0	%	60.0	60.0	60.0	60.0
CPd	Controlled capacity after a wake-up in day operating mode.	0.0...100.0	%	60.0	60.0	60.0	60.0
CPn	Controlled capacity after a wake-up in night operating mode.	0.0...100.0	%	50.0	50.0	50.0	50.0
CSd	Duration of constant-speed compressor heating (set by **CSC**) on startup or after a stand-by.	0...999	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. • **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...100.0	%	100.0	1000.	100.0	100.0
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
AoU (Analog Output configuration)							
AP	Sets probe used for Analogue output. • **diS** (0) = disabled • **Pb1** (1) = probe Pb1 • **Pb2** (2) = probe Pb2 • **Pb3** (3) = probe Pb3 • **Pb4** (4) = probe Pb4 • **Pbi** (5) = virtual probe • **Pbr** (6) = remote probe • **PbL** (7) = remote probe (Field Bus)	diS, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
AoF	Analogue output mode. • **ro** (0) = output proportional to probe reading, within the range set by parameters **LAo** and **HAo** • **Er** (1) = output proportional to error between setpoint 1 and the value read on the probe, within the range set by parameters **LAo** and **HAo**	ro/Er	flag	ro	ro	ro	ro
LAo	Analog output lower limit.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
HAo	Analog output upper limit.	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
AoS	Probe error value.	0.0...100.0	%	0.0	0.0	0.0	0.0
CnF (Configuration)							
H08	Stand-by operating mode. • **0** = display off; the regulators are active and the device signals possible alarms by reactivating the display • **1** = display off; the regulators and the alarms are blocked • **2** = the display shows the label “OFF”; the regulators and alarms are inhibited.	0/1/2	num	2	2	2	2

PAR	Description	Range	MU	Value	AP1	AP2	AP3
H11	Configuration of digital input 1 (**DI1**)/ polarity. • **0** = disabled • **±1** = defrost • **±2** = reduced set • **±3** = auxiliary • **±4** = door switch • **±5** = external alarm • **±6** = stand-by • **±7** = pressure switch • **±8** = deep cooling • **±9** = light • **±10** = reserved • **±11** = energy saving with door • **±12** = reserved • **±13** = reserved • **±14** = load application AP1 and AP2 • **±15** = panic alarm • **±16** = HACCP alarms disable **Notes**: • 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.	-16...+16	num	0	0	0	0
H12	Configuration of digital input 2 (**DI2**) / polarity. Same as **H11**.	-16...+16	num	0	0	0	0
H13	Configuration of digital input 3 (**DI3**) / polarity. Same as **H11**.	-16...+16	num	0	0	0	0
H14	Configuration of digital input 4 (**DI4**) / polarity. Same as **H11**.	-16...+16	num	0	0	0	0
H15	Configuration of digital input 5 (**DI5**) / polarity.Same as **H11**. .	-16...+16	num	0	0	0	0
H21	Configuration of digital output 1 (**Out1**). • **0** = disabled • **1** = compressor 1 • **2** = defrost 1 • **3** = evaporator fans • **4** = alarm • **5** = auxiliary • **6** = stand-by • **7** = light • **8** = buzzer • **9** = compressor 2 • **10** = defrost 2 • **11** = fans 2 (condenser fans inversion function) • **12** = heater dead band control • **13** = fans 3 (condenser fans function) • **14** = condenser fans with probe • **15** = indipendent on/off regulator • **16** =humidify • **17** =de-humidify • **18** = de-humidify with resistor • **19** = compressor 3 • **20** = compressor 4	0...20	num	1	1	0	3
H22	Configuration of digital output 2 (**Out2**). Same as **H21**.	0...20	num	17	17	2	0
H23	Configuration of digital output 3 (**Out3**). Same as **H21**.	0...20	num	16	16	3	4
H24	Configuration of digital output 4 (**Out4**). Same as **H21**.	0...20	num	3	3	4	7
H25	Enables/disables the buzzer. • **no** (0) = disabled • **yES** (1) = enabled.	no/yES	flag	yES	yES	yES	yES

PAR	Description	Range	MU	Value	AP1	AP2	AP3
H31	Configuration of ⌂ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = start nPL tuning • **6** = start tun tuning • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset	0...12	num	1	1	1	1
H32	Configuration of ▽ key. • **0** = disabled • **1** = defrost • **2** = auxiliary • **3** = reduced set • **4** = stand-by • **5** = start nPL tuning • **6** = start tun tuning • **7** = deep cooling • **8** = light • **9** = reserved • **10** = reserved • **11** = HACCP disabled • **12** = HACCP reset • **13** = summer/winter	0...13	num	0	0	0	0
H33	Configuration of ⏻ key. Same as **H31**.	0...12	num	4	4	4	4
H34	Configuration of 💡 key. Same as **H31**.	0...12	num	0	0	0	8
H35	Configuration of ☆ key. Same as **H31**.	0...12	num	0	0	0	0
P01	Probe Pb1 present. • **diS** (0) = disable • **diG** (1) = digital input • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC	diS/diG/ntC/ Pt1/PtC	num	ntC	ntC	ntC	ntC
P02	Probe Pb2 present. Same as **P01**.	diS/diG/ntC/ Pt1/PtC	num	ntC	ntC	ntC	ntC
P03	Probe Pb3 present. Same as **P01**.	diS/diG/ntC/ Pt1/PtC	num	ntC	ntC	ntC	ntC
P04	Probe Pb4 present. . • **diS** (0) = disable • **diG** (1) = digital input • **ntC** (2) = NTC • **Pt1** (3) = Pt1000 • **PtC** (4) = PTC • **420** (6) = 4...20 mA • **020** (7) = 0...20 mA	diS/diG/ntC Pt1/PtC /420/020	num	420	420	diS	diS
04L	Lower limit analog input 4 (only if **P04** = 020 or **P04** = 420).	-199.9...**04H**	num	0.0	0.0	0.0	0.0
04H	Upper limit analog input 4 (0...20 mA or 4...20 mA) (only if **P04** = diS).	**04L**...1999	num	100.0	100.0	100.0	100.0
n01	Analog output 1 type. • **diS** (0) = disabled • **010** (9) = 0...10 V	diS/010	num	010	010	010	010

PAR	Description	Range	MU	Value	AP1	AP2	AP3
01n	Analogue output 1 type (Output **0...10 V**). • **0** = disabled • **1** = Anti-sweater heaters - Frame Heater • **2** = Reserved • **3** = Variable Speed Fans (VSF) • **4** = General analog output	0...4	num	0	0	0	3
n02	Analog output 2 type. • **diS** (0) = disabled • **diP** (5) = digital PnP • **FP** (6) = variable Frequency PNP • **dP** (7) = variable duty cycle PNP	diS/diP/FP/dP	num	FP	FP	FP	FP
02n	Analogue output 2 configurability (Output **OC**). Same as **01n**.	0...4	num	0	0	2	2
H45	Defrost input mode for applications with dual evaporator. • **0** = first evaporator only • **1** = if at least one of the evaporators is below its defrost end temperature • **2** = only if both evaporators are under the respective defrost end temperature • **3** = evaporator 1 and evaporator 2 alternately • **4** = end of defrost using two probes.	0...4	num	0	0	0	0
H48	RTC (Real Time Clock) present. • **no** (0) = no RTC • **yES** (1) = RTC present.	no/yES	flag	yES	yES	yES	yES
H60	Display selected application. • **0** = disabled • **1** = AP1 • **2** = AP2 • **3** = AP3.	0...3	num	1 (not in applications)			
H70	1st probe to use as a virtual probe. • **0** = disabled • **1** = Pb1 probe • **2** = Pb2 probe • **3** = Pb3 probe • **4** = Pb4 probe.	0...4	num	0	0	0	0
H71	2nd probe to use as a virtual probe. Same as **H70**.	0...4	num	0	0	0	0
H72	% calculation used by the virtual probe for daytime.	0.0...100.0	num	0	0	0	0
ZCE	It enables/disables the zero crossing feature • **0** = disabled • **1** = enabled	0/1	flag	0	0	0	0
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.	/	/	/	/	/	/
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.	/	/	/	/	/	/
FnC (Functions)							
oSP	Reduced set activation / deactivation. The labels displayed will be: • **SP** = the reduced set is not active • **oSP** = the reduced set is active	/	/	/	/	/	/
dEF	Activate defrost	/	/	/	/	/	/
AUX	AUX output activation / deactivation. The labels displayed will be: • **AoF** = Deactivates the AUX output • **Aon** = Activates the AUX output	/	/	/	/	/	/

PAR	Description	Range	MU	Value	AP1	AP2	AP3
rAP	Reset pressure switch alarms	/	/	/	/	/	/
rES	Reset HACCP alarms	/	/	/	/	/	/
tun	Autotuning activation/deactivation	/	/	/	/	/	/
nPL	Preliminary Autotuning procedure activation/deactivation.	/	/	/	/	/	/
nAd (Night and Day)							
E10	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	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	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	Event 2 type. Same as **E15**.	0...5	num	0 (not in applications)			
FrH (Anti-sweater heaters - Frame Heater)							
FH	Anti-sweater heaters probe (FH). • **diS** (0) = disabled • **dC** (1) = duty cycle • **Pb1** (2) = probe Pb1 • **Pb2** (3) = probe Pb2 • **Pb3** (4) = probe Pb3 • **Pb4** (5) = probe Pb4 • **Pbi** (6) = virtual probe • **Pbr** (7) = remote probe • **PbL** (8) = Field Bus probe	diS, dC, Pb1...Pb4 Pbi, Pbr, PbL	num	diS	diS	diS	diS
FHt	Anti-sweater heaters operating period duration (FH), only used if the OC output is used with SSR relay.	1...250	s*10	30	30	30	30
FH0	Setpoint corresponding to the anti-sweater heaters (only if **FH**≠dis and **FH**≠dc).	-199.9...1999	°C/°F	0.0	0.0	0.0	0.0
FH1	Offset corresponding to the anti-sweater heaters (only if **FH**≠dis and **FH**≠dc).	0.0...25.0	°C/°F	0.0	0.0	0.0	0.0
FH2	Band corresponding to the anti-sweater heaters (only if **FH**≠dis and **FH**≠dc).	0.0...25.0	°C/°F	0.0	0.0	0.0	0.0
FH3	Minimum percentage for the anti-sweater heaters (only if **FH**≠dis and **FH**≠dc).	0.0...100.0	%	0.0	0.0	0.0	0.0
FH4	Maximum percentage for the day Duty cycle.	0.0...100.0	%	75.0	75.0	75.0	75.0
FH5	Maximum percentage for the night Duty cycle	0.0...100.0	%	50.0	50.0	50.0	50.0

PAR	Description	Range	MU	Value	AP1	AP2	AP3
FH6	Anti-sweater heaters percentage during defrost.	0.0...100.0	%	100.0	100.0	100.0	100.0
dEC (Deep Cooling Cycle)							
dCA	Enable Deep cooling cycle. • **diS**(0) = disabled • **Std**(1) = manual • **Aut**(2) = automatic	diS/ Std/ Aut	num	diS	diS	diS	diS
dCS	"Deep cooling cycle" setpoint	**LdL**...**HdL**	°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”	**LdL**...**HdL**	°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.

Modbus MSK 864 functions and resources

Contents

This section includes the following topics:

Setting parameters via Modbus

Introduction

Modbus is a Primary/Secondary protocol for communication between devices connected in a network. Modbus devices communicate using a Primary-Secondary technique in which only one device (Primary) can send request messages. The other devices in the network (Secondary) respond, returning the data requested by the Primary or executing the action contained in the message sent by the Primary. A Secondary is a device connected to a network that processes information and sends the results to the Primary using the Modbus protocol.
The Primary device can send messages to individual Secondaries.
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)
- 1 or 2 stop BITs (see **Pty**)

Parameters can be changed via:

- Device keypad
- UNICARD / DMI
- Sends data via Modbus protocol directly to an individual device .

Modbus commands available and data areas

The following commands are implemented:

Modbus command	Description
03 (hex 0x03)	Read resources
16 (hex 0x10)	Write resources
43 (hex 0x2B)	Read device ID. The following 3 fields can be read: • **0** = Manufacturer ID • **1** = Model ID • **2** = Family ID (MSK 864) / device version

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

Configuration

All the serial ports 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 parameters **Adx**.
The device configuration parameters are as follows:

Parameter	Description
Ad1	Modbus protocol controller address 1 (RS485)
br1	Baudrate 1 selection
Pt1	Sets the Modbus 1 protocol parity BIT and the number of stop BITs: • **n** = NONE parity bit + 2 stop BITS • **E** = EVEN parity bit + 1 stop BIT • **o** = ODD parity bit + 1 stop BIT
Ad2	Modbus protocol controller address 2 (Field Bus)
br2	Baudrate 2 selection
Pt2	Sets the Modbus 2 protocol parity BIT and the number of stop BITs. Same as **Pt1**.
Ad3	Modbus protocol controller address 3 (TTL)
br3	Baudrate 3 selection
Pt3	Sets the Modbus 3 protocol parity BIT and the number of stop BITs. Same as **Pt1**.

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

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

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE

- Before writing a Modbus parameter help ensure it is included in the parameter list specific for the model in use.
- Do not write any parameter not having the full understanding of its behavior in general and in relation to the specific application (1).

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

(**1**): contact technical support for parameters not described in the manual and/or in case of any doubt.

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
rE	Type of regulation	**CP**	33932	3840	32967	3	R/W	Byte	N	0…4	num
rP1	Thermostat regulation probe 1	**CP**	32920	3840	32930	48	R/W	Byte	N	0…7	num
rP2	Thermostat regulation probe 2	**CP**	32920	61440	32932	768	R/W	Byte	N	0…7	num
SEt	Regulation setpoint 1	**CP**	32769	0	32931	49152	R/W	Word	Y	LSE...HSE	°C/°F
diF	Differential of setpoint 1	**CP**	32770	0	32928	768	R/W	Word	N	0.0…30.0	°C/°F
db1	Tripping band above setpoint 1	**CP**	33811	0	32967	12	R/W	Word	N	0.0…30.0	°C/°F
SP2	Regulation setpoint 2	**CP**	33805	0	32967	48	R/W	Word	Y	LS2...HS2	°C/°F
dF2	Differential of setpoint 2	**CP**	33834	0	32947	3072	R/W	Word	N	0.0…30.0	°C/°F
db2	Tripping band above setpoint 2	**CP**	33813	0	32967	192	R/W	Word	N	0.0…30.0	num
LSE	Minimum value settable for setpoint	**CP**	32771	0	32928	3072	R/W	Word	Y	LdL...HSE	°C/°F
HSE	Maximum value settable for setpoint	**CP**	32773	0	32928	12288	R/W	Word	Y	LSE...HdL	°C/°F
LS2	Minimum value settable for setpoint 2	**CP**	33810	0	32967	768	R/W	Word	Y	LdL...HS2	°C/°F
HS2	Maximum value settable for setpoint 2	**CP**	33809	0	32967	3072	R/W	Word	Y	LS2...HdL	°C/°F
HC	Operating mode of setpoint 1 (Heating/Cooling)	**CP**	32968	256	32928	49152	R/W	Byte	N	0/1	flag
HC2	Operating mode of setpoint 2 (Heating/Cooling)	**CP**	32970	4	32967	12288	R/W	Byte	N	0/1	flag
ont	ON time for compressor output with faulty regulation probe	**CP**	32768	0	32929	3	R/W	Byte	N	0…250	min
oFt	OFF time for compressor output with faulty regulation probe	**CP**	32772	0	32929	12	R/W	Byte	N	0…250	min
don	Compressor output enabling delay from request	**CP**	32776	0	32929	48	R/W	Byte	N	0…250	s
doF	Compressor output enabling delay from shutdown	**CP**	32780	0	32929	192	R/W	Byte	N	0…250	min
dbi	Delay between two consecutive starts of the compressor output	**CP**	32784	0	32929	768	R/W	Byte	N	0…250	min
Cit	Minimum enabling time for compressor output	**CP**	32800	0	32930	3	R/W	Byte	N	0…250	min
CAt	Maximum enabling time for compressor output	**CP**	32804	0	32930	12	R/W	Byte	N	0…250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
odo	Delay output enabling from Power On	**CP**	32788	0	32929	3072	R/W	Byte	N	0…250	min
CP2	Enabling delay for compressor 2	**CP**	32887	255	32948	49152	R/W	Byte	N	0…250	min
dFA	Compressor and condenser fans activation delay after command	**CP**	32895	0	32930	3072	R/W	Byte	N	0…250	s
PPE	Default power for non-allocated probe/probe error	**CP**	33804	0	32967	49152	R/W	Byte	N	0.0…100.0	%
tSU	Interstep up time	**CP**	33808	0	33953	12288	R/W	Byte	N	0…255	s
tSd	Interstep down time	**CP**	33812	0	33953	49152	R/W	Byte	N	0…255	s
rP3	Thermostat regulation probe 3	**CP**	32917	61440	33959	192	R/W	Byte	N	0…7	num
HC3	Operating mode of setpoint 3 (Heating/Cooling)	**CP**	32970	8	33959	768	R/W	Byte	N	0/1	flag
SP3	Regulation setpoint 3	**CP**	33814	0	33959	3072	R/W	Word	Y	-199.9...1999	°C/°F
dF3	Differential of setpoint 3	**CP**	33815	0	33959	12288	R/W	Word	N	0.1...30.0	°C/°F
PbH	Humidity control probe selection	**HUD**	33933	15	33954	3	R/W	Byte	N	0…14	num
SEH	Humidity setpoint	**HUD**	33841	0	33954	12	R/W	Word	Y	0.0...100.0	%RH
dFH	Differential of humidity set point	**HUD**	33842	0	33954	48	R/W	Word	N	0.0…50.0	%RH
dbH	Humidity intervention semi-band	**HUD**	33843	0	33954	192	R/W	Word	N	0.0…50.0	%RH
dEH	Humidity regulation during defrost	**HUD**	32970	16384	33954	768	R/W	Byte	N	0/1	flag
CHC	Dehumidify control type	**HUD**	32971	1	33961	768	R/W	Byte	N	0/1	flag
CHt	Humidity-temperature control type	**HUD**	32926	768	33960	768	R/W	Byte	N	0…3	num
CHL	Minimum temperature to enable humidity control	**HUD**	33817	0	33954	3072	R/W	Word	Y	-199.9...1999	°C/°F
CHH	Maximum temperature to enable humidity control	**HUD**	33818	0	33954	12288	R/W	Word	Y	-199.9...1999	°C/°F
CHd	Humidity control enable differential	**HUD**	33821	0	33954	49152	R/W	Word	N	0.0...30.0	°C/°F
CHn	Humidify-dehumidify out on time	**HUD**	33816	0	33955	12	R/W	Byte	N	0…250	s
CHF	Humidify-dehumidify out off time	**HUD**	33820	0	33955	48	R/W	Byte	N	0…250	s
dP1	Defrost probe 1 selection	**dEF**	32921	15	32936	768	R/W	Byte	N	0…7	num
dP2	Defrost probe 2 selection	**dEF**	32921	240	32936	12288	R/W	Byte	N	0…7	num
dtY	Type of defrost	**dEF**	32908	61440	32930	768	R/W	Byte	N	0…2	num
doH	Defrost cycle enabling delay from request	**dEF**	32820	0	32931	3	R/W	Byte	N	0…250	min
dt2	Unit of measurement for defrost duration	**dEF**	32925	192	32930	49152	R/W	Byte	N	0…2	num
dEt	Defrost timeout	**dEF**	32816	0	32930	12288	R/W	Byte	N	1…250	h/min/s
dS1	Defrost end temperature evaporator 1	**dEF**	32774	0	32931	12	R/W	Word	Y	-199.9...1999	°C/°F
dS2	Defrost end temperature evaporator 2	**dEF**	32775	0	32931	48	R/W	Word	Y	-199.9...1999	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
dPo	Defrost enabling request from Power On	**dEF**	32968	1024	32931	768	R/W	Byte	N	0/1	flag
tCd	Compressor output enabling/disabling time before a defrost	**dEF**	32796	0	32929	49152	R/W	Byte	Y	-127...127	min
Cod	OFF time of compressor before defrost	**dEF**	32792	0	32929	12288	R/W	Byte	N	0…250	min
dMR	Enable defrost timers with manual defrost	**dEF**	32969	2048	32961	12	R/W	Byte	N	0/1	flag
d00	Cumulative time for defrost activation	**dEF**	32875	0	32949	12	R/W	Byte	N	0…250	h/min/s
d01	Unit of measurement for parameter d00	**dEF**	32925	12	32951	12	R/W	Byte	N	0…2	num
dit	Interval between defrosts	**dEF**	32812	0	32949	49152	R/W	Byte	N	0…250	h/min/s
d11	Unit of measurement for defrost intervals	**dEF**	32925	48	32951	48	R/W	Byte	N	0…2	num
d20	Enable defrost at compressor stoppage	**dEF**	32969	256	32951	768	R/W	Byte	N	0/1	flag
d40	Defrost probe 1 selection	**dEF**	32913	240	32950	3	R/W	Byte	N	0…7	num
d41	Defrosting start temperature	**dEF**	32837	0	32947	49152	R/W	Word	Y	-199.9...1999	°C/°F
d42	Time for which the evaporator temperature must remain below the dSE threshold	**dEF**	32839	0	32947	12288	R/W	Word	N	0…255	min
d43	Timer mode for temperature below threshold	**dEF**	32913	3840	32950	12	R/W	Byte	N	0…3	num
d44	Threshold management mode	**dEF**	32913	61440	32950	48	R/W	Byte	N	0…2	num
d45	Defrosting start temperature 2	**dEF**	33847	0	32951	3	R/W	Word	Y	-199.9...1999	°C/°F
d60	Max number of defrosts to skip	**dEF**	32908	3840	33955	768	R/W	Byte	N	0…10	num
d61	Percentage duration of optimal defrost 1	**dEF**	32892	0	33955	3072	R/W	Byte	N	0…100.0	%
d63	Number of defrost cycles at start-up for system ramp-up	**dEF**	32912	3840	33958	48	R/W	Byte	N	0…10	num
d90	Timed defrost mode	**dEF**	32914	3840	32950	3072	R/W	Byte	N	0…3	num
d91	Number of daily defrosts	**dEF**	32876	0	32949	48	R/W	Byte	N	0…255	num
d92	Weekend 1	**dEF**	32914	15	32950	192	R/W	Byte	N	0…7	num
d93	Weekend 2	**dEF**	32914	240	32950	768	R/W	Byte	N	0…7	num
d94	Regular defrost interval duration	**dEF**	32914	61440	32950	12288	R/W	Byte	N	1…7	num
d1H	Start time for defrost nr. 1 during weekdays	**dEF**	34058	255	32993	3	R/W	Byte	N	0…24	hours
d1n	Start minutes for defrost nr. 1 during weekdays	**dEF**	34058	0	32993	12	R/W	Byte	N	0...59	min
d2H	Start time for defrost nr. 2 during weekdays	**dEF**	34059	255	32993	48	R/W	Byte	N	d1H...24	hours
d2n	Start minutes for defrost nr. 2 during weekdays	**dEF**	33024	0	32993	192	R/W	Byte	N	0...59	min
d3H	Start time for defrost nr. 3 during weekdays	**dEF**	33028	0	32993	768	R/W	Byte	N	d2H...24	hours
d3n	Start minutes for defrost nr. 3 during weekdays	**dEF**	33029	255	32993	3072	R/W	Byte	N	0...59	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
d4H	Start time for defrost nr. 4 during weekdays	**dEF**	33029	0	32993	12288	R/W	Byte	N	d3H...24	hours
d4n	Start minutes for defrost nr. 4 during weekdays	**dEF**	33030	255	32993	49152	R/W	Byte	N	0...59	min
d5H	Start time for defrost nr. 5 during weekdays	**dEF**	33030	0	32994	3	R/W	Byte	N	d4H...24	hours
d5n	Start minutes for defrost nr. 5 during weekdays	**dEF**	33031	255	32994	12	R/W	Byte	N	0...59	min
d6H	Start time for defrost nr. 6 during weekdays	**dEF**	33031	0	32994	48	R/W	Byte	N	d5H...24	hours
d6n	Start minutes for defrost nr. 6 during weekdays	**dEF**	33032	0	32994	192	R/W	Byte	N	0...59	min
F1H	Start time for defrost nr. 1 during holidays	**dEF**	33033	255	32994	768	R/W	Byte	N	0...24	hours
F1n	Start minutes for defrost nr. 1 during holidays	**dEF**	33033	0	32994	3072	R/W	Byte	N	0...59	min
F2H	Start time for defrost nr. 2 during holidays	**dEF**	33034	255	32994	12288	R/W	Byte	N	F1H...24	hours
F2n	Start minutes for defrost nr. 2 during holidays	**dEF**	33034	0	32994	49152	R/W	Byte	N	0...59	min
F3H	Start time for defrost nr. 3 during holidays	**dEF**	33035	255	32995	3	R/W	Byte	N	F2H...24	hours
F3n	Start minutes for defrost nr. 3 during holidays	**dEF**	33035	0	32995	12	R/W	Byte	N	0...59	min
F4H	Start time for defrost nr. 4 during holidays	**dEF**	33036	0	32995	48	R/W	Byte	N	F3H...24	hours
F4n	Start minutes for defrost nr. 4 during holidays	**dEF**	33037	255	32995	192	R/W	Byte	N	0...59	min
F5H	Start time for defrost nr. 5 during holidays	**dEF**	33037	0	32995	768	R/W	Byte	N	F-F4H...24	hours
F5n	Start minutes for defrost nr. 5 during holidays	**dEF**	33038	255	32995	3072	R/W	Byte	N	0...59	min
F6H	Start time for defrost nr. 6 during holidays	**dEF**	33038	0	32995	12288	R/W	Byte	N	F-F5H...24	hours
F6n	Start minutes for defrost nr. 6 during holidays	**dEF**	33039	255	32995	49152	R/W	Byte	N	0...59	min
FP1	Evaporator fan probe selection in normal mode	**FAn**	32921	3840	32939	3072	R/W	Byte	N	0...7	num
FPt	Parameter mode FSt (absolute or relative)	**FAn**	32968	4096	32933	3	R/W	Byte	N	0/1	flag
FSt	Evaporator fans disabling temperature	**FAn**	32778	0	32933	12	R/W	Word	Y	-199.9...1999	°C/°F
Fot	Evaporator fans enabling temperature	**FAn**	32838	0	32948	768	R/W	Word	Y	-199.9...1999	°C/°F
FAd	Evaporator fans enabling differential	**FAn**	32869	0	32933	48	R/W	Byte	N	0.1...30.0	°C/°F
Fdt	Evaporator fans delay after defrost cycle	**FAn**	32832	0	32947	48	R/W	Byte	N	0…250	min
dt	Dripping time	**FAn**	32870	255	32933	192	R/W	Byte	N	0…250	min
dFd	Evaporator fans disabling during defrost time	**FAn**	32968	8192	32933	768	R/W	Byte	N	0/1	flag
FCo	Evaporator fans status with OFF compressor output	**FAn**	32909	15	32932	49152	R/W	Byte	N	0...6	num
FdC	Evaporator fans shutdown delay after compressor disabling	**FAn**	32870	0	32933	3072	R/W	Byte	N	0…250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
Fon	Evaporator fans ON time in Duty Cycle mode	**FAn**	32871	255	32933	12288	R/W	Byte	N	0…250	min/s
FoF	Evaporator fans OFF time in Duty Cycle mode	**FAn**	32871	0	32933	49152	R/W	Byte	N	0…250	min/s
Fnn	Evaporator fans ON time in night duty cycle mode	**FAn**	32868	0	32932	3072	R/W	Byte	N	0…250	min/s
FnF	Evaporator fans OFF time in night duty cycle mode	**FAn**	32869	255	32932	12288	R/W	Byte	N	0…250	min/s
FC1	Condenser probe selection	**FAn**	32921	61440	33958	3	R/W	Byte	N	0...7	num
SCF	Condenser fan enabling setpoint	**FAn**	33838	0	32941	49152	R/W	Word	Y	-50.0...150.0	°C/°F
dCF	Condenser fan enabling differential	**FAn**	33839	0	32942	3	R/W	Word	N	0.0...30.0	°C/°F
tCF	Condenser fan enabling delay after defrost	**FAn**	33836	0	32942	12	R/W	Byte	N	0...255	min
CFd	Condenser fans disabling during defrost	**FAn**	32915	15	32949	192	R/W	Byte	N	0/1	flag
HUL	Humidity level selection	**FAn**	32926	3072	33960	3072	R/W	Byte	N	0...3	num
HU1	Evaporator fans on time humidity level 1	**FAn**	33888	0	33960	12288	R/W	Byte	N	0…250	min/s
HU2	Evaporator fans off time humidity level 1	**FAn**	33889	255	33960	49152	R/W	Byte	N	0…250	min/s
HU3	Evaporator fans on time humidity level 2	**FAn**	33889	0	33961	3	R/W	Byte	N	0…250	min/s
HU4	Evaporator fans off time humidity level 2	**FAn**	33890	255	33961	12	R/W	Byte	N	0…250	min/s
HU5	Evaporator fans on time humidity level 3	**FAn**	33890	0	33961	48	R/W	Byte	N	0…250	min/s
HU6	Evaporator fans off time humidity level 3	**FAn**	33891	255	33961	192	R/W	Byte	N	0…250	min/s
rA1	Temperature alarm probe 1 selection	**AL**	32922	15	32966	48	R/W	Byte	N	0...7	num
rA2	Temperature alarm probe 2 selection	**AL**	33933	240	33962	48	R/W	Byte	N	0...7	num
Att	Alarms mode (absolute or relative)	**AL**	32968	32768	32934	12	R/W	Byte	N	0/1	flag
AFd	Alarm tripping differential	**AL**	32872	0	32934	48	R/W	Word	N	0.1...25.0	°C/°F
HAL	Maximum alarm 1 threshold	**AL**	32779	0	32934	192	R/W	Word	Y	LAL...1999	°C/°F
LAL	Minimum alarm 1 threshold	**AL**	32781	0	32934	768	R/W	Word	Y	-199.9...HAL	°C/°F
HA2	Maximum alarm 2 threshold	**AL**	32777	0	33962	192	R/W	Word	Y	LA2...1999	°C/°F
LA2	Minimum alarm 2 threshold	**AL**	32835	0	33962	768	R/W	Word	Y	-199.9...HA2	°C/°F
PAo	Temperature alarms disabling time from Power On	**AL**	32873	255	32934	3072	R/W	Byte	N	0…250	min*10
dAo	Temperature alarm disabling time after defrost cycle	**AL**	32841	0	32934	12288	R/W	Word	N	0…999	min
oAo	High and low temperature alarms disabling time after door closing	**AL**	32874	255	32934	49152	R/W	Byte	N	0...10	hours

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
tdo	Open door disabling time	**AL**	32875	255	32935	49152	R/W	Byte	N	0…250	min
tAo	High/Minimum alarm delay on probe 1	**AL**	32874	0	32935	3	R/W	Byte	N	0…250	min
2tA	High/Minimum alarm delay on probe 2	**AL**	32899	0	33962	3072	R/W	Byte	N	0…250	min
dAt	Defrost alarm signal silenced due to timeout	**AL**	32782	0	32935	12	R/W	Word	N	0/1	flag
EAL	Regulators blocked from external alarm	**AL**	32915	3840	32935	48	R/W	Byte	N	0...4	num
AoP	Polarity of alarm output	**AL**	32969	1	32935	768	R/W	Byte	N	0/1	flag
rA3	Temperature alarm probe selection	**AL**	32915	240	33959	49152	R/W	Byte	N	0...7	num
SA3	Compressor overheating setpoint	**AL**	32831	0	32947	12	R/W	Word	Y	LdL...HdL	°C/°F
dA3	Compressor overheating differential	**AL**	32833	0	32947	192	R/W	Word	N	0.1...30.0	°C/°F
F-rFt	Refrigerant level alarm bypass	**AL**	33051	0	32985	12288	R/W	Byte	N	0…250	min
HCP	HACCP probe selection	**HAC**	32910	3840	33955	49152	R/W	Byte	N	0...7	num
SHH	Maximum HACCP alarm threshold	**HAC**	33833	0	33956	768	R/W	Word	Y	SLH...1999	°C/°F
SLH	Minimum HACCP alarm threshold	**HAC**	33835	0	33956	3072	R/W	Word	Y	-199.9...SHH	°C/°F
drA	Minimum dwelling time in critical area before alarm signalling	**HAC**	32824	0	33956	12288	R/W	Byte	N	0…250	min
drH	HACCP alarm reset time from last manual reset	**HAC**	33832	0	33956	49152	R/W	Byte	N	0…250	hours
HCE	Enable HACCP alarms storage with/without alarm relay enabling	**HAC**	32926	192	33957	3	R/W	Byte	N	0...2	num
HCt	HACCP alarms storage disabling time (key or digital input)	**HAC**	33844	0	33957	12	R/W	Byte	N	0…250	min
dod	Loads shutdown enabling after door micro enabling	**dor**	32909	3840	32935	12288	R/W	Byte	N	0...10	num
dAd	D.I. 1/2 enabling signalling delay	**dor**	32882	255	32940	3072	R/W	Byte	N	0…250	min
dCo	Compressor deactivation delay after door opened	**dor**	32840	0	32931	3072	R/W	Byte	N	0…250	min
dFo	Fan enabling delay from acknowledgement	**dor**	32906	0	33962	12	R/W	Byte	N	0…250	min
AuP	Aux output activation when door opened	**dor**	32909	240	32935	192	R/W	Byte	N	0/1	flag
dCd	Fan enabling delay from door closing	**dor**	33840	0	32936	3072	R/W	Byte	N	0…250	s
L00	Shared probe	**Lin**	33933	61440	33963	192	R/W	Byte	N	0...6	num
L01	Distributed display (referred to Secondary)	**Lin**	32924	3072	33963	768	R/W	Byte	N	0...2	num
L02	Setpoint synchronisation	**Lin**	32971	8	33963	3072	R/W	Byte	N	0/1	flag
L03	Defrost synchronisation	**Lin**	32919	15	32961	3	R/W	Byte	N	0...2	num
L04	Resource locking after defrost end	**Lin**	32919	240	32961	48	R/W	Byte	N	0/1	flag
L05	Standby synchronisation	**Lin**	32925	12288	32961	12288	R/W	Byte	N	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
L06	Lights synchronisation	**Lin**	32925	49152	32961	49152	R/W	Byte	N	0/1	flag
L07	Reduced setpoint synchronisation	**Lin**	32926	3	32962	3	R/W	Byte	N	0/1	flag
L08	AUX synchronisation	**Lin**	32926	12	32963	48	R/W	Byte	N	0/1	flag
L10	Resource unlock timeout during synchronised defrosts	**Lin**	32898	255	32963	192	R/W	Byte	N	1…250	min
L11	Number of devices connected in Field Bus	**Lin**	33933	3840	33962	12288	R/W	Byte	N	0...8	num
L12	Sharing of alarm relay in Field Bus	**Lin**	32926	12288	33962	49152	R/W	Byte	N	0...2	num
L15	Share alarm buzzer in Field Bus	**Lin**	32926	49152	33963	48	R/W	Byte	N	0...2	num
PEn	Number of errors allowed per maximum/minimum pressure switch input	**PrE**	32894	255	32946	12288	R/W	Byte	N	0...15	num
PEi	Minimum/maximum pressure switch error count interval	**PrE**	32894	0	32946	49152	R/W	Byte	N	1...99	min
PEt	Compressor activation delay after pressure switch deactivation	**PrE**	32895	255	32947	3	R/W	Byte	N	0...255	min
oSP	Offset on setpoint	**EnS**	32783	0	32936	49152	R/W	Word	Y	-30.0...30.0	°C/°F
Ad1	1 On Board Address	**Add**	33048	0	32984	768	R/W	Byte	N	1...247	num
br1	1 On Board baudrate	**Add**	33051	255	32984	3072	R/W	Byte	N	0...2	num
Pt1	1 On Board parity	**Add**	33049	255	32984	12288	R/W	Byte	N	0...2	num
Ad2	2 On Board Address	**Add**	33054	0	32989	192	R/W	Byte	N	1...247	num
br2	2 On Board baudrate	**Add**	33055	0	32989	768	R/W	Byte	N	0...2	num
Pt2	2 On Board parity	**Add**	33055	255	32989	3072	R/W	Byte	N	0...2	num
SC2	Primary/Secondary selection serial port 2	**Add**	32970	32	33958	3072	R/W	Byte	N	0/1	flag
Po2	Polling time serial port 2	**Add**	33850	0	---	---	R/W	Word	N	0...1000	s/100
to2	Timeout serial port 2	**Add**	33855	0	---	---	R/W	Word	N	0...1000	s/100
Ad3	3 On Board Address	**Add**	33039	0	32990	768	R/W	Byte	N	1...247	num
br3	3 On Board baudrate	**Add**	34059	0	32990	3072	R/W	Byte	N	0...2	num
Pt3	3 On Board parity	**Add**	33047	0	32990	12288	R/W	Byte	N	0...2	num
dro	°C/°F selection	**diS**	32969	8	32937	192	R/W	Byte	N	0/1	flag
CA1	Analog input 1 calibration	**diS**	32785	0	32937	768	R/W	Word	Y	-30.0...30.0	°C/°F
CA2	Analog input 2 calibration	**diS**	32786	0	32937	3072	R/W	Word	Y	-30.0...30.0	°C/°F
CA3	Analog input 3 calibration	**diS**	32787	0	32937	12288	R/W	Word	Y	-30.0...30.0	°C/°F
CA4	Analog input 4 calibration	**diS**	33837	0	32963	12288	R/W	Word	Y	-30.0...30.0	°C/°F
CAI	Calibration enabling	**diS**	32924	49152	32937	49152	R/W	Byte	N	0...2	num
LdL	Minimum value that can be displayed	**diS**	32790	0	32938	3	R/W	Word	Y	-199.9...HdL	°C/°F
HdL	Maximum value that can be displayed	**diS**	32791	0	32938	12	R/W	Word	Y	LdL...1999	°C/°F
LoC	Disables keypad operation	**diS**	32969	16	32938	48	R/W	Byte	N	0/1	flag
ddd	Display main status	**diS**	32909	61440	32938	192	R/W	Byte	N	0...7	num
ddE	Display on Eco	**diS**	32918	240	32958	12288	R/W	Byte	N	0...8	num
ddL	Display blocking mode during defrost	**diS**	32910	15	32938	768	R/W	Byte	N	0...2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
Ldd	Display blocking timeout from defrost end	**diS**	32878	255	32938	3072	R/W	Byte	N	0…250	min
ndt	Display with decimal point	**diS**	32969	32	32938	12288	R/W	Byte	N	0/1	flag
FiS	Display filter selection	**diS**	33053	255	32990	3	R/W	Byte	N	0...2	num
tAu	Time constant for display filter	**diS**	33053	0	32990	12	R/W	Byte	N	0…250	min
Fit	Display filter mode	**diS**	33054	255	32990	48	R/W	Byte	N	0/1	flag
PS1	Value of password 1	**diS**	32879	0	32939	192	R/W	Byte	N	0…250	num
PS2	Value of password 2	**diS**	32880	0	32939	768	R/W	Byte	N	0…250	num
CEr	Probe error capacity	**VSC**	32795	0	32942	768	R/W	Word	N	0.0...100.0	%
PdS	Wake-up forced restart differential	**VSC**	32797	0	32942	3072	R/W	Word	Y	-50.0...50.0	K/°R
PuS	Pull-up forced restart differential	**VSC**	32798	0	32942	12288	R/W	Word	Y	-50.0...50.0	K/°R
Pud	Temperature timeout out of range	**VSC**	32799	0	32942	49152	R/W	Word	N	0…999	min
PdE	Wake-up 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 wake-up timeout	**VSC**	32803	0	32943	48	R/W	Word	N	0…999	min
Pdd	Optimized wake-up capacity	**VSC**	32805	0	32943	192	R/W	Word	N	0.0...100.0	%
CPd	Capacity after day wake-up	**VSC**	32806	0	32943	768	R/W	Word	N	0.0...100.0	%
CPn	Capacity after night wake-up	**VSC**	32807	0	32943	3072	R/W	Word	N	0.0...100.0	%
CSd	Compressor startup delay	**VSC**	32814	0	32944	12288	R/W	Word	N	0…999	s
CSC	Compressor startup capacity	**VSC**	32815	0	32944	49152	R/W	Word	N	44.4...100.0	%
CAU	Select PID automatic or manual mode	**VSC**	32882	0	32945	12	R/W	Word	N	0/1	flag
CdU	PID duty cycle in manual mode	**VSC**	32818	0	32945	48	R/W	Word	N	0.0...100.0	%
F_1	Maximum Frequency	**VSC**	32827	0	32946	192	R/W	Word	N	0…250	Hz
F_2	Minimum Frequency	**VSC**	32829	0	32946	768	R/W	Word	N	0…250	Hz
AP	Probe used by the Analog Output	**AoU**	33934	15	33964	768	RW	Byte	N	0...7	num
AoF	Analogue output configurability 1	**AoU**	33932	61440	33957	768	R/W	Byte	N	ro/Er	flag
LAO	Lower limit of analogue output 1	**AoU**	33825	0	33957	3072	R/W	Word	Y	-199.9...1999	°C/°F
HAO	Upper limit of analogue output 1	**AoU**	33826	0	33957	12288	R/W	Word	Y	-199.9...1999	°C/°F
AoS	Operation mode of analogue output with probe error	**AoU**	32891	255	33957	49152	R/W	Byte	N	0.0...100.0	%
H08	Standby operating mode	**CnF**	32925	3	32939	12288	R/W	Byte	N	0...2	num
H11	Analogue input configuration 1 when configured as digital input	**CnF**	32881	255	32939	49152	R/W	Byte	N	-16...16	num
H12	Analogue input configuration 2 when configured as digital input	**CnF**	32881	0	32940	768	R/W	Byte	N	-16...16	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
H13	Analogue input configuration 3 when configured as digital input	**CnF**	32888	0	32963	49152	R/W	Byte	N	-16...16	num
H14	Analogue input configuration 4 when configured as digital input	**CnF**	32889	255	32964	768	R/W	Byte	N	-16...16	num
H15	Configurability of digital input 5	**CnF**	32889	0	32964	3072	R/W	Byte	N	-16...16	num
H21	Configurability of digital output 1	**CnF**	32884	0	32940	12288	R/W	Byte	N	0...20	num
H22	Configurability of digital output 2	**CnF**	32885	255	32940	49152	R/W	Byte	N	0...20	num
H23	Configurability of digital output 3	**CnF**	32885	0	32941	3	R/W	Byte	N	0...20	num
H24	Configurability of digital output 4	**CnF**	32886	255	32941	12	R/W	Byte	N	0...20	num
H25	Buzzer enable	**CnF**	32897	255	32931	12288	R/W	Byte	N	0/1	num
H31	UP button configurability	**CnF**	32910	61440	32941	48	R/W	Byte	N	0...12	num
H32	DOWN button configurability	**CnF**	32911	15	32941	192	R/W	Byte	N	0...13	num
H33	ESC button configurability	**CnF**	32911	240	32941	768	R/W	Byte	N	0...12	num
H34	Free button 1 configurability	**CnF**	32911	3840	32941	3072	R/W	Byte	N	0...12	num
H35	Free button 2 configurability	**CnF**	32911	61440	32941	12288	R/W	Byte	N	0...12	num
P01	Analogue input configuration 1	**CnF**	32923	15	32957	12	R/W	Byte	N	0...4	num
P02	Analogue input configuration 2	**CnF**	32923	240	32957	48	R/W	Byte	N	0...4	num
P03	Analogue input configuration 3	**CnF**	32923	3840	32957	192	R/W	Byte	N	0...4	num
P04	Analogue input configuration 4	**CnF**	32923	61440	32957	768	R/W	Byte	N	0...4,6,7	num
04L	Lower limit of analogue input 4	**CnF**	33845	0	33959	12	R/W	Word	Y	-199.9...04H	num
04H	Upper limit of analogue input 4	**CnF**	33846	0	33959	48	R/W	Word	Y	04L...1999	num
n01	Analog output 1 type	**CnF**	32912	61440	33958	49152	R/W	Byte	N	0,9	num
01n	Analogue output configurability 1	**CnF**	32922	240	32957	3072	R/W	Byte	N	0...4	num
n02	Analog output 2 type	**CnF**	32913	15	33959	3	R/W	Byte	N	0,5,6,7	num
02n	Analogue output configurability 2	**CnF**	32922	3840	32957	12288	R/W	Byte	N	0...4	num
H45	Defrost input mode for applications with dual evaporator	**CnF**	32918	15	32950	49152	R/W	Byte	N	0...3	num
H48	RTC present	**CnF**	32969	64	32942	48	R/W	Byte	N	0/1	flag
H60	Vectors and parameters selection	**CnF**	33043	0	32987	192	R/W	Byte	N	0...4	num
H70	Sensor 1 selection for virtual sensor	**CnF**	32918	61440	33961	3072	R/W	Byte	N	0...4	num
H71	Sensor 2 selection for virtual sensor	**CnF**	32919	61440	33961	12288	R/W	Byte	N	0...4	num
H72	% calculation virtual probe day	**CnF**	32893	0	33961	49152	R/W	Byte	N	0.0...100.0	%

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
ZCE	It enables/disables the zero crossing feature.	**CnF**	32970	8192	33964	3072	R/W	Byte	N	0/1	flag
CUS	Customer model reference	**CnF**	34045	0	32990	192	R/W	Word	N	0…999	num
UL	Parameters from the controller to the UNICARD function visibility	**FPr**	-	-	32985	48	R/W	Byte	N	0...3	num
Fr	UNICARD formatting function visibility	**FPr**	-	-	32985	768	R/W	Byte	N	0...3	num
oSPf	Reduced set activation	**FnC**	-	-	32988	768	R/W	Byte	N	0...3	num
DEF	Activate defrost	**FnC**	-	-	32987	768	R/W	Byte	N	0...3	num
AUX	AUX output activation / deactivation	**FnC**	-	-	32987	49152	R/W	Byte	N	0...3	num
rAP	Pressure switch alarms reset visibility	**FnC**	-	-	32985	3072	R/W	Byte	N	0...3	num
rES	HACCP alarms reset visibility	**FnC**	-	-	32984	49152	R/W	Byte	N	0...3	num
tUn	Autotuning activation	**FnC**	-	-	32988	3072	R/W	Byte	N	0...3	num
nPL	Preliminary Autotuning procedure activation	**FnC**	-	-	32988	12288	R/W	Byte	N	0...3	num
E10	Time band 1 profile	**nAd**	33040	0	32985	49152	R/W	Byte	N	0…11	num
E11	Event start hour 1	**nAd**	33041	0	32986	3	R/W	Byte	N	0...23	hours
E12	Event start minute 1	**nAd**	33042	255	32986	12	R/W	Byte	N	0...59	min
E13	Event termination hour 1	**nAd**	33042	0	32986	48	R/W	Byte	N	0...23	hours
E14	Event termination minute 1	**nAd**	33043	255	32986	192	R/W	Byte	N	0...59	min
E15	Enable functions during event 1	**nAd**	33041	255	32986	768	R/W	Byte	N	0...5	num
E20	Time band 2 profile	**nAd**	33044	0	32986	3072	R/W	Byte	N	0…11	num
E21	Event start hour 2	**nAd**	33045	0	32986	12288	R/W	Byte	N	0...23	hours
E22	Event start minute 2	**nAd**	33046	255	32986	49152	R/W	Byte	N	0...59	min
E23	Event termination hour 2	**nAd**	33046	0	32987	3	R/W	Byte	N	0...23	hours
E24	Event termination minute 2	**nAd**	33047	255	32987	12	R/W	Byte	N	0...59	min
E25	Enable functions during event 2	**nAd**	33045	255	32987	48	R/W	Byte	N	0...5	num
FH	Frame heater probe selection	**FrH**	32898	0	32964	12288	R/W	Byte	N	0...8	num
FHt	Frame heater period	**FrH**	32899	255	32964	49152	R/W	Byte	N	1...250	s*10
FH0	Frame heater setpoint	**FrH**	32858	0	32965	3	R/W	Word	Y	-199.9...1999	°C/°F
FH1	Frame heater offset	**FrH**	32859	0	32965	12	R/W	Word	N	0.0...25.0	°C/°F
FH2	Frame heater range	**FrH**	32861	0	32965	48	R/W	Word	N	0.0...25.0	°C/°F
FH3	Minimum percentage/frame heater duty-cycle	**FrH**	32856	0	32965	192	R/W	Byte	N	0.0...100.0	%
FH4	Maximum percentage/frame heater duty-cycle day	**FrH**	32860	0	32965	768	R/W	Byte	N	0.0...100.0	%
FH5	Maximum percentage/frame heater duty-cycle night	**FrH**	32867	0	32965	3072	R/W	Byte	N	0.0...100.0	%
FH6	Percentage/frame heater duty-cycle in defrost	**FrH**	32873	0	32965	12288	R/W	Byte	N	0.0...100.0	%
dCA	Enable deep cooling	**dEC**	32925	3072	32959	12288	R/W	Byte	N	0...2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
dCS	Deep cooling setpoint	**dEC**	32834	0	32947	768	R/W	Word	Y	LdL...HdL	°C/°F
tdC	Deep cooling Duration	**dEC**	32886	0	32948	12288	R/W	Byte	N	0...250	min
dCC	Defrost delay after deep cooling	**dEC**	32883	0	32948	3072	R/W	Byte	N	0...250	min
Sid	Deep cooling start threshold	**dEC**	32857	0	32962	48	R/W	Word	N	LdL...HdL	°C/°F
toS	Over-threshold time for deep cooling start	**dEC**	32867	255	32957	3	R/W	Byte	N	0…250	min
Application 1 parameters											
V1-rE	Type of regulation	**V1**	34236	3840	33271	3	R/W	Byte	N	0...4	num
V1-rP1	Thermostat regulation probe 1	**V1**	33224	3840	33234	48	R/W	Byte	N	0...7	num
V1-rP2	Thermostat regulation probe 2	**V1**	33224	61440	33236	768	R/W	Byte	N	0...7	num
V1-SEt	Regulation setpoint 1	**V1**	33073	0	33235	49152	R/W	Word	Y	V1-LSE...V1-HSE	°C/°F
V1-diF	Differential of setpoint 1	**V1**	33074	0	33232	768	R/W	Word	N	0.0...30.0	°C/°F
V1-db1	Tripping band above setpoint 1	**V1**	34115	0	33271	12	R/W	Word	N	0.0...30.0	°C/°F
V1-SP2	Regulation setpoint 2	**V1**	34109	0	33271	48	R/W	Word	Y	V1-LS2...V1-HS2	°C/°F
V1-dF2	Differential of setpoint 2	**V1**	34138	0	33251	3072	R/W	Word	N	0.0...30.0	°C/°F
V1-db2	Tripping band above setpoint 2	**V1**	34117	0	33271	192	R/W	Word	N	0.0...30.0	num
V1-LSE	Minimum value settable for setpoint	**V1**	33075	0	33232	3072	R/W	Word	Y	V1-LdL...V1-HSE	°C/°F
V1-HSE	Maximum value settable for setpoint	**V1**	33077	0	33232	12288	R/W	Word	Y	V1-LSE...V1-HdL	°C/°F
V1-LS2	Minimum value settable for setpoint 2	**V1**	34114	0	33271	768	R/W	Word	Y	V1-LdL...V1-HS2	°C/°F
V1-HS2	Maximum value settable for setpoint 2	**V1**	34113	0	33271	3072	R/W	Word	Y	V1-LS2...V1-HdL	°C/°F
V1-HC	Operating mode (Heating/Cooling)	**V1**	33272	256	33232	49152	R/W	Byte	N	0/1	flag
V1-HC2	Operating mode of set point 2 (Heating/Cooling)	**V1**	33274	4	33271	12288	R/W	Byte	N	0/1	flag
V1-ont	ON time for compressor output with faulty regulation probe	**V1**	33072	0	33233	3	R/W	Byte	N	0…250	min
V1-oFt	OFF time for compressor output with faulty regulation probe	**V1**	33076	0	33233	12	R/W	Byte	N	0…250	min
V1-don	Compressor output enabling delay from request	**V1**	33080	0	33233	48	R/W	Byte	N	0…250	s
V1-doF	Compressor output enabling delay from shutdown	**V1**	33084	0	33233	192	R/W	Byte	N	0…250	min
V1-dbi	Delay between two consecutive starts of the compressor output	**V1**	33088	0	33233	768	R/W	Byte	N	0…250	min
V1-Cit	Minimum enabling time for compressor output	**V1**	33104	0	33234	3	R/W	Byte	N	0…250	min
V1-CAt	Maximum enabling time for compressor output	**V1**	33108	0	33234	12	R/W	Byte	N	0…250	min
V1-odo	Delay output enabling from Power On	**V1**	33092	0	33233	3072	R/W	Byte	N	0…250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-CP2	Enabling delay for compressor 2	**V1**	33191	255	33252	49152	R/W	Byte	N	0…250	min
V1-dFA	Compressor and condenser fans activation delay after command	**V1**	33199	0	33234	3072	R/W	Byte	N	0…250	s
V1-PPE	Default power for non-allocated probe/probe error	**V1**	34108	0	33271	49152	R/W	Byte	N	0.0...100.0	%
V1-tSU	Interstep up time	**V1**	34112	0	34257	12288	R/W	Byte	N	0...255	s
V1-tSd	Interstep down time	**V1**	34116	0	34257	49152	R/W	Byte	N	0...255	s
V1-rP3	Thermostat regulation probe 3	**V1**	33221	61440	34263	192	R/W	Byte	N	0...7	num
V1-HC3	Operating mode of setpoint 3 (Heating/Cooling)	**V1**	33274	8	34263	768	R/W	Byte	N	0/1	flag
V1-SP3	Regulation setpoint 3	**V1**	34118	0	34263	3072	R/W	Word	Y	-199.9...1999	°C/°F
V1-dF3	Differential of setpoint 3	**V1**	34119	0	34263	12288	R/W	Word	N	0.1...30.0	°C/°F
V1-PbH	Humidity control probe selection	**V1**	34237	15	34258	3	R/W	Byte	N	0...14	num
V1-SEH	Humidity setpoint	**V1**	34145	0	34258	12	R/W	Word	Y	0.0...100.0	%RH
V1-dFH	Differential of humidity setpoint	**V1**	34146	0	34258	48	R/W	Word	N	0.0...50.0	%RH
V1-dbH	Humidity intervention semi-band	**V1**	34147	0	34258	192	R/W	Word	N	0.0...50.0	%RH
V1-dEH	Humidity regulation during defrost	**V1**	33274	16384	34258	768	R/W	Byte	N	0/1	flag
V1-CHC	Dehumidify control type	**V1**	33275	1	34265	768	R/W	Byte	N	0/1	flag
V1-CHt	Humidity-temperature control type	**V1**	33230	768	34264	768	R/W	Byte	N	0...3	num
V1-CHL	Minimum temperature to enable humidity control	**V1**	34121	0	34258	3072	R/W	Word	Y	-199.9...1999	°C/°F
V1-CHH	Maximum temperature to enable humidity control	**V1**	34122	0	34258	12288	R/W	Word	Y	-199.9...1999	°C/°F
V1-CHd	Humidity control enable differential	**V1**	34125	0	34258	49152	R/W	Word	N	0.0...30.0	°C/°F
V1-CHn	Humidify-dehumidify out on time	**V1**	34120	0	34259	12	R/W	Byte	N	0…250	s
V1-CHF	Humidify-dehumidify out off time	**V1**	34124	0	34259	48	R/W	Byte	N	0…250	s
V1-dP1	Defrost probe 1 selection	**V1**	33225	15	33240	768	R/W	Byte	N	0...7	num
V1-dP2	Defrost probe 2 selection	**V1**	33225	240	33240	12288	R/W	Byte	N	0...7	num
V1-dtY	Type of defrost	**V1**	33212	61440	33234	768	R/W	Byte	N	0...2	num
V1-doH	Defrost cycle enabling delay from request	**V1**	33124	0	33235	3	R/W	Byte	N	0…250	min
V1-dt2	Unit of measurement for defrost duration	**V1**	33229	192	33234	49152	R/W	Byte	N	0...2	num
V1-dEt	Defrost timeout	**V1**	33120	0	33234	12288	R/W	Byte	N	1...250	h/min/s
V1-dS1	Defrost end temperature evaporator 1	**V1**	33078	0	33235	12	R/W	Word	Y	-199.9...1999	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-dS2	Defrost end temperature evaporator 2	**V1**	33079	0	33235	48	R/W	Word	Y	-199.9...1999	°C/°F
V1-dPo	Defrost enabling request from Power On	**V1**	33272	1024	33235	768	R/W	Byte	N	0/1	flag
V1-tCd	Compressor output enabling/disabling time before a defrost	**V1**	33100	0	33233	49152	R/W	Byte	Y	-127...127	min
V1-Cod	OFF time of compressor before defrost	**V1**	33096	0	33233	12288	R/W	Byte	N	0...250	min
V1-dMR	Enable defrost timers with manual defrost	**V1**	33273	2048	33265	12	R/W	Byte	N	0/1	flag
V1-d00	Cumulative time for defrost activation	**V1**	33179	0	33253	12	R/W	Byte	N	0…250	h/min/s
V1-d01	Unit of measurement for parameter d00	**V1**	33229	12	33255	12	R/W	Byte	N	0...2	num
V1-dit	Interval between defrosts	**V1**	33116	0	33253	49152	R/W	Byte	N	0…250	h/min/s
V1-d11	Unit of measurement for defrost intervals	**V1**	33229	48	33255	48	R/W	Byte	N	0...2	num
V1-d20	Enable defrost at compressor stoppage	**V1**	33273	256	33255	768	R/W	Byte	N	0/1	flag
V1-d40	Defrost probe 1 selection	**V1**	33217	240	33254	3	R/W	Byte	N	0...7	num
V1-d41	Defrosting start temperature	**V1**	33141	0	33251	49152	R/W	Word	Y	-199.9...1999	°C/°F
V1-d42	Time for which the evaporator temperature must remain below the dSE threshold	**V1**	33143	0	33251	12288	R/W	Word	N	0...255	min
V1-d43	Timer mode for temperature below threshold	**V1**	33217	3840	33254	12	R/W	Byte	N	0...3	num
V1-d44	Threshold management mode	**V1**	33217	61440	33254	48	R/W	Byte	N	0...2	num
V1-d45	Defrosting start temperature 2	**V1**	34151	0	33255	3	R/W	Word	Y	-99.9...1999	°C/°F
V1-d60	Max number of defrosts to skip	**V1**	33212	3840	34259	768	R/W	Byte	N	0...10	num
V1-d61	Percentage duration of optimal defrost 1	**V1**	33196	0	34259	3072	R/W	Byte	N	0.0...100.0	%
V1-d63	Number of defrost cycles at start-up for system ramp-up	**V1**	33216	3840	34262	48	R/W	Byte	N	0...10	num
V1-d90	Timed defrost mode	**V1**	33218	3840	33254	3072	R/W	Byte	N	0...3	num
V1-d91	Number of daily defrosts	**V1**	33180	0	33253	48	R/W	Byte	N	0...255	num
V1-d92	Weekend 1	**V1**	33218	15	33254	192	R/W	Byte	N	0...7	num
V1-d93	Weekend 2	**V1**	33218	240	33254	768	R/W	Byte	N	0...7	num
V1-d94	Regular defrost interval duration	**V1**	33218	61440	33254	12288	R/W	Byte	N	1...7	num
V1-FP1	Evaporator fan probe selection in normal mode	**V1**	33225	3840	33243	3072	R/W	Byte	N	0...7	num
V1-FPt	Parameter mode FSt (absolute or relative)	**V1**	33272	4096	33237	3	R/W	Byte	N	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-FSt	Evaporator fans disabling temperature	**V1**	33082	0	33237	12	R/W	Word	Y	-199.9...1999	°C/°F
V1-Fot	Evaporator fans enabling temperature	**V1**	33142	0	33252	768	R/W	Word	Y	-199.9...1999	°C/°F
V1-FAd	Evaporator fans enabling differential	**V1**	33173	0	33237	48	R/W	Word	N	0.1...30.0	°C/°F
V1-Fdt	Evaporator fans delay after defrost cycle	**V1**	33136	0	33251	48	R/W	Byte	N	0…250	min
V1-dt	Dripping time	**V1**	33174	255	33237	192	R/W	Byte	N	0…250	min
V1-dFd	Evaporator fans disabling during defrost time	**V1**	33272	8192	33237	768	R/W	Byte	N	0/1	flag
V1-FCo	Evaporator fans status with OFF compressor output	**V1**	33213	15	33236	49152	R/W	Byte	N	0...6	num
V1-FdC	Evaporator fans shutdown delay after compressor disabling	**V1**	33174	0	33237	3072	R/W	Byte	N	0…250	min
V1-Fon	Evaporator fans ON time in Duty Cycle mode	**V1**	33175	255	33237	12288	R/W	Byte	N	0…250	min/s
V1-FoF	Evaporator fans OFF time in Duty Cycle mode	**V1**	33175	0	33237	49152	R/W	Byte	N	0…250	min/s
V1-Fnn	Evaporator fans ON time in night duty cycle mode	**V1**	33172	0	33236	3072	R/W	Byte	N	0…250	min/s
V1-FnF	Evaporator fans OFF time in night duty cycle mode	**V1**	33173	255	33236	12288	R/W	Byte	N	0…250	min/s
V1-FC1	Condenser probe selection	**V1**	33225	61440	34262	3	R/W	Byte	N	0...7	num
V1-SCF	Condenser fan enabling set point	**V1**	34142	0	33245	49152	R/W	Word	Y	-50.0...150.0	°C/°F
V1-dCF	Condenser fan enabling differential	**V1**	34143	0	33246	3	R/W	Word	N	0.0...30.0	°C/°F
V1-tCF	Condenser fan enabling delay after defrost	**V1**	34140	0	33246	12	R/W	Byte	N	0...255	min
V1-CFd	Condenser fans disabling during defrost	**V1**	33219	15	33253	192	R/W	Byte	N	0/1	flag
V1-HUL	Humidity level selection	**V1**	33230	3072	34264	3072	R/W	Byte	N	0...3	num
V1-HU1	Evaporator fans on time humidity level 1	**V1**	34192	0	34264	12288	R/W	Byte	N	0…250	min/s
V1-HU2	Evaporator fans off time humidity level 1	**V1**	34193	255	34264	49152	R/W	Byte	N	0…250	min/s
V1-HU3	Evaporator fans on time humidity level 2	**V1**	34193	0	34265	3	R/W	Byte	N	0…250	min/s
V1-HU4	Evaporator fans off time humidity level 2	**V1**	34194	255	34265	12	R/W	Byte	N	0…250	min/s
V1-HU5	Evaporator fans on time humidity level 3	**V1**	34194	0	34265	48	R/W	Byte	N	0…250	min/s
V1-HU6	Evaporator fans off time humidity level 3	**V1**	34195	255	34265	192	R/W	Byte	N	0…250	min/s
V1-rA1	Temperature alarm probe 1 selection	**V1**	33226	15	33270	48	R/W	Byte	N	0...7	num
V1-rA2	Temperature alarm probe 2 selection	**V1**	34237	240	34266	48	R/W	Byte	N	0...7	num
V1-Att	Alarms mode (absolute or relative)	**V1**	33272	32768	33238	12	R/W	Byte	N	0/1	flag

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-AFd	Alarm tripping differential	**V1**	33176	0	33238	48	R/W	Word	N	0.1...25.0	°C/°F
V1-HAL	Maximum alarm 1 threshold	**V1**	33083	0	33238	192	R/W	Word	Y	V1-LAL...1999	°C/°F
V1-LAL	Minimum alarm 1 threshold	**V1**	33085	0	33238	768	R/W	Word	Y	-199.9...V1-HAL	°C/°F
V1-HA2	Maximum alarm 2 threshold	**V1**	33081	0	34266	192	R/W	Word	Y	V1-LA2...1999	°C/°F
V1-LA2	Minimum alarm 2 threshold	**V1**	33139	0	34266	768	R/W	Word	Y	-199.9...V1-HA2	°C/°F
V1-PAo	Temperature alarms disabling time from Power On	**V1**	33177	255	33238	3072	R/W	Byte	N	0…250	min*10
V1-dAo	Temperature alarm disabling time after defrost cycle	**V1**	33145	0	33238	12288	R/W	Word	N	0…999	min
V1-oAo	High and low temperature alarms disabling time after door closing	**V1**	33178	255	33238	49152	R/W	Byte	N	0...10	hours
V1-tdo	Open door disabling time	**V1**	33179	255	33239	49152	R/W	Byte	N	0…250	min
V1-tAo	High/Minimum alarm delay on probe 1	**V1**	33178	0	33239	3	R/W	Byte	N	0…250	min
V1-2tA	High/Minimum alarm delay on probe 2	**V1**	33203	0	34266	3072	R/W	Byte	N	0…250	min
V1-dAt	Defrost alarm signal silenced due to timeout	**V1**	33086	0	33239	12	R/W	Word	N	0/1	flag
V1-EAL	Regulators blocked from external alarm	**V1**	33219	3840	33239	48	R/W	Byte	N	0...4	num
V1-AoP	Polarity of alarm output	**V1**	33273	1	33239	768	R/W	Byte	N	0/1	flag
V1-rA3	Temperature alarm probe selection	**V1**	33219	240	34263	49152	R/W	Byte	N	0...7	num
V1-SA3	Compressor overheating setpoint	**V1**	33135	0	33251	12	R/W	Word	Y	V1-LdL...V1-HdL	°C/°F
V1-dA3	Compressor overheating differential	**V1**	33137	0	33251	192	R/W	Word	N	0.1...30.0	°C/°F
V1-HCP	HACCP probe selection	**V1**	33214	3840	34259	49152	R/W	Byte	N	0...7	num
V1-SHH	Maximum HACCP alarm threshold	**V1**	34137	0	34260	768	R/W	Word	Y	V1-SLH...1999	°C/°F
V1-SLH	Minimum HACCP alarm threshold	**V1**	34139	0	34260	3072	R/W	Word	Y	-199.9...V1-SHH	°C/°F
V1-drA	Minimum dwelling time in critical area before alarm signalling	**V1**	33128	0	34260	12288	R/W	Byte	N	0…250	min
V1-drH	HACCP alarm reset time from last manual reset	**V1**	34136	0	34260	49152	R/W	Byte	N	0…250	hours
V1-HCE	Enable HACCP alarms storage with/without alarm relay enabling	**V1**	33230	192	34261	3	R/W	Byte	N	0...2	num
V1-HCt	HACCP alarms storage disabling time (key or digital input)	**V1**	34148	0	34261	12	R/W	Byte	N	0…250	min
V1-dod	Loads shutdown enabling after door micro enabling	**V1**	33213	3840	33239	12288	R/W	Byte	N	0...10	num
V1-dAd	D.I. 1/2 enabling signalling delay	**V1**	33186	255	33244	3072	R/W	Byte	N	0…250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-dCo	Compressor deactivation delay after door opened	**V1**	33144	0	33235	3072	R/W	Byte	N	0…250	min
V1-dFo	Fan enabling delay from acknowledgement	**V1**	33210	0	34266	12	R/W	Byte	N	0…250	min
V1-AuP	Aux output activation when door opened	**V1**	33213	240	33239	192	R/W	Byte	N	0/1	flag
V1-dCd	Fan enabling delay from door closing	**V1**	34144	0	33240	3072	R/W	Byte	N	0…250	s
V1-L00	Shared probe	**V1**	34237	61440	34267	192	R/W	Byte	N	0...6	num
V1-L01	Distributed display (referred to Secondary)	**V1**	33228	3072	34267	768	R/W	Byte	N	0...2	num
V1-L02	Setpoint synchronisation	**V1**	33275	8	34267	3072	R/W	Byte	N	0/1	flag
V1-L03	Defrost synchronisation	**V1**	33223	15	33265	3	R/W	Byte	N	0...2	num
V1-L04	Resource locking after defrost end	**V1**	33223	240	33265	48	R/W	Byte	N	0/1	flag
V1-L05	Standby synchronisation	**V1**	33229	12288	33265	12288	R/W	Byte	N	0/1	flag
V1-L06	Lights synchronisation	**V1**	33229	49152	33265	49152	R/W	Byte	N	0/1	flag
V1-L07	Reduced setpoint synchronisation	**V1**	33230	3	33266	3	R/W	Byte	N	0/1	flag
V1-L08	AUX synchronisation	**V1**	33230	12	33267	48	R/W	Byte	N	0/1	flag
V1-L10	Resource unlock timeout during synchronised defrosts	**V1**	33202	255	33267	192	R/W	Byte	N	1…250	min
V1-L11	Number of devices connected in Field Bus	**V1**	34237	3840	34266	12288	R/W	Byte	N	0...8	num
V1-L12	Sharing of alarm relay in Field Bus	**V1**	33230	12288	34266	49152	R/W	Byte	N	0...2	num
V1-L15	Share alarm buzzer in Field Bus	**V1**	33230	49152	34267	48	R/W	Byte	N	0...2	num
V1-PEn	Number of errors allowed per maximum/minimum pressure switch input	**V1**	33198	255	33250	12288	R/W	Byte	N	0...15	num
V1-PEi	Minimum/maximum pressure switch error count interval	**V1**	33198	0	33250	49152	R/W	Byte	N	1...99	min
V1-PEt	Compressor activation delay after pressure switch deactivation	**V1**	33199	255	33251	3	R/W	Byte	N	0...255	min
V1-oSP	Offset on setpoint	**V1**	33087	0	33240	49152	R/W	Word	Y	-30.0...30.0	°C/°F
V1-SC2	Primary/Secondary selection serial port 2	**V1**	33274	32	34262	3072	R/W	Byte	N	0/1	flag
V1-Po2	Polling time serial port 2	**V1**	34154	0	-	-	R/W	Word	N	0...1000	s/100
V1-to2	Timeout serial port 2	**V1**	34158	0	-	-	R/W	Word	N	0...1000	s/100
V1-dro	°C/°F selection	**V1**	33273	8	33241	192	R/W	Byte	N	0/1	flag
V1-CA1	Analog input 1 calibration	**V1**	33089	0	33241	768	R/W	Word	Y	-30.0...30.0	°C/°F
V1-CA2	Analog input 2 calibration	**V1**	33090	0	33241	3072	R/W	Word	Y	-30.0...30.0	°C/°F
V1-CA3	Analog input 3 calibration	**V1**	33091	0	33241	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
V1-CA4	Analog input 4 calibration	**V1**	34141	0	33267	12288	R/W	Word	Y	-30.0...30.0	°C/°F
V1-CAI	Calibration enabling	**V1**	33228	49152	33241	49152	R/W	Byte	N	0...2	num
V1-LdL	Minimum value that can be displayed	**V1**	33094	0	33242	3	R/W	Word	Y	-199.9...V1-HdL	°C/°F
V1-HdL	Maximum value that can be displayed	**V1**	33095	0	33242	12	R/W	Word	Y	V1-LdL...1999	°C/°F
V1-LoC	Disables keypad operation	**V1**	33273	16	33242	48	R/W	Byte	N	0/1	flag
V1-ddd	Display main status	**V1**	33213	61440	33242	192	R/W	Byte	N	0...7	num
V1-ddE	Display on Eco	**V1**	33222	240	33262	12288	R/W	Byte	N	0...8	num
V1-ddL	Display blocking mode during defrost	**V1**	33214	15	33242	768	R/W	Byte	N	0...2	num
V1-Ldd	Display blocking timeout from defrost end	**V1**	33182	255	33242	3072	R/W	Byte	N	0...250	min
V1-ndt	Display with decimal point	**V1**	33273	32	33242	12288	R/W	Byte	N	0/1	flag
V1-PS1	Value of password 1	**V1**	33183	0	33243	192	R/W	Byte	N	0…250	num
V1-PS2	Value of password 2	**V1**	33184	0	33243	768	R/W	Byte	N	0…250	num
V1-CEr	Probe error capacity	**V1**	33099	0	33246	768	R/W	Word	N	0.0...100.0	%
V1-PdS	Wake-up forced restart differential	**V1**	33101	0	33246	3072	R/W	Word	N	-50.0...50.0	K/°R
V1-PuS	Pull-up forced restart differential	**V1**	33102	0	33246	12288	R/W	Word	N	-50.0...50.0	K/°R
V1-Pud	Temperature timeout out of range	**V1**	33103	0	33246	49152	R/W	Word	N	0…999	min
V1-PdE	Wake-up end differential	**V1**	33105	0	33247	3	R/W	Word	N	-50.0...50.0	K/°R
V1-PuE	Pull-up end differential	**V1**	33106	0	33247	12	R/W	Word	N	-50.0...50.0	K/°R
V1-Pdt	Optimized wake-up timeout	**V1**	33107	0	33247	48	R/W	Word	N	0…999	min
V1-Pdd	Optimized wake-up capacity	**V1**	33109	0	33247	192	R/W	Word	N	0.0...100.0	%
V1-CPd	Capacity after day wake-up	**V1**	33110	0	33247	768	R/W	Word	N	0.0...100.0	%
V1-CPn	Capacity after night wake-up	**V1**	33111	0	33247	3072	R/W	Word	N	0.0...100.0	%
V1-CSd	Compressor startup delay	**V1**	33118	0	33248	12288	R/W	Word	N	0…999	s
V1-CSC	Compressor startup capacity	**V1**	33119	0	33248	49152	R/W	Word	N	44.4...100.0	%
V1-CAU	Select PID automatic or manual mode	**V1**	33186	0	33249	12	R/W	Word	N	0/1	flag
V1-CdU	PID duty cycle in manual mode	**V1**	33122	0	33249	48	R/W	Word	N	0.0...100.0	%
V1-F_1	Maximum Frequency	**V1**	33131	0	33250	192	R/W	Word	N	0…250	Hz
V1-F_2	Minimum Frequency	**V1**	33133	0	33250	768	R/W	Word	N	0…250	Hz
V1-AP	Probe used by the Analog Output	**V1**	34238	15	34268	768	RW	Byte	N	0...7	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-AoF	Analogue output configurability 1	**V1**	34236	61440	34261	768	R/W	Byte	N	ro/Er	flag
V1-LAO	Lower limit of analogue output 1	**V1**	34129	0	34261	3072	R/W	Word	Y	-199.9...1999	°C/°F
V1-HAO	Upper limit of analogue output 1	**V1**	34130	0	34261	12288	R/W	Word	Y	-199.9...1999	°C/°F
V1-AoS	Operation mode of analogue output with probe error	**V1**	33272	512	34261	49152	R/W	Byte	N	0.0...100.0	%
V1-H08	Standby operating mode	**V1**	33229	3	33243	12288	R/W	Byte	N	0...2	num
V1-H11	Analogue input configuration 1 when configured as digital input	**V1**	33185	255	33243	49152	R/W	Byte	N	-16...16	num
V1-H12	Analogue input configuration 2 when configured as digital input	**V1**	33185	0	33244	768	R/W	Byte	N	-16...16	num
V1-H13	Analogue input configuration 3 when configured as digital input	**V1**	33192	0	33267	49152	R/W	Byte	N	-16...16	num
V1-H14	Analogue input configuration 4 when configured as digital input	**V1**	33193	255	33268	768	R/W	Byte	N	-16...16	num
V1-H15	Configurability of digital input 5	**V1**	33193	0	33268	3072	R/W	Byte	N	-16...16	num
V1-H21	Configurability of digital output 1	**V1**	33188	0	33244	12288	R/W	Byte	N	0...20	num
V1-H22	Configurability of digital output 2	**V1**	33189	255	33244	49152	R/W	Byte	N	0...20	num
V1-H23	Configurability of digital output 3	**V1**	33189	0	33245	3	R/W	Byte	N	0...20	num
V1-H24	Configurability of digital output 4	**V1**	33190	255	33245	12	R/W	Byte	N	0...20	num
V1-H25	Buzzer enable	**V1**	33201	255	33235	12288	R/W	Byte	N	0/1	num
V1-H31	UP button configurability	**V1**	33214	61440	33245	48	R/W	Byte	N	0...12	num
V1-H32	DOWN button configurability	**V1**	33215	15	33245	192	R/W	Byte	N	0...13	num
V1-H33	ESC button configurability	**V1**	33215	240	33245	768	R/W	Byte	N	0...12	num
V1-H34	Free button 1 configurability	**V1**	33215	3840	33245	3072	R/W	Byte	N	0...12	num
V1-H35	Free button 2 configurability	**V1**	33215	61440	33245	12288	R/W	Byte	N	0...12	num
V1-P01	Analogue input configuration 1	**V1**	33227	15	33261	12	R/W	Byte	N	0...4	num
V1-P02	Analogue input configuration 2	**V1**	33227	240	33261	48	R/W	Byte	N	0...4	num
V1-P03	Analogue input configuration 3	**V1**	33227	3840	33261	192	R/W	Byte	N	0...4	num
V1-P04	Analogue input configuration 4	**V1**	33227	61440	33261	768	R/W	Byte	N	0...4,6,7	num
V1-04L	Lower limit of analogue input 4	**V1**	34149	0	34263	12	R/W	Word	Y	-199.9...V1-04H	num
V1-04H	Upper limit of analogue input 4	**V1**	34150	0	34263	48	R/W	Word	Y	V1-04L...1999	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V1-n01	Analog output 1 type	**V1**	33216	61440	34262	49152	R/W	Byte	N	0,9	num
V1-01n	Analogue output configurability 1	**V1**	33226	240	33261	3072	R/W	Byte	N	0...4	num
V1-n02	Analog output 2 type	**V1**	33217	15	34263	3	R/W	Byte	N	0,5,6,7	num
V1-02n	Analogue output configurability 2	**V1**	33226	3840	33261	12288	R/W	Byte	N	0...4	num
V1-H45	Defrost input mode for applications with dual evaporator	**V1**	33222	15	33254	49152	R/W	Byte	N	0...3	num
V1-H48	RTC present	**V1**	33273	64	33246	48	R/W	Byte	N	0/1	flag
V1-H70	Sensor 1 selection for virtual sensor	**V1**	33222	61440	34265	3072	R/W	Byte	N	0...4	num
V1-H71	Sensor 2 selection for virtual sensor	**V1**	33223	61440	34265	12288	R/W	Byte	N	0...4	num
V1-H72	% calculation virtual probe day	**V1**	33197	0	34265	49152	R/W	Byte	N	0.0...100.0	%
V1-ZCE	It enables/disables the zero crossing feature.	**V1**	33274	8192	34268	3072	R/W	Byte	N	0/1	flag
V1-FH	Frame heater probe selection	**V1**	33202	0	33268	12288	R/W	Byte	N	0...8	num
V1-FHt	Frame heater period	**V1**	33203	255	33268	49152	R/W	Byte	N	1...250	s*10
V1-FH0	Frame heater setpoint	**V1**	33162	0	33269	3	R/W	Word	Y	-199.9...1999	°C/°F
V1-FH1	Frame heater offset	**V1**	33163	0	33269	12	R/W	Word	N	0.0...25.0	°C/°F
V1-FH2	Frame heater range	**V1**	33165	0	33269	48	R/W	Word	N	0.0...25.0	°C/°F
V1-FH3	Minimum percentage/frame heater duty-cycle	**V1**	33160	0	33269	192	R/W	Byte	N	0.0...100.0	%
V1-FH4	Maximum percentage/frame heater duty-cycle day	**V1**	33164	0	33269	768	R/W	Byte	N	0.0...100.0	%
V1-FH5	Maximum percentage/frame heater duty-cycle night	**V1**	33171	0	33269	3072	R/W	Byte	N	0.0...100.0	%
V1-FH6	Percentage/frame heater duty-cycle in defrost	**V1**	33177	0	33269	12288	R/W	Byte	N	0.0...100.0	%
V1-dCA	Enable deep cooling	**V1**	33229	3072	33263	12288	R/W	Byte	N	0...2	num
V1-dCS	Deep cooling setpoint	**V1**	33138	0	33251	768	R/W	Word	Y	V1-LdL...V1-HdL	°C/°F
V1-tdC	Deep cooling Duration	**V1**	33190	0	33252	12288	R/W	Byte	N	0…250	min
V1-dCC	Defrost delay after deep cooling	**V1**	33187	0	33252	3072	R/W	Byte	N	0…250	min
V1-Sid	Deep cooling start threshold	**V1**	33161	0	33266	48	R/W	Word	Y	V1-LdL...V1-HdL	°C/°F
V1-toS	Over-threshold time for deep cooling start	**V1**	33171	255	33261	3	R/W	Byte	N	0…250	min
Application 2 parameters											
V2-rE	Type of regulation	**V2**	34444	3840	33479	3	R/W	Byte	N	0...4	num
V2-rP1	Thermostat regulation probe 1	**V2**	33432	3840	33442	48	R/W	Byte	N	0...7	num
V2-rP2	Thermostat regulation probe 2	**V2**	33432	61440	33444	768	R/W	Byte	N	0...7	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-SEt	Regulation setpoint 1	**V2**	33281	0	33443	49152	R/W	Byte	Y	V2-LSE...V2-HSE	°C/°F
V2-diF	Differential of setpoint 1	**V2**	33282	0	33440	768	R/W	Byte	N	0.0...30.0	°C/°F
V2-db1	Tripping band above setpoint 1	**V2**	34323	0	33479	12	R/W	Byte	N	0.0...30.0	°C/°F
V2-SP2	Regulation setpoint 2	**V2**	34317	0	33479	48	R/W	Byte	Y	V2-LS2...V2-HS2	°C/°F
V2-dF2	Differential of setpoint 2	**V2**	34346	0	33459	3072	R/W	Byte	N	0.0...30.0	°C/°F
V2-db2	Tripping band above setpoint 2	**V2**	34325	0	33479	192	R/W	Byte	N	0.0...30.0	num
V2-LSE	Minimum value settable for setpoint	**V2**	33283	0	33440	3072	R/W	Byte	Y	V2-LdL...V2-HSE	°C/°F
V2-HSE	Maximum value settable for setpoint	**V2**	33285	0	33440	12288	R/W	Byte	Y	V2-LSE...V2-HdL	°C/°F
V2-LS2	Minimum value settable for setpoint 2	**V2**	34322	0	33479	768	R/W	Byte	Y	V2-LdL...V2-HS2	°C/°F
V2-HS2	Maximum value settable for setpoint 2	**V2**	34321	0	33479	3072	R/W	Byte	Y	V2-LS2...V2-HdL	°C/°F
V2-HC	Operating mode (Heating/Cooling)	**V2**	33480	256	33440	49152	R/W	Byte	N	0/1	flag
V2-HC2	Operating mode of set point 2 (Heating/Cooling)	**V2**	33482	4	33479	12288	R/W	Byte	N	0/1	flag
V2-ont	ON time for compressor output with faulty regulation probe	**V2**	33280	0	33441	3	R/W	Byte	N	0…250	min
V2-oFt	OFF time for compressor output with faulty regulation probe	**V2**	33284	0	33441	12	R/W	Byte	N	0…250	min
V2-don	Compressor output enabling delay from request	**V2**	33288	0	33441	48	R/W	Byte	N	0…250	s
V2-doF	Compressor output enabling delay from shutdown	**V2**	33292	0	33441	192	R/W	Byte	N	0…250	min
V2-dbi	Delay between two consecutive starts of the compressor output	**V2**	33296	0	33441	768	R/W	Byte	N	0…250	min
V2-Cit	Minimum enabling time for compressor output	**V2**	33312	0	33442	3	R/W	Byte	N	0…250	min
V2-CAt	Maximum enabling time for compressor output	**V2**	33316	0	33442	12	R/W	Byte	N	0…250	min
V2-odo	Delay output enabling from Power On	**V2**	33300	0	33441	3072	R/W	Byte	N	0…250	min
V2-CP2	Enabling delay for compressor 2	**V2**	33399	255	33460	49152	R/W	Byte	N	0…250	min
V2-dFA	Compressor and condenser fans activation delay after command	**V2**	33407	0	33442	3072	R/W	Byte	N	0…250	s
V2-PPE	Default power for non-allocated probe/probe error	**V2**	34316	0	33479	49152	R/W	Byte	N	0.0...100.0	%
V2-tSU	Interstep up time	**V2**	34320	0	34465	12288	R/W	Byte	N	0...255	s
V2-tSd	Interstep down time	**V2**	34324	0	34465	49152	R/W	Byte	N	0...255	s
V2-rP3	Thermostat regulation probe 3	**V2**	33429	61440	34471	192	R/W	Byte	N	0...7	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-HC3	Operating mode of setpoint 3 (Heating/Cooling)	**V2**	33482	8	34471	768	R/W	Byte	N	0/1	flag
V2-SP3	Regulation setpoint 3	**V2**	34326	0	34471	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V2-dF3	Differential of setpoint 3	**V2**	34327	0	34471	12288	R/W	Byte	N	0.1...30.0	°C/°F
V2-PbH	Humidity control probe selection	**V2**	34445	15	34466	3	R/W	Byte	N	0...14	num
V2-SEH	Humidity setpoint	**V2**	34353	0	34466	12	R/W	Byte	Y	0.0...100.0	%RH
V2-dFH	Differential of humidity setpoint	**V2**	34354	0	34466	48	R/W	Byte	N	0.0...50.0	%RH
V2-dbH	Humidity intervention semi-band	**V2**	34355	0	34466	192	R/W	Byte	N	0.0...50.0	%RH
V2-dEH	Humidity regulation during defrost	**V2**	33482	16384	34466	768	R/W	Byte	N	0/1	flag
V2-CHC	Dehumidify control type	**V2**	33483	1	34473	768	R/W	Byte	N	0/1	flag
V2-CHt	Humidity-temperature control type	**V2**	33438	768	34472	768	R/W	Byte	N	0...3	num
V2-CHL	Minimum temperature to enable humidity control	**V2**	34329	0	34466	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V2-CHH	Maximum temperature to enable humidity control	**V2**	34330	0	34466	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V2-CHd	Humidity control enable differential	**V2**	34333	0	34466	49152	R/W	Byte	N	0.0...30.0	°C/°F
V2-CHn	Humidify-dehumidify out on time	**V2**	34328	0	34467	12	R/W	Byte	N	0…250	s
V2-CHF	Humidify-dehumidify out off time	**V2**	34332	0	34467	48	R/W	Byte	N	0…250	s
V2-dP1	Defrost probe 1 selection	**V2**	33433	15	33448	768	R/W	Byte	N	0...7	num
V2-dP2	Defrost probe 2 selection	**V2**	33433	240	33448	12288	R/W	Byte	N	0...7	num
V2-dtY	Type of defrost	**V2**	33420	61440	33442	768	R/W	Byte	N	0...2	num
V2-doH	Defrost cycle enabling delay from request	**V2**	33332	0	33443	3	R/W	Byte	N	0…250	min
V2-dt2	Unit of measurement for defrost duration	**V2**	33437	192	33442	49152	R/W	Byte	N	0...2	num
V2-dEt	Defrost timeout	**V2**	33328	0	33442	12288	R/W	Byte	N	1...250	h/min/s
V2-dS1	Defrost end temperature evaporator 1	**V2**	33286	0	33443	12	R/W	Byte	Y	-199.9...1999	°C/°F
V2-dS2	Defrost end temperature evaporator 2	**V2**	33287	0	33443	48	R/W	Byte	Y	-199.9...1999	°C/°F
V2-dPo	Defrost enabling request from Power On	**V2**	33480	1024	33443	768	R/W	Byte	N	0/1	flag
V2-tCd	Compressor output enabling/disabling time before a defrost	**V2**	33308	0	33441	49152	R/W	Byte	Y	-127...127	min
V2-Cod	OFF time of compressor before defrost	**V2**	33304	0	33441	12288	R/W	Byte	N	0…250	min
V2-dMR	Enable defrost timers with manual defrost	**V2**	33481	2048	33473	12	R/W	Byte	N	0/1	flag
V2-d00	Cumulative time for defrost activation	**V2**	33387	0	33461	12	R/W	Byte	N	0…250	h/min/s

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-d01	Unit of measurement for parameter d00	**V2**	33437	12	33463	12	R/W	Byte	N	0...2	num
V2-dit	Interval between defrosts	**V2**	33324	0	33461	49152	R/W	Byte	N	0…250	h/min/s
V2-d11	Unit of measurement for defrost intervals	**V2**	33437	48	33463	48	R/W	Byte	N	0...2	num
V2-d20	Enable defrost at compressor stoppage	**V2**	33481	256	33463	768	R/W	Byte	N	0/1	flag
V2-d40	Defrost probe 1 selection	**V2**	33425	240	33462	3	R/W	Byte	N	0...7	num
V2-d41	Defrosting start temperature	**V2**	33349	0	33459	49152	R/W	Byte	Y	-199.9...1999	°C/°F
V2-d42	Time for which the evaporator temperature must remain below the dSE threshold	**V2**	33351	0	33459	12288	R/W	Byte	N	0...255	min
V2-d43	Timer mode for temperature below threshold	**V2**	33425	3840	33462	12	R/W	Byte	N	0...3	num
V2-d44	Threshold management mode	**V2**	33425	61440	33462	48	R/W	Byte	N	0...2	num
V2-d45	Defrosting start temperature 2	**V2**	34359	0	33463	3	R/W	Byte	Y	-199.9...1999	°C/°F
V2-d60	Max number of defrosts to skip	**V2**	33420	3840	34467	768	R/W	Byte	N	0...10	num
V2-d61	Percentage duration of optimal defrost 1	**V2**	33404	0	34467	3072	R/W	Byte	N	0.0...100.0	%
V2-d63	Number of defrost cycles at start-up for system ramp-up	**V2**	33424	3840	34470	48	R/W	Byte	N	0...10	num
V2-d90	Timed defrost mode	**V2**	33426	3840	33462	3072	R/W	Byte	N	0...3	num
V2-d91	Number of daily defrosts	**V2**	33388	0	33461	48	R/W	Byte	N	0...255	num
V2-d92	Weekend 1	**V2**	33426	15	33462	192	R/W	Byte	N	0...7	num
V2-d93	Weekend 2	**V2**	33426	240	33462	768	R/W	Byte	N	0...7	num
V2-d94	Regular defrost interval duration	**V2**	33426	61440	33462	12288	R/W	Byte	N	1...7	num
V2-FP1	Evaporator fan probe selection in normal mode	**V2**	33433	3840	33451	3072	R/W	Byte	N	0...7	num
V2-FPt	Parameter mode FSt (absolute or relative)	**V2**	33480	4096	33445	3	R/W	Byte	N	0/1	flag
V2-FSt	Evaporator fans disabling temperature	**V2**	33290	0	33445	12	R/W	Byte	Y	-199.9...1999	°C/°F
V2-Fot	Evaporator fans enabling temperature	**V2**	33350	0	33460	768	R/W	Byte	Y	-199.9...1999	°C/°F
V2-FAd	Evaporator fans enabling differential	**V2**	33381	0	33445	48	R/W	Byte	N	0.1...30.0	°C/°F
V2-Fdt	Evaporator fans delay after defrost cycle	**V2**	33344	0	33459	48	R/W	Byte	N	0…250	min
V2-dt	Dripping time	**V2**	33382	255	33445	192	R/W	Byte	N	0…250	min
V2-dFd	Evaporator fans disabling during defrost time	**V2**	33480	8192	33445	768	R/W	Byte	N	0/1	flag
V2-FCo	Evaporator fans status with OFF compressor output	**V2**	33421	15	33444	49152	R/W	Byte	N	0...6	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-FdC	Evaporator fans shutdown delay after compressor disabling	**V2**	33382	0	33445	3072	R/W	Byte	N	0…250	min
V2-Fon	Evaporator fans ON time in Duty Cycle mode	**V2**	33383	255	33445	12288	R/W	Byte	N	0…250	min/s
V2-FoF	Evaporator fans OFF time in Duty Cycle mode	**V2**	33383	0	33445	49152	R/W	Byte	N	0…250	min/s
V2-Fnn	Evaporator fans ON time in night duty cycle mode	**V2**	33380	0	33444	3072	R/W	Byte	N	0…250	min/s
V2-FnF	Evaporator fans OFF time in night duty cycle mode	**V2**	33381	255	33444	12288	R/W	Byte	N	0…250	min/s
V2-FC1	Condenser probe selection	**V2**	33433	61440	34470	3	R/W	Byte	N	0...7	num
V2-SCF	Condenser fan enabling set point	**V2**	34350	0	33453	49152	R/W	Byte	Y	-50.0...150.0	°C/°F
V2-dCF	Condenser fan enabling differential	**V2**	34351	0	33454	3	R/W	Byte	N	0.0...30.0	°C/°F
V2-tCF	Condenser fan enabling delay after defrost	**V2**	34348	0	33454	12	R/W	Byte	N	0...255	min
V2-CFd	Condenser fans disabling during defrost	**V2**	33427	15	33461	192	R/W	Byte	N	0/1	flag
V2-HUL	Humidity level selection	**V2**	33438	3072	34472	3072	R/W	Byte	N	0...3	num
V2-HU1	Evaporator fans on time humidity level 1	**V2**	34400	0	34472	12288	R/W	Byte	N	0…250	min/s
V2-HU2	Evaporator fans off time humidity level 1	**V2**	34401	255	34472	49152	R/W	Byte	N	0…250	min/s
V2-HU3	Evaporator fans on time humidity level 2	**V2**	34401	0	34473	3	R/W	Byte	N	0…250	min/s
V2-HU4	Evaporator fans off time humidity level 2	**V2**	34402	255	34473	12	R/W	Byte	N	0…250	min/s
V2-HU5	Evaporator fans on time humidity level 3	**V2**	34402	0	34473	48	R/W	Byte	N	0…250	min/s
V2-HU6	Evaporator fans off time humidity level 3	**V2**	34403	255	34473	192	R/W	Byte	N	0…250	min/s
V2-FE1	Select variable speed fan probe	**V2**	33431	3840	33461	768	R/W	Byte	N	0...7	num
V2-FEt	Setpoint mode	**V2**	33438	48	33461	3072	R/W	Byte	N	0/1	flag
V2-FES	Setpoint	**V2**	33374	0	33461	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V2-FEd	Band	**V2**	33375	0	33463	12288	R/W	Byte	N	0.1...50.0	°C/°F
V2-FEu	Cut-off band	**V2**	34341	0	33465	192	R/W	Byte	N	0.0...25.0	°C/°F
V2-FEC	Cut-off differential	**V2**	34342	0	33465	768	R/W	Byte	N	0.1...25.0	°C/°F
V2-FEr	Fan switch-off delay after compressor deactivation	**V2**	34340	0	33470	768	R/W	Byte	N	0…250	min
V2-FE2	Minimum day percentage	**V2**	33412	0	33470	3072	R/W	Byte	N	0.0...100.0	%
V2-FE3	Maximum day percentage with compressor on	**V2**	33413	255	33471	3	R/W	Byte	N	0.0...100.0	%
V2-FE4	Maximum day percentage with compressor off	**V2**	33413	0	33471	12	R/W	Byte	N	0.0...100.0	%

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-FE5	Minimum night percentage	**V2**	33414	255	33471	48	R/W	Byte	N	0.0...100.0	%
V2-FE6	Maximum night percentage with compressor on	**V2**	33414	0	33471	192	R/W	Byte	N	0.0...100.0	%
V2-FE7	Maximum night percentage with compressor off	**V2**	33415	255	33471	768	R/W	Byte	N	0.0...100.0	%
V2-FE8	Percentage during defrost	**V2**	33415	0	33471	49152	R/W	Byte	N	0.0...100.0	%
V2-FE9	Percentage in the event of probe error	**V2**	33416	0	33472	768	R/W	Byte	N	0.0...100.0	%
V2-FEA	Maximum pick-up speed	**V2**	33417	255	33472	3072	R/W	Byte	N	0.0...100.0	%
V2-FEb	Fan pick-up time	**V2**	33417	0	33472	12288	R/W	Byte	N	0…250	s
V2-FEP	Fan forcing period at pick-up speed	**V2**	33418	255	33472	49152	R/W	Byte	N	0…250	min
V2-rA1	Temperature alarm probe 1 selection	**V2**	33434	15	33478	48	R/W	Byte	N	0...7	num
V2-rA2	Temperature alarm probe 2 selection	**V2**	34445	240	34474	48	R/W	Byte	N	0...7	num
V2-Att	Alarms mode (absolute or relative)	**V2**	33480	32768	33446	12	R/W	Byte	N	0/1	flag
V2-AFd	Alarm tripping differential	**V2**	33384	0	33446	48	R/W	Byte	N	0.1...25.0	°C/°F
V2-HAL	Maximum alarm 1 threshold	**V2**	33291	0	33446	192	R/W	Byte	Y	V2-LAL...1999	°C/°F
V2-LAL	Minimum alarm 1 threshold	**V2**	33293	0	33446	768	R/W	Byte	Y	-199.9...V2-HAL	°C/°F
V2-HA2	Maximum alarm 2 threshold	**V2**	33289	0	34474	192	R/W	Byte	Y	V2-LA2...1999	°C/°F
V2-LA2	Minimum alarm 2 threshold	**V2**	33347	0	34474	768	R/W	Byte	Y	-199.9...V2-HA2	°C/°F
V2-PAo	Temperature alarms disabling time from Power On	**V2**	33385	255	33446	3072	R/W	Byte	N	0…250	min*10
V2-dAo	Temperature alarm disabling time after defrost cycle	**V2**	33353	0	33446	12288	R/W	Byte	N	0…999	min
V2-oAo	High and low temperature alarms disabling time after door closing	**V2**	33386	255	33446	49152	R/W	Byte	N	0...10	hours
V2-tdo	Open door disabling time	**V2**	33387	255	33447	49152	R/W	Byte	N	0…250	min
V2-tAo	High/Minimum alarm delay on probe 1	**V2**	33386	0	33447	3	R/W	Byte	N	0…250	min
V2-2tA	High/Minimum alarm delay on probe 2	**V2**	33411	0	34474	3072	R/W	Byte	N	0…250	min
V2-dAt	Defrost alarm signal silenced due to timeout	**V2**	33294	0	33447	12	R/W	Byte	N	0/1	flag
V2-EAL	Regulators blocked from external alarm	**V2**	33427	3840	33447	48	R/W	Byte	N	0...4	num
V2-AoP	Polarity of alarm output	**V2**	33481	1	33447	768	R/W	Byte	N	0/1	flag
V2-rA3	Temperature alarm probe selection	**V2**	33427	240	34471	49152	R/W	Byte	N	0...7	num
V2-SA3	Compressor overheating setpoint	**V2**	33343	0	33459	12	R/W	Byte	Y	V2-LdL...V2-HdL	°C/°F

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-dA3	Compressor overheating differential	**V2**	33345	0	33459	192	R/W	Byte	N	0.1...30.0	°C/°F
V2-HCP	HACCP probe selection	**V2**	33422	3840	34467	49152	R/W	Byte	N	0...7	num
V2-SHH	Maximum HACCP alarm threshold	**V2**	34345	0	34468	768	R/W	Byte	Y	V2-SLH...1999	°C/°F
V2-SLH	Minimum HACCP alarm threshold	**V2**	34347	0	34468	3072	R/W	Byte	Y	-199.9...V2-SHH	°C/°F
V2-drA	Minimum dwelling time in critical area before alarm signalling	**V2**	33336	0	34468	12288	R/W	Byte	N	0…250	min
V2-drH	HACCP alarm reset time from last manual reset	**V2**	34344	0	34468	49152	R/W	Byte	N	0…250	hours
V2-HCE	Enable HACCP alarms storage with/without alarm relay enabling	**V2**	33438	192	34469	3	R/W	Byte	N	0...2	num
V2-HCt	HACCP alarms storage disabling time (key or digital input)	**V2**	34356	0	34469	12	R/W	Byte	N	0…250	min
V2-dod	Loads shutdown enabling after door micro enabling	**V2**	33421	3840	33447	12288	R/W	Byte	N	0...10	num
V2-dAd	D.I. 1/2 enabling signalling delay	**V2**	33394	255	33452	3072	R/W	Byte	N	0…250	min
V2-dCo	Compressor deactivation delay after door opened	**V2**	33352	0	33443	3072	R/W	Byte	N	0…250	min
V2-dFo	Fan enabling delay from acknowledgement	**V2**	33418	0	34474	12	R/W	Byte	N	0…250	min
V2-AuP	Aux output activation when door opened	**V2**	33421	240	33447	192	R/W	Byte	N	0/1	flag
V2-dCd	Fan enabling delay from door closing	**V2**	34352	0	33448	3072	R/W	Byte	N	0…250	s
V2-L00	Shared probe	**V2**	34445	61440	34475	192	R/W	Byte	N	0...6	num
V2-L01	Distributed display (referred to Secondary)	**V2**	33436	3072	34475	768	R/W	Byte	N	0...2	num
V2-L02	Setpoint synchronisation	**V2**	33483	8	34475	3072	R/W	Byte	N	0/1	flag
V2-L03	Defrost synchronisation	**V2**	33431	15	33473	3	R/W	Byte	N	0...2	num
V2-L04	Resource locking after defrost end	**V2**	33431	240	33473	48	R/W	Byte	N	0/1	flag
V2-L05	Standby synchronisation	**V2**	33437	12288	33473	12288	R/W	Byte	N	0/1	flag
V2-L06	Lights synchronisation	**V2**	33437	49152	33473	49152	R/W	Byte	N	0/1	flag
V2-L07	Reduced setpoint synchronisation	**V2**	33438	3	33474	3	R/W	Byte	N	0/1	flag
V2-L08	AUX synchronisation	**V2**	33438	12	33475	48	R/W	Byte	N	0/1	flag
V2-L10	Resource unlock timeout during synchronised defrosts	**V2**	33410	255	33475	192	R/W	Byte	N	1…250	min
V2-L11	Number of devices connected in Field Bus	**V2**	34445	3840	34474	12288	R/W	Byte	N	0...8	num
V2-L12	Sharing of alarm relay in Field Bus	**V2**	33438	12288	34474	49152	R/W	Byte	N	0...2	num
V2-L15	Share alarm buzzer in Field Bus	**V2**	33438	49152	34475	48	R/W	Byte	N	0...2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-PEn	Number of errors allowed per maximum/minimum pressure switch input	**V2**	33406	255	33458	12288	R/W	Byte	N	0...15	num
V2-PEi	Minimum/maximum pressure switch error count interval	**V2**	33406	0	33458	49152	R/W	Byte	N	1...99	min
V2-PEt	Compressor activation delay after pressure switch deactivation	**V2**	33407	255	33459	3	R/W	Byte	N	0...255	min
V2-oSP	Offset on setpoint	**V2**	33295	0	33448	49152	R/W	Byte	Y	-30.0...30.0	°C/°F
V2-SC2	Primary/Secondary selection serial port 2	**V2**	33482	32	34470	3072	R/W	Byte	N	0/1	flag
V2-Po2	Polling time serial port 2	**V2**	34362	0	-	-	R/W	Byte	N	0...1000	s/100
V2-to2	Timeout serial port 2	**V2**	34366	0	-	-	R/W	Byte	N	0...1000	s/100
V2-dro	°C/°F selection	**V2**	33481	8	33449	192	R/W	Byte	N	0/1	flag
V2-CA1	Analog input 1 calibration	**V2**	33297	0	33449	768	R/W	Byte	Y	-30.0...30.0	°C/°F
V2-CA2	Analog input 2 calibration	**V2**	33298	0	33449	3072	R/W	Byte	Y	-30.0...30.0	°C/°F
V2-CA3	Analog input 3 calibration	**V2**	33299	0	33449	12288	R/W	Byte	Y	-30.0...30.0	°C/°F
V2-CA4	Analog input 4 calibration	**V2**	34349	0	33475	12288	R/W	Byte	Y	-30.0...30.0	°C/°F
V2-CAI	Calibration enabling	**V2**	33436	49152	33449	49152	R/W	Byte	N	0...2	num
V2-LdL	Minimum value that can be displayed	**V2**	33302	0	33450	3	R/W	Byte	Y	-199.9...V2-HdL	°C/°F
V2-HdL	Maximum value that can be displayed	**V2**	33303	0	33450	12	R/W	Byte	Y	V2-LdL...1999	°C/°F
V2-LoC	Disables keypad operation	**V2**	33481	16	33450	48	R/W	Byte	N	0/1	flag
V2-ddd	Display main status	**V2**	33421	61440	33450	192	R/W	Byte	N	0...7	num
V2-ddE	Display on Eco	**V2**	33430	240	33470	12288	R/W	Byte	N	0...8	num
V2-ddL	Display blocking mode during defrost	**V2**	33422	15	33450	768	R/W	Byte	N	0...2	num
V2-Ldd	Display blocking timeout from defrost end	**V2**	33390	255	33450	3072	R/W	Byte	N	0...250	min
V2-ndt	Display with decimal point	**V2**	33481	32	33450	12288	R/W	Byte	N	0/1	flag
V2-PS1	Value of password 1	**V2**	33391	0	33451	192	R/W	Byte	N	0…250	num
V2-PS2	Value of password 2	**V2**	33392	0	33451	768	R/W	Byte	N	0…250	num
V2-CEr	Probe error capacity	**V2**	33307	0	33454	768	R/W	Byte	N	0.0...100.0	%
V2-PdS	Wake-up forced restart differential	**V2**	33309	0	33454	3072	R/W	Byte	N	-50.0...50.0	K/°R
V2-PuS	Pull-up forced restart differential	**V2**	33310	0	33454	12288	R/W	Byte	N	-50.0...50.0	K/°R
V2-Pud	Temperature timeout out of range	**V2**	33311	0	33454	49152	R/W	Byte	N	0…999	min
V2-PdE	Wake-up end differential	**V2**	33313	0	33455	3	R/W	Byte	N	-50.0...50.0	K/°R
V2-PuE	Pull-up end differential	**V2**	33314	0	33455	12	R/W	Byte	N	-50.0...50.0	K/°R

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-Pdt	Optimized wake-up timeout	**V2**	33315	0	33455	48	R/W	Byte	N	0…999	min
V2-Pdd	Optimized wake-up capacity	**V2**	33317	0	33455	192	R/W	Byte	N	0.0...100.0	%
V2-CPd	Capacity after day wake-up	**V2**	33318	0	33455	768	R/W	Byte	N	0.0...100.0	%
V2-CPn	Capacity after night wake-up	**V2**	33319	0	33455	3072	R/W	Byte	N	0.0...100.0	%
V2-CSd	Compressor startup delay	**V2**	33326	0	33456	12288	R/W	Byte	N	0…999	s
V2-CSC	Compressor startup capacity	**V2**	33327	0	33456	49152	R/W	Byte	N	44.4...100.0	%
V2-CAU	Select PID automatic or manual mode	**V2**	33394	0	33457	12	R/W	Byte	N	0/1	flag
V2-CdU	PID duty cycle in manual mode	**V2**	33330	0	33457	48	R/W	Byte	N	0.0...100.0	%
V2-F_1	Maximum Frequency	**V2**	33339	0	33458	192	R/W	Byte	N	0…250	Hz
V2-F_2	Minimum Frequency	**V2**	33341	0	33458	768	R/W	Byte	N	0…250	Hz
V2-AP	Probe used by the Analog Output	**V2**	34446	15	34476	768	RW	Byte	N	0...7	num
V2-AoF	Analogue output configurability 1	**V2**	34444	61440	34469	768	R/W	Byte	N	ro/Er	flag
V2-LAO	Lower limit of analogue output 1	**V2**	34337	0	34469	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V2-HAO	Upper limit of analogue output 1	**V2**	34338	0	34469	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V2-AoS	Operation mode of analogue output with probe error	**V2**	33403	255	34469	49152	R/W	Byte	N	0.0...100.0	%
V2-H08	Standby operating mode	**V2**	33437	3	33451	12288	R/W	Byte	N	0...2	num
V2-H11	Analogue input configuration 1 when configured as digital input	**V2**	33393	255	33451	49152	R/W	Byte	N	-16...16	num
V2-H12	Analogue input configuration 2 when configured as digital input	**V2**	33393	0	33452	768	R/W	Byte	N	-16...16	num
V2-H13	Analogue input configuration 3 when configured as digital input	**V2**	33400	0	33475	49152	R/W	Byte	N	-16...16	num
V2-H14	Analogue input configuration 4 when configured as digital input	**V2**	33401	255	33476	768	R/W	Byte	N	-16...16	num
V2-H15	Configurability of digital input 5	**V2**	33401	0	33476	3072	R/W	Byte	N	-16...16	num
V2-H21	Configurability of digital output 1	**V2**	33396	0	33452	12288	R/W	Byte	N	0...20	num
V2-H22	Configurability of digital output 2	**V2**	33397	255	33452	49152	R/W	Byte	N	0...20	num
V2-H23	Configurability of digital output 3	**V2**	33397	0	33453	3	R/W	Byte	N	0...20	num
V2-H24	Configurability of digital output 4	**V2**	33398	255	33453	12	R/W	Byte	N	0...20	num
V2-H25	Buzzer enable	**V2**	33409	255	33443	12288	R/W	Byte	N	0/1	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-H31	UP button configurability	**V2**	33422	61440	33453	48	R/W	Byte	N	0...12	num
V2-H32	DOWN button configurability	**V2**	33423	15	33453	192	R/W	Byte	N	0...13	num
V2-H33	ESC button configurability	**V2**	33423	240	33453	768	R/W	Byte	N	0...12	num
V2-H34	Free button 1 configurability	**V2**	33423	3840	33453	3072	R/W	Byte	N	0...12	num
V2-H35	Free button 2 configurability	**V2**	33423	61440	33453	12288	R/W	Byte	N	0...12	num
V2-P01	Analogue input configuration 1	**V2**	33435	15	33469	12	R/W	Byte	N	0...4	num
V2-P02	Analogue input configuration 2	**V2**	33435	240	33469	48	R/W	Byte	N	0...4	num
V2-P03	Analogue input configuration 3	**V2**	33435	3840	33469	192	R/W	Byte	N	0...4	num
V2-P04	Analogue input configuration 4	**V2**	33435	61440	33469	768	R/W	Byte	N	0...4,6,7	num
V2-04L	Lower limit of analogue input 4	**V2**	34357	0	34471	12	R/W	Byte	Y	-199.9...V2-04H	num
V2-04H	Upper limit of analogue input 4	**V2**	34358	0	34471	48	R/W	Byte	Y	V2-04L...1999	num
V2-n01	Analog output 1 type	**V2**	33424	61440	34470	49152	R/W	Byte	N	0,9	num
V2-01n	Analogue output configurability 1	**V2**	33434	240	33469	3072	R/W	Byte	N	0...4	num
V2-n02	Analog output 2 type	**V2**	33425	15	34471	3	R/W	Byte	N	0,5,6,7	num
V2-02n	Analogue output configurability 2	**V2**	33434	3840	33469	12288	R/W	Byte	N	0...4	num
V2-H45	Defrost input mode for applications with dual evaporator	**V2**	33430	15	33462	49152	R/W	Byte	N	0...3	num
V2-H48	RTC present	**V2**	33481	64	33454	48	R/W	Byte	N	0/1	flag
V2-H70	Sensor 1 selection for virtual sensor	**V2**	33430	61440	34473	3072	R/W	Byte	N	0...4	num
V2-H71	Sensor 2 selection for virtual sensor	**V2**	33431	61440	34473	12288	R/W	Byte	N	0...4	num
V2-H72	% calculation virtual probe day	**V2**	33405	0	34473	49152	R/W	Byte	N	0.0...100.0	%
V2-ZCE	It enables/disables the zero crossing feature.	**V2**	33482	8192	34476	3072	R/W	Byte	N	0/1	flag
V2-FH	Frame heater probe selection	**V2**	33410	0	33476	12288	R/W	Byte	N	0...8	num
V2-FHt	Frame heater period	**V2**	33411	255	33476	49152	R/W	Byte	N	1...250	s*10
V2-FH0	Frame heater setpoint	**V2**	33370	0	33477	3	R/W	Byte	Y	-199.9...1999	°C/°F
V2-FH1	Frame heater offset	**V2**	33371	0	33477	12	R/W	Byte	N	0.0...25.0	°C/°F
V2-FH2	Frame heater range	**V2**	33373	0	33477	48	R/W	Byte	N	0.0...25.0	°C/°F
V2-FH3	Minimum percentage/frame heater duty-cycle	**V2**	33368	0	33477	192	R/W	Byte	N	0.0...100.0	%
V2-FH4	Maximum percentage/frame heater duty-cycle day	**V2**	33372	0	33477	768	R/W	Byte	N	0.0...100.0	%

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V2-FH5	Maximum percentage/frame heater duty-cycle night	**V2**	33379	0	33477	3072	R/W	Byte	N	0.0...100.0	%
V2-FH6	Percentage/frame heater duty-cycle in defrost	**V2**	33385	0	33477	12288	R/W	Byte	N	0.0...100.0	%
V2-dCA	Enable deep cooling	**V2**	33437	3072	33471	12288	R/W	Byte	N	0...2	num
V2-dCS	Deep cooling setpoint	**V2**	33346	0	33459	768	R/W	Byte	Y	V2-LdL...V2-HdL	°C/°F
V2-tdC	Deep cooling Duration	**V2**	33398	0	33460	12288	R/W	Byte	N	0…250	min
V2-dCC	Defrost delay after deep cooling	**V2**	33395	0	33460	3072	R/W	Byte	N	0…250	min
V2-Sid	Deep cooling start threshold	**V2**	33369	0	33474	48	R/W	Byte	Y	V2-LdL...V2-HdL	°C/°F
V2-toS	Over-threshold time for deep cooling start	**V2**	33379	255	33469	3	R/W	Byte	N	0...250	min
Application 3 parameters											
V3-rE	Type of regulation	**V3**	34648	3840	33683	3	R/W	Byte	N	0...4	num
V3-rP1	Thermostat regulation probe 1	**V3**	33636	3840	33646	48	R/W	Byte	N	0...7	num
V3-rP2	Thermostat regulation probe 2	**V3**	33636	61440	33648	768	R/W	Byte	N	0...7	num
V3-SEt	Regulation setpoint 1	**V3**	33485	0	33647	49152	R/W	Byte	Y	V3-LSE...V3-HSE	°C/°F
V3-diF	Differential of setpoint 1	**V3**	33486	0	33644	768	R/W	Byte	N	0.0...30.0	°C/°F
V3-db1	Tripping band above setpoint 1	**V3**	34527	0	33683	12	R/W	Byte	N	0.0...30.0	°C/°F
V3-SP2	Regulation setpoint 2	**V3**	34521	0	33683	48	R/W	Byte	Y	V3-LS2...V3-HS2	°C/°F
V3-dF2	Differential of setpoint 2	**V3**	34550	0	33663	3072	R/W	Byte	N	0.0...30.0	°C/°F
V3-db2	Tripping band above setpoint 2	**V3**	34529	0	33683	192	R/W	Byte	N	0.0...30.0	num
V3-LSE	Minimum value settable for setpoint	**V3**	33487	0	33644	3072	R/W	Byte	Y	V3-LdL...V3-HSE	°C/°F
V3-HSE	Maximum value settable for setpoint	**V3**	33489	0	33644	12288	R/W	Byte	Y	V3-LSE...V3-HdL	°C/°F
V3-LS2	Minimum value settable for setpoint 2	**V3**	34526	0	33683	768	R/W	Byte	Y	V3-LdL...V3-HS2	°C/°F
V3-HS2	Maximum value settable for setpoint 2	**V3**	34525	0	33683	3072	R/W	Byte	Y	V3-LS2...V3-HdL	°C/°F
V3-HC	Operating mode (Heating/Cooling)	**V3**	33684	256	33644	49152	R/W	Byte	N	0/1	flag
V3-HC2	Operating mode of set point 2 (Heating/Cooling)	**V3**	33686	4	33683	12288	R/W	Byte	N	0/1	flag
V3-ont	ON time for compressor output with faulty regulation probe	**V3**	33484	0	33645	3	R/W	Byte	N	0…250	min
V3-oFt	OFF time for compressor output with faulty regulation probe	**V3**	33488	0	33645	12	R/W	Byte	N	0…250	min
V3-don	Compressor output enabling delay from request	**V3**	33492	0	33645	48	R/W	Byte	N	0…250	s
V3-doF	Compressor output enabling delay from shutdown	**V3**	33496	0	33645	192	R/W	Byte	N	0…250	min

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-dbi	Delay between two consecutive starts of the compressor output	**V3**	33500	0	33645	768	R/W	Byte	N	0…250	min
V3-Cit	Minimum enabling time for compressor output	**V3**	33516	0	33646	3	R/W	Byte	N	0…250	min
V3-CAt	Maximum enabling time for compressor output	**V3**	33520	0	33646	12	R/W	Byte	N	0…250	min
V3-odo	Delay output enabling from Power On	**V3**	33504	0	33645	3072	R/W	Byte	N	0…250	min
V3-CP2	Enabling delay for compressor 2	**V3**	33603	255	33664	49152	R/W	Byte	N	0…250	min
V3-dFA	Compressor and condenser fans activation delay after command	**V3**	33611	0	33646	3072	R/W	Byte	N	0…250	s
V3-PPE	Default power for non-allocated probe/probe error	**V3**	34520	0	33683	49152	R/W	Byte	N	0.0...100.0	%
V3-tSU	Interstep up time	**V3**	34524	0	34669	12288	R/W	Byte	N	0...255	s
V3-tSd	Interstep down time	**V3**	34528	0	34669	49152	R/W	Byte	N	0...255	s
V3-rP3	Thermostat regulation probe 3	**V3**	33633	61440	34675	192	R/W	Byte	N	0...7	num
V3-HC3	Operating mode of setpoint 3 (Heating/Cooling)	**V3**	33686	8	34675	768	R/W	Byte	N	0/1	flag
V3-SP3	Regulation setpoint 3	**V3**	34530	0	34675	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V3-dF3	Differential of setpoint 3	**V3**	34531	0	34675	12288	R/W	Byte	N	0.1...30.0	°C/°F
V3-PbH	Humidity control probe selection	**V3**	34649	15	34670	3	R/W	Byte	N	0...7	num
V3-SEH	Humidity setpoint	**V3**	34557	0	34670	12	R/W	Byte	Y	0.0...100.0	%RH
V3-dFH	Differential of humidity setpoint	**V3**	34558	0	34670	48	R/W	Byte	N	0.0...50.0	%RH
V3-dbH	Humidity intervention semi-band	**V3**	34559	0	34670	192	R/W	Byte	N	0.0...50.0	%RH
V3-dEH	Humidity regulation during defrost	**V3**	33686	16384	34670	768	R/W	Byte	N	0/1	flag
V3-CHC	Dehumidify control type	**V3**	33687	1	34677	768	R/W	Byte	N	0/1	flag
V3-CHt	Humidity-temperature control type	**V3**	33642	768	34676	768	R/W	Byte	N	0...3	num
V3-CHL	Minimum temperature to enable humidity control	**V3**	34533	0	34670	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V3-CHH	Maximum temperature to enable humidity control	**V3**	34534	0	34670	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V3-CHd	Humidity control enable differential	**V3**	34537	0	34670	49152	R/W	Byte	N	0.0...30.0	°C/°F
V3-CHn	Humidify-dehumidify out on time	**V3**	34532	0	34671	12	R/W	Byte	N	0…250	s
V3-CHF	Humidify-dehumidify out off time	**V3**	34536	0	34671	48	R/W	Byte	N	0…250	s
V3-dP1	Defrost probe 1 selection	**V3**	33637	15	33652	768	R/W	Byte	N	0...7	num
V3-dP2	Defrost probe 2 selection	**V3**	33637	240	33652	12288	R/W	Byte	N	0...7	num
V3-dtY	Type of defrost	**V3**	33624	61440	33646	768	R/W	Byte	N	0...2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-doH	Defrost cycle enabling delay from request	**V3**	33536	0	33647	3	R/W	Byte	N	0…250	min
V3-dt2	Unit of measurement for defrost duration	**V3**	33641	192	33646	49152	R/W	Byte	N	0...2	num
V3-dEt	Defrost timeout	**V3**	33532	0	33646	12288	R/W	Byte	N	1...250	h/min/s
V3-dS1	Defrost end temperature evaporator 1	**V3**	33490	0	33647	12	R/W	Byte	Y	-199.9...1999	°C/°F
V3-dS2	Defrost end temperature evaporator 2	**V3**	33491	0	33647	48	R/W	Byte	Y	-199.9...1999	°C/°F
V3-dPo	Defrost enabling request from Power On	**V3**	33684	1024	33647	768	R/W	Byte	N	0/1	flag
V3-tCd	Compressor output enabling/disabling time before a defrost	**V3**	33512	0	33645	49152	R/W	Byte	Y	-127...127	min
V3-Cod	OFF time of compressor before defrost	**V3**	33508	0	33645	12288	R/W	Byte	N	0…250	min
V3-dMR	Enable defrost timers with manual defrost	**V3**	33685	2048	33677	12	R/W	Byte	N	0/1	flag
V3-d00	Cumulative time for defrost activation	**V3**	33591	0	33665	12	R/W	Byte	N	0…250	h/min/s
V3-d01	Unit of measurement for parameter d00	**V3**	33641	12	33667	12	R/W	Byte	N	0...2	num
V3-dit	Interval between defrosts	**V3**	33528	0	33665	49152	R/W	Byte	N	0…250	h/min/s
V3-d11	Unit of measurement for defrost intervals	**V3**	33641	48	33667	48	R/W	Byte	N	0...2	num
V3-d20	Enable defrost at compressor stoppage	**V3**	33685	256	33667	768	R/W	Byte	N	0/1	flag
V3-d40	Defrost probe 1 selection	**V3**	33629	240	33666	3	R/W	Byte	N	0...7	num
V3-d41	Defrosting start temperature	**V3**	33553	0	33663	49152	R/W	Byte	Y	-199.9...1999	°C/°F
V3-d42	Time for which the evaporator temperature must remain below the dSE threshold	**V3**	33555	0	33663	12288	R/W	Byte	N	0...255	min
V3-d43	Timer mode for temperature below threshold	**V3**	33629	3840	33666	12	R/W	Byte	N	0...3	num
V3-d44	Threshold management mode	**V3**	33629	61440	33666	48	R/W	Byte	N	0...2	num
V3-d45	Defrosting start temperature 2	**V3**	34563	0	33667	3	R/W	Byte	Y	-199.9...1999	°C/°F
V3-d60	Max number of defrosts to skip	**V3**	33624	3840	34671	768	R/W	Byte	N	0...10	num
V3-d61	Percentage duration of optimal defrost 1	**V3**	33608	0	34671	3072	R/W	Byte	N	0.0...100.0	%
V3-d63	Number of defrost cycles at start-up for system ramp-up	**V3**	33628	3840	34674	48	R/W	Byte	N	0...10	num
V3-d90	Timed defrost mode	**V3**	33630	3840	33666	3072	R/W	Byte	N	0...3	num
V3-d91	Number of daily defrosts	**V3**	33592	0	33665	48	R/W	Byte	N	0...255	num
V3-d92	Weekend 1	**V3**	33630	15	33666	192	R/W	Byte	N	0...7	num
V3-d93	Weekend 2	**V3**	33630	240	33666	768	R/W	Byte	N	0...7	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-d94	Regular defrost interval duration	**V3**	33630	61440	33666	12288	R/W	Byte	N	1...7	num
V3-FP1	Evaporator fan probe selection in normal mode	**V3**	33637	3840	33655	3072	R/W	Byte	N	0...7	num
V3-FPt	Parameter mode FSt (absolute or relative)	**V3**	33684	4096	33649	3	R/W	Byte	N	0/1	flag
V3-FSt	Evaporator fans disabling temperature	**V3**	33494	0	33649	12	R/W	Byte	Y	-199.9...1999	°C/°F
V3-Fot	Evaporator fans enabling temperature	**V3**	33554	0	33664	768	R/W	Byte	Y	-199.9...1999	°C/°F
V3-FAd	Evaporator fans enabling differential	**V3**	33585	0	33649	48	R/W	Byte	N	0.1...30.0	°C/°F
V3-Fdt	Evaporator fans delay after defrost cycle	**V3**	33548	0	33663	48	R/W	Byte	N	0…250	min
V3-dt	Dripping time	**V3**	33586	255	33649	192	R/W	Byte	N	0…250	min
V3-dFd	Evaporator fans disabling during defrost time	**V3**	33684	8192	33649	768	R/W	Byte	N	0/1	flag
V3-FCo	Evaporator fans status with OFF compressor output	**V3**	33625	15	33648	49152	R/W	Byte	N	0...6	num
V3-FdC	Evaporator fans shutdown delay after compressor disabling	**V3**	33586	0	33649	3072	R/W	Byte	N	0…250	min
V3-Fon	Evaporator fans ON time in Duty Cycle mode	**V3**	33587	255	33649	12288	R/W	Byte	N	0…250	min/s
V3-FoF	Evaporator fans OFF time in Duty Cycle mode	**V3**	33587	0	33649	49152	R/W	Byte	N	0…250	min/s
V3-Fnn	Evaporator fans ON time in night duty cycle mode	**V3**	33584	0	33648	3072	R/W	Byte	N	0…250	min/s
V3-FnF	Evaporator fans OFF time in night duty cycle mode	**V3**	33585	255	33648	12288	R/W	Byte	N	0…250	min/s
V3-FC1	Condenser probe selection	**V3**	33637	61440	34674	3	R/W	Byte	N	0...7	num
V3-SCF	Condenser fan enabling set point	**V3**	34554	0	33657	49152	R/W	Byte	Y	-50.0...150.0	°C/°F
V3-dCF	Condenser fan enabling differential	**V3**	34555	0	33658	3	R/W	Byte	N	0.0...30.0	°C/°F
V3-tCF	Condenser fan enabling delay after defrost	**V3**	34552	0	33658	12	R/W	Byte	N	0...255	min
V3-CFd	Condenser fans disabling during defrost	**V3**	33631	15	33665	192	R/W	Byte	N	0/1	flag
V3-HUL	Humidity level selection	**V3**	33642	3072	34676	3072	R/W	Byte	N	0...3	num
V3-HU1	Evaporator fans on time humidity level 1	**V3**	34604	0	34676	12288	R/W	Byte	N	0…250	min/s
V3-HU2	Evaporator fans off time humidity level 1	**V3**	34605	255	34676	49152	R/W	Byte	N	0…250	min/s
V3-HU3	Evaporator fans on time humidity level 2	**V3**	34605	0	34677	3	R/W	Byte	N	0…250	min/s
V3-HU4	Evaporator fans off time humidity level 2	**V3**	34606	255	34677	12	R/W	Byte	N	0…250	min/s
V3-HU5	Evaporator fans on time humidity level 3	**V3**	34606	0	34677	48	R/W	Byte	N	0…250	min/s
V3-HU6	Evaporator fans off time humidity level 3	**V3**	34607	255	34677	192	R/W	Byte	N	0…250	min/s

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-FE1	Select variable speed fan probe	**V3**	33635	3840	33665	768	R/W	Byte	N	0...7	num
V3-FEt	Setpoint mode	**V3**	33642	48	33665	3072	R/W	Byte	N	0/1	flag
V3-FES	Setpoint	**V3**	33578	0	33665	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V3-FEd	Band	**V3**	33579	0	33667	12288	R/W	Byte	N	0.1...50.0	°C/°F
V3-FEu	Cut-off band	**V3**	34545	0	33669	192	R/W	Byte	N	0.0...25.0	°C/°F
V3-FEC	Cut-off differential	**V3**	34546	0	33669	768	R/W	Byte	N	0.1...25.0	°C/°F
V3-FEr	Fan switch-off delay after compressor deactivation	**V3**	34544	0	33674	768	R/W	Byte	N	0…250	min
V3-FE2	Minimum day percentage	**V3**	33616	0	33674	3072	R/W	Byte	N	0.0...100.0	%
V3-FE3	Maximum day percentage with compressor on	**V3**	33617	255	33675	3	R/W	Byte	N	0.0...100.0	%
V3-FE4	Maximum day percentage with compressor off	**V3**	33617	0	33675	12	R/W	Byte	N	0.0...100.0	%
V3-FE5	Minimum night percentage	**V3**	33618	255	33675	48	R/W	Byte	N	0.0...100.0	%
V3-FE6	Maximum night percentage with compressor on	**V3**	33618	0	33675	192	R/W	Byte	N	0.0...100.0	%
V3-FE7	Maximum night percentage with compressor off	**V3**	33619	255	33675	768	R/W	Byte	N	0.0...100.0	%
V3-FE8	Percentage during defrost	**V3**	33619	0	33675	49152	R/W	Byte	N	0.0...100.0	%
V3-FE9	Percentage in the event of probe error	**V3**	33620	0	33676	768	R/W	Byte	N	0.0...100.0	%
V3-FEA	Maximum pick-up speed	**V3**	33621	255	33676	3072	R/W	Byte	N	0.0...100.0	%
V3-FEb	Fan pick-up time	**V3**	33621	0	33676	12288	R/W	Byte	N	0…250	s
V3-FEP	Fan forcing period at pick-up speed	**V3**	33622	255	33676	49152	R/W	Byte	N	0…250	min
V3-rA1	Temperature alarm probe 1 selection	**V3**	33638	15	33682	48	R/W	Byte	N	0...7	num
V3-rA2	Temperature alarm probe 2 selection	**V3**	34649	240	34678	48	R/W	Byte	N	0...7	num
V3-Att	Alarms mode (absolute or relative)	**V3**	33684	32768	33650	12	R/W	Byte	N	0/1	flag
V3-AFd	Alarm tripping differential	**V3**	33588	0	33650	48	R/W	Byte	N	0.1...25.0	°C/°F
V3-HAL	Maximum alarm 1 threshold	**V3**	33495	0	33650	192	R/W	Byte	Y	V3-LAL...1999	°C/°F
V3-LAL	Minimum alarm 1 threshold	**V3**	33497	0	33650	768	R/W	Byte	Y	-199.9...V3-HAL	°C/°F
V3-HA2	Maximum alarm 2 threshold	**V3**	33493	0	34678	192	R/W	Byte	Y	V3-LA2...1999	°C/°F
V3-LA2	Minimum alarm 2 threshold	**V3**	33551	0	34678	768	R/W	Byte	Y	-199.9...V3-HA2	°C/°F
V3-PAo	Temperature alarms disabling time from Power On	**V3**	33589	255	33650	3072	R/W	Byte	N	0…250	min*10

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-dAo	Temperature alarm disabling time after defrost cycle	**V3**	33557	0	33650	12288	R/W	Byte	N	0…999	min
V3-oAo	High and low temperature alarms disabling time after door closing	**V3**	33590	255	33650	49152	R/W	Byte	N	0...10	hours
V3-tdo	Open door disabling time	**V3**	33591	255	33651	49152	R/W	Byte	N	0…250	min
V3-tAo	High/Minimum alarm delay on probe 1	**V3**	33590	0	33651	3	R/W	Byte	N	0…250	min
V3-2tA	High/Minimum alarm delay on probe 2	**V3**	33615	0	34678	3072	R/W	Byte	N	0…250	min
V3-dAt	Defrost alarm signal silenced due to timeout	**V3**	33498	0	33651	12	R/W	Byte	N	0/1	flag
V3-EAL	Regulators blocked from external alarm	**V3**	33631	3840	33651	48	R/W	Byte	N	0...4	num
V3-AoP	Polarity of alarm output	**V3**	33685	1	33651	768	R/W	Byte	N	0/1	flag
V3-rA3	Temperature alarm probe selection	**V3**	33631	240	34675	49152	R/W	Byte	N	0...7	num
V3-SA3	Compressor overheating setpoint	**V3**	33547	0	33663	12	R/W	Byte	Y	V3-LdL...V3-HdL	°C/°F
V3-dA3	Compressor overheating differential	**V3**	33549	0	33663	192	R/W	Byte	N	0.1...30.0	°C/°F
V3-HCP	HACCP probe selection	**V3**	33626	3840	34671	49152	R/W	Byte	N	0...7	num
V3-SHH	Maximum HACCP alarm threshold	**V3**	34549	0	34672	768	R/W	Byte	Y	V3-SLH...1999	°C/°F
V3-SLH	Minimum HACCP alarm threshold	**V3**	34551	0	34672	3072	R/W	Byte	Y	-199.9...V3-SHH	°C/°F
V3-drA	Minimum dwelling time in critical area before alarm signalling	**V3**	33540	0	34672	12288	R/W	Byte	N	0…250	min
V3-drH	HACCP alarm reset time from last manual reset	**V3**	34548	0	34672	49152	R/W	Byte	N	0…250	hours
V3-HCE	Enable HACCP alarms storage with/without alarm relay enabling	**V3**	33642	192	34673	3	R/W	Byte	N	0...2	num
V3-HCt	HACCP alarms storage disabling time (key or digital input)	**V3**	34560	0	34673	12	R/W	Byte	N	0…250	min
V3-dod	Loads shutdown enabling after door micro enabling	**V3**	33625	3840	33651	12288	R/W	Byte	N	0...10	num
V3-dAd	D.I. 1/2 enabling signalling delay	**V3**	33598	255	33656	3072	R/W	Byte	N	0…250	min
V3-dCo	Compressor deactivation delay after door opened	**V3**	33556	0	33647	3072	R/W	Byte	N	0…250	min
V3-dFo	Fan enabling delay from acknowledgement	**V3**	33622	0	34678	12	R/W	Byte	N	0…250	min
V3-AuP	Aux output activation when door opened	**V3**	33625	240	33651	192	R/W	Byte	N	0/1	flag
V3-dCd	Fan enabling delay from door closing	**V3**	34556	0	33652	3072	R/W	Byte	N	0…250	s
V3-L00	Shared probe	**V3**	34649	61440	34679	192	R/W	Byte	N	0...6	num
V3-L01	Distributed display (referred to Secondary)	**V3**	33640	3072	34679	768	R/W	Byte	N	0...2	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-L02	Setpoint synchronisation	**V3**	33687	8	34679	3072	R/W	Byte	N	0/1	flag
V3-L03	Defrost synchronisation	**V3**	33635	15	33677	3	R/W	Byte	N	0...2	num
V3-L04	Resource locking after defrost end	**V3**	33635	240	33677	48	R/W	Byte	N	0/1	flag
V3-L05	Standby synchronisation	**V3**	33641	12288	33677	12288	R/W	Byte	N	0/1	flag
V3-L06	Lights synchronisation	**V3**	33641	49152	33677	49152	R/W	Byte	N	0/1	flag
V3-L07	Reduced setpoint synchronisation	**V3**	33642	3	33678	3	R/W	Byte	N	0/1	flag
V3-L08	AUX synchronisation	**V3**	33642	12	33679	48	R/W	Byte	N	0/1	flag
V3-L10	Resource unlock timeout during synchronised defrosts	**V3**	33614	255	33679	192	R/W	Byte	N	1…250	min
V3-L11	Number of devices connected in Field Bus	**V3**	34649	3840	34678	12288	R/W	Byte	N	0...8	num
V3-L12	Sharing of alarm relay in Field Bus	**V3**	33642	12288	34678	49152	R/W	Byte	N	0...2	num
V3-L15	Share alarm buzzer in Field Bus	**V3**	33642	49152	34679	48	R/W	Byte	N	0...2	num
V3-PEn	Number of errors allowed per maximum/minimum pressure switch input	**V3**	33610	255	33662	12288	R/W	Byte	N	0...15	num
V3-PEi	Minimum/maximum pressure switch error count interval	**V3**	33610	0	33662	49152	R/W	Byte	N	1...99	min
V3-PEt	Compressor activation delay after pressure switch deactivation	**V3**	33611	255	33663	3	R/W	Byte	N	0...255	min
V3-oSP	Offset on setpoint	**V3**	33499	0	33652	49152	R/W	Byte	Y	-30.0...30.0	°C/°F
V3-SC2	Primary/Secondary selection serial port 2	**V3**	33686	32	34674	3072	R/W	Byte	N	0/1	flag
V3-Po2	Polling time serial port 2	**V3**	34566	0	-	-	R/W	Byte	N	0...1000	s/100
V3-to2	Timeout serial port 2	**V3**	34570	0	-	-	R/W	Byte	N	0...1000	s/100
V3-dro	°C/°F selection	**V3**	33685	8	33653	192	R/W	Byte	N	0/1	flag
V3-CA1	Analog input 1 calibration	**V3**	33501	0	33653	768	R/W	Byte	Y	-30.0...30.0	°C/°F
V3-CA2	Analog input 2 calibration	**V3**	33502	0	33653	3072	R/W	Byte	Y	-30.0...30.0	°C/°F
V3-CA3	Analog input 3 calibration	**V3**	33503	0	33653	12288	R/W	Byte	Y	-30.0...30.0	°C/°F
V3-CA4	Analog input 4 calibration	**V3**	34553	0	33679	12288	R/W	Byte	Y	-30.0...30.0	°C/°F
V3-CAI	Calibration enabling	**V3**	33640	49152	33653	49152	R/W	Byte	N	0...2	num
V3-LdL	Minimum value that can be displayed	**V3**	33506	0	33654	3	R/W	Byte	Y	-199.9...V3-HdL	°C/°F
V3-HdL	Maximum value that can be displayed	**V3**	33507	0	33654	12	R/W	Byte	Y	V3-LdL...1999	°C/°F
V3-LoC	Disables keypad operation	**V3**	33685	16	33654	48	R/W	Byte	N	0/1	flag
V3-ddd	Display main status	**V3**	33625	61440	33654	192	R/W	Byte	N	0...7	num
V3-ddE	Display on Eco	**V3**	33634	240	33674	12288	R/W	Byte	N	0...8	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-ddL	Display blocking mode during defrost	**V3**	33626	15	33654	768	R/W	Byte	N	0...2	num
V3-Ldd	Display blocking timeout from defrost end	**V3**	33594	255	33654	3072	R/W	Byte	N	0…250	min
V3-ndt	Display with decimal point	**V3**	33685	32	33654	12288	R/W	Byte	N	0/1	flag
V3-PS1	Value of password 1	**V3**	33595	0	33655	192	R/W	Byte	N	0…250	num
V3-PS2	Value of password 2	**V3**	33596	0	33655	768	R/W	Byte	N	0…250	num
V3-CEr	Probe error capacity	**V3**	33511	0	33658	768	R/W	Byte	N	0.0...100.0	%
V3-PdS	Wake-up forced restart differential	**V3**	33513	0	33658	3072	R/W	Byte	N	-50.0...50.0	K/°R
V3-PuS	Pull-up forced restart differential	**V3**	33514	0	33658	12288	R/W	Byte	N	-50.0...50.0	K/°R
V3-Pud	Temperature timeout out of range	**V3**	33515	0	33658	49152	R/W	Byte	N	0…999	min
V3-PdE	Wake-up end differential	**V3**	33517	0	33659	3	R/W	Byte	N	-50.0...50.0	K/°R
V3-PuE	Pull-up end differential	**V3**	33518	0	33659	12	R/W	Byte	N	-50.0...50.0	K/°R
V3-Pdt	Optimized wake-up timeout	**V3**	33519	0	33659	48	R/W	Byte	N	0…999	min
V3-Pdd	Optimized wake-up capacity	**V3**	33521	0	33659	192	R/W	Byte	N	0.0...100.0	%
V3-CPd	Capacity after day wake-up	**V3**	33522	0	33659	768	R/W	Byte	N	0.0...100.0	%
V3-CPn	Capacity after night wake-up	**V3**	33523	0	33659	3072	R/W	Byte	N	0.0...100.0	%
V3-CSd	Compressor startup delay	**V3**	33530	0	33660	12288	R/W	Byte	N	0…999	s
V3-CSC	Compressor startup capacity	**V3**	33531	0	33660	49152	R/W	Byte	N	44.4...100.0	%
V3-CAU	Select PID automatic or manual mode	**V3**	33598	0	33661	12	R/W	Byte	N	0/1	flag
V3-CdU	PID duty cycle in manual mode	**V3**	33534	0	33661	48	R/W	Byte	N	0.0...100.0	%
V3-F_1	Maximum Frequency	**V3**	33543	0	33662	192	R/W	Byte	N	0…250	Hz
V3-F_2	Minimum Frequency	**V3**	33545	0	33662	768	R/W	Byte	N	0…250	Hz
V3-AP	Probe used by the Analog Output	**V3**	34650	15	34680	768	RW	Byte	N	0...7	num
V3-AoF	Analogue output configurability 1	**V3**	34648	61440	34673	768	R/W	Byte	N	ro/Er	flag
V3-LAO	Lower limit of analogue output 1	**V3**	34541	0	34673	3072	R/W	Byte	Y	-199.9...1999	°C/°F
V3-HAO	Upper limit of analogue output 1	**V3**	34542	0	34673	12288	R/W	Byte	Y	-199.9...1999	°C/°F
V3-AoS	Operation mode of analogue output with probe error	**V3**	33607	255	34673	49152	R/W	Byte	N	0.0...100.0	%
V3-H08	Standby operating mode	**V3**	33641	3	33655	12288	R/W	Byte	N	0...2	num
V3-H11	Analogue input configuration 1 when configured as digital input	**V3**	33597	255	33655	49152	R/W	Byte	N	-16...16	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-H12	Analogue input configuration 2 when configured as digital input	**V3**	33597	0	33656	768	R/W	Byte	N	-16...16	num
V3-H13	Analogue input configuration 3 when configured as digital input	**V3**	33604	0	33679	49152	R/W	Byte	N	-16...16	num
V3-H14	Analogue input configuration 4 when configured as digital input	**V3**	33605	255	33680	768	R/W	Byte	N	-16...16	num
V3-H15	Configurability of digital input 5	**V3**	33605	0	33680	3072	R/W	Byte	N	-16...16	num
V3-H21	Configurability of digital output 1	**V3**	33600	0	33656	12288	R/W	Byte	N	0...20	num
V3-H22	Configurability of digital output 2	**V3**	33601	255	33656	49152	R/W	Byte	N	0...20	num
V3-H23	Configurability of digital output 3	**V3**	33601	0	33657	3	R/W	Byte	N	0...20	num
V3-H24	Configurability of digital output 4	**V3**	33602	255	33657	12	R/W	Byte	N	0...20	num
V3-H25	Buzzer enable	**V3**	33613	255	33647	12288	R/W	Byte	N	0/1	num
V3-H31	UP button configurability	**V3**	33626	61440	33657	48	R/W	Byte	N	0...12	num
V3-H32	DOWN button configurability	**V3**	33627	15	33657	192	R/W	Byte	N	0...13	num
V3-H33	ESC button configurability	**V3**	33627	240	33657	768	R/W	Byte	N	0...12	num
V3-H34	Free button 1 configurability	**V3**	33627	3840	33657	3072	R/W	Byte	N	0...12	num
V3-H35	Free button 2 configurability	**V3**	33627	61440	33657	12288	R/W	Byte	N	0...12	num
V3-P01	Analogue input configuration 1	**V3**	33639	15	33673	12	R/W	Byte	N	0...4	num
V3-P02	Analogue input configuration 2	**V3**	33639	240	33673	48	R/W	Byte	N	0...4	num
V3-P03	Analogue input configuration 3	**V3**	33639	3840	33673	192	R/W	Byte	N	0...4	num
V3-P04	Analogue input configuration 4	**V3**	33639	61440	33673	768	R/W	Byte	N	0...4,6,7	num
V3-04L	Lower limit of analogue input 4	**V3**	34561	0	34675	12	R/W	Byte	Y	-199.9...V3-04H	num
V3-04H	Upper limit of analogue input 4	**V3**	34562	0	34675	48	R/W	Byte	Y	V3-04L...1999	num
V3-n01	Analog output 1 type	**V3**	33628	61440	34674	49152	R/W	Byte	N	0,9	num
V3-01n	Analogue output configurability 1	**V3**	33638	240	33673	3072	R/W	Byte	N	0...4	num
V3-n02	Analog output 2 type	**V3**	33629	15	34675	3	R/W	Byte	N	0,5,6,7	num
V3-02n	Analogue output configurability 2	**V3**	33638	3840	33673	12288	R/W	Byte	N	0...4	num
V3-H45	Defrost input mode for applications with dual evaporator	**V3**	33634	15	33666	49152	R/W	Byte	N	0...3	num
V3-H48	RTC present	**V3**	33685	64	33658	48	R/W	Byte	N	0/1	flag
V3-H70	Sensor 1 selection for virtual sensor	**V3**	33634	61440	34677	3072	R/W	Byte	N	0...4	num

Label	Description	Folder	Val. Par. Address	Val. Filter	Vis. Par. Address	Vis. Filter	R/W	Data Size	CPL	Range	MU
V3-H71	Sensor 2 selection for virtual sensor	**V3**	33635	61440	34677	12288	R/W	Byte	N	0...4	num
V3-H72	% calculation virtual probe day	**V3**	33609	0	34677	49152	R/W	Byte	N	0.0...100.0	%
V3-ZCE	It enables/disables the zero crossing feature.	**V3**	33686	8192	34680	3072	R/W	Byte	N	0/1	flag
V3-FH	Frame heater probe selection	**V3**	33614	0	33680	12288	R/W	Byte	N	0...8	num
V3-FHt	Frame heater period	**V3**	33615	255	33680	49152	R/W	Byte	N	1...250	s*10
V3-FH0	Frame heater setpoint	**V3**	33574	0	33681	3	R/W	Byte	Y	-199.9...1999	°C/°F
V3-FH1	Frame heater offset	**V3**	33575	0	33681	12	R/W	Byte	N	0.0...25.0	°C/°F
V3-FH2	Frame heater range	**V3**	33577	0	33681	48	R/W	Byte	N	0.0...25.0	°C/°F
V3-FH3	Minimum percentage/frame heater duty-cycle	**V3**	33572	0	33681	192	R/W	Byte	N	0.0...100.0	%
V3-FH4	Maximum percentage/frame heater duty-cycle day	**V3**	33576	0	33681	768	R/W	Byte	N	0.0...100.0	%
V3-FH5	Maximum percentage/frame heater duty-cycle night	**V3**	33583	0	33681	3072	R/W	Byte	N	0.0...100.0	%
V3-FH6	Percentage/frame heater duty-cycle in defrost	**V3**	33589	0	33681	12288	R/W	Byte	N	0.0...100.0	%
V3-dCA	Enable deep cooling	**V3**	33641	3072	33675	12288	R/W	Byte	N	0...2	num
V3-dCS	Deep cooling setpoint	**V3**	33550	0	33663	768	R/W	Byte	Y	V3-LdL...V3-HdL	°C/°F
V3-tdC	Deep cooling Duration	**V3**	33602	0	33664	12288	R/W	Byte	N	0...250	min
V3-dCC	Defrost delay after deep cooling	**V3**	33599	0	33664	3072	R/W	Byte	N	0...250	min
V3-Sid	Deep cooling start threshold	**V3**	33573	0	33678	48	R/W	Byte	Y	V3-LdL...V3-HdL	°C/°F
V3-toS	Over-threshold time for deep cooling start	**V3**	33583	255	33673	3	R/W	Byte	N	0…250	min

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
HUd	Visibility of folder **HUd** (humidity)	32966	3072	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
HAC	Visibility of folder **HACCP** (HACCP)	32966	12288	2 bit	0...3	num
dor	Visibility of folder **dor** (door switch)	32962	3072	2 bit	0...3	num
Lin	Visibility of folder **Lin** (Field Bus)	32965	49152	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
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** (Variable-speed compressor)	32955	768	2 bit	0...3	num
AOU	Visibility of folder **AOU** (Analog Output configuration)	32966	49152	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
FrH	Visibility of folder **FrH** (Anti-sweater heaters - Frame Heater)	32966	3	2 bit	0...3	num
dEC	Visibility of folder **dEC** (Deep Cooling cycle)	32962	12	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-HUd	Visibility of folder **HUd** (humidity)	33270	3072	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-HAC	Visibility of folder **HACCP** (HACCP)	33270	12288	2 bit	0...3	num
V1-dor	Visibility of folder **dor** (door switch)	33266	3072	2 bit	0...3	num
V1-Lin	Visibility of folder **Lin** (Field Bus)	33269	49152	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-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** (Variable-speed compressor)	33259	768	2 bit	0...3	num
V1-AOU	Visibility of folder **AOU** (Analog Output configuration)	33270	49152	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-FrH	Visibility of folder **FrH** (Anti-sweater heaters - Frame Heater)	33270	3	2 bit	0...3	num
V1-dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33266	12	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-HUd	Visibility of folder **HUd** (humidity)	33478	3072	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-FE	Visibility of folder **FE** (Modulated Fans)	33475	12	2 bit	0...3	num
V2-AL	Visibility of folder **AL** (alarms)	33466	12288	2 bit	0...3	num

Label	Description	Address	Filter	Data size	Range	MU
V2-HAC	Visibility of folder **HACCP** (HACCP)	33478	12288	2 bit	0...3	num
V2-dor	Visibility of folder **dor** (door switch)	33474	3072	2 bit	0...3	num
V2-Lin	Visibility of folder **Lin** (Field Bus)	33477	49152	2 bit	0...3	num
V2-PrE	Visibility of folder **PrE** (pressure switch)	33467	3	2 bit	0...3	num
V2-ENS	Visibility of folder **EnS** (energy saving)	33467	12	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** (Variable-speed compressor)	33467	768	2 bit	0...3	num
V2-AOU	Visibility of folder **AOU** (Analog Output configuration)	33478	49152	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-FrH	Visibility of folder **FrH** (Anti-sweater heaters - Frame Heater)	33478	3	2 bit	0...3	num
V2-dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33474	12	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-HUd	Visibility of folder **HUd** (humidity)	33682	3072	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-FE	Visibility of folder **FE** (Modulated Fans)	33679	12	2 bit	0...3	num
V3-AL	Visibility of folder **AL** (alarms)	33670	12288	2 bit	0...3	num
V3-HAC	Visibility of folder **HACCP** (HACCP)	33682	12288	2 bit	0...3	num
V3-dor	Visibility of folder **dor** (door switch)	33678	3072	2 bit	0...3	num
V3-Lin	Visibility of folder **Lin** (Field Bus)	33681	49152	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-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** (Variable-speed compressor)	33671	768	2 bit	0...3	num
V3-AOU	Visibility of folder **AOU** (Analog Output configuration)	33682	49152	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-FrH	Visibility of folder **FrH** (Anti-sweater heaters - Frame Heater)	33682	3	2 bit	0...3	num
V3-dEC	Visibility of folder **dEC** (Deep Cooling cycle)	33678	12	2 bit	0...3	num

Table of Modbus Resources

⚠ WARNING

HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE
Do not write read-only resources.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Label	Description	Address	Filter	R/W	Data_ Size	CPL	Range	MU
AI1	Analogue input 1	4125	0	R	Word	Y	-1999...1999	°C
AI2	Analogue input 2	4126	0	R	Word	Y	-1999...1999	°C
AI3	Analogue input 3	4127	0	R	Word	Y	-1999...1999	°C
AI4	Analogue input 4	4128	0	R	Word	Y	-1999...1999	°C
AI1_F	Analogue input 1	4129	0	R	Word	Y	-1999...1999	°F
AI2_F	Analogue input 2	4130	0	R	Word	Y	-1999...1999	°F
AI3_F	Analogue input 3	4131	0	R	Word	Y	-1999...1999	°F
AI4_F	Analogue input 4	4132	0	R	Word	Y	-1999...1999	°F
Pbi	Virtual probe 1	4189	0	R	Word	Y	-1999...1999	°C
Pbr	External regulation probe	4190	0	R	Word	Y	-1999...1999	°C
PbL	Remote probe (Field Bus)	4191	0	R	Word	Y	-1999...1999	°C
PER	Power generated by compressor 1	4189	0	R	Word	N	0...100	%
VFAn	Fans analog output	2169	0	R	Word	N	0...100	%
StP	Number of active steps	2403	0	R	Word	N	0...4	num
SETP	Control setpoint value 1	2196	0	R	Word	Y	-67.0...302	°F
DI1	Digital input 1	4137	1	R	1 bit	N	0...1	flag
DI2	Digital input 2	4137	2	R	1 bit	N	0...1	flag
DI3	Digital input 3	4137	4	R	1 bit	N	0...1	flag
DI4	Digital input 4	4137	8	R	1 bit	N	0...1	flag
DI5	Digital input 5	4137	16	R	1 bit	N	0...1	flag
E1	Analog input 1 error	4145	1	R	1 bit	N	0...1	flag
E2	Analog input 2 error	4145	2	R	1 bit	N	0...1	flag
E3	Analog input 3 error	4145	4	R	1 bit	N	0...1	flag
E4	Analog input 4 error	4145	8	R	1 bit	N	0...1	flag
Ei	Virtual analog input error	4145	16	R	1 bit	N	0...1	flag
Er	External temperature sensor error alarm	4145	32	R	1 bit	N	0...1	flag
EL	Analog input 7 error	4145	64	R	1 bit	N	0...1	flag
oPd	Door open	4145	16	R	1 bit	N	0...1	flag
EA	External alarm	4145	32	R	1 bit	N	0...1	flag
AL1	Low analogue input threshold exceeded 1	4145	64	R	1 bit	N	0...1	flag
AH1	High analogue input threshold exceeded 1	4145	128	R	1 bit	N	0...1	flag
AL2	Low analogue input threshold exceeded 2	4146	1	R	1 bit	N	0...1	flag
AH2	High analogue input threshold exceeded 2	4146	2	R	1 bit	N	0...1	flag
Ad2	Defrost timeout	4145	256	R	1 bit	N	0...1	flag
E10	RTC error	4145	512	R	1 bit	N	0...1	flag
COH	Overheating alarm	4145	1024	R	1 bit	N	0...1	flag
rCA	Refrigerant level low	4145	2048	R	1 bit	N	0...1	flag
nPA	Pressure switch	4145	4096	R	1 bit	N	0...1	flag
PA	Critical pressure	4145	8192	R	1 bit	N	0...1	flag
PAn	Men at work alarm	4146	4	R	1 bit	N	0...1	flag
HCP	HACCP Alarm	4146	8	R	1 bit	N	0...1	flag
LnA1	LAN communication loss alarm	4145	8	R	1 bit	N	0...1	flag
LnA2	Device on the network in alarm	4146	512	R	1 bit	N	0...1	flag
ELi1	Link alarm loss on device	4146	256	R	1 bit	N	0...1	flag

Label	Description	Address	Filter	R/W	Data_ Size	CPL	Range	MU
ELi2	Number of devices on the network does not match the configuration	4146	1024	R	1 bit	N	0...1	flag
ALM	Alarm	4183	256	R	1 bit	N	0...1	flag
RL1	Output 1	4141	1	R	1 bit	N	0...1	flag
RL2	Output 2	4141	2	R	1 bit	N	0...1	flag
RL3	Output 3	4141	4	R	1 bit	N	0...1	flag
RL4	Output 4	4141	8	R	1 bit	N	0...1	flag
BUZ	Buzzer	4141	256	R	1 bit	N	0...1	flag
CP1	Compressor 1	4183	2	R	1 bit	N	0...1	flag
COMP2	Compressor 2	4183	4	R	1 bit	N	0...1	flag
RGEN	General purpose regulator 1 digital output	4183	8	R	1 bit	N	0...1	flag
DEF1	Defrost 1	4183	16	R	1 bit	N	0...3	flag
DEF2	Defrost 2	4183	32	R	1 bit	N	0...3	flag
FAN	Evaporator fans	4183	64	R	1 bit	N	0...1	flag
FAN_C	Condenser fans	4183	128	R	1 bit	N	0...1	flag
LIGHT	Light	4183	1024	R	1 bit	N	0...1	flag
AUX	Auxiliary	4183	512	R	1 bit	N	0...1	flag
STD-BY	Stand-by	4183	1	R	1 bit	N	0...1	flag
ENS	Energy saving	4183	16384	R	1 bit	N	0...1	flag
ECo	Reduced set	4183	8192	R	1 bit	N	0...1	flag
DEEP	Deep Cooling	4183	2048	R	1 bit	N	0...1	flag
Do	Door status	4183	32768	R	1 bit	N	0...1	flag
RonAux	Activates auxiliary output	4181	1	W	1 bit	N	0...1	flag
RoFFAux	Deactivates auxiliary output	4181	2	W	1 bit	N	0...1	flag
Ronon	Device on	4181	4	W	1 bit	N	0...1	flag
RoFFoFF	Device off	4181	8	W	1 bit	N	0...1	flag
AttEnSav	Activates energy saving function	4181	16	W	1 bit	N	0...1	flag
DisattEnSav	Deactivates energy saving function	4181	32	W	1 bit	N	0...1	flag
Att_SetR	Activates economy mode	4181	64	W	1 bit	N	0...1	flag
Disatt_SetR	Deactivates economy mode	4181	128	W	1 bit	N	0...1	flag
RonLight	Switches lights on	4181	256	W	1 bit	N	0...1	flag
RoFFLight	Switches lights off	4181	512	W	1 bit	N	0...1	flag
Att_Sbr	Manual Defrost activation	4181	4096	W	1 bit	N	0...1	flag
DCon	Deep Cooling regulator activation	4181	16384	W	1 bit	N	0...1	flag
RTCUp	Updates clock	4154	0	W	Word	N	0...65535	flag

Eliwell Controls srl
Via dell'Industria, 15 Z.I. Paludi
32016 Alpago (BL) Italy
Phone +39 (0) 437 166 0000
www.eliwell.com

Customers Technical Support
Phone+39 (0) 437 166 0005
E techsuppeliwell@se.com

Sales
Phone+39 (0) 437 166 0060 (Italy)
Phone+39 (0) 437 166 0066 (other countries)
E saleseliwell@se.com

IDNX1_00EN - IDNext 1000 - EN - 01/2026