Air-air units

Electronic control

VECTIC

11671

10 - 2024

Instructions manual

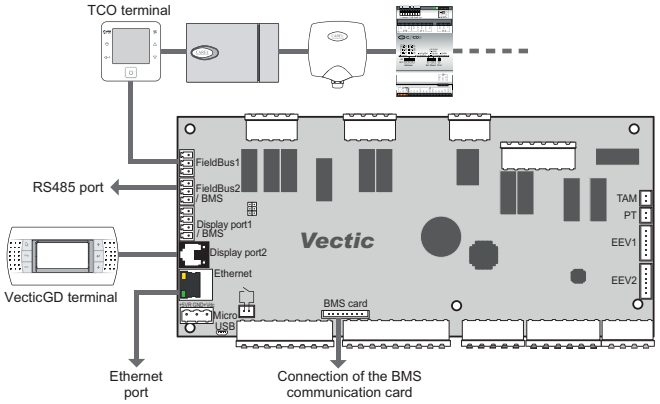
CONTENTS

ORIGINAL TEXTS: SPANISH VERSION

1 - GENERAL DESCRIPTION

The **Vectic** control is an electronic module with microprocessor designed for the control and supervision of air-air units.

This control consist of a µPC3 control board, sensors, a VecticGD graphic terminal, and a TCO user terminal (optional).



The µPC3 control board comes equipped with a web tool, C.FIELD, which can be accessed through the board's IP address. This tool enables users to monitor the status of the unit at all times. By navigating through various menus, users can view the variables that are controlled by the Vectic control.

The control board includes a RS485 field-bus *(Fieldbus1)* to manage additional components such as: c.pCOe expansion modules, SMALL boards, plug-fans, probes of temperature or relative humidity of the ambient air, energy meters, etc.

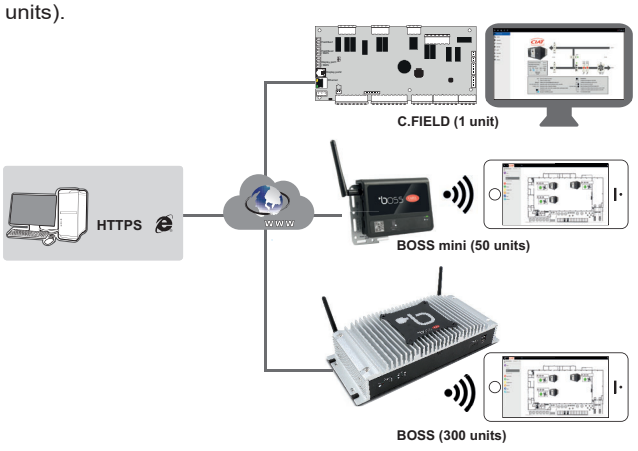
This board also integrates two BMS communication ports:

- One RS485 port *(Fieldbus2/BMS)* for communication with:
  - Modbus RTU.
  - BACnet MSTP (additional license required).

  This port allows the unit to be connected to our remote monitoring solution: **ABOUND HVAC Performance**.
- One Ethernet IP port *(Ethernet)* for communication with:
  - Modbus TCP/IP.
  - BACnet IP (additional license required).

  The Ethernet port allows the unit to be connected on a **shared network (SHRD)** of up to 15 units, with one unit configured as "Lead" and the rest as "Lag". This network allows the exchange of data and information among the various units. Depending on the installation conditions, it can also share the readings of certain probes installed in the unit that is configured as the "Lead" unit, as well as temperature setpoints and operating mode. Furthermore, it is possible to configure one of the units as a "Backup" to be activated in case of malfunction of the other unit.

  This port also enables integration of the unit with our local supervision solutions: **BOSS mini** (50 units) and **BOSS** (300 units).



A communication card *(BMS card)* (optional) can also be connected to the µPC3 control board for the following protocols:

- BACnet MSTP;
- BACnet Ethernet;
- Modbus RTU;
- Ethernet TCP/IP.

Main functions of Vectic control:

- Selection of operating mode: HEATING / COOLING / AUTO / VENTILATION.
- Selection of setpoint.
- Continuous control of the operating parameters.
- Display of the values measured by the sensors.
- Compressors time delays.
- Defrosting management (heat pump units).
- Control of the supply air temperature.
- All-seasons operation via the condensation and evaporation pressure control.
- Setpoint compensation based on the outdoor temperature.
- Hourly and weekly schedule (possibility of 3 setpoints).
- Fire protection.
- Diagnosis of faults and general alarm.

Optional functions:

This control is used to manage addition components such as:

- External air damper for the renewal of fresh air, depending on the temperature of the mixed air or depending on the air quality sensor.
- Mixing box for thermal, enthalpy or thermo-enthalpy free-cooling.
- Rotary heat exchanger. Wheel speed with on/off control or variable control.
- Cooling circuit for the recovery of the extracted air energy.
- Control of the overpressure.
- Zoning of the air flow up to 4 different zones.
- Constant supply pressure control.
- Unit with 100% fresh air.
- Preheater (electrical heater) in fresh air (for units with 100% fresh air).
- Low return temperature application.
- Auxiliary electrical heaters: two-stage with on/off control or single-stage with proportional control.
- Hot water coil with 3-way valve, with proportional or on/off control.
- Gas burner with proportional control.
- Gas boiler with proportional control.
- Heat recovery coil with 3-way valve, with proportional control.
- Humidifier with proportional or on/off control.
- Basic dehumidification.
- Active dehumidification with condensation coil.
- Clogged filter switch.
- Smoke detection station.
- Refrigerant leak detector.
- RS485 probe(s) of ambient temperature or temperature + humidity.
- Air quality probe(s) for measuring CO_2
- Energy meter and calculation of cooling and heating capacities, thermal and electrical energy, and seasonal energy efficiencies.
- Low outdoor temperature (GREAT COLD).
- Remote COOLING / HEATING.
- Mechanical disconnection of stages.

C.FIELD web tool

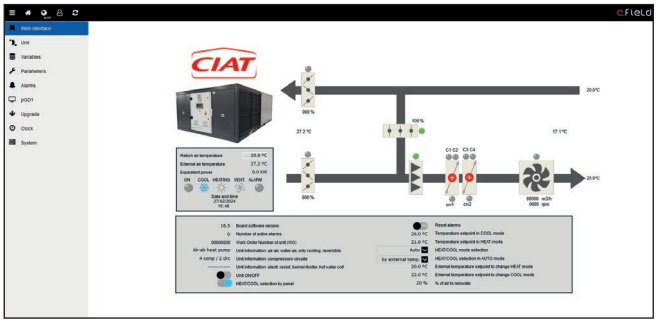
The µPC3 control board includes a web tool for managing the operation of the unit. C.FIELD facilitates unit setup, commissioning, maintenance and software version updates.

To access C.FIELD it is only necessary to know the IP address of the board: **http://IP_address/commissioning/index.html**

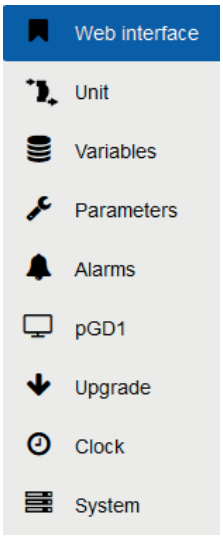
The chapter on "Network configuration" provides instructions on how to access the IP address.

Note: if the board is not connected to the Internet, C.FIELD can be accessed via the microUSB port.

There are four levels of access, sorted from highest to lowest: Administrator, Service, User, Guest. The Web Interface section is displayed at all levels, also for guest users.



The C.FIELD menu includes the following sections:



Web interface: synoptic of the air circuit, visualization of the main variables and some parameters. Access to the cooling circuit overview.

Unit: display of the value of the inputs/ outputs grouped by type.

Variables: unit supervision variables divided into groups.

Parameters: all control parameters divided into groups.

Alarms: recording of alarms.

pGD1: emulation of the VecticGD terminal with all its functionalities.

Update: management of software updates, operating system and C.FIELD.

Clock: date, time and time zone.

System: µPC3 board information.

BOSSmini and BOSS supervision solutions

The following supervision solutions are available depending on the dimensions of the installation:

BOSS mini

It is the solution for the management and supervision of small or medium-sized air conditioning installations. Up to 10 units with 50 variables per unit or 50 units with 10 variables maximum per unit.

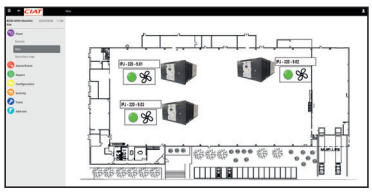
The µPC3 control board allows for communication through its built-in Ethernet port.

Its main advantages are:

- Integrated WIFI Hotspot for direct access without any extra infrastructure.
- Smartphone compatibility.
- Secure supervisor control from remote through a simple browser.
- Introduces Bacnet protocol (MSTP and TCP/IP) along with Modbus protocols (MSTP and TCP/IP)
- Integration of BMS with IP Lag mode (sharing values of interest for the general management of the building).

To access BOSSmini it is only necessary to know its identification number (xxxx):

http://mboss-xxxx/boss/



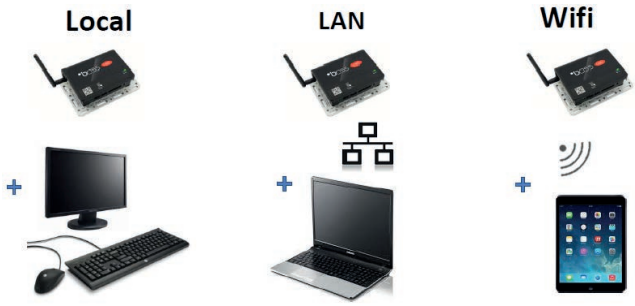
BOSSmini offers four different access levels, allowing for both commissioning and daily access for system maintenance. It also includes advanced monitoring functions and allows for the creation of areas and groups to simplify installation management.

This solution also allows the integration of energy meters for monitoring the electrical consumption of the installation.

BOSSmini is shipped from the factory with pre-configured settings and customizations that are based on the specific needs and specifications of each customer.

Available in two versions:

- CPU device.
- CPU device, monitor, mouse and keyboard.



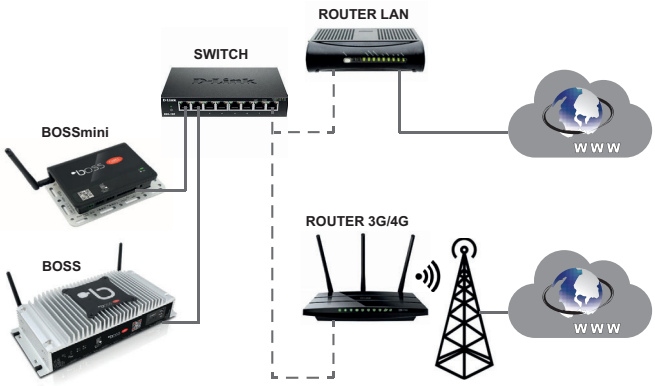
BOSS

It is the solution for the management and supervision of large air conditioning installations, up to 300 units and 3500 variables.

The µPC3 control board also allows for communication through its built-in Ethernet port. It has the same features as BOSSmini.

To access BOSS: **http://boss-xxxx/boss/**

BOSSmini and BOSS enable remote system management. A simple Internet connection provides access to all the information on the system (Router LAN o 3G/4G). The Web interface, the same that is available to the local user, allows the monitoring and complete configuration of the installation: from the office or any other current location of the user.

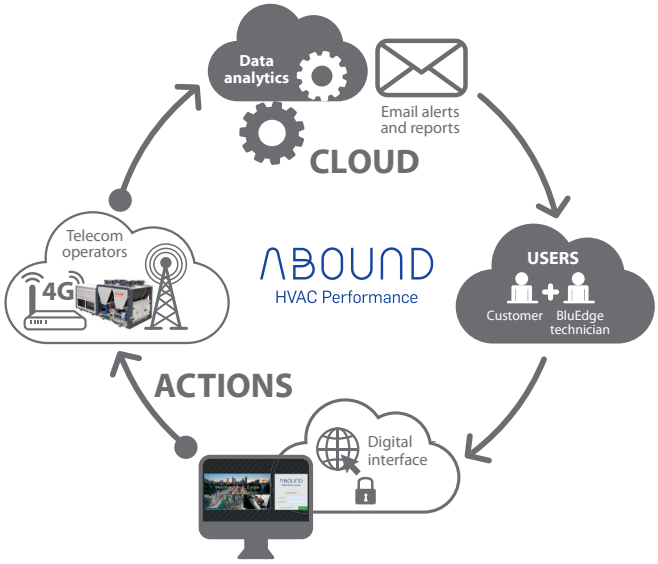


ABOUND HVAC Performance supervision solution

ABOUND HVAC Performance is a remote supervision solution dedicated to monitoring and controlling several CIAT machines in real time.

Its main advantages are:

- Improved energy performance. European regulations encourage buildings to install control and supervision systems to achieve the 2030 energy efficiency target of ≥ 27%.
- Access to the operating trend curves for analysis.
- Improved availability rate for the machines.



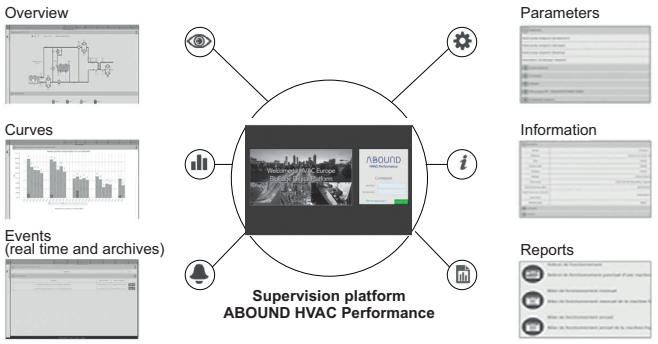
Equipment required

- A transportable box that can be used on both, machines which are already in use (existing inventory) and on new machines.

  One box can manage up to 5 units connected in series via the Modbus RS485 port of each µPC3 control board.
- Contents of the box (available in 230V and 400V)
  - 1 GPRS / 4G LTE-M modem
  - 1 SIM SMART card
  - 1 power supply (24 VDC)
  - 1 power protection device
  - 1 GSM antenna
  - Rail mounting
  - Enclosed casing to protect the equipment during transport
  - Packing box for cable routing (bus, power supply)

Features of ABOUND HVAC Performance

ABOUND HVAC Performance will send data in real time to the supervision website. The machine operating data can be accessed from any PC, smartphone or tablet. Any event can configured to trigger a mail alert.

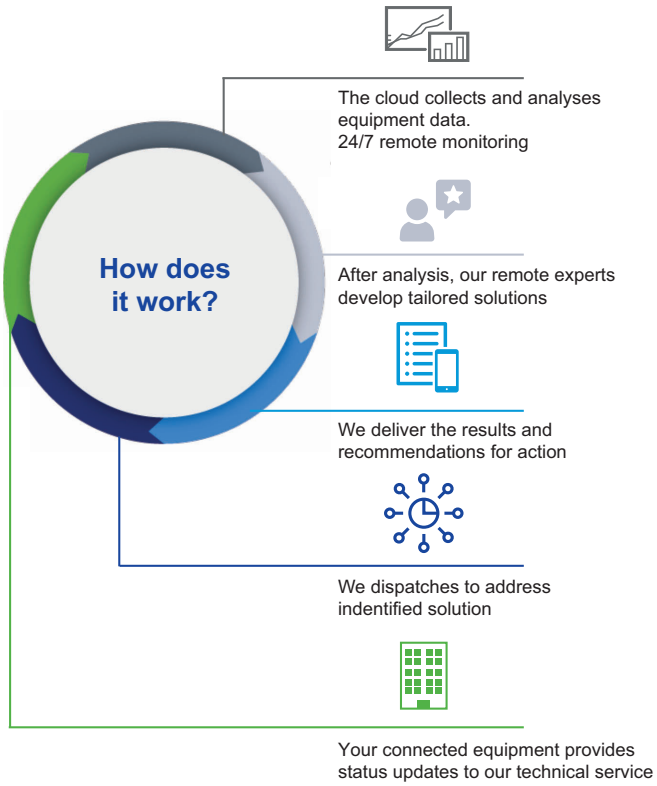


- Parameters monitored: Overview, controller dashboard, events and temperature curves.
- Monthly and annual reports are available to analyse :
  - The performance and operation of the machine.

    Example: operating curves and time, number of compressor start-ups, events, preventive maintenance actions to be performed, etc.
- Incidents such as a drift in the measurements on a temperature sensor, incorrectly set control parameters, or even incorrect settings between one compressor stage and the other are immediately detected, and the corrective actions put in place.

BluEdge maintenance service

With your BluEdge service agreement, enabled by Abound HVAC Performance supervision solution, both you and our highly trained team will gain visibility, access expert advice and effectively optimise the lifecycle outcomes of your installation.



Maintenance levels available with BluEdge

CORE
Empower BluEdge® teams with digital tools and dashboards to **monitor** your HVAC assets

ENHANCE
Remote experts **analyse** data to deliver proactive health and performance insights

ELITE
Predictive analytics and dispatch to **optimise** key outcomes

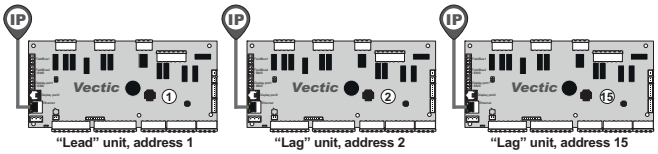
Communication in a SHRD shared network

By default, the electronic control is configured for a stand-alone unit, but it is also possible to include it in an SHRD shared network as "Lead", "Lag" or "Backup".

The "Lead/Lag" network allows the exchange of data and information between the units, and depending on the conditions of the installation, it can share the reading of some probes installed on the unit configured as "Lead", temperature setpoints, and operating mode. The maximum number of units that can be integrated into a "Lead/Lag" network is 15.

The Backup network allows to configure one unit as a “Backup”, for activation in case of malfunction of the other unit. The maximum number of units that can be integrated into a Backup network is 2.

Communication between network units is via the Ethernet port of each control board.



Functionality

Important: to use any of the following functionalities it is necessary to configure in the “Selection software” one unit as "Lead" and the others as "Lag" (including the backup unit).

The SHRD network allows to have the following functionalities depending on the parametrized configuration:

- **Lead/Lag:**

  It allows to share some of the probes installed in the "Lead" unit: ambient temperature or ambient temperature + humidity, outdoor temperature, outdoor humidity and CO_2 air quality.

- **Extended Lead/Lag:**

  It includes “Lead/Lag” functionalities and the "Lead" unit provides ambient temperature setpoints to the other units.

- **Lead/Lag with the same operating mode:**

  It includes the “Extended Lead/Lag” functionalities and the "Lead" unit also provides the status (Cooling- Heating - Ventilation) to the other units.

- **Backup in case of alarm:**

  One of the two units is configured as a backup unit, for activation in case of malfunction of the other one.

- **Extended Backup:**

  It includes the “Backup in case of alarm” functionalities and also, the control manages the automatic switching between the two units weekly, to compensate the operation times of both units.

  Important: the “Backup in case of alarm” function always prevails over “Extended Backup”, i.e. if one unit has to operate for a specific week but a severe alarm appears, it will automatically switch operation to the other unit.

  Alarm levels are set to determine which of the two units should operate (see "Alarms" Chapter).

  Note: In the case of installations with Backup units, it is not possible to share the probes, since both units must be fully autonomous in their operation. If both units are connected to the same supply duct network, it is imperative that the installation consists of non-return dampers (installer responsibility).

For more detailed information see the chapter "Network Configuration".

Communication in a pLAN local network

This connection on a pLAN local network allows reducing the number of VecticGD terminals, since a single shared terminal can monitor all units in the network.

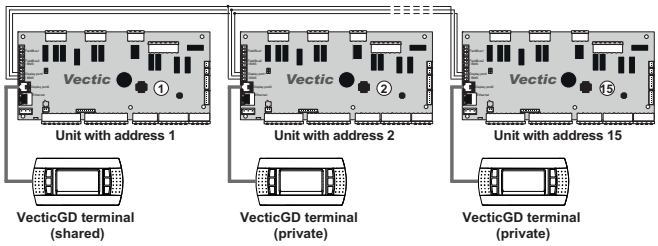
The maximum number of units that can be configured on a Lead/Lag pLAN network is 15, and in case of Backup units is 2.

The maximum number of units that can be connected on a pLAN network is 15. As many VecticGD terminals as units can be added to the network. The terminal installed on the unit with address 1 will be configured as shared and the rest as private.

Important: If the units are also to be included in a SHRD shared network, the same addresses must be used on both networks to avoid errors. Both, units and VecticGD terminals, are shipped configured from the factory.

Units configured as "Backup" cannot be connected in a local pLAN network, since the two units must be fully autonomous in their operation.

Communication between the units of the pLAN network is carried out using the Display port1/BMS of each control board.



Characterisc of the network: communications standard: RS485; transmission speed: 65,2 Kbit/s; maximum network length: 500 m.

For more detailed information see the chapter "Network Configuration".

3 - COMPOSITION

3.1. VecticGD graphic terminal

This terminal, fitted as standard on the electrical cabinet, is very easy to use. It provides detailed explanations of control in easy to understand English. No decoding is required.

Only 6, large, easy-to-use buttons are required to maneuver through the entire menus.

This terminal is used to:

- Carry out initial programming of the unit.
- Modify operating parameters.
- Switch the unit ON / OFF.
- Select the operating mode and adjust the setpoints.
- Display the variables controlled and sensor values measured.
- Display the current alarms and their historical record.

Note: multiple units can share a single terminal, if they are integrated into a pLAN local network (for up to 15 units).

3.2. TCO user terminal (optional)

This terminal can be installed on the electrical cabinet, instead of the VecticGD graphic terminal. In this case, the remote connection of the VecticGD terminal is possible.

This terminal is used to:

- Switch the unit ON / OFF.
- Select the operating mode and adjust the setpoints.
- Display the installation's temperatures and humidity, outdoor temperature, supply air temperature, CO_2 sensor and opening of the outdoor damper.
- Display alarms codes.

3.3. Sensors

Sensors included with the control:

The standard sensors connected to the control board are:

- Return air temperature probe (S1).
- Outdoor air temperature probe (S2).

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- Supply air temperature probe (S3).
- Mixing air temperature probe (S4).
- Ambient air temperature probe, NTC type (S5a).

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- Transducers of low pressure: circuit 1 (S6) and circuit 2 (S11).
- Transducers of high pressure: circuit 1 (S7) and circuit 2 (S12).
- Suction temperature probes: circuit 1 (S8) and circuit 2 (S9).

Optional sensors connected on the control board:

- Outdoor air relative humidity (S5h): this probe is used instead of the outdoor temperature probe and is necessary with the option of enthalpic or thermoenthalpic free-cooling.

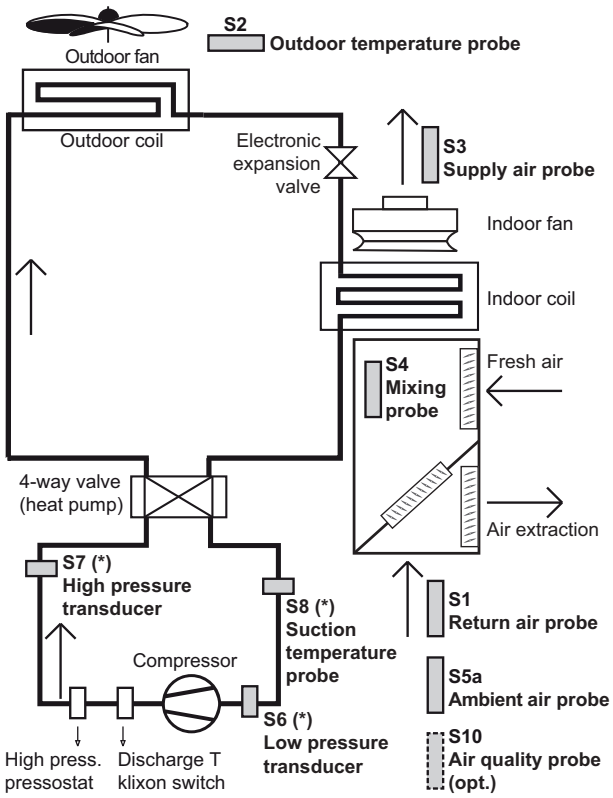
  When the unit needs the outdoor humidity probe (S5h), this one is connected on the board in place of the NTC ambient temperature probe (S5a). In this case, it's necessary to use a RS485 ambient temperature probe connected on the Field-bus.

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- Air quality probe to enable measuring CO_2. This probe can be installed in the environment (S10a) or duct-mounted (S10c).

  A second probe can be connected on the c.pCOe expansion card with address 9 to improve the air quality control.

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- Outdoor coil temperature probe (S9): in unit with 1 circuit, the input intended for the suction probe of circuit 2 can be used to connect this probe.

Unit with 1 circuit



(*) Units with 2 circuits:
- Low pressure transducer: S6 (circuit 1) and S11 (circuit 2)
- High pressure transducer: S7 (circuit 1) and S12 (circuit 2)
- Suction temperature probe: S8 (circuit 1) and S9 (circuit 2)

Optional sensors connected, in series, on the Field-bus:

- RS485 ambient temp. probe (1 to 4 probes connected in series):
  - When the unit needs the outdoor humidity probe (with enthalpic or thermoenthalpic free-cooling), this one is connected on the board in place of the NTC ambient temperature probe (S5a). In this case, a RS485 ambient temperature probe is used.
  - An ambient temperature probe with RS485 communication is required for installation at distances up to 30 meters.

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- RS485 ambient T + RH probe (1 to 4 probes connected in series):
  - This probe is necessary with enthalpic or thermoenthalpic free-cooling. In this case, the outdoor humidity probe is also added.

  Note: If the unit is integrated into a shared network (SHRD), it can read the value measured by the probe of the unit configured as "Lead".
- RS485 enthalpy probes on the mixing air and the supply air. Combined with an energy meter, these probes allow the calculation of cooling and heating capacities, thermal and electrical energy, and seasonal energy efficiencies.

3.4. c.pCOe expansion cards (optional)

For the management of some optional elements, the control needs additional inputs and outputs. This problem is solved by the use of c.pCOe expansion card connected in series on the Field-Bus.

Basic module with address 8:

This module is needed to manage the options:

- Low outdoor temperature (GREAT COLD).
- Remote COOLING / HEATING.
- Mechanical disconnection of stages.
- Proportional humidifier or overpressure control with exhaust damper.
- Active dehumidification with condensation coil.
- Unit with 100% fresh air.
- Failure signaling of compressors manual motor starters (MMS).

Basic module with address 9:

This module is needed to manage the options:

- Second air quality probe (CO_2) for installation in the environment or outdoor. The outdoor probe allows the measurement of the diference between indoor and outdoor CO2 concentration, in ppm (level of ADI).
- Preheater (electrical heater) in fresh air (for units with 100% fresh air).
- Rotary heat exchanger with variable speed.
- Zoning into 2 zones with dampers.
- Control of supply and return dampers (external to the unit).
- Constant supply pressure control.
- Overpressure control with return fan.
- Pressure control with supply damper.
- Failure signaling of compressors manual motor starters (MMS).
- Control of air renewal through an external extractor.

Enhanced module with address 4:

The management of the cooling circuit for the recovery of the extracted air energy (optional) is done with this module.

It can also be used instead of modules with addresses 8 and 9 with the following optional:

- Low outdoor temperature (GREAT COLD).
- Remote COOLING / HEATING.
- Proportional humidifier or overpressure control with exhaust damper.
- Active dehumidification with condensation coil.
- Second air quality probe (CO_2) for installation in the environment or outdoor.
- Constant supply pressure control.
- Overpressure control with return fan.

3.5. Driver EVDEVO (optional)

For the management of bipolar electronic expansion valves (optional) it is necessary to connect in series on the Field-Bus an EVDEVO driver with address 7, 71 or 72 (depending on the manufacturer).

3.6. SMALL board (optional)

A SMALL board connected in series on the Field-Bus with address 11 allows the management of the zoning of the air flow up to 4 different zones through dampers (optional).

3.7. BMS communication cards (optional)

The µPC3 control board includes two communication ports that allow connection with a centralized technical management system: a RS485 port and an Ethernet port.

Additionally, a BMS communication card (optional) can be connected to the control board for the following protocols: BACnet Ethernet, BACnet MSTP, Ethernet and Modbus RTU.

BACnet™ Ethernet

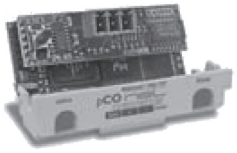
(Configuration by the integrator)

This open standard, developed by ASHRAE, enables air conditioning and heating systems for homes and buildings to be connected for the sole purpose of performing intelligent energy management.

The PCO Web Ethernet card allows the network communication with the protocol BACnet™ Ethernet. In this case, no additional license is required since it is associated with the card.

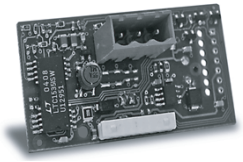
BACnet™ RS485

(Configuration by the integrator)



To establish communication with a network with the BACNet™ MSTP protocol is needed a BACnet™ RS485 serial card. In this case, no additional license is required since it is associated with the card.

Modbus RTU RS485



A Modbus RTU RS485 serial card can be used to connect the unit to a second BMS management system.

PCO Web Ethernet

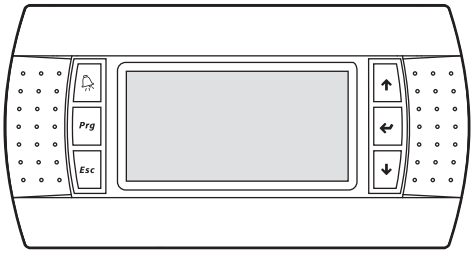
This card enables the management and supervision of a single unit via an HTML page that is embedded in the card. Its main advantage over the C.FIELD application included in the µPC3 board is that it allows for the storage of a data record.

4.1. VecticGD graphic terminal (standard)

Features

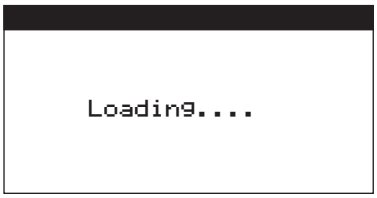
- LCD FSTN display (132 x 64 pixel), backlit in blue.
- The screen provides detailed explanations of control in easy to understand English. No decoding is required.
- Only 6, large, easy-to-use buttons are required to maneuver through the entire menus.
- Dimensions:

  156 mm (Length) x 82 mm (Width) x 31 mm (Depth)



First run of the software

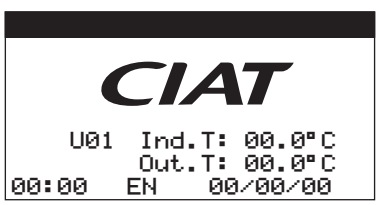
On the first run of the software installed on the control, the following screen appears on the terminal, informing about the installation of the values by default:



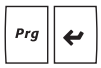
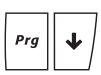
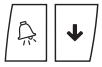
The screen will look like this when these values are loaded:

When you switch on the power again, the terminal loads the initial screen, showing:

- The unit number in a shared network (U01 corresponds to the unit configured as "Lead" of the network or a stand-alone unit).
- The measured indoor temperature (Ind.T).
- The measured outdoor temperature (Out.T).
- The default installation language. The available languages are: Spanish (ES), French (FR), English (EN) and Italian (IT).
- The time and date.



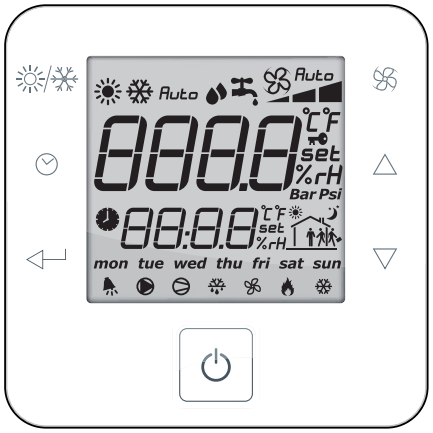
Keys and combinations (quick guide)

Key		*Function*
	**Alarm**	There is/are active alarm(s) if the key is illuminated red. By pressing the key once, the description of the first alarm will be shown. By using the up/down keys, the other alarms stored in the memory can be consulted. By pressing this key for a second time, the alarm(s) will be reset. If no alarm is active, the message “No alarm active" appears.
	**Prg**	This key allows access to the MAIN MENU. All the screens of this control can be selected from this menu. The key will light up in orange.
	**Esc**	To exit any screen, pressing this key returns the user to the start screen of the previous menu. From the initial screen, if keeping this key pressed for a few seconds, access is given to a group of help screens with information on the key or key combination that enable performing the most important control functions.
	**Esc + Down**	By pressing both keys simultaneously, it’s possible to change of unit in the pLAN network (shared VecticGD terminal).
	**Up Down**	These keys enable consulting the information displayed on-screen by going forward or back. They can also modify values. By pressing both keys at the same time, direct access is gained to the group of screens “06. Input/ Output” (belonging to the MAIN MENU).
	**Enter**	This enables confirming the modified values. By pressing the key once, the cursor is placed on the first screen parameter. Pressing the key again confirms the adjusted parameter value and it then proceeds to the next parameter.
	**Prg + Enter**	The unit is switched on or switched off by pressing both these keys at the same time for a few seconds. This action is equivalent to the On/Off from the screen “02. Unit On/Off” (belonging to the MAIN MENU).
	**Prg + Up**	HEATING mode (winter) is selected by pressing both these keys at the same time for a few seconds.
	**Prg + Down**	COOLING mode (summer) is selected by pressing both these keys at the same time for a few seconds
	**Alarm + Down**	The language of the screens is selected by pressing both these keys at the same time for a few seconds

4.2. TCO user terminal (optional)

Features

- LCD display, backlit in blue.
- Built-in temperature sensor.
- Clock and Scheduling.



Dimensions:
Length: 86 mm
Width: 86 mm
Depth: 51 mm

Screen

The TCO terminal has an LCD display to show the information of the unit and to interact with the user.

Symbol	*Meaning*
	Selection of HEATING mode (winter)
	Selection of COOLING mode (summer)
Auto	Selection of AUTOMATIC mode
	Supply fan in operation (3 possible speeds in plug-fan)
88.8 set %rH	Main indicator of: - Temperature (ºC or ºF) - Activated lock key (key) - Setpoint (set) - Relative humidity (%RH)
88:8.8 set %rH	Secondary indicator of: - Temperature (ºC or ºF) - Setpoint (set) - Hour and minute - Relative humidity (%RH)
	Alarm indicator
	Pump of the hot water coil in operation
	Compressor in operation
	Defrosting indicator
	Outdoor fan in operation
	Active backup in HEATING mode
	Operation in cooling mode (in AUTO mode it makes known whether the unit is operating in COOLING or HEATING)
	Selection of the type of schedule: 6 possible phases.
	Activation of the indicator of the Scheduling
mon tue wed thu fri sat sun	Indicators of the days of the week (Monday to Sunday)

Keys and combinations (quick guide)

Key		*Function*
	Operating mode	Allows the operating mode to be selected: HEATING, COOLING, AUTO or VENTILATION (only if selection by panel is activated)
	Fan	Allows to select 3 different flows in plug-fans: V1: minimum flow V2: nominal flow V3: maximum flow
	Scheduling	Short press: allows to activate the Scheduling stored in the TCO terminal Long press (3 secs): allows the time and the Scheduling to be modified.
	Up / Down	These keys allow the user to go forward and backward to consult the information found on the screen. They can also modify values
	Enter	This enables confirming the modified values. It also allows the set of values to be seen on the screen (temperature measured, temperature setpoint, humidity measured, humidity setpoint, outdoor temperature, discharge T, alarm code, CO_2 mesure, fresh air damper opening)
	On / Off	Allows the unit to be turned OFF/ON

View in succession of the values measured

In addition to view in the ambient (or return) air temperature on the main screen, it is possible to view other values through the set that is activated by pressing the key.

The following values will be shown with each press:

1) Ambient or return T

2) Setpoint temp.

3) Ambient RH (opt)

4) Setpoint RH (opt)

5) Outdoor temperature

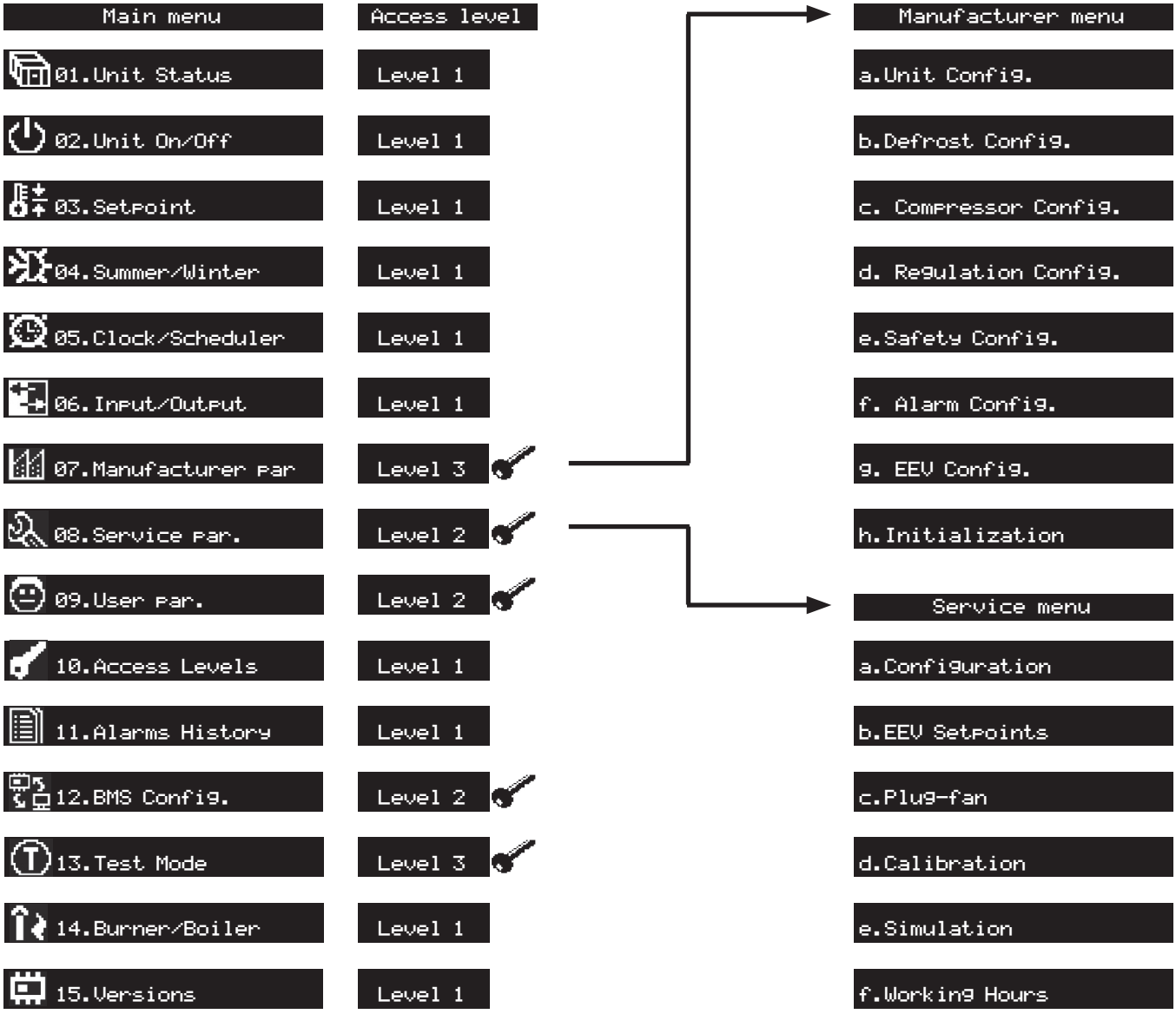
6) Supply temperature

7) Active alarms

8) CO_2 measure (opt.)

9) Outd. damper (opt)

5 - MENU STRUCTURE IN THE VECTICGD GRAPHICAL TERMINAL



5.1. Access levels

3 levels of access are configured for access to the parameters screens: level 1 (no password), level 2 (with password) and level 3 (with password).

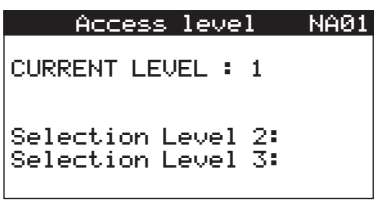
Level 3 password allows access to all level 2 screens.

Change in the level of access

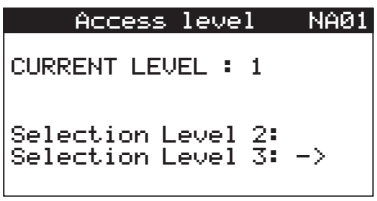
From the initial screen of the terminal, by pressing the Prg key, the **MAIN MENU** is acceded.

The keys ↑ and ↓ enable navigating through the menu until the Group of screens: **10. Access Levels** is reached.

This group of screens is accessed by pressing ↵. The following screen is displayed:



Press the ↵ key until the cursor is placed on the desired access level. Then, press on the ↓ key.



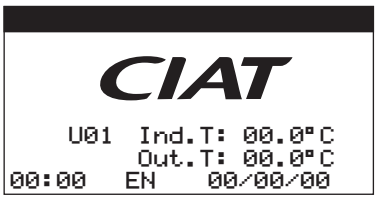
The screen to enter the password is visualised. If this password is needed, please consult.

The terminal comes back to the level 1 after a period of inactivity of 10 minutes. The change of level can also be done from one screen of this menu.

6 - INFORMATION ABOUT THE UNIT STATUS

Initial screen

When the VecticGD terminal is switched on, the screen below shows this information:



U01: This indicates the number of the unit in which the terminal is connected.

Ind.T: This indicates the ambient (by default) or return (optional) air temperature.

Out.T: Outdoor air temperature. In units with humidity probe, this indicates the relative humidity of the indoor air.

00:00: Time

00/00/00: Date

ES: Language of the terminal screens. The available languages are: Spanish (ES), French (FR), English (EN) and Italian (IT).

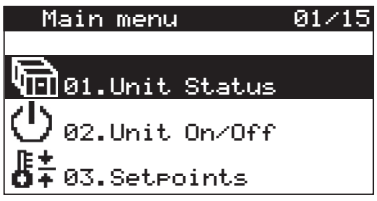
The language of the screens can be selected by pressing the keys [⌂] + [↓] at the same time for a few seconds.

Unit status screens

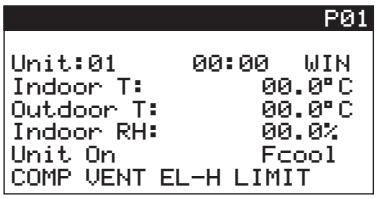
The main parameters of the regulation are displayed in this group of screens.

They can be accessed in two ways:

- By pressing the [↵] key from the initial screen.
- By pressing the [Prg] key from the initial screen, the MAIN MENU is accessed. The first group of screens is **01. Unit status.** Press the [↵] key to enter the group.



The first screen of this group collects the following information:



00:00: Indicates the time.

WIN / SUM / AL: This indicates the operating status: WINTER or SUMMER. In the event of alarm, the indication “AL” will appear alternately.

Indoor T: This indicates the ambient (by default) or return (optional) air temperature.

Outdoor T: This indicates the outdoor air temperature.

Indoor RH: This indicates the relative humidity of the indoor air (in units with return or ambient humidity probe, optional).

Unit: This indicates the OFF/ON status:

On Turned on.

Off Turned off.

Remote Off If enabled for a remote shutdown.

Off by Phase If the unit is shut down by Scheduling.

Machine status: Available options status:

Fcool Active free-cooling.

Comp Active compressors in summer in addition to free-cooling.

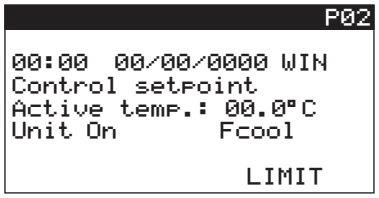
Deum Dehumidification.

Gas Gas burner/boiler operating above the minimum.

COMP VENT EL-H: The meaning of these texts on the display is: compressor (COMP), supply fan (VENT) and electrical heaters (RES) in operation.

LIMIT: This text appears intermittently when the control of the supply temperature is activated, limiting the capacity of the unit.

On the second screen of the group is shown:



00:00 and **00/00/0000:** This indicates the time and date.

WIN / SUM / AL: Operating mode.

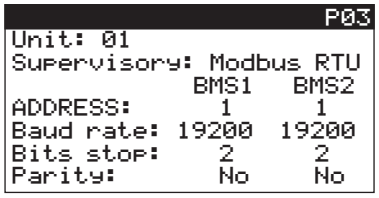
Active temp.: Setpoint temperature.

Unit: This indicates the OFF/ON status.

Machine status: Available options status (e.g. Fcool).

LIMIT: This text appears intermittently when the control of the supply temperature is activated

The next screen of the group only appears when the unit is integrated in a BMS supervision network. It is possible to independently configure the two BMS ports on the control board: BMS1 (BMS card) and BMS2 (Fieldbus2/BMS).

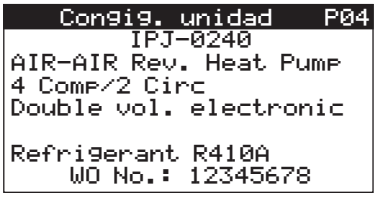


Supervisory: Type of protocol.

Address: in the supervision network. This could be different from the board address.

Baud rate: Bit rate (38400, 19200, 9600, 4800, 2400, 1200).

The last screen reports on the configuration of the unit.



Nº WO: Work order number of the unit (needed in case of consultation with the Technical Support Service).

7 - STARTING / STOPPING THE UNIT

There are different procedures for starting / stopping the unit (On/Off):

- **By keyboard (from the terminal):**

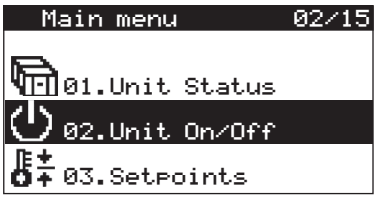
  This procedure is always valid. If the unit is stopped from the terminal, it cannot be started using any of the other procedures.

  If the unit has stopped, all the functions and the different variables are disabled.

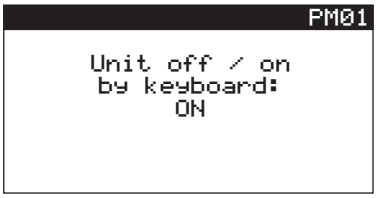
  The ON / OFF function can be carried out:

  * **On the VecticGD terminal:**

    From the MAIN MENU, in the group **02. Unit On/Off.**



    Press the [↵] key, the following screen is reached:



    It can also be done from the keyboard of the terminal, by simultaneously pressing the [Prg] [↵] keys for a few seconds.

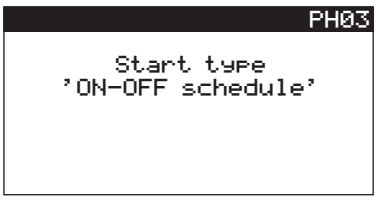
  * **On the TCO terminal (optional):**

    By pressing the key [⏻].

    When the unit is stopped, the display will only show the date, time and the OFF symbol.

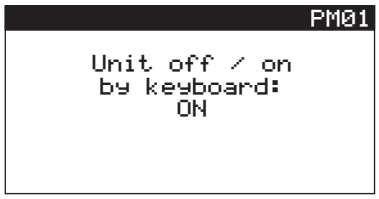
- **By time phase (with scheduling):**

  From the MAIN MENU, in the group of screens **05. Clock/ Scheduler**, the unit can be stopped outside of the schedule.



Note: See the different types of schedules in the chapter of "Scheduling".

The "On/Off by time phase" can only be done if the option "On" is selected on the screen PM01.



Important: If the procedures of "On/Off by time phase" and "remote On/Off" are simultaneously active, the unit will start only if both agree.

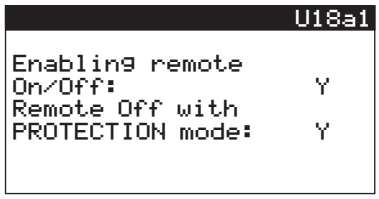
- **By digital input (remote On/Off):**

  The "remote On/Off" is carried out by means of the digital input DI7:

  - open contact: unit OFF
  - closed contact: unit ON

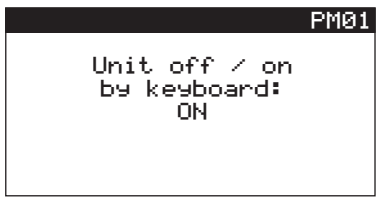
  Note: To activate the remote off/on the bridge made in this input must be eliminated (see wiring diagram)

  This procedure must be enabled on the group of screens **09. User Par.** (protected by level 2 password).



  When the unit is stopped by "remote On/Off", it is also possible to enable the automatic unit start when a temperature setpoint for PROTECTION of the building is reached.

  The "remote On/Off" can only be done if the option "On" is selected on the screen PM01.



  Note: The "On/Off by keyboard" always has priority over the "remote On/Off".

  Important: If the procedures of "remote On/Off" and "On/Off by time phase" are simultaneously active, the unit will start only if both agree.

  Important: The "remote On/Off" must be disabled for maintenance tasks.

8 - SETPOINTS SELECTION

The control of the ambient temperature is carried out by starting up the unit: compressors and/or backup component (electrical heater, water coil, etc.).

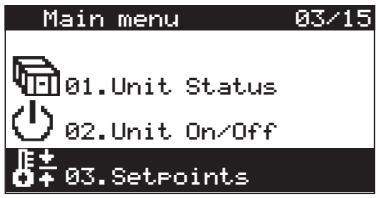
To do so, the control compares the temperature reading of the ambient air probe (or the return probe) with the setpoint value.

The control has two different set points: one for operation in COOLING mode (summer) and another for operation in HEATING mode (winter).

The selection of the setpoint can be carried out:

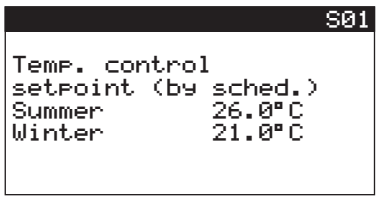
- **On the VecticGD terminal:**

From the MAIN MENU, in the group **03. Setpoints.**

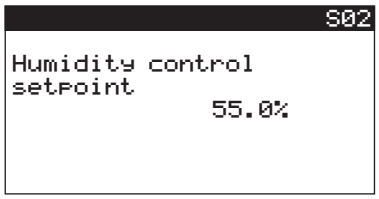


On the first screen of this group, the setpoints of temperature can be selected.

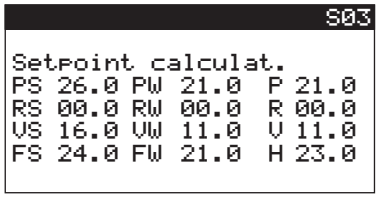
Note: if the indication “by schedule” appears on the screen, this means that the setpoints have been set in the Scheduling.



On the next screen it is possible to modify the humidity setpoint when its management is enabled (optional).



The third screen enables the display of the following calculations of setpoints:



In which:

PS In COOLING mode (summer): Setpoint + Dead Zone / 2

PW In HEATING mode (winter): Setpoint + Dead Zone / 2

P Current selection of the setpoint

RS Setpoint of the electrical heaters in COOLING mode

RW Setpoint of the electrical heaters in HEATING mode

R Current selection of the setpoint for the electrical heaters

VS Setpoint of the auxiliary hot water coil in COOLING mode

VW Setpoint of the auxiliary hot water coil in HEATING mode

V Current selection of the setpoint for the auxiliary coil

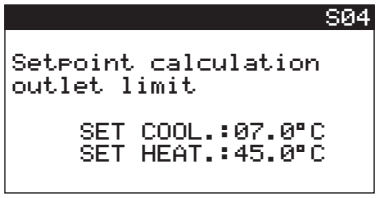
FV Setpoint of free-cooling in COOLING mode

FI Setpoint of free-cooling in HEATING mode

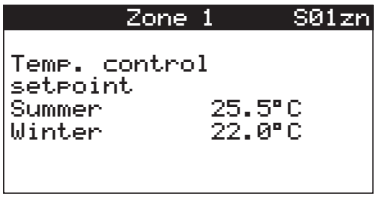
F Current selection of the setpoint for the free-cooling

On the last screen of this group, it is possible to display the limits of setpoint for the supply temperature in COOLING mode (summer) and HEATING mode (winter):

- In COOLING mode (summer): to prevent excessively significant drops in the ambient temperature.
- In HEATING mode (winter): to avoids the stratification of the hot air masses.



When the unit includes the option of zoning up to 4 zones with variation of air flow, the first screens displayed will allow the selection of the setpoints for each zone:



With the air zoning, the control use the minimum setpoint in COOLING mode and the maximum setpoint in HEATING mode, among all the setpoints in the 4 zones. The S01 screen displays these setpoints and their value cannot be changed.

Note: the optional air zoning can be selected on a screen of the group **07. Manufacturer Par. → a. Unit Config.** of the TECHNICAL MENU (password protected).

- **On the TCO terminal (optional):**

To modify the setpoint, it is necessary to press only the △ or ▽ keys.

At that time, the display will light up and the current setpoint value from active mode (COOLING or HEATING) will appear next to the text **set**.

Note: The temperature control can be performed with the ambient probe installed on the TCO terminal (optional).

The selection of this probe can only be done from a screen of the Group **07. Manufacturer Par.** (protected by level 3 password).

9 - SELECTION OF THE OPERATING MODE

There are different procedures for the selection of the operating mode:

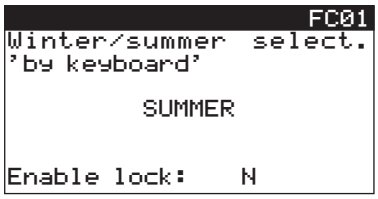
- **On the VecticGD terminal:**

From the MAIN MENU, in the group **04. Summer/Winter.**

Press the ↵ key, the following screen is reached:

This screen allows to select 3 options:

- **By keyboard:** on this screen, it is possible to switch between summer mode (COOLING) and winter mode (HEATING).



Note: When the parameter «Enable lock» is activated (Y), this screen is for information purposes only, so that the final user cannot change it. In this case, it has been locked from a screen of the Group **08. Service Par.** (protected by level 2 password).

Nevertheless, these operations can also be carried out using the following key combinations:

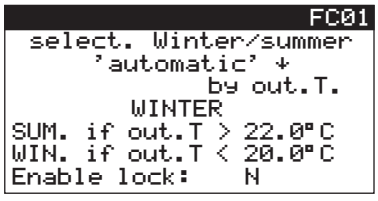
Prg ↑ : HEATING mode

Prg ↓ : COOLING mode

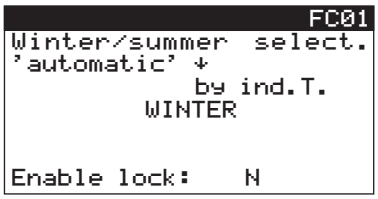
- **Automatic:** on this screen, it is possible to select two options for automatic mode:

  * *By outdoor temperature (by default):* The unit changes from operation in COOLING mode to HEATING mode or vice versa depending on the temperature measured by the outdoor air probe.

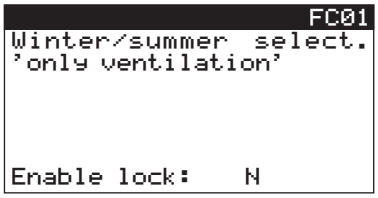
    In this case, the setpoints of outdoor temperature can be modified in COOLING mode or HEATING mode.



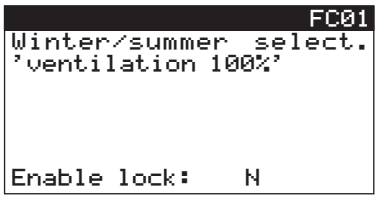
  * *By indoor temperature:* The unit changes from operation in COOLING mode to HEATING mode or vice versa depending on the temperature measured by the ambient (or return) air probe and the active COOLING and HEATING setpoints



- **Only ventilation:** on this screen it is possible to select the VENTILATION mode. It allows operation for only indoor fans and free-cooling/free-heating.



- **Ventilation mode with 100% fresh air (optional):** on this screen it is possible to select this ventilation mode. It allows operation for indoor fans, the return damper will close and the fresh air and extraction air dampers (according to the assembly) will be opened at 100%. The analog input U2 of the c.pCOe expansion module with address 8 is used for the activation of this mode.



- **On the TCO terminal (optional):**

By pressing the ☼/❄ key, the operating mode of the unit can be selected. With each press, the icon corresponding to the operating mode selected will be lit up.

The availables modes are: HEATING ☼ - COOLING ❄ - AUTO Auto y VENTILATION (without icon).

- **Remote COOLING/HEATING (optional):**

The selection of the COOLING/HEATING operating mode can be done using the digital input U5 of the expansion card c.pCOe with address 8:

- closed contact: HEATING mode (Winter)
- open contact: COOLING mode (Summer)

Note: The selection of the type of switching “by digital input” is carried out on a screen of the Group **07. Manufacturer Par.** (protected by level 3 password).

9 - SELECTION OF THE OPERATING MODE

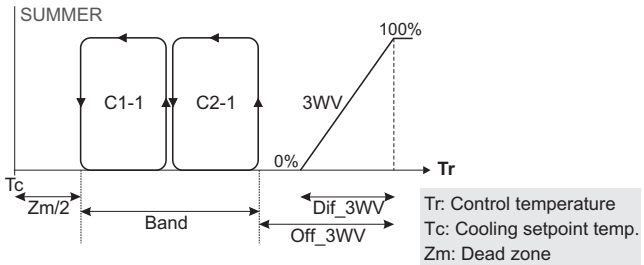
9.1. COOLING operating mode (summer)

The control will compare the temperature reading of the ambient (or return) air probe with the value set by the COOLING setpoint and with the value of the control band.

The unit will stop when the ambient (or return) temperature drops below the setpoint + one-half of the dead zone value.

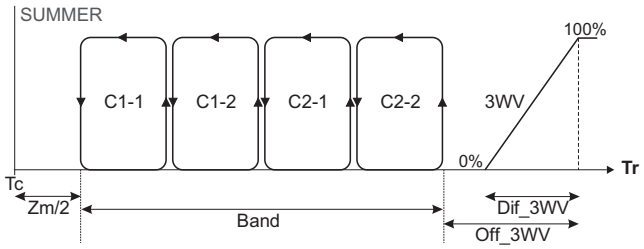
The input command of the various stages is the one featured on the chart.

• 2 compressors (1 circuit)



Tr: Control temperature
Tc: Cooling setpoint temp.
Zm: Dead zone
Banda: Control band

• 4 compressors (2 circuit)



As backup cooling, these units can incorporate a cold water coil (V3V). For the regulation of the coil, the control has a proportional or on/off output Y2 which controls the three-way valve.

For the input of the compressor stages, the control will use the control band value, whilst for the water coil (optional), it will take the differential into account.

The input command for the previous chart can be modified using parameters in order to give priority to the hot water coil.

Note: When the outdoor coil pressure of a circuit overcomes a limit value (41,5 bar by default), one of the two compressors will be stopped, thereby avoiding the stop of both compressors due to the high pressure. This compressor will start working again if the pressure drops below 36,5 bar.

Illustrative example:

- Summer setpoint = 26.0ºC
- Differential band = 3.0ºC and Dead zone = 0ºC
- Unit without cold water coil.

• *Units 2 compressors:*

With the temperature below 26.0ºC, the compressors stop. If the temperature starts to rise and exceeds 27.5ºC, compressor C1-1 starts. If it continues to rise and exceeds 29.0ºC, compressor C2-1 is also activated.

If the temperature drops below 27.5ºC compressor C2-1 stops. If it continues to drop until reaching a value below 26.0ºC, compressor C1-1 stops (the off and on command for the compressors will depend on whether the rotation is activated or not).

• *Units 4 compressors:*

The control band is divided between 4 compressors.

9.2. HEATING operating mode (winter)

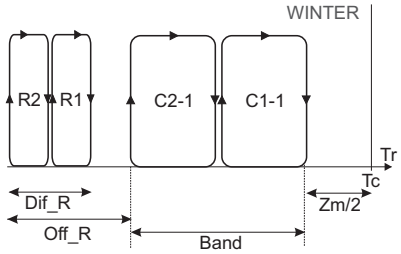
The control will compare the temperature reading of the ambient (or return) air probe with the value set by the HEATING setpoint and with the value of the control band.

As backup heating, these units can incorporate any of the following components:

- a hot water coil (V3V).
- two stages of electrical heaters (R)
- a gas burner.
- a gas boiler.

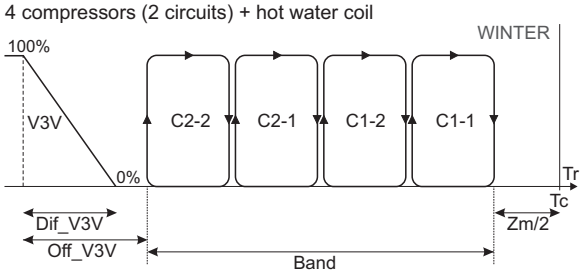
An example of input command of the various stages is the one featured on the chart.

• 2 compressors (1 circuit) + electrical heaters



Tr: Control temperature
Tc: Heating setpoint temp
Zm: Dead zone
Band: Control band

• 4 compressors (2 circuits) + hot water coil



For the regulation of the hot water coil, the control has a proportional or on/off output Y2 which controls the three-way valve, and for the regulation of the electrical heaters, there are two on/off outputs NO6- NO7.

The previous configuration is typical for the options however the control can also administer a proportional electrical heater stage in the output Y2 and an on/off water coil in output NO6

For the input of the compressor stages, the control will use the control band value, whilst for the input of heaters and of the water coil (optionals), it will take the respective differentials into account.

The input command for the previous chart can be modified using parameters in order to:

- Give priority to the hot water coil (by default).
- Activate the electrical heater stages without activating the compressor(s) for cases of compressor breakdown or locking due to a low outdoor temperature.

  Important: if this locking is enabled, half of the compressors will be disconnected at an outdoor temperature of -11'5ºC, and all other compressors with a temperature of -14.5ºC. The recovery compressor (optional) is authorized to operate.

Forced disconnection of stages

It is possible to disconnect compressor or electrical heater stages, by using parameters or mechanically using the digital inputs of the expansion card c.pCOe with address 8.

This is useful for reducing electric consumption in time bands when the electric price rate is high or in those cases where the electricity consumption or the section of the electrical outlet are limited.

10 - TIME SCHEDULING

10.1. Scheduling: VecticGD terminal

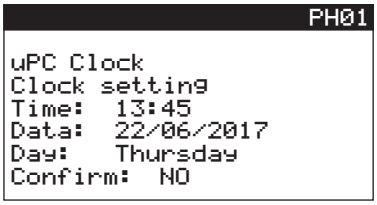
The VecticGD graphical terminal incorporates a scheduler with possibility of 3 different programs. It allows to choose for each day of the week one of these 3 programs.

The scheduler is accessed from the MAIN MENU. This is the group of screens **05. Clock/Scheduler.**

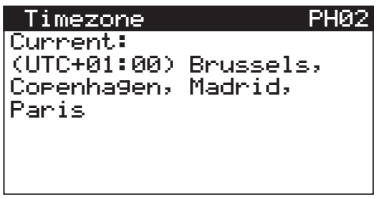
Note: the scheduling can be easily configured on machines integrated in a monitoring network with BOSS / BOSS mini thanks to its web interface.

Date and time

On the first screen, it is possible to change the time and date of the control. The day of the week will be automatically updated.



In the next screen the time zone can be selected.



Note: The schedule is automatically adjusted to changes in EU time.

Types of schedule

The scheduler allows choosing between different operating modes of the unit within the time slots and outside of them:

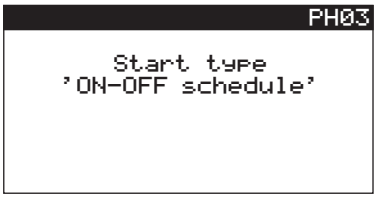
- **ON/OFF schedule:** within the time slots, the unit will operate with the setpoints established in group **03. Setpoints** for COOLING mode (summer) and HEATING mode (winter), whilst outside the time slots it will be stopped.
- **Schedule only setpoint change:** within the time slots, the unit will operate with the setpoints established for COOLING mode (summer) and HEATING mode (winter), whilst outside the time slots it will operate with different setpoints.
- **ON/OFF schedule with limit SET of ON:** within the time slots, the unit will operate with the setpoints established for COOLING mode (summer) and HEATING mode (winter), whilst outside the time slots it will be stopped. In this case, a starting safety is established when the temperature rises or falls from a limit setpoint.
- **Schedule with 3 setpoints + OFF of the unit:** within the time slots, the unit will operate with one of the three possible setpoints established for COOLING mode (summer) and HEATING mode (winter), whilst outside the time slots it will be stopped.

  The three setpoints that can be established are:

  - COMFORT: standard setpoint of the unit.
  - ECONOMY: setpoint further away from the comfort point, used at times with low occupancy.
  - PROTECTION: setpoint of building protection, usually used at night, when the building is empty.

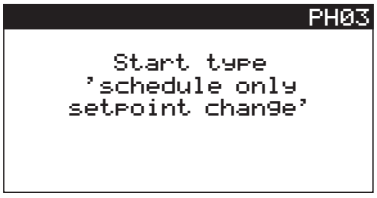
The schedule type is selected on the screen PH03:

- **ON/OFF schedule:**



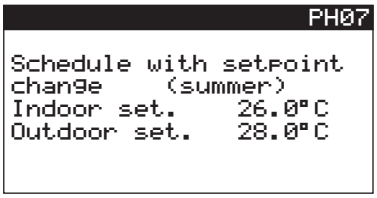
The unit will operate with the setpoint temperatures established on COOLING mode (summer) and HEATING mode (winter).

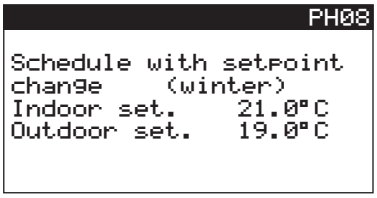
- **Schedule only setpoint change:**



Two control setpoint temperatures will be set on the screen PH07 (summer) and on the screen PH08 (winter):

* `Indoor set:` setpoint inside the time slots.
* `Outdoor set:` setpoint outside the time slots.





- **ON/OFF schedule with limit SET of ON:**

  With this type of schedule two new parameters are displayed on the screen:

  * `Disab.comp.COOL:` when the unit is working with the safety limit setpoint in COOLING mode, the compressors can be disabled in order that if the conditions of the outdoor air are favourable, the unit carries out free-cooling.
  * `Dis. air refresh.:` when the unit is working with the safety limit setpoint is disabled the air renewal.

10 - TIME SCHEDULING

The regulation setpoint and safety limit setpoint are established on the screen PH09 (summer) and on the screen PH10 (winter):

* Indoor set.: setpoint for the time slots.
* Limit set.: safety limit setpoint outside the time slots.

```
                          PH09

Schedule with ON
by limit SP (summ.)
Indoor set.     26.0°C
Limit set.      34.0°C
```

```
                          PH10

Schedule with ON
by limit SP (winter)
Indoor set.     21.0°C
Limit set.      13.0°C
```

The differentials for the limit setpoint are established on the screen PH11:

```
                          PH11

Schedule with ON
by limit SP
Win.Lim. Diff.01.0°C
Sum.Lim. Diff.02.0°C
```

- **Schedule with 3 setpoints + OFF of the unit:**

  Two new parameters are displayed on the screen PH03 with this type of schedule:

  * Disab.comp.COOL: when the unit is working with the safety limit setpoint in COOLING mode, the compressors can be disabled in order that if the conditions of the outdoor air are favourable, the unit carries out free-cooling.
  * Dis. air refresh.: when the unit is working with the safety limit setpoint is disabled the air renewal.

```
                          PH03

        Start type
  'ON-OFF schedule with
     limit SET of ON'
   - ON for LIMIT SET -
Disab. comp. COOL:  N
Dis. air refresh.:  N
```

Three regulation setpoint temperatures will be established on the screens PH14 (Summer) and PH15 (Winter) :

* Set.COMFORT: standard setpoint of the unit.
* Set.ECONOMY: setpoint further away from the comfort point, used at times with low occupancy.
* Set.PROTECTION: setpoint of building protection, usually used at night, when the building is empty.

The differentials for the PROTECTION setpoint will also be established.

* Dif.lim.PROT: differential for the PROTECTION setpoint.

```
                          PH14

Schedule with setpoint
change (Summer)
COMFORT Set       26.0°C
ECONOMY Set       28.0°C
PROTECTION Set    34.0°C
PROT.Lim.Dif      02.0°C
```

```
                          PH15

Schedule with setpoint
change (Winter)
CONFORT Set       21.0°C
ECONOMY Set       19.0°C
PROTECTION Set    13.0°C
PROT.Lim.Dif      01.0°C
```

On the PH13 screen, the time slots with the different setpoints will be assigned for each day of the week.

In the top left zone of the screen it is indicated the day of the week to which there is assigned the schedule (in the example: on Monday). When it is created it is possible to copy in any other day of the week.

For example: it copies to Tuesday: YES (the Tuesday schedule will be the same that on Monday).

```
 SCHEDULER                PH13
Day: MON
Copy in: TUE    Ok? Yes
☑ 1 07:00 ECONOMY
☑ 2 09:00 CONFORT
☑ 3 17:00 PROTECTION
☑ 4 21:00 OFF
Save?   Yes
```

On the PH13a and PH13b screens, the setpoints for vacation periods and special days will be assigned respectively.

```
VACATION PERIOD          PH13a
  Start  End    Status
☑ 01/01  06/01 PROTECT.
☑ 01/04  07/04 OFF
☑ 01/08  15/00 OFF
```

```
SPECIAL DAYS             PH13b
☑ 1 28/02 ECONOMY
☑ 2 01/05 PROTECTION
☑ 3 01/08 OFF
☑ 4 04/09 OFF
☑ 5 06/12 PROTECTION
☑ 6 08/12 PROTECTION
```

In addition to the schedule types described above, the scheduler also allows the following actions in PH03:

- **Manual:** The unit will be running or stopped without taking into account the time schedule. In this case, the unit can be switched OFF/ON from this screen.

```
                          PH03

        Start type
        'Manual'

            ON
```

- **Forced:** this permits an occasional start-up or shutdown of the unit without modifying the time schedule. When this period ends, the unit goes back to the schedule that was programmed.

```
                          PH03

        Start type
         -FORCED-

ON time: 002 h
```

This type of schedule does not appear in the screen selection.

To activate it press the key Prg for a few seconds. Access is gained to a screen on which the forced running time is established.

Note: This forced start-up only can be done from the PH03 screen.

Daily schedule

On screens PH04, PH05 and PH06 three different daily schedules can be created, each with a maximum of three time slots in which the unit will be started. The unit will work inside and outside the time slots with the type of schedule selected on the screen PH03.

For example:

Program 1: Slot 1: morning from 06:30h to 11:00h
Slot 2: morning from 11:30h to 13:30h
Slot 3: evening from 17:00h to 19:00h
Program 2: Slot 1: morning from 08:00h to 14:00h
Slot 2: evening from 17:00h to 20:00h
Program 3: Slot 1: morning from 07:00h to 15:00h

PH04

SCHEDULE PROGR. N.1
Slot1 > 06:30 to 11:00
Slot2 > 11:30 to 13:30
Slot3 > 15:00 to 19:00

PH05

SCHEDULE PROGR. N.2
Slot1 > 08:00 to 14:00
Slot2 > 17:00 to 20:30
Slot3 > 00:00 to 00:00

PH06

SCHEDULE PROGR. N.3
Slot1 > 07:00 to 15:00
Slot2 > 00:00 to 00:00
Slot3 > 00:00 to 00:00

Note: the start type "**3 setpoints schedule + OFF of unit**" has its own schedule program defined on the screen PH13 (see the previous section).

Weekly schedule

On this display, it is possible to assign a schedule program for each day of the week.

The available options are:

1: schedule program No.1

2: schedule program No.2

3: schedule program No.3

0: no programming

PH12

Program selection
Daily start
M:1 T:1 W:1 T:1 F:2
S:3 S:0 -Mon- (0=off)

10.2. Scheduling: TCO terminal

With the TCO terminal enabled (optional), the schedule programming of this terminal can be done.

Note: the activation of both, the TCO terminal and its scheduler, is carried out from the group of screens 07. **Manufacturer Par.** (protected by level 3 password).

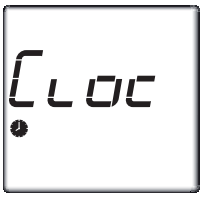
The TCO terminal has a scheduler that allows 6 time slots to be chosen for each day of the week, indicated by the following icons on the screen:

A change in the setpoint temperature or the disconnection of the unit can be scheduled in these time slots.

Clock setting of the terminal

By pressing the key for a long time, the terminal changes to the initial clock display (CLOC).

From there, by pressing the key, the time update display is accessed.



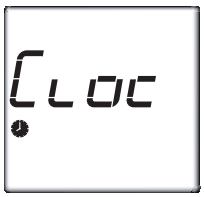
The current time appears intermittently and can be modified with the help of the keys. The new time can be validated with the key.

The minutes appear below intermittently. Its value can also be modified with the keys and validated with the key.

There are two ways of returning to the main display: by repeatedly pressing the key or not acting on the terminal for some seconds.

Creation of a schedule program

By pressing the key for a long time, the terminal changes to the initial clock display (CLOC).



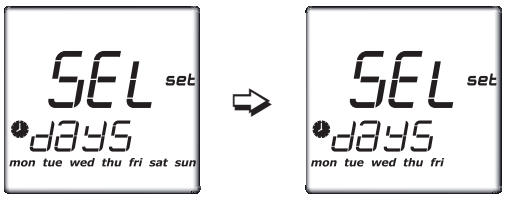
Next, by pressing the key, the terminal changes to the initial schedule program screen (TIME BAND).

If it desired to abandon the programming, by pressing the key again, the terminal changes to the exit display (ESC), which is exited by pressing .

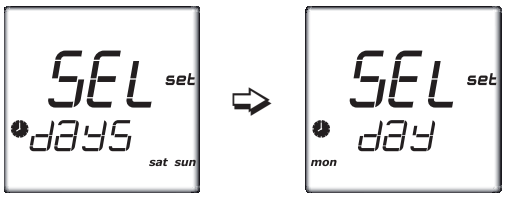
10 - TIME SCHEDULING

If it is desired to continue with the scheduled programme, ⏎ must be pressed with the terminal on the initial programming display (TIME BAND).

The text SEL DAYS will then appear on the display to select the days of the week to which the schedule will apply. With the △ ▽ keys, the following groups can be selected:



Complete week ***Working days***

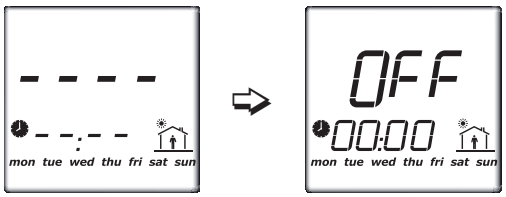


Weekend ***Day to day***

If it's desired to leave the programming, by pressing the △ key again, the terminal changes to the exit display (ESC), which is exited by pressing ⏎.

If it is desired to continue with the schedule programming, the ⏎ key must be pressed on the screen of the days to which it applies in order to access the first time slot. The sequence of these slots is as follows:

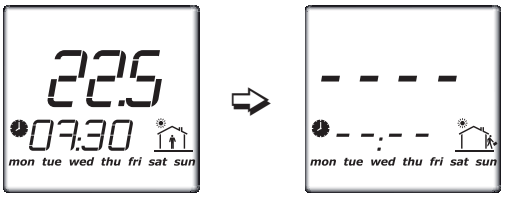
The first time slot will flicker on this display. If it desired to schedule this slot, the ⏎ key will be pressed and automatically stop flickering, going on to appear as follows:



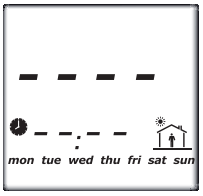
Next, with the ⏎ key, the activation time of the program for the selected slot will be set, and then, whether the unit will remain stopped (OFF) or at the setpoint value.

Finally, the schedule slot will cease flickering. By pressing the △ key, the scheduling created will be saved and the terminal will go on to display the next slot.

It will be necessary to define a minimum of two slots for each day, since only the initial time is established is established for each slot, and not the ending time.



To delete the schedule from a time slot, it is necessary to select it with the ⏎ key, and then, by pressing the △ ▽ keys, the time will be modified until the display returns to show the following:



Note: Before making a new schedule, it must be checked whether there is already one defined. If any schedule is made that may affect another that is already stored, the latter will not be saved.

Activation of the schedule programming

By pressing the ⏲ key for a short time, the stored schedule programming corresponding to the activation time is activated.

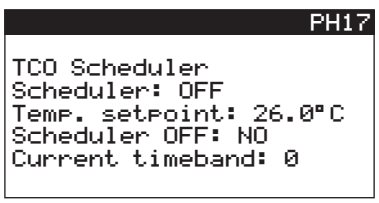
The symbol 🕒 and the active scheduling slot will always appear on the main display, both on stopped units and units in operation.

With the unit in operation, by pressing the keys △ or ▽ the setpoint for the time slot will be shown.

Note: The text **set** will appear next to the setpoint value.

To deactivate the schedule programming, it is necessary only to press the ⏲ key for a short while.

The screen PH17 of the VecticGD terminal (group **05. Clock/ Scheduler)** shows if the scheduler of the TCO terminal is active, the current timeband and the temperature setpoint.



11 - DISPLAY OF THE INPUTS / OUTPUTS STATUS

All variables which are controlled by the system are displayed in this group of screens, including the status of the digital inputs, the digital outputs and the analogue outputs, both the main board and the installed expansion cards.

This group of screens is accessed from the MAIN MENU, in **06. Inputs/Outputs.**

- Values measured by the sensors: screen I01, I01a, I01b, I02, I03, I03a, I03b, I03c, I04a, I04b, I05a, I05c, I05e, I06a, I06b, I12d.

```
                              I01

S1 probe
Return temperature
probe          16.0ºC
S2 probe
Outdoor temperature
probe          20.0ºC
```

- Electronic expansion valve(s) reading: screens I06a1, I06b1, I06c1, I06e, I06f, I06g.

```
 EEV                          I06a

Opening:    0000stp
            000.0%
Status:     ---
Protection:    None

 SH:  000.0K
```

- Cumulated operating hours by the unit and each compressor: screens I07, I07a.

```
                              I07

Operating hours
Unit:                  00000
Compress. 1-C1:00000
Compress. 2-C1:00000
```

- Digital inputs status: screen I08 (main board), screen I08b (expansion card addr.8), screen I08c (expansion card addr.9).

```
                              I08

Digital input
status (1...10):
CCCCC CCCCC
```

C: Closed contact

O: Open contact

- Digital outputs status: screens I09, I09a, I10, I11 (main board), I10b (expansion card addr.8), I10c (expansion card addr.9).

```
                              I09

Compressor 1 - C1     OFF
Compressor 2 - C1     OFF
Compressor 1 - C2     OFF
Compressor 2 - C2     OFF
```

- Analogue outputs status: screens I12, I12a (main board), screen I12b (expansion card addr.8), screen I12c (expansion card addr.9).

```
                              I12

Outdoor damper:  025%
Heat valve:      000%
```

000%: opening percentage

- Cooling recovery circuit reading (optional): screens I06cr1, I06cr2, I06fr, I06er, I05ar, I08cr, I10cr.

```
Active recovey    I06cr1
Cooling capacity: 000%
Pres.HP: 000.0bar
HP. Temp: 000.0ºC

suct. T: 000.0ºC
evap P:  000.0barg
evap T:  000.0ºC
```

- Optional element readings: R-410A leak detector: screen I18a; energy meter: screens I15, I16, I17, I18; and calculation of cooling and heating capacities, thermal and electrical energy, and seasonal energy efficiencies: screens I18b, I18c, I18d, I18e, I18f, I18g, I18h.

```
      Energy meter        I15
Voltages
V L1-L2:        000.0 V
V L2-L3:        000.0 V
V L3-L1:        000.0 V
V L1:           000.0 V
V L2:           000.0 V
V L3:           000.0 V
```

```
Cooling mode              I18f
Cooling energy:
                          0 kWh

Electric energy:
                          0 kWh

SEER:  0.0
```

12 - VERSIONS OF SOFTWARE AND HARDWARE

In this group of screens **15. Versions** from the MAIN MENU, the Software version installed on the control board is provided.

```
   SOFTWARE              V01
      Vectic Control

Version:    16.7.0
Date:       25/09/24

SO:    5.1.6
Boot:  5.1.6
```

The second screen of this menu shows the main features of the hardware.

```
   HARDWARE              V02
Board type:  uPC3
Board size: Medium
Main cycle: 247ms
      4.0 cycles/s
```

Important: All screens for the configuration of the unit and all its components are protected by level 2 or 3 passwords. To modify these parameters, it is necessary to request the passwords.

The “List of control parameters” chapter includes all control parameters together with an explanation and the screen of the VecticGD terminal in which they are located.

Note: Refer to the "Connections" chapter for detailed information on connecting components to the main board and expansion modules.

13.1. Compressors

Rotation of the compressors

The control allows the rotation of the compressors to equal their number of operating hours. With this function, activated by default, the compressor which starts up first is the one which has the least number of accumulated operating hours.

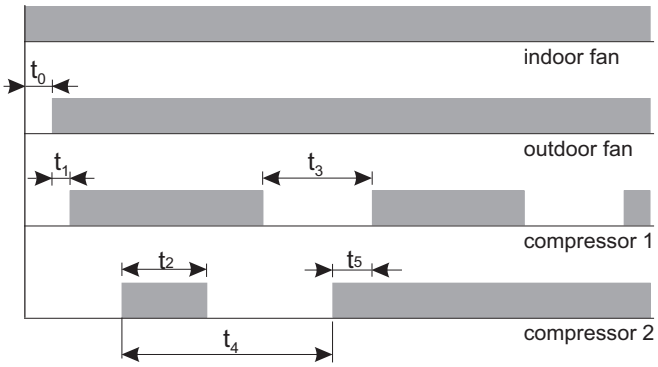
From this moment, the type of rotation of the circuits will be:

- Grouped: First there connect all the compressors of the same circuit.
- Equalized (by default) : First there connects an alone compressor of every circuit. Once connected all the circuits there connects the second compressor of every circuit.

Note: for units with an active recovery circuit, the operation of the compressor will depend on the position of the fresh air damper and it will not enter into rotation with the other compressors.

Compressor timing

All of the compressors, including the one for the active recovery circuit (optional), shall respect the following timings:



- **Delay of the start-up of the outdoor fan with regard to the supply fan (t_0=30s)**

  This determines the minimum time that should elapse between the start-up of the supply fan and the start-up of the outdoor fan in order to guarantee a stable airflow.

- **Delay of the start-up of the compressor with regard to the outdoor fan (t_1=10s)**

  This determines the minimum time that should elapse between the start-up of the outdoor fan and the start-up of the first compressor to limit the simultaneous start-up.

  Therefore for the start-up of the first compressor it must pass: $t_0 + t_1$

- **Minimum operation time (t_2=120s)**

  This keeps the compressor in operation during the period selected. It is not allowed to be shut down unless there is a failure in the circuit.

  The minimum time of operation of the compressors must be 120 seconds (do not change).

- **Minimum shut-down time (t_3=180s)**

  This determines the time that must elapse from the last shutdown of the compressor before it can start up again.

- **Time between start-ups of the same compressor (t_4=300s)**

  This sets the maximum number of compressor start-ups in one hour.

- **Time between start-ups of several compressors (t_5=60s)**

  This determines the minimum time that should elapse between the start-up of a compressor and the start-up of the following one. It limits the simultaneous start-up and the peaks of starting current of an unit.

13.2. Cycle reversing valve (CRV)

In the heat pump units, there is a four-way cycle reversing valve per circuit which allows the HEATING / COOLING operation mode of the unit to be selected.

- Valve with voltage (N.O.): for operating in COOLING mode and during defrosting (by default).
- Valve without voltage (N.C.): for operating in HEATING mode.

13.3. Electronic expansion valve

The Vectic control board directly controls two unipolar stators for electronic expansion valve (EVV).

The control manages the circuit overheating (SH setpoint). The valve opens and closes depending on:

- The value measured by the suction temperature probe.
- The evaporation pressure on the circuit.

13.4. Outdoor circuit fans

Types of fans

The Vectic control enables managing various types of outdoor fans:

- Electronic axial fans (standard in PJ units): in this case, it’s possible to select, using three parameters, the maximum speed in COOLING and HEATING mode (by default 100%), as well as the minimal speed (0%).
- Plug-fans (standard in ISPV units): with the same operation as electronic axial fans.
- 2-speed axial fans (optional in PJ units): in this case, it’s possible to select, by means of parameters, the pressures for the change in speed as well as the fan disconnection time to implement this change. The fan start is always carried out at high speed.

Operating mode

The outdoor fans will be in operation with the manufacturer’s settings whenever the compressors are in operation, except in these cases:

- Disconnection is timed to the stopping of the compressor in 60 seconds both in COOLING mode (to reduce the condensation pressure) and HEATING mode (to remove ice from the coil).
- Disconnection during defrosting, except when the defrosting is started by low pressure, which will operate if the pressure rises over the ON value and will disconnect if the pressure drops below the OFF value.
- In HEATING mode, with the unit started but compressors stopped by low outdoor temperature, the fan will be activated for 60 seconds every 30 minutes.
- With the unit running in AUTO mode and the outdoor fan stopped, it will also be activated for 60 seconds every 30 minutes.

Condensation and evaporation control

The control can manages the condensation pressure (in cooling mode) and the evaporation pressure (in heating mode), with AUTO setpoint, according to the outdoor temperature and the circuit capacity (half or full).

13.5. Indoor circuit supply fans

The indoor circuit includes one or more plug-fans that drive the air-conditioned to the premises through the network of ducts.

These electronic variable speed fans adjust its rotational speed to the requirements of the installation.

It is possible to select the type of speed control:

- Constant flow control (by default): in this case it is possible to fix the setpoint of flow in COOLING, HEATING and VENTILATION mode.
- PWM control (0…100%): in this case it is possible to fix the percentage of speed modulation in COOLING, HEATING and VENTILATION mode.

In units with tandem compressors it is also possible to reduce the supply air flow rate up to 50% (under certain conditions of power demand).

Note: The supply plug-fan(s) is(are) connected on the RS485 Field-bus of the control board, with addresses: 1 (main fan) and 22 to 28 (secondary fans) (19200 bps, 8 bits of data, 2 stop bits without parity).

Operating mode

The time delay for the start of the supply fan in the start up of the unit is 30 seconds. In the case of an unit with 100% fresh air, the default value will be 90 seconds to allow the complete opening of the fresh air damper.

In units with TCO terminal, the default value will be 60 seconds to ensure that the communication has been established.

With the factory settings, the supply fan is always working when the unit is connected. It can only be stopped:

- Upon stopping the compressor, an ON - OFF time can be defined for the fan in order to avoid the stratification of warm air masses.
- In units with CO2 air quality probe, when demand of air renewal does not exist, neither of temperature nor of humidity.

Upon stopping the unit, depending on the season of the year, a time can be set during which the fan will stay in operation in order to prevent the appearance of humidity in the coil or to dissipate heat from the electrical heaters.

This delay is established by default in 60 seconds in both HEATING and COOLING modes.

During maintenance operations, the supply fan can be started up if no alarm prevents this.

Constant supply pressure control (optional)

This function allows to control the air flow driven by the plug-fan to keep the pressure in the supply duct constant, with the setpoint value set by parameter (default 200 Pa). This control is especially useful with the zoning option to avoid limiting the number of zones (maximum 4 zones) (see section "Zoning of the air flow").

As an important limitation, a minimum flow rate must be taken to ensure the proper functioning of the unit. This means the following:

- With compressors and other support elements of the unit running: disconnection below 35% of nominal flow rate (timed 480 seconds).
- With compressors stopped: disconnection below 10% of nominal flow rate (timed 120 seconds).

To carry out this type of control of the supply fan it is necessary to install a differential pressure sensor with one intake open to the environment and the other one connected to the supply duct. The sensor has a measuring range of 0-1000 Pa and output 4-20 mA, and it is connected to the analog input U2 of the c.pCOe expansion module with address 9.

This function is not compatible with the overpressure control with differential pressure sensor.

Note: This differential pressure sensor, supplied from the factory, must be installed by the customer.

13.6. Indoor circuit return fans (optional)

Units equipped with a mixing box, with motorized damper for controlling the exhaust air and the fresh air, can incorporate return fan(s) of any of the following types:

- Radial.
- Electronic plug-fan.

With return plug-fan(s) it is possible to select the type of speed control, in the same way as for the supply fan(s).

Note: The return plug-fan(s) is(are) connected on the RS485 Field-bus of the control board, with addresses: 2 (main fan) and 32 to 38 (secondary fans) (19200 bps, 8 bits of data, 2 stop bits without parity).

13.7. Supply and return dampers for zoning into 2 zones (optional)

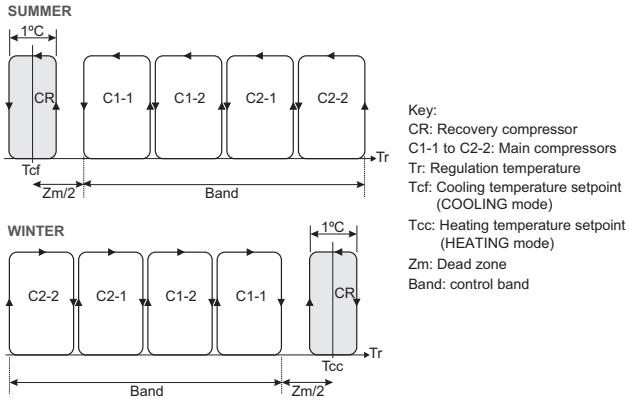
This control allows the zoning into 2 zones via a c.pCOe expansion card with address 9.

- With this type of zoning, the ducts of supply and return are splitted into two branches. In each branch is placed a damper with an on/off servomotor and end of stroke stop. The startup of the unit will not be allowed if the opening of the dampers of supply and return of a same zone is not detected. In the case of opening of the two zones will be allowed the operation with 100 % of flow.
- Two ambient temperature probes (T) will be installed (one on each zone) to control both the unit and the dampers of supply and return, depending on the temperature setpoint and the operating mode.
- Two air quality probes (CO_2) will be installed to control the outdoor air requirement. The renewal of air and the dampers of supply and return will be managed depending on the air quality setpoint. The percentage of opening of the fresh air damper will take place according to the renewal of air required depending on the air quality setpoint and the maximum value of the two probes of CO_2.

13.8. Cooling recovery circuit (optional)

For unit with a cooling recovery circuit, the compressor will operate whenever:

- There is demand for COOLING or HEATING.
- The temperature conditions for supply, return and mixing air allow the opening of the fresh air damper at 10% for a period of time greater than 90 seconds (values set by default).



The recovery compressor can function even though there is no demand, depending on the temperature measured by the supply air probe. Please, refer to the paragraph “Regulation of the supply temperature”.

Note: in cooling only unit with recovery circuit, it´s possible to select the operating of this compressor like heat pump.

13.9. Fresh air damper

For control of the fresh air damper (optional), the control has a proportional output 0/10V (Y1).

This will be activated for the following circumstances:

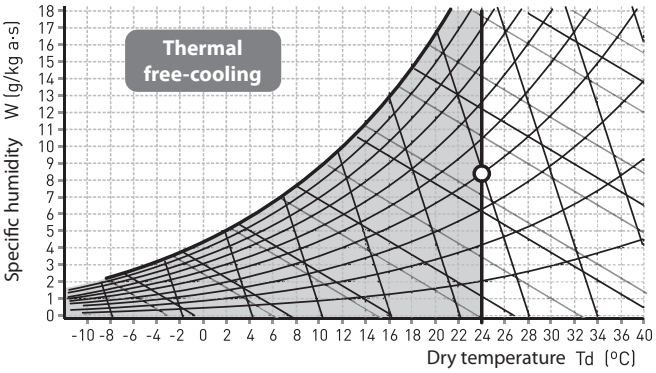
Free-cooling

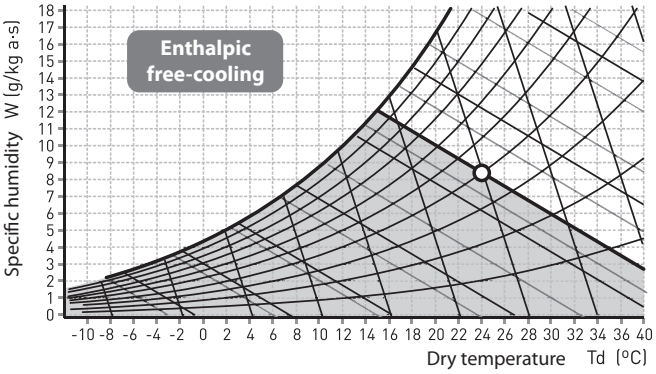
The operation of the free-cooling, in units with mixing box, allows the outdoor air conditions to be taken advantage of when these are more favourable than those of the return air.

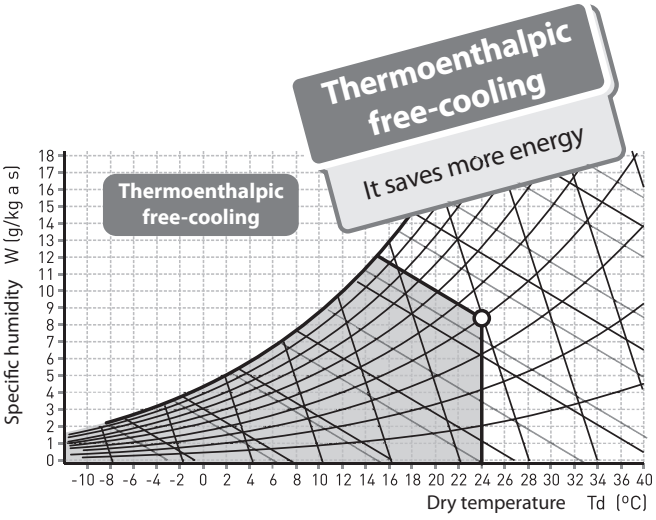
Note: the free-cooling function is not compatible with the activation of the rotary heat exchanger or the recovery circuit.

After free-cooling, the first compressor of the main circuit will enter into operation, if necessary.

To check whether or not the conditions of the outdoor air are more favourable than those for the return air, three procedures can be used:







- For **thermal free-cooling,** the opening of the fresh air damper is ordered when the temperature of the outdoor air is lower than that of the return air plus a differential. In this case, the control uses the outdoor and return air temperature probes.
- For **enthalpic free-cooling,** the control calculates the enthalpy of the return air and of the outdoor air based on the temperature and relative humidity readings of the return and outdoor air. After calculating the enthalpies, carry out the following comparison:
  * Damper closed and (Hint-Hext) > enthalpy diff., damper opens.
  * Damper open and (Hint-Hext) ≤ enthalpy diff., damper closes.
- For **thermoenthalpic free-cooling,** the opening of the fresh air damper is performed when the enthalpy of the outdoor air is lower than that of the return air plus a differential and it also meets the condition that the outdoor temperature is lower than that of the return air by 1ºC, which allows the outdoor conditions to be taken advantage of in a better manner.

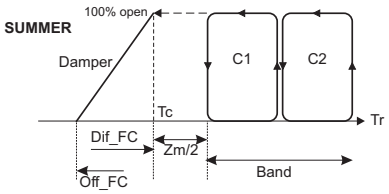
Free-cooling in summer (COOLING mode)

The free-cooling will be active when the following conditions are met:

- Summer free-cooling function is authorized.
- The unit is operating in COOLING or AUTO mode.
- The outdoor temperature is less than the return temperature minus the free-cooling differential.

Free-cooling function depends on two parameters:

- Offset: this defines the difference between the setpoint and the air return temperature at which the fresh air damper begins the opening.
- Differential: the opening of the fresh air damper is carried out in accordance with the return air temperature.



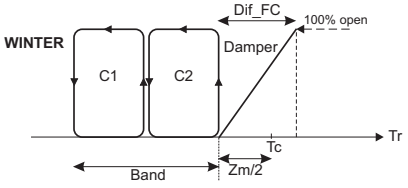
It's possible to disable the compressors if it is considered that the difference between the return temperature and the outdoor temperature is sufficient with free-cooling.

Free-cooling in winter (HEATING mode)

Free-cooling in winter is useful, for example, in shopping centres, discos etc. where, during operation in winter, due to overheating, the temperature is always greater at the setpoint and cooling has to be initiated instead of heating.

This function will be active provided that these conditions are met:

- Winter free-cooling function is authorized. By default it will not be authorized, it will be necessary to modify the value in the CU14 screen of the Group **07. Manufacturer Par.** (protected by level 3 password)
- The unit is operating in HEATING mode.
- The outdoor temperature is less than the return temperature minus the free-cooling differential.
- The outlet temperature is above 10ºC.



Air renewal

Units with mixing air probe

When the outdoor conditions do not permit free-cooling, but air renewal is required, control of the fresh air damper can be carried out according to 3 parameters:

1. Desired renewal percentage:

   This value is set at 20% by default.

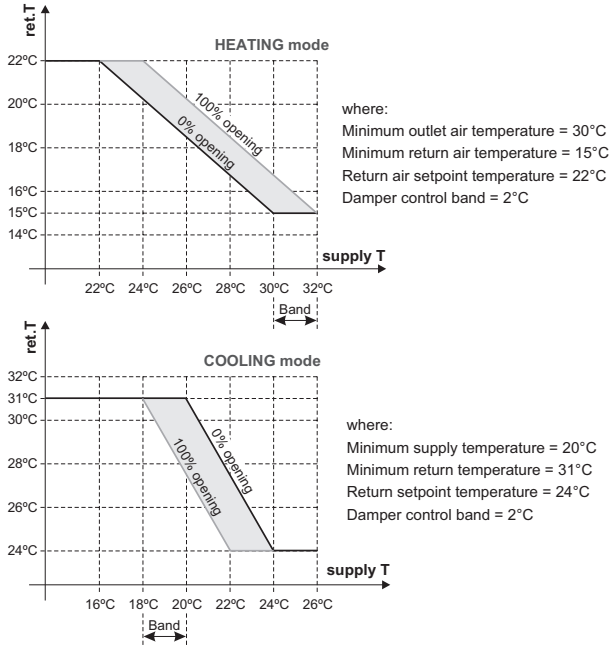
   In units with recovery circuit this value is set at 60%.

2. Supply - return air temperature:

   If the outlet and/or return air temperature conditions are very unfavourable, the command is given to close the fresh air damper, ignoring air renewal, until optimum conditions are reached.

   - In HEATING mode, minimum supply temperature 30ºC and/or minimum return temperature 15ºC.
   - In COOLING mode, minimum supply temperature 20ºC and/or minimum return temperature 31ºC.

   The following chart shows the logic applied by the control with the value obtained for these temperatures:



3. Minimum mixing temperature:

   By default: 12ºC in HEATING mode and 35ºC in COOLING mode.

   In units with recovery circuit this value is set at 5ºC in HEATING mode and 42ºC in COOLING mode.

   The control will calculate the renewal percentage in accordance with the outdoor, return and minimum mixing air temperatures:

$$\%\ renewal = \frac{Return\ air\ T - mixing\ air\ T\ (12ºC)}{Return\ T - outdoor\ T}\ x\ 100$$

The control will compare the 3 opening percentages obtained and, with the lowest of these 3 values, will establish the instantaneous opening of the fresh air damper.

Next, depending on the renewal air calculated with the following formula, the opening or the closing of the damper will be ordered:

$$\%\ renewal = \frac{Return\ air\ T - mixing\ air\ T}{Return\ T - outdoor\ T}\ x\ 100$$

For the opening or closing of the damper, a maximum variation is set at 3% over a period of 60 seconds.

Note: the maximum opening value of the damper can also be blocked by parameter and will take priority over the one previously obtained.

If the outdoor conditions change and the unit starts to request free-cooling, the starting position of the damper will be the one that it had for air renewal at this time.

Note: during defrosting and, with the unit shut down, the fresh air damper will remain closed.

Units with mixing air probe + CO2 air quality probe

If the unit has an air quality probe (in the B10 input of the board) in addition to the mixing temperature probe.

The control of the damper will be carried out in accordance with the % of CO_2 measured and the mixing temperature.

The instantaneous opening percentage will be calculated depending on:

- Supply - return temperatures.
- Measurement of the quality probe (ppm).
- Minimum mixing air temperature.

Using these two probes together improves the management of the air renewal with low outdoor temperatures.

Note: on units with CO_2 air quality probe for outdoor installation, external CO_2 level can be limited to permit air renewal (by default 2000 ppm). The fresh air damper will close from that value.

- **Increase of the air flow for renewal:** In units with CO_2 probe it is also possible to increase the air flow up to 25% over the setpoint value selected by parameter (or up to the maximum nominal flow). This functionality is activated when the fresh air damper is open at 100% and the CO_2 level cannot be lowered below the setpoint value + differential (ppm). In this case, the control will gradually increase the air flow to a maximum of 25% (or to the maximum nominal flow).

  This function is activated on the CU17a screen of the group **07. Manufacturer Par**. The values of the serpoints are displayed on the U12d and U12f screens of the group **09.User Par.**

  Note: This function is not compatible with the air flow zoning.

Units with differential air pressure sensor

A differential air pressure sensor (-50 Pa, +50 Pa) can be installed at the same position of the air quality probe (in the B10 input of the board). In this case the percentage of renewal is adjusted according to the pressure in the room.

This probe allows dynamic control of the opening of the damper to reach the differential pressure setpoint between inside and outside.

External extractor to electronic control

The air renewal settings can be adjusted based on the on/off status of an external extractor, as selected on the CU24 screen of the group **07. Manufacturer Par.** On this screen, or on the U43 screen of group **09.User Par.**, it can be selected the renewal settings for the extractor, whether it is stopped (by default, 20%) or in operation (by default 80%).

Overpressure control

In installations with different air flow in supply and return (to prevent the outdoor air intake or to eliminate odours from inside) the fresh air damper and the exhaust damper will be managed independently.

For the exhaust damper regulation, the control uses the proportional output 0/10V (U9) of the c.pCOe expansion module with address 8 or the Y2 output of the main board.

- The percentage of opening of the exhaust damper shall be obtained from the following formula:

$$\%\ extrac.\ damper = \%\ outd.\ damper - [\ (\frac{return\ flow}{supply\ flow} - 1)\ x\ 100\ x\ K\ ]$$

  where:

  K = overpressure constant (this constant allows to adjust the opening of the exhaust damper in the site).

- The value calculated for the exhaust flow will be:

  exhaust flow = renewal flow – (supply flow – return flow)

Important: this type of control of the dampers penalizes the exhaust of air and thereby, the cooling recovery.

Overpressure control with differential pressure sensor

This function allows to control the air flow of the return plug-fan to maintain constant overpressure inside the room, with the setpoint value set by parameter (by default 45 Pa) in the U401 screen of group **09.User Par.**

This control requires the installation of a differential pressure sensor with one intake open to the environment and the other one connected outside. The sensor has a measurement range of -50 to 50 Pa and 4-20 mA output, and it is connected to the analog input U2 of the c.pCOe expansion module with address 9.

This function is not compatible with the constant supply pressure control.

Note: This differential pressure sensor, supplied from the factory, must be installed by the customer.

13.10. Electrical heaters (optional)

The control has two on/off outputs (NO5 and NO6) for controlling 2 stages of electrical heaters.

A stage can also be connected in the proportional output 0/10V (Y2). This output can be used for the control of a hot water coil or a gas burner/boiler. These backup elements are not compatible.

The electrical heater will be activated under the following circumstances:

- As backup in HEATING mode, following the input of all the available compressors.
- As backup in HEATING mode, in accordance with the supply temperature, when this one drops below the control setpoint (ambient or return).
- In HEATING mode, instead of compressors, if they are disabled or signalling an alarm. This option is interesting when the electrical consumption or the section of the electrical power supply is limited.
- During the defrosting operation if selected as backup.
- As backup in COOLING mode, in accordance with the return temperature when the latter drops below an offset configured (by default -7ºC).
- As backup in COOLING mode, to raise the supply temperature. The difference between the supply temperature and the ambient temperature is limited to improve the thermal comfort.

13.11. Auxiliary water coil (optional)

The control has a proportional or off/on output (Y2) where a three-way valve can be connected (3-WV) to control a water coil.

This output can also be used to control a proportional electrical heater or gas burner which means that these backup elements are not compatible.

Hot water coil

The hot water coil could be activated under the following circumstances:

- As a backup in HEATING mode, following the input of all the available compressors (by default) or as first control stage.
- As a backup in HEATING mode, in accordance with the supply temperature, when this one drops below the control setpoint (ambient or return).
- During the defrosting operation if selected as backup.
- As a backup in COOLING mode, to raise the supply temperature. The difference between the supply temperature and the ambient temperature is limited to improve the thermal comfort.
- As a backup in COOLING mode, to raise the indoor temperature, when this one drops below an offset configured (by default -5ºC).
- With the unit running or shut down if an anti-freeze alarm is triggered (AL09).
- With the unit stopped when the outdoor temperature drops below a safety value (by default 4ºC). In this case, the pump is activated and the 3-way valve is opened to maintain, in the water coil, a water outlet temperature of 10ºC in ON operating mode and 15ºC in OFF operating mode.

  Important: The pump of the water circuit has to be activated whenever the 3-way valve is switched on. To do this, it's necessary to configure like "pump", the output NO7 of the main board, or the outputs NO1 or NO4 of the c.pCOe expansion card with address 8. This configuration is performed on a screen of the Group **07. Manufacturer Par.** (protected by level 3 password).

  It's the installer's responsibility to connect the pump to the electronic control, except with the factory-installed GREAT COLD option.

GREAT COLD

This optional allows the antifreeze protection depending on the water temperature. If the water temperature in the coil drops below 4ºC, the control activates the pump and the 3-way valve opens to 100%. The pump stops when 7°C are reached.

The GREAT COLD option includes:

- A circulation pump factory-installed.
- Probes in the input and the output of the coil, connected to the analogic inputs U3 and U4 of the c.pCOe expansion card with address 8.
- An electrical heating for the piping layout connected to the digital output NO1 of the c.pCOe expansion card with address 8.

Cold water coil

The cold water coil can be activated as a backup in COOLING mode, following the input of all the available compressors (by default) or as first control stage.

13.12. Gas burner (optional)

The control has a proportional output 0/10V (Y2) where a gas burner with proportional actuator can be connected.

The burner connection is managed by the control, in HEATING mode, through an ON/OFF signal of the digital output NO5. In the case of a 2nd burner stage, it's connected on the digital output NO6.

- In cooling-only units, the burner is activates in the same way as an electrical heater with one or two stages.
- In heat pump units it is possible to choose three different methods for controlling the burner. This can be done on the screen **14.Burner/Boiler** of the MAIN MENU:
  - Operation after compressors as one or two electrical heater stages (both option not compatible).
  - Operation instead of compressors.
  - Operation instead of compressors if the outdoor temperature is lower than the value set (5ºC by default).

When the return temperature drops below the value setpoint, the burner will start to operate. The power control is carried out in accordance with the temperatures of the supply air and return air. The control compares both temperatures. If the supply temperature is excessively high, the control limits the power supplied by the burner despite the demand. This comparison avoids the stratification of the hot air masses and keeps the supply temperature below the safety value (55ºC by default), which stops the burner.

Moreover, the control compares the supply temperature and the ambient temperature to improve the feeling of thermal comfort.

The gas burner integrates its own operating control, as well as its own safety devices. The Vectic control receives a safety signal from the burner in the event of failure (digital input DI5). This signal only indicates the failure.

13.13. Gas boiler (optional)

The control has a proportional output 0/10V (Y2) where a gas boiler with proportional actuator can be connected.

The boiler connection is managed by the control, in HEATING mode, through an ON/OFF signal of the digital output NO5.

- In cooling-only units, the boiler is activates in the same way as an electrical heater with one or two stages.
- In heat pump units it is possible to choose three different methods for controlling the boiler. This can be done on the screen **14.Burner/Boiler** of the MAIN MENU:
  - Operation after compressors as one electrical heater stage (both option not compatible).
  - Operation instead of compressors.
  - Operation instead of compressors if the outdoor temperature is lower than the value set (5ºC by default).

When the return temperature drops below the value setpoint, the boiler will start to operate. The power control is carried out in accordance with the temperatures of the supply air and return air. The control compares both temperatures. If the supply temperature is excessively high, the control limits the power supplied by the boiler despite the demand. This comparison avoids the stratification of the hot air masses and keeps the supply temperature below the safety value (55ºC by default), which stops the boiler.

Moreover, the control compares the supply temperature and the ambient temperature to improve the feeling of thermal comfort.

The gas boiler integrates its own operating control, as well as its own safety devices. The Vectic control receives a safety signal from the boiler in the event of failure (digital input DI5). This signal only indicates the failure.

Important: The Vectic control manages the start-up and stop of the circulation pump of the water circuit. The pump will start-up 10 seconds before the boiler. The pump stop will be delayed 180 seconds with regard to the boiler.

13.14. Heat recovery coil (optional)

The control has a proportional output (Y2) where a three-way valve can be connected (3-WV) to manage a heat recovery coil.

Note: the 3-way valve is supplied for installation outside of the unit.

Electronic regulation uses the same inputs and outputs for the management of the heat recovery coil (HRC) and the hot water coil (HWC), so these elements are not compatible.

The function of the heat recovery coil is to pre-heat the air that will pass through the main indoor coil. For this, it uses the temperature of an outdoor water installation.

The priority of the activation of this coil with respect to the compressors is established by means of a parameter.

13.15. Condensate pump (optional)

A condensate pump can be connected on the output NO12. It's available for units with one circuit. The pump level float is connected on the digital output DI09. The parameters for pump control are set on the screen CU22 of the Group **07. Manufacturer Par.** (protected by level 3 password).

13.16. Rotary heat exchanger (optional)

The control can manage a rotary heat exchanger connected on the output NO7 of the main board, or on the outputs NO1 or NO4 of the c.pCOe expansion card with address 8.

This configuration is performed on a screen of the Group **07. Manufacturer Par.** (protected by level 3 password).

The management may be:

- **On-off:** this will function whenever there is demand for COOLING or for HEATING and when the temperature conditions for outlet, return and mixing air allow for an opening of the fresh air damper of 5% for a period of time greater than 10 seconds (by default).
- **Variable:** the variable wheel speed will depend on the minimum value of the exhaust temperature and the recovery temperature on the wheel. If this value is lower to 6°C, the speed of the wheel decreases until reaching a minimum value fixed of 10% when the temperature is lower to 1°C (by default).

  The control of the wheel speed is carried out via a 0/10V (U9) proportional output on the c.pCOe expansion card with address 8.

13.17. Meter of power energy (optional)

The control can manage an energy meter so that the readings it makes are visualized on the VecticGD terminal.

The energy meter can be connected on the RS485 Field-bus of the control board, with address 5 (19200 bps, 8 bits of data, 2 stop bits without parity).

Calculation of the cooling/heating capacities

To perform this calculation, it's necessary to connect two RS485 enthalpic probes: one for the mixing air (placed before the indoor coil) and other for the supply air (placed after the indoor coil). These probes also provide seasonal energy performance coefficients in COOLING (SEER), HEATING (SCOP) and AUTO (SPERF) modes. Data is stored in board's memory in case of a power outage on the unit (backup every 2 hours).

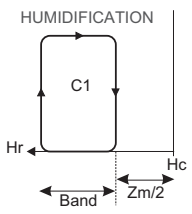
These probes will be connected on the Field-bus of the control board via two RS485 cards, with address 132 for the mixing probe and address 133 for the supply probe.

13.18. Humidification (optional)

The control can manage an on/off humidifier connected on the output NO7, or on the outputs NO1 or NO4 of the c.pCOe expansion card with address 8. This configuration is performed on a screen of the Group **07. Manufacturer Par.** (protected by level 3 password).

A humidifier with proportional control can be connected on the 0/10V output (U9) of the c.pCOe expansion card with address 8 or on the 0/10V output (Y2) of the main board.

The control of the safety devices and alarms is carried out by the humidifier. The humidifier operating signal is produced when the relative humidity of the return air is lower than the humidity setpoint established (55%) minus the differential (5%).



Hr: Relative humidity of return air
Hc: Humidity setpoint
Zm: Dead zone
Band: Humidity control band

14 - OPTIONAL FUNCTIONS OF THE CONTROL

14.1. Control of the supply air temperature

The control of supply is activated when two circumstances are fulfilled:

- The supply temperature is included between the maximum and minimum values of supply setpoints.
- The difference between the supply temperature and the ambient temperature is lower than the offset set. The ambient probe improves the supply temperature control, limiting the difference between both temperatures. It increases the thermal comfort level of the installation.

Control in summer (COOLING mode)

The control of the **minimum temperature limit** in the supply air prevents excessively significant drops in the ambient temperature.

This setting is important for units with automatic switching between COOLING and HEATING mode, with low outdoor temperatures and hot water coil, to avoid the risk of freezing of the coil if the unit starts to operatue in COOLING mode.

In COOLING mode, the control is activated when the supply temperature is included between the maximum and minimum setpoint, and the difference with the ambient temperature is lower than the offset set:

- Minimum setpoint in COOLING mode: 10ºC
- Maximum setpoint in COOLING mode: 22ºC
- Offset with regard to the ambient temperature measured: 15ºC
- Control band (differential): 5ºC

  For example:

  Ambient T: 30,5ºC - Offset: 15ºC = 15,5ºC -> control On

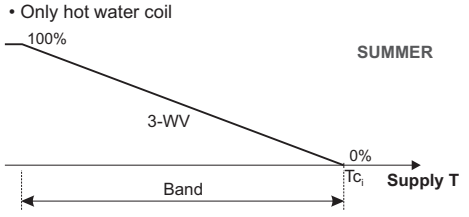
  Ambient T: 24,0ºC - Offset: 15ºC = 9,0ºC -> control Off

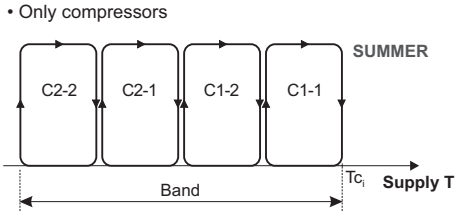
The compressors will gradually disconnect to avoid an excessively low supply temperature.

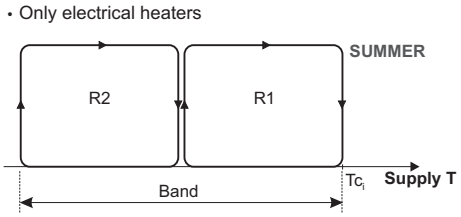
The following components could be used as “Backup” to increase it: hot water coil (V3V), compressors in HEATING mode (C) and electrical heaters (R).

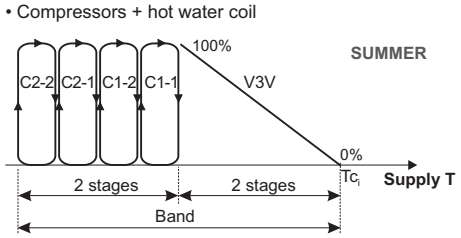
The control band of the supply temperature (by default 5ºC) is divided between the «number of components» authorised to function as “Backup”.

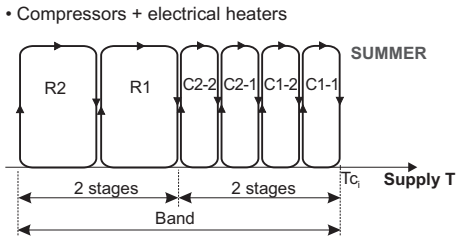
Note: On units with RS485 T+RH probe (optional) the supply temperature can be controlled so that it does not drop below the measured dew point temperature in the room. For this purpose, the control will disconnect the necessary compressors. This function is activated on the screen CU21a of the group **07. Manufacturer Par. → a. Unit Config.** (protected by level 3 password).











Where:
SupplyT: supply temperature
Tc_s : supply temperature setpoint

Control in winter (HEATING mode)

The control of the **maximum temperature limit** in the supply air avoids the stratification of the hot air masses.

In HEATING mode, the control is activated when the supply temperature is included between the maximum and minimum setpoint and the difference with the ambient temperature is higher than the offset set:

- Minimum setpoint in HEATIING mode: 30ºC
- Maximum setpoint in HEATIING mode: 45ºC
- Offset with regard to the ambient temperature measured: 22ºC
- Control band (differential): 5ºC

  For example:

  Ambient T: 17,5ºC + Offset: 22ºC = 39,5ºC -> control On

  Ambient T: 24,0ºC + Offset: 22ºC = 46,0ºC -> control Off

The backup stages and the compressors will be disconnected (always starting with the electric heaters) within the control band (by default 5ºC).

The control of the **minimum temperature limit** in the supply air actives compresors in HEATING mode, hot water auxiliary coil or electrical heater (in the order of entry established for HEATING mode), to prevent a drop of supply temperature bellow the ambiente temperature setpoint in HEATING mode (by default 21ºC).

This control avoid the risk of freezing of the coil, for units with low outdoor temperatures and hot water coil.

If the unit is working in HEATING mode, when there is demand of free-cooling in winter, the control of minimun supply temperature changes and it is carried out as a fonction of the setpoint of minimun supply temperature in COOLING mode (10ºC by default).

Note: when the control of supply is activated, on the screens P01 and P02 of the group **01. Unit status** the text “LIMIT” appears intermittently.

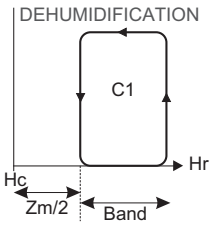
14.2. Basis dehumidification (standard)

This humidity control does not need any additional elements to the control, as it is managed by acting on the compressors. It is configured on some screens of the Group 07. **Manufacturer Par.** (protected by level 3 password).

This function is carried out by turning on the compressors in COOLING mode when the relative humidity of the return (or ambient) air is greater than the humidity setpoint established plus the differential.

If the unit incorporates any auxiliary heating element (electrical heater, hot water coil or burner) it will be activated to reheat the air if necessary.

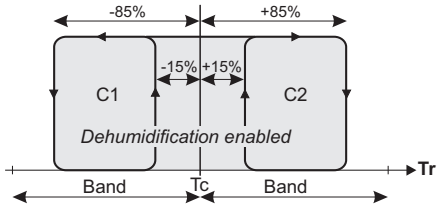
The compressors are stopped when they enter into the dead zone.



Hr: Relative humidity of return air
Hc: Humidity setpoint
Zm: Dead zone
Band: Humidity control band

Note: In the event that several compressors have been selected in dehumidification, these will start or stop through the same dehumidification stage.

To ensure that the compressors can control humidity, the return air must have a temperature ranging between the setpoint ±15% of the temperature differential and the setpoint ±85% of the temperature differential, as indicated in the following chart.



Tr: return temperature
Tc: setpoint temperature
Band: temperature control band

COOLING mode
Tc = 26.0ºC, Band = 2ºC
85% = 1.7ºC, 15% = 0.3ºC

OFF dehumidification < 24.3ºC
ON dehumidification > 25.7ºC
ON dehumidification < 26.3ºC
OFF dehumidification > 27.7ºC

HEATING mode
Tc = 21.0ºC, Band = 2ºC
85% = 1.7ºC, 15% = 0.3ºC

OFF dehumidification < 19.3ºC
ON dehumidification > 20.7ºC
ON dehumidification < 21.3ºC
OFF dehumidification > 22.7ºC

If the value *"% return temperature ON dehumidification"* is equal to the value *"% return temperature OFF dehumidification"*, this graphic is not taken into account for the dehumidification, and the dehumidification by temperature is not limited.

14.3. Active dehumidification (optional)

The control manages the active dehumidification using the c.pCOe expansion card with address 8.

The configuration of this fonction is performed on some screens of the Group **07. Manufacturer Par.** (protected by level 3 password).

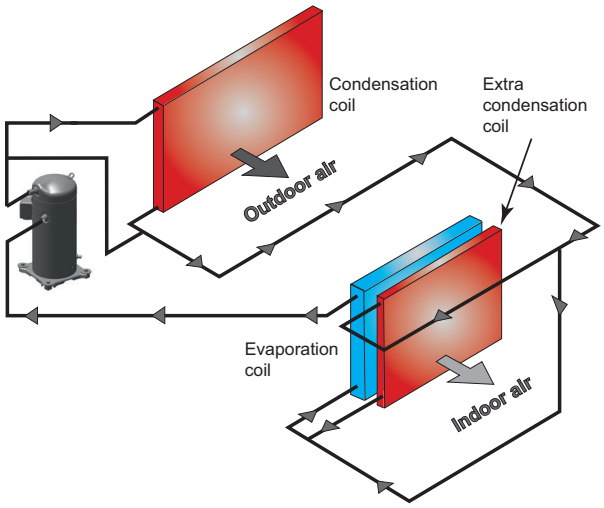
Note: the indoor humidity probe must be selected to enable the active dehumidification.

The PJ unit can incorporate an extra condensation coil for dehumidification applications in high relative humidity ambients.

The dehumidification process is done by the main refrigerant coil. Hot gas recovered is injected in the additional condensation coil to reheat the air.

The use of the extra condensation coil to reheat the air after the evaporator provides a flexible and efficient operation. Energy recovery is controlled using 3-way-valve to accurately compensate for the room demand.

Besides, the connection of this additional condensation coil allows the subcooling mode to satisfy part load type conditions when there is a space need for cooling and dehumidification.



This option also allows an additional reheating using the auxiliary electrical heaters (optional).

Influence of selection conditions

Dehumidification capacity is strongly influenced by different factors:

- Supply airflow: the lower airflow, the higher dehumidification capacity.
- Relative humidity set-point: the influence of humidity setpoint is key. The higher set-point, the higher dehumidification capacity.

Operating logic

Setpoint of ambient temperature in HEATING mode Tc = 21ºC

Setpoint of ambient temperature in COOLING mode Tc = 26ºC

Setpoint of ambient humidity Hc = 50%

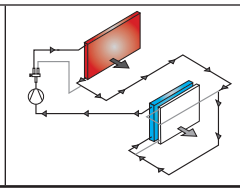
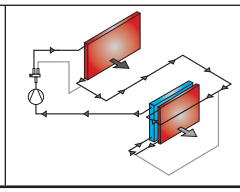
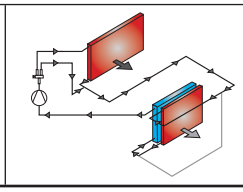
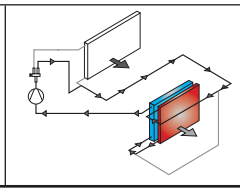
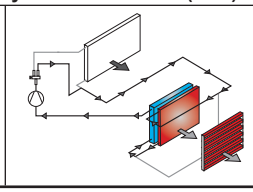
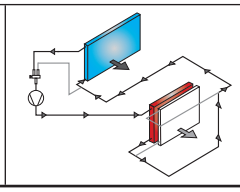
Note: In the neutral zone, i.e. with an ambient temperature between the COOLING or HEATING modes setpoints, the unit will not operate in any operation mode.

When the management of the active dehumidification is activated, the control performs the following functions:

- Dehumidification control takes precedence over temperature control.
- P+I humidity control.
- Control of the proportional 3-way valve (3-WV) of the extra condensation coil with dehumidification demand, depending on the ambient temperature and the setpoint of the selected mode (COOLING mode or HEATING mode).
- The external fans will be disconnected with the 3-WV open at 100%. In the 2-circuit units only the fans of the affected circuit will be disconnected.
- Control of the SV1 solenoid valve which is activated when the cycle reversing valve is activated (COOLING mode), provided that one of the following conditions IS FULFILLED:
  - No demand for DEHUMIDIFICATION.

- The circuit is not in DEFROSTING operation.
- Not during the first 300 seconds of the start of the compressor with the cycle reversing valve activated (COOLING mode).
- Not during the first 300 seconds after overcoming 40.0 bar of pressure.

- Control of the SV2 solenoid valve which is activated when the cycle reversing valve is activated (COOLING mode), provided that one of the following conditions IS FULFILLED:
  - Demand for DEHUMIDIFICATION.
  - The circuit is in DEFROSTING operation.
  - During the first 300 seconds of the start of the compressor with the cycle reversing valve activated (COOLING mode).
  - During the first 300 seconds after overcoming 40.0 bar of pressure.

Inddor conditions		*SV1*	*SV2*	*3-WV*
Condition 1: Cooling				
T > Tc H < Hc		Open	Closed	0%
Condition 2: Subcooling				
T > Tc H > Hc		Closed	Open	0%
Condition 3: Dehumidification + partial re-heat				
T < Tc H > Hc		Closed	Open	Open 0...100%
Condition 4: Dehumidification + 100% re-heat				
T < Tc H > Hc		Closed	Open	Open 100%
Condition 5: Dehumidification + 100% re-heat + auxilary electrical heater (E.H.)				
T < Tc H > Hc		Closed	Open	Open 100% + E.H.
Condition 6: Heating				
T < Tc H < Hc		Closed	Closed	0%

Legend:

T: Ambient temperature
Tc: Ambient temperature setpoint
H: Ambient humidity
Hc: Ambient humidity setpoint

Note: the active dehumidification is not compatible with the hot water coil, the gas boiler, the gas burner, the air zoning and the 100% fresh air units (PJ units with CF assembly).

14.4. Low return temperature application

This function allows to blow air with low temperature attending to the demands of the installation when is the unit operated in COOLING mode.

To do this, the evaporation control of the indoor unit is managed. This allows to adjust the supply air flow according to the return temperature.

14.5. Outdoor temperature compensation

This function allows the setpoint temperature to vary in accordance with the temperature measured by the outdoor air probe.

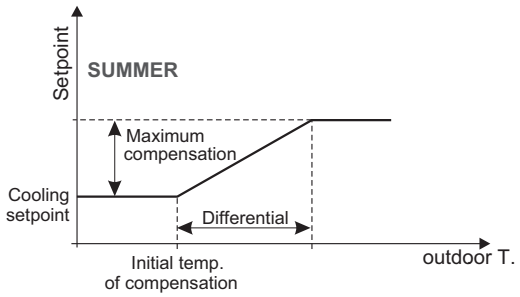
The outdoor temperature compensation rules are different for HEATING and COOLING mode operation.

The compensation of the setpoint enables thermal “shock” between the inside and outside of the premises to be prevented whilst at the same time providing significant energy savings when the outdoor temperature values are particularly significant for ambient temperature control.

COOLING mode (Summer)

The compensation function increases the setpoint temperature when the outdoor temperature increases.

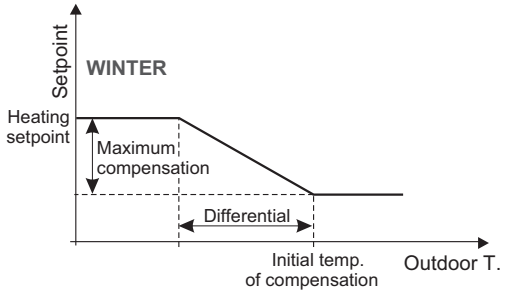
- Minimum outdoor temperature to start compensation = 30ºC
- Compensation differential that determines the variation band of outdoor temperature = 5ºC
- Maximum increase in the temperature setpoint alloweda = 5ºC



HEATING mode (Winter)

The compensation function decreases the setpoint temperature when the outdoor temperature decreases.

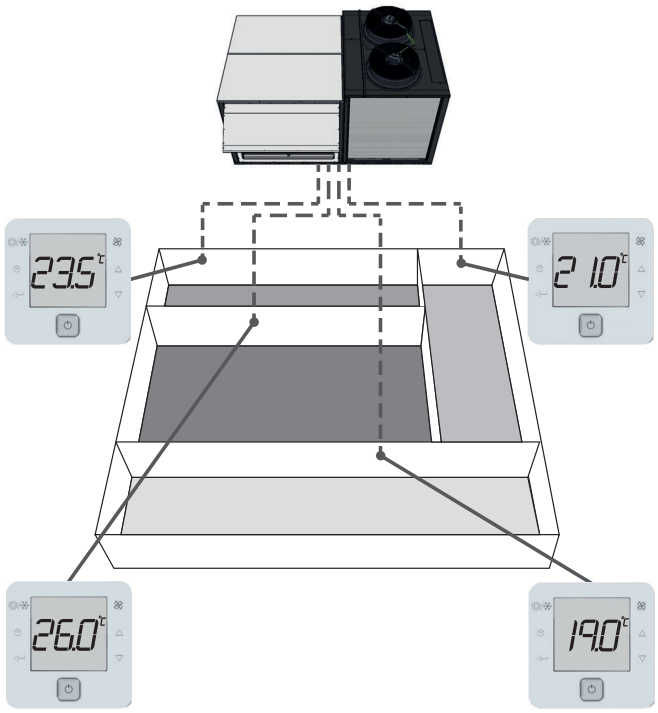
- Maximum outdoor temperature to start compensation = 0ºC
- Compensation differential that determines the variation band of outdoor temperature = 5ºC
- Maximum decrease in the temperature setpoint allowed = 5ºC



14.6. Zoning of the air flow

This option allows the management of the air flow of the unit to condition up to 4 different zones with a minimum air flow of 35% (all of them in same operating mode: heating or cooling).

Vectic control gives the control signal to the dampers installed in each zone (dampers and servomotors for those dampers not supplied). The unit modifies the air flow and capacity depending on information coming from sensors in each zone and considering active zones in each moment.



The option includes 4 zone terminals (one for each zone) and a control board supplied in an independent box. The 4 terminals, the unit's main board and also the servomotors that control dampers in each zone are connected on this board (dampers and servos not supplied).

The temperature information for each zone is coming from temperature sensor integrated inside each zone terminal. It is not needed to install any extra ambient sensor.

Characteristics	
Number of zones	up to 4
Type of fans	Plug-fan
Components included	4 zone terminals and a control box
Dampers and servos per zone	not supplied
Control signal for dampers / servos	supplied
Control of the damper for each zone	yes, control carried out by the electronic control
Terminal in each zone	yes
Minimum air flow	35%
Capacity control	Based on the ambient temperature conditions of each zone terminal (by default) or the return temperature (optional)

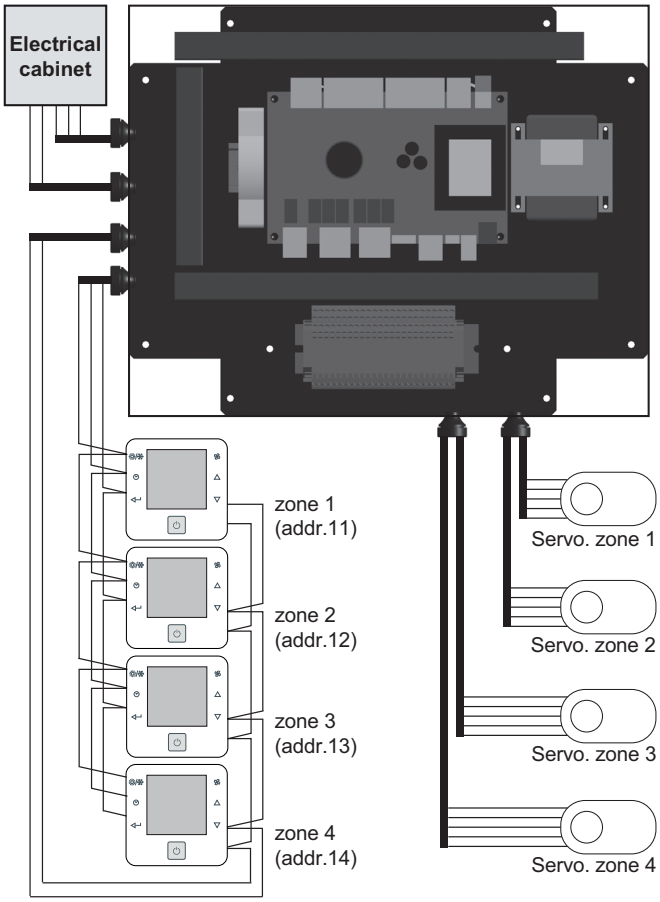
In case the unit includes enthalpy or thermoentalpic free cooling (T+H control) an extra return T+H sensor in the offer is required.

If the unit additionally includes a CO_2 air quality probe, it must be a return probe and not an ambient probe.

Connections of the zoning box

The control board for air zoning is assembled in a separate box.

This board is connected in series on the Field-Bus of the main board of the Vectic control, located in the electrical cabinet of the unit.



The installer must carry out the following connections:

- **Connection of the zone terminals:**
  - Power supply at 230Vac 50/60Hz (L&N): 2 wires (section 0.5 at 1.5 mm²).
  - Communication (RX+/TX+ & RX-/TX-): shielded cable type AWG20 or AWG22 with 1 braided pair + drainwire + shielding (e.g., model BELDEN 7703NH).

  Zone terminals can be installed at a maximum distance of 100 metres from the zoning box.

  These terminals are configured with their corresponding address in the factory. In the unlikely event of a communications failure the screen will display "Cn". Please make sure to check connections and the firmware version.

- **Connection de the servomotores for the supply dampers:**
  - 5 wires (section 0.5 at 1.5 mm²), supply 24Vac.

- **Connection to the electrical cabinet of the unit:**
  - Power supply: 230Vac ((L&N): 2 wires (section 0.5 at 1.5 mm²).
  - Communication (RX+/TX+ & RX-/TX-): shielded cable type AWG20 or AWG22 with 1 braided pair + drainwire + shielding (e.g., model BELDEN 7703NH).

Note: Please refer to the wiring diagram provided with the unit to get more detailed information about the wiring.

Note: the air zoning is not compatible with the active dehumidification or the function of Increase of air flow for renewal with CO_2 probe.

14 - OPTIONAL FUNCTIONS OF THE CONTROL

Operating mode

The unit modifies the air flow and capacity depending on information coming from sensors in each zone and considering active zones in each moment.

A different flow rate can be set for each zone. The sum of these flows must be found within a range:

- Maximum total flow: by default 100%.
- Minimum total flow: by default 35%. A minimum air flow below 35% can never be set to ensure the proper functioning of the unit. Although the flow demanded by the active zones is less than 35%, the unit will operate with this flow.

The electronic control will mange the air flow and the capacity depending on:

- The number of active zones.
- The sensors of the cooling circuits.
- The probes of ambient temperature built-in the zone terminals (the location of the terminal is important for the measured value) or the CO_2 air quality probe (optional).
- The setpoints of temperature in COOLING mode and HEATING mode set by the user for each zone. In this case the control will use the minimum setpoint in COOLING mode and the maximum setpoint in HEATING mode. It is also possible to activate, by parameter, an AUTO mode for changing the operating mode.

According to the obtained values, the Vectic control will order the opening or closing of the supply dampers of each zone independently (dampers and servos not supplied)

Note: if a unit incorporates the CO_2 probe and is stopped because there is no temperature demand, when a CO_2 demand appears it is activated with 100% flow and all the dampers open until the CO_2 demand ends or there is some zone with temperature demand.

Activation of the zoning option

The zoning option is selected on the screen CU12d of the group **07. Manufacturer Par. → a. Unit Config.** (protected by level 3 password):

```
                          CU12d
Enable zoning
by variable:              N
by dampers:               N
by TCO 4 zones:           Y
```

The zone terminals are configured in the following screen:

```
                          CU01z

TCO Thermostat 1          Y
TCO Thermostat 2          Y
TCO Thermostat 3          Y
TCO Thermostat 4          Y
Control by ret. sensor
z1:N z2:N z3:N z4:N
```

Note: The control allows the use of return probes connected on the zoning board instead of the ambient temperature probes incorporated inside the zone terminals (optional upon request).

Zone terminals

These terminals are the same as the user's terminal (optional).

In addition to view the main screen, it is possible to display other screens through the set that is activated by pressing the ◁┘ key.

The following values will be shown with each press:

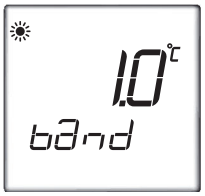
The main screen shows the ambient temperature, current operating mode of the unit, time and day of the week.

The next screen displays the set point temperature set for this zone in the active mode (HEATING or COOLING) next to the text: **set**.

The temperature setpoint for this zone can be modified with the △ ▽ keys.

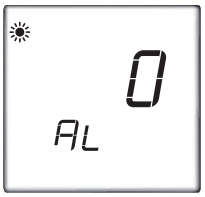
Note: The operating mode of the unit is modified in the VecticGD terminal.

This screen shows the zone that corresponds to the terminal.



This screen shows the regulation band associated with the temperature setpoint.

The regulation band for this zone can be modified with the △ ▽ keys.



This screen shows if there is an active alarm by means of a code.

Refer to the codes in the "alarms list".

This display shows the delay set for the opening/closing of the damper.

This delay an be modified with the △ ▽ keys.

These terminals allow the scheduling. Consult the chapter "Time scheduling" for more information.

Setpoints in the VecticGD terminal

It is also possible to modify the setpoints of the zone terminals in the VecticGD terminal. This fonction is performed on some screens of the Group **03. Setpoints** (MAIN MENU).

The first screens displayed of this group will allow the selection of the setpoints for each zone:

```
          Zone 1          S01zn
Temp. control
setpoint
Summer              25.5°C
Winter              22.0°C
```

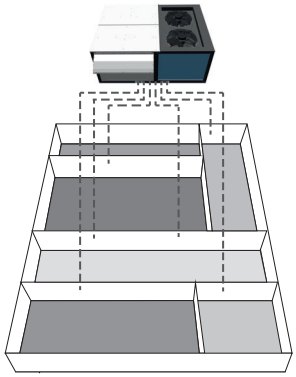
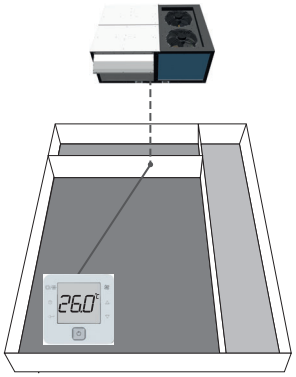
With the air zoning, the control use the minimum setpoint in COOLING mode and the maximum setpoint in HEATING mode, among all the setpoints in the 4 zones. The S01 screen displays these setpoints and their value cannot be changed.

14.7. Constant supply pressure

This multi-zone management solution keeps the air flow constant by using a differential pressure sensor.

This type of management eliminates the restriction of the number of zones, which facilitates a greater adaptation to the characteristics of the installation, although the customer must carry out the control of dampers in each zone.

It is also possible to choose between two different configurations:

Configurations	
Capacity control based on the return conditions (by default)	Capacity control based on the environment conditions (configurable)
Several zones	Several zones (one main zone)
Same comfort priority by zone	One main zone. Comfort of all zones depends on the demand of the main zone
	

These are the main characteristics of this multi-zone solution:

Characteristics	
Number of zones	Unlimited
Type of fans	Plug-fan
Components included	Differential pressure sensor (range 0 - 1000 Pa)
Dampers and servos per zone	Not supplied
Control signal for dampers / servos	Not supplied (external control required)
Control of the damper for each zone	No (at customer level)
Terminal in each zone	No or just one for the main zone (see "Configurations")
Minimum air flow	35% or 10% in ventilation mode (operating only the fans). There is an associated alarm in case of lower airflow. It is necessary to set the minimum damper opening per zone or provide remote stop control in case all dampers are closed
Capacity control	• Based on the return conditions (by default) • Based on the environment conditions (configurable), in case of a main zone (see "Configurations")

In case the unit includes enthalpy or thermoentalpic free cooling (T+H control) an extra return T+H sensor in the offer is required.

If the unit additionally includes a CO_2 air quality probe, it must be a return probe and not an ambient probe. There is only one case in which the ambient air quality probe can be used: with constant supply pressure and capacity based on the environmental conditions of the main zone.

Connections

The sensor, factory supplied, has a measuring range of 0-1000 Pa and output 4-20 mA, and it is connected to the analog input B2 of the c.pCOe expansion module with address 9.

This sensor must be installed with one intake open to the environment and the other one connected to the supply duct.

To calculate the appropriate distance (D) between the supply mouth and the intake in the duct, the following recommendations should be followed:

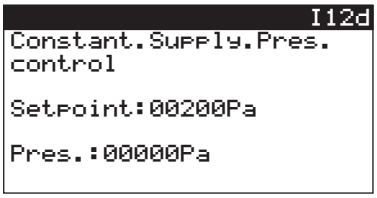
- If the intake is connected in a circular duct:
  D = 2 x Ø
- If the intake is connected in a rectagular duct (L1 x L2):
  D = 2 x [(2 x L1 x L2) / (L1 + L2)]

Important: The customer must take care of the installation of the zone terminal (if located) and the control of the zone damper.

Operating mode

The use of a differential pressure sensor allows to control the air flow to maintain the pressure in the supply duct constant, with the setpoint value set by parameter (by default 200 Pa).

The setpoint can be modified on a screen of the group **06. Inputs/ Outputs** (MAIN MENU).

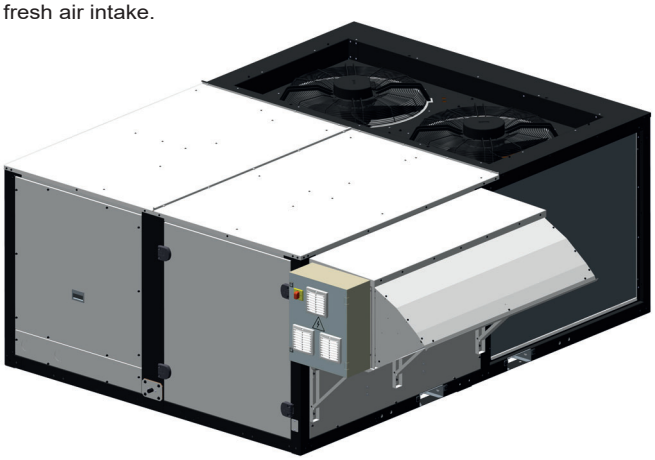


A minimum flow rate must be taken to ensure the proper functioning of the unit. This means the following:

- With compressors and other support elements of the unit running: disconnection below 35% of nominal flow rate (timed 480 seconds).
- With compressors stopped: disconnection below 10% of nominal flow rate (timed 120 seconds).

14.8. Preheater in fresh air

With 100% fresh air units (PJ units with CF assembly), it is possible to incorporate a preheater module (electrical heater) coupled to the fresh air intake.



An electrical heater with proportional control will modulate capacity to get the condenser inlet conditions within the operating limits of the cooling circuit in case of very low outdoor temperatures.

With the unit working in HEATING mode, when the outdoor temperature drops below 10°C, the electrical heater can be activated.

The control is carried out according to:

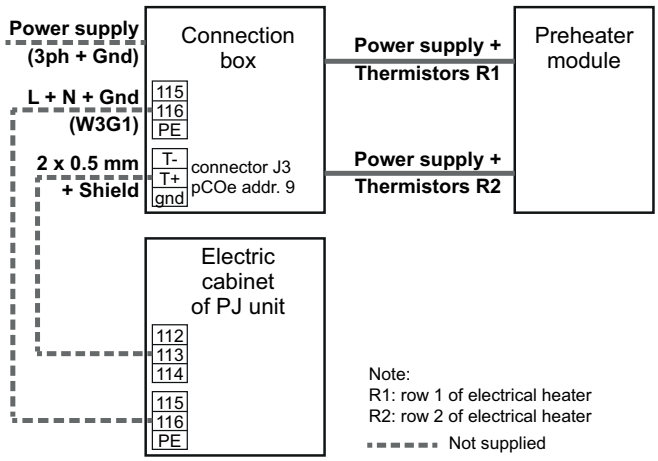
- The temperatures of the supply air and the return air.
- The minimum and maximum temperatures allowed for fresh air intake.

The control manages this module using the c.pCOe expansion card with address 9. The configuration of the preheater is performed on some screens of the Group **07. Manufacturer Par.** (protected by level 3 password).

Electrical connection of the module:

The preheater module is supplied in kit for installation on site. The electrical connection of the kit is the responsibility of the installer.

Note: Please refer to the wiring diagram provided with the PJ unit to get more detailed information about the wiring.



15.1. Defrosting function

When the unit is working in HEATING mode, the defrosting of the outdoor coils is performed by cycle inversion in order to remove any ice which has accumulated on them.

In 2-circuits units the defrosting procedure will be independent, i.e., the one will not start until the first one finishes.

Defrosting is carried out in the following cases:

- **Defrosting by minimum pressure**

  When the pressure measured by the low pressure transducer drops below 2,5 bar (R410A) or 2,2 bar (R454B) (by default).

  Note: If the unit tries to perform a 4th defrosting operation in less than an hour, this could be due to a lack of refrigerant caused by a small leak or failure in the expansion valve, which means that the control will trigger a low pressure alarm. This safety device is reset manually.

- **Defrosting by difference with the outdoor temperature**

  The defrosting function is activated if the difference between the outdoor temperature and the evaporation temperature exceeds 16ºC (by default).

  In addition to this condition, always it is necessary that:

  - The outdoor temperature is lower than 10ºC.
  - The pressure measured by the low pressure transducer is lower than the initial value for defrosting, 5,6 bar (R410A) or 5,0 bar (R454B).
  - The pressure is not rising.
  - The time that must elapse from the last defrosting of the affected circuit has been excelled, 20 minutes.
  - The time that must elapse from the last defrosting of another circuit (units with 2 circuits) has been excelled, 90 seconds.

  Note: There is the possibility of a defrosting by time (rescue defrosting), so that if the pressure measured by the low transducer is less than 5,6 bar (R410A) or 5,0 bar (R454B) for a time of more than 3 hours (180 min), a defrosting is made without taking into account the difference of 16ºC with the outdoor temperature (configurable by parameters).

Defrosting operation

- **Starting defrosting**

  If one of the last cases is met, once the delay has elapsed at the start of defrosting, 120 seconds, the shut-down of the compressors will be triggered.

  The regimen will be changed 30 seconds after the compressors are stopped, giving power to the 4-way valve. The compressors will be started up after 15 seconds, so that they can perform the defrosting procedure.

  During the defrosting operation, the behaviour of the other unit components will be as follows:

  - The supply fan will continue to operate.
  - the outdoor fans will be connected when a set pressure of 35 bar (R410A) or 32,2 bar (R454B) is exceeded, if the outdoor temperature is greater than -5ºC. They will be disconnected if the pressure drops below 33 bar (R410A) or 30,4 bar (R454B) the outdoor temperature drops below -6ºC or a maximum connection time elapses.

    This action enables prolonging the duration of defrosting and, as such, the ice accumulated on the coil is completely removed.

    In the case of 1-circuit units with an outdoor coil temperature probe (optional) a special configuration for the outdoor fans is possible: they will be connected when a pressure of 28 bar (R410A) or 25,7 bar (R454B) is exceeded and will not be disconnected until the pressure does not drop below 26 bar (R410A) or 23,8 bar (R454B), the temperature measured in the probe is higher than 5ºC or a maximum connection time elapses. In this case, the duration of the defrosting is also modified (16 minutes).
  - The optional backup device incorporate by the unit can be enabled: electrical heaters, hot water coil, gas burner or boiler.
  - The fresh air damper (optional) will remain closed, except for 100% fresh air units.
  - The electrical heater of the preheating module, optional for 100% fresh air units, will be activated.
  - The rotary heat exchanger (optional) will operate. In this case, the fresh air damper will remain open.

  Note: control of compressors by minimum supply temperature is stopped during the defrosting operation.

- **Ending defrosting**

  The following conditions must be met in order to end:

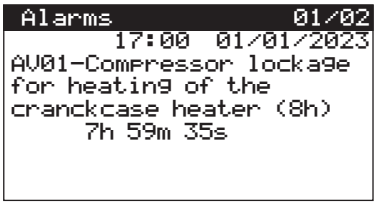
  - By maximum time, after 10 minutes from the start.
  - By pressure, when this exceeds 33 bar (R410A) o 30,4 bar (R454B).
  - By opening the high pressure switch. This alarm will not be indicated.

  When the defrosting operation ends, the compressors stops, the four-way valve is reversed again and, after this, it will be possible to restart the compressors by the normal pressure control.

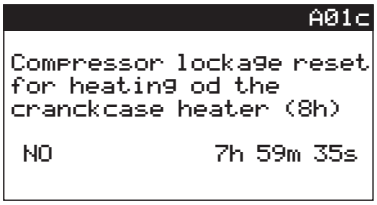
15.2. Compressor lockage

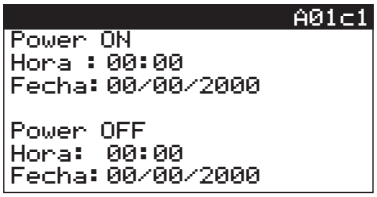
In the event of a power cut-off for a period longer than 2 hours, the compressors will be locked. The unit must remain 8 hours consecutively with voltage to unlock the compressors.

The warning screen on the VecticGD also shows the remaining time until the end of the locking.



From a screen of the Group **08. Service Par. → f. Working Hours** (protected by level 2 password) allows to reset this lockage of compressors, but this shall be recorded in the data register of the control.





15.3. Failure safety of compressors manual motor starters (MMS) (optional)

The c.pCOe expansion modules with addresses 8 or 9 can be used for failure signaling in any of the manual motor starters. This safety can be configured as only an indication or shutdown of the associated compressor (CS15 screen).

15.4. High temperature safety in tandem compressors (optional)

In units with tandem compressors, working in COOLING mode, when the outdoor coil pressure of a circuit overcomes a limit value (41,5 bar by default), one of the two compressors will be stopped, thereby avoiding the stop of both compressors due to the high pressure.

This compressor will start working again if the pressure drops below 36,5 bar.

15.5. High or low indoor temperature safety

The control indicates an alarm event when the indoor temperature (return or ambient) drops bellow 15ºC or exceeds 40ºC.

This alarm is timed at 30 minutes.

15.6. High supply temperature safety

In units with optional electrical heaters or gas burner, when the supply temperature exceeds 55ºC, this optional will be shut down and will not be reconnected until this temperature drops below 53ºC.

15.7. Protection in case of blockage of the supply duct

This protection is enabled by default, on the CU21b screen of the group **07. Manufacturer Par. → a. Unit Config.** (protected by level 3 password):

```
SUPPLY RPM LIMIT    CU21b
(DUCT BLOCKAGE)
Enabling:           YES
DIFF. P. LIM:      015.0%
RPM LIM:           075.0%
RPM SET:           060.0%
DEL. OFF LIM:        045s
```

When the following conditions are met:

- Differential supply pressure < 15% maximum differential pressure.
- Supply fan speed (rpm) > 75% maximum rpm of the supply fan.

The flow reduction is activated by blocking the duct, which entails the following action:

- The supply fan is set to 60% rpm of its maximum speed.
- The AV24 warning is displayed in VecticGD terminal (see alarm table).

Once the conditions are no longer met (duct unlocked), the unit returns to normal operation after 45 seconds (configurable by parameter).

15.8. Anti-fire safety

When the return air temperature exceeds a safety value the anti-fire safety device will be activated (60ºC by default) and the unit will stop. It will not return to operation until the temperature has dropped to below 40ºC.

```
                          CS01

Anti-fire safety
Set: 60.0ºC
Difer.:       20.0ºC
Damper status during
failure:      OPEN
```

In units with fresh air damper it is possible to select the damper position in the event of an anti-fire alarm or when the units incorporates a smoke station (optional) connected to the digital input DI2.

The following functioning logic must be selected to comply with the French regulations on Fire safety (ERP).

- In case of failure of the thermal protection of the supply fan, this fan and all components are stopped, the fresh air damper is open to 100% (return air damper closed). Manual reset.

  Note: this safety is a priority to that of the A2L sensor.
- In case of failure of the thermal protection of the electrical heaters, all components are stopped and the supply fan after 120 seconds, the fresh air damper is open to 100% (return air damper closed). Manual reset.

```
                          CS01a
Anti-fire safety
french ERP:    N

Damper status during
failure: OPEN
Delay shutdown ind.fan
with resist.:120 seg
```

Special anti-fire safety

This functionality allows the selection of the fan flow rate when a fire alarm occurs. It is configured on the CU12c screen of the group **07. Manufacturer Par. → a. Unit Config.** (protected by level 3 password)

It also allows to select manual or automatic reset for the anti-fire safety, on the CA10 screen of the group **f. Alarms Config.**

15.9. Clogged filter detector (optional)

A clogged filter switch can be connected on the digital input DI6.

This protection can be configured for only signalling on the terminal (by default) or to stop the unit.

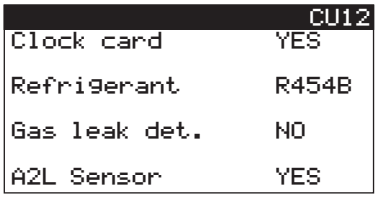
```
Alarms                    01/02
        17:00  01/01/2023
AL23-Clogged filter
(only indication)
```

15.10. R-454B Refrigerant leak detector (standard)

Due to the A2L category of the R-454B refrigerant (lightly flammable), units incorporating this refrigerant require the installation of a leak detector in the indoor circuit. This detector uses infrared instead of semiconductor technology with no need of calibration (self-calibration), with very fast time response, and high lifetime (life cycle: 15 years).

This detector is installed on a panel next to the supply fans. This position ensures the correct reading of the gas concentration in the indoor coil.

The R-454B refrigerant is selected on the screen CU12 of the group **07. Manufacturer Par. → a. Unit Config.** (protected by level 3 password) The "A2L sensor" (leak detector for R-454B) is also activated on this screen.



The working pressures of the cooling circuits are automatically adjusted according to the type of refrigerant.

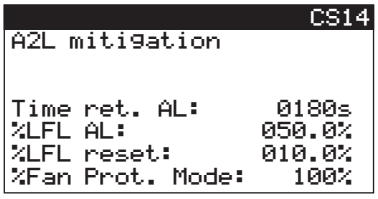
In group **07. Manufacturer Par. → b. Defrost Config.** it is possible to check the value of these parameters:

Screen	Parameter	R-410A	R-454B
CD09	Setpoint to start the defrosting	5.6 bar	5.0 bar
CD09	Setpoint to end the defrosting	33.0 bar	30.4 bar
CD04	Setpoint for start of defrosting by minimal pressure	2.5 bar	2.2 bar

In group **07. Manufacturer Par. → e. Safety Config.** it is possible to check the value of these parameters:

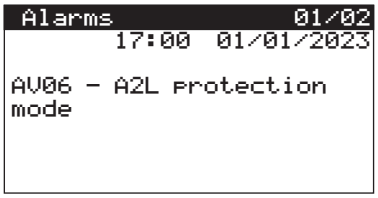
Screen	Parameter	R-410A	R-454B
CS12	Start value of the alarm of low pressure safety	2.0 bar	1.7 bar
CS12	Final value of the alarm of low pressure safety	4.0 bar	3.6 bar

The screen CS14 of the group **07. Manufacturer Par. → e. Safety Config.** shows the parameters of mitigation in case of refrigerant leakage:



- The parameter "Time ret. AL" (by default, 180 seconds) allows setting the delay time so that when a warning appears on the sensor it does not become an alarm. After this period the PROTECTION MODE will be activated.
- The parameter "%LFL AL" (by default, 50%) allows to adjust the percentage of the LFL from which the refrigerant leak failure occurs (ON of the hysteresis cycle). With this value the unit starts operating in PROTECTION MODE.
- The parameter "%LFL reset" (by default, 10%) allows to adjust the percentage of LFL (Lower Flammability Limit) below which the refrigerant leak alarm ends (OFF of the hysteresis cycle). With this value the unit stops operating in PROTECTION MODE.
- The parameter "%Fan Prot. Mode" (by default, to 100%) allows to adjust the percentage of the airflow rate of the indoor fans (supply and also return if available) when the unit starts operating in PROTECTION MODE.

The PROTECTION MODE instantly disables the compressors and support elements, activates the indoor fans (supply and also return if available) at 100% of airflow (parameterizable) and opens the fresh air damper at 100% (if available). This happens temporarily, as long as the leak occurs or the sensor remains in failure. If either of these two conditions ceases, the unit will return to the operating mode it had before the leak (ON, OFF, COOLING, HEATING, VENT, etc.) and the protection mode warning will disappear.



In any case, alarms will be maintained until they are reset from the VecticGD terminal (manual reset).

The alarms related to the leak detector are:

- AL85: A2L sensor without communication.
- AL86: A2L sensor failure.
- AL87: Refrigerant leakage, within the defined hysteresis cycle.
- AL88: Critical alarm, refrigerant leakage and failure of the indoor fan (communication, sensor, etc).

Detectors in the outdoor circuit (optional)

It is possible to install two leak detectors in each of the unit's outdoor circuits. This is necessary when using outdoor fans coupled to a duct (optional upon request). It is configured on the CU17e screen of the group **07. Manufacturer Par. → a. Unit Config.**

The status of these sensors can be viewed on the I19b1 and I19b2 screens of the group **06. Inputs/Outputs**.

If a leak is detected or the sensor is broken/offline, the unit goes into PROTECTION MODE. This mode instantly disables the compressors and support elements, activates the indoor fans (supply and also return if available) at 100% of airflow (parameterizable) and opens the fresh air damper to 100% (if available) and, in addition, activates the outdoor fans (100% if they are electronic fans, at high speed for 2-speeds fans or simply activated in the case of radial fans). This happens temporarily, as long as the leak occurs or the sensor remains in failure. If either of these two conditions ceases, the unit will return to the operating mode it had before the leak (ON, OFF, COOLING, HEATING, VENT, etc.) and the protection mode warning will disappear.

The alarms related to these leak detectors are:

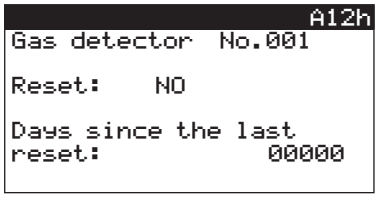
- AL121, AL122 (outdoor circuit 1) and AL126, AL127 (outdoor circuit 2): A2L sensor without communication.
- AL123, AL124 (outdoor circuit 1) and AL128, AL129 (outdoor circuit 2): A2L sensor failure.
- AL125 (outdoor circuit 1) and AL130 (outdoor circuit 2): Refrigerant leakage, within the defined hysteresis cycle.

15.11. R-410A refrigerant leak detector (optional)

In units with R-410A refrigerant, a leak detector can be connected on the RS485 Field-bus of the control board, with address 6 (19200 bps, 8 bits, without parity and 2 stop bits).

When a concentration of gas established by parameter is exceeded, the alarm is activated and the unit is stopped.

The counter of the number of operating hours and days for the refrigerant gas detector is accessed in the Group of screens **08. Service Par. → f. Working Hours** (protected by level 2 password).



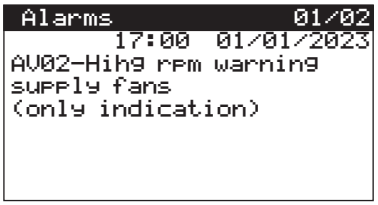
This information is very important to perform the maintenance tasks on the leakage detector:

- Annual test: To comply with the requirements of the EN378 and F GAS is necessary to perform a test of the detector every year.
- Every 3 years: A calibration is recommended.
- Every 5 years: The sensor element of the detector must be changed and calibrated.

15.12. High-speed safety on plug-fans (optional)

The VecticGD terminal can display a warning message when a plug-fan exceed the maximum permissible speed for a period of time longer than 30 minutes (by default).

This safety can be configured as indication only (default) or unit shutdown.



15.13. Protections against low temperature (optional)

The control can manage the following protections by means of the c.pCOe expansion card with address 8:

- Compressor with an additional crankcase heater
- Electrical heater for antifreeze protection of external dampers.
- Electrical heater for protecting the electric panel (1 or 2 stages).
- Hot water coil circuit with the GREAT COLD option. This protection includes an electrical heating for the piping layout.

16.1. Alarm display

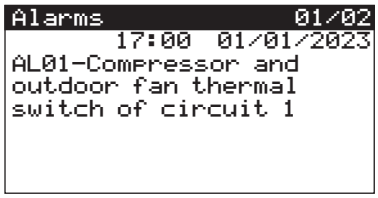
On the VecticGD terminal:

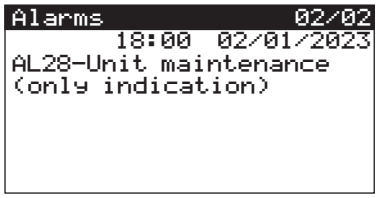
There is/are active alarm(s) if the key is illuminated red.

By pressing the key once, the description of the first alarm will be shown.

By using the keys, the other alarms stored in the memory can be consulted. For example:

For example:





By pressing this key for a second time, the alarm(s) will be reset.

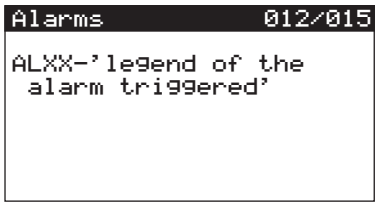
If no alarm is active, the message “No alarm active” appears.

Note: active warnings will also be displayed.

Alarm History

From the MAIN MENU, the group of screens **11. Alarm History** is accessed.

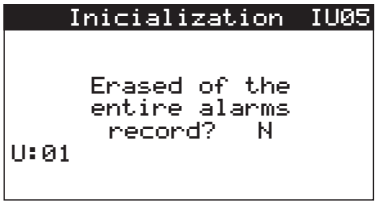
Each screen shows the description of the alarm, together with its date and time, the unit in which the VecticGD terminal is connected (U:01), as well as the ambient (or return) temperature (Tr) and the outdoor temperature existing at the time of the alarm.



By using the keys, the last 100 alarms stored can be consulted.

The failures of electrical power supply also will remain registered.

From a screen of the Group **07. Manufacturer Par.** (protected by level 3 password) is possible to delete the “Alarm History”.



On the TCO terminal (optional):

If the icon appears on the TCO terminal display, there is/are active alarm(s).

In addition to view in the ambient (or return) air temperature on the main display, it is possible to view other values through the set that is activated by pressing the key. One of those values may be an alarm code. If there is more than one alarm is indicated the code of the most important alarm, And below the symbol AL.

With the key, It is possible to write on the display the value “0” in the place of the alarm. Pressing the key will reset inactive alarms and will return to the main display.

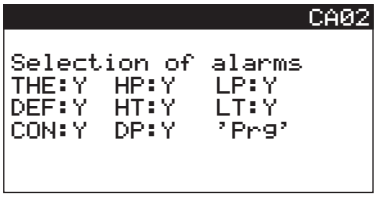
The icon will disappear from the display if there is no active alarm.

16.2. Signalling of remote alarms (optional)

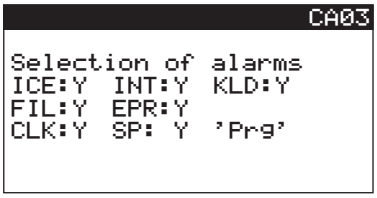
The digital output NO7 can be used to connect an relay for general alarm signalling.

Important: Output NO7 can also be used for the following optional elements: pump in the hot water coil circuit, pump in the boiler circuit, heat recovery coil, on-off humidifier or rotary heat exchanger, so these optional elements are not compatibles. Outputs NO1 or NO4 of the expansion card c.pCOe with address 8 can also be used to connect some of the above optional elements.

The alarms that could activate the relay are selected on the Group **07. Manufacturer Par. → f. Alarm Config** (protected by level 3 password).



THE:	Thermal	HT:	High temperature
HP:	High pressure	LT:	Low temperature
LP:	Low pressure	CON:	Counters
DEF:	Defrost	DP:	Disconnected probes



ICE:	Anti-freeze HWC	FIL:	Clogged filter
INT:	Supply fan safety / plug-fan without communication / anti-fire	EPR:	Eprom not OK
		CLK:	Clock
KLD:	Compr. discharge	SP:	Setpoint Winter / Summer

From these selection screens, by pressing the Prg key, access is given to additional information screens, indicating which alarm the acronym stands for.

16.3. Alarm list

Controlled alarms	Unit shutdown	Affected circ. shutdown	Reset Type	Timing	Actuation	Alarm level (**)	VecticGD	TCO	Add.
Thermal protection of compressors and outdoor fan(s) of circuit 1	No	Yes	Auto (*)	No	Shutdown of circuit 1	1 (2 with manual reset)	AL01	AL1	27
Thermal protection of compressor of recovery circuit	No	Yes	Auto(*)	No	Stop the recovery compressor	1 (2 with manual reset)	AL01a	---	269
Thermal protection of compressors and outdoor fan(s) of circuit 2	No	Yes	Auto (*)	No	Shutdown of circuit 2	1 (2 with manual reset)	AL02	AL2	28
High pressure of circuit 1	No	Yes	Auto (*)	No	Shutdown of circuit 1	1 (2 with manual reset)	AL05	AL5	29
High or low pressure of recovery circuit	No	Yes	Auto (*)	No	Stop the recovery compressor	1 (2 with manual reset)	AL05cr	---	118
High pressure of circuit 2	No	Yes	Auto (*)	No	Shutdown of circuit 2	1 (2 with manual reset)	AL06	AL6	30
Safety alarm of the rotary heat exchanger	No	No	Manual	No	Stop the rotary heat exchanger	1	AL07a	AL701	---
Maintenance of recovery compressor	No	No	Manual	No	Only indication	0	AL08	AL8	119
Anti-freeze alarm of hot water coil	Yes (in COOLING)	Yes, all circuits (in COOLING)	Manual	Yes, 2 s	HEATING mode: this closes fresh air damper and opens hot water coil valve COOLING mode: this stops compressors and closes fresh air damper	2	AL09	AL9	31
High indoor temperature	No	No	Auto	Yes (progr.)	Only indication	0	AL10	AL10	34
Low indoor temperature	No	No	Auto	Yes (progr.)	Only indication	0	AL11	AL11	35
Low pressure of circuit 1 (possible gas leak in the circuit)	No	Yes	Auto (*)	No	Shutdown of circuit 1	1 (2 with manual reset)	AL12	AL12	38
Low pressure of recovery circuit	No	Yes	Auto	Yes, 15 s (progr.)	Stop the recovery compressor	0 (1 with manual reset)	AL12cr	---	267
Low pressure of circuit 2 (possible gas leak in the circuit)	No	Yes	Auto (*)	No	Shutdown of circuit 2	1 (2 with manual reset)	AL13	AL13	39
Low pressure due to continuous defrosting by min. pressure of circuit 1 (possible gas leak in the circuit)	No	Yes	Auto (*)	No	Shutdown of circuit 1	1 (2 with manual reset)	AL12b	AL1202	225
Low pressure due to continuous defrosting by min. pressure of circuit 2 (possible gas leak in the circuit)	No	Yes	Auto (*)	No	Shutdown of circuit 2	1 (2 with manual reset)	AL12c	AL1203	226
Maintenance of compressor 1 - circuit 1	No	No	Manual	No	Only indication	0	AL16	AL16	36
Maintenance of compressor 1 - circuit 2	No	No	Manual	No	Only indication	0	AL17	AL17	37
Maintenance of compressor 2 - circuit 1	No	No	Manual	No	Only indication	0	AL18	AL18	122
Maintenance of compressor 2 - circuit 2	No	No	Manual	No	Only indication	0	AL19	AL19	123
Thermal protection of supply fan	Yes	Yes, all circuits	Manual	0 s	Serious alarm, unit shutdown	3	AL20	AL20	40
Failure of high pressure transducer of circuit 1	No	Yes	Auto	No	Shutdown of circuit 1	1 (2 after delay)	AL21	AL21	41
Failure of high pressure transducer of recovery circuit	No	Yes	Auto	No	Stop the recovery compressor	1 (2 after delay)	AL21cr	---	274
Failure of high pressure transducer of circuit 2	No	Yes	Auto	No	Shutdown of circuit 2	1 (2 after delay)	AL22	AL22	42
Failure of low pressure transducer of circuit 1	No	Yes	Auto	No	Shutdown of circuit 1	1 (2 after delay)	AL21b	AL2102	212
Failure of low pressure transducer of recovery circuit	No	Yes	Auto	No	Stop the recovery compressor	1 (2 after delay)	AL22cr	---	273
Failure of low pressure transducer of circuit 2	No	Yes	Auto	No	Shutdown of circuit 2	1 (2 after delay)	AL21c	AL2103	213
Failure of suction temperature probe of circuit 1	No	Yes	Auto	No	Shutdown of circuit 1	1 (2 after delay)	AL21d	AL70	---
Failure of suction temperature probe of recovery circuit	No	Yes	Auto	No	Stop the recovery compressor	1 (2 after delay)	AL21dcr	---	275
Failure of suction temperature probe of circuit 2	No	Yes	Auto	No	Shutdown of circuit 2	1 (2 after delay)	AL22d	AL71	---
Failure of outdoor coil temperature probe (units with 1 circuit)	No	No	Auto	No	Only indication, end of running of outdoor fans during defrosting by time and not by outdoor coil temperature probe	1 (2 after delay)	AL22d	AL71	---
Clogged filters	Yes	No	Auto	Yes, 2 s	Only indication or unit shutdown (configurable by parameter)	3 or 1	AL23	AL23	43
Thermistor of electrical heaters	Yes	Yes, all circuits	Auto (*)	Yes, 4 s	Shutdown of electr. heaters, burner or boiler Unit/compressor shutdown (configurable by parameter) Locking by repeated alarms	3 or 2	AL24	AL24	44

(*) If a certain number of alarms take place over a period of time, this reset can be changed to “Manual” (configurable by parameters).
(**) Alarm levels with “Backup”. Please refer to the meaning in the following section.

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Controlled alarms	Unit shutdown	Affected circ. shutdown	Reset Type	Timing	Actuation	Alarm level (**)	VecticGD	TCO	Add.
Thermistor of electrical heater for preheating in the fresh air	No	No	Auto (*)	Yes,14 s (progr.)	Shutdown of electrical heater for preheating in the fresh air	3	AL24a	AL2401	297
Locking the electrical heating contactor	Yes	Yes	Manual	No	Unit shutdown and ventilation mode at maximum flow Note: the magneto-thermal switches of the electrical heaters will automatically open using current emission coils connected mechanically to them	3	AL24b	AL2402	354
Failure of Eprom memory of the µPC3 board	No	No	Manual	No	Serious alarm	3	AL26	AL26	32
Failure of Eprom memory of the SMALL board (zoning)	No	No	Manual	No	Serious alarm, but only indication	1	AL26zn	---	---
µPC3 board clock missing or not working	No	No	Manual	No	Only indication	1	AL27	AL27	33
SMALL board clock missing or not working (zoning)	No	No	Manual	No	Only indication	0	AL27zn	---	---
unit maintenance (cumulative operating hours)	No	No	Manual	No	Only indication	3 or 1	AL28	AL28	108
Failure of return temperature probe	Yes	Yes	Manual	No	Serious alarm, unit shutdown	0	AL29	AL29	109
Failure of ambient humidity probe No.1	No	No	Auto	Yes,10 s (progr.)	Only indication	0	AL30a	AL3001	165
RS485 probe No.1 without communication	No	No	Auto	Yes,10 s	Only indication Stop of zone 1 (air flow zoning)	0	AL30b	AL3002	163
Failure of ambient temperature probe No.1	No	No	Auto	Yes,10 s (progr.)	Only indication Stop of zone 1 (air flow zoning)	0	AL30c	AL3003	164
Failure of ambient humidity probe No.2	No	No	Auto	Yes,10 s (progr.)	Only indication	0	AL30d	AL3004	177
RS485 probe No.2 without communication	No	No	Auto	Yes, 10 s	Only indication Stop of zone 2 (air flow zoning)	0	AL30e	AL3005	175
Failure of ambient temperature probe No.2	No	No	Auto	Yes,10 s (progr.)	Only indication Stop of zone 2 (air flow zoning)	0	AL30f	AL3006	176
Failure of ambient humidity probe No.3	No	No	Auto	Yes,10 s (progr.)	Only indication	0	AL30g	AL3007	259
RS485 probe No.3 without communication	No	No	Auto	Yes, 10 s	Only indication Stop of zone 3 (air flow zoning)	0	AL30h	AL3008	257
Failure of ambient temperature probe No.3	No	No	Auto	Yes,10 s (progr.)	Only indication Stop of zone 3 (air flow zoning)	0	AL30i	AL3009	258
Failure of ambient humidity probe No.4	No	No	Auto	Yes,10 s (progr.)	Only indication	0	AL30j	AL3010	262
RS485 probe No.4 without communication	No	No	Auto	Yes,10 s	Only indication Stop of zone 4 (air flow zoning)	0	AL30k	AL3011	260
Failure of ambient temperature probe No.4	No	No	Auto	Yes,10 s (progr.)	Only indication Stop of zone 4 (air flow zoning)	1	AL30l	AL3012	261
Probe in the SHRD shared network without communication: temperature, RH or CO_2	No	No	Auto	Yes,30 s (progr.)	Only indication	0	AL31	AL31	110
Failure of the indoor (return) humidity probe	No	No	Auto	No	Only indication	1	AL33	AL33	112
Failure of the outdoor humidity probe	No	No	Auto	No	Only indication	1	AL34	AL34	113
Failure of the supply temperature probe	No	No	Auto	No	Only indication	1	AL35	AL35	114
Failure of the mixing temperature probe or the air quality probe	No	No	Auto	No	Only indication	1	AL35a	AL3501	130
COOLING setpoint < HEATING setpoint	Yes	Yes	Manual	No	Serious alarm, unit shutdown	3	AL36	AL36	115
COOLING setpoint < HEATING setpoint in zone 1	Yes	Yes	Auto	No	Unit shutdown (air flow zoning)	0	AL36a	---	360
COOLING setpoint < HEATING setpoint in zone 2	Yes	Yes	Auto	No	Unit shutdown (air flow zoning)	0	AL36b	---	361
COOLING setpoint < HEATING setpoint in zone 3	Yes	Yes	Auto	No	Unit shutdown (air flow zoning)	0	AL36c	---	362
COOLING setpoint < HEATING setpoint in zone 4	Yes	Yes	Auto	No	Unit shutdown (air flow zoning)	0	AL36d	---	363
Anti-fire safety device / smoke detection	Yes	Yes, all circuits	Manual	No	Serious alarm, shut-down of the unit and fresh air damper open / closed (configurable by parameter)	3	AL39	AL39	136
Supply temperature limit exceeded	No	No	Manual	No	Shutdown of electrical heaters or gas burner/boiler	3	AL40	AL40	166
c.pCOe expansion card with address 8 without communication	No	No	Auto	No	Only indication	0	AL45b	AL4502	211
c.pCOe expansion card addr. 8 alarm mismatch	No	No	Auto	No	Only indication	0	AL45g	AL4507	210
c.pCOe expansion card with address 9 without communication	No	No	Manual	No	Unit shutdown and dampers on the previous position to the alarm (zoning 2 zones)	0	AL45c	AL4503	---
c.pCOe expansion card addr. 9 alarm mismatch	No	No	Auto	No	Only indication	0	AL45h	AL4508	---
Energy meter without communication	No	No	Auto	No	Only indication	0	AL46	AL46	192
Supply plug-fan addr.1 without communication	No	No	Auto	No	Only indication	1	AL47	AL47	201

(*) If a certain number of alarms take place over a period of time, this reset can be changed to “Manual” (configurable by parameters).
(**) Alarm levels with “Backup”. Please refer to the meaning in the following section.

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Controlled alarms	Unit shutdown	Affected circ. shutdown	Reset Type	Timing	Actuation	Alarm level (**)	VecticGD	TCO	Add.
Supply plug-fan addr.22 without communic.	No	No	Auto	No	Only indication	1	AL47a	---	---
Supply plug-fan addr.23 without communic.	No	No	Auto	No	Only indication	1	AL47b	---	---
Supply plug-fan addr.24 without communic.	No	No	Auto	No	Only indication	1	AL47c	---	---
Supply plug-fan addr.25 without communic.	No	No	Auto	No	Only indication	1	AL47d	---	---
Supply plug-fan addr.26 without communic.	No	No	Auto	No	Only indication	1	AL47e	---	---
Supply plug-fan addr.27 without communic.	No	No	Auto	No	Only indication	1	AL47f	---	---
Supply plug-fan addr.28 without communic.	No	No	Auto	No	Only indication	1	AL47g	---	---
Failure of the pressure sensor for air flow control (supply plug-fan)	Yes	No	Manual	No	Unit shutdown	3	AL48	AL48	202
Return plug-fan addr.2 without communic.	No	No	Auto	No	Only indication	1	AL49	AL49	205
Return plug-fan addr.32 without communic.	No	No	Auto	No	Only indication	1	AL49a	---	---
Return plug-fan addr.33 without communic.	No	No	Auto	No	Only indication	1	AL49b	---	---
Return plug-fan addr.34 without communic.	No	No	Auto	No	Only indication	1	AL49c	---	---
Return plug-fan addr.35 without communic.	No	No	Auto	No	Only indication	1	AL49d	---	---
Return plug-fan addr.36 without communic.	No	No	Auto	No	Only indication	1	AL49e	---	---
Return plug-fan addr.37 without communic.	No	No	Auto	No	Only indication	1	AL49f	---	---
Return plug-fan addr.38 without communic.	No	No	Auto	No	Only indication	1	AL49g	---	---
Failure of the pressure sensor for air flow control (return plug-fan)	No	No	Manual	No	Only indication	3	AL50	AL50	206
Failure of the R-410A leak detector sensor	No	Yes, all circuits	Manual	Yes, 60 s	Compressors shutdown	3	AL51a	AL5101	83
R-410A gas leak detected	No	Yes, all	Manual	Yes, 60 s	Compressor shutdown	2	AL51b	AL5102	82
R-410A leak detector without communication	No	Yes, all	Manual	Yes, 30 s	Compressor shutdown	2	AL51c	AL5104	81
R-410A leak detector: maintenance notice	No	No	Manual	No	Only indication	0	AL51d	AL5103	---
TCO terminal without communication	No	No	Auto	No	Only indication	1	AL63a	AL6301	---
TCO with failure in the internal temperature sensor	Yes	No	Auto	No	Only indication or unit shutdown (configurable by parameter)	3 or 1	AL63b	AL6302	---
TCO terminal with internal humidity sensor failure	No	No	Auto	No	Only indication	0	AL63c	AL6303	---
TCO terminal with clock card failure	No	No	Auto	No	Only indication	0	AL63d	AL6304	---
Water inlet temperature probe on the hot water coil (c.pCOe expansion card add. 8)	No	No	Auto	No	Only indication	0	AL64	AL64	221
Water outlet temperature probe on the hot water coil (c.pCOe expansion card add. 8)	No	No	Auto	Yes, 5 s	The pump is activated and the hot water coil valve open to 100%	0	AL65	AL65	222
Anti-freeze alarm on the hot water coil (c.pCOe expansion card address 8)	No	Yes, all (in COOLING)	Manual	Yes, 10 s	Serious alarm, compressors are stopped, pump is activated and hot water coil valve opens to 100%	2	AL66	AL66	223
Failure of the NTC or RS485 ambient air temperature probe	Yes	No	Auto	Yes, 5 s	Only indication or unit shutdown (configurable by parameter)	3 or 1	AL67	AL67	224
Failure of the CO2 air quality probe	No	No	Auto	Yes, 5 s	Only indication	1	AL67a	AL6701	---
Failure of the CO2 air quality probe installed outdoor or in zone 2	No	No	Auto	Yes, 5 s	Only indication	1	AL67c	---	---
Failure of the differential pressure sensor of the supply air	No	No	Auto	Yes, 5 s	Constant supply pressure control is stopped	1	AL67b	---	---
Failure of extraction temp. probe on the wheel	No	No	Auto	Yes, 5 s	Stop the rotary heat exchanger	1	AL68	AL68	---
Failure of recovery temp. probe on the wheel	No	No	Auto	Yes, 5 s	Stop the rotary heat exchanger	1	AL69	AL69	---
Failure of the supply damper not open (c.pCOe expansion card address 9)	Yes	No	Manual	Yes, 160 s	Without indication or unit shutdown (configurable by parameter)	3 or 0	AL70	---	---
Failure in the return damper not open (c.pCOe expansion card address 9)	Yes	No	Manual	Yes, 160 s	Without indication or unit shutdown (configurable by parameter)	3 or 0	AL71	---	---
Failure in the supply damper not closed (c.pCOe expansion card address 9)	No	No	Manual	Yes, 160 s	Only indication	1	AL72	---	---
Failure in the return damper not closed (c.pCOe expansion card address 9)	No	No	Manual	Yes, 160 s	Only indication	1	AL73	---	---
Failure of the supply damper not open in zone 1	No	No	Auto	Yes, 30 s (progr.)	Stop of zone 1 (air flow zoning)	0	AL70z	---	---
Failure of the supply damper not open in zone 2	No	No	Auto	Yes, 30 s (progr.)	Stop of zone 2 (air flow zoning)	0	AL71z	---	---
Failure of the supply damper not open in zone 3	No	No	Auto	Yes, 30 s (progr.)	Stop of zone 3 (air flow zoning)	0	AL72z	---	---
Failure of the supply damper not open in zone 4	No	No	Auto	Yes, 30 s (progr.)	Stop of zone 4 (air flow zoning)	0	AL73z	---	---
Failure of return temperature probe in zone 1	No	No	Auto	No	Stop of zone 1 (return probe control activated) (air flow zoning)	0	AL74zn	---	---
Failure of return temperature probe in zone 2	No	No	Auto	No	Stop of zone 2 (return probe control activated) (air flow zoning)	0	AL75zn	---	---
Failure of return temperature probe in zone 3	No	No	Auto	No	Stop of zone 3 (return probe control activated) (air flow zoning)	0	AL76zn	---	---

(*) If a certain number of alarms take place over a period of time, this reset can be changed to “Manual” (configurable by parameters).
(**) Alarm levels with “Backup”. Please refer to the meaning in the following section.

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Controlled alarms	Unit shutdown	Affected circ. shutdown	Reset Type	Timing	Actuation	Alarm level (**)	VecticGD	TCO	Add.
Failure of return temperature probe in zone 4	No	No	Auto	No	Stop of zone 4 (return probe control activated) (air flow zoning)	0	AL77zn	---	---
Unit stop with minimum air flow at constant supply pressure	Yes	No	Auto (*)	Yes,120 s	Unit shutdown	3	AL74	---	---
Alarm for continuous operation of the condensate pump	Yes, (in COOLING)	Yes, (in COOLING)	Manual	Yes,420 s	The condensate pump is stopped	1	AL75	---	---
Driver EVDEVO address 7 without communic. (bipolar electronic expansion valves)	No	Yes, all circuits	Manual	Yes,30 s	Shutdown of all circuit	3	AL81	---	---
EEPROM of the EVDEVO driver broken	No	Yes, all circuits	Manual	No	Shutdown of all circuit	3	AL82	---	---
Electronic bipolar expansion valve of circuit 1 broken or disconnected	No	Yes	Manual	No	Shutdown of circuit 1	2	AL83	---	---
Electronic bipolar expansion valve of circuit 2 broken or disconnected	No	Yes	Manual	No	Shutdown of circuit 2	2	AL84	---	---
A2L sensor without communication (R-454B refrigerant leak detector of the indoor circuit)	No	Yes, all circuits	Manual	Yes,30 s	Unit in A2L protection mode	3	AL85	---	---
Failure of the A2L sensor (R-454B refrigerant leak detector of the indoor circuit)	No	Yes, all circuits	Manual	Yes,180 s	Unit in A2L protection mode	3	AL86	---	---
Leak detected by A2L sensor (R-454B refrigerant leak detector of the indoor circuit)	Yes	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL87	---	---
Critical A2L sensor alarm (R-454B refrigerant leak detector of the indoor circuit)	Yes	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL88	---	---
c.pCOe expansion card address 4 without communication: recovery circuit	No	No	Auto	No	Only indication	1	AL99	---	---
SMALL board with address 11 without communication: zoning of the air flow	No	No	Auto	No	Only indication	1	AL99zn	---	---
Number of writes on the control board retain memory exceeded	Yes	Yes	Auto	No	Unit shutdown	3	AL100	---	---
Write error on the control board retain memory	No	No	Auto	No	Solo señalización	3	AL101	---	---
Electronic bipolar expansion valve of circuit 1 broken or disconnected	Yes	Yes	Manual	No	Shutdown of circuit 1	1 (2 after delay)	AL102	---	---
Electronic bipolar expansion valve of circuit 2 broken or disconnected	Yes	Yes	Manual	No	Shutdown of circuit 2	1 (2 after delay)	AL103	---	---
Electronic bipolar expansion valve of recovery circuit broken or disconnected	Yes	Yes	Manual	No	Shutdown of recovery circuit	1 (2 after delay)	AL104	---	---
Energy meter: RS485 probe No.5 without communication	No	No	Auto	No	Only indication	0	AL107	---	---
Energy meter: RS485 probe No.6 without communication	No	No	Auto	No	Only indication	0	AL108	---	---
Energy meter: Failure of mixing temperature probe No.5	No	No	Auto	No	Only indication	0	AL105	---	---
Energy meter: Failure of supply temperature probe No.6	No	No	Auto	No	Only indication	0	AL106	---	---
Energy meter: Failure of mixing humidity probe No.5	No	No	Auto	No	Only indication	0	AL109	---	---
Energy meter: Failure of supply humidity probe No.6	No	No	Auto	No	Only indication	0	AL110	---	---
Alarm driver Eliwell address 71	Yes	Yes	Manual	No	Shutdown of circuit 1	1 (2 after delay)	AL111	---	368
Alarm driver Eliwell address 72	Yes	Yes	Manual	No	Shutdown of circuit 2	1 (2 after delay)	AL112	---	369
Failure of the differential pressure sensor for overpressure control with return fan	No	No	Auto	Yes, 5 s	Overpressure control with return fans is stopped	1	AL113	---	348
Manual motor starter (MMS) of compressor 1 in OFF position	No	No	Manual	Yes, 5 s	Only indication or compressor shutdown (config. by parameter)	2	AL115	---	410
Manual motor starter (MMS) of compressor 1_2 in OFF position	No	No	Manual	Yes, 5 s	Only indication or compressor shutdown (config. by parameter)	2	AL116	---	411
Manual motor starter (MMS) of compressor 2 in OFF position	No	No	Manual	Yes, 5 s	Only indication or compressor shutdown (config. by parameter)	2	AL117	---	412
Manual motor starter (MMS) of compressor 2_2 in OFF position	No	No	Manual	Yes, 5 s	Only indication or compressor shutdown (config. by parameter)	2	AL118	---	413
Manual motor starter (MMS) of recovery compressor in OFF position	No	No	Manual	Yes, 5 s	Only indication or compressor shutdown (config. by parameter)	2	AL119	---	414
Differ. pressure sensor for pressure control with supply damper broken or disconnected	No	No	Auto	No	Pressure control with supply damper is stopped	1	AL120	---	348
R-454B leak detector No.1 of outdoor circuit 1: A2L sensor without communication	No	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL121	---	---
R-454B leak detector No.2 of outdoor circuit 1: A2L sensor without communication	No	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL122	---	---
R-454B leak detector No.1 of outdoor circuit 1: failure of the A2L sensor	No	Yes, all circuits	Manual	Yes,180 s (progr.)	Unit in A2L protection mode	3	AL123	---	---
R-454B leak detector No.2 of outdoor circuit 1: failure of the A2L sensor	No	Yes, all circuits	Manual	Yes,180 s (progr.)	Unit in A2L protection mode	3	AL124	---	---

(*) If a certain number of alarms take place over a period of time, this reset can be changed to “Manual” (configurable by parameters).
(**) Alarm levels with “Backup”. Please refer to the meaning in the following section.

Controlled alarms	Unit shutdown	Affected circ. shutdown	Reset Type	Timing	Actuation	Alarm level (**)	VecticGD	TCO	Add.
R-454B leak detector of outdoor circuit 1: leak detected by A2L sensor	Yes	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL125	---	---
R-454B leak detector No.1 of outdoor circuit 2: A2L sensor without communication	No	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL126	---	---
R-454B leak detector No.2 of outdoor circuit 2: A2L sensor without communication	No	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL127	---	---
R-454B leak detector No.1 of outdoor circuit 2: failure of the A2L sensor	No	Yes, all circuits	Manual	Yes,180 s (progr.)	Unit in A2L protection mode	3	AL128	---	---
R-454B leak detector No.2 of outdoor circuit 2: failure of the A2L sensor	No	Yes, all circuits	Manual	Yes,180 s (progr.)	Unit in A2L protection mode	3	AL129	---	---
R-454B leak detector of outdoor circuit 2: leak detected by A2L sensor	Yes	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AL130	---	---
General alarm of main supply fan address 1	Yes	Yes	Auto	Yes, 5 s	Unit shutdown	3	---	---	---
General alarm of secondary supply fans address 22 to address 28	No	No	Auto	Yes, 5 s	Only indication	0	---	---	---
General alarm of main return fan address 2	Yes	Yes	Auto	Yes, 5 s	Unit shutdown	3	---	---	---
General alarm of secondary return fans address 32 to address 38	No	No	Auto	Yes, 5 s	Only indication	0	---	---	---
Power cut-off for a period longer than 2 hours	No	Yes, all circuits	Auto	Yes, 2 hours	Compressors locking for 8 hours to ensure heating of crankcase heater	3	AV01	---	---
Warning whenever the supply fan speed limit (rpm) is exceeded	Yes	No	Auto	Yes, 30 min	Only indication or unit shutdown (configurable by parameter)	3 or 1	AV02	---	---
Warning whenever the return fan speed limit (rpm) is exceeded	Yes	No	Auto	Yes, 30 min	Only indication or unit shutdown (configurable by parameter)	3 or 1	AV03	---	---
Low flow warning in constant supply pressure control	No	Yes, all circuits	Auto	Yes, 120 s	Without permissions all the thermal power elements of the unit	2	AV04	---	---
Warning whenever return flow setpoint > supply flow setpoint, with overpressure control	No	No	Auto	No	Only indication	0	AV05	---	---
A2L protection mode	Yes	Yes, all circuits	Manual	No	Unit in A2L protection mode	3	AV06	---	---
Low overheating SH in the valve of circuit 1	No	No	Auto	No	Only indication	0	AV07	---	---
Low overheating SH in the valve of circuit 2	No	No	Auto	No	Only indication	0	AV08	---	---
Low overheating SH in the valve of recovery circuit	No	No	Auto	No	Only indication	0	AV09	---	---
Low evaporation temperature of circuit 1	No	No	Auto	No	Only indication	0	AV10	---	---
Low evaporation temperature of circuit 2	No	No	Auto	No	Only indication	0	AV11	---	---
Low evaporation temperature of recovery circuit	No	No	Auto	No	Only indication	0	AV12	---	---
High evaporation temperature of circuit 1	No	No	Auto	No	Only indication	0	AV13	---	---
High evaporation temperature of circuit 2	No	No	Auto	No	Only indication	0	AV14	---	---
High evaporation temperature of rec. circuit	No	No	Auto	No	Only indication	0	AV15	---	---
High condensation temperature of circuit 1	No	No	Auto	No	Only indication	0	AV16	---	---
High condensation temperature of circuit 2	No	No	Auto	No	Only indication	0	AV17	---	---
High condensation temperature of rec.circuit	No	No	Auto	No	Only indication	0	AV18	---	---
Low suction temperature of circuit 1	No	No	Auto	No	Only indication	0	AV19	---	---
Low suction temperature of circuit 2	No	No	Auto	No	Only indication	0	AV20	---	---
Low suction temperature of recovery circuit	No	No	Auto	No	Only indication	0	AV21	---	---
Defrost by minimum pressure of circuit 1	No	Yes	Auto(*)	No	Only indication	0	AV22	---	---
Defrost by minimum pressure of circuit 2	No	Yes	Auto(*)	No	Only indication	0	AV23	---	---
Flow reduction due to blocking of supply duct	No	No	Auto	No	Supply fan speed (rpm) limitation	1	AV24	---	---

(*) If a certain number of alarms take place over a period of time, this reset can be changed to “Manual” (configurable by parameters).
(**) Alarm levels with “Backup”. Please refer to the meaning in the following section.

16.4. Alarm levels with “Backup”

“Backup in case of alarm” function always prevails over “Extended Backup”, i.e. if one unit has to operate for a specific week but a severe alarm appears, it will automatically switch operation to the other unit.

Alarm levels are set to determine which of the two units should operate.

Note: In some cases the alarm level can be set by parameters.

The following table indicates the different alarm levels:

- Level 0: no alarm
- Level 1: mild alarm
- Level 2: severe alarm
- Level 3: critical alarm

It is also possible to change the alarm level, from level 1 to level 2, if it persists for a period of time (default 20 minutes).

Based on these alarm levels, the software performs a comparison between the two units and sets which one should work:

- If both units have the same alarm level they will continue to work the same as until then..
- With different alarm level, the unit with the lowest alarm level will operate.
- It can also be configured by parameter that does not exist a back-up with alarm levels 1 and 2. In this case the units only switch with the alarm level 3.

Important: the software incorporates a series of securities that guarantee that one of the units will always work (and only one).

17 - LIST OF CONTROL PARAMETERS

17.1. Parameters with “Level of access 1”

Parameters of “Unit Status”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
P01	PLAN_ADDRESS	Address of the unit in the shared network	0	0	0	---	Integer	R	
P01	HORA	Clock: hour	0	0	0	h	Integer	R	48
P01	MINUTO	Clock: minute	0	0	0	min	Integer	R	47
P01	MODO_VENT	VENTILATION operating mode	0	0	1	---	Digital	R	236
P01	MODO_FRIO	COOLING operating mode	0	0	1	---	Digital	R	14
P01	GLOBAL_ALARM	Signal of active alarms	0	0	1	---	Digital	R	26
P01	TEMP_INT	Indoor temperature for regulation of the unit	0.0	-99.9	0.0	°C	Analog.	R	291
P01	TEMP_EXT	Temperature of the outdoor air	0.0	-99.9	0.0	°C	Analog.	R	2
P01	HUM_INT	Indoor relative humidity for regulation of the unit	0.0	0.0	0.0	%rH	Analog.	R	5
P01	ESTADO_EQUIPO	Unit status (ON, OFF, remote OFF, OFF by phase)	0	0	0	---	Integer	R	
P01	EN_FASE_HOR_NUEVA	Indication of unit switch-on by schedule programming	0	0	1	---	Digital	R	
P01	DESHUMIDIFICA	Indication of active dehumidifier	0	0	1	---	Digital	R	304
P01	HUMIDIFICA	Indication of active humidifier	0	0	1	---	Digital	R	22
P01	ON_COMPENSACION	Indication of active compensation	0	0	1	---	Digital	R	
P01	ON_DESESCARCHE	Indication of active defrosting	0	0	1	---	Digital	R	183
P01	ON_FREECOOL	Indication of active free-cooling	0	0	1	---	Digital	R	184
P01	ON_FREEHEAT	Indication of active free-heating	0	0	1	---	Digital	R	185
P01	LAMP_COMPRESOR	Indication of compressors in operation	0	0	1	---	Digital	R	
P01	LAMP_VINT	Indication of supply fans in operation	0	0	1	---	Digital	R	
P01	LAMP_RESISTENCIA	Indication of electrical heaters in operation	0	0	1	---	Digital	R	
P01	ON_LIMITE_TEMP_IMPULSION	Indication of unit in operation with limit of supply temperature	0	0	1	---	Digital	R	238
P02	HORA	Clock: hour	0	0	0	h	Integer	R	48
P02	MINUTO	Clock: minute	0	0	0	min	Integer	R	47
P02	DIA	Clock: day	0	0	0	day	Integer	R	49
P02	MES	Clock: month	0	0	0	month	Integer	R	50
P02	ANO	Clock: year	0	0	0	year	Integer	R	51
P02	MODO_FRIO	VENTILATION operating mode	0	0	1	---	Digital	R	
P02	MODO_VENT	COOLING operating mode	0	0	1	---	Digital	R	236
P02	GLOBAL_ALARM	Signal of active alarms	0	0	1	---	Digital	R	26
P02	SET_TEMP_DISPLAY	Active setpoint temperature	0.0	0.0	0.0	°C	Analog.	R	
P02	ESTADO_EQUIPO	ON/OF unit status	0	0	0	---	Integer	R	
P02	EN_FASE_HOR_NUEVA	Indication of unit switch-on by schedule programming	0	0	1	---	Digital	R	
P02	DESHUMIDIFICA	Indication of active dehumidifier	0	0	1	---	Digital	R	
P02	HUMIDIFICA	Indication of active humidifier	0	0	1	---	Digital	R	22
P02	ON_COMPENSACION	Indication of active compensation	0	0	1	---	Digital	R	
P02	ON_DESESCARCHE	Indication of active defrosting	0	0	1	---	Digital	R	183
P02	ON_FREECOOL	Indication of active free-cooling	0	0	1	---	Digital	R	184
P02	ON_FREEHEAT	Indication of active free-heating	0	0	1	---	Digital	R	185
P02	LAMP_COMPRESOR	Indication of compressors in operation	0	0	1	---	Digital	R	
P02	LAMP_VINT	Indication of supply fans in operation	0	0	1	---	Digital	R	
P02	LAMP_RESISTENCIA	Indication of electrical heaters in operation	0	0	1	---	Digital	R	
P02	ON_LIMITE_TEMP_IMPULSION	Indication of unit in operation with limit of supply temperature	0	0	1	---	Digital	R	238
P03	PLAN_ADDRESS	Address of the unit in the shared network	0	0	0	---	Integer	R	
P03	HAB_SUPERVISION	Enabling the supervision serial card (optional)	1	0	1	---	Digital	R	50
P03	TIPO_PROT_COM	Type of protocol in supervision network: Modbus RTU	1	0	1	---	Integer	R	227
P03	BMS_ADDRESS	Address of the unit in the supervision network of the BMS port it is connected to (BMS1 or BMS2)	1	0	207	---	Integer	R	228
P03	BAUD_RATE	Bits rate in the supervision network of the BMS port it is connected to (BMS1 or BMS2): 0=1200, 1=2400, 2=4800, 3=9600, 4=19200, 5= 38400	4	0	4	---	Integer	R	229
P03	Stop_bits_Number_MB	Number of stop bits for the MODBUS protocol (0 = 2 stop bits, 1= 1 stop bit)	0	0	1	---	Digital	R	282
P03	Parity_Type_MB	Type of parity for the MODBUS protocol in the supervision network of the BMS port it is connected to (BMS1 or BMS2): 0= no; 1= pair; 2= odd	0	0	2	---	Integer	R	230
P04	MODELO_EQUIPO	Unit model	0	0	99	---	Integer	R	58
P04	INFO_EQUIPO_1	Unit information (0= air-air cooling-only; 1= air-air heat pump)	1	0	9	---	Integer	R	191
P04	INFO_EQUIPO_2	Unit information: compressors-circuits (0,2c-1c,4c-2c) + recovery	1	0	99	---	Integer	R	192
P04	UNICO_VOL_AIRE_EXT_CIRC_2	Selection of single-volume of outdoor air in 2-circuits units	0	0	1	---	Digital	R	
P04	TIPO_VENT_EXT	Type of outdoor fan (3= 2 speeds axial fan; 4= electronic axial fan or plug-fan)	4	1	4	---	Integer	R	1
P04	INFO_EQUIPO_3	Unit information: with electrical heaters - gas burner/boiler - hot water coil	1	0	9	---	Integer	R	193

17 - LIST OF CONTROL PARAMETERS

Parameters of “Unit Status” (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
P04	TIPO_REFRIGERANTE	Type of refrigerant (4=R410A, 5=R-454B)	4	0	5	---	Integer	R	43
P04	NUM_WO_DIG_1	Work order number of the unit (digit 1)	0	0	9	---	Analog.	R	185
P04	NUM_WO_DIG_2	Work order number of the unit (digit 2)	0	0	9	---	Analog.	R	186
P04	NUM_WO_DIG_3	Work order number of the unit (digit 3)	0	0	9	---	Analog.	R	187
P04	NUM_WO_DIG_4	Work order number of the unit (digit 4)	0	0	9	---	Analog.	R	188
P04	NUM_WO_DIG_5	Work order number of the unit (digit 5)	0	0	9	---	Analog.	R	189
P04	NUM_WO_DIG_6	Work order number of the unit (digit 6)	0	0	9	---	Analog.	R	190
P04	NUM_WO_DIG_7	Work order number of the unit (digit 7)	0	0	9	---	Analog.	R	191
P04	NUM_WO_DIG_8	Work order number of the unit (digit 8)	0	0	9	---	Analog.	R	192

Parameters of “Unit On/Off”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
PM01	SYS_ON	Selection of the unit ON/OFF by keyboard or remote: 0: Switch-off (Off) # 1: Switch-on (On)	0	0	1	---	Digital	R/W	65
PM01z	SYS_ON_T11	Selection of the zone 1 ON/OFF by keyboard or remote: 0: Switch-off (Off) # 1: Switch-on (On)	0	0	1	---	Digital	R/W	364
PM01z	SYS_ON_T12	Selection of the zone 2 ON/OFF by keyboard or remote: 0: Switch-off (Off) # 1: Switch-on (On)	0	0	1	---	Digital	R/W	365
PM01z	SYS_ON_T13	Selection of the zone 3 ON/OFF by keyboard or remote: 0: Switch-off (Off) # 1: Switch-on (On)	0	0	1	---	Digital	R/W	366
PM01z	SYS_ON_T14	Selection of the zone 4 ON/OFF by keyboard or remote: 0: Switch-off (Off) # 1: Switch-on (On)	0	0	1	---	Digital	R/W	367

Parameters of “Setpoint”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
S01zn	SET_POINT_TEMP_FRIO_T11	Temperature setpoint in COOLING mode (summer) in the terminal of zone 1 (zoning of the air flow)	26.0	0.0	50.0	°C	Analog.	R/W	283
S01zn	SET_POINT_TEMP_CALOR_T11	Temperature setpoint in HEATING mode (winter) in the terminal of zone 1 (zoning of the air flow)	21.0	0.0	50.0	°C	Analog.	R/W	284
S02zn	SET_POINT_TEMP_FRIO_T12	Temperature setpoint in COOLING mode (summer) in the terminal of zone 2 (zoning of the air flow)	26.0	0.0	50.0	°C	Analog.	R/W	285
S02zn	SET_POINT_TEMP_CALOR_T12	Temperature setpoint in HEATING mode (winter) in the terminal of zone 2 (zoning of the air flow)	21.0	0.0	50.0	°C	Analog.	R/W	286
S03zn	SET_POINT_TEMP_FRIO_T13	Temperature setpoint in COOLING mode (summer) in the terminal of zone 3 (zoning of the air flow)	26.0	0.0	50.0	°C	Analog.	R/W	287
S03zn	SET_POINT_TEMP_CALOR_T13	Temperature setpoint in HEATING mode (winter) in the terminal of zone 3 (zoning of the air flow)	21.0	0.0	50.0	°C	Analog.	R/W	288
S04zn	SET_POINT_TEMP_FRIO_T14	Temperature setpoint in COOLING mode (summer) in the terminal of zone 4 (zoning of the air flow)	26.0	0.0	50.0	°C	Analog.	R/W	289
S04zn	SET_POINT_TEMP_CALOR_T14	Temperature setpoint in HEATING mode (winter) in the terminal of zone 4 (zoning of the air flow)	21.0	0.0	50.0	°C	Analog.	R/W	290
S01	SET_POINT_TEMP_FRIO	Temperature setpoint in COOLING mode (summer)	26.0	0.0	50.0	°C	Analog.	R/W	15
S01	SET_POINT_TEMP_CALOR	Temperature setpoint in HEATING mode (winter)	21.0	0.0	50.0	°C	Analog.	R/W	16
S02	SET_POINT_HUM	Indoor humidity setpoint	50.0	0.0	100.0	%rH	Analog.	R/W	18
S02	HAB_SONDA_HUM_INT_ VIRTUAL	Enabling the indoor humidity probe in the SHRD shared network	0	0: no	1: yes	---	Digital	R	
S03	SET_COMPRESOR_EN_FRIO	Calculation of setpoints: Setpoint in COOLING mode (summer) + Dead Zone / 2	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_COMPRESOR_EN_CALOR	Calculation of setpoints: Setpoint In HEATING mode (winter) + Dead Zone / 2	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_TEMP_COMPRESOR	Current selection of the setpoint	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_RES_EN_FRIO	Calculation of setpoints: Setpoint of the electrical heaters in COOLING mode	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_RES_EN_CALOR	Calculation of setpoints: Setpoint of the electrical heaters in HEATING mode	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_TEMP_RES	Current selection of setpoint for electrical heaters	0.0	0.0	99.9	°C	Analog.	R	
S03	SET_VLV_CALOR_EN_FRIO	Calculation of setpoints: Setpoint of the hot water coil in COOLING mode	0.0	0.0	99.9	°C	Analog.	R/W	
S03	SET_VLV_CALOR_EN_CALOR	Calculation of setpoints: Setpoint of the hot water coil in HEATING mode	0.0	0.0	99.9	°C	Analog.	R/W	
S03	SET_VLV_CALOR	Current selection of setpoint for the hot water coil	0.0	0.0	99.9	°C	Analog.	R/W	
S03	SET_FCOOL_VER	Calculation of setpoints: free-cooling in summer	00.0	-99.9	99.9	---	Integer	R	
S03	SET_FCOOL_INV	Calculation of setpoints: free-cooling in winter	00.0	-99.9	99.9	---	Integer	R	
S03	SET_FHEAT	Calculation of setpoints: free-heating	00.0	-99.9	99.9	---	Integer	R	
S04	SET_IMPULSION_FRIO_CAL	Supply setpoint calculated in COOLING mode	7.0	0.0	30.0	°C	Analog.	R	122
S04	SET_IMPULSION_CALOR_CAL	Supply setpoint calculated in HEATING mode	45.0	0.0	55.0	°C	Analog.	R	121

17 - LIST OF CONTROL PARAMETERS

Parameters of “Summer/Winter”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
FC01	SEL_FRIO_CALOR	Procedures for the selection of the COOLING/HEATING mode: 0: by keyboard 1: remote (by digital input) 2: auto 3: only ventilation 4: ventilation 100% fresh air 5: SHRD shared network	2	0	5	---	Integer	R/W	59
FC01	MODO_FRIO_CALOR_AUTO	COOLING/HEATING selection in AUTO: 0: by indoor temperature; 1: by outdoor temperature	1	0	1	---	Digital	R/W	232
FC01	CALOR_FRIO_PANEL	COOLING/HEATING selection by keyboard: 0: HEATING (winter); 1: COOLING (summer)	1	0	1	---	Digital	R/W	66
FC01	SET_TEMP_EXT_CAMBIO_FRIO	Outdoor temperature setpoint for change to COOLING mode (in AUTO mode)	22.0	99.9	99.9	°C	Analog.	R/W	223
FC01	SET_TEMP_EXT_CAMBIO_CALOR	Outdoor temperature setpoint for change to HEATING mode (in AUTO mode)	20.0	99.9	99.9	°C	Analog.	R/W	222
FC01	PGD1_bloqueado_SEL_FRIO_CALOR	Enabling of the locking of summer / winter selection in the VecticGD (so that the final user cannot change it)	0	0	1	---	Digital	R/W	240
FC01	ON_VENT_100_AE_REMOTO	Enabling of the VENTILATION mode with 100% fresh air remotely (analog input U2 of the c.pCOe expansion card with address 8)	0	0	1	---	Digital	R	

Parameters of “Clock/Scheduler”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
PH01	TIPO_RELOJ	Type of clock (0= No, 1= Actual, 2= Shared network)	1	0	2	---	Integer	R/W	57
PH01	NEW_HOUR	Setting the clock: new hour	0	0	23	h	Integer	R/W	119
PH01	NEW_MINUTE	Setting the clock: new minute	0	0	59	min	Integer	R/W	120
PH01	NEW_DAY	Setting the clock: new day	0	0	31	day	Integer	R/W	121
PH01	NEW_MONTH	Setting the clock: new month	0	0	12	month	Integer	R/W	122
PH01	NEW_YEAR	Setting the clock: new year	0	0	99	year	Integer	R/W	123
PH01	DIA_SEMANA	Day of the week	0	0	0	day	Integer	R/W	52
PH01	NEW_DATE_MSK	Confirm time change	0	0	1	---	Digital	R/W	
PH02	TZ_Idx	Index used to change the time zone (management change from winter to summer and vice versa automatically)	52	1	TZ_IdxMax	---	Integer	R	
PH03	TIPO_PROG_HORARIA	Type of start-up: 0 = ON/OFF schedule 1 = Schedule only setpoint change 2 = ON/OFF schedule with limit SET of ON 3 = Forced 4 = 3 setpoints schedule + OFF of unit	3	0	4	---	Integer	R/W	71
PH03	ARR_FORZADO	Forced start-up	0	0	1	---	Digital	R/W	120
PH03	TIME_ARR_FORZADO	On time with forced start-up	2	1	999	h	Integer	R/W	73
PH03	HAB_BLOQ_COMP_ON_FASE_LIM_FRIO	Disable the compressors in summer with “ON/OFF schedule with limit SET of ON” (nocturnal freecooling)	0	0	1	---	Digital	R/W	72
PH03	HAB_BLOQ_RENOVACION_ON_FASE_LIM	Disable the outdoor air renewal with “ON/OFF schedule with limit SET of ON” (nocturnal operation)	0	0	1	---	Digital	R/W	73
PH04	H_ARR_1A	Start-up hour of slot 1- program 1	6	0	23	h	Integer	R/W	74
PH04	M_ARR_1A	Start-up minute of slot 1-program 1	30	0	59	min	Integer	R/W	75
PH04	H_PAR_1A	Stop hour of slot 1 - program 1	11	0	23	h	Integer	R/W	76
PH04	M_PAR_1A	Stop minute of slot 1 - program 1	0	0	59	min	Integer	R/W	77
PH04	H_ARR_1B	Start-up hour of slot 2 - program 1	11	0	23	h	Integer	R/W	78
PH04	M_ARR_1B	Start-up minute of slot 2 - program 1	30	0	59	min	Integer	R/W	79
PH04	H_PAR_1B	Stop hour of slot 2 - program 1	13	0	23	h	Integer	R/W	80
PH04	M_PAR_1B	Stop minute of slot 2 - program 1	30	0	59	min	Integer	R/W	81
PH04	H_ARR_1C	Start-up hour of slot 3 - program 1	15	0	23	h	Integer	R/W	82
PH04	M_ARR_1C	Start-up minute of slot 3 - program 1	0	0	59	min	Integer	R/W	83
PH04	H_PAR_1C	Stop hour of slot 3 - program 1	19	0	23	h	Integer	R/W	84
PH04	M_PAR_1C	Stop minute of slot 3 - program 1	0	0	59	min	Integer	R/W	85
PH05	H_ARR_2A	Start-up hour of slot1 - program 2	8	0	23	h	Integer	R/W	86
PH05	M_ARR_2A	Start-up minute of slot 1 - program 2	0	0	59	min	Integer	R/W	87
PH05	H_PAR_2A	Stop hour of slot 1 - program 2	14	0	23	h	Integer	R/W	88
PH05	M_PAR_2A	Stop minute of slot 1 - program 2	0	0	59	min	Integer	R/W	89
PH05	H_ARR_2B	Start-up hour of slot 2 - program 2	17	0	23	h	Integer	R/W	90
PH05	M_ARR_2B	Start-up minute of slot 2 - program 2	0	0	59	min	Integer	R/W	91
PH05	H_PAR_2B	Stop hour of slot 2 - program 2	20	0	23	h	Integer	R/W	92
PH05	M_PAR_2B	Stop minute of slot 2 - program 2	30	0	59	min	Integer	R/W	93
PH05	H_ARR_2C	Start-up hour of slot 3 - program 2	0	0	23	h	Integer	R/W	94
PH05	M_ARR_2C	Start-up minute of slot 3 - program 2	0	0	59	min	Integer	R/W	95
PH05	H_PAR_2C	Stop hour of slot 3 - program 2	0	0	23	h	Integer	R/W	96

17 - LIST OF CONTROL PARAMETERS

Parameters of "Clock/Scheduler" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
PH05	M_PAR_2C	Stop minute of slot 3 - program 2	0	0	59	min	Integer	R/W	97
PH06	H_ARR_3A	Start-up hour of slot 1 - program 3	7	0	23	h	Integer	R/W	98
PH06	M_ARR_3A	Start-up minute of slot 1 - program 3	0	0	59	min	Integer	R/W	99
PH06	H_PAR_3A	Stop hour of slot 1 - program 3	15	0	23	h	Integer	R/W	100
PH06	M_PAR_3A	Stop minute of slot 1 - program 3	0	0	59	min	Integer	R/W	101
PH06	H_ARR_3B	Start-up hour of slot 2 - program 3	0	0	23	h	Integer	R/W	102
PH06	M_ARR_3B	Start-up minute of slot 2 - program 3	0	0	59	min	Integer	R/W	103
PH06	H_PAR_3B	Stop hour of slot 2 - program 3	0	0	23	h	Integer	R/W	104
PH06	M_PAR_3B	Stop minute of slot 2 - program 3	0	0	59	min	Integer	R/W	105
PH06	H_ARR_3C	Start-up hour of slot 3 - program 3	0	0	23	h	Integer	R/W	106
PH06	M_ARR_3C	Start-up minute of slot 3 - program 3	0	0	59	min	Integer	R/W	107
PH06	H_PAR_3C	Stop hour of slot 3 - program 3	0	0	23	h	Integer	R/W	108
PH06	M_PAR_3C	Stop minute of slot 3 - program 3	0	0	59	min	Integer	R/W	109
PH07	SET_INT_FRIO	Schedule only setpoint change: internal Set in summer	26.0	-99.9	99.9	°C	Analog.	R/W	61
PH07	SET_EXT_FRIO	Schedule only setpoint change: external Set in summer	28.0	-99.9	99.9	°C	Analog.	R/W	59
PH08	SET_INT_CALOR	Schedule only setpoint change: internal Set in winter	21.0	-99.9	99.9	°C	Analog.	R/W	60
PH08	SET_EXT_CALOR	Schedule only setpoint change: external Set in winter	19.0	-99.9	99.9	°C	Analog.	R/W	58
PH09	SET_INT_LIM_FRIO	ON/OFF schedule with limit SET of ON (summer): internal Set	26.0	-99.9	99.9	°C	Analog.	R/W	79
PH09	SET_EXT_LIM_FRIO	ON/OFF schedule with limit SET of ON (summer): limit Set	34.0	-99.9	99.9	°C	Analog.	R/W	77
PH10	SET_INT_LIM_CALOR	ON/OFF schedule with limit SET of ON (winter): internal Set	21.0	-99.9	99.9	°C	Analog.	R/W	78
PH10	SET_EXT_LIM_CALOR	ON/OFF schedule with limit SET of ON (winter): limit Set	13.0	-99.9	99.9	°C	Analog.	R/W	76
PH11	DIF_LIM_CALOR	ON/OFF schedule with limit SET of ON (winter): differential	1.0	0.0	99.9	°C	Analog.	R/W	81
PH11	DIF_LIM_FRIO	ON/OFF schedule with limit SET of ON (summer): differential	2.0	0.0	99.9	°C	Analog.	R/W	80
PH12	LUN_A	Monday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	1	0	3	---	Integer	R/W	110
PH12	MAR_A	Tuesday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	1	0	3	---	Integer	R/W	111
PH12	MIE_A	Wednesday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	1	0	3	---	Integer	R/W	112
PH12	JUE_A	Thrusday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	1	0	3	---	Integer	R/W	113
PH12	VIE_A	Friday schedule (0=off; 1=program1; 2=program2; 3=program3)	3	0	3	---	Integer	R/W	114
PH12	SAB_A	Saturday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	0	0	3	---	Integer	R/W	115
PH12	DOM_A	Sunday schedule (0 = off; 1 = prog. 1; 2 = prog. 2; 3 = prog. 3)	0	0	3	---	Integer	R/W	116
PH12	DIA_SEMANA	Weekday	0	0	0	day	Integer	R/W	52
PH13	Scheduler_1.Day	Programming day	0	0	6	---	Integer	R/W	
PH13	Scheduler_1.CopyTo_Day	Copy day	0	0	7	---	Integer	R/W	
PH13	Scheduler_1.EnDayCopy	Enabling copy	0	0	1	---	Digital	R/W	
PH13	Scheduler_1.Event_Msk[0].Enabled	Daily event enabled	0	0	1	---	Digital	R/W	
PH13	Scheduler_1.Event_Msk[0].Hours	Start time of the daily event	0	0	23	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[0].Mins	Starting minute of the daily event	0	0	59	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[0]. UnitStatus	Daily event unit status (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[1].Enabled	Daily event enabled	0	0	1	---	Digital	R/W	
PH13	Scheduler_1.Event_Msk[1].Hours	Start time of the daily event	0	0	23	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[1].Mins	Starting minute of the daily event	0	0	59	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[1]. UnitStatus	Daily event unit status (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[2].Enabled	Daily event enabled	0	0	1	---	Digital	R/W	
PH13	Scheduler_1.Event_Msk[2].Hours	Start time of the daily event	0	0	23	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[2].Mins	Starting minute of the daily event	0	0	59	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[2]. UnitStatus	Daily event unit status (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[3].Enabled	Daily event enabled	0	0	1	---	Digital	R/W	
PH13	Scheduler_1.Event_Msk[3].Hours	Start time of the daily event	0	0	23	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[3].Mins	Starting minute of the daily event	0	0	59	---	Integer	R/W	
PH13	Scheduler_1.Event_Msk[3]. UnitStatus	Daily event unit status (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13	Scheduler_1.DaysSchedMsg	Messages to be displayed for daily events	0	0	9	---	Integer	R	
PH13	Scheduler_1.SaveData	Save data	0	0	1	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[0]. Enabled	Leave period	0	0	1	---	Digital	R/W	
PH13a	Scheduler_1.VacationsSched[0]. StartDay	First day of the period	0	1	31	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[0]. StartMonth	First month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[0]. EndDay	Last day of the period	0	1	31	---	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Clock/Scheduler" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
PH13a	Scheduler_1.VacationsSched[0].EndMonth	Last month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[0].UnitStatus	Unit status during the holiday period (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[1].Enabled	Leave period	0	0	1	---	Digital	R/W	
PH13a	Scheduler_1.VacationsSched[1].StartDay	First day of the period	0	1	31	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[1].StartMonth	First month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[1].EndDay	Last day of the period	0	1	31	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[1].EndMonth	Last month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[1].UnitStatus	Unit status during the holiday period (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[2].Enabled	Leave period	0	0	1	---	Digital	R/W	
PH13a	Scheduler_1.VacationsSched[2].StartDay	First day of the period	0	1	31	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[2].StartMonth	First month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[2].EndDay	Last day of the period	0	1	31	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[2].EndMonth	Last month of the period	0	1	12	---	Integer	R/W	
PH13a	Scheduler_1.VacationsSched[2].UnitStatus	Unit status during the holiday period (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT)	0	0	3	---	Integer	R/W	
PH13a	Scheduler_1.VacationsMsg	Messages to be displayed for holiday periods	0	0	9	---	Integer	R	
PH13b	Scheduler_1.SpecDaysSched[0].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[0].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[0].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[0].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[1].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[1].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[1].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[1].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[2].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[2].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[2].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[2].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[3].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[3].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[3].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[3].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[4].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[4].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[4].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[4].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[5].Enabled	Special day enabled	0	0	1	---	Digital	R/W	
PH13b	Scheduler_1.SpecDaysSched[5].SpecialDay	Special day	0	1	31	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[5].SpecialMonth	Special month	0	1	12	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysSched[5].UnitStatus	Unit status on special day (0=OFF; 1=PROTECTION; 2=ECONOMY; 3=COMFORT; 4=AUTO)	0	0	4	---	Integer	R/W	
PH13b	Scheduler_1.SpecDaysMsg	Messages to be displayed for special days	0	0	9	---	Integer	R	
PH14	SET_INT_FRIO	Setpoint for COMFORT time slots in summer	26.0	-99.9	99.9	°C	Analog.	R/W	61
PH14	SET_EXT_FRIO	Setpoint for ECONOMY time slots in summer	28.0	-99.9	99.9	°C	Analog.	R/W	59
PH14	SET_EXT_LIM_FRIO	Setpoint for BUILDING PROTECTION time slots in summer	34.0	-99.9	99.9	°C	Analog.	R/W	77
PH14	DIF_LIM_FRIO	Differential for setpoint of BUILDING PROTECTION in summer	2.0	0.0	99.9	°C	Analog.	R/W	80
PH15	SET_INT_CALOR	Setpoint for COMFORT time slots in winter	21.0	-99.9	99.9	°C	Analog.	R/W	60
PH15	SET_EXT_CALOR	Setpoint for ECONOMY time slots in winter	19.0	-99.9	99.9	°C	Analog.	R/W	58
PH15	SET_EXT_LIM_CALOR	Setpoint for BUILDING PROTECTION time slots in winter	13.0	-99.9	99.9	°C	Analog.	R/W	76
PH15	DIF_LIM_CALOR	Differential for the setpoint of BUILDING PROTECTION in winter	1.0	0.0	99.9	°C	Analog.	R/W	81
PH16	ThTune_clock_hours	Display of data from the TCO terminal: hour	0	0	99	---	Integer	R	
PH16	ThTune_clock_minutes	Display of data from the TCO terminal: minutes	0	0	99	---	Integer	R	
PH16	NEW_DAY	Display of data from the TCO terminal: day	0	0	31	---	Integer	R/W	121
PH16	NEW_MONTH	Display of data from the TCO terminal: month	0	0	12	---	Integer	R/W	122
PH16	NEW_YEAR	Display of data from the TCO terminal: year	0	0	99	---	Integer	R/W	123
PH16	ThTune_clock_weekday	Display of data from the TCO terminal: weekday	0	1	7	---	Integer	R	
PH17	HAB_PROG_HORARIA_CLOCK_KEY	Display of data from the TCO terminal: ON/OFF schedule prog.	0	0	1	---	Digital	R	
PH17	ThTune_Temperature_setpoint	Display of data from the TCO terminal: temperature setpoint	0.0	0.0	99.9	---	Analog.	R/W	
PH17	Current_Timeband_Icon	Display of data from the TCO terminal: current band of scheduling	0	0	6	---	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Input/Output"

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I01	TEMP_RET	Display of the return air temperature	0.0	-99.9	99.9	°C	Analog.	R	1
I01	TEMP_EXT	Display of the outdoor air temperature	0.0	-99.9	99.9	°C	Analog.	R	2
I01a	TEMP_SONDA_AMB	Display of the ambient air temperature (NTC or RS485)	0.0	-99.9	99.9	°C	Analog.	R	
I01a	SONDA_AMB_1_TEMP	Display of the ambient temperature probe No.1 - RS485	0.0	-99.9	99.9	°C	Analog.	R	193
I01a	SONDA_AMB_2_TEMP	Display of the ambient temperature probe No.2 - RS485	0.0	-99.9	99.9	°C	Analog.	R	196
I01a	SONDA_AMB_3_TEMP	Display of the ambient temperature probe No.3 - RS485	0.0	-99.9	99.9	°C	Analog.	R	241
I01a	SONDA_AMB_4_TEMP	Display of the ambient temperature probe No.4 - RS485	0.0	-99.9	99.9	°C	Analog.	R	244
I01a	SEL_TEMP_SONDAS_AMB_CALOR	Selection of the value of ambient temperature with RS485 probes in HEATING mode (0 = middle, 1 = minimum, 2 = maximum)	0	0	2	---	Analog.	R	200
I01a	SEL_TEMP_SONDAS_AMB_FRIO	Selection of the value of ambient temperature with RS485 probes in COOLING mode (0 = middle, 1 = minimum, 2 = maximum)	0	0	2	---	Analog.	R	199
I01b	TEMP_TCO	Selection of the value of ambient temperature with TCO terminal	0.0	-99.9	99.9	°C	Analog.	R	14
I02	HUM_SONDA_INT_RS485_O_AI10	Display of the ambient humidity RS485 probe (middle value)	0.0	-99.9	99.9	%rH	Analog.	R	5
I02	SONDA_AMB_1_HUM	Display of the ambient humidity probe No.1 - RS485	0.0	-99.9	99.9	%rH	Analog.	R	194
I02	SONDA_AMB_2_HUM	Display of the ambient humidity probe No.2 - RS485	0.0	-99.9	99.9	%rH	Analog.	R	197
I02	SONDA_AMB_3_HUM	Display of the ambient humidity probe No.3 - RS485	0.0	-99.9	99.9	%rH	Analog.	R	242
I02	SONDA_AMB_4_HUM	Display of the ambient humidity probe No.4 - RS485	0.0	-99.9	99.9	%rH	Analog.	R	245
I02a	HUM_EXT	Display of the outdoor air humidity	0.0	-99.9	99.9	%rH	Analog.	R	6
I02b	Speed_Input_Rpm_FRIO_Fan1	rpm setpoint for control of supply fan in COOING mode	1200	0	2950	rpm	Integer	R	275
I02b	Speed_Input_Rpm_CALOR_Fan1	rpm setpoint for control of supply fan in HEATING mode	1200	0	2950	rpm	Integer	R	277
I02b	Speed_Input_Rpm_VENTIL_Fan1	rpm setpoint for control of supply fan in VENTILATION	1200	0	2950	rpm	Integer	R	279
I02b	CAUDAL_VINT_MEDIDO_AJUSTE	Measured flow rate at supply	0	0	99999	m^3/h	Integer	R	198
I02b	actual_speed_msk_Fan1	Current speed of supply fan	0	0	9999	rpm	Integer	R	199
I02b	SET_CAUDAL_VINT_FRIO	Setpoint for constant supply flow control in COOING mode	30600	0	99999	m^3/h	Integer	R	200
I02b	SET_CAUDAL_VINT_CALOR	Setpoint for constant supply flow control in HEATING mode	30600	0	99999	m^3/h	Integer	R	201
I02b	SET_CAUDAL_VINT_ VENTILACION	Setpoint for constant supply flow control in VENTILATION	30600	0	99999	m^3/h	Integer	R	197
I02b	Speed_Input_perc_FRIO_Fan1	% setpoint for PWM control of supply fan in COOING mode	50.0	0.0	100.0	%	Analog.	R	160
I02b	Speed_Input_perc_CALOR_Fan1	% setpoint for PWM control of supply fan in HEATING mode	50.0	0.0	100.0	%	Analog.	R	161
I02b	Speed_Input_perc_VENTIL_Fan1	% setpoint for PWM control of supply fan in VENTILATION	50.0	0.0	100.0	%	Analog.	R	159
I02c	Speed_Input_Rpm_FRIO_Fan2	rpm setpoint for control of return fan in COOING mode	1200	0	2950	rpm	Integer	R	276
I02c	Speed_Input_Rpm_CALOR_Fan2	rpm setpoint for control of return fan in HEATING mode	1200	0	2950	rpm	Integer	R	278
I02c	Speed_Input_Rpm_VENTIL_Fan2	rpm setpoint for control of return fan in VENTILATION	1200	0	2950	rpm	Integer	R	280
I02c	CAUDAL_VRET_MEDIDO_AJUSTE	Measured flow rate at return	0	0	99999	m^3/h	Integer	R	204
I02c	actual_speed_msk_Fan2	Current speed of return fan	0	0	9999	rpm	Integer	R	205
I02c	SET_CAUDAL_VRET_FRIO	Setpoint for constant return flow control in COOING mode	30600	0	99999	m^3/h	Integer	R	206
I02c	SET_CAUDAL_VRET_CALOR	Setpoint for constant return flow control in HEATING mode	30600	0	99999	m^3/h	Integer	R	207
I02c	SET_CAUDAL_VRET_ VENTILACION	Setpoint for constant return flow control in VENTILATION	30600	0	99999	m^3/h	Integer	R	203
I02c	Speed_Input_perc_FRIO_Fan2	% setpoint for PWM control of return fan in COOING mode	50.0	0.0	100.0	%	Analog.	R	175
I02c	Speed_Input_perc_CALOR_Fan2	% setpoint for PWM control of return fan in HEATING mode	50.0	0.0	100.0	%	Analog.	R	176
I02c	Speed_Input_perc_VENTIL_Fan2	% setpoint for PWM control of return fan in VENTILATION	50.0	0.0	100.0	%	Analog.	R	174
I03	TEMP_IMP	Display of the supply air temperature	0.0	-99.9	99.9	°C	Analog.	R	7
I03	TEMP_MEZCLA	Display of the mixing air temperature	0.0	-99.9	99.9	°C	Analog.	R	8
I03a	CO2	Display of the CO2 probe or the difference between indoor probe and outdoor probe (in units with outdoor CO2 probe)	0	-9999	9999	ppm	Integer	R	3
I03a	CO2_FISICA_zona1	Reading of the CO2 probe of zone 1 (zoning into 2 zones)	0	-9999	9999	ppm	Integer	R	256
I03a	CO2_FISICA_zona2	Reading of the CO2 probe of zone 2 (zoning into 2 zones) or second CO2 probe or outdoor CO2 probe	0	-9999	9999	ppm	Integer	R	220
I03a1	CO2	Display of the differential pressure sensor reading for air renewal (Pa)	0	-9999	9999	Pa	Integer	R	3
I03b	TEMP_ENTRADA_BAC	Display of the water inlet temperature of the hot water coil	0.0	-99.9	99.9	°C	Analog.	R	25
I03b	TEMP_SALIDA_BAC	Display of the water outlet temperature of the hot water coil	0.0	-99.9	99.9	°C	Analog.	R	26
I03c	TEMP_EXTRACCION_RUEDA	Display of the exhaust air temperature on the wheel	0.0	-99.9	99.9	°C	Analog.	R	247
I03c	TEMP_RECUPERACION_RUEDA	Display of the recovery air temperature on the wheel	0.0	-99.9	99.9	°C	Analog.	R	249
I04a	ENTALPIA_EXT_KCAL	Display of the outdoor enthalpy	0.0	-99.999	99.999	Kcal/kg	Integer	R	14,15
I04a	HUM_EXT	Display of the outdoor air humidity	0.0	-99.9	99.9	%rH	Analog.	R	6
I04b	ENTALPIA_INT_KCAL	Display of the indoor enthalpy	0.0	-99.999	99.999	Kcal/kg	Integer	R	16,17
I04b	HUM_INT	Display of the indoor air humidity	0.0	-99.9	99.9	%rH	Analog.	R	5
I05a	T_P_HP_C1	Display of the high pressure transducer of circuit 1	0.0	-99.9	99.9	bar	Analog.	R	3
I05a	TEMP_CAL_HP_C1	Calculated temperature for high pressure of circuit 1	0.0	-99.9	99.9	°C	Analog.	R	123
I05a	T_P_HP_C2	Display of the high pressure transducer of circuit 2	0.0	-99.9	99.9	bar	Analog.	R	4
I05a	TEMP_CAL_HP_C2	Calculated temperature for high pressure of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	124

17 - LIST OF CONTROL PARAMETERS

Parameters of "Input/Output" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I05c	T_P_LP_C1_AIN06	Display of the low pressure transducer of circuit 1	0.0	-99.9	99.9	bar	Analog.	R	204
I05c	TEMP_CAL_LP_C1_AIN06	Calculated temperature for low pressure of circuit 1	0.0	-99.9	99.9	---	Analog.	R	206
I05c	T_P_LP_C2_AIN09	Display of the low pressure transducer of circuit 2	0.0	-99.9	99.9	bar	Analog.	R	205
I05c	TEMP_CAL_LP_C2_AIN09	Calculated temperature for low pressure of circuit 2	0.0	-99.9	99.9	---	Analog.	R	207
I05e	TEMP_ASP_C1_AIN08	Display of the suction temperature of circuit 1	0.0	-99.9	99.9	---	Analog.	R	251
I05e	SHTemp_A	Display of overheating of circuit 1	00.0	-99.9	99.9	---	Integer	R	
I05e	TEMP_ASP_C2_AIN11	Display of the suction temperature of circuit 2	0.0	-99.9	99.9	---	Analog.	R	252
I05e	SHTemp_B	Display of overheating of circuit 2	00.0	-99.9	99.9	---	Integer	R	
I05f	TEMP_ASP_C2_AIN11	Display of the outdoor coil temperature (1-circuit units)	0.0	-99.9	99.9	---	Analog.	R	252
I06a	T_P_HP_C1	Display of the high pressure transducer of circuit 1	0.0	-99.9	99.9	bar	Analog.	R	3
I06a	TEMP_CAL_HP_C1	Calculated temperature for high pressure of circuit 1	0.0	-99.9	99.9	°C	Analog.	R	123
I06a	COMPRESOR_1	Contactor of compressor 1 circuit 1	0	0	1	---	Digital	R	16
I06a	COMPRESOR_1_2	Contactor of compressor 2 circuit 1	0	0	1	---	Digital	R	76
I06a	TEMP_ASP_C1_EVOS	Suction temperature on circuit 1	0.0	-99.9	99.9	°C	Analog.	R	
I06a	T_P_LP_C1_EVOS	Evaporating pressure on circuit 1	0.0	-99.9	99.9	bar	Analog.	R	
I06a	TEMP_CAL_LP_C1_EVOS	Evaporating temperature on circuit 1	0.0	-99.9	99.9	°C	Analog.	R	
I06a1	I4_EEV_POSITION_STEP	Valve position (steps) of circuit 1	0	-9999	9999	---	Integer	R	
I06a1	A17_EEV_POSITION_PERCENT	Valve opening (%) of circuit 1	0.0	0.0	100.0	%	Analog.	R	255
I06a1	EVD1_RegStatus	Status of circuit 1 valve	0	-32768	32767	---	Integer	R	
I06a1	EVD1_ProtStatus	Status of circuit 1 valve protection	0	-32768	32767	---	Integer	R	
I06a1	SH_A_EVOS	Overheating on the expansion valve of circuit 1	0.0	-99.9	99.9	K	Analog.	R	253
I06b	T_P_HP_C2	Display of the high pressure transducer of circuit 2	0.0	-99.9	99.9	bar	Analog.	R	4
I06b	TEMP_CAL_HP_C2	Calculated temperature for high pressure of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	124
I06b	COMPRESOR_2	Contactor of compressor 1 circuit 2	0	0	1	---	Digital	R	17
I06b	COMPRESOR_2_2	Contactor of compressor 2 circuit 2	0	0	1	---	Digital	R	77
I06b	TEMP_ASP_C2_EVOS	Suction temperature on circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
I06b1	T_P_LP_C2_EVOS	Evaporating pressure on circuit 2	0.0	-99.9	99.9	bar	Analog.	R	
I06b1	TEMP_CAL_LP_C2_EVOS	Evaporating temperature on circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
I06b1	I149_EEV_POSITION_STEP_2ND	Valve position (steps) of circuit 2	0	-9999	9999	---	Integer	R	
I06b1	A66_EEV_POSITION_PERCENT_2ND	Valve opening (%) of circuit 2	0.0	0.0	100.0	%	Analog.	R	256
I06b1	EVD2_RegStatus	Status of circuit 2 valve	0	-32768	32767	---	Integer	R	
I06b1	EVD2_ProtStatus	Status of circuit 2 valve protection	0	-32768	32767	---	Integer	R	
I06b1	SH_B_EVOS	Overheating on the expansion valve of circuit 1	0.0	-99.9	99.9	K	Analog.	R	254
I06c1	TEMP_ASP_C1_EVOS	Suction temperature on circuit 1	0.0	-99.9	99.9	°C	Analog.	R	
I06c1	SH_A_EVOS	Overheating on the expansion valve of circuit 1	0.0	-99.9	99.9	K	Analog.	R	253
I06e	T_P_LP_C1_EVOS	Evaporating pressure on the circuit 1 valve	0.0	-99.9	99.9	bar	Analog.	R	
I06e	TEMP_CAL_LP_C1_EVOS	Evaporating temperature on the circuit 1 valve	0.0	-99.9	99.9	°C	Analog.	R	
I06f	TEMP_ASP_C2_EVOS	Suction temperature on circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
I06f	SH_B_EVOS	Overheating on the expansion valve of circuit 2	0.0	-99.9	99.9	K	Analog.	R	254
I06g	T_P_LP_C2_EVOS	Evaporating pressure on the circuit 2 valve	0.0	-99.9	99.9	bar	Analog.	R	
I06g	TEMP_CAL_LP_C2_EVOS	Evaporating temperature on the circuit 2 valve	0.0	-99.9	99.9	°C	Analog.	R	
I07	N_HOR_ON_EQUIPO	Display of operating hours of unit	0	0	32767	h	Integer	R	62
I07	N_HOR_COMP1	Display of operating hours of compressor 1 circuit 1	0	0	32767	h	Integer	R	10
I07	N_HOR_COMP1_2	Display of operating hours of compressor 2 circuit 1	0	0	32767	h	Integer	R	53
I07a	N_HOR_COMP2	Display of operating hours of compressor 1 circuit 2	0	0	32767	h	Integer	R	11
I07a	N_HOR_COMP2_2	Display of operating hours of compressor 2 circuit 2	0	0	32767	h	Integer	R	69
I07a	N_HOR_CR	Display of operating hours of recovery compressor	0	0	32767	h	Integer	R	12
I08	DIN01_RTVI	Status of digital input 1: supply fan thermal protection	0	0	1	---	Digital	R	12
I08	DIN02_INC	Status of digital input 2: gas detector	0	0	1	---	Digital	R	135
I08	DIN03_AP1	Status of digital input 3: high pressure circuit 1	0	0	1	---	Digital	R	1
I08	DIN04_TC1	Status of digital input 4: thermal protection of compressors and outdoor fans of circuit 1	0	0	1	---	Digital	R	5
I08	DIN05_TS_IC	Status of digital input 5: safety of el. heaters / burner / boiler	0	0	1	---	Digital	R	7
I08	DIN06_FS	Status of digital input 6: clogged filters detector	0	0	1	---	Digital	R	11
I08	DIN07_ON_OFF	Status of digital input 7: remote ON/OFF	0	0	1	---	Digital	R	
I08	DIN08_AH_BAC_REC_ROT	Status of digital input 8: antifreeze safety of the hot water coil (HWC)	0	0	1	---	Digital	R	
I08	DIN09_AP2	Status of digital input 9: high pressure circuit 2	0	0	1	---	Digital	R	2
I08	DIN10_TC2	Status of digital input 10: thermal protection of compressors and outdoor fans of circuit 2	0	0	1	---	Digital	R	6
I08a	DIN21_OFF_1ET	Status of digital input 21: disconnection of 1 compressor stage	0	0	1	---	Digital	R	
I08a	DIN_OFF_2ET	Status of digital input 22: disconnection of 2 compressor stages	0	0	1	---	Digital	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Input/Output" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I08a	DIN_OFF_4ET	Status of digital input 23: disconnection of 4 compressor stages	0	0	1	---	Digital	R	
I08a	DIN_OFF_RES	Status of digital input 24: disconnection of electrical heaters	0	0	1	---	Digital	R	
I08b	DIN25_DEBUG	Status of digital input 25: opening of supply damper of zone 1	0	0	1	---	Digital	R	
I08b	DIN26_DEBUG	Status of digital input 26: opening of supply damper of zone 2	0	0	1	---	Digital	R	
I08b	DIN27_DEBUG	Status of digital input 27: opening of return damper of zone 1	0	0	1	---	Digital	R	
I08b	DIN28_DEBUG	Status of digital input 28: opening of return damper of zone 2	0	0	1	---	Digital	R	
I09	COMPRESOR_1	Status of contactor of compressor 1 circuit 1	0	0	1	---	Digital	R	16
I09	COMPRESOR_1_2	Status of contactor of compressor 2 circuit 1	0	0	1	---	Digital	R	76
I09	COMPRESOR_2	Status of contactor of compressor 1 circuit 2	0	0	1	---	Digital	R	17
I09	COMPRESOR_2_2	Status of contactor of compressor 2 circuit 2	0	0	1	---	Digital	R	77
I09a	RES_ELECTRICA_1_O_ VALV	Status of contactor of 1st stage of electrical heaters or gas burner or gas boiler or hot water coil valve	0	0	1	---	Digital	R	20
I09a	RES_ELECTRICA_2	Status of contactor of 2nd stage of electrical heaters	0	0	1	---	Digital	R	21
I10	OUT_VIC1	Status of cycle reversing valve of circuit 1	0	0	1	---	Digital	R	18
I10	OUT_VIC2	Status of cycle reversing valve of circuit 2	0	0	1	---	Digital	R	19
I10	VENTILADOR_EXT_1	Status of outdoor fan(s) of circuit 1	0	0	1	---	Digital	R	23
I10	VENTILADOR_EXT_2	Status of outdoor fan(s) of circuit 2	0	0	1	---	Digital	R	24
I10b	DOUT18	Status of digital output 18: elective heating for the piping layout of the water circuit with GREAT COLD or configurable output (humidifier, HWC pump, alarm signal,...)	0	0	1	---	Digital	R	
I10b	DOUT19	Status of digital output 19: compressor with supplementary crankcase heater	0	0	1	---	Digital	R	
I10b	DOUT20	Status salida digital 20: electrical heater for protection of fresh air damper or solenoid valve SV1 with actve dehumidification	0	0	1	---	Digital	R	
I10b	DOUT21	Status of digital output 21: configurable output (humidifier, HWC pump, alarm signal,...) or solenoid valve SV2 with actve dehumidification	0	0	1	---	Digital	R	
I10c	DOUT22	Status of digital output 22: supply damper of zone 1	0	0	1	---	Digital	R	
I10c	DOUT23	Status of digital output 23: supply damper of zone 2	0	0	1	---	Digital	R	
I10c	DOUT24	Status of digital output 24: return damper of zone 1	0	0	1	---	Digital	R	
I10c	DOUT25	Status of digital output 25: return damper of zone 2	0	0	1	---	Digital	R	
I11	ON_VENTILADOR_INT	Status of indoor unit supply fan	0	0	1	---	Digital	R	15
I11	OUT_07	Status of output NO7 in which one of the following options can be connected: on-off humidifier, circulation pump of the hot water coil, boiler pump, rotary heat exchanger or remote alarm signal	0	0	1	---	Digital	R	
I12	AOUT_COMPUERTA	Display of opening % of fresh air damper (optional). Range vary between 0% (0V) and 100% (10V)	0.0	0.0	100.0	---	Analog.	R	10
I12	AOUT_VALV_O_RES_ PROP_O_HUMIDIF	Display of opening % of : HWC heat valve or proportional electrical heater or proportional humidifier or gas burner/boiler or overpressure damper	0.0	0.0	100.0	---	Analog.	R	11
I12a	AOUT_VEN_EXT1	Display of operating % of electronic outdoor fan(s) of circuit 1	0.0	0.0	100.0	---	Analog.	R	12
I12a	AOUT_VEN_EXT2	Display of operating % of electronic outdoor fan(s) of circuit 2	0.0	0.0	100.0	---	Analog.	R	13
I12b	AOUT6	Display of % proportional humidifier or exhaust damper or 3-way valve (3-WV) of the condensation coil with active dehumidification	0.0	0.0	100.0	---	Analog.	R	
I12c	AOUT7	Display of operating % of the wheel (variable rotary heat exchanger) or preheater with electrical heater	0.0	0.0	100.0	---	Analog.	R	
I12d	SET_PRES_DIF_IMP	Differential pressure sensor setpoint for constant supply pressure	200	0	10000	Pa	Integer	R	292
I12d	PRES_DIF_IMP	Differential pressure sensor reading for constant supply pressure	0	-99999	99999	Pa	Integer	R	291
I12d1	SET_PRES_DIF_IMP	Differential pressure sensor setpoint for overpressure control with return fan	45	-50	50	Pa	Integer	R	292
I12d1	PRES_DIF_IMP	Differential pressure sensor reading for overpressure control with return fan	0	-99999	99999	Pa	Integer	R	291
I12d2	SET_PRES_COMP_IMP_ ACTIVA	Differential pressure sensor setpoint for pressure control with supply damper	600	0	1000	Pa	Integer	R	
I12d2	PRES_DIF_IMP	Differential pressure sensor reading for pressure control with supply damper	0	0	1000	Pa	Integer	R	291
I12d2	HAB_AUTO_SET_PRES_ COMP_IMP_OK	Display of active AUTO mode for pressure control with supply damper	0	0	1	---	Digital	R	
I12d2	MODO_BOOST_ON	Type of AUTO mode for pressure control with supply damper: 0: Standard mode (STD) active 1: Boost mode (BOOST) active	0	0	1	---	Digital	R	
I12e	ACTIVAR_FBC1	Status of the condensate pump	0	0	1	---	Digital	R	
I12e	DEMANDA_ACTIVAR_FBC1	Condensate pump operating demand	0	0	1	---	Digital	R	
I15	VOLTAGE_L1_L2	Reading of the energy meter: voltage between phases L1-L2	0	-9999	9999	V	Integer	R	167
I15	VOLTAGE_L3_L1	Reading of the energy meter: voltage between phases L2-L3	0	-9999	9999	V	Integer	R	168
I15	VOLTAGE_L3_L1	Reading of the energy meter: voltage between phases L3-L1	0	-9999	9999	V	Integer	R	169
I15	VOLTAGE_L2	Reading of the energy meter: voltage between phase L1 and neutral	0	-9999	9999	V	Integer	R	170
I15	VOLTAGE_L2	Reading of the energy meter: voltage between phase L2 and neutral	0	-9999	9999	V	Integer	R	171
I15	VOLTAGE_L3	Reading of the energy meter: voltage between phase L3 and neutral	0	-9999	9999	V	Integer	R	172
I16	CURRENT_L1	Reading of the energy meter: current phase L1	0.0	-999.9	999.9	A	Analog.	R	131
I16	CURRENT_L2	Reading of the energy meter: current phase L2	0.0	-999.9	999.9	A	Analog.	R	132

17 - LIST OF CONTROL PARAMETERS

Parameters of "Input/Output" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I16	CURRENT_L3	Reading of the energy meter: current phase L3	0.0	-999.9	999.9	A	Analog.	R	133
I16	TYPE_INDUCTIVE_O_ CAPACITIVE	Inductive character L (0) or capacitive character C (1) of the equivalent electrical load of the unit	0	0	1	---	Digital	R	334
I16	POWER_FACTOR	Reading of the energy meter: power factor	0	0	32	---	Integer	R	173
I16	FREQUENCY	Reading of the energy meter: frequency	0.0	-999.9	999.9	Hz	Analog.	R	142
I17	REACTIVE_POWER_L1	Reading of the energy meter: reactive power phase L1	0.0	-999.9	999.9	kVAR	Analog.	R	134
I17	REACTIVE_POWER_L2	Reading of the energy meter: reactive power phase L2	0.0	-999.9	999.9	kVAR	Analog.	R	135
I17	REACTIVE_POWER_L3	Reading of the energy meter: reactive power phase L3	0.0	-999.9	999.9	kVAR	Analog.	R	136
I17	REACTIVE_POWER_TOTAL	Reading of the energy meter: total reactive power	0.0	-999.9	999.9	kVAR	Analog.	R	315
I17	REACTIVE_ENERGY	Reading of the energy meter: equivalent reactive energy	0	0	4294967295	kWhR	Integer	R	174,175
I18	POWER_L1	Reading of the energy meter: phase power L1	0.0	-999.9	999.9	W	Analog.	R	137
I18	POWER_L2	Reading of the energy meter: phase power L2	0.0	-999.9	999.9	W	Analog.	R	138
I18	POWER_L3	Reading of the energy meter: phase power L3	0.0	-999.9	999.9	W	Analog.	R	139
I18	POWER_TOTAL	Reading of the energy meter: total power		-999.9	999.9	kW	Analog.	R	140
I18	ENERGY	Reading of the energy meter: energy	0	0	4294967295	kWh	Integer	R	176,177
I18	HOURMETER_EM	Reading of the energy meter: time (hours)	0	0	4294967295	h	Integer	R	180,181
I18a	DevAddr_GLD	Number of the R-410A gas leak detector	6	0	999	---	Integer	R/W	
I18a	Concentration_Percent_Gas_ Leakag	Reading of the R-410A gas leak detector: concentration (%)	0	0	100	%	Integer	R	7
I18a	Concentration_ppm_Gas_ Leakag	Reading of the R-410A gas leak detector: concentration (ppm)	0	0	5000	ppm	Integer	R	6
I18a	RedLedStatus_GLD	Reading of the R-410A gas leak detector: red led: 1= Active; 0= Off	0	0	1	---	Digital	R	
I18a	GreenLedStatus_GLD	Reading of the R-410A gas leak detector: green led: 1= Active; 0= Off	0	0	1	---	Digital	R	
I18a	Relay_Status_GLD	Reading of the R-410A gas leak detector: relay: 1= Active; 0= Off	0	0	1	---	Digital	R	
I18b	ENTALPIA_MEZCLA_KCAL	Calculation of cooling and heating capacities: display of input enthalpy	0.0	-999.9	999.9	Kcal/Kg	Analog.	R	237
I18b	SONDA_MEZCLA_HUM	Calculation of cooling and heating capacities: supply probe - display of input humidity	0.0	0.0	100.0	%rH	Analog.	R/W	232
I18b	SONDA_MEZCLA_TEMP	Calculation of cooling and heating capacities: mixing probe RS485 - display of input temperature	0.0	-999.9	999.9	°C	Analog.	R	231
I18c	ENTALPIA_IMPULSION_ KCAL	Calculation of cooling and heating capacities: display of output enthalpy	0.0	-999.9	999.9	Kcal/Kg	Analog.	R	238
I18c	SONDA_IMPULSION_HUM	Calculation of cooling and heating capacities: supply probe - display of output humidity	0.0	0.0	100.0	%rH	Analog.	R	235
I18c	SONDA_IMPULSION_TEMP	Calculation of cooling and heating capacities: mixing probe RS485 - display of output temperature	0.0	-999.9	999.9	°C	Analog.	R	234
I18d	CAUDAL_IMPULSION_MSK	Calculation of cooling and heating capacities: display of supply flow	0	-99999	99999	x10 m^3/h	Integer	R/W	
I18d	DIF_ENTALPIA_POT_ TERMICA_KCAL	Calculation of cooling and heating capacities: display of the input-output enthalpy difference	0.0	-999.9	999.9	KJ/Kg	Analog.	R	268
I18d	Densidad_aire_impulsion	Calculation of cooling and heating capacities: display of air density	0	-99999	99999	x10 g/m^3	Integer	R	231
I18d	Pot_termica	Calculation of cooling and heating capacities: display of total capacity	0.0	-9999.9	9999.9	KW	Analog.	R	239
I18d	POWER_TOTAL	Calculation of cooling and heating capacities: display of electric power	0.0	-9999.9	9999.9	kW	Analog.	R	140
I18e	MODO_FRIO_2	Calculation of cooling and heating capacities: operating mode	0	0	1	---	Digital	R	
I18e	EER_COP	Calculation of cooling and heating capacities: display of EER / COP calculation	0.0	-999.9	999.9	---	Analog.	R	240
I18e	ON_COMPRESOR	Calculation of cooling and heating capacities: display of started compressors	0	0	1	---	Digital	R	186
I18e	PORC_COMPRESORES	Calculation of cooling and heating capacities: display of compressor stages (%)	0	0	100	%	Integer	R	232
I18e	COMPRESOR_REC	Calculation of cooling and heating capacities: display of recovery compressor	0	0	1	---	Digital	R/W	117
I18e	RENOVACION_CAL	Calculation of cooling and heating capacities: display of air renewal calculated depending on the mixing probe or the CO2 probe	0	0	100	%	Integer	R	124
I18e	TEMP_INT	Calculation of cooling and heating capacities: display of indoor temperature used in the unit control	0.0	-99.9	99.9	°C	Analog.	R/W	291
I18e	TEMP_EXT	Calculation of cooling and heating capacities: display of outdoor temperature	0.0	-99.9	99.9	°C	Analog.	R/W	2
I18f	TH_ENERGY_FRIO	Thermal energy in COOLING mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18f	ELEC_ENERGY_FRIO	Electrical energy in COOLING mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18f	SEER	Seasonal efficiency in COOLING mode with at least one active compressor	0.0	0.0	10.0	---	Analog.	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Input/Output" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I18g	TH_ENERGY_CALOR	Thermal energy in HEATING mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18g	ELEC_ENERGY_CALOR	Electrical energy in HEATING mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18g	SCOP	Seasonal efficiency in HEATING mode with at least one active compressor	0.0	0.0	10.0	---	Analog.	R	
I18h	TH_ENERGY_AUTO	Thermal energy in AUTO mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18h	ELEC_ENERGY_AUTO	Electrical energy in AUTO mode with at least one active compressor	0	0	4294967295	kWh	Integer	R	
I18h	SPERF	Seasonal efficiency in AUTO mode with at least one active compressor	0.0	0.0	10.0	---	Analog.	R	
I06cr1	T_P_HP_CR	Display of the high pressure transducer of the recovery circuit	0.0	-999.9	999.9	bar	Analog.	R	263
I06cr1	TEMP_CAL_HP_CR	Calculated temperature for high pressure of the recovery circuit	0.0	-999.9	999.9	°C	Analog.	R	265
I06cr1	COMPRESOR_REC	Contactor of recovery circuit compressor	0	0	1	---	Digital	R	117
I06cr1	TEMP_ASP_CR	Suction temperature on the recovery circuit	0.0	-999.9	999.9	°C	Analog.	R	259
I06cr1	T_P_LP_CR	Evaporating pressure on the recovery circuit	0.0	-999.9	999.9	bar	Analog.	R	264
I06cr1	TEMP_CAL_LP_CR	Evaporating temperature on the recovery circuit	0.0	-999.9	999.9	°C	Analog.	R	266
I06cr2	EEV_POS_STEPS_CR	Valve position (steps) of the recovery circuit	0	-9999	9999	---	Integer	R	
I06cr2	EEV_POS_PERCENT_CR	Valve opening (%) of the recovery circuit	0.0	0.0	100.0	%	Analog.	R	261
I06cr2	EVD_CR_RegStatus	Status of the recovery circuit valve	0	-32768	32767	---	Integer	R	
I06cr2	EVD_CR_ProtStatus	Status of the recovery circuit valve protection	0	-32768	32767	---	Integer	R	
I06cr2	SH_EVOS_CR	Overheating on the expansion valve of the recovery circuit	0.0	-999.9	999.9	ºC	Analog.	R	260
I08cr	CR_DIN01_DEBUG	Status of digital input: remote On/Off	0	0	1	---	Digital	R	
I08cr	CR_DIN02_DEBUG	Status of digital input: high pressure switch of the recovery circuit	0	0	1	---	Digital	R	
I08cr	CR_DIN03_DEBUG	Status of digital input: compressor thermal protection of the recovery circuit	0	0	1	---	Digital	R	
I08cr	DIN25_M8_C_F_DEBUG	Status of digital input: remote Cooling/Heating	0	0	1	---	Digital	R	
I10cr	COMPRESOR_REC	Status of digital output: Contactor of the recovery compresor	0	0	1	---	Digital	R	117
I10cr	OUT_VIC_CR	Status of digital output: cycle reversing valve of recovery compresor	0	0	1	---	Digital	R	278
I10cr	RELE_ALARMA_CR	Status of digital output: alarm relay	0	0	1	---	Digital	R	
I10cr	DOUT19	Status of digital output 19: compressor with supplementary crankcase heater	0	0	1	---	Digital	R	
I10cr	DOUT20	Status of digital output 20: electrical heater for protection of fresh air damper or solenoid valve SV1 with actve dehumidification	0	0	1	---	Digital	R	
I10cr	DOUT18	Status of digital output 18: electical heating for the piping layout of the water circuit with GREAT COLD or configurable output (humidifier, HWC pump, alarm signal,...)	0	0	1	---	Digital	R	
I02zn	TEMP_TCO11	Display of the temperature meaured by terminal on zone 1 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	294
I02zn	TEMP_TCO12	Display of the temperature meaured by terminal on zone 2 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	295
I02zn	TEMP_TCO13	Display of the temperature meaured by terminal on zone 3 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	296
I02zn	TEMP_TCO14	Display of the temperature meaured by terminal on zone 4 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	297
I03zn	TEMP_RET_Z1	Display of the NTC probe return temperature (optional) of zone 1 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	299
I03zn	TEMP_RET_Z2	Display of the NTC probe return temperature (optional) of zone 2 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	300
I03zn	TEMP_RET_Z3	Display of the NTC probe return temperature (optional) of zone 3 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	301
I03zn	TEMP_RET_Z4	Display of the NTC probe return temperature (optional) of zone 4 (air zoning)	0.0	-99.9	99.9	°C	Analog.	R	302
I08zn	COMPUERTA_IMP_ZONA1_ABIERTA	Status of digital input 01 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	COMPUERTA_IMP_ZONA2_ABIERTA	Status of digital input 02 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	COMPUERTA_IMP_ZONA3_ABIERTA	Status of digital input 03 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	COMPUERTA_IMP_ZONA4_ABIERTA	Status of digital input 04 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	ZONIF_4Z_UPC2.IN_DIG05_INC	Status of digital input 05 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	ZONIF_4Z_UPC2.IN_DIG06_RTVI	Status of digital input 06 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I08zn	ZONIF_4Z_UPC2.IN_DIG07_ON_OFF	Status of digital input 07 of SMALL board (addr.11): air flow zoning	0	0	1	---	Digital	R	
I09zn	COMPUERTA_IMP_ZONA1_ABIERTA	Status of supply damper of zone 1 (air flow zoning)	0	0	1	---	Digital	R	
I09zn	COMPUERTA_IMP_ZONA2_ABIERTA	Status of supply damper of zone 2 (air flow zoning)	0	0	1	---	Digital	R	
I09zn	COMPUERTA_IMP_ZONA3_ABIERTA	Status of supply damper of zone 3 (air flow zoning)	0	0	1	---	Digital	R	

Parameters of "Input/Output" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
I09zn	COMPUERTA_IMP_ZONA4_ ABIERTA	Status of supply damper of zone 4 (air flow zoning)	0	0	1	---	Digital	R	
I09zn	ZONIF_4Z_UPC2.DOUT5	Status of output No.5 of SMALL board (addr.11) (air flow zoning)	0	0	1	---	Digital	R	
I09zn	ZONIF_4Z_UPC2.DOUT6	Status of output No.6 of SMALL board (addr.11) (air flow zoning)	0	0	1	---	Digital	R	
I09zn	ZONIF_4Z_UPC2.RELE_ ALARMA_4Z	Status of alarm relay of SMALL board (addr.11) (air flow zoning)	0	0	1	---	Digital	R	
I19	A2L_SENSOR_PERCENT_LFL	Percentage LFL of A2L sensor of the indoor circuit (R-454B leak detector)	0.0	-999.9	999.9	%	Analog.	R	316
I19	A2L_SENSOR_PERCENT_VOL	Volume percentage of A2L sensor of the indoor circuit (R-454B leak detector)	0.0	-999.9	999.9	%	Analog.	R	317
I19	A2L_SENSOR_TEMP	Temperature of A2L sensor of the indoor circuit (R-454B leak detector)	0.0	-999.9	999.9	°C	Analog.	R	318
I19	A2L_SENSOR_LIFE	Life of A2L sensor of the indoor circuit (R-454B leak detector)	0	0	32767	---	Integer	R	293
I19b1	A2L_SENSOR_PERCENT_ LFL_EXT1_1	Percentage LFL of A2L sensor No.1 of the outdoor circuit 1 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b1	A2L_SENSOR_PERCENT_ VOL_EXT1_1	Volume percentage of A2L sensor No.1 of the outdoor circuit 1 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b1	A2L_SENSOR_PERCENT_ LFL_EXT1_2	Percentage LFL of A2L sensor No.2 of the outdoor circuit 1 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b1	A2L_SENSOR_PERCENT_ VOL_EXT1_2	Volume percentage of A2L sensor No.2 of the outdoor circuit 1 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b2	A2L_SENSOR_PERCENT_ LFL_EXT2_1	Percentage LFL of A2L sensor No.1 of the outdoor circuit 2 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b2	A2L_SENSOR_PERCENT_ VOL_EXT2_1	Volume percentage of A2L sensor No.1 of the outdoor circuit 2 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b2	A2L_SENSOR_PERCENT_ LFL_EXT2_2	Percentage LFL of A2L sensor No.2 of the outdoor circuit 2 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	
I19b2	A2L_SENSOR_PERCENT_ VOL_EXT2_2	Volume percentage of A2L sensor No.2 of the outdoor circuit 2 (R-454B leak detector)	0.0	0.0	100.0	%	Analog.	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of “Access Levels”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
NA01	ACTUAL_ACCES_LEVEL	Current access level	1	1	9	---	Integer	R	
NA01	NOT_PASS_ACCESS_LEVEL_1	Without access to level 1	0	0	1	---	Digital	R/W	
NA01	MASK_ACCES_LEVEL_1	Access to level 1	0	0	1	---	Digital	R/W	
NA01	NOT_PASS_ACCESS_LEVEL_2	Without access to level 2	0	0	1	---	Digital	R/W	
NA01	MASK_ACCES_LEVEL_2	Access to level 2	0	0	1	---	Digital	R/W	
NA01	NOT_PASS_ACCESS_LEVEL_3	Without access to level 3	0	0	1	---	Digital	R/W	
NA01	MASK_ACCES_LEVEL_3	Access to level 3	0	0	1	---	Digital	R/W	

Parameters of “Alarms History”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
H01	AlrmLogsIdx	Index to sort alarms	0	0	999	---	Integer	R	
H01	AlrmLogHour	Time to which the alarm log value is referred by the AlrmLogsIdx index	0	0	99	---	Integer	R	
H01	AlrmLogMinute	Minute to which the alarm log value is referred by the AlrmLogsIdx index	0	0	99	---	Integer	R	
H01	AlrmLogDay	Day to which the alarm log value refers by the AlrmLogsIdx index	0	0	99	---	Integer	R	
H01	AlrmLogMonth	Month to which the alarm log value refers by the AlrmLogsIdx index	0	0	99	---	Integer	R	
H01	AlrmLogYear	Year to which the alarm log value refers by the AlrmLogsIdx index	0	0	99	---	Integer	R	
H01	AlrmLogCode	Alarm code (used to display active alarms from the alarm table)	0	0	9	---	Integer	R	
H02	AlrmLogDelete	Clear alarm log (0: Nothing 1: Clear alarm log) NOTE: Required to be at level 3 access	0	0	1	---	Digital	R/W	

Parameters of “Burner/Boiler”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
G01	CONTROL_QUEMADOR_GAS	Control of the gas burner or gas boiler: 0 = burner/boiler as 2nd stage; 1 = only burner/boiler 2 = only burner/boiler with low outdoor temperature	0	0	2	---	Integer	R/W	2
G01	SET_QUEMADOR_BAJA_TEXT	Setpoint of outdoor temperature below which the burner/boiler is activated instead of compressors	5.0	-10.0	10.0	°C	Analog.	R/W	120

Parameters of “Versions”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
V01	logo_bool	Type of logo	0	0	1	---	Digital	R/W	
V01	PROJECT_RELEASE_1	Release version	0	0	9	---	Analog.	R	
V01	DIA_COMPILACION	Software version compilation day	0	1	31	---	Integer	R	
V01	MES_COMPILACION	Software release build month	0	1	12	---	Integer	R	
V01	ANO_COMPILACION	Software release compilation year	0	0	99	---	Integer	R	
V01	OsVersion	Board operating system version	0	0	999	---	Integer	R	
V01	BootVersion	Boot version	0	0	999	---	Integer	R	
V02	BoardTyp[1]	Board Type (µPC3)	0	0	99	---	Integer	R	
V02	BoardTyp[2]	Board size (Medium)	0	0	99	---	Integer	R	
V02	PrgCycleMs	Program cycle in ms	0	0	9999	---	Integer	R	
V02	CyclesPerSecond	Program cycles per second	0	-99999.9	99999.9	---	Analog.	R	

17.2. Parameters with “Level of access 2”

Parameters of “User”

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
L01	ID_Lang	Language (0: Spanish, 1: French, 2: English, 3: Italian)	0	0	3	---	Analog.	R/W	
U01	LIM_SUP_TEMP_FRIO	Upper limit of temperature setpoint in COOLING mode (summer)	30.0	20.0	50.0	°C	Analog.	R/W	19
U01	LIM_INF_TEMP_FRIO	Lower limit of temperature setpoint in COOLING mode (summer)	15.0	0.0	30.0	°C	Analog.	R/W	20
U01a	LIM_SUP_TEMP_CALOR	Upper limit of temperature setpoint in HEATING mode (winter)	30.0	20.0	50.0	°C	Analog.	R/W	148
U01a	LIM_INF_TEMP_CALOR	Lower limit of temperature setpoint in HEATING mode (winter)	15.0	0.0	30.0	°C	Analog.	R/W	149
U02	BANDA_TEMP_FRIO	Control band of temperature in COOLING mode (summer) for connecting the stages	3.0	0.1	99.9	°C	Analog.	R/W	21
U02	BANDA_TEMP_CALOR	Control band of temperature in HEATING mode (winter) for connecting the stages	3.0	0.1	99.9	°C	Analog.	R/W	22
U03	ZONA_MUERTA_TEMP	Dead zone of temperature control (zone around the setpoint where no compressor is connected)	0.0	0.0	3.0	°C	Analog.	R/W	39
U04	LIM_INF_HUM	Lower limit of humidity setpoint	25.0	0.0	100.0	%rH	Analog.	R/W	24
U04	LIM_SUP_HUM	Upper limit of humidity setpoint	80.0	0.0	100.0	%rH	Analog.	R/W	23
U05	BANDA_HUMEDAD	Humidity control band	5.0	0.0	99.9	%rH	Analog.	R/W	17
U05	ZONA_MUERTA_HUM	Dead zone of humidity control (zone around the setpoint where no compressor is connected)	4.0	0.0	50.0	%rH	Analog.	R/W	40
U07	DELTA_FREE_COOL	Delta between outdoor temperature and return temperature to authorize free-cooling function	3.0	0.0	15.0	°C	Analog.	R/W	27
U07	MAX_APERTURA_ COMPUERTA_FREE	Maximum opening of the fresh air damper with freecooling or freeheating	100	0	100	%	Integer	R/W	208
U08	ENTALPIA_DIF	Delta of enthalpy to enable freecooling (differential between external enthalpy and return to authorize free-cooling)	1	0	30	Kcal/ Kg	Integer	R/W	20, 21
U08	MAX_APERTURA_ COMPUERTA_FREE	Maximum opening of fresh air damper with freecooling or freeheating	100	0	100	%	Integer	R/W	208
U09	OFFSET_FCOOL_VER	Offset of the free-cooling damper with regard to the setpoint in COOLING mode (summer)	-2.0	-5.0	5.0	°C	Analog.	R/W	28
U09	BANDA_FCOOL	Differential of the free-cooling damper with regard to the setpoint in COOLING mode (summer)	3.0	0.1	99.9	°C	Analog.	R/W	29
U10	OFFSET_FHEAT	Offset of the free-cooling damper with regard to the setpoint in HEATING mode (winter)	2.0	-5.0	5.0	°C	Analog.	R/W	30
U10	BANDA_FHEAT	Differential of the free-cooling damper with regard to the setpoint in HEATING mode (winter): Differential	3.0	0.1	99.9	°C	Analog.	R/W	31
U11	SET_RENOVACION	% Outdoor air for renewal (Desired percentage)	20	0	99	%	Integer	R/W	36
U11	SET_RENOVACION_M3H	Outdoor air for renewal in m^3/h	---	0	---	m3/h	Analog.	R/W	
U11b	POS_COMPUERTA_ CALOR_AL_INICIO	Fresh air damper in the start-up in HEATING mode (winter) Note: In 100% fresh air units, the default position will be 0: Normal	1	0: Normal	1: Closed	---	Digital	R/W	54
U11b	POS_COMPUERTA_ FRIO_AL_INICIO	Fresh air damper in the start-up in COOLING mode (summer)	0	0: Normal	1: Closed	---	Digital	R/W	243
U11b	MIN_APERTURA_ COMPUERTA	Minimum opening of the fresh air damper	0	0	100	%	Integer	R/W	165
U11b	MAX_APERTURA_ COMPUERTA	Maximum opening of the fresh air damper	100	0	100	%	Integer	R/W	131
U11c	TIME_RET_ON_VINT	Delay time for the opening of the fresh air damper with respect to the connection of the supply fan, in units with 100% fresh air	30	0	999	s	Integer	R/W	216
U11c	HAB_OFF_POR_SOND_ AMB_CON_100_EXT	Enable the unit OFF by ambient probe in operation with 100% fresh air	0	0	1	---	Digital	R/W	299
U11c1	SET_POINT_FRIO_ON_ EQUIPO	Temperature setpoint in COOLING mode for unit ON with 100% fresh air	30.0	-99.9	99.9	°C	Analog.	R/W	309
U11c1	SET_POINT_CALOR_ ON_EQUIPO	Temperature setpoint in HEATING mode for unit ON with 100% fresh air	17.0	-99.9	99.9	°C	Analog.	R/W	310
U11d	TIME_RET_ON_VINT	Delay in opening of supply and return dampers with regard to the supply fan connection	30	0	999	s	Integer	R/W	216
U12	SET_IMPULSION_FRIO_ MIN	Minimum limit for the supply temperature control in COOLING mode (summer)	10.0	0.0	30.0	°C	Analog.	R/W	32
U12	BANDA_IMP_FRIO	Differential for the supply temperature control in COOLING mode (summer)	5.0	0.0	99.9	°C	Analog.	R/W	33
U12b	OFFSET_CAL_IMP_FRIO	Compensation between ambient temperature and supply temperature for the supply temperature control in COOLING mode (summer)	17.0	0.0	30.0	°C	Analog.	R/W	114
U12b	SET_IMPULSION_FRIO_ MIN	Minimum setpoint for the supply temperature control in COOLING mode (summer)	10.0	0.0	30.0	°C	Analog.	R/W	32
U12b	SET_IMPULSION_FRIO_ MAX	Maximum setpoint for the supply temperature control in COOLING mode (summer)	22.0	0.0	30.0	°C	Analog.	R/W	115
U12a	SET_IMPULSION_ CALOR_MAX	Minimum limit for the supply temperature control in HEATING mode (winter)	45.0	30.0	55.0	°C	Analog.	R/W	83
U12a	BANDA_IMP_CALOR	Differential for the supply temperature control in HEATING mode (winter)	5.0	0.0	99.9	°C	Analog.	R/W	84
U12c	OFFSET_CAL_IMP_ CALOR	Compensation between ambient temperature and supply temperature for the supply temperature control in HEATING mode (winter)	25.0	0.0	30.0	°C	Analog.	R/W	112
U12c	SET_IMPULSION_ CALOR_MIN	Minimum setpoint for the supply temperature control in HEATING mode (winter)	30.0	25.0	55.0	°C	Analog.	R/W	113
U12c	SET_IMPULSION_ CALOR_MAX	Maximum setpoint for the supply temperature control in HEATING mode (winter)	45.0	30.0	55.0	°C	Analog.	R/W	83

17 - LIST OF CONTROL PARAMETERS

Parameters of "User" (...continuation)

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
U12d	SP_CO2	Setpoint of air quality control CO2 (ppm)	1000	0	2000	ppm	Integer	R/W	4
U12d	DIF_CO2	Differencial of air quality control CO2 (ppm)	500	0	1000	ppm	Integer	R/W	5
U12d	LIM_MIN_SET_RENOVACION_CON_CO2	Minimum opening of the fresh air damper for AIR RENEWAL with CO2 probe	0	0	100	%	Integer	R/W	257
U12d	LIM_MAX_SET_RENOVACION_CON_CO2	Time with minimum opening of the fresh air damper for AIR RENEWAL with CO2 probe	100	0	100	%	Integer	R/W	233
U12d	TIME_SET_RENOVACION_CON_CO2	Maximum opening of the fresh air damper for AIR RENEWAL with CO2 probe	60	0	999	s	Integer	R/W	258
U12d1	SP_CO2	Setpoint of differential pressure sensor for air renewal (Pa)	1000	0	2000	Pa	Integer	R/W	4
U12d1	DIF_CO2	Differencial of differential pressure sensor for air renewal (Pa)	500	0	1000	Pa	Integer	R/W	5
U12d1	LIM_MIN_SET_RENOVACION_CON_CO2	Minimum opening of the fresh air damper for AIR RENEWAL with differential pressure sensor	0	0	100	%	Integer	R/W	257
U12d1	LIM_MAX_SET_RENOVACION_CON_CO2	Time with minimum opening of the fresh air damper for AIR RENEWAL with differential pressure sensor	100	0	100	%	Integer	R/W	233
U12d1	TIME_SET_RENOVACION_CON_CO2	Maximum opening of the fresh air damper for AIR RENEWAL with differential pressure sensor	60	0	999	S	Integer	R/W	258
U12e	SP_LIM_CO2_EXTERIOR	Setpoint of the outdoor probe for CO2 air quality control (ppm). From this value the oudoor damper is closed.	2000	0	5000	ppm	Integer	R/W	248
U12e	DIF_LIM_CO2_EXTERIOR	Differential of the outdoor probe for CO2 quality control (ppm)	200	0	1000	ppm	Integer	R/W	249
U12f	DIF_INCR_CAUDAL_CO2	Differential of Increase of the air flow for renewal in units with CO_2 probe	200	0	1000	%	Entera	R/W	
U12f	PORC_INCR_CAUDAL_CO2	Percentage of Increase of the air flow for renewal in units with CO_2 probe	25.0	0.0	100.0	%	Analóg.	R/W	
U13	SET_COMP_EXT_FRIO	Setpoint of minimum outdoor temperature to start the compensation control in COOLING mode (summer)	30.0	-99.9	99.9	°C	Analog.	R/W	34
U13	VAL_DIF_COMP_EXT_FRIO	Differencial for compensation in COOLING mode (summer)	5.0	-99.9	99.9	°C	Analog.	R/W	35
U13	MAX_COMP_EXT_FRIO	Maximum compensation in COOLING mode (summer)	5.0	0.0	99.9	°C	Analog.	R/W	36
U14	SET_COMP_EXT_CALOR	Setpoint of minimum outdoor temperature to start the compensation control in HEATING mode (winter)	0.0	-99.9	99.9	°C	Analog.	R/W	64
U14	VAL_DIF_COMP_EXT_CALOR	Differencial for compensation in HEATING mode (winter)	5.0	-99.9	99.9	°C	Analog.	R/W	65
U14	MAX_COMP_EXT_CALOR	Maximum compensation in HEATING mode (winter)	5.0	0.0	99.9	°C	Analog.	R/W	66
U18a	AUTOSTART	Enabling of automatic start-up after locking	1	0: no	1: yes	---	Digital	R/W	58
U18a	TIME_ON_AUTOSTART	Timing for the automatic start-up after a power failure (for phasing the start-up of different units in the same installation)	5	5	999	s	Integer	R/W	166
U18a1	HAB_ON_OFF_REMOTO	Enabling of remote ON/OFF	1	0: no	1: yes	---	Digital	R/W	59
U18a1	HAB_OFF_REMOTO_CON_PROTECTION	Enabling of the BUILDING PROTECTION mode when the remote ON/OFF connected on digital input is OFF	0	0: no	1: yes	---	Digital	R/W	289
U18a1	HAB_BLOQ_COMP_ON_FASE_LIM_FRIO	Disable compressors in COOLING mode (summer) with "ON/OFF schedule with limit SET of ON" (nocturnal freecooling)	0	0: no	1: yes	---	Digital	R/W	72
U18a1	HAB_BLOQ_RENOVACION_ON_FASE_LIM	Disable outdoor air renewal in COOLING mode (summer) with "ON/OFF schedule with limit SET of ON" (nocturnal freecooling)	0	0: no	1: yes	---	Digital	R/W	73
U18a2	SET_EXT_LIM_FRIO	Setpoint for BUILDING PROTECTION time slots in summer	34.0	-99.9	99.9	°C	Analog.	R/W	77
U18a2	DIF_LIM_FRIO	Differential for setpoint of BUILDING PROTECTION in summer	2.0	0.0	99.9	°C	Analog.	R/W	80
U18a2	SET_EXT_LIM_CALOR	Setpoint for BUILDING PROTECTION time slots in winter	13.0	-99.9	99.9	°C	Analog.	R/W	76
U18a2	DIF_LIM_CALOR	Differential for setpoint of BUILDING PROTECTION in winter	1.0	0.0	99.9	°C	Analog.	R/W	81
U18b	TIME_PANT	Back-lighting time of the graphic terminal display	30	0	999	s	Integer	R/W	
U18c	HAB_G_PRINC	Enabling of automatic return to the MAIN screen	0	0: no	1: yes	---	Digital	R/W	290
U18c	TIME_RETURN_MENU	Time for the automatic return to the MAIN screen	600	0	9999	s	Integer	R/W	284
U19	NUM_COMP_DESHUM	Number of compressors in dehumidification	0	0	4	---	Integer	R/W	22
U20	BANDA_RES	Differential for control of electrical heaters or gas burner/boiler in HEATING mode (winter)	3.0	0.1	99.9	°C	Analog.	R/W	53
U20	OFFSET_RES	Offset for control of electrical heaters or gas burner/boiler in HEATING mode (winter)	-2.0	-5.0	5.0	°C	Analog.	R/W	52
U20	SET_HAB_RES_TEMP_EXT	Setpoint for enabling the electrical heaters or the gas burner/boiler by the outdoor temperature	20.0	-20.0	40.0	°C	Analog.	R/W	129
U28	OFFSET_VALV_CALOR	Offset for control of the hot water coil in HEATING mode (winter)	-2.0	-10.0	0.0	°C	Analog.	R/W	62
U28	BANDA_VALV_CALOR	Differential for control of the hot water coil in HEATING mode (winter)	3.0	0.1	99.9	°C	Analog.	R/W	63
U28	HAB_PRIORIDAD_VALV_CALOR	Enable the priority of the hot water coil or the heat recovery coil with regard to the compressors in HEATING mode (winter)	1	0: no	1: yes	---	Digital	R/W	132
U28b	OFFSET_VALV_FRIO	Offset for control of the cold water coil with regard to the compressors in COOLING mode (summer)	2.0	-10.0	0.0	°C	Analog.	R/W	220
U28b	BANDA_VALV_FRIO	Differential for control of the cold water coil with regard to the compressors in COOLING mode (summer)	3.0	0.1	99.9	°C	Analog.	R/W	221
U28b	HAB_PRIORIDAD_VALV_FRIO	Enable the priority of the cold water coil with regard to the compressors in COOLING mode (summer)	0	0: no	1: yes	---	Digital	R/W	209
U20b	OFFSET_RES_EN_FRIO	Offset of electrical heaters as backup in COOLING mode (summer) to raise the return temperature	-7.0	-99.9	0.0	°C	Analog.	R/W	73
U20b	OFFSET_VALV_CALOR_EN_FRIO	Enabling of hot water coil as backup in COOLING mode (summer) to raise the return temperature	-5.0	-99.9	0.0	°C	Analog.	R/W	74
U35a1	HAB_ZONIFICACION_POR_VAR	Enable the air flow reduction in units with power zoning by dampers	0	0: no	1: yes	---	Digital	R/W	67
U35a1	PORC_CAUDAL_50_PORC_COMP_TANDEM	% of air flow with the selection of flow automatic reduction with power zoning	50.0	50.0	75.0	%	Analog.	R/W	150

17 - LIST OF CONTROL PARAMETERS

Parameters of "User" (...continuation) 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
U35a1	RED_CAUDAL_AUTOMATICO	Enable the flow reduction of 50% power with power zoning	0	0: no	1: yes	---	Digital	R	70
U35a2	HAB_ZONA1_PARA_ZONIF_ COMPUERTAS	In units with power zoning: enable the power zoning by dampers in the zone 1	1	0: no	1: yes	---	Digital	R/W	248
U35a2	HAB_ZONA2_PARA_ZONIF_ COMPUERTAS	In units with power zoning: enable the power zoning by dampers in the zone 2	1	0: no	1: yes	---	Digital	R/W	249
U35a2	HAB_ZONIFICACION_2_ZONA_ POR_COMP	Active zones in zoning 2 zones (0= 0 zones; 1= 2 zones)	0	0	1	---	Digital	R	
U35a2	PORC_CAUDAL_50_PORC_ COMP_TANDEM	In units with power zoning: % of flow with which the unit will work with regard to the setpoint flow	50.0	50.0	75.0	%	Analog.	R/W	150
U35a3	ON_COMPUERTA_Z1	Display of zone 1 activated (zoning of the air flow)	0	0: no	1: yes	---	Digital	W	311
U35a3	ON_COMPUERTA_Z2	Display of zone 2 activated (zoning of the air flow)	0	0: no	1: yes	---	Digital	W	312
U35a3	ON_COMPUERTA_Z3	Display of zone 3 activated (zoning of the air flow)	0	0: no	1: yes	---	Digital	W	313
U35a3	ON_COMPUERTA_Z4	Display of zone 4 activated (zoning of the air flow)	0	0: no	1: yes	---	Digital	W	314
U35a3	PORC_CAUDAL_ZONIFICA_ ZONA1	% of flow in the zone 1 (zoning of the air flow)	25.0	0.0	100.0	%	Analog.	R/W	271
U35a3	PORC_CAUDAL_ZONIFICA_ ZONA3	% of flow in the zone 2 (zoning of the air flow)	25.0	0.0	100.0	%	Analog.	R/W	272
U35a3	PORC_CAUDAL_ZONIFICA_ ZONA2	% of flow in the zone 3 (zoning of the air flow)	25.0	0.0	100.0	%	Analog.	R/W	273
U35a3	PORC_CAUDAL_ZONIFICA_ ZONA4	% of flow in the zone 4 (zoning of the air flow)	25.0	0.0	100.0	%	Analog.	R/W	274
U35a3	PORC_CAUDAL_ZONIFICA_MAX	Limit of maximum flow % (zoning of the air flow)	100.0	25.0	100.0	%	Analog.	R/W	270
U35a3	PORC_CAUDAL_ZONIFICA_MIN	Limit of minimum flow % (zoning of the air flow)	35.0	25.0	100.0	%	Analog.	R/W	269
U35a3	HAB_ON_EQUIPO_ POR_4ZONAS	Activation of the reduction of flow with zoning of the air flow	0	0: no	1: yes	---	Digital	W	315
U35a3	PORC_CAUDAL_ZONIFICA	Display of the current reduction of flow with zoning of the air flow	25.0	25.0	100.0	%	Analog.	W	
U35b	HAB_RED_CAUDAL_CON_ COMP_TANDEM	Enable the flow reduction of 50% power without zoning (in units with tandem compressors and plug-fan)	0	0: no	1: yes	---	Digital	R/W	207
U35b	PORC_CAUDAL_50_PORC_ COMP_TANDEM	% of air flow with selection of flow automatic reduction without zoning (units with tandem compres. and plug-fan)	50.0	50.0	90.0	%	Analog.	R/W	150
U35b	RED_CAUDAL_AUTOMATICO	Enable the automatic flow reduction without zoning (in units with tandem compressors and plug-fan)	0	0: no	1: yes	---	Digital	R	70
U35b2	HAB_OFF_50_COMP_ZONIF	Enabling flow reduction with zoning	1	0: no	1: yes	---	Digital	R/W	
U35b2	PORC_CAUDAL_OFF_50_ COMP_ZONIF	Visualization of current flow reduction with zoning	35.0	0	99.9	%		R	
U35b2	HAB_ON_ZONIF_4_ZONAS_ POR_CO2	Enabling demand of 4 zones by CO2 demand (zoning of the air flow)	0	0: no	1: si	---	Digital	R/W	356
U35b2	HAB_MODO_AUTO_TCO_4_ ZONAS	Enabling AUTO mode on TCO zone terminals (zoning of the air flow) If when the COOLING mode is activated, in one or more zones the temperature drops below its HEATING mode setpoint (and the other zones have no demand or there are a smaller number of zones with COOLING demand), the change to HEATING mode occurs. The same happens in the opposite case, from HEATING to COOLING.	0	0: no	1: si	---	Digital	R/W	358
U36	DESCONEXION_NUM_ COMPRESORES	Enable the forced stages disconnection: Number of compressor stages to disconnect	0	0	5	---	Integer	R/W	128
U36	DESCONEXION_NUM_ RESISTENCIAS	Enable the forced stages disconnection: Number of elec. heaters stages to disconnect	0	0	3	---	Integer	R/W	129
U36	HAB_OFF_ETAPAS_POR_DIN	Enable the forced stages disconnection of compressor and/or electrical heater by digital input	0	0: no	1: yes	---	Digital	R/W	291
U40	SET_PRES_DIF_IMP	Differential pressure sensor setpoint for constant supply pressure	200	0	10000	Pa	Integer	R/W	292
U401	SET_PRES_DIF_IMP	Differential pressure sensor setpoint for overpressure control with return fan	45	-50	50	Pa	Integer	R	292
U402	SET_PRES_COMP_IMP	Differential pressure setpoint for pressure control with supply damper	450	0	1000	Pa	Integer	R/W	305
U402	MIN_PRES_COMP_IMP	Minimum differential pressure for pressure control with supply damper	50	0	1000	Pa	Integer	R/W	
U402	OFFSET_COMP_SINTRA_FRIO	Setpoint offset for compressors in COOLING mode for pressure control with supply damper	1.0	-10.0	10.0	ºC	Analog.	R/W	
U402	OFFSET_COMP_SINTRA_ CALOR	Setpoint offset for compressors in HEATING mode for pressure control with supply damper	-1.0	-10.0	10.0	ºC	Analog.	R/W	
U403	HETER_AUTO_SET_PRES_ COMP_IMP	Temperature differential to activate the AUTO mode for pressure control with supply damper	5.0	0.0	25.0	ºC	Analog.	R/W	
U403	SET_PRES_COMP_IMP_STD	Differential pressure setpoint for STD mode of the AUTO mode for pressure control with supply damper	450	0	1000	Pa	Integer	R/W	
U403	SET_PRES_COMP_IMP_ BOOST	Differential pressure setpoint for BOOST mode of the AUTO mode for pressure control with supply damper	600	0	1000	Pa	Integer	R/W	
U43	PERC_AIRE_EXTERIOR_ Extractor_OFF	Percentage of the outdoor air damper opening when the external extractor is in OFF position	20.0	0.0	100.0	%	Analog.	R/W	
U43	PERC_AIRE_EXTERIOR_ Extractor_ON	Percentage of the outdoor air damper opening when the external extractor is in ON position	80.0	0.0	100.0	%	Analog.	R/W	
U44	SET_CAUDAL_INCENDIO	Air flow with anti-fire safety and HAB_ANTIINCENDIO_ESPECIAL = Yes	30600	CAUDAL _VINT_ NOMINAL _MAX	CAUDAL _VINT_ NOMINAL _MAX	m3/h	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "BMS configuration" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
U36a	TIPO_PROT_COM	Type of protocol in supervision network: Modbus RTU	1	0	6	---	Integer	R/W	227
U36b	BMS_ADDRESS	Unit address in the BMS2 port in the supervision network	1	1	207	---	Integer	R/W	228
U36b	BAUD_RATE	Baud rate for the supervisory connection in the BMS2 port: 0= 1200; 1= 2400; 2= 4800; 3= 9600; 4= 19200; 5= 38400	4	0	5	---	Integer	R/W	229
U36b	Stop_bits_Number_MB	Number of stop bits for the MODBUS protocol in the BMS2 port: 1= 2 stop bits, 2= 1 stop bit	2	1	2	---	Integer	R/W	282
U36b	Parity_Type_MB	Type of parity for the MODBUS protocol in the BMS2 port: 0= no; 1= pair; 2= odd	0	0	2	---	Integer	R/W	230
U36b	VAR_INTEGER_32BITS	Reading of 32-bit logs: 0= Inverse; 1= Direct	0	0	1	---	Digital	R/W	283
U36b1	BMS1_ADDRESS	Unit address in the BMS1 port in the supervision network	1	1	207	---	Integer	R/W	228
U36b1	BAUD_RATE_BMS1	Baud rate for the supervisory connection in the BMS1 port: 0= 1200; 1= 2400; 2= 4800; 3= 9600; 4= 19200; 5= 38400	4	0	5	---	Integer	R/W	229
U36b1	STOP_BITS_NUMBER_ MB_BMS1	Number of stop bits for the MODBUS protocol in the BMS1 port: 1= 2 stop bits, 2= 1 stop bit	2	1	2	---	Integer	R/W	282
U36b1	Parity_Type_MB_BMS1	Type of parity for the MODBUS protocol in the BMS1 port: 0= no; 1= pair; 2= odd	0	0	2	---	Integer	R/W	230
U36b1	VAR_INTEGER_32BITS	Reading of 32-bit logs: 0= Inverse; 1= Direct	0	0	1	---	Digital	R/W	283
U36c	HAB_DETECCION_FALLO_ COM_BMS	Enabling BMS communication failure detection, allowing the load of parameters by default	0	0	1	---	Digital	R/W	173
U36c	TIME_PERDIDA_ COMUNICACION_BMS	Period of time for checking the loss of BMS communication before the load of parameters by default	15	0	99	min	Integer	R/W	
U36c	VAR_DETECCION_FALLO_ BMS	Variable to change by the BMS for checking the loss of BMS communication for more than 15 minutes (1-->0)	0	0	1	---	Digital	R/W	174
U36c	PERDIDA_ COMUNICACION_BMS	Variable of the signalling on-screen of the BMS communication loss	0	0	1	---	Digital	R	
U36d	BACNET_DEV_INSTANCE	Instance of the BACNET device	77000	0	77999		Integer	R/W	
U36d	HAB_BACNET_IP	Enabling the BACNET IP protocol	0	0: no	1: yes		Digital	R/W	
U36e	BACNET_DEV_INSTANCE	Instance of the BACNET device	77000	0	77999		Integer	R/W	
U36e	MSTP_ST_ADD	Number of devices(addresses) in the BACNET network	1	1	127		Integer	R/W	
U36e	MSTP_MAX_MAN	Address of the last "Lead" in the BACNET network	127	1	127		Integer	R/W	
U36e	MSTP_MAX_INFO_FR	Maximum number of information frames in each BACNET request	10	1	127		Integer	R/W	
U36e	HAB_BACNET_MSTP	Enabling the BACNET MSTP protocol	0	0: no	1: yes		Digital	R/W	
U40a	SET_POINT_TEMP_FRIO_ BMS	Value by default with the loss of BMS communication: temperature setpoint in COOLING mode (summer)	26.0	0.0	50.0	°C	Analog.	R/W	
U40a	SET_POINT_TEMP_ CALOR_BMS	Value by default with the loss of BMS communication: temperature setpoint in HEATING mode (winter)	21.0	0.0	50.0	°C	Analog.	R/W	
U40b	SYS_ON_BMS	Value by default with the loss of BMS communication: Unit ON/OFF by keyboard or remote	0	0	1	---	Digital	R/W	
U40c	SEL_FRIO_CALOR_BMS	Value by default with the loss of BMS communication: COOLING/HEATING selection: 0= by keyboard, 2= auto	0	0	2	---	Integer	R/W	
U40c	MODO_FRIO_CALOR_ AUTO_BMS	Value by default with the loss of BMS communication: COOLING/HEATING selection in AUTO mode: 0= by indoor temperature; 1= by outdoor temperature	1	0	1	---	Digital	R/W	
U40c	CALOR_FRIO_PANEL_BMS	Value by default with the loss of BMS communication: COOLING/HEATING selection by keyboard: 0= HEATING mode (winter), 1= COOLING mode (summer)	1	0	1	---	Digital	R/W	
U40d	DESCONEXION_NUM_ COMPR_BMS	Value by default with the loss of BMS communication: Number of compressor stages to disconnect	0	0	5	---	Integer	R/W	
U40d	DESCONEXION_NUM_ RESIST_BMS	Value by default with the loss of BMS communication: Number of electrical heaters stages to disconnect	0	0	3	---	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "BMS configuration" (...continuation) 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
U40e	TIPO_PROG_HORARIA_ BMS	Value by default with the loss of BMS communication: Type of start-up with schedule programming: 0 = ON/OFF schedule; 1 = Schedule only setpoint change; 2 = ON/OFF schedule with limit SET of ON; 3 = Forced; 4 = 3 setpoints schedule + OFF of unit	0	0	4	---	Integer	R/W	
U40f	H_ARR_1A_BMS	Value by default with loss of BMS communication: Start-up hour of slot 1-program 1	6	0	23	h	Integer	R/W	
U40f	M_ARR_1A_BMS	Value by default with loss of BMS communication: Start-up minute of slot 1-program 1	30	0	59	min	Integer	R/W	
U40f	H_PAR_1A_BMS	Value by default with loss of BMS communication: Stop hour of slot 1 - program 1	11	0	23	h	Integer	R/W	
U40f	M_PAR_1A_BMS	Value by default with loss of BMS communication: Stop minute of slot 1 - program 1	0	0	59	min	Integer	R/W	
U40f	H_ARR_1B_BMS	Value by default with loss of BMS communication: Start-up hour of slot 2 - program 1	11	0	23	h	Integer	R/W	
U40f	M_ARR_1B_BMS	Value by default with loss of BMS communication: Start-up minute of slot 2 - program 1	30	0	59	min	Integer	R/W	
U40f	H_PAR_1B_BMS	Value by default with loss of BMS communication: Stop hour of slot 2 - program 1	13	0	23	h	Integer	R/W	
U40f	M_PAR_1B_BMS	Value by default with loss of BMS communication: Stop minute of slot 2 - program 1	30	0	59	min	Integer	R/W	
U40f	H_ARR_1C_BMS	Value by default with loss of BMS communication: Start-up hour of slot 3 - program 1	15	0	23	h	Integer	R/W	
U40f	M_ARR_1C_BMS	Value by default with loss of BMS communication: Start-up minute of slot 3 - program 1	0	0	59	min	Integer	R/W	
U40f	H_PAR_1C_BMS	Value by default with loss of BMS communication: Stop hour of slot 3 - program 1	19	0	23	h	Integer	R/W	
U40f	M_PAR_1C_BMS	Value by default with loss of BMS communication: Stop minute of slot 3 - program 1	0	0	59	min	Integer	R/W	
U40g	LUN_A_BMS	Value by default with loss of BMS communication: Monday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	MAR_A_BMS	Value by default with loss of BMS communication: Tuesday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	MIE_A_BMS	Value by default with loss of BMS communication: Wednesday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	JUE_A_BMS	Value by default with loss of BMS communication: Thrusday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	VIE_A_BMS	Value by default with loss of BMS communication: Friday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	SAB_A_BMS	Value by default with loss of BMS communication: Saturday schedule: 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	DOM_A_BMS	Value by default with loss of BMS communication: Sunday schedule : 0=off; 1=program 1; 2=program 2; 3=program 3	1	0	3	---	Integer	R/W	
U40g	DIA_SEMANA	Weekday	0	0	7	day	Integer	R/W	52
U41	PLAN_ADDRESS	Unit address in the SHRD shared network	0	0	31	---	Integer	R/W	
U42	COMMAND_TYPE_ PCOWEB	Operation type: 0: write; 1: write; 2: read	0	0	2	---	Integer	R/W	
U42	DHCP_PCOWEB	Activate DHCP on pCOWeb	1	0: no	1: yes	---	Digital	R/W	
U42	IP1_PCOWEB_PGD1	First byte of pCOWeb IP address	0	0	255	---	Integer	R/W	
U42	IP2_PCOWEB	Second byte of pCOWeb IP address	0	0	255	---	Integer	R/W	
U42	IP3_PCOWEB	Third byte of pCOWeb IP address	0	0	255	---	Integer	R/W	
U42	IP4_PCOWEB	Fourth byte of pCOWeb IP address	0	0	255	---	Integer	R/W	
U42	MASK_PCOWEB	pCOWeb IP address network mask	0	0	255	---	Integer	R/W	
U42	COMMAND_PCOWEB	Confirm operation	0	0: no	1: yes	---	Digital	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A0	SEL_FRIO_CALOR	Procedures for the selection of the COOLING/HEATING mode: 0= by keyboard, 1= remote (by digital input), 2= auto, 3= only ventilation, 4= ventilation 100% fresh air 5= SHRD shared network	2	0	5	---	Integer	R/W	59
A0	ON_VENT_100_AE_REMOTO	Activation of the ventilation mode with 100% fresh air in remote (analog input U2 of the expansion module c.pCOe with address 8)	0	0	1	---	Digital	R	
A0	MODO_FRIO_CALOR_AUTO	COOLING/HEATING selection in AUTO: 0= by indoor temperature, 1= by outdoor temperature	1	0	1	---	Digital	R/W	232
A0	CALOR_FRIO_PANEL	COOLING/HEATING selection by keyboard: 0= HEATING (winter), 1= COOLING (summer)	1	0	1	---	Digital	R/W	66
A0	SET_TEMP_EXT_CAMBIO_FRIO	Outdoor temperature setpoint for change to COOLING mode (in AUTO mode)	22.0	99.9	99.9	°C	Analog.	R/W	223
A0	SET_TEMP_EXT_CAMBIO_CALOR	Outdoor temperature setpoint for change to HEATING mode (in AUTO mode)	20.0	99.9	99.9	°C	Analog.	R/W	222
A0	PGD1_bloqueado_SEL_FRIO_CALOR	Enabling of the locking in the VecticGD terminal (so that the final user cannot change it)	0	0: no	1: yes	---	Digital	R/W	240
A002d	TIPO_SONDA_HUM_INT	Type of indoor humidity probe: 0= No, 1= Actual, 2= Probe in SHRD shared network, 3= Virtual, 4= RS485	0	0	4	---	Integer	R/W	56
A002d	TIPO_SONDA_HUM_EXT	Type of outdoor humidity probe: 0= No, 1= Actual, 2= Probe in SHRD shared network	0	0	2	---	Integer	R/W	55
A002e	TIPO_FREECOOLING	Type of freecooling: 0= Thermal, 1= Enthalpic, 2= Thermoenthalpic	0	0	2	---	Integer	R/W	118
A002e	SET_POINT_HUM	Humidity setpoint	50.0	0.0	100.0	%rH	Analog.	R/W	18
A002f	HAB_SONDA_AMB	Enable the ambient probe	1	0: no	1: yes	---	Digital	R/W	167
A002f	CONTROL_SONDA_AMB	Enable control with ambient probe	1	0: no		---	Digital	R/W	189
A002f	TIPO_SONDA_AMB	Type of ambient probe: 1= 1 RS485 probe, 2= 2 RS485 probes, 3= probe in SHRD shared network, 4= 1 NTC probe, 5= 3 RS485 probes, 6= 4 RS485 probes, 7= 1 probe 4-20mA	4	1	7	---	Integer	R/W	46
A002f	SEL_TEMP_SONDAS_AMB_FRIO	Selection of temperature value with ambient probes in COOLING mode: 0= average, 1= minimum, 2= maximum	0	0	2	---	Analog.	R/W	199
A002f	SEL_TEMP_SONDAS_AMB_CALOR	Selection of temperature value with ambient probes in HEATING mode: 0= average, 1= minimum, 2= maximum	0	0	2	---	Analog.	R/W	200
A11	SET_RENOVACION_CAL	% Outdoor air for renewal	0	0	99	%	Integer	R	126
A11	RENOVACION_CAL	% air renewal with mixing probe	0	0	99	%	Integer	R	124
A11	CAL_APER_RENOV_2	% real opening of fresh air damper	0	0	99	%	Integer	R/W	125
A11	TIME_CAL	Calculation time	60	0	99	s	Integer	R/W	194
A11	V_CAL	Calculation constant	3	0	99	%	Integer	R/W	195
A11	DIF_TEMP_RENOVACION_CAL	Difference between mixing and return T, and between mixing temperature and exterior for renewal calculation	3.0	0.0	9.9	°C	Analog.	R/W	145
A11	OFFSET_SET_RENOVACION	Offset for renovation setpoint	0	0	99	%	Integer	R/W	
A11a	HAB_COMPENSACION	Enable the setpoint compensation in accordance with the outdoor temp.	0	0: no	1: yes	---	Digital	R/W	55
A11a	HAB_PROT_BAJA_TEMP_EXTERIOR	Enable the protection for low outdoor temperature by digital outputs of the c.pCOe expansion module	0	0: no	1: yes	---	Digital	R/W	326
A11a	HAB_MB_TERMOSTATO_TCO	Enabling of the User terminal by MODBUS	0	0: no	1: yes	---	Digital	R/W	229
A11b	CONTROL_TCO_SONDA	Selection of the control probe with TCO terminal: 0= TCO terminal, 1= ambient probe, 2= return probe	1	0	3	---	Integer	R/W	217
A11b	CONTROL_SONDA_AMB	Enable control with ambient probe	1	0: no	1: yes	---	Digital	R/W	189
A11b	ThTune_bloqueado	Keypad lockage of the TCO terminal	0	0: no	1: yes	---	Digital	R/W	230
A11b	Clock_Source_THTune_or_Pco	Selection of clock source in TCO terminal or control board	1	0	1	---	Digital	R/W	327
A11b	pCO_ThTune_Scheduler	Selection of scheduler in TCO terminal or VecticGD terminal	0	0	1	---	Digital	R/W	328

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" (...continuation) a.Configuration

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A11b	HAB_CAMBIO_CAUDAL_POR_TCO	Enable the flow change by TCO terminal (supply plug-fan)	0	0: no	1: yes	---	Digital	R/W	325
A11b	FanStatusIn_THTN_1	Speed of the supply plug-fan with TCO terminal	1	1	3	---	Integer	R/W	283
A11c	SET_RES_TRIAC	Min. return temperature for the control of the preheater with electrical heater	7.0	0.0	30.0	°C	Analog.	R/W	275
A11c	SET_RET_MAX_RES_TRIAC	Max. return temperature for the control of the preheater with electrical heater	25.0	0.0	30.0	°C	Analog.	R/W	276
A11c	SET_HAB_RES_TEMP_EXT_TRIAC	Outdoor temperature setpoint for enabling the preheater with electrical heater	10.0	-20.0	40.0	°C	Analog.	R/W	277
A11d	PLAN_ADDRESS	Address of the unit in the shared network	1	1	15	---	Integer	R/W	
A11e	EQUIPO_MASTER	Lead or Lag unit in a SHRD shared network: 0= Lag 1= Lead	0	0	1	---	Digital	R/W	
A11e	SHRD_ADDRESS	Unit address in SHRD shared network	1	1	15	---	Integer	R	
A11e	NUM_SLAVES	Number of "Lag" units in the SHRD shared network (if the unit is "Lead")	1	1	15	---	Integer	R/W	
A11f	IdxSlave	"Lag" number in SHRD shared network	2	2	15	---	Integer	R/W	
A11f	IP_SLAVE_[IdxSlave]_DIGITS[1]	IP address of the "Lag" unit indicated by IdxSlave in the SHRD shared network	0	0	255	---	Integer	R/W	
A11f	IP_SLAVE_[IdxSlave]_DIGITS[2]	IP address of the "Lag" unit indicated by IdxSlave in the SHRD shared network	0	0	256	---	Integer	R/W	
A11f	IP_SLAVE_[IdxSlave]_DIGITS[3]	IP address of the "Lag" unit indicated by IdxSlave in the SHRD shared network	0	0	257	---	Integer	R/W	
A11f	IP_SLAVE_[IdxSlave]_DIGITS[4]	IP address of the "Lag" unit indicated by IdxSlave in the SHRD shared network	0	0	258	---	Integer	R/W	
A11f	ChkAdressSlave[IdxSlave]	Checking that the IP corresponds to the "Lag" unit indicated by IdxSlave in the SHRD shared network	0	0	1	---	Digital	R	
A11f	Confirm_IP_Slaves	Confirm "Lag" units IPs values. If it is 1, it will prompt to check the "Lag" unit IP address indicated by IdxSlave in the SHRD shared network	0	0: no	1: yes	---	Digital	R/W	
A11g	HAB_M_S_EXTENDED	Enabling the "Lead/Lag Extended" function in the shared network	0	0	1	---	Digital	R	
A11g	HAB_SET_POINT_TEMP_SHRD	Enabling temperature setpoint by SHRD shared network	0	0	1	---	Digital	R	
A11g	HAB_SET_POINT_HUM_SHRD	Enabling humidity setpoint by SHRD shared network	0	0	1	---	Digital	R	
A11g	HAB_SET_POINT_CO2_SHRD	Enabling CO2 setpoint by SHRD shared network	0	0	1	---	Digital	R	
A11g	HAB_M_S_OPER_MODE	Enabling the "Lead/Lag" function with same operation mode by SHRD shared network	0	0	1	---	Digital	R	
A11h	HAB_BACKUP_BY_ALARM	Enabling the Backup in case of alarm function (SHRD shared network)	0	0	1	---	Digital	R	
A11h	HAB_BACKUP_BY_ALARM_LEVEL_1	Enabling the unit's Backup in case of alarm of level 1 (SHRD shared network)	1	0	1	---	Digital	R	
A11h	HAB_BACKUP_BY_ALARM_LEVEL_2	Enabling the unit's Backup in case of alarm of level 2 (SHRD shared network)	1	0	1	---	Digital	R	
A11h	TIME_DEL_ALARM_LEVEL_2	Delay time for an alarm to go from level 1 to level 2 (SHRD shared network)	20	0	99	min	Integer	R	
A11h	HAB_BACKUP_EXTENDED	Enabling the Backup Extended function (SHRD shared network)	0	0	1	---	Digital	R	
A11h	DIA_SEM_BACKUP_EXT	Day of the week for alternation in operation with Backup Extended (SHRD shared network): 0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday	2	0	6	---	Integer	R	
A12	PASS_LEVEL_2_T	New SERVICE password	---	0	9999	---	Integer	R/W	29

Parameters of "Service" 08.Service par. → b.EEV setpoits

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
EV1a	A50_SH_SET_MSK	Overheating setpoint of the circuit 1 expansion valve	8.0	0.0	99.9	°C/°F	Analog.	R/W	257
EV1a	UMBRAL_BAJO_SH_EEV_1_T	LowSH: limit of low overheating on the circuit 1 expansion valve	2.0	0.0	99.9	°C/°F	Analog.	R/W	
EV1a	UMBRAL_LOP_EEV_1_T	LOP: limit of low evaporating temperature on the circuit 1 expansion valve	-23.5	-99.9	99.9	°C/°F	Analog.	R/W	
EV1a	A54_MOP_THRESHOLD	MOP: limit of high evaporating temperature on the circuit 1 expansion valve	25	0.0	99.9	°C/°F	Analog.	R/W	
EV1b	A83_SH_SET_MSK_2ND	Overheating setpoint of the circuit 2 expansion valve	8.0	0.0	99.9	°C/°F	Analog.	R/W	258
EV1b	UMBRAL_BAJO_SH_EEV_2_T	LowSH: limit of low overheating on the circuit 2 expansion valve	2.0	0.0	99.9	°C/°F	Analog.	R/W	
EV1b	UMBRAL_LOP_EEV_2_T	LOP: limit of low evaporating temperature on the circuit 2 expansion valve	-23.5	-99.9	99.9	°C/°F	Analog.	R/W	
EV1b	A93_MOP_THRESHOLD_2ND	MOP: limit of high evaporating temperature on the circuit 2 expansion valve	25	0.0	99.9	°C/°F	Analog.	R/W	
EV1c	SH_SET_CR	Overheating setpoint of the recovery circuit valve	8.0	0.0	99.9	°C/°F	Analog.	R/W	262
EV1c	LOW_SH_CR	LowSH: limit of low overheating on the recovery circuit valve	2.0	0.0	99.9	°C/°F	Analog.	R/W	
EV1c	LOP_CR	LOP: limit of low evaporating temperature on the recovery circuit valve	-23.5	-99.9	99.9	°C/°F	Analog.	R/W	
EV1c	MOP_CR	MOP: limit of high evaporating temperature on the recovery circuit valve	14.0	0.0	99.9	°C/°F	Analog.	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A00	Fan1_address_msk	Address of the supply plug-fan	1	1	254	---	Integer	R/W	
A00	Control_mode_SET1_Fan1	Type of flow control of the supply plug-fan: 0= RPM control, 1= Flow control, 2= PWM control	1	0	2	---	Integer	R/W	281
A00	VEL_VENT_TCO	Plug-fan speed with TCO terminal	2	1	3	---	Integer	R/W	
A00	Maximal_Speed_Fan1	Maximum supply fan speed	2200	0	9999	rpm	Integer	R	
A00a	Speed_Input_Rpm_FRIO_Fan1	Speed setpoint (rpm) in COOLING mode with supply plug-fan	1200	0	2950	rpm	Integer	R/W	275
A00a	Speed_Input_Rpm_CALOR_Fan1	Speed setpoint (rpm) in HEATING mode with supply plug-fan	1200	0	2950	rpm	Integer	R/W	277
A00a	Speed_Input_Rpm_VENTIL_Fan1	Speed setpoint (rpm) in VENTILATION mode with supply plug-fan	1200	0	2950	rpm	Integer	R/W	279
A00a	CAUDAL_VINT_MEDIDO_AJUSTE	Measured flow with supply plug-fan	0	0	999999	m^3/h	Integer	R	198
A00a	actual_speed_msk_Fan1	Measured speed with supply plug-fan	0	0	9999	rpm	Integer	R	199
A00b	SET_CAUDAL_VINT_FRIO	Setpoint of flow in COOLING mode with supply plug-fan	30600	0	999999	m^3/h	Integer	R/W	200
A00b	SET_CAUDAL_VINT_CALOR	Setpoint of flow in HEATING mode with supply plug-fan	30600	0	999999	m^3/h	Integer	R/W	201
A00b	SET_CAUDAL_VINT_ VENTILACION	Setpoint of flow in VENTILATION mode with supply plug-fan	30600	0	999999	m^3/h	Integer	R/W	197
A00b	CAUDAL_VINT_MEDIDO_AJUSTE	Measured flow with supply plug-fan	0	0	999999	m^3/h	Integer	R	198
A00b	actual_speed_msk_Fan1	Measured speed with supply plug-fan	0	0	999999	rpm	Integer	R	199
A00c	Speed_Input_perc_FRIO_Fan1	Speed setpoint (%) in COOLING mode with supply plug-fan	50.0	0	100.0	%	Analog.	R/W	160
A00c	Speed_Input_perc_CALOR_Fan1	Speed setpoint (%) in HEATING mode with supply plug-fan	50.0	0	100.0	%	Analog.	R/W	161
A00c	Speed_Input_perc_VENTIL_Fan1	Speed setpoint (%) in VENTILATION mode with supply plug-fan	50.0	0	100.0	%	Analog.	R/W	159
A00c	CAUDAL_VINT_MEDIDO_AJUSTE	Measured flow with supply plug-fan	0	0	999999	m^3/h	Integer	R	198
A00c	actual_speed_msk_Fan1	Measured speed with supply plug-fan	0	0	9999	rpm	Integer	R	199
A00d	Analog_IN2_Ebm_Fan1	Current value on the differential pressure sensor of supply fan	0	0	999999	Pa	Integer	R	224
A00d	AIN2_Min_Value_Ebm_Fan1	Minimum limit of the air pressure differential sensor with supply plug-fan	0	0	5000	Pa	Integer	R/W	267
A00d	AIN2_Max_Value_Ebm_Fan1	Maximum limit of the air pressure differential sensor with supply plug-fan	1600	0	5000	Pa	Integer	R/W	265
A00d	VALUE_Al_sensor_pda_Fan1	Voltage minimum value of the air pressure differential sensor to signal its alarm of supply fan	0.1	0.0	10.0	V	Analog.	R/W	307
A00d	TIME_RET_Al_sensor_pda_Fan1	Delay time to start the supply fan for alarm signalling of the air pressure differential sensor	60	10	120	s	Integer	R/W	269
A00e	actual_speed_msk_Fan22	Current speed (rpm) of the the supply fan with address 22	0	0	9999	rpm	Integer	R	
A00e	Speed_RPM_Offset_Fan22	Speed offset (rpm) of the the supply fan with address 22	0	-2500	2500	rpm	Integer	R/W	
A00f	actual_speed_msk_Fan23	Current speed (rpm) of the the supply fan with address 23	0	0	9999	rpm	Integer	R	
A00f	Speed_RPM_Offset_Fan23	Speed offset (rpm) of the the supply fan with address 23	0	-2500	2500	rpm	Integer	R/W	
A00g	actual_speed_msk_Fan24	Current speed (rpm) of the the supply fan with address 24	0	0	9999	rpm	Integer	R	
A00g	Speed_RPM_Offset_Fan24	Speed offset (rpm) of the the supply fan with address 24	0	-2500	2500	rpm	Integer	R/W	
A00h	actual_speed_msk_Fan25	Current speed (rpm) of the the supply fan with address 25	0	0	9999	rpm	Integer	R	
A00h	Speed_RPM_Offset_Fan25	Speed offset (rpm) of the the supply fan with address 25	0	-2500	2500	rpm	Integer	R/W	
A00i	actual_speed_msk_Fan26	Current speed (rpm) of the the supply fan with address 26	0	0	9999	rpm	Integer	R	
A00i	Speed_RPM_Offset_Fan26	Speed offset (rpm) of the the supply fan with address 26	0	-2500	2500	rpm	Integer	R/W	
A00j	actual_speed_msk_Fan27	Current speed (rpm) of the the supply fan with address 27	0	0	9999	rpm	Integer	R	
A00j	Speed_RPM_Offset_Fan27	Speed offset (rpm) of the the supply fan with address 27	0	-2500	2500	rpm	Integer	R/W	
A00k	actual_speed_msk_Fan28	Current speed (rpm) of the the supply fan with address 28	0	0	9999	rpm	Integer	R	
A00k	Speed_RPM_Offset_Fan28	Speed offset (rpm) of the the supply fan with address 28	0	-2500	2500	rpm	Integer	R/W	
A00l	Fan1_address_msk	Address of the supply fan	1	0	255	---	Integer	R	
A00l	OUT_CAR_X1_FAN1	Analog output X1 value of the "Lead" supply plug-fan	0.0	-100.0	100.0	%	Analog.	R/W	
A00l	OUT_CAR_Y1_FAN1	Analog output Y1 value of the "Lead" supply plug-fan	0.3	0.0	10.0	V	Analog.	R/W	
A00l	OUT_CAR_X2_FAN1	Analog output X2 value of the "Lead" supply plug-fan	80.0	-100.0	100.0	%	Analog.	R/W	
A00l	OUT_CAR_Y2_FAN1	Analog output Y2 value of the "Lead" supply plug-fan	8.3	0.0	10.0	V	Analog.	R/W	
A001	Fan2_address_msk	Address of the return plug-fan	2	1	254	---	Integer	R/W	
A001	Control_mode_SET1_Fan2	Type of flow control of the return plug-fan: 0= RPM control, 1= Flow control, 2= PWM control	1	0	2	---	Integer	R/W	282
A001	VEL_VENT_TCO	Plug-fan speed with TCO terminal	2	1	3	---	Integer	R/W	
A001	Maximal_Speed_Fan2	Maximum return fan speed	2200	0	9999	rpm	Integer	R	
A001a	Speed_Input_Rpm_FRIO_Fan2	Speed setpoint (rpm) in COOLING mode with return plug-fan	1200	0	2950	rpm	Integer	R/W	276
A001a	Speed_Input_Rpm_CALOR_Fan2	Speed setpoint (rpm) in HEATING mode with return plug-fan	1200	0	2950	rpm	Integer	R/W	278
A001a	Speed_Input_Rpm_VENTIL_Fan2	Speed setpoint (rpm) in VENTILATION mode with return plug-fan	1200	0	2950	rpm	Integer	R/W	280

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" (...continuation) c.Plug-fan

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A001a	CAUDAL_VRET_MEDIDO_AJUSTE	Measured flow with return plug-fan	0	0	999999	m³/h	Integer	R	204
A001a	actual_speed_msk_Fan2	Measured speed with return plug-fan	0	0	9999	rpm	Integer	R	205
A001b	SET_CAUDAL_VRET_FRIO	Setpoint of flow in COOLING mode with return plug-fan	30600	0	999999	m³/h	Integer	R/W	206
A001b	SET_CAUDAL_VRET_CALOR	Setpoint of flow in HEATING mode with return plug-fan	30600	0	999999	m³/h	Integer	R/W	207
A001b	SET_CAUDAL_VRET_ VENTILACION	Setpoint of flow in VENTILATION mode with return plug-fan	30600	0	999999	m³/h	Integer	R/W	203
A001b	CAUDAL_VRET_MEDIDO_AJUSTE	Measured flow with return plug-fan	0	0	999999	m³/h	Integer	R	204
A001b	actual_speed_msk_Fan2	Measured speed with return plug-fan	0	0	999999	rpm	Integer	R	205
A001c	Speed_Input_perc_FRIO_Fan2	Speed setpoint (%) in COOLING mode with return plug-fan	50.0	0	100.0	%	Analog.	R/W	175
A001c	Speed_Input_perc_CALOR_Fan2	Speed setpoint (%) in HEATING mode with return plug-fan	50.0	0	100.0	%	Analog.	R/W	176
A001c	Speed_Input_perc_VENTIL_Fan2	Speed setpoint (%) in VENTILATION mode with return plug-fan	50.0	0	100.0	%	Analog.	R/W	174
A001c	CAUDAL_VRET_MEDIDO_AJUSTE	Measured flow with return plug-fan	0	0	999999	m³/h	Integer	R	204
A001c	actual_speed_msk_Fan2	Measured speed with return plug-fan	0	0	9999	rpm	Integer	R	205
A001d	Analog_IN2_Ebm_Fan2	Current value on the differential pressure sensor of return fan	0	0	999999	Pa	Integer	R	225
A001d	AIN2_Min_Value_Ebm_Fan2	Minimum limit of the air pressure differential sensor with return plug-fan	0	0	5000	Pa	Integer	R/W	268
A001d	AIN2_Max_Value_Ebm_Fan2	Maximum limit of the air pressure differential sensor with return plug-fan	1600	0	5000	Pa	Integer	R/W	266
A001d	VALUE_AI_sensor_pda_Fan2	Voltage minimum value of the air pressure differential sensor to signal its alarm of return fan	0.1	0.0	10.0	V	Analog.	R/W	308
A001d	TIME_RET_AI_sensor_pda_Fan2	Delay time to start the return fan for alarm signalling of the air pressure differential sensor	60	10	120	s	Integer	R/W	270
A001e	actual_speed_msk_Fan32	Current speed (rpm) of the the return fan with address 32	0	0	9999	rpm	Integer	R	
A001e	Speed_RPM_Offset_Fan32	Speed offset (rpm) of the the return fan with address 32	0	-2500	2500	rpm	Integer	R/W	
A001f	actual_speed_msk_Fan33	Current speed (rpm) of the the return fan with address 33	0	0	9999	rpm	Integer	R	
A001f	Speed_RPM_Offset_Fan33	Speed offset (rpm) of the the return fan with address 33	0	-2500	2500	rpm	Integer	R/W	
A001g	actual_speed_msk_Fan34	Current speed (rpm) of the the return fan with address 34	0	0	9999	rpm	Integer	R	
A001g	Speed_RPM_Offset_Fan34	Speed offset (rpm) of the the return fan with address 34	0	-2500	2500	rpm	Integer	R/W	
A000h	actual_speed_msk_Fan35	Current speed (rpm) of the the return fan with address 35	0	0	9999	rpm	Integer	R	
A000h	Speed_RPM_Offset_Fan35	Speed offset (rpm) of the the return fan with address 35	0	-2500	2500	rpm	Integer	R/W	
A001i	actual_speed_msk_Fan36	Current speed (rpm) of the the return fan with address 36	0	0	9999	rpm	Integer	R	
A001i	Speed_RPM_Offset_Fan36	Speed offset (rpm) of the the return fan with address 36	0	-2500	2500	rpm	Integer	R/W	
A001j	actual_speed_msk_Fan37	Current speed (rpm) of the the return fan with address 37	0	0	9999	rpm	Integer	R	
A001j	Speed_RPM_Offset_Fan37	Speed offset (rpm) of the the return fan with address 37	0	-2500	2500	rpm	Integer	R/W	
A001k	actual_speed_msk_Fan38	Current speed (rpm) of the the return fan with address 38	0	0	9999	rpm	Integer	R	
A001k	Speed_RPM_Offset_Fan38	Speed offset (rpm) of the the return fan with address 38	0	-2500	2500	rpm	Integer	R/W	
A001l	Fan2_address_msk	Address of the return fan	1	0	255	---	Integer	R	
A001l	OUT_CAR_X1_FAN2	Analog output X1 value of the "Lead" return plug-fan	0.0	-100.0	100.0	%	Analog.	R/W	
A001l	OUT_CAR_Y1_FAN2	Analog output Y1 value of the "Lead" return plug-fan	0.3	0.0	10.0	V	Analog.	R/W	
A001l	OUT_CAR_X2_FAN2	Analog output X2 value of the "Lead" return plug-fan	80.0	-100.0	100.0	%	Analog.	R/W	
A001l	OUT_CAR_Y2_FAN2	Analog output Y2 value of the "Lead" return plug-fan	8.3	0.0	10.0	V	Analog.	R/W	
A002b	HAB_RED_CAUDAL_CONDUCTO_ TEXTIL	Enable flow reduction to fan start with fabric duct	1	0	1	---	Digital	R/W	
A002b	PORC_CAUDAL_CONDUCTO_ TEXTIL	Percentage of flow to fan start with fabric duct	35.0	20.0	75.0	%	Analog.	R/W	
A002b	TIME_RED_CAUDAL_ CONDUCTO_TEXTIL	Reduced flow timing to fan start with fabric duct	20	0	999	s	Integer	R/W	
A002	SET_CAUDAL_VINT_CALOR	Supply flow (measured value or value set by parameter)	1200	0	9999	x10 m³/h	Integer	R/W	201
A002	SET_CAUDAL_VRET_CALOR	Return flow (measured value or value set by parameter)	1200	0	9999	x10 m³/h	Integer	R/W	207
A002	Sobrepresion	Calculation of the OVERPRESSURE	0.0	0.0	99.9	%	Analog.	R	151
A002	SET_AJUSTE_SOBREPRESION	Constant of adjustment of the calculation of the overpressure	1.0	0.0	10.0	---	Analog.	R/W	152
A002	AOUT_COMPUERTA	Output fresh air damper	000.0	000.0	999.9	%	Analog.	R	10
A002	AOUT_COMPUERTA_ EXTRACCION	Output exhaust air damper	000.0	000.0	999.9	%	Analog.	R	153
A002c	CAUDAL_IMPULSION_MSK	Supply flow (measured value or value set by parameter)	0	0	9999	x10 m³/h	Integer	R	
A002c	CAUDAL_RETORNO_MSK	Return flow (measured value or value set by parameter)	0	0	9999	x10 m³/h	Integer	R	
A002c	RENOVACION_CAL	Calculation of the air renewal with mixing probe or CO2 probe	0	0	99	%	Integer	R	124
A002c	CAUDAL_RENOVACION_MSK	Renewal flow	0	0	9999	x10 m³/h	Analog.	R	201
A002c	CAUDAL_EXTRACCION_MSK	Extraction flow	0	0	9999	x10 m³/h	Integer	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A04	TAR_TEMP_RET	Calibration of the return air temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	45
A04	TEMP_RET	Reading of the return air temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	1
A04	TAR_TEMP_EXT	Calibration of the outdoor air temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	46
A04	TEMP_EXT	Reading of the outdoor air temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	2
A04a	TAR_TEMP_AMB	Calibration of the ambient air temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	108
A04a	TEMP_AMB	Reading of the ambient air temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	9
A04b	TAR_TEMP_TCO	Calibration of the TCO ambient temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	
A04b	TEMP_TCO	Reading of the TCO ambient temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	14
A05	TAR_TEMP_IMP	Calibration of the supply air temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	47
A05	TEMP_IMP	Reading of the supply air temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	7
A05	TAR_TEMP_MEZCLA	Calibration of the mixing air temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	50
A05	TEMP_MEZCLA	Reading of the mixing air temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	8
A05a1	TAR_CO2	Calibration of the CO2 probe	0	-999	999	Pa	Integer	R/W	215
A05a1	CO2	Reading of the differential pressure sensor for air renewal	0	0	9999	Pa	Integer	R	3
A05a	CO2_FISICA_zona1	Reading of the CO2 probe (zone 1) (zoning into 2 zones)	0	0	9999	ppm	Integer	R	256
A05a	TAR_CO2	Calibration of the CO2 probe	0	-999	999	ppm	Integer	R/W	215
A05a	TAR_CO2_zona2	Calibration of the second CO2 air quality probe (installation in the environment or outdoor) or zone 2 probe (zoning into 2 zones)	0	-999	999	ppm	Integer	R/W	221
A05a	CO2_FISICA_zona2	Reading of the second CO2 air quality probe (installation in the environment or outdoor) or zone 2 probe (zoning into 2 zones)	0	0	9999	ppm	Integer	R	220
A5b	TAR_TEMP_ENTRADA_BAC	Calibration of the HWC inlet water temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	227
A5b	TEMP_ENTRADA_BAC	Reading of the HWC inlet water temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	25
A5b	TAR_TEMP_SALIDA_BAC	Calibration of the HWC outlet water temperature probe	0.0	-9.9	9.9	°C	Analog.	R/W	228
A5b	TEMP_SALIDA_BAC	Reading of the HWC outlet water temperature probe	0.0	-99.9	99.9	°C	Analog.	R/W	26
A5c	TAR_TEMP_EXTRACCION_ RUEDA	Calibration of the exhaust temperature probe on the wheel (recovery heat exchanger)	0.0	-9.9	9.9	°C	Analog.	R/W	248
A5c	TEMP_EXTRACCION_RUEDA	Reading of the exhaust temperature probe on the wheel	0.0	-99.9	99.9	°C	Analog.	R/W	247
A5c	TAR_TEMP_RECUPERACION_ RUEDA	Calibration of the recovery temperature probe on the wheel (recovery heat exchanger)	0.0	-9.9	9.9	°C	Analog.	R/W	250
A5c	TEMP_RECUPERACION_RUEDA	Reading of the recovery temperature probe on the wheel	0.0	-99.9	99.9	°C	Analog.	R/W	249
A05d	TAR_PRES_DIF_IMP	Calibration of the differential pressure sensor for constant supply pressure	0	-9999	9999	Pa	Integer	R/W	
A05d	PRES_DIF_IMP	Reading of the differential pressure sensor for constant supply pressure	0	0	9999	Pa	Integer	R	291
A06	TAR_T_P_AP_C1	Calibration of the high pressure transducer of circuit 1	0.0	-9.9	9.9	bar	Analog.	R/W	48
A06	T_P_HP_C1	Reading of the high pressure transducer of circuit 1	0.0	-99.0	99.0	bar	Analog.	R	3
A06	TAR_T_P_AP_C2	Calibration of the high pressure transducer of circuit 2	0.0	-9.9	9.9	bar	Analog.	R/W	49
A06	T_P_HP_C2	Reading of the high pressure transducer of circuit 2	0.0	-99.0	99.0	bar	Analog.	R	4
A06b	TAR_T_P_LP_C1_AIN06	Calibration of the low pressure transducer of circuit 1	0.0	-9.9	9.9	bar	Analog.	R/W	212
A06b	T_P_LP_C1	Reading of the low pressure transducer of circuit 1	0.0	-99.0	99.0	bar	Analog.	R	204
A06b	TAR_TEMP_ASP_C1_AIN08	Calibration of the suction temperature probe of circuit 1	0.0	-9.9	9.9	°C	Analog.	R/W	312
A06b	TEMP_ASP_C1	Reading of the suction temperature probe of circuit 1	0.0	-9.0	999.9	-°C	Analog.	R	251
A06b0	TAR_T_P_LP_C2_AIN09	Calibration of the low pressure transducer of circuit 2	0.0	-9.9	9.9	bar	Analog.	R/W	213
A06b0	T_P_LP_C2	Reading of the low pressure transducer of circuit 2	0.0	-99.0	99.0	bar	Analog.	R	205
A06b0	TAR_TEMP_ASP_C2_AIN11	Calibration of the suction temperature probe of circuit 2	0.0	-9.9	9.9	°C	Analog.	R/W	314
A06b0	TEMP_ASP_C2	Reading of the suction temperature probe of circuit 2	0.0	-9.0	999.9	°C	Analog.	R	252
A06b1	TAR_TEMP_ASP_C2_AIN11	Calibration of the outdoor coil probe (1-citcuit units)	0.0	-9.9	9.9	°C	Analog.	R/W	314
A06b1	TEMP_ASP_C2_AIN11	Reading of the outdoor coil probe (1-citcuit units)	0.0	-9.0	999.9	°C	Analog.	R	
A06d	SerialProbe_2_1.NetAddr_SP	Address of the RS485 ambient probe Nb.1	128	128	159	---	Integer	R	
A06d	TAR_SONDA_AMB_1_TEMP	Temperature calibration of the RS485 ambient probe Nb.1	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06d	SONDA_AMB_1_TEMP	Temperature reading of the RS485 ambient probe Nb.1	0.0	-99.9	99.9	ºC	Analog.	R	
A06d	TAR_SONDA_AMB_1_HUM	Humidity calibration of the RS485 ambient probe Nb.1	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06d	SONDA_AMB_1_HUM	Humidity reading of the RS485 ambient probe Nb.1	0.0	0.0	100.0	%rh	Analog.	R	
A06e	SerialProbe_2_1.NetAddr_SP	Address of the RS485 ambient probe Nb.1	128	128	159	---	Integer	R	
A06e	SONDA_AMB_1_TEMP	Temperature reading of the RS485 ambient probe Nb.1	0.0	-99.9	99.9	ºC	Analog.	R	
A06e	SONDA_AMB_1_HUM	Humidity reading of the RS485 ambient probe Nb.1	0.0	0.0	100.0	%rh	Analog.	R	
A06e	SONDA_AMB_1_ROCIO	Dew point reading of the RS485 ambient probe Nb.1	0.0	-99.9	99.9	ºC	Analog.	R	
A06e	SerialProbe_2_1.Online_SP	Status of the RS485 ambient probe Nb.1 (0: Offline ,1: Online)	0	0	1	ºC	Digital	R	
A06f	SerialProbe_2_2.NetAddr_SP	Address of the RS485 ambient probe Nb.2	129	128	159	---	Integer	R	
A06f	TAR_SONDA_AMB_2_TEMP	Temperature calibration of the RS485 ambient probe Nb.2	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06f	SONDA_AMB_2_TEMP	Temperature reading of the RS485 ambient probe Nb.2	0.0	-99.9	99.9	ºC	Analog.	R	
A06f	TAR_SONDA_AMB_2_HUM	Humidity calibration of the RS485 ambient probe Nb.2	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06f	SONDA_AMB_2_HUM	Humidity reading of the RS485 ambient probe Nb.2	0.0	0.0	100.0	%rh	Analog.	R	
A06g	SerialProbe_2_2.NetAddr_SP	Address of the RS485 ambient probe Nb.2	129	128	159	---	Integer	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" (...continuation) d.Calibration

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A06g	SONDA_AMB_2_TEMP	Temperature reading of the RS485 ambient probe Nb.2	0.0	-99.9	99.9	ºC	Analog.	R	
A06g	SONDA_AMB_2_HUM	Humidity reading of the RS485 ambient probe Nb.2	0.0	0.0	100.0	%rh	Analog.	R	
A06g	SONDA_AMB_2_ROCIO	Dew point reading of the RS485 ambient probe Nb.2	0.0	-99.9	99.9	ºC	Analog.	R	
A06g	SerialProbe_2_2.Online_SP	Status of the RS485 ambient probe Nb.2 (0: Offline ,1: Online)	0	0	1	---	Digital	R	
A06h	SerialProbe_2_3.NetAddr_SP	Address of the RS485 ambient probe Nb.3	130	128	159	---	Integer	R	
A06h	TAR_SONDA_AMB_3_TEMP	Temperature calibration of the RS485 ambient probe Nb.3	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06h	SONDA_AMB_3_TEMP	Temperature reading of the RS485 ambient probe Nb.3	0.0	-99.9	99.9	ºC	Analog.	R	
A06h	TAR_SONDA_AMB_3_HUM	Humidity calibration of the RS485 ambient probe Nb.3	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06h	SONDA_AMB_3_HUM	Humidity reading of the RS485 ambient probe Nb.3	0.0	0.0	100.0	%rh	Analog.	R	
A06i	SerialProbe_2_3.NetAddr_SP	Address of the RS485 ambient probe Nb.3	130	128	159	---	Integer	R	
A06i	SONDA_AMB_3_TEMP	Temperature reading of the RS485 ambient probe Nb.3	0.0	-99.9	99.9	ºC	Analog.	R	
A06i	SONDA_AMB_3_HUM	Humidity reading of the RS485 ambient probe Nb.3	0.0	0.0	100.0	%rh	Analog.	R	
A06i	SONDA_AMB_3_ROCIO	Dew point reading of the RS485 ambient probe Nb.3	0.0	-99.9	99.9	ºC	Analog.	R	
A06i	SerialProbe_2_3.Online_SP	Status of the RS485 ambient probe Nb.3 (0: Offline ,1: Online)	0	0	1	---	Digital	R	
A06j	SerialProbe_2_4.NetAddr_SP	Address of the RS485 ambient probe Nb.4	131	128	159	---	Integer	R	
A06j	TAR_SONDA_AMB_4_TEMP	Temperature calibration of the RS485 ambient probe Nb.4	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06j	SONDA_AMB_4_TEMP	Temperature reading of the RS485 ambient probe Nb.4	0.0	-99.9	99.9	ºC	Analog.	R	
A06j	TAR_SONDA_AMB_4_HUM	Humidity calibration of the RS485 ambient probe Nb.4	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06j	SONDA_AMB_4_HUM	Humidity reading of the RS485 ambient probe Nb.4	0.0	0.0	100.0	%rh	Analog.	R	
A06k	SerialProbe_2_4.NetAddr_SP	Address of the RS485 ambient probe Nb.4	131	128	159	---	Integer	R	
A06k	SONDA_AMB_4_TEMP	Temperature reading of the RS485 ambient probe Nb.4	0.0	-99.9	99.9	ºC	Analog.	R	
A06k	SONDA_AMB_4_HUM	Humidity reading of the RS485 ambient probe Nb.4	0.0	0.0	100.0	%rh	Analog.	R	
A06k	SONDA_AMB_4_ROCIO	Dew point reading of the RS485 ambient probe Nb.4	0.0	-99.9	99.9	ºC	Analog.	R	
A06k	SerialProbe_2_4.Online_SP	Status of the RS485 ambient probe Nb.4 (0: Offline ,1: Online)	0	0	1	---	Digital	R	
A06l	TAR_SONDA_MEZCLA_TEMP	Temperature calibration of the RS485 mixing probe - Outlet temperature	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06l	SONDA_MEZCLA_TEMP	Calculation of cooling and heating power: RS485 mixing probe - Outlet temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06l	TAR_SONDA_MEZCLA_HUM	Temperature calibration of the RS485 mixing probe - Outlet humidity	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06l	SONDA_MEZCLA_HUM	Calculation of cooling and heating power: RS485 mixing probe - Outlet humidity display	0.0	0.0	100.0	%rh	Analog.	R	
A06m	SerialProbe_2_5.NetAddr_SP	Address of the RS485 mixing probe	133	128	159	---	Integer	R	
A06m	SONDA_MEZCLA_TEMP	Calculation of cooling and heating power: RS485 mixing probe - Outlet temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06m	SONDA_MEZCLA_HUM	Calculation of cooling and heating power: RS485 mixing probe - Outlet humidity display	0.0	0.0	100.0	%rh	Analog.	R	
A06m	SONDA_MEZCLA_ROCIO	Calculation of cooling and heating power: RS485 mixing probe - Dew point temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06m	SerialProbe_2_5.Online_SP	Status of the RS485 mixing probe (0: Offline ,1: Online)	0	0	1	---	Digital	R	
A06n	SerialProbe_2_6.NetAddr_SP	Address of the RS485 supply probe	132	128	159	---	Integer	R	
A06n	TAR_SONDA_IMPULSION_TEMP	Temperature calibration of the RS485 supply probe - Inlet temperature	0.0	-10.0	10.0	ºC	Analog.	R/W	
A06n	SONDA_IMPULSION_TEMP	Calculation of cooling and heating power: RS485 supply probe - Inlet temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06n	TAR_SONDA_IMPULSION_HUM	Temperature calibration of the RS485 supply probe - Inlet humidity	0.0	-10.0	10.0	%rh	Analog.	R/W	
A06n	SONDA_IMPULSION_HUM	Calculation of cooling and heating power: RS485 supply probe - Inlet humidity display	0.0	0.0	100.0	%rh	Analog.	R	
A06o	SerialProbe_2_6.NetAddr_SP	Address of the RS485 supply probe	132	128	159	---	Integer	R	
A06o	SONDA_IMPULSION_TEMP	Calculation of cooling and heating power: RS485 supply probe - Inlet temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06o	SONDA_IMPULSION_HUM	Calculation of cooling and heating power: RS485 supply probe - Inlet humidity display	0.0	0.0	100.0	%rh	Analog.	R	
A06o	SONDA_IMPULSION_ROCIO	Calculation of cooling and heating power: RS485 supply probe - Dew point temperature display	0.0	-99.9	99.9	ºC	Analog.	R	
A06o	SerialProbe_2_6.Online_SP	Status of the RS485 supply probe (0: Offline ,1: Online)	0	0	1	---	Digital	R	
A06br	TAR_T_P_LP_CR	Calibration of the low pressure transducer of recovery circuit	0.0	-9.9	9.9	bar	Analog.	R/W	
A06br	T_P_LP_CR	Reading of the low pressure transducer of recovery circuit	0.0	-999.9	999.9	bar	Analog.	R	264
A06br	TAR_TEMP_ASP_CR	Calibration of the suction temperature probe of recovery circuit	0.0	-9.9	9.9	ºC	Analog.	R/W	
A06br	TEMP_ASP_CR	Reading of the suction temperature probe of recovery circuit	0.0	-999.9	999.9	°C	Analog.	R	259
A06cr	TAR_T_P_HP_CR	Calibration of the high pressure transducer of recovery circuit	0.0	-9.9	9.9	bar	Analog.	R/W	
A06cr	T_P_HP_CR	Reading of the high pressure transducer of recovery circuit	0.0	-999.9	999.9	bar	Analog.	R	263
A07	TAR_HUM_INT	Calibration of the indoor air humidity probe	0.0	-9.9	9.9	%rH	Analog.	R/W	54
A07	TAR_HUM_EXT	Calibration of the outdoor air humidity probe	0.0	-9.9	9.9	%rH	Analog.	R/W	55
A07b1	IS_SONDA_AMB	Lower threshold for the ambient probe 4-20 mA	0.0	-99.9	99.9	°C	Analog.	R/W	
A07b1	FS_SONDA_AMB	Upper threshold for the ambient probe 4-20 mA	50.0	-99.9	99.9	°C	Analog.	R/W	
A07c	IS_CO2	Lower threshold for the CO2 quality probe	0	-100	10000	ppm	Integer	R/W	
A07c	FS_CO2	Upper threshold for the CO2 quality probe	2000	0	10000	ppm	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" (...continuation) d.Calibration

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A07c	LIM_MIN_CO2_ALARMA	Minimum limit to signal CO2 quality probe alarm	0	0	5000	ppm	Integer	R/W	
A07c	LIM_MAX_CO2_ALARMA	Maximum limit to signal CO2 quality probe alarm	2000	0	5000	ppm	Integer	R/W	
A07c1	IS_CO2_zona2	Lower threshold for the second CO2 quality probe: ambient probe or outdoor probe	0	0	10000	ppm	Integer	R/W	
A07c1	FS_CO2_zona2	Upper threshold for the second CO2 quality probe: ambient probe or outdoor probe	2000	0	10000	ppm	Integer	R/W	
A07c2	IS_CO2	Lower threshold for differential pressure sensor for air renewal (Pa)	0	-100	10000	Pa	Integer	R/W	
A07c2	FS_CO2	Upper threshold for differential pressure sensor for air renewal (Pa)	2000	0	10000	Pa	Integer	R/W	
A07c2	LIM_MIN_CO2_ALARMA	Minimum limit to signal alarm of differential pressure sensor for air renewal	0	0	5000	Pa	Integer	R/W	
A07c2	LIM_MAX_CO2_ALARMA	Maximum limit to signal alarm of differential pressure sensor for air renewal	2000	0	5000	Pa	Integer	R/W	
A07d	IS_SONDA_HUM	Lower threshold for the humidity probes 4-20 mA	10.0	0.0	100.0	%rH	Analog.	R/W	72
A07d	FS_SONDA_HUM	Upper threshold for the humidity probes 4-20 mA	90.0	0.0	100.0	%rH	Analog.	R/W	71
A07d	LIM_MIN_HUM_ALARMA	Minimum limit of humidity to signal alarm	0.0	0.0	110.0	%rH	Analog.	R/W	146
A07d	LIM_MAX_HUM_ALARMA	Maximum limit of humidity to signal alarm	100.0	0.0	110.0	%rH	Analog.	R/W	147
A07e	IS_PRESION	Lower threshold for the pressure transducer	0.0	-2.0	50.0	bar	Analog.	R/W	97
A07e	FS_PRESION	Upper threshold for the pressure transducer	45.0	0.0	50.0	bar	Analog.	R/W	98
A07f	TIPO_REFRIGERANTE	Type of refrigerant (4=R410A, 5=R-454B)	4	0	5	---	Integer	R/W	43
A07f	T_P_BEXT_C1	Reading of the high pressure transducer of circuit 1	0.0	0.0	0.0	bar	Analog.	R	
A07f	TEMP_CAL_BEXT_C1	Conversion to temperature of the high pressure transducer of circuit 1	0.0	0.0	0.0	°C	Analog.	R	
A07f	T_P_BEXT_C2	Reading of the high pressure transducer of circuit 2	0.0	-99.9	99.9	bar	Analog.	R/W	
A07f	TEMP_CAL_BEXT_C2	Conversion to temperature of the high pressure transducer of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
A07f1	TIPO_REFRIGERANTE	Type of refrigerant (4=R410A, 5=R-454B)	4	0	5	---	Integer	R/W	43
A07f1	T_P_BINT_C1	Reading of the low pressure transducer of circuit 1	0.0	0.0	0.0	bar	Analog.	R/W	
A07f1	TEMP_CAL_BINT_C1	Conversion to temperature of the low pressure transducer of circuit 1	0.0	0.0	0.0	°C	Analog.	R	
A07f1	T_P_BINT_C2	Reading of the low pressure transducer of circuit 2	0.0	-99.9	99.9	bar	Analog.	R/W	
A07f1	TEMP_CAL_BINT_C2	Conversion to temperature of the low pressure transducer of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
A07h	HAB_FILTRO1	Enabling of probe software filter to avoid reading oscillations	0	0: no	1: yes	---	Digital	R/W	98
A07h	TIME_FILTRO1	Filter time	30	0	99	s	Integer	R/W	
A07h	GRADI_FILTRO1	Filter differential	10.0	0.0	99.9	---	Analog.	R/W	
A07i	HAB_FILTRO_CAL_IMP	Enabling of probe software filter with supply SET by ambient probe	1	0: no	1: yes	---	Digital	R/W	168
A07i	TIME_FILTRO_CAL_IMP	Filter time with supply SET by ambient probe	60	0	99	s	Integer	R/W	
A07i	GRADI_FILTRO_CAL_IMP	Filter differential with supply SET by ambient probe	1.0	0.0	99.9	---	Analog.	R/W	
A07j	IS_PRES_DIF_IMP	Lower threshold differential pressure sensor for constant supply pressure	0	0	10000	Pa	Integer	R/W	
A07j	FS_PRES_DIF_IMP	Upper threshold differential pressure sensor for constant supply pressure	1000	0	10000	Pa	Integer	R/W	
A07j	LIM_MIN_PRES_DIF_IMP_ALARMA	Minimum limit to signal alarm of the differential pressure sensor for constant supply pressure	0	0	10000	Pa	Integer	R/W	
A07j	LIM_MAX_PRES_DIF_IMP_ALARMA	Maximum limit to signal alarm of the differential pressure sensor for constant supply pressure	1000	0	10000	Pa	Integer	R/W	
A07j1	IS_PRES_DIF_IMP	Lower threshold for differential pressure sensor for overpressure control with return fan or pressure control with supply damper	0	0	10000	---	Integer	R/W	
A07j1	FS_PRES_DIF_IMP	Upper threshold for differential pressure sensor for overpressure control with return fan or pressure control with supply damper	1000	0	10000	---	Integer	R/W	

Parameters of "Service" 08.Service par. → e.Simulation

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A08	TEMP_RET.Hw_val	Reading of return air temperature probe	0.0	-99.9	99.9	°C	Analog.	R	
A08	T_P_HP_C1_AIN07.Hw_val	Reading of high pressure transducer C1	0.0	-99.9	99.9	bar	Analog.	R	
A08	TEMP_EXT.Hw_val	Reading of outdoor air temperature probe	0.0	-99.9	99.9	°C	Analog.	R	
A08	TEMP_ASP_C1_AIN08.Hw_val	Reading of suction temperature probe C1	0.0	-99.9	99.9	°C	Analog.	R	
A08	TEMP_IMP.Hw_val	Reading of supply air temperature probe	0.0	-99.9	99.9	°C	Analog.	R	
A08	T_P_LP_C2_AIN09.Hw_val	Reading of low pressure transducer C2	0.0	-99.9	99.9	bar	Analog.	R	
A08	TEMP_MEZCLA.Hw_val	Reading of mixing air temperature probe	0.0	-99.9	99.9	°C	Analog.	R	
A08	CO2_FISICA_zona1.Hw_val	Reading of CO2 probe or indoor humidity probe	0	0	9999	ppm	Analog.	R	
A08	PROBE_AI5.Hw_val	Reading of ambient temperature probe or outdoor humidity	0.0	-99.9	99.9	°C	Analog.	R	
A08	TEMP_ASP_C2_AIN11.Hw_val	Reading of suction temperature probe C2	0.0	-99.9	99.9	°C	Analog.	R	
A08	T_P_LP_C1_AIN06.Hw_val	Reading of low pressure transducer C1	0.0	-99.9	99.9	bar	Analog.	R	
A08	T_P_HP_C2_AIN12.Hw_val	Reading of high pressure transducer C2	0.0	-99.9	99.9	bar	Analog.	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A08a	AIN33	Second ambient or outdoor air quality probe	0	0	2000	ppm	Integer	R	
A08a	AIN34	Differential pressure sensor for constant supply pressure control	0	0	1000	bar	Integer	R	
A08a	TEMP_ASP_CR	Suction temperature of the recovery circuit	0.0	-99.9	99.9	°C	Analog.	R	
A08a	T_P_LP_CR	Low pressure transducer of the recovery circuit	0.0	-99.9	99.9	bar	Analog.	R	
A08a	T_P_HP_CR	High pressure transducer of the recovery circuit	0.0	-99.9	99.9	bar	Analog.	R	
A08b	SONDA_AMB_1_TEMP	Ambient probe RS485 No.1: temperature	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_AMB_1_HUM	Ambient probe RS485 No.1: humidity	0.0	-99.9	99.9	%rh	Analog.	R	
A08b	SONDA_AMB_2_TEMP	Ambient probe RS485 No.2: temperature	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_AMB_2_HUM	Ambient probe RS485 No.2: humidity	0.0	-99.9	99.9	%rh	Analog.	R	
A08b	SONDA_AMB_3_TEMP	Ambient probe RS485 No.3: temperature	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_AMB_3_HUM	Ambient probe RS485 No.3: humidity	0.0	-99.9	99.9	%rh	Analog.	R	
A08b	SONDA_AMB_4_TEMP	Ambient probe RS485 No.4: temperature	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_AMB_4_HUM	Ambient probe RS485 No.4: humidity	0.0	-99.9	99.9	%rh	Analog.	R	
A08b	SONDA_MEZCLA_TEMP	Ambient probe RS485 No.5: mixing temperature (energy meter)	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_MEZCLA_HUM	Ambient probe RS485 No.5: mixing humidity (energy meter)	0.0	-99.9	99.9	%rh	Analog.	R	
A08b	SONDA_IMPULSION_TEMP	Ambient probe RS485 No.6: supply temperature (energy meter)	0.0	-99.9	99.9	°C	Analog.	R	
A08b	SONDA_IMPULSION_HUM	Ambient probe RS485 No.6: supply humidity (energy meter)	0.0	-99.9	99.9	%rh	Analog.	R	
A08c	TEMP_ENTRADA_BAC	HWC inlet water temperature probe with GREAT COLD	0.0	-99.9	99.9	°C	Analog.	R	
A08c	TEMP_SALIDA_BAC	HWC outlet water temperature probe with GREAT COLD	0.0	-99.9	99.9	°C	Analog.	R	
A08d	CO2_FISICA_zona2	CO2 quality probe 4-20 mA in zone 2	0.0	0	9999	mA	Analog.	R	
A08d	PRES_DIF_IMP	Differential pressure sensor for constant supply pressure	0.0	0	9999	bar	Analog.	R	
A08d	TEMP_EXTRACCION_RUEDA	Exhaust temperature probe on the wheel (recovery heat exchanger)	0.0	-99.9	99.9	°C	Analog.	R	
A08d	TEMP_RECUPERACION_ RUEDA	Recovery temperature probe on the wheel (recovery heat exchanger)	0.0	-99.9	99.9	°C	Analog.	R	
A09	VENT_INT_MAN	Reading of the digital outputs: supply fan	0	0	1	---	Digital	R/W	
A09	COMP1_MAN	Reading of the digital outputs: compressor 1 of circuit 1	0	0	1	---	Digital	R/W	
A09	COMP1_2_MAN	Reading of the digital outputs: compressor 2 of circuit 1	0	0	1	---	Digital	R/W	
A09	COMP1_2_MAN	Reading of the digital outputs: compressor 1 of circuit 2	0	0	1	---	Digital	R/W	
A09	COMP2_2_MAN	Reading of the digital outputs: compressor 2 of circuit 2	0	0	1	---	Digital	R/W	
A09	COMP_REC_MAN	Reading of the digital outputs: recovery compressor	0	0	1	---	Digital	R/W	
A09	REC_ROTATIVO_MAN	Reading of the digital outputs: rotary heat exchanger	0	0	1	---	Digital	R/W	
A09a	VIC1_MAN	Reading of the digital outputs: reversing cycle valve of circuit 1	0	0	1	---	Digital	R/W	
A09a	VIC2_MAN	Reading of the digital outputs: reversing cycle valve of circuit 2	0	0	1	---	Digital	R/W	
A09a	RESISTENCIA_1_O_VALV_ ON_MAN	Reading of the digital outputs: electrical heater 1 or on/off hot water coil (with proportional electrical heater)	0	0	1	---	Digital	R/W	
A09a	RESISTENCIA_2_MAN	Reading of the digital outputs: electrical heater 2	0	0	1	---	Digital	R/W	
A09a	BOMBA_BOILER_MAN	Reading of the digital outputs: pump of the boiler circuit	0	0	1	---	Digital	R/W	
A10	MAN_AOUT1	Reading of the analogue outputs (%): fresh air damper opening	0	0	100	---	Integer	R/W	
A10	MAN_AOUT2	Reading of the analogue outputs (%): 3-way valve of the hot water coil or gas burner/boiler or proportional el. heater	0	0	100	---	Integer	R/W	
A10	MAN_AOUT3	Reading of the analogue outputs (%): electronic expansion valve circuit 1	0	0	100	---	Integer	R/W	
A10	MAN_AOUT4	Reading of the analogue outputs (%): electronic expansion valve circuit 2	0	0	100	---	Integer	R/W	
A101	MAN_AOUT6	Reading of the analogue outputs (%) expansion card address 8: proportional humidifier or exhaust valve	0	0	100	---	Integer	R/W	
A101	MAN_AOUT7	Reading of the analogue outputs (%): expansion card address 9: wheel control (variable rotary heat exchanger)	0	0	100	---	Integer	R/W	
A10a	DES_MAN1	Forced defrosting of circuit 1	0	0	1	---	Digital	R/W	
A10a	DES_MAN1_2	Forced defrosting of circuit 2	0	0	1	---	Digital	R/W	
A10b	D24_MANUAL_POSIT_ ENABLE	Enable the manual position of the valve of circuit 1	0	0	1	---	Digital	R/W	
A10b	I39_MANUAL_POSIT_STEPS	Position of the valve of circuit 1 (steps)	0	0	9999	steps	Integer	R/W	
A10b1	D32_MANUAL_POSIT_ ENABLE_2ND	Enable the manual position of the valve of circuit 2	0	0	1	---	Digital	R/W	
A10b1	I53_MANUAL_POSIT_ STEPS_2ND	Position of the valve of circuit 2 (steps)	0	0	9999	steps	Integer	R/W	
A10cr	EEV_MANUAL_POSIT_ ENABLE_CR	Enable the manual position of the valve of the recovery circuit	0	0	1	---	Digital	R/W	
A10cr	EEV_MANUAL_POSIT_ STEPS_CR	Position of the valve of the recovery circuit (steps)	0	0	9999	steps	Integer	R/W	
A14	TEST_AP1	High pressure test of circuit 1	0	0	1	---	Digital	R/W	
A14	TEST_AP1_OK	Correct result of the high pressure test of circuit 1	0	0	1	---	Digital	R	
A14	TEST_AP2	High pressure test of circuit 2	0	0	1	---	Digital	R/W	
A14	TEST_AP2_OK	Correct result of the high pressure test of circuit 2	0	0	1	---	Digital	R	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A01	N_HOR_ON_EQUIPO	Accumulated operating hours of the unit	0	0	32767	h	Integer	R/W	62
A01	SET_HOR_ON_EQUIPO	Operating hours of the unit for alarm indication	20000	0	32000	h	Integer	R/W	37
A01	RESET_ON_HORAS_ MAQUINA	Reset the counter for number of hours of unit operation	0	0	1	---	Digital	R/W	107
A01a	N_HOR_VENT	Accumulated operating hours of the supply fan	0	0	32767	h	Integer	R	136
A01a	N_HOR_FREEC_FREEH	Accumulated operating hours of the free-cooling or free-heating	0	0	32767	h	Integer	R	213
A01a	N_HOR_REC_ROTATIVO	Accumulated operating hours of the rotary heat exchanger	0	0	32767	h	Integer	R	214
A01a	N_HOR_RES1	Accumulated operating hours of the electrical heater, stage 1	0	0	32767	h	Integer	R	137
A01a	N_HOR_RES2	Accumulated operating hours of the electrical heater, stage 2	0	0	32767	h	Integer	R	138
A01a	N_HOR_VALV_CALOR	Accumulated operating hours of the auxiliary hot water coil	0	0	32767	h	Integer	R	212
A01b	Countdown_ON_1	Remaining time to complete the "minimum time of ON" of compressor 1 circuit 1	0	0	999	s	Integer	R	
A01b	Countdown_OFF_1	Remaining time to complete the "minimum time of OFF" of compressor 1 circuit 1	0	0	999	s	Integer	R	
A01b	Countdown_ON_1_2	Remaining time to complete the "minimum time of ON" of compressor 2 circuit 1	0	0	999	s	Integer	R	
A01b	Countdown_OFF_1_2	Remaining time to complete the "minimum time of OFF" of compressor 2 circuit 1	0	0	999	s	Integer	R	
A01b	Countdown_ON_2	Remaining time to complete the "minimum time of ON" of compressor 1 circuit 2	0	0	999	s	Integer	R	
A01b	Countdown_OFF_2	Remaining time to complete the "minimum time of OFF" of compressor 1 circuit 2	0	0	999	s	Integer	R	
A01b	Countdown_ON_2_2	Remaining time to complete the "minimum time of ON" of compressor 2 circuit 2	0	0	999	s	Integer	R	
A01b	Countdown_OFF_2_2	Remaining time to complete the "minimum time of OFF" of compressor 2 circuit 2	0	0	999	s	Integer	R	
A01b	Countdown_ON_R	Remaining time to complete the "minimum time of ON" of compressor of recovery circuit	0	0	999	s	Integer	R	
A01b	Countdown_OFF_R	Remaining time to complete the "minimum time of OFF" of compressor of recovery circuit	0	0	999	s	Integer	R	
A01b	RESET_TIME_ COMPRESOR	Reset the timings of the compressor counters (to avoid waiting times at maintenance tasks)	0	0	1	---	Digital	R/W	182
A01c	HORAS_BLOQUEO_ COMP_TENSION	Remaining time to complete the compressors lockage due to a power cut-off for a period longer than 2 hours (to ensure the heating of the crankcase heater)	8	0	8	h	Integer	R/W	
A01c	RESET_BLOQUEO_ COMP_TENSION	Reset the timings of the compressors lockage due to a power cut-off (It is recorded in the register of control data)	0	0	1	---	Digital	R/W	
A01c1	PowerON_Hour	Last power supply to the unit: hour	0	0	99	h	Integer	R	
A01c1	PowerON_Minute	Last power supply to the unit: minute	0	0	99	min	Integer	R	
A01c1	PowerON_Day	Last power supply to the unit: day	0	0	99	min	Integer	R	
A01c1	PowerON_Month	Last power supply to the unit: month	0	0	99	---	Integer	R	
A01c1	PowerON_Year	Last power supply to the unit: year	0	0	99	---	Integer	R	
A01c1	PowerOFF_Hour	Last power cut-off of the unit: hour	0	0	99	h	Integer	R	
A01c1	PowerOFF_Minute	Last power cut-off of the unit: minute	0	0	99	min	Integer	R	
A01c1	PowerOFF_Day	Last power cut-off of the unit: day	0	0	99	min	Integer	R	
A01c1	PowerOFF_Month	Last power cut-off of the unit: month	0	0	99	---	Integer	R	
A01c1	PowerOFF_Year	Last power cut-off of the unit: year	0	0	99	---	Integer	R	
A01d	DISABLE_COMP1	Disable compressor 1 of circuit 1 (for maintenance task / failure)	0	0	1	---	Digital	R/W	330
A01d	DISABLE_COMP1_2	Disable compressor 2 of circuit 1 (for maintenance task / failure)	0	0	1	---	Digital	R/W	331
A01d	DISABLE_COMP2	Disable compressor 1 of circuit 2 (for maintenance task / failure)	0	0	1	---	Digital	R/W	332
A01d	DISABLE_COMP2_2	Disable compressor 2 of circuit 2 (for maintenance task / failure)	0	0	1	---	Digital	R/W	333
A02	N_HOR_COMP1	Accumulated operating hours of compressor 1 of circuit 1	0	0	0	h	Integer	R/W	10
A02	SET_HOR_COMP1	Operating hours of compressor 1 of circuit 1 for alarm indication	10000	0	32000	h	Integer	R/W	38
A02	RESET_ON_HORAS_ COMP1	Reset the counter of operating hours of compressor 1 of circuit 1	0	0	1	---	Digital	R/W	105
A02a	N_HOR_COMP1_2	Accumulated operating hours of compressor 2 of circuit 1	0	0	0	h	Integer	R/W	53
A02a	SET_HOR_COMP1_2	Operating hours of compressor 2 of circuit 1 for alarm indication	10000	0	32000	h	Integer	R/W	67
A02a	RESET_ON_HORAS_ COMP1_2	Reset the counter of operating hours of compressor 2 of circuit 1	0	0	1	---	Digital	R/W	124
A03	N_HOR_COMP2	Accumulated operating hours of compressor 1 of circuit 2	0	0	0	h	Integer	R/W	11
A03	SET_HOR_COMP2	Operating hours of compressor 1 of circuit 2 for alarm indication	10000	0	32000	h	Integer	R/W	39
A03	RESET_ON_HORAS_ COMP2	Reset the counter of operating hours of compressor 1 of circuit 2	0	0	1	---	Digital	R/W	106
A03a	N_HOR_COMP2_2	Accumulated operating hours of compressor 2 of circuit 2	0	0	0	h	Integer	R/W	69
A03a	SET_HOR_COMP2_2	Operating hours of compressor 2 of circuit 2 for alarm indication	10000	0	32000	h	Integer	R/W	70
A03a	RESET_ON_HORAS_ COMP2_2	Reset the counter of operating hours of compressor 2 of circuit 2	0	0	1	---	Digital	R/W	125
A03b	N_HOR_CR	Accumulated operating hours of recovery compressor	0	0	0	h	Integer	R/W	12
A03b	SET_HOR_CR	Operating hours of recovery compressor for alarm indication	10000	0	32000	h	Integer	R/W	13
A03c	N_ARR_V_INT	Counter of number of start-ups of supply fan	0	0	32000	---	Integer	R/W	139, 140
A03c	N_ARR_COMP1	Counter of number of start-ups of compressor 1 of circuit 1	0	0	32000	---	Integer	R/W	141, 142
A03c	N_ARR_COMP2	Counter of number of start-ups of compressor 1 of circuit 2	0	0	32000	---	Integer	R/W	145, 146
A03c	N_ARR_CR	Counter of number of start-ups of recovery compressor	0	0	32000	---	Integer	R/W	44, 45

17 - LIST OF CONTROL PARAMETERS

Parameters of "Service" (...continuation) f.Working Hours

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
A03d	N_ARR_COMP1_2	Counter of number of start-ups of compressor 2 of circuit 1	0	0	32000	---	Integer	R/W	143, 144
A03d	N_ARR_COMP2_2	Counter of number of start-ups of compressor 2 of circuit 2	0	0	32000	---	Integer	R/W	147, 148
A03d	N_ARR_RES1	Counter of number of 1st stage of electrical heater or gas burner/boiler	0	0	32000	---	Integer	R/W	149
A03d	N_ARR_RES2	Counter of number of 2nd stage of electrical heater or gas burner/boiler	0	0	32000	---	Integer	R/W	151
A10d	N_DES_C1	Counter of number of defrosting of circuit 1	0	0	32000	---	Integer	R/W	153, 154
A10d	N_DES_C2	Counter of number of defrosting of circuit 2	0	0	32000	---	Integer	R/W	157, 158
A10e	N_SEG_ULT_DES_C1	Duration of the last defrosting operation of circuit 1	0	0	999	s	Integer	R/W	161
A10e	N_SEG_ULT_DES_C2	Duration of the last defrosting operation of circuit 2	0	0	999	s	Integer	R/W	163
A10f	CONT_TED_C1	Elapsed time between the last two defrostings of circuit 1	0	0	32000	---	Integer	R/W	
A10f	CONT_TED_C2	Elapsed time between the last two defrostings of circuit 2	0	0	32000	---	Integer	R/W	
A12a	N_AL_AP1	Number of alarms of high pressure of compressor 1 circuit 1	0	0	9999	---	Integer	R	
A12a	N_AL_AP1_2	Number of alarms of high pressure of compressor 2 circuit 1	0	0	9999	---	Integer	R	
A12a	N_AL_BP1	Number of alarms of low pressure of compressor 1 circuit 1	0	0	9999	---	Integer	R	
A12a	N_AL_BP1_2	Number of alarms of low pressure of compressor 2 circuit 1	0	0	9999	---	Integer	R	
A12a	N_AL_KLD1	Number of alarms of discharge temperature of compressor 1 circuit 1	0	0	9999	---	Integer	R	
A12a	N_AL_KLD2	Number of alarms of discharge temperature of compressor 2 circuit 1	0	0	9999	---	Integer	R	
A12b	N_AL_AP2	Number of alarms of high pressure of compressor 1 circuit 2	0	0	9999	---	Integer	R	
A12b	N_AL_AP2_2	Number of alarms of high pressure of compressor 2 circuit 2	0	0	9999	---	Integer	R	
A12b	N_AL_BP2	Number of alarms of low pressure of compressor 1 circuit 2	0	0	9999	---	Integer	R	
A12b	N_AL_BP2_2	Number of alarms of low pressure of compressor 2 circuit 2	0	0	9999	---	Integer	R	
A12b	N_AL_KLD2	Number of alarms of discharge temperature of compressor 1 circuit 2	0	0	9999	---	Integer	R	
A12b	N_AL_KLD2_2	Number of alarms of discharge temperature of compressor 2 circuit 2	0	0	9999	---	Integer	R	
A12c	N_AL_TERM_COMP_VEXT_1	Number of alarms of thermal protection of compressors and outdoor fans of circuit 1	0	0	9999	---	Integer	R	
A12c	N_AL_TERM_COMP_VEXT_2	Number of alarms of thermal protection of compressors and outdoor fans of circuit 2	0	0	9999	---	Integer	R	
A12e0	N_AL_TERM_VENT_INT	Number of alarms of thermal protection of supply fan	0	0	9999	---	Integer	R	
A12e0	N_AL_TERM_RES_ELECTRICA	Number of alarms of electrical heaters thermistor	0	0	9999	---	Integer	R	
A12e0	N_AL_AP_BP_CR	Number of alarms of high-low pressure of the recovery compressor	0	0	9999	---	Integer	R	
A12e0	N_JUMP_INICIAL	Number of alarms of power supply failure	0	0	9999	---	Integer	R	
A12e0	N_AL_FBC1_RM	Number of alarms per continuous operation of the condensate pump	0	0	9999	---	Integer	R	
A12e1	N_AL_ANTIHIELO_BAC	Number of alarms of the hot water coil or heat recovery coil safety	0	0	9999	---	Integer	R	
A12e1	N_AL_INCENDIO	Number of alarms of the anti-fire safety	0	0	9999	---	Integer	R	
A12e1	N_AI_Offline_ModBus_EVDEVO	Number of offline bipolar driver alarms	0	0	9999	---	Integer	R	
A12e1	N_AI_EEPROM_EVDEVO	Number of alarms for bipolar EEPROM driver failure	0	0	9999	---	Integer	R	
A12e1	N_AI_EEV_A_EVDEVO	Number of alarms of bipolar driver valve A	0	0	9999	---	Integer	R	
A12e1	N_AI_EEV_B_EVDEVO	Number of alarms of bipolar driver valve B	0	0	9999	---	Integer	R	
A12e2	N_AL_DEV_A2L_SENSOR	Number of A2L sensor failure alarms	0	0	9999	---	Integer	R	
A12e2	N_AL_LFL_A2L_SENSOR	Number of leakage alarms detected in A2L sensor	0	0	9999	---	Integer	R	
A12e2	N_AL_CRIT_A2L	Number of A2L sensor critical alarms	0	0	9999	---	Integer	R	
A12f	N_AL_HUM_INT	Number of alarms of the indoor humidity probe	0	0	9999	---	Integer	R	
A12f	N_AL_HUM_EXT	Number of alarms of the outdoor humidity probe	0	0	9999	---	Integer	R	
A12f	N_AL_TEMP_RET	Number of alarms of the return temperature probe	0	0	9999	---	Integer	R	
A12f	N_AL_TEMP_EXT	Number of alarms of the outdoor temperature probe	0	0	9999	---	Integer	R	
A12f	N_AL_TEMP_IMP	Number of alarms of the supply temperature probe	0	0	9999	---	Integer	R	
A12f	N_AL_TEMP_MEZCLA	Number of alarms of the mixing temperature probe	0	0	9999	---	Integer	R	
A12f	N_AL_CO2	Number of alarms of the CO2 air quality probe	0	0	9999	---	Integer	R	
A12g0	N_AL_SONDA_AMB_1	Number of alarms of the ambient temperature probe No.1	0	0	9999	---	Integer	R	
A12g0	N_AL_SONDA_AMB_2	Number of alarms of the ambient temperature probe No.2	0	0	9999	---	Integer	R	
A12g0	N_AL_T_P_BEXT_C1	Number of alarms of high pressure transducer of circuit 1	0	0	9999	---	Integer	R	
A12g0	N_AL_T_P_BEXT_C2	Number of alarms of high pressure transducer of circuit 2	0	0	9999	---	Integer	R	
A12i	ResCnt_GLD_1	Reset the counter of operating hours of the R-410A gas leak detector	0	0	1	---	Integer	R/W	
A12i	SensorDays_GLD_1	Days R-410A gas leak detector operation since last reset	0	0	99	---	Integer	R	
A13	RESET_ON_CONT	Reset the counter of number of start-ups	0	0	1	---	Digital	R/W	
A13	RESET_DES_CONT	Reset the counter of number of defrosting operations	0	0	1	---	Digital	R/W	
A13	RESET_ON_CONT_AL	Reset the counter of number of alarms	0	0	1	---	Digital	R/W	

17.3. Parameters with “Level of access 3”

Parameters of “Manufacturer” 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU01	MODELO_EQUIPO	Unit model	0	0	99	---	Integer	R/W	58
CU01	TIPO_EQUIPO	Selection of the unit type (0=air-air)	0	0	1	---	Integer	R/W	182
CU01	HAB_BOMBA_CALOR	Enable the operation as heat-pump (0=cooling only; 1=heat pump)	1	0	1	---	Digital	R/W	45
CU01	FABRICANTE_EVD	Bipolar EEV driver manufacturer (0: Carel; 1: Eliwell)	0	0	1	---	Digital	R/W	370
CU01	NUM_WO_DIG_1	Work order number of the unit (digit 1)	0	0	9	---	Analog.	R/W	185
CU01	NUM_WO_DIG_2	Work order number of the unit (digit 2)	0	0	9	---	Analog.	R/W	186
CU01	NUM_WO_DIG_3	Work order number of the unit (digit 3)	0	0	9	---	Analog.	R/W	187
CU01	NUM_WO_DIG_4	Work order number of the unit (digit 4)	0	0	9	---	Analog.	R/W	188
CU01	NUM_WO_DIG_5	Work order number of the unit (digit 5)	0	0	9	---	Analog.	R/W	189
CU01	NUM_WO_DIG_6	Work order number of the unit (digit 6)	0	0	9	---	Analog.	R/W	190
CU01	NUM_WO_DIG_7	Work order number of the unit (digit 7)	0	0	9	---	Analog.	R/W	191
CU01	NUM_WO_DIG_8	Work order number of the unit (digit 8)	0	0	9	---	Analog.	R/W	192
CU02	NUM_COMP_CIRC	Number of compressor: 0: without compr. 2: 2 compressors / 1 circuit 6: 4 compressors / 2 circuits	1	0	7	---	Integer	R/W	60
CU02	HAB_UNICO_VOL_AIRE_EXT	Enable the single volume of outdoor air (0: no ; 1: yes)	1	0: no	1: yes	---	Digital	R/W	57
CU02a	HAB_COMPRESOR_REC	Enable de cooling recovery circuit	0	0: no	1: yes	---	Digital	R/W	263
CU02a	MIN_APERTURA_ON_REC_FRIO	% minimum damper opening to allow recovery compressor operation in COOLING mode	20	0	99	%	Integer	R/W	68
CU02a	MIN_APERTURA_ON_REC_ CALOR	% minimum damper opening to allow recovery compressor operation in HEATING mode	20	0	99	%	Integer	R/W	226
CU02a	TIME_MIN_APERTURA_ON_REC	Time with minimum opening of air damper to allow the start of the recovery compressor	90	0	999	s	Integer	R/W	9
CU02a	HAB_BOMBA_CALOR_COMP_ REC	Compressor recovery - heat pump 0: Compressor recovery + cooling only; 1: Compressor recovery + heat pump	1	0	1	---	Digital	R/W	203
CU03	CONF_OUT07	Element connected on the digital output OUT07: 0: Humidifier 1: Pump of the HWC circuit 2: Pump of the boiler circuit 3: General alarm 4: Inverter compressor 5: Rotary heat exchanger	3	0	5	---	Integer	R/W	117
CU03	SET_ON_VALV_CALOR_POR_ BAJA_TEXT	Setpoint to start-up the pump and the HWC valve depending on the low outdoor temperature	4.0	-10.0	10.0	°C	Analog.	R/W	82
CU03	MIN_APERTURA_VALV_CALOR	Minimum opening of the HWC valve with low outdoor temp. and unit ON	10	0	100	%	Integer	R/W	211
CU03	TIME_RET_OFF_BOMBA_BAC	Delay time to stop of the HWC pump	60	0	999	s	Integer	R/W	210
CU03	SET_ON_BOILER_POR_BAJA_ TEXT	Consigna para arranque bomba circuito caldera por temperatura exterior baja	4.0	-10.0	10.0	°C	Analog.	R/W	
CU03	MIN_APERTURA_BOILER	Setpoint to start-up the pump of the boiler circuit depending on the low outdoor temperature	10	0	100	%	Integer	R/W	
CU03	TIME_RET_OFF_BOMBA_BOILER	Minimum opening of the boiler with low outdoor temperature and unit ON	60	0	999	s	Integer	R/W	
CU03	MIN_APERTURA_ON_REC	Delay time to stop of the pump of the boiler circuit	10	0	99	%	Integer	R/W	68
CU03	TIME_MIN_APERTURA_ON_REC	Time with minimum opening of fresh air damper to allow the start of the rotary heat exchanger	90	0	999	s	Integer	R/W	9
CU03	HAB_COMPUERTA_CON_ DESESCARCHE	Enable the opening of the fresh air damper during defrosting with rotary heat exchanger	0	0: no	1: yes	---	Digital	R/W	
CU03	TIME_ON_VEXT_INI_DES	Running time of the outdoor fan at the start of the defrosting	45	0	120	s	Integer	R/W	185
CU03	HAB_REC_ROTATIVO_VARIABLE	Enable the rotary heat exchanger with variable wheel	0	0: no	1: yes	---	Digital	R/W	247
CU03	Inverter_Power_Min	Minimum power of the inverter compressor	30	0	99	---	Integer	R/W	
CU03	IS_OUT_INVERTER	Lower threshold of the inverter compressor	0.0	0.0	10.0	---	Analog.	R/W	
CU03	FS_OUT_INVERTER	Upper threshold of the inverter compressor	5.0	0.0	10.0	---	Analog.	R/W	
CU03a	CONF_OUT01_MOD_N8	Element on the digital output 01 of c.pCOe expansion card with addr.8: 0: Humidifier 1: Pump of the HWC circuit 2: Pump of the boiler circuit 3: General alarm 4: Inverter compressor 5: Rotary heat exchanger 6: Preheating electrical heater of fresh air with dehumidification 7: compressor OFF by crankcase resistance timing 8: freecooling ON for damper by-pass on the rotary heat exchanger	6	0	8	---	Integer	R/W	218
CU03a	SET_ON_VALV_CALOR_POR_ BAJA_TEXT	Setpoint to start-up the pump and the HWC valve depending on the low outdoor temperature	4.0	-10.0	10.0	°C	Analog.	R/W	82
CU03a	MIN_APERTURA_VALV_CALOR	Minimum opening of the HWC valve with low outdoor temp. and unit ON	10	0	100	%	Integer	R/W	211
CU03a	TIME_RET_OFF_BOMBA_BAC	Delay time to stop of the HWC pump	60	0	999	s	Integer	R/W	210

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU03a	SET_ON_BOILER_POR_BAJA_TEXT	Setpoint to start-up the pump of the boiler circuit depending on the low outdoor temperature	4.0	-10.0	10.0	°C	Analog.	R/W	
CU03a	MIN_APERTURA_BOILER	Minimum opening of the boiler with low outdoor temperature and unit ON	10	0	100	%	Integer	R/W	
CU03a	TIME_RET_OFF_BOMBA_BOILER	Delay time to stop of the pump of the boiler circuit	60	0	999	s	Integer	R/W	
CU03a	MIN_APERTURA_ON_REC	% of minimum opening of fresh air damper to allow the start of the rotary heat exchanger	10	0	99	%	Integer	R/W	68
CU03a	TIME_MIN_APERTURA_ON_REC	Time with minimum opening of fresh air damper to allow the start of the rotary heat exchanger	90	0	999	s	Integer	R/W	9
CU03a	HAB_COMPUERTA_CON_DESESCARCHE	Enable the opening of the fresh air damper during defrosting with rotary heat exchanger	0	0: no	1: yes	---	Digital	R/W	
CU03a	Inverter_Power_Min	Minimum power of the inverter compressor	30	0	99	---	Integer	R/W	
CU03a	IS_OUT_INVERTER	Lower threshold of the inverter compressor	0.0	0.0	10.0	---	Analog.	R/W	
CU03a	FS_OUT_INVERTER	Upper threshold of the inverter compressor	5.0	0.0	10.0	---	Analog.	R/W	
CU03b	CONF_OUT04_MOD_N8	Element on the digital output 04 of c.pCOe expansion card with addr.8: 0: Humidifier 1: Pump of the HWC circuit 2: Pump of the boiler circuit 3: General alarm 4: Inverter compressor 5: Rotary heat exchanger 6: ---------- 7: compressor OFF by crankcase resistance timing 8: freecooling ON for damper by-pass on the rotary heat exchanger	0	0	8	---	Integer	R/W	219
CU03b	SET_ON_VALV_CALOR_POR_BAJA_TEXT	Setpoint to start-up the pump and the HWC valve depending on the low outdoor temperature	4.0	-10.0	10.0	°C	Analog.	R/W	82
CU03b	MIN_APERTURA_VALV_CALOR	Minimum opening of the HWC valve with low outdoor temperature and unit ON	10	0	100	%	Integer	R/W	211
CU03b	TIME_RET_OFF_BOMBA_BAC	Delay time to stop of the HWC pump	60	0	999	s	Integer	R/W	210
CU03b	SET_ON_BOILER_POR_BAJA_TEXT	Setpoint to start-up the pump of the boiler circuit depending on the low outdoor temperature	4.0	-10.0	10.0	°C	Analog.	R/W	
CU03b	MIN_APERTURA_BOILER	Minimum opening of the boiler with low outdoor temperature and unit ON	10	0	100	%	Integer	R/W	
CU03b	TIME_RET_OFF_BOMBA_BOILER	Delay time to stop of the pump of the boiler circuit	60	0	999	s	Integer	R/W	
CU03b	HAB_REC_ROTATIVO_VARIABLE	Enable the rotary heat exchanger with variable wheel	0	0: no	1: yes	---	Digital	R/W	247
CU03b	MIN_APERTURA_ON_REC	% of minimum opening of fresh air damper to allow the start of the rotary heat exchanger	10	0	99	%	Integer	R/W	68
CU03b	TIME_MIN_APERTURA_ON_REC	Time with minimum opening of fresh air damper to allow the start of the rotary heat exchanger	90	0	999	s	Integer	R/W	9
CU03b	HAB_COMPUERTA_CON_DESESCARCHE	Enable the opening of the fresh air damper during defrosting with rotary heat exchanger	0	0: no	1: yes	---	Digital	R/W	
CU03b	Inverter_Power_Min	Minimum power of the inverter compressor	30	0	99	---	Integer	R/W	
CU03b	IS_OUT_INVERTER	Lower threshold of the inverter compressor	0.0	0.0	10.0	---	Analog.	R/W	
CU03b	FS_OUT_INVERTER	Upper threshold of the inverter compressor	5.0	0.0	10.0	---	Analog.	R/W	
CU03c	SET_TEMP_MAX_AOUT_REC_ROT_VAR	Setpoint of maximum outlet temperature of the variable rotary heat exchanger	6.0	10.0	20.0	°C	Analog.	R/W	
CU03c	SET_TEMP_MIN_AOUT_REC_ROT_VAR	Setpoint of minimum outlet temperature of the variable rotary heat exchanger	1.0	10.0	20.0	°C	Analog.	R/W	
CU03c	MAX_AOUT_REC_ROT_VARIABLE	Maximum speed of the variable rotary heat exchanger	100	30	100	%	Integer	R/W	
CU03c	MIN_AOUT_REC_ROT_VARIABLE	Minimum speed of the variable rotary heat exchanger	10	0	100	%	Integer	R/W	
CU04	TIPO_VENT_INT	Type of indoor fan (supply fan): 3= electronic plug-fan	3	2	3	---	Integer	R/W	196
CU04	FABRICANTE_PLUGFAN_INT	Supply plug-fan manufacturer: 0: EBM; 1:FANSTECH; 2: BELMONT	0	0	2	---	Integer	R/W	
CU04	HAB_EBM_LEGACY_INT	Enable operation of supply plug-fans as "Lead / Lag"	0	0: no	1: yes	---	Digital	R/W	
CU04	RPM_MAX_IMP	RPM limit for FANSTECH and BELMONT fans	2200	0	2500	rpm	Integer	R/W	
CU04a	TIPO_PRESION_VENT_INT	Available pressure type of the indoor supply fan: 1= low 2= nominal 3= high 4= low, metallic type 5= nominal, metallic type 6= high, metallic type	2	1	6	---	Integer	R/W	289
CU04a	NUM_VINT_PLUG_FAN	Number of indoor supply plug-fans	2	0	9	---	Integer	R/W	
CU04a	CAUDAL_VINT_NOMINAL	Nominal flow of the supply plug-fan	30600	0	99999	m^3/h	Integer	R/W	
CU04a	CTE_CALCULO_CAUDAL_VINT	Constant of calculation for the supply plug-fan	260	0	999	---	Integer	R/W	
CU04a	PORC_CAUDAL_VINT_MIN	Percentage for minimum flow rate of the supply plug-fan	-54	-100	0	%	Integer	R/W	298
CU04a	PORC_CAUDAL_VINT_MAX	Percentage for maximum flow rate of the supply plug-fan	20	0	100	%	Integer	R/W	299
CU04c	HAB_COMP_REG_PRES_U_INT	Enabling of the damper for control of the indoor unit pressure	0	0: no	1: yes	---	Digital	R/W	
CU04c	MAX_AOUT_VENT_INT_FRIO	Maximum analogue output for the supply fan in COOLING mode	100	30	100	%	Integer	R/W	
CU04c	MAX_AOUT_VENT_INT_CALOR	Maximum analogue output for the supply fan in HEATING mode	100	30	100	%	Integer	R/W	
CU04c	MIN_AOUT_VENT_INT	Minimum analogue output for the supply fan	0	0	100	%	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU041	TIPO_VENT_RET	Type of return fan:0: none; 2: radial; 3: Electronic plug-fan	0	0	4	---	Integer	R/W	202
CU041	FABRICANTE_PLUGFAN_RET	Return plug-fan manufacturer: 0: EBM; 1:FANSTECH; 2: BELMONT	0	0	2	---	Integer	R/W	
CU041	HAB_EBM_LEGACY_RET	Enable operation of return plug-fans as "Lead / Lag"	0	0: no	1: yes	---	Digital	R/W	
CU041	RPM_MAX_RET	RPM limit for FANSTECH and BELMONT fans	2200	0	2500	rpm	Integer	R/W	
CU041	HAB_CONTROL_ SOBREPRESION	Enable the overpressure control - exhaust damper control	0	0: no	1: yes	---	Digital	R/W	71
CU041a	TIPO_PRESION_VENT_RET	Pressure type of the return fan: 1= nominal; 2= high; 3= nominal, metallic type; 4= high, metallic type	1	1	4	---	Integer	R/W	290
CU041a	NUM_VRET_PLUG_FAN	Number of return plug-fans	2	0	9	---	Integer	R/W	
CU041a	CTE_CALCULO_CAUDAL_VRET	Constant of calculation for the return plug-fan	260	0	999	---	Integer	R/W	
CU041a	CAUDAL_VRET_NOMINAL	Nominal flow of the return plug-fan	30600	0	99999	m^3/h	Integer	R/W	
CU041a	PORC_CAUDAL_VRET_MIN	Percentage for minimum flow rate of the return plug-fan	-54	-100	0	%	Integer	R/W	
CU041a	PORC_CAUDAL_VRET_MAX	Percentage for maximum flow rate of the return plug-fan	20	0	100	%	Integer	R/W	
CU042	HAB_SUB_CAUDAL_VRET_CR	Enabling return fan flow variation with recovery circuit	1	0	1	---	Digital	R/W	
CU042	VAL_INI_RED_CAUDAL_LP_CR	Starting value of evaporative flow reduction with recovery circuit	5.0	-40.0	70.0	ºC	Analog.	R/W	
CU042	VAL_FIN_RED_CAUDAL_LP_CR	End value of evaporative flow reduction with recovery circuit	0.0	-40.0	70.0	ºC	Analog.	R/W	
CU042	VAL_MAX_RED_CAUDAL_LP_CR	Maximum value of evaporative flow reduction with recovery circuit	10.0	0.0	20.0	%	Analog.	R/W	
CU042	VAL_INI_RED_CAUDAL_HP_CR	Starting value of condensation flow reduction with recovery circuit	50.0	-40.0	70.0	ºC	Analog.	R/W	
CU042	VAL_FIN_RED_CAUDAL_HP_CR	End value of condensation flow reduction with recovery circuit	60.0	-40.0	70.0	ºC	Analog.	R/W	
CU042	VAL_MAX_RED_CAUDAL_HP_ CR	Maximum value of condensation flow reduction with recovery circuit	10.0	0.0	20.0	%	Analog.	R/W	
CU043	HAB_CONTROL_ SOBREPRESION_CON_Y2	Enable the overpressure control - extraction damper control via Y2 analogue output	0	0	1	---	Digital	R/W	
CU05	EQUIPO_AIRE_AIRE	Type of unit: AIR-AIR	0	0	1	---	Digital	R	
CU05	TIPO_VENT_EXT	Type of outdoor fan: 3= 2 speeds axial fan; 4= electronic axial fan or plug-fan	4	2	4	---	Integer	R/W	1
CU05	MAX_AOUT_VENT_EXT_FRIO	Maximum analogue output for the outdoor fan in COOLING mode	100	30	100	%	Integer	R/W	250
CU05	MAX_AOUT_VENT_EXT_CALOR	Maximum analogue output for the outdoor fan in HEATING mode	100	30	100	%	Integer	R/W	251
CU05	MIN_AOUT_VENT_EXT	Minimum analogue output for the outdoor fan	10	0	100	%	Integer	R/W	184
CU05	SET_ON_AGUA_AIRE_POR_ BAJA_TEXT	Setpoint for starting the pump and 3-way valve by low outdoor temperature	4,0	-10,0	10,0	ºC	Analog.	R/W	
CU051	MAX_AOUT_VENT_EXT_FRIO_ EN_ON	Maximum analogue output for the connection of the outdoor fan in COOLING mode	100	30	100	%	Integer	R/W	252
CU051	MAX_AOUT_VENT_EXT_ CALOR_EN_ON	Maximum analogue output for the connection of the outdoor fan in HEATING mode	100	30	100	%	Integer	R/W	253
CU051	MAX_AOUT_VENT_EXT_FRIO_ EN_OFF	Maximum analogue output for the disconnection of the outdoor fan in COOLING mode	50	30	100	%	Integer	R/W	254
CU051	MAX_AOUT_VENT_EXT_ CALOR_EN_OFF	Maximum analogue output for the disconnection of the outdoor fan in HEATING mode	50	30	100	%	Integer	R/W	255
CU05a	VAL_INI_VEXT_ALTA_VEL_ COND	Final value of the outdoor fan at high speed in condensation	R410A: 34.0 R454B: 31.3	0.0	60.0	bar	Analog.	R/W	68
CU05a	VAL_FIN_VEXT_ALTA_VEL_ COND	Initial value of the outdoor fan at high speed in condensation	R410A: 27.0 R454B: 24.8	0.0	60.0	bar	Analog.	R/W	70
CU05a	VAL_FIN_VEXT_ALTA_VEL_ EVAP	Final value of the outdoor fan at high speed in evaporation	R410A: 10.0 R454B: 9.1	0.0	60.0	bar	Analog.	R/W	101
CU05a	VAL_INI_VEXT_ALTA_VEL_ EVAP	Initial value of the outdoor fan at high speed in evaporation	R410A: 8.0 R454B: 7.2	0.0	60.0	bar	Analog.	R/W	103
CU05a	TIME_CAMBIO_VEL_VEXT	Timing for changing the speed of the outdoor fan	2	1	10	s	Integer	R/W	
CU06	HAB_QUEMADOR_GAS	Enable the gas burner	0	0: no	1: yes	---	Digital	R/W	86
CU06	HAB_RES_DESESCARCHE	Enable electrical heaters or gas burner in defrostings	0	0: no	1: yes	---	Digital	R/W	99
CU06a	HAB_BOILER	Enable the gas boiler	0	0: no	1: yes	---	Digital	R/W	264
CU06a	HAB_RES_DESESCARCHE	Enable gas boiler in defrostings	0	0: no	1: yes	---	Digital	R/W	99
CU07	NUM_RES	Number of electrical heaters: 0: ------- 1: 1 electrical heater 2: 2 electrical heaters 3: 2 electrical heaters (3 stages) 4: proportional	0	0	4	---	Integer	R/W	41
CU07	NUM_RES_DES	Number of electrical heaters during defrosting	0	0	4	---	Integer	R/W	61
CU07	VAL_BAC_DESESCARCHE	% proportional electrical heater in defrostings	100	0	100	%	Integer	R/W	
CU07	HAB_RESISTENCIA_PROP	Enable the proportional electrical heater	0	0: no	1: yes	---	Digital	R	
CU07	HAB_RES_SIN_COMPRESOR	Enable the electrical heater for replacing the compressor	0	0: no	1: yes	---	Digital	R/W	181
CU07a	HAB_CONTROL_RESIST_TRIAC	Enabling of the preheater with electrical heater in fresh air	0	0: no	1: yes	---	Digital	R/W	296
CU07a	SET_RES_TRIAC	Minimum return temperature for the control of the preheater with electrical heater	7.0	0.0	30.0	°C	Analog.	R/W	275
CU07a	SET_RET_MAX_RES_TRIAC	Maximum return temperature for the control of the preheater with electrical heater	25.0	0.0	30.0	°C	Analog.	R/W	276

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU07a	SET_HAB_RES_TEMP_EXT_ TRIAC	Outdoor temperature setpoint for enabling the preheater with electrical heater	10.0	-20.0	40.0	°C	Analog.	R/W	277
CU07a	MIN_APERTURA_ON_RES_ TRIAC	% damper opening to allow the start-up of preheater with electrical heater	100	0	100	%	Integer	R/W	
CU08	HAB_VALVULA_CALOR	Enable the valve of the hot water coil or the heat recovery coil	0	0: no	1: yes	---	Digital	R/W	103
CU08	HAB_VALVULA_FRIO	Enable the valve of the cold water coil	0	0: no	1: yes	---	Digital	R/W	208
CU08	HAB_VALVULA_ON_OFF	Enable the on/off valve of the water coil	0	0: no	1: yes	---	Digital	R/W	
CU08	HAB_BAC_DESESCARCHE	Enable the hot water coil in defrostings	0	0: no	1: yes	---	Digital	R/W	129
CU08	VAL_BAC_DESESCARCHE	% of proportional hot water coil in defrostings	100	0	100	%	Integer	R/W	
CU08	NUM_RES_DES	Number of electrical heaters during defrosting	0	0	3	---	Integer	R/W	61
CU08	HAB_PROT_ANTIHIELO_BAC_ GF	Enabling the antifreeze protection for low outdoor temperature with the hot water coil	0	0: no	1: yes	---	Digital	R/W	128
CU08a	SET_ANTIHIELO_AGUA_BAC	Antifreeze protection setpoint of the hot water coil with low outdoor temperatures	4.0	-20.0	10.0	°C	Analog.	R/W	229
CU08a	DIF_ANTIHIELO_AGUA_BAC	Differential for reset of the antifreeze protection of hot water coil	3.0	0.0	10.0	°C	Analog.	R/W	230
CU08b	SET_TEMP_AGUA_BAC	Water temperature setpoint of the hot water coil	10.0	0.0	20.0	°C	Analog.	R/W	56
CU08b	OFFSET_TEMP_AGUA_BAC	Water temperature offset of the hot water coil with OFF unit	5.0	0.0	10.0	°C	Analog.	R/W	51
CU08b	BANDA_TEMP_AGUA_BAC	Band of the water temperature setpoint of the hot water coil	3.0	0.1	5.0	°C	Analog.	R/W	57
CU09	HAB_SONDA_AMB	Enable the ambient probe	1	0: no	1: yes	---	Digital	R/W	167
CU09	CONTROL_SONDA_AMB	Enable control with ambient probe	1	0: no	1: yes	---	Digital	R/W	189
CU09	TIPO_SONDA_AMB	Type of ambient probe: 1= 1 RS485 probe, 2= 2 RS485 probes, 3= probe in SHRD shared network, 4= 1 NTC probe, 5= 3 RS485 probes, 6= 4 RS485 probes, 7= 1 probe 4-20mA	4	1	7	---	Integer	R/W	46
CU09	SEL_TEMP_SONDAS_AMB_ FRIO	Selection of temperature value with ambient probes in COOLING mode (0=average, 1=minimum; 2=maximum)	0	0	2	---	Analog.	R/W	199
CU09	SEL_TEMP_SONDAS_AMB_ CALOR	Selection of temperature value with ambient probes in HEATING mode (0=average, 1=minimum; 2=maximum)	0	0	2	---	Analog.	R/W	200
CU10	HAB_SONDA_TEMP_IMP	Enable the supply probe	1	0	1	---	Digital	R/W	48
CU10	TIPO_TEMP_EXT	Type of outdoor temperature probe (0= No; 1= Actual; 2= Probe in SHRD shared network)	1	0	2	---	Integer	R/W	54
CU10	TIPO_SONDA_HUM_INT	Type of indoor humidity probe: (0= No; 1= Actual; 2= Probe in SHRD shared network; 3= Virtual; 4= RS485)	0	0	4	---	Integer	R/W	56
CU10	TIPO_SONDA_HUM_EXT	Type of outdoor humidity probe: (0= No; 1= Actual; 2= Probe in SHRD shared network)	0	0	2	---	Integer	R/W	55
CU10a	HAB_CONTROL_HUM_DESHUM	Enable the control of humidification / dehumidification	0	0	1	---	Digital	R/W	47
CU10a	HAB_HUMIDIFICA	Enable the humidification function	0	0	2	---	Integer	R/W	190
CU10a	NUM_COMP_DESHUM	Number of compressors in basic dehumidification	0	0	4	---	Integer	R/W	22
CU10a	PORCEN_TEMP_ON_DESH	% Indoor temperature for compressors ON in dehumidification	15	0	100	%	Integer	R/W	189
CU10a	PORCEN_TEMP_OFF_DESH	% Indoor temperature for compressors OFF in dehumidification	85	0	100	%	Integer	R/W	188
CU10a	SET_HUM_OFF_COMPUERTA	Setpoint for closing the fresh air damper with high indoor humidity	100.0	0.0	100.0	%rH	Analog.	R/W	130
CU101	NUM_COMP_DESHUM	Number of compressors in active dehumidification 0: None 1: Non available 2: 2 compressors (1 circuit) 3: Non available 4: 4 compressors (2 circuits)	0	0	4	---	Integer	R/W	22
CU101	HAB_CONTROL_DESHUM_ REHEAT	Enable the active dehumidification with condensation coil. Note: The indoor humidity probe always has to be selected in CU10	0	0: no	1: yes	---	Digital	R/W	300
CU101	MIN_AOUT_DESHUM_REHEAT	Minimum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)	0	0	100	---	Integer	R/W	243
CU101	MAX_AOUT_DESHUM_REHEAT	Maxmum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)	100	0	100	---	Integer	R/W	244
CU10b	HAB_VALV_CALOR_POR_IMP_ MIN_FRIO	Control of minimum supply temperature with hot water coil in COOLING mode	0	0: no	1: yes	---	Digital	R/W	100
CU10b	HAB_COMP_CALOR_POR_ IMP_MIN_FRIO	Control of minimum supply temperature with compressor in COOLING mode	1	0: no	1: yes	---	Digital	R/W	101
CU10b	HAB_RES_POR_IMP_MIN_FRIO	Control of minimum supply temperature with electrical heaters in COOLING mode	0	0: no	1: yes	---	Digital	R/W	102
CU10c	HAB_VALV_CALOR_POR_IMP_ MIN_CALOR	Control of minimum supply temperature with hot water coil in HEATING mode	0	0: no	1: yes	---	Digital	R/W	218
CU10c	HAB_COMP_CALOR_POR_ IMP_MIN_CALOR	Control of minimum supply temperature with compressor in HEATING mode	1	0: no	1: yes	---	Digital	R/W	219
CU10c	HAB_RES_POR_IMP_MIN_ CALOR	Control of minimum supply temperature with electrical heaters in HEATING mode	0	0: no	1: yes	---	Digital	R/W	220

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU11	TIPO_SONDA_RENOVACION	Type of probe for air renewal: 0: None 1: Mixed air temperature 2: Actual air quality probe 3: Air quality probe in SHRD network 4: Actual air quality probe (2 probes) 5: Ambient air quality probe + Outdoor air quality probe 6: Differential pressure sensor 7: Air quality probe - RS485	1	0	7	---	Integer	R/W	127
CU11	HAB_LIM_CO2	Activate the air quality control	1	0: no	1: yes	---	Digital	R/W	84
CU11	TIPO_CO2	Type of CO2 control: 0= % # 1= ppm	1	0: %	1: ppm	---	Digital	R/W	
CU11	HAB_SONDA_MEZCLA_CON_CO2	Enable the mixing probe with CO2 probe (B6 or B8 with CO2 probe in SHRD network)	1	0	1	---	Digital	R/W	85
CU11	HAB_SET_TEMP_CO2	Enable the control of the fresh air damper depending on the mixing temperature with CO2 probe	0	0: no	1: yes	---	Digital	R	
CU11	SET_TEMP_CO2_CALOR	Setpoint of mixing temperature to close the fresh air damper in HEATING mode (winter) with CO2 probe	17.0	10.0	20.0	°C	Analog.	R/W	99
CU11	SET_TEMP_CO2_FRIO	Setpoint of mixing temperature to close the fresh air damper in COOLING mode (summer) with CO2 probe	30.0	20.0	50.0	°C	Analog.	R/W	225
CU11a	SET_TEMP_MEZCLA_CALOR	Setpoint of mixing temperature to close the fresh air damper in HEATING mode (winter)	12.0	0.0	20.0	°C	Analog.	R/W	91
CU11a	SET_TEMP_MEZCLA_FRIO	Setpoint of mixing temperature to close the fresh air damper in COOLING mode (summer)	35.0	20.0	50.0	°C	Analog.	R/W	224
CU11b	TIPO_SONDA_RENOVACION	Type of probe for air renewal: 0: None 1: Mixed air temperature 2: Actual air quality probe 3: Air quality probe in SHRD network 4: Actual air quality probe (2 probes) 5: Ambient air quality probe + Outdoor air quality probe 6: Differential pressure sensor 7: Air quality probe - RS485	1	0	7	---	Integer	R/W	127
CU11b	SEL_CO2_SONDAS_CO2	Selection of CO2 value with two CO2 probes: 0: average 1: minimum 2: maximum	0	0	2	---	Integer	R/W	234
CU11c	HAB_INCR_CAUDAL_CO2	Enable the increase of the air flow for renewal in units with CO_2 probe	0	0: no	1: yes	---	Digital	R/W	
CU12	TIPO_RELOJ	Type of clock: 0: No, 1: Actual 2: Network	1	0	2	---	Integer	R/W	57
CU12	TIPO_REFRIGERANTE	Type of refrigerant: 4: R410A 5: R454B	4	0	5	---	Integer	R/W	43
CU12	HAB_MB_GAS_LEAKAGE_ DETECTOR	Enable the R-410A gas leak detector	0	0: no	1: yes	---	Digital	R/W	80
CU12	HAB_A2L_SENSOR	Enable the A2L sensor (R-454B refrigerant) and the mitigation logic	0	0	1	---	Digital	R/W	347
CU12	TYPE_A2L_SENSOR_INT	Manufacturer of A2L sensor of the indoor circuit (0: NET; 1: SENSATA)	0	0	1	---	Integer	R/W	
CU12a	SEL_FRIO_CALOR	Procedures for the selection of the COOLING/HEATING mode: 0: by keyboard 1: remote (by digital input) 2: auto 3: only ventilation 4: ventilation 100% fresh air 5: SHRD shared network	2	0	5	---	Integer	R/W	59
CU12a	HAB_VENTILACION_100_AE_REMOTO	Selection of VENTILATION 100% fresh air by digital input	0	0	1	---	Digital	R/W	
CU12a	MODO_FRIO_CALOR_AUTO	COOLING/HEATING selection in AUTO: 0: by indoor temperature 1: by outdoor temperature	1	0	1	---	Digital	R/W	232
CU12a	HAB_COMPENSACION	Enable the setpoint compensation depending on the outdoor temperature	0	0: no	1: yes	---	Digital	R/W	55
CU12a	HAB_PROT_BAJA_TEMP_ EXTERIOR	Enable the protection for low outdoor temperature by digital outputs of the c.pCOe expansion module	0	0: no	1: yes	---	Digital	R/W	326
CU12a	HAB_MB_TERMOSTATO_TCO	Enabling of the TCO terminal by MODBUS	0	0: no	1: yes	---	Digital	R/W	229
CU12b	CONTROL_TCO_SONDA	Selection of the control probe with TCO terminal: 0= TCO terminal 1= ambient probe 2= return probe	1	0	2	---	Integer	R/W	217
CU12b	CONTROL_SONDA_AMB	Enable the control with ambient probe	1	0: no	1: yes	---	Digital	R/W	189
CU12b	ThTune_bloqueado	Keypad lockage of the TCO terminal	0	0: no	1: yes	---	Digital	R/W	230
CU12b	Clock_Source_THTune_or_Pco	Selection of clock source in TCO terminal or control board	1	0	1	---	Digital	R/W	327
CU12b	pCO_ThTune_Scheduler	Selection of scheduler in TCO terminal or VecticGD terminal	0	0	1	---	Digital	R/W	328
CU12b	HAB_CAMBIO_CAUDAL_POR_TCO	Enable the flow change by TCO terminal (supply plug-fan)	0	0: no	1: yes	---	Digital	R/W	325
CU12c	HAB_CONTROL_COMPUERTA_ IMP_RET	Enable the control of supply and return damper (external to the unit)	0	0: no	1: yes	---	Digital	R/W	250

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU12c	HAB_ANTIINCENDIO_ESPECIAL	Enabling special anti-fire safety	0	0: no	1: sí	---	Digital	R/W	
CU12c	SET_CAUDAL_INCENDIO	Air flow with special anti-fire safety alarm	30600	0	99999	m3/h	Integer	R/W	
CU12d	HAB_ZONIFICACION_POR_ VARIABLE	Enable the reduction of power and flow by zoning	0	0: no	1: yes	---	Digital	R/W	67
CU12d	HAB_ZONIFICACION_POR_ COMPUERTAS	Enabling of zoning by motorised dampers (I/O expansion module)	0	0: no	1: yes	---	Digital	R/W	239
CU12d	HAB_ZONIFICACION_4_ZONAS	Enabling of the air zoning up to 4 zones by motorised dampers (SMALL board with address 11)	0	0: no	1: yes	---	Digital	R/W	295
CU01zn	HAB_TERMOSTATO_TCO_11	Enable the terminal of zone 1 (zoning of the air flow)	1	0: no	1: yes	---	Digital	R/W	307
CU01zn	HAB_TERMOSTATO_TCO_12	Enable the terminal of zone 2 (zoning of the air flow)	1	0: no	1: yes	---	Digital	R/W	308
CU01zn	HAB_TERMOSTATO_TCO_13	Enable the terminal of zone 3 (zoning of the air flow)	1	0: no	1: yes	---	Digital	R/W	309
CU01zn	HAB_TERMOSTATO_TCO_14	Enable the terminal of zone 4 (zoning of the air flow)	1	0: no	1: yes	---	Digital	R/W	310
CU01zn	CONTROL_TCO11_SONDA	Temperature control zone 1 (0: ambient probe; 1: return NTC probe)	0	0	1	---	Digital	R/W	
CU01zn	CONTROL_TCO12_SONDA	Temperature control zone 2 (0: ambient probe; 1: return NTC probe)	0	0	1	---	Digital	R/W	
CU01zn	CONTROL_TCO13_SONDA	Temperature control zone 3 (0: ambient probe; 1: return NTC probe)	0	0	1	---	Digital	R/W	
CU01zn	CONTROL_TCO14_SONDA	Temperature control zone 4 (0: ambient probe; 1: return NTC probe)	0	0	1	---	Digital	R/W	
CU13	HAB_MB_ENERGY_METER	Enabling of the electric energy meter	0	0: no	1: yes	---	Digital	R/W	190
CU13	HAB_MB_THERMAL_ENERGY_ METER	Enabling of the meter of COOLING/HEATING capacities	0	0: no	1: yes	---	Digital	R/W	237
CU13a	TIPO_MEDIDOR_ENERGIA	Type of energy meter: 0= Integrated in the board; 1= Gavazzi EM210; 2= Gavazzi EM530; 3= Omron KM-N2	1	0	3	---	Integer	R	
CU13a	SYSTEM_TYPE	Energy meter, type of electrical system: Gavazzi (0= 3p; 1= 3P.n; 2= 2P; 3= 1P; 4= 3P.A) Onrom (0= 1P2W; 1= 1P3W; 2= 3P3W; 3= 1P2W2; 4= 1P3W2; 5= 3P4W)	0	0	5	---	Integer	R/W	179
CU13a	CT	Ratio of current trafo	0	0	---	---	Integer	R	178
CU13a	VT	Ratio of the voltage trafo	0	0	---	---	Analog.	R	141
CU13a	Reset_Energy_TMP	Reset logs stored in the meter meter	0	0: no	---	---	Digital	R	
CU14	HAB_SUPERVISION	Enabling of the serial card for BMS communication	1	0: no	1: yes	---	Digital	R	50
CU14	HAB_FREECOOL_VER	Enabling of the free-cooling in COOLING mode (summer)	1	0: no	1: yes	---	Digital	R/W	52
CU14	HAB_FREEHEAT	Enabling of the free-heating in HEATING mode (winter)	0	0: no	1: yes	---	Digital	R/W	53
CU14	HAB_FREECOOL_INV	Enabling of the free-cooling in HEATING mode (winter)	0	0: no	1: yes	---	Digital	R/W	62
CU14	HAB_RENOVACION_AIRE	Enabling of the renewal with outdoor air	1	0: no	1: yes	---	Digital	R/W	233
CU14	HAB_EQUIPO_100_AIRE_ EXTERIOR	Enabling of the unit operation with 100% fresh air	0	0: no	1: yes	---	Digital	R/W	231
CU14	HAB_DI_100_AE	Enabling of the unit operation with 100% fresh air by digital input (input B2 exp. module c.pCOe adr.8)	0	0: no	1: yes	---	Digital	R/W	
CU14a	TIPO_FREECOOLING	Type of free-cooling: 0=thermal; 1=enthalpic; 2= thermoenthalpic	0	0	2	---	Integer	R/W	118
CU15a	SET_IMPULSION_CALOR_FC	Value of the supply temperature to close the fresh air damper in HEATING mode (winter)	30.0	0.0	50.0	°C	Analog.	R/W	85
CU15a	SET_TEMP_OFF_FC_CALOR	Value of the return temperature to close the fresh air damper in HEATING mode (winter)	15.0	0.0	50.0	°C	Analog.	R/W	86
CU15a	BANDA_TEMP_OFF_FC_CALOR	Regulation band to close the fresh air damper in HEATING mode (winter)	3.0	0.1	5.0	°C	Analog.	R/W	87
CU15b	SET_IMPULSION_FRIO_FC	Value of the supply temperature to close the fresh air damper in COOLING mode (summer)	20.0	0.0	50.0	°C	Analog.	R/W	88
CU15b	SET_TEMP_OFF_FC_FRIO	Value of the return temperature to close the fresh air damper in COOLING mode (summer)	31.0	0.0	50.0	°C	Analog.	R/W	89
CU15b	BANDA_TEMP_OFF_FC_FRIO	Regulation band to close the fresh air damper in COOLING mode (summer)	3.0	0.1	5.0	°C	Analog.	R/W	90
CU16	HAB_VIC_C1_ON_CALOR	4-way valve of circuit 1: 0: N.Open; 1: N.Closed	0	0	1	---	Digital	R/W	
CU16	HAB_VIC_C2_ON_CALOR	4-way valve of circuit 2: 0: N.Open; 1: N.Closed	0	0	1	---	Digital	R/W	
CU17a	MB_MASTER_BAUDRATE	Parameter for the MODBUS MASTER communication of the Field-bus card No.1: Baud rate 0= 1200, 1= 2400, 2= 4800, 3= 9600, 4= 19200, 5= 38400	4	0	5	---	Integer	R/W	
CU17a	MB_MASTER_STOP_BITS	Parameter for the MODBUS MASTER communication of the Field-bus card No.1: stop bits: 0 = 2 stop bits, 1= 1 stop bit	2	1	2	---	Integer	R/W	

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU17a	MB_MASTER_PARITY	Parameter for the MODBUS MASTER communication of the Field-bus card No.1: parity mode 0= no parity 1= odd 2= even	0	0	2	---	Integer	R/W	
CU17c	Device_Address_X420H_1	Eliwell driver address of circuit 1	71	0	254	---	Integer	R	
CU17c	Device_Address_X420H_2	Eliwell driver address of circuit 2	72	0	254	---	Integer	R	
CU17c	Del_Al_Offline_evdevo	Delay for Offline bipolar driver alarm	3000	0	27000	ms	Integer	R/W	
CU17c	Device_Address_EVDEVO	EVDEVO driver serial communication address	7	0	254	---	Integer	R	
CU17c	Del_Al_Offline_evdevo	Delay for alarm by Offline driver EVDEVO	3000	0	27000	ms	Integer	R/W	
CU17e	Device_Address_A2L_SENSOR	Serial communication address of the A2L sensor (R-454B refrigerant)	81	0	247	---	Integer	R/W	
CU17e	Del_Al_Offline_A2L_SENSOR	Delay for Offline alarm of the A2L sensor (R-454B refrigerant)	3000	0	27000	ms	Integer	R/W	
CU17e	NEW_Address_A2L_SENSOR	New serial communication address of the A2L sensor (R-454B refrigerant)	81	0	247	---	Integer	R/W	
CU17e	RESET_AL_A2L_SENSOR	Internal alarms reset of the A2L sensor (R-454B refrigerant)	0	0	1	---	Digital	R/W	
CU17e	HAB_A2L_SENSOR_UEXT	Enable the A2L sensors inthe outdoor circuit(s) (R-454B refrigerant)	0	0: no	1: yes	---	Digital	R/W	
CU18a	A50_SH_SET_MSK	Overheating setpoint of the circuit 1 expansion valve	8.0	-72.0	324.0	°C/°F	Analog.	R/W	257
CU18a	UMBRAL_BAJO_SH_EEV_1_T	LowSH: limit of low overheating on the circuit 1 expansion valve	2.0	-72.0	324.0	°C/°F	Analog.	R/W	
CU18a	UMBRAL_LOP_EEV_1_T	LOP: limit of low evaporating temperature on the circuit 1 expansion valve	-23.5	-76.0	392.0	°C/°F	Analog.	R/W	
CU18a	A54_MOP_THRESHOLD	MOP: limit of high evaporating temperature on the circuit 1 expansion valve	25.0	-76.0	392.0	°C/°F	Analog.	R/W	
CU18b	A83_SH_SET_MSK_2ND	Overheating setpoint of the circuit 2 expansion valve	8.0	-72.0	324.0	°C/°F	Analog.	R/W	258
CU18b	UMBRAL_BAJO_SH_EEV_2_T	LowSH: limit of low overheating on the circuit 2 expansion valve	2.0	-72.0	324.0	°C/°F	Analog.	R/W	
CU18b	UMBRAL_LOP_EEV_2_T	LOP: limit of low evaporating temperature on the circuit 2 expansion valve	-23.5	-76.0	392.0	°C/°F	Analog.	R/W	
CU18b	A93_MOP_THRESHOLD_2ND	MOP: limit of high evaporating temperature on the circuit 2 expansion valve	25.0	-76.0	392.0	°C/°F	Analog.	R/W	
CU18c	SH_SET_CR	Overheating setpoint of the recovery circuit expansion valve	8.0	0	99.0	°C/°F	Analog.	R/W	262
CU18c	LOW_SH_CR	LowSH: limit of low overheating on the recovery circuit expansion valve	2.0	0	99.0	°C/°F	Analog.	R/W	
CU18c	LOP_CR	LOP: limit of low evaporating temperature on the recovery circuit expansion valve	-23.5	-99.0	99.0	°C/°F	Analog.	R/W	
CU18c	MOP_CR	MOP: limit of high evaporating temperature on the recovery circuit expansion valve	14.0	0	99.0	°C/°F	Analog.	R/W	
CU19	HAB_M_S_EXTENDED	Enabling the "Lead / Lag" Extended function in the shared network	0	0	1	---	Digital	R	
CU19	HAB_SET_POINT_TEMP_SHRD	Enabling temperature setpoint by SHRD shared network	0	0	1	---	Digital	R	
CU19	HAB_SET_POINT_HUM_SHRD	Enabling humidity setpoint by SHRD shared network	0	0	1	---	Digital	R	
CU19	HAB_SET_POINT_CO2_SHRD	Enabling CO2 setpoint by SHRD shared network	0	0	1	---	Digital	R	
CU20	HAB_BACKUP_BY_ALARM	Enabling the Backup in case of alarm function (SHRD shared network)	0	0	1	---	Digital	R	
CU20	HAB_BACKUP_BY_ALARM_ LEVEL_1	Enabling the unit's Backup in case of alarm of level 1 (SHRD shared network)	1	0	1	---	Digital	R	
CU20	HAB_BACKUP_BY_ALARM_ LEVEL_2	Enabling the unit's Backup in case of alarm of level 2 (SHRD shared network)	1	0	1	---	Digital	R	
CU20	TIME_DEL_ALARM_LEVEL_2	Delay time for an alarm to go from level 1 to level 2 (SHRD shared network)	20	0	99	min	Integer	R	
CU20	HAB_BACKUP_EXTENDED	Enabling the Backup Extended function (SHRD shared network)	0	0	1	---	Digital	R	
CU20	DIA_SEM_BACKUP_EXT	Day of the week for alternation in operation with Backup Extended (SHRD shared network): 0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday	2	0	6	---	Integer	R	
CU21	HAB_CTRL_PRES_IMP_CTE	Enable the constant supply pressure control	0	0: no	1: yes	---	Digital	R/W	346
CU21	MIN_PORC_AV_CTRL_PRES_ IMP_CTE	Minimum air flow rate for warning with constant supply pressure control	35.0	0.0	100.0	%	Integer	R/W	
CU21	MIN_PORC_AL_CTRL_PRES_ IMP_CTE	Minimum air flow rate for alarm with constant supply pressure control	10.0	0.0	100.0	%	Integer	R/W	
CU21	TIME_ON_AV_CTRL_PRES_ IMP_CTE	Delay time to activate constant supply pressure control warning	480	0	9999	s	Integer	R/W	
CU21	TIME_ON_AL_CTRL_PRES_ IMP_CTE	Delay time to activate constant supply pressure control alarm	120	0	9999	s	Integer	R/W	
CU21	TIME_OFF_AL_CTRL_PRES_ IMP_CTE	Delay time to disable constant supply pressure control alarm	120	0	9999	s	Integer	R/W	
CU21a	HAB_CTRL_SOBREPRESION_ VRET	Enabling overpressure control with return fan	0	0: no	1: yes	---	Digital	R/W	
CU21a	HAB_LIM_IMP_ROCIO	Enable the supply temperature limitation by ambient dew temperature	0	0: no	1: yes	---	Digital	R/W	
CU21b	HAB_LIM_RPM_CONDUCTO_ BQ	Enabling a limitation on speed fan (rpm) due to duct lockage	1	0	1	---	Digital	R/W	
CU21b	CONDUCTO_BQ_LIM_PDIF	Lower differential pressure limit to activate the rpm reduction of the supply fan due to duct lockage	15.0	0.0	100.0	%	Analog.	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) a.Unit Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CU21b	CONDUCTO_BQ_LIM_RPM	Upper differential pressure limit to activate the rpm reduction of the supply fan due to duct lockage	75.0	0.0	100.0	%	Analog.	R/W	
CU21b	CONDUCTO_BQ_SET_RPM	Speed (rpm) setpoint of the supply fan with duct lockage	60.0	0.0	100.0	%	Analog.	R/W	
CU21b	TIME_DEL_OFF_CONDUCTO_BQ	Delay time for deactivation of the speed (rpm) reduction of the supply fan with duct lockage	45	0	999	s	Integer	R/W	
CU22	HAB_FBC1	Enabling the condensate pump (1-circuit units)	0	0: no	1: yes	---	Digital	R/W	
CU22	TIME_OFF_FBC	Delay time for OFF of the condensate pump	10	0	9999	s	Integer	R/W	
CU22	TIME_ON_FBC	Delay time for ON of the condensate pump	3	0	9999	s	Integer	R/W	
CU22	TIEMPO_MAX_FBC	Maximum operating time of the condensate pump	120	0	9999	s	Integer	R/W	
CU22	TIEMPO_OFF_FBC_POR_OFF	OFF delay time by OFF of the condensate pump	420	0	9999	s	Integer	R/W	
CU22	TIEMPO_BLOQUEO_FBC	Condensate pump locking time after OFF	300	0	9999	s	Integer	R/W	
CU22	HORAS_AL_FBC	Time for continuous operation condensate pump alarm	3	0	9999	h	Integer	R/W	
CU23	HAB_CTRL_PRES_COMP_IMP	Enabling the pressure control with supply damper	0	0: no	1: yes	---	Digital	R/W	
CU23	SET_PRES_COMP_IMP	Differential pressure setpoint for pressure control with supply damper	600	0	1000	Pa	Integer	R/W	
CU23	MIN_PRES_COMP_IMP	Minimum differential pressure for pressure control with supply damper	50	0	1000	Pa	Integer	R/W	
CU23	OFFSET_COMP_SINTRA_FRIO	Offset for compressors setpoint in COOLING mode with pressure control with supply damper	1.0	-10.0	10.0	ºC	Analog.	R/W	
CU23	OFFSET_COMP_SINTRA_CALOR	Offset for compressors setpoint in HEATING mode with pressure control with supply damper	-1.0	-10.0	10.0	ºC	Analog.	R/W	
CU23a	HAB_AUTO_SET_PRES_COMP_IMP	Enabling the pressure control with supply damper in AUTO mode	0	0: no	1: yes	---	Digital	R/W	
CU23a	HAB_SONDA_AMB_MEDIA_SHRD	Enabling the average ambient temperature measured by SHRD network shared probes	0	0: no	1: yes	---	Digital	R/W	
CU23b	HETER_AUTO_SET_PRES_COMP_IMP	Temperature differential to activate the AUTO mode of the pressure control with supply damper	5.0	0.0	25.0	ºC	Analog.	R/W	
CU23b	SET_PRES_COMP_IMP_STD	Differential pressure setpoint for STD mode of the AUTO mode of the pressure control with supply damper	450	0	1000	Pa	Integer	R/W	
CU23b	SET_PRES_COMP_IMP_BOOST	Differential pressure setpoint for BOOST mode of the AUTO mode of the pressure control with supply damper	600	0	1000	Pa	Integer	R/W	
CU24	HAB_EXTRACTOR_EXTERNO	Enabling the selection of percentage of fresh air based on the status of an external extractor	0	0: no	1: yes	---	Digital	R/W	
CU24	PERC_AIRE_EXTERIOR_EXTRACTOR_OFF	Percentage of opening of external air damper with the external extractor on OFF position	20.0	0.0	100.0	%	Analog.	R/W	
CU24	PERC_AIRE_EXTERIOR_EXTRACTOR_OFF	Percentage of opening of external air damper with the external extractor on ON position	80.0	0.0	100.0	%	Analog.	R/W	
CUFAN	FABRICANTE_PLUGFAN_INT	Plug-fan manufacturer: 0: EBM 1: FANSTECH 2: BELMONT	0	0	2	---	Integer	R/W	
CUFAN	AI_Offline_MB_Fan1	Device status: 0:Online, 1:Offline	0	0	1	---	Digital	R	
CUFAN	CONFIG_PLUGFAN	Fan Setup Mode: 0: Normal 1: Set Up Communication 2: Set Up Address	0	0	2	---	Integer	R/W	
CUFAN	FAN1_NAMES	Name of the fan to be configured (thermal label)	0	0	15	---	Integer	R/W	
CUFAN	EN_WRITE_CONFIG_FAN1	The active fan does not correspond to the main fan	0	0: yes	1: no	---	Digital	R	
CUFAN	EN_RESCUE_FAN	Enable misconfigured fan reconfiguration	0	0: no	1: yes	---	Digital	R/W	
CUFAN	FAN_RESCUE_NAMES	Name of the fan to be reconfigured (thermal label)	0	0	15	---	Integer	R/W	
CUFAN	Confirm_New_Values_msk_Fan1	Confirm the new communication values	0	0: no	1: yes	---	Digital	R/W	323

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CD03	HAB_MASKS_DESES_ AVANZ	Enabling advanced defrost adjustment (allows direct access to CD06, CD07, CD08, CD11 screens without manufacturer password)	1	0: no	1: yes	---	Digital	R/W	
CD04	VAL_DES_MIN	Setpoint for start of defrosting by minimal pressure	R410A: 2.5 R454B: 2.2	-25.0	10.0	bar	Analog.	R/W	104
CD04	HAB_PRES_BEXT	Enable the high pressure transducer	1	0: no	1: yes	---	Digital	R/W	134
CD04	HAB_DES_TIME_RESCATE	Enable the defrosting by time (rescue defrosting)	1	0	1	---	Digital	R/W	351
CD04	TIME_INI_DES_RESCATE	Time to start the rescue defrosting if the pressure measured by the low transducer is below the defrosting start setpoint, ignoring the outdoor temperature	180	0	999	min	Integer	R/W	294
CD05	VAL_DES_DIF	Difference between the outdoor temperature and the evaporation temperature measured to start the defrosting procedure	16.0	5.0	20.0	°C	Analog.	R/W	105
CD05	SET_TEMP_EXT_DES	Outdoor temperature setpoint to allow the defrosting by difference	10.0	0.0	50.0	°C	Analog.	R/W	226
CD06	TIME_DES_C1_2	Time between defrosting of different circuits	90	0	999	s	Integer	R/W	295
CD06	TIME_ENTRE_DES_DIF	Minimum time between defrosting of the same circuit by difference between the outdoor temperature and the evaporation temperature	20	0	99	min	Integer	R/W	40
CD07	VAL_ON_VEXT_DES_OBL	Value of pressure to switch-on the outdoor fan during the defrosting	R41A: 28.0 R454B: 25.7	10.0	45.0	bar	Analog.	R/W	95
CD07	VAL_OFF_VEXT_DES_OBL	Value of pressure to switch-off the outdoor fan during the defrosting	R41A: 26.0 R454B: 23.8	10.0	45.0	bar	Analog.	R/W	96
CD07	SET_TEXT_VEXT_OFF_DES	Outdoor temperature setpoint below which there is not allowed to operate the outdoor fan during the defrosting	-6.0	-30.0	0.0	°C	Analog.	R/W	111
CD07	TIME_MAX_DUR_DES_MIN	Time of connection of the outdoor fan during the defrosting procedure by minimal pressure	240	0	999	s	Integer	R/W	296
CD07	TIME_MAX_DUR_DES_DIF	Time of connection of the outdoor fan during the defrosting procedure by difference between the outdoor temperature and the evaporation temperature	120	0	999	s	Integer	R/W	297
CD07a	H_SONDA_ FIN_VEXT_ DES_BEXT	Enable the outdoor coil temperature probe for defrosting in 1-circuit units	0	0	1	---	Digital	R/W	352
CD07a	H_FIN_VEXT_DES_BEXT	Enable the stoppage of the outdoor fan during defrosting in 1-circuit units	0	0	1	---	Digital	R/W	353
CD07a	SP_FIN_VEXT_DES_BEXT	Setpoint for the stop of the outdoor fan during defrosting in 1-circuit units	5.0	0.0	30.0	°C	Analog.	R/W	319
CD08	HAB_ON_VEXT_INI_DES	Enable the connection of the outdoor fan at the start of the defrosting	1	0: no	1: yes	---	Digital	R/W	200
CD08	TIME_ON_VEXT_INI_DES	Running time of the outdoor fan at the start of the defrosting	45	0	120	s	Integer	R/W	185
CD09	VAL_INI_DES	Setpoint to start the defrosting	R41A: 5.6 R454B: 5.0	-10.0	10.0	bar	Analog.	R/W	37
CD09	VAL_FIN_DES	Setpoint to end the defrosting	R410A: 35.0 R454B: 32.2	0.0	50.0	bar	Analog.	R/W	38
CD10	TIME_RET_INICIO_DES	Time delay to start the defrosting	120	0	999	s	Integer	R/W	34
CD10	TIME_MIN_DUR_DES	Minimum period of duration of the defrosting	1	0	999	min	Integer	R/W	64
CD10	TIME_MAX_DUR_DES	Maximum period of duration of the defrosting	10	0	999	min	Integer	R/W	35
CD11a	HAB_CAMBIO_V4V_POR_ DESES_C1	Enabling cycle reversing valve (CRV) change during defrosting of circuit 1	0	0	1	---	Digital	R/W	
CD11a	HAB_CAMBIO_V4V_POR_ DESES_C2	Enabling cycle reversing valve (CRV) change during defrosting of circuit 2	0	0	1	---	Digital	R/W	
CD11a	DELTA_P_CAMBIO_V4V_ POR_DESES	Pressure difference between high and low for activation of cycle reversing valve change during the defrosting procedure	4.0	-9.9	9.9	---	Analog.	R/W	
CD11a	HAB_OPEN_EEV_POR_ DESES_C1	Enabling the opening of the electronic expansion valve (EEV) during defrosting of circuit 1	0	0	1	---	Digital	R/W	
CD11a	HAB_OPEN_EEV_POR_ DESES_C2	Enabling the opening of the electronic expansion valve (EEV) during defrosting of circuit 2	0	0	1	---	Digital	R/W	
CD11a	MAN_STEPS_EVV_DES	Position of the electronic expansion valve (EEV) during the defrosting procedure	380	0	480	---	Integer	R/W	
CD11a	DEL_INI_DES	Delay of start and end of the defrosting procedure to ensure electronic expansion valve opening (EEV)	5	0	99	---	Integer	R/W	
CD11b	HAB_COMP_SWITCH_ DES_C1	Enabling compressor start alternation during defrosting of circuit 1	0	0	1	---	Digital	R/W	
CD11b	HAB_COMP_SWITCH_ DES_C2	Enabling compressor start alternation during defrosting of circuit 2	0	0	1	---	Digital	R/W	
CD11b	IND_COMP_LAST_DES_C1	Identification index of the compressor that was the first to start-up during the last defrosting of circuit 1	1	0	9	---	Integer	R	
CD11b	IND_COMP_LAST_DES_C2	Identification index of the compressor that was the first to start-up during the last defrosting of circuit 2	2	0	9	---	Integer	R	
CD12	HAB_DES_LP_CR	Enabling defrosting by minimal pressure of the recovery circuit	1	0	1	---	Digital	R	
CD12	VAL_INI_DES_LP_CR	Setpoint to start the defrosting by evaporation of the recovery circuit	-1.0	-40.0	70.0	ºC	Analog.	R/W	
CD12	TIME_INI_DES_LP_CR	Time to start the defrosting of the recovery circuit	5	0	999	min	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CC01	TIME_MIN_OFF_COMP	Minimum time of stoppage of a compressor	180	0	9999	s	Integer	R/W	27
CC01	TIME_MIN_ON_COMP	Minimum time of connection of a compressor	120	0	9999	s	Integer	R/W	33
CC02	TIME_MIN_ON_ON_COMP	Time between start-ups of the same compressor	300	0	9999	s	Integer	R/W	31
CC02	TIME_MIN_ON_ON_COMP_DIST	Time between start-ups of different compressors	60	0	9999	s	Integer	R/W	32
CC03	TIME_RET_AL_BP	Low pressure alarm delay	15	0	9999	s	Integer	R/W	19
CC03	HAB_ROT_COMP	Enabling of the compressors rotation	1	0: no	1: yes	---	Digital	R/W	64
CC03	EqualizedCircPwr	Type of circuit rotation: 0: grouped 1: equalized 2: grouped on increasing - equalized on decreasing	1	0	2	---	Integer	R/W	
CC04	DESHAB_AL_BP_CALOR	Cancel low pressure safety in HEATING mode (winter)	0	0	1	---	Digital	R/W	87
CC04	DESHAB_AL_BP_DES	Cancel low pressure safety during defrosting	0	0	1	---	Digital	R/W	88
CC04a	HAB_OFF_COMP_DES	Enable the compressors stoppage before the defrosting	1	0: no	1: yes	---	Digital	R/W	90
CC04a	TIME_OFF_COMP_DES	Time of compressors stoppage during the defrosting	105	0	9999	s	Integer	R/W	
CC04b	TIME_CAMBIO_V4V	4-way valve: time before the change and after the compressors stoppage	90	0	9999	s	Integer	R/W	
CC04c	HAB_OFF_COMP_CAMBIO_F_C	Compressors stoppage before the change COOLING / HEATING	1	0: no	1: yes	---	Digital	R/W	91
CC04c	TIME_OFF_COMP_CAMBIO_F_C	Time of compressors stoppage due to the change of COOLING / HEATING mode	180	0	9999	s	Integer	R/W	
CC05	TIPO_BLOQ_COMP_FRIO_FC	Disable the compressors with free-cooling, in COOLING mode (summer): 0: no; 1: by Delta ambient T - outdoor T 2: Outdoor T setpoint	2	0	2	---	Integer	R/W	72
CC05	SET_TEMP_BLOQ_COMP_FRIO_FC	Setpoint of compressors lockage with free-cooling, in COOLING mode, due to the low outdoor temperature	10.0	-99.9	99.9	°C	Analog.	R/W	92
CC05	VAL_DIF_BLOQ_COMP_FRIO_FC	Setpoint of compressors lockage with free-cooling, in COOLING mode, by delta of ambient temperature - outdoor temperature	14.0	-99.9	99.9	°C	Analog.	R/W	93
CC05	SET_HUM_BLOQ_COMP_FRIO_FC	Humidity setpoint of compressors lockage with free-cooling, in COOLING mode	80.0	0.0	100.0	%rH	Analog.	R/W	154
CC06	TIPO_BLOQ_COMP_CALOR	Disable the compressors in HEATING mode depending on the outdoor T	0	0: no	1: yes	---	Digital	R/W	131
CC06	SET_TEMP_BLOQ_COMP_CALOR_50_PORC	Locking setpoint to disconnect half of the compressors in HEATING mode due to the low outdoor temperature	-11.5	-99,9	99,9	°C	Analog.	R/W	298
CC06	SET_TEMP_BLOQ_COMP_CALOR	Locking setpoint to disconnect all of the compressors in HEATING mode due to the low outdoor temperature (the optional recovery compressor is authorized to operate). In this case the fan will be activated for 60 sec every 30 min	-14.5	-99.9	99.9	°C	Analog.	R/W	94

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CR01	CONTROL_P_PI	Type of temperature control: 0:Proportional (P) 1:Proportional+Integral (PI)	1	0	1	---	Digital	R/W	63
CR01	BANDA_TEMP_FRIO	Band for temperature control in summer (COOLING mode)	3.0	0.1	99.9	°C	Analog.	R/W	21
CR01	BANDA_TEMP_CALOR	Band for temperature control in winter (HEATING mode)	3.0	0.1	99.9	°C	Analog.	R/W	22
CR01	TIME_INTEGRACION	Integration time with PI temperature control	100	0	9999	s	Integer	R/W	42
CR01a	CONTROL_P_PI_IMP	Type of supply temperature control: 0: Proportional (P) 1: Proportional+Integral (PI)	1	0	1	---	Digital	R/W	
CR01a	BANDA_IMP_FRIO	Band for supply temperature control in summer (COOLING mode)	5.0	0.1	99.9	°C	Analog.	R/W	33
CR01a	BANDA_IMP_CALOR	Band for supply temperature control in winter (HEATING mode)	20.0	0.1	99.9	°C	Analog.	R/W	84
CR01a	TIME_INTEGRACION_IMP	Integration time with PI supply temperature control	100	0	9999	s	Integer	R/W	
CR01b	CONTROL_P_PI_HUM_DESHUM	Type of humidity control: 0: Proportional (P) 1: Proportional+Integral (PI)	1	0	1	---	Digital	R/W	303
CR01b	BANDA_HUMEDAD	Band for humidity control	5.0	0.1	99.9	°C	Analog.	R/W	17
CR01b	TIME_INTEGRACION_HUM_ DESHUM	Integration time with PI humidity control	100	0	9999	s	Integer	R/W	247
CR02	HAB_RES_EN_FRIO	Enable the electrical heaters as backup in COOLING mode (summer) to increase the outdoor temperature	1	0: no	1: yes	---	Digital	R/W	92
CR02	HAB_VALV_CALOR_EN_FRIO	Enable the hot water coil as backup in COOLING mode (summer) to increase the outdoor temperature	1	0: no	1: yes	---	Digital	R/W	93
CR03	HAB_OFF_VINT_FRIO	Supply fan stoppage when the setpoint in COOLING mode is reached	0	0: no	1: yes	---	Digital	R/W	94
CR03	HAB_OFF_VINT_CALOR	Supply fan stoppage when the setpoint in HEATING mode is reached	0	0: no	1: yes	---	Digital	R/W	95
CR03	HAB_OFF_VINT_POR_CO2	Supply fan stoppage when the compressors are stopped, without demand of air renewal and with CO2 probe	0	0: no	1: yes	---	Digital	R/W	204
CR03a	TIME_VINT_ON_ANTIESTRATIF	Running time of the supply fan without demand of compressor operation, to prevent the stratification of the hot air masses	0	0	999	min	Integer	R/W	186
CR03a	TIME_VINT_OFF_ANTIESTRATIF	Stopping time of the supply fan without demand of compressor operation, to prevent the stratification of the hot air masses	0	0	999	min	Integer	R/W	187
CR04	TIME_RET_OFF_VINT_FRIO	Delay of the supply fan stoppage with regard to the compressors stoppage in COOLING mode	60	0	999	s	Integer	R/W	23
CR04	TIME_RET_OFF_VINT_CALOR	Delay of the supply fan stoppage with regard to the compressors stoppage in HEATING mode	60	0	999	s	Integer	R/W	24
CR04a	TIME_RET_OFF_VEXT_FRIO	Delay of the outdoor fan stoppage with regard to the compressors stoppage in COOLING mode	30	0	999	s	Integer	R/W	
CR04a	TIME_RET_OFF_VEXT_CALOR	Delay of the outdoor fan stoppage with regard to the compressors stoppage in HEATING mode	30	0	999	s	Integer	R/W	
CR05	TIME_RET_ON_COMP_ON_VINT	Delay of the start-up of the first compressor with regard to the supply fan (to guarantee a sufficiently stable flow)	30	0	999	s	Integer	R/W	25
CR05	TIME_RET_ON_COMP_ON_ VEXT	Delay of the start-up of the first compressor with regard to the outdoor fan	10	10	120	s	Integer	R/W	
CR05a	TIME_RET_ON_VINT	Delay of the supply fan start-up (to allow the complete opening of the fresh air damper)	30	0	999	s	Integer	R/W	216
CR05a	TIME_RET_ON_VINT_CALOR	Delay of the supply fan start-up in HEATING mode	0	0	999	s	Integer	R/W	
CR06	HAB_C_COND_VENT_EXT	Enable the condensation control of the outdoor unit (COOLING mode)	1	0: no	1: yes	---	Digital	R/W	171
CR06	HAB_C_COND_VENT_EXT_ AUTO	Enable the automatic condensation control of the outdoor unit	1	0: no	1: yes	---	Digital	R/W	
CR06	TIME_VEXT_OFF_MAX_COND	Running time of compressor before to start the condensation control (delay of the fan connection with regard to the compressors)	0	0	999	s	Integer	R/W	
CR06	TIME_VEXT_ON_MAX_COND	Delay of the outdoor fan working at the maximum speed before to start the condensation control	30	0	999	s	Integer	R/W	
CR06	CONTROL_P_PI_C_COND_VEXT	Type of condensation control of the outdoor unit: 0: Proportional (P) 1: Proportional+Integral+Derivative (PID)	1	0	1	---	Digital	R/W	179
CR06	BANDA_C_COND_VEXT	Differential on the condensation control of the outdoor unit	20.0	0.1	30.0	bar	Analog.	R/W	69
CR06	TIME_INT_C_COND_VEXT	Integration time with PID condensation control of the outdoor unit	120	0	999	s	Integer	R/W	133
CR06	Td_PID_COND_VEXT	Derivative with PID condensation control of the outdoor unit	0.2	0.0	99.9	---	Analog.	R/W	
CR06a	TEMP_EXT	Outdoor air temperature	0.0	-99.9	99.9	°C	Analog.	R/W	2
CR06a	OFFSET_CAL_C_COND_VEXT_ HALF_CAP	Offset for calculation the condensation control of the outdoor unit with half load circuit	10.5	0.0	30.0	°C	Analog.	R/W	
CR06a	OFFSET_CAL_C_COND_VEXT_ HIGH_CAP	Offset for calculation the condensation control of the outdoor unit with half full circuit	15.5	0.0	30.0	°C	Analog.	R/W	
CR06a	SET_C_COND_VEXT_MIN	Minimum value of setpoint for condensation control	25.0	-10.0	30.0	°C	Analog.	R/W	
CR06a	SET_C_COND_VEXT_MAX	Maximum value of setpoint for condensation control	60.0	0.0	60.0	°C	Analog.	R/W	
CR06a	SET_TEMP_C_COND_VEXT1	Temperaure setpoint calculated for condensation control of circuit 1	0.0	-99.9	99.9	°C	Analog.	R	
CR06a	SET_C_COND_VEXT_CAL_ AOUT3	Pressure setpoint calculated for condensation control of circuit 1	0.0	0.0	30.0	bar	Analog.	R	
CR06a	SET_TEMP_C_COND_VEXT2	Temperaure setpoint calculated for condensation control of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	

Parameters of "Manufacturer" (...continuation) d.Regulation Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CR06a	SET_C_COND_VEXT_CAL_ AOUT4	Pressure setpoint calculated for condensation control of circuit 2	0.0	0.0	30.0	bar	Analog.	R	
CR06b	SET_C_COND_VEXT	Setpoint on the condensation control of the outdoor unit	R410A: 30.5 R454B: 28.0	-99.9	99.9	bar	Analog.	R/W	67
CR06b	HAB_PRES_BEXT	Enable the high pressure transducer	1	0: no	1: yes	---	Digital	R/W	134
CR07	HAB_C_EVAP_VENT_EXT	Enable the evaporation control of the outdoor unit (HEATING mode)	1	0: no	1: yes	---	Digital	R/W	172
CR07	HAB_C_EVAP_VENT_EXT_AUTO	Enable the automatic evaporation control of the outdoor unit	1	0: no	1: yes	---	Digital	R/W	
CR07	TIME_VEXT_ON_MAX_EVAP	Delay of the outdoor fan working at the maximum speed before to start the evaporation control	30	0	999	s	Integer	R/W	
CR07	CONTROL_P_PI_C_EVAP_VEXT	Type of evaporation control of the outdoor unit: 0: Proportional (P) 1: Proportional+Integral+Derivative (PID)	1	0	1	---	Digital	R/W	178
CR07	BANDA_C_EVAP_VEXT	Differential on the evaporation control of the outdoor unit	20.0	0.0	30.0	bar	Analog.	R/W	102
CR07	TIME_INT_C_EVAP_VEXT	Integration time with PID evaporation control of the outdoor unit	120	0	999	s	Integer	R/W	132
CR07	Td_PID_EVAP_VEXT	Derivative with PID evaporation control of the outdoor unit	0.1	0.0	99.9	---	Analog.	R/W	
CR07a	TEMP_EXT	Outdoor air temperature	0.0	-99.9	99.9	°C	Analog.	R/W	2
CR07a	OFFSET_CAL_C_EVAP_VEXT_ HALF_CAP	Offset for calculation the evaporation control of the outdoor unit with half load circuit	7.0	0.0	30.0	°C	Analog.	R/W	
CR07a	OFFSET_CAL_C_EVAP_VEXT_ HIGH_CAP	Offset for calculation the evaporation control of the outdoor unit with half full circuit	8.0	0.0	30.0	°C	Analog.	R/W	
CR07a	SET_C_EVAP_VEXT_MIN	Minimum value of setpoint for condensation control	-5.0	-10.0	30.0	°C	Analog.	R/W	
CR07a	SET_C_EVAP_VEXT_MAX	Maximum value of setpoint for condensation control	10.0	0.0	30.0	°C	Analog.	R/W	
CR07a	SET_TEMP_C_EVAP_VEXT1	Temperaure setpoint calculated for condensation control of circuit 1	0.0	-99.9	99.9	°C	Analog.	R	
CR07a	SET_C_EVAP_VEXT_CAL_ AOUT3	Pressure setpoint calculated for condensation control of circuit 1	7.0	0.0	30.0	bar	Analog.	R	
CR07a	SET_TEMP_C_EVAP_VEXT2	Temperaure setpoint calculated for condensation control of circuit 2	0.0	-99.9	99.9	°C	Analog.	R	
CR07a	SET_C_EVAP_VEXT_CAL_ AOUT4	Pressure setpoint calculated for condensation control of circuit 2	7.0	0.0	30.0	bar	Analog.	R	
CR07b	SET_C_EVAP_VEXT	Setpoint on the condensation control of the outdoor unit	R140A: 6.3 R454B: 5.7	-99.9	99.9	bar	Analog.	R/W	100
CR07b	HAB_PRES_BEXT	Enable the high pressure transducer	1	0: no	1: yes	---	Digital	R/W	134
CR08	HAB_C_COND_VENT_INT	Enable the condensation control of the indoor unit	0	0: no	1: yes	---	Digital	R/W	217
CR08	HAB_C_COND_VENT_INT_AUTO	Enable the automatic condensation control of the indoor unit	1	0: no	1: yes	---	Digital	R/W	
CR08	TIME_VINT_ON_MAX_COND	Delay of the supply fan working at the maximum speed before to start the condensation control	120	0	999	s	Integer	R/W	
CR08	CONTROL_P_PI_C_COND_VINT	Type of condensation control of the indoor unit: 0: Proportional (P) 1: Proportional+Integral+Derivative (PID)	1	0	1	---	Digital	R/W	
CR08	BANDA_C_COND_VINT	Differential on the condensation control of the indoor unit	20.0	0.0	30.0	bar	Analog.	R/W	217
CR08	TIME_INT_C_COND_VINT	Integration time with PID condensation control of the indoor unit	120	0	999	s	Integer	R/W	
CR08	Td_PID_COND_VINT	Derivative with PID condensation control of the indoor unit	0.2	0.0	99.9	---	Analog.	R/W	
CR08a	SET_POINT_TEMP_CALOR_CAL	Current setpoint of the unit in HEATING mode	0.0	-99.9	99.9	°C	Analog.	R	
CR08a	SET_TEMP_CALOR_MIN_C_ COND_VINT	Minimum value of setpoint in HEATING mode for condensation control	22.0	0.0	30.0	°C	Analog.	R/W	
CR08a	SET_TEMP_CALOR_MAX_C_ COND_VINT	Maximum value of setpoint in HEATING mode for condensation control	27.0	0.0	30.0	°C	Analog.	R/W	
CR08a	PORC_CAUDAL_VINT_MIN_C_ COND	% maximum flow rate for condensation control	-60	-99	0	%	Integer	R/W	
CR08a	PORC_CAUDAL_VINT_MAX_C_ COND	% minimum flow rate for condensation control	0	0	99	%	Integer	R/W	
CR08a	SET_C_COND_VINT_MIN	Minimum value of condensation setpoint for condensation control	37.0	-10.0	30.0	°C	Analog.	R/W	
CR08a	SET_C_COND_VINT_MAX	Maximum value of condensation setpoint for condensation control	50.0	0.0	60.0	°C	Analog.	R/W	
CR08a	SET_TEMP_C_COND_VINT	Temperaure setpoint calculated for condensation control	0.0	-99.9	99.9	bar	Analog.	R	
CR08a	SET_C_COND_VINT_CAL_AOUT	Pressure setpoint calculated for condensation control	7.0	0.0	30.0	°C	Analog.	R	
CR08a	SEL_T_P_BINT_CALOR	Select the value in HEATING mode (0 = average; 1 = minimum; 2 = maximum)	0	0	2	---	Integer	R/W	
CR08a	T_P_BINT_CALOR_CALCULADA	Measured condensation pressure	00.0	00.0	99.9	°C	Integer	R/W	
CR08b	SET_C_COND_VINT	Setpoint on the condensation control of the indoor unit	R410A: 27.0 R454B: 24.8	0.0	60.0	bar	Analog.	R/W	216
CR08b	HAB_PRES_BINT	Enable the low pressure transducer	1	0: no	1: yes	---	Digital	R/W	
CR08b	PORC_CAUDAL_VINT_MIN_C_ COND	% of minimum flow on the supply fan with condensation control	-60	-99	0	%	Integer	R/W	
CR08b	PORC_CAUDAL_VINT_MAX_C_ COND	% of maximum flow on the supply fan with condensation control	0	0	99	%	Integer	R/W	
CR08b	SEL_T_P_BINT_CALOR	Select the value in HEATING mode (0 = average; 1 = minimum; 2 = maximum)	0	0	2	---	Integer	R/W	
CR08b	T_P_BINT_CALOR_CALCULADA	Calculated temperature value	00.0	00.0	99.9	°C	Integer	R/W	
CR09	HAB_C_EVAP_VENT_INT	Enable the automatic evaporation control of the indoor unit (necessary for "Low return temperature application")	0	0: no	1: yes	---	Digital	R/W	216

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" (...continuation) d.Regulation Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CR09	HAB_C_EVAP_VENT_INT_AUTO	Enable the automatic evaporation control of the indoor unit (necessary for "Low return temperature application")	1	0: no	1: yes	---	Digital	R/W	
CR09	TIME_VINT_ON_MAX_EVAP	Delay of the supply fan working at the maximum speed before to start the evaporation control	120	0	999	s	Integer	R/W	
CR09	CONTROL_P_PI_C_EVAP_VINT	Type of evaporation control of the indoor unit: 0: Proportional (P) 1: Proportional+Integral+Derivative (PID)	1	0	1	---	Digital	R/W	
CR09	BANDA_C_EVAP_VINT	Differential on the evaporation control of the indoor unit	10.0	0.0	30.0	bar	Analog.	R/W	219
CR09	TIME_INT_C_EVAP_VINT	Integration time with PID evaporation control of the indoor unit	50	0	999	s	Integer	R/W	
CR09	Td_PID_EVAP_VINT	Derivative with PID evaporation control of the indoor unit	0.1	0.0	99.9	---	Analog.	R/W	
CR09a	SET_POINT_TEMP_FRIO_CAL	Current setpoint of the unit in HEATING mode	0.0	-99.9	99.9	°C	Analog.	R	
CR09a	SET_TEMP_FRIO_MIN_C_ EVAP_VINT	Minimum value of setpoint in HEATING mode with evaporation control	15.0	0.0	30.0	°C	Analog.	R/W	
CR09a	SET_TEMP_FRIO_MAX_C_ EVAP_VINT	Maximum value of setpoint in HEATING mode with evaporation control	20.0	0.0	30.0	°C	Analog.	R/W	
CR09a	PORC_CAUDAL_VINT_MIN_C_ EVAP	% maximum flow rate for evaporation control	-60	-99	0	%	Integer	R/W	
CR09a	PORC_CAUDAL_VINT_MAX_C_ EVAP	% minimum flow rate for evaporation control	0	0	99	%	Integer	R/W	
CR09a	SET_C_EVAP_VINT_MIN	Minimum value of evaporation setpoint for evaporation control	5.0	-10.0	30.0	°C	Analog.	R/W	
CR09a	SET_C_EVAP_VINT_MAX	Maximum value of evaporation setpoint for evaporation control	9.5	0.0	60.0	°C	Analog.	R/W	
CR09a	SET_TEMP_C_EVAP_VINT	Temperaure setpoint calculated for evaporation control	0.0	-99.9	99.9	bar	Analog.	R	
CR09a	SET_C_EVAP_VINT_CAL_AOUT	Pressure setpoint calculated for evaporation control	7.0	0.0	30.0	°C	Analog.	R	
CR09b	SET_C_EVAP_VINT	Setpoint for evaporation control of the indoor unit	R410A: 6.3 R454B: 5.7	0.0	60.0	bar	Analog.	R/W	218
CR09b	HAB_PRES_BINT	Enable the low pressure transducer	1	0: no	1: yes	---	Digital	R/W	
CR09b	PORC_CAUDAL_VINT_MIN_C_ EVAP	% of minimum flow on the supply fan with evaporation control	-60	-99	0	%	Integer	R/W	
CR09b	PORC_CAUDAL_VINT_MAX_C_ EVAP	% of maximum flow on the supply fan with evaporation control	0	0	99	%	Integer	R/W	
CR09b	SEL_T_P_BINT_FRIO	Value selected in HEATING mode (0=average, 1=min., 2=max.)	0	0	2	---	Integer	R/W	
CR09b	T_P_BINT_FRIO_CALCULADA	Calculated temperature value	00.0	00.0	99.9	°C	Integer	R/W	
CR10	HAB_VENT_EXT_AUTO_MODO_ FRIO	Enable outdoor fan operation with the unit ON and the fan stopped for more than 30 minutes, with the unit in COOLING mode and in AUTO mode by outdoor temperature	1	0	1	---	Digital	R/W	
CR10	HAB_VENT_EXT_AUTO_MODO_ CALOR	Enable outdoor fan operation with the unit ON and the fan stopped for more than 30 minutes, with the unit in HEATING mode and the compressors locking with an outdoor temperature below -10ºC	1	0	1	---	Digital	R/W	
CR10	TIME_VEXT_ON_MODO_AUTO	With the unit ON and the compressors stopped: connection time for the outdoor fan (for safety)	1	0	999	min	Integer	R/W	
CR10	TIME_VEXT_OFF_MODO_AUTO	With the unit ON and the compressors stopped: disconnection time for the outdoor fan (for safety)	30	0	999	min	Integer	R/W	
CR11	SET_RES_TRIAC	Minimum return temperature to control the electrical heater of preheating in fresh air (unit 100% fresh air)	7.0	0.0	30.0	°C	Analog.	R/W	275
CR11	BANDA_RES_TRIAC	Control band of the minimum return temperature with PID control of the electrical heater of preheating	15.0	0.0	30.0	°C	Analog.	R/W	279
CR11	TIME_INTEGRACION_RES_ TRIAC	Integration time of the minimum return temperature with PID control of the electrical heater of preheating	120	0	999	s	Integer	R/W	236
CR11	Td_PID_RES_TRIAC	Differential of the minimum return temperature with PID control of the electrical heater of preheating	0.1	0.0	99.9	---	Analog.	R/W	
CR11	MIN_AOUT_RESISTENCIAS_ TRIAC	Minimum % for the TRIAC opening to control the supply temperature with electrical heater of preheating	0	0	100	%	Integer	R/W	239
CR11	MAX_AOUT_RESISTENCIAS_ TRIAC	Maximum % for the TRIAC opening to control the supply temperature with electrical heater of preheating	100	0	100	%	Integer	R/W	240
CR12	SET_RET_MAX_RES_TRIAC	Maximum return temperature to control the electrical heater of preheating in fresh air (unit 100% fresh air)	25.0	0.0	30.0	°C	Analog.	R/W	276
CR12	BANDA_RET_MAX_RES_TRIAC	Control band of the maximum return temperature with PID control of the electrical heater of preheating	15.0	0.0	30.0	°C	Analog.	R/W	278
CR12	TIME_INTEGRACION_RET_M_ RES_TRIAC	Integration time of the maximum return temperature with PID control of the electrical heater of preheating	120	0	999	s	Integer	R/W	235
CR12	Td_PID_RET_MAX_RES_TRIAC	Differential of the maximum return temperature with PID control of the electrical heater of preheating	0.1	0.0	99.9	---	Analog.	R/W	
CR12	SET_POINT_TEMP_CALOR_CAL	Current setpoint for the minimum supply temperatue in HEATING mode	0.0	-99.9	99.9	°C	Analog.	R/W	
CR12	BANDA_IMP_RES_TRIAC	Control band of the minimum supply temperature with PID control of the electrical heater of preheating	15.0	0.0	30.0	°C	Analog.	R/W	280
CR12	TIME_INTEGRACION_IMP_RES_ TRIAC	Integration time of the minimum supply temperature with PID control of the electrical heater of preheating	120	0	999	s	Integer	R/W	237
CR12	Td_PID_IMP_RES_TRIAC	Differential of the minimum supply temperature with PID control of the electrical heater of preheating	0.1	0.0	99.9	---	Analog.	R/W	
CR13	SET_POINT_TEMP_ DESHUMIDIFICACION	Display of ambient temp. setpoint in the current operating mode (COOLING or HEATING) for active dehumidification with condensation coil	0.0	0.0	30.0	°C	Analog.	R	

Parameters of "Manufacturer" (...continuation) d.Regulation Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CR13	BANDA_REHEAT_INT	Control band of the dehumidification temperature setpoint with PID control	15.0	0.0	30.0	°C	Analog.	R/W	281
CR13	TIME_INTEGRACION_REHEAT_INT	Integration time of the dehumidification temperature setpoint with PID control	120	0	999	s	Integer	R/W	241
CR13	Td_PID_REHEAT_INT	Differential of the dehumidification temperature setpoint with PID control	0.1	0.0	99.9	---	Analog.	R/W	
CR13	MIN_AOUT_DESHUM_REHEAT	Minimum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)	0	0	100	---	Integer	R/W	243
CR13	MAX_AOUT_DESHUM_REHEAT	Maxmum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)	100	0	100	---	Integer	R/W	244
CR14	TIME_RET_OFF_VS2_DESPUES_KG	Activation of the solenoid valve SV2 during the first 300 seconds of the compressor start-up in COOLING mode (active dehumidification)	300	0	999	s	Integer	R/W	245
CR14	TIME_RET_OFF_VS2_DESPUES_HP	Activation of the solenoid valve SV2 during the first 300 seconds after having passed a pressure of 40.0 bar (active dehumidification)	300	0	999	s	Integer	R/W	246
CR14	VAL_VS2_ON_POR_HP	High pressure value for the activation of the solenoid valve SV2 (active dehumidification)	40.0	0.0	45.0	bar	Analog.	R/W	282
CR15a	SET_PRES_DIF_IMP	Differential pressure setpoint in supply duct	200	0	10000	Pa	Integer	R/W	292
CR15a	BANDA_CTRL_PRES_IMP_CTE	Differential for constant supply pressure control	65.0	0.1	9999.9	Pa	Analog.	R/W	
CR15a	Ti_PID_CTRL_PRES_IMP_CTE	Integral time for constant supply pressure control	140.0	0	999.9	s	Integer	R/W	
CR15a	Td_PID_CTRL_PRES_IMP_CTE	Derivative time for constant supply pressure control	0.0	0.0	99.9	---	Analog.	R/W	
CR15a	MIN_OUT_CTRL_PRES_IMP_CTE	Minimum output for constant supply pressure control	0.0	0	100	%	Integer	R/W	
CR15a	MAX_OUT_CTRL_PRES_IMP_CTE	Maximum output for constant supply pressure control	100	0	100	%	Integer	R/W	
CR15b	PORC_PRES_DIF_IMP_START_PID	Percentage of differential pressure setpoint in supply duct for starting PID	80	0	100	%	Integer	R/W	
CR15b	PORC_INI_RAMP_CPIC	Initial percentage of ramp for constant supply supply pressure control	50	0	100	%	Integer	R/W	
CR15b	TIME_RAMP_CPIC	Ramp time for constant supply pressure control	160	0	9999	s	Integer	R/W	
CR15c	SET_PRES_DIF_IMP	Differential pressure setpoint for overpressure control with return fan	45	-50	50	Pa	Integer	R/W	292
CR16	DIFF_NZ_CTRL_PRES_COMP_IMP	Dead zone differential for pressure control with supply damper	50	0	1000	Pa	Integer	R/W	
CR16	T_NZ_CTRL_PRES_COMP_IMP	Time to reach minimum or maximum neutral zone output for pressure control with supply damper	500	0	9999	s	Integer	R/W	
CR16	MAN_T_NZ_CTRL_PRES_COMP_IMP	Time of activation of the manual mode of the neutral zone for pressure control with supply damper	30	0	1000	s	Integer	R/W	
CR16	MAN_OUT_NZ_CTRL_PRES_COMP_IMP	Output value when the manual mode of the neutral zone for pressure control with supply damper is activated	100.0	0.0	100.0	%	Analog.	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CS01	SET_AL_INCENDIO	Return temperature setpoint to activate the anti-fire alarm	60.0	40.0	80.0	°C	Analog.	R/W	116
CS01	DIF_AL_INCENDIO	Return temperature differential to activate the anti-fire alarm	20.0	10.0	50.0	°C	Analog.	R/W	117
CS01	COMP_OFF_AL_INCENDIO	Status of the fresh air damper with anti-fire alarm: 0 = open 1 = closed	0	0	1	---	Digital	R/W	170
CS01a	REG_ANTI_INCENDIO_FRA_ERP	French regulations on Fire safety (ERP): 0 = disabled 1 = enabled	0	0	1	---	Digital	R/W	234
CS01a	TIME_RET_OFF_VINT_REG_INC_ERP	Delay of the supply fan stoppage in units with electrical heaters, with French regulations on Fire safety (ERP)	120	0	999	s	Integer	R/W	
CS03	SET_IMPULSION_CALOR_MAX	Setpoint to control the maximum supply temperature in HEATING mode (winter)	45.0	30.0	55.0	°C	Analog.	R/W	83
CS03	OFFSET_AL_IMPULSION_ALTA	Offset of the supply temperature setpoint to activate the high supply temperature alarm	10.0	0.0	20.0	°C	Analog.	R/W	118
CS03	DIF_AL_IMPULSION_ALTA	Differential of the supply temperature setpoint to activate the high supply temperature alarm	2.0	1.0	10.0	°C	Analog.	R/W	119
CS04	SET_ALTA_TEMP_FRIO	Setpoint of high indoor temperature in COOLING mode (summer) for alarm signal	50.0	0.0	60.0	°C	Analog.	R/W	41
CS04	SET_BAJA_TEMP_FRIO	Setpoint of low indoor temperature in COOLING mode (summer) for alarm signal	10.0	0.0	60.0	°C	Analog.	R/W	42
CS05	SET_ALTA_TEMP_CALOR	Setpoint of high indoor temp. in HEATING mode (winter) for alarm signal	50.0	0.0	60.0	°C	Analog.	R/W	43
CS05	SET_BAJA_TEMP_CALOR	Setpoint of low indoor temp. in HEATING mode (winter) for alarm signal	10.0	0.0	60.0	°C	Analog.	R/W	44
CS06	TIME_RET_AL_TEMP	Delay on the high / low indoor temperature for alarm signal	30	0	999	min	Integer	R/W	18
CS07	TIME_AL_VIRT	Delay of the alarm of the shared probe disconnection (due to data transmission) (SHRD shared network)	30	0	9999	s	Integer	R/W	65
CS08	TIME_RET_AL_TERM_VENT_INT	Delay of the alarm of the supply fan thermal protection (to avoid the alarm during the start-up)	0	0	999	s	Integer	R/W	26
CS08a	HAB_AVISO_ALTA_RPM_PLUG_FAN	Enable the warning message when a plug-fan exceed the maximum speed	1	0: no	1: yes	---	Digital	R/W	
CS08a	TIME_RET_ALTA_RPM_PLUG_FAN	Delay of the warning message when a plug-fan exceed the maximum speed	30	0	999	min	Integer	R/W	
CS08a	HAB_OFF_POR_AVISO_ALTA_RPM	Enable the unit stoppage when a plug-fan exceed the maximum speed	0	0: no	1: yes	---	Digital	R/W	
CS08a	Maximal_Speed_Fan1	Maximum speed of the supply fan 1	0	0	9999	rpm	Integer	R/W	
CS08a	Maximal_Speed_Fan2	Maximum speed of the supply fan 2	0	0	9999	rpm	Integer	R/W	
CS08b	HAB_OFF_POR_AL_FILTRO_SUCIO	Configuration of the clogged filters alarm: 0= only indication 1= unit stop	0	0	1	---	Digital	R/W	
CS08c	HAB_OFF_POR_AL_ANTIHIELO_BAC	Configuration of the antifreeze alarm for the hot water coil: 0= only indication 1= unit stop	0	0	1	---	Digital	R/W	
CS08c	APERTURA_VALV_CALOR_AL_ANTIHIELO	Hot water battery opening: by antifreeze alarm (if the optional GREAT COLD is not activated and the unit is stopped)	100	0	100	%	Integer	R/W	
CS08c	APERTURA_VALV_CALOR_POR_BAJA_TEX	Hot water battery opening: by low outdoor temperature alarm (if the optional GREAT COLD is not activated and the unit is stopped)	100	0	100	%	Integer	R/W	
CS09	DevAddr_GLD	Address of R-410A refrigerant leak detector	6	0	254	---	Integer	R	
CS09	Alarm_Setp_ppm	Limit value in ppm to activate the alarm of the R-410A gas leak detector	200	0	9999	ppm	Integer	R/W	
CS09	AlrmDelay_GLD	Delay of the alarm of the R-410A gas leak detector	0	0	59	min	Integer	R/W	
CS09	BuzzerMute_GLD	Disable the acoustic alarm of the R-410A gas leak detector after a certain activation time	0	0: no	1: yes	---	Digital	R/W	
CS11	SET_RES_CALEFACTORA_TUBERIA_BAC	Setpoint to activate the electrical heater around the piping of the hot water coil	4.0	-10.0	10.0	°C	Analog.	R/W	
CS11	SET_RES_CARTER_DOBLE_COMPRESOR	Setpoint to activate the supplementary crankcase heater and the 1st stage of electrical heater for protection of the electric panel	-8.0	-20.0	0.0	°C	Analog.	R/W	
CS11	SET_RES_CALEFACTORA_COMPUERTA	Setpoint to activate the electrical heater for protection of the outdoor dampers	-12.0	-20.0	0.0	°C	Analog.	R/W	
CS11	SET_RES_CALEFACTORA_CUADRO_2	Setpoint to activate the 2nd stage of electrical heater for protection of the electric panel	-16.0	-20.0	0.0	°C	Analog.	R/W	
CS12	VAL_INI_AL_BP	Start value of the alarm of low pressure safety	R410A: 2.0 R454B: 1.7	0.0	9.9	bar	Analog.	R/W	
CS12	VAL_FIN_AL_BP	Final value of the alarm of low pressure safety	R410A: 4.0 R454B: 3.6	0.0	9.9	bar	Analog.	R/W	
CS13	HAB_LIM_POT_COMP_TANDEM_POR_AP	Enable the power limitation due to the high pressure, in units with tandem compressors (one of the two compressors is stopped)	1	0: no	1: yes	---	Digital	R/W	241
CS13	VAL_INI_AL_AP	Start value of the alarm of high pressure safety	R410A: 41.5 R454B: 38.3	0.0	45.0	bar	Analog.	R/W	
CS13	VAL_FIN_AL_AP	Final value of the alarm of high pressure safety	R410A: 36.5 R454B: 33.6	0.0	45.0	bar	Analog.	R/W	

Parameters of "Manufacturer" (...continuation) e.Safety Config.

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CS13	VAL_INI_AL_AP_arranque	Start value of the alarm of high pressure safety at the start	R410A: 41.0 R454B: 37.8	0.0	45.0	bar	Analog.	R/W	
CS13	TIME_LIM_POT_COMP_AP_ ARRANQUE	Time with start value of the alarm of high pressure safety at the start	60	0	99	s	Digital	R/W	
CS14	TIME_DEL_DEV_AL_A2L_ SENSOR	Delay in internal failures of the A2L sensor (R-454B refrigerant) for device alarm activation	180	0	9999	s	Integer	R/W	
CS14	LFL_PERC_AL_A2L_ SENSOR	%LFL for A2L leak alarm activation (R-454B refrigerant)	25,0	0,0	999,9	%	Analog.	R/W	
CS14	LFL_PERC_REARM_A2L_ SENSOR	%LFL for A2L leak alarm reset (R-454B refrigerant)	5,0	0,0	999,9	%	Analog.	R/W	
CS14	PROT_MODE_A2L_FAN_ PERC	% operation of the indoor fan in A2L protection mode (R-454B refrigerant)	100	0	100	%	Integer	R/W	
CS15	HAB_MMS_STATUS	Enabling the status signaling for the compressors manual motor starters (MMS)	0	0	1	---	Digital	R/W	
CS15	HAB_MMS_STATUS_M9	I/O expansion module cPCOe to which the compressors manual motor starters (MMS) is connected: 0: Module with address 8 1: Module with address 9	0	0	1	---	Digital	R/W	
CS15	DIN_OFF_MMS_C1	Status of the manual motor starter (MMS) of compressor 1	0	0	1	---	Digital	R/W	
CS15	DIN_OFF_MMS_C1_2	Status of the manual motor starter (MMS) of compressor 1_2	0	0	1	---	Digital	R/W	
CS15	DIN_OFF_MMS_C2	Status of the manual motor starter (MMS) of compressor 2	0	0	1	---	Digital	R/W	
CS15	DIN_OFF_MMS_C2_2	Status of the manual motor starter (MMS) of compressor 2_2	0	0	1	---	Digital	R/W	
CS15	DIN_OFF_MMS_CR	Status of the manual motor starter (MMS) of the recovery compressor	0	0	1	---	Digital	R/W	
CS15	HAB_OFF_COMP_POR_OFF_ MMS	Enabling the compressor OFF by manual motor starter (MMS) OFF	0	0	1	---	Digital	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of "Manufacturer" 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
CA01	TIME_RS_SIR	Alarm management: acoustic alarm reset	2	0	9999	s	Integer	R/W	
CA01	RL_AL	Alarm relay: 0= normal 1= buzzer	0	0	1	---	Digital	R/W	
CA01	SEL_ALARMA_POR_MASK	Relay activation with active alarm selected in the screen	1	0: no	1: yes	---	Digital	R/W	180
CA02	HAB_TER	For remote ouptut, selection of alarm of thermal protection	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_HP	For remote output, selection of alarm of high pressure	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_LP	For remote output, selection of alarm of low pressure	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_DES	For remote output, selection of alarm of defrosting	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_HT	For remote output, selection of alarm of high temperature	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_LT	For remote output, selection of alarm of low temperature	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_CON	For remote output, selection of alarm of counters	1	0: no	1: yes	---	Digital	R/W	
CA02	HAB_SD	For remote output, selection of alarm of disconnected probes	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_HIE	For remote output, selection of alarm of HWC antifreeze protection	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_INT	For remote output, selection of alarm of supply fan thermal protection	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_KLD	For remote output, selection of alarm of compressor discharge temperature	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_FIL	For remote output, selection of alarm of clogged filter	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_EPR	For remote output, selection of alarm of EPROM failure	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_REL	For remote output, selection of alarm of clock	1	0: no	1: yes	---	Digital	R/W	
CA03	HAB_SP	For remote output, selection of alarm of COOLING/HEATING setpoint	1	0: no	1: yes	---	Digital	R/W	
CA04	HAB_BQ_AL_AP	Enable the change to manual reset of the high pressure safety after a certain number of alarms	1	0: no	1: yes	---	Digital	R/W	
CA04	NUM_VECES_BQ_AL_AP	Number of alarms to change to manual reset of the high pressure safety	4	0	20	---	Integer	R/W	
CA04	TIME_BQ_AL_AP	Time in minutes to count the number of alarms for locking due to high pressure	30	0	1440	min	Integer	R/W	
CA05	HAB_BQ_AL_BP	Enable the change to manual reset of the low pressure safety after a certain number of alarms	1	0: no	1: yes	---	Digital	R/W	
CA05	NUM_VECES_BQ_AL_BP	Number of alarms to change to manual reset of the low pressure safety	4	0	20	---	Integer	R/W	
CA05	TIME_BQ_AL_BP	Time in minutes to count the number of alarms for locking due to low pressure	30	0	1440	min	Integer	R/W	
CA06	HAB_BQ_AL_TERM	Enable the change to manual reset of the thermal protection of compressors and outdoor fans after a certain number of alarms	1	0: no	1: yes	---	Digital	R/W	
CA06	NUM_VECES_BQ_AL_TERM	Number of alarms to change to manual reset of the thermal protection of compressors and outdoor fans	4	0	20	---	Integer	R/W	
CA06	TIME_BQ_AL_TERM	Time in minutes to count the number of alarms for locking due to the thermal protection of compressors and outdoor fans	30	0	1440	min	Integer	R/W	
CA07	HAB_BQ_AL_TERM_RES	Enable the change to manual reset of the thermal protection of electrical heaters after a certain number of alarms	1	0: no	1: yes	---	Digital	R/W	
CA07	NUM_VECES_BQ_AL_TERM_RES	Number of alarms to change to manual reset of the thermal protection of electrical heaters	4	0	20	---	Integer	R/W	
CA07	TIME_BQ_AL_TERM_RES	Time in minutes to count the number of alarms for locking due to the thermal protection of electrical heaters	30	0	1440	min	Integer	R/W	
CA09	HAB_BQ_AL_MIN_CAUDAL	Enabling the lockage by minimum flow rate alarm with constant supply pressure	1	0: no	1: yes	---	Digital	R/W	
CA09	NUM_VECES_BQ_AL_MIN_CAUDAL	Number of times to lock the unit by minimum flow rate alarm with constant supply pressure	9999	0	9999	---	Integer	R/W	
CA09	TIME_BQ_AL_MIN_CAUDAL	Time in minutes to take into account number of alarm times to manually reset the unit by minimum flow alarm with constant supply pressure	9999	0	9999	min	Integer	R/W	
CA10	HAB_RM_RA_AL_INCENDIO	Enabling the type of anti-fire alarm reset with special anti-fire safety enabled: 0= automatic reset 1= manual reset	0	0	1	---	Digital	R/W	
CA10	NUM_VECES_BQ_ ANTIICENDIO	Number of repetitions of the anti-fire alarm for manual reset with special anti-fire safety enabled	1	0	9999	---	Integer	R/W	
CA10	TIME_BQ_AL_ANTIINCENDIO	Time in minutes to account for the number of alarm repetitions for manual reset with special anti-fire safety enabled	1	0	9999	min	Integer	R/W	

17 - LIST OF CONTROL PARAMETERS

Parameters of “Manufacturer” 

Note: These parameters are provided on request.

Parameters of “Manufacturer” 

Screen	Parameter	Description of the parameter	Value	Min.	Max.	UOM	Type	R/W	Add. BMS
IU01	ID_Lang	Language (0= Spanish; 1= French ; 2= English; 3= Italian)	0	0	3	---	Integer	R/W	
IU02	logo_bool	Type of logo	0	0	1	---	Digital	R/W	
IU03	En_WipeAll	Installation of the default values for the setting parameters: 0: no 1: default values	0	0	1	---	Integer	R/W	
IU03a	ImpExpSel	Selecting export or import parameters: 0: Import 1: Export	0	0	1	---	Digital	R/W	
IU03a	ParamsImpExpFileName	Parameter file name: DevParamsXY.txt, where the XY number can be selected	0	0	99	---	Entera	R/W	
IU03a	EnImpExpTmp	Confirm the export or import operation	0	0: no	1: yes	---	Entera	R/W	
IU05	RESET_EVENTOS	Delete the entire alarm history	0	0: no	1: yes	---	Digital	R/W	
IU05	PLAN_ADDRESS	Display the board address in the shared network	0	0	15	---	Integer	R/W	
IU05a	REBOOT_LOG	Restart and delete the variable log (erases all ".csv" files from the memory of the control board)	0	0: no	1: yes	---	Digital	R/W	
IU06	PASS_LEVEL_2_T	New password of “Service” parameters	---	0	9999	---	Integer	R/W	29
IU06	PASS_LEVEL_3_T	New password of “Manufacturer” parameters	---	0	9999	---	Integer	R/W	30

Note: Refer to the next chapter for more information on exporting and importing parameters and alarms.

18 - EXPORT AND IMPORT OF PARAMETERS AND ALARMS

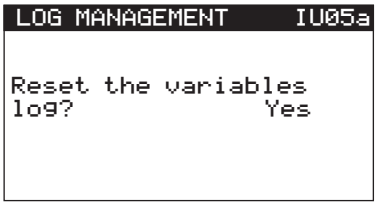
18.1. Recoding of variables

The following variables are recorded:

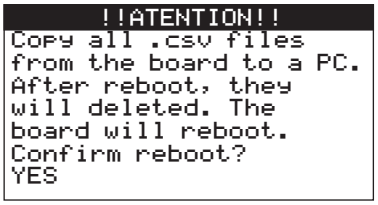
- Digitals: COMPRESOR_1, COMPRESOR_1_2, COMPRESOR_2, COMPRESOR_2_2, COMPRESOR_REC, OUT_VIC1, OUT_VIC2, OUT_VIC_CR, RES_ELECTRICA_1_O_VALV, RES_ELECTRICA_2, VENTILADOR_INT.
- Analogs: TEMP_IMP, TEMP_INT, TEMP_EXT, TEMP_RET, TEMP_MEZCLA, HUM_INT, HUM_EXT, CO2_FISICA_ZONA1, CO2_FISICA_ZONA2, TEMP_CAL_LP1, TEMP_CAL_HP1, TEMP_CAL_LP2, TEMP_CAL_HP2, TEMP_CAL_CR, TEMP_CAL_CR.

The log has a depth of 1 day and a sampling time of 30 seconds, so every 24 hours a ".csv" file is exported with that day's log and is restarted. This file is saved in the board's memory, in the VARIABLES_LOGS folder. Files are named Log_XYZ, where XYZ is an index that increments each time the file is exported (starts at 001), up to a maximum of 180 days. Once the XYZ index reaches the value 180, the oldest ".csv" files (starting with 001) will be deleted.

The **". csv"** files can be deleted from the memory of the board from the VecticGD terminal, on the IU05a screen of the group **07. Manufacturer Par. → h. Initialization** (protected by level 3 password).



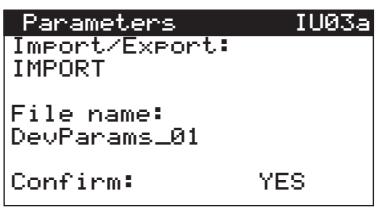
When set to "Yes" and press "Enter", the following warning and confirmation screen appears:



Once the log is restarted, the index XYZ will start again with the value 001.

18.2. Export/Import of parameters

It is possible to export the parameters of the unit in a **". txt"** file to be saved in the memory of the board (folder IMP_EXP_PARAMS). It is also possible to import the **". txt"** file with parameters from the screen IU03a of the group **07. Manufacturer Par. → h. Initialization** (protected by level 3 password).



When set to "Yes" and press "Enter", another screen with information about the result of the operation appears.

The result can be:

0 → Operation completed

1 → Wrong file name

2 → Disk not accessible

3 → File not accessible

4 → File I/O error

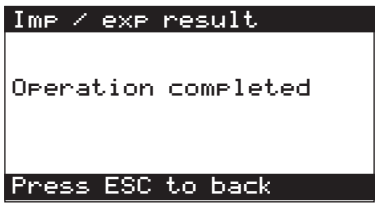
5 → Invalid file

6 → Value not valid

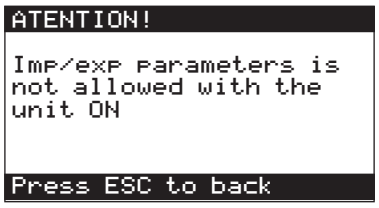
7 → Insufficient memory buffer

8 → File empty

9 → Wrong time parameters



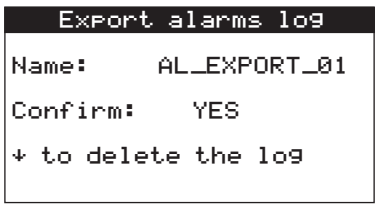
Note: The unit must be in OFF mode to export or import parameters, otherwise the operation will not be executed.



18.3. Export of the alarm history

It is possible to export a **". csv"** file with the alarm history. To access, press "Enter" from the alarms log.

In the name settings only the index can be changed.



Once done, a screen appears with the result of the operation.

18.4. Access to files

To access the downloaded files, there are two options:

A. Connect the board to a PC using a USB cable and access the board memory via the file explorer.

B. access the board memory via FTP. The board must be connected to a network via the integrated Ethernet port.

To access, open the file explorer and type:

ftp://IPaddress/

19 - CONNECTING THE UNIT TO A BMS SUPERVISION NETWORK

19.1. Enabling supervision

The connection of the unit to a BMS supervision network for centralised technical management is enabled on a screen of the Group **07.Manufacturer Par.** (protected by level 3 password).

```
                              CU14
Supervision                   Y
Summer fcooling               Y
Winter fheating               N
Winter fcooling               N
Air renewal                   Y
100% outdoor air              N
DI 100% outd.air N
```

19.2. Configuration of the supervision network

The configuration of the supersvision network is performed in the Group of screens **12. BMS Config.** (protected by level 2 password).

The type of supervision protocol is selected on the first screen (Modbus RTU).

```
                              U36a

Type of protocol
for supervision
network
     MODBUS
```

The two BMS ports of the control board can be configured independently.

On the U36b screen for BMS2 (Fieldbus2/BMS) and U36b1 for BMS1 (BMS card) an address is associated with the board within the corresponding supervision network. The characteristics of the network are also defined:

- Baud rate: transmission speed in bps.
- Stop bit No: this variable can take value 1 or 2.
- Parity type: without parity, couple or odd.

```
      BMS 2                   U36b
Unit address for
BMS2 network  :  1
Baud rate     :  19200
Stop bits     :  2
Parity        :  No
Reading 32-bit logs:
                INVERSE
```

Configuration depending on the installed communications card:

- **BACNET MSTP RS485 card**

  (Configuration by the Integrator)

  Protocol: MODBUS

  Address: 1 to 207

  Baud rate: 1200, 2400, 4800, 9600, 19200, 38400 bps

- **BACNET ETHERNET PCOWEB card**

  (Configuration by the Integrator)

  Protocol: MODBUS

  Address: 1 (The address is configured in the card)

  Baud rate: 19200 bps

- **ETHERNET PCOWEB card**

  Protocol: MODBUS

  Address: 1 (The address is configured in the card)

  Baud rate: 19200 bps

  Note: The IP address of the pCOWeb card is configured on the U42 screen of the group **12. BMS Config.**

19.3. Failure of BMS communication

The following screen enables the detection of a failure in the BMS communication. The period of time for checking the loss of communication is 15 minutes.

```
                              U36c
Enable BMS communicat.
fault detection:  Y
Time for fault:   15 m

Var.digital BMS fault
detection n. 174: Y
BMS commun. fault:Y
```

If the detection of a failure in the BMS communication has been enabled on the last screen, the values by default of the main parameters can be introduced on the next screens:

```
                              U40a
VALUES WITHOUT BMS

Temp. control
setpoint
Summer        26.0°C
Winter        21.0°C
```

```
                              U40b
VALUES WITHOUT BMS

       Unit off/on

            ON
```

```
                              U40c
VALUES WITHOUT BMS

Winter/Summer select.
'autimatic' by ind.T.

          SUMMER
```

```
                              U40d
VALUES WITHOUT BMS

DISCONNECTING
No. compressor stages
to disconnect: 0
No. el.heaters stages
to disconnect: 0
```

```
                              U40e
VALUES WITHOUT BMS

       Start type
   'ON-OFF schedule'
```

```
                              U40f
VALUES WITHOUT BMS

SCHEDULE PROGR.  N.1
Slot 1>06:30 to 11:00
Slot 2>11:30 to 13:30
Slot 3>15:00 to 19:00
```

```
                              U40f
VALUES WITHOUT BMS

 Program select.
  Daily start
M:1 T:1 W:1 T:1 F:1
S:1 Su: -Sun-(0=off)
```

19.4. Carel and Modbus supervision variables

Digital variables

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
1	R	DIN03_AP1	Digital input	0	1	High pressure switch circuit 1
2	R	DIN09_AP2	Digital input	0	1	High pressure switch circuit 2
5	R	DIN04_TC1	Digital input	0	1	Thermal protection of compressor 1 of circuit 1
6	R	DIN10_TC2	Digital input	0	1	Thermal protection of compressor 1 of circuit 2
7	R	DIN05_TS_IC	Digital input	0	1	Electrical heater(s) thermal protection / alarm signal of gas burner or boiler
8	R	DIN07_ON_OFF	Digital input	0	1	Remote ON/OFF selection
10	R	DIN08_AH_BAC	Digital input	0	1	Anti-freeze thermostat signal
11	R	DIN06_FS	Digital input	0	1	Clogged filter pressure switch signal
12	R	DIN01_RTVI	Digital input	0	1	Supply fan overload / general interlock signal (RTVi)
13	R	MODO_CALOR	Status	0	1	HEATING (winter) operating mode
14	R	MODO_FRIO	Status	0	1	COOLING (summer) operating mode
15	R	ON_VENTILADOR_INT	Digital output	0	1	Supply fan of the indoor circuit
16	R	COMPRESOR_1	Digital output	0	1	Switch of compressor 1 of circuit 1
17	R	COMPRESOR_2	Digital output	0	1	Switch of compressor 1 of circuit 2
18	R	OUT_VIC1	Digital output	0	1	Válvula de inversión de ciclo del circuito 1
19	R	OUT_VIC2	Digital output	0	1	Válvula de inversión de ciclo del circuito 2
20	R	RES_ELECTRICA_1_O_VALV	Digital output	0	1	Contactor of the 1st stage of electrical heater or gas burner /boiler or hot water coil valve
21	R	RES_ELECTRICA_2	Digital output	0	1	Contactor of the 2nd stage of electrical heater
22	R	HUMIDIFICA	Digital output	0	1	Output for the humidifier
23	R	VENTILADOR_EXT_1	Digital output	0	1	Low-speed outdoor fan circ. 1
24	R	VENTILADOR_EXT_2	Digital output	0	1	Low-speed outdoor fan circ. 2 (2 circuits units)
25	R/W	RESET_ALARMS	Alarm	0	1	Alarm reset
26	R	GLOBAL_ALARM	Alarm	0	1	Active alarm signal
27	R	AL_TERM_COMP_VEXT_1	Alarm	0	1	Alarm of thermal protection of compressor 1 circuit 1
28	R	AL_TERM_COMP_VEXT_2	Alarm	0	1	Alarm of thermal protection of compressor 1 circuit 2
29	R	AL_AP1	Alarm	0	1	Alarm due to high pressure of circuit 1
30	R	AL_AP2	Alarm	0	1	Alarm due to high pressure of circuit 2
31	R	AL_ANTIHIELO_BAC	Alarm	0	1	Anti-freeze alarm of the hot water coil
32	R	AL_PERM_MEM_ERROR	Alarm	0	1	Eprom memory of µPC3 board damaged
33	R	AL_RELOJ	Alarm	0	1	The clock is broken or disconnected
34	R	AL_ALTA_TEMP_REG	Alarm	0	1	Overly high return air temperature
35	R	AL_BAJA_TEMP_REG	Alarm	0	1	Overly low return air temperature
36	R	AL_SET_HOR_COMP1	Alarm	0	1	Maintenance of compressor 1 of circuit 1
37	R	AL_SET_HOR_COMP2	Alarm	0	1	Maintenance of compressor 1 of circuit 2
38	R	AL_BP1	Alarm	0	1	Alarm due to low pressure of circuit 1 (possible gas leak in the circuit)
39	R	AL_BP2	Alarm	0	1	Alarm due to low pressure of circuit 2 (possible gas leak in the circuit)
40	R	AL_TERM_VENT_INT	Alarm	0	1	Alarm of the supply fan thermal protection relay (RTVi)
41	R	AL_T_P_HP_C1	Alarm	0	1	Alarm due to the high pressure transducer of circuit 1
42	R	AL_T_P_HP_C2	Alarm	0	1	Alarm due to the high pressure transducer of circuit 2
43	R	AL_FILTRO_SUCIO	Alarm	0	1	Clogged filter alarm
44	R	AL_TERM_RES_ELECTRICA	Alarm	0	1	Electrical heater(s) thermal protection alarm
45	R/W	HAB_BOMBA_CALOR	Configuration	0	1	Enable the operation in heat pump mode: 0: cooling only; 1: heat pump
46	R	HAB_RELOJ	Status	0: no	1: yes	Enable the timer card
47	R/W	HAB_CONTROL_HUM_DESHUM	Configuration	0: no	1: yes	Enable the dehumidification function
48	R/W	HAB_SONDA_TEMP_IMP	Configuration	0: no	1: yes	Enable the supply temperature probe
49	R	SEL_FC_FH_ENTALPICO	Status	0: no	1: yes	Enable the enthalpic free-cooling
50	R	HAB_SUPERVISION	Configuration	0: no	1: yes	Enable the supervisory serial card
52	R/W	HAB_FREECOOL_VER	Configuration	0: no	1: yes	Enable the free-cooling in COOLING mode (summer)
53	R/W	HAB_FREEHEAT	Configuration	0: no	1: yes	Enable the free-heating in HEATING mode (winter)
54	R/W	POS_COMPUERTA_CALOR_AL_INICIO	Regulation	0	1	Select the fresh air damper position at start-up in HEATING mode: 0= normal position; 1= closed
55	R/W	HAB_COMPENSACION	Config.	0: no	1: yes	Enable the setpoint compensation in accordance with the outdoor temperature
56	R/W	HAB_OFF_VINT_DES	Defrosting	0: no	1: yes	Enable the supply fan stoppage during defrosting

Digital variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
57	R/W	HAB_UNICO_VOL_AIRE_EXT	Config.	0: no	1: yes	Enable the simultaneous defrosting
58	R/W	AUTOSTART	Regulation	0: no	1: yes	Enable the automatic start-up after locking/power cut
59	R/W	HAB_ONOFF_REMOTO	Regulation	0: no	1: yes	Enable the remote ON/OFF
60	R	HAB_ON_OFF_HOR	Status	0: no	1: yes	Enable the ON-OFF time schedule
61	R	HAB_CAMBIO_MODO_HOR	Status	0: no	1: yes	Enable the setpoint change time schedule
62	R/W	HAB_FREECOOL_INV	Config.	0: no	1: yes	Enable the free-cooling in HEATING mode (winter)
63	R/W	CONTROL_P_PI	Fan	0	1	Temperature control type: 0= proportional (P); 1= proportional + integral (P+I)
64	R/W	HAB_ROT_COMP	Compresor	0: no	1: yes	Enable the rotation of compressors
65	R/W	SYS_ON	Comands	0	1	Unit ON/OFF: 0= off; 1= on
66	R/W	CALOR_FRIO_PANEL	Comands	0	1	Select HEATING/COOLING mode via the panel: 0= HEATING mode (winter); 1= COOLING mode (summer)
67	R/W	HAB_ZONIFICACION_POR_VARIABLE	Config.	0: no	1: yes	Enable the power and flow reduction for the zoning of the unit
68	R/W	HAB_ZONIFICACION_1_ZONA_POR_VAR	Comands	0	1	Selection of the number of active zones: 0= 2 zones; 1= 1 zone
69	R	RED_CAUDAL_POR_ZONIFICACION	Status	0	1	Status of flow reduction in zoning: 0= disabled; 1= enabled
70	R	RED_CAUDAL_AUTOMATICO	Status	0	1	Status of flow reduction in automatic flow reduction: 0= disabled; 1= enabled
71	R/W	HAB_CONTROL_SOBREPRESION	Config.	0: no	1: yes	Enable the overpressure control
72	R/W	HAB_BLOQ_COMP_ON_FASE_LIM_FRIO	RTC	0: no	1: yes	Disable the compressors in summer with scheduling and setpoint limit in summer (freecooling night)
73	R/W	HAB_BLOQ_RENOVACION_ON_FASE_LIM	RTC	0: no	1: yes	Disable the outdoor air exchange and scheduling limit setpoint (night)
74	R	SYS_ON1	Status	0	1	Display of unit status: 0= off; 1= on
75	R/W	HAB_BINATI	Fan	0: no	1: yes	Condensation fan by maximum pressure
76	R	COMPRESOR_1_2	Digit. output	0	1	Switch of compressor 2 of circuit 1
77	R	COMPRESOR_2_2	Digit. output	0	1	Switch of compressor 2 of circuit 2
80	R/W	HAB_MB_GAS_LEAKAGE_DETECTOR	Config.	0: no	1: yes	Enable the R-410A gas leakage detector
81	R	AL_GLD_OFFLINE	Alarm	0	1	Communication fault with the R-410A gas leakage detector
82	R	AL_GLD_LEAK_DETECTED	Alarm	0	1	Alarm of R-410A gas leakage detected
83	R	AL_GLD_SENSOR_FAULT	Alarm	0	1	Alarm of broken or disconnected sensor of R-410A gas leakage detector
84	R/W	HAB_LIM_CO2	Config.	0: no	1: yes	CO2 limit enabled
85	R/W	HAB_SONDA_MEZCLA_CON_CO2	Config.	0: no	1: yes	Enabling of mixing air probe with CO2 probe
86	R/W	HAB_QUEMADOR_GAS	Config.	0: no	1: yes	Gas burner/boiler control enabled
87	R/W	DESHAB_AL_BP_CALOR	Compresor	0: no	1: yes	Cancel low pressure safety in HEATING mode (winter)
88	R/W	DESHAB_AL_BP_DES	Compresor	0: no	1: yes	Cancel low pressure safety during defrosting
89	R/W	HAB_DES_FIN_MIN_SONDA	Defrosting	0: no	1: yes	End of defrosting with the lowest pressure value
90	R/W	HAB_OFF_COMP_DES	Compresor	0: no	1: yes	Stop compressors before defrosting
91	R/W	HAB_OFF_COMP_CAMBIO_F_C	Compresor	0: no	1: yes	Stop compressors before HEATING/COOLING operating mode change
92	R/W	HAB_RES_EN_FRIO	Fan	0: no	1: yes	Electrical heaters as backup in COOLING mode (summer)
93	R/W	HAB_VALV_CALOR_EN_FRIO	Fan	0: no	1: yes	Hot water coil as backup in COOLING mode (summer)
94	R/W	HAB_OFF_VINT_FRIO	Fan	0: no	1: yes	Stop supply fan when stopping the compressors in COOLING mode
95	R/W	HAB_OFF_VINT_CALOR	Fan	0: no	1: yes	Stop supply fan when stopping the compressors in HEATING mode
98	R/W	HAB_FIL	Service	0: no	1: yes	Enable sensor filter
99	R/W	HAB_RES_DESESCARCHE	Config.	0: no	1: yes	Enable electrical heaters or gas burner/boiler during defrosting
100	R/W	HAB_VALV_CALOR_POR_IMP_MIN_FRIO	Config.	0: no	1: yes	Supply air temperature control with auxiliary hot water coil
101	R/W	HAB_COMP_CALOR_POR_IMP_MIN_FRIO	Config.	0: no	1: yes	Supply air temperature control with compressors
102	R/W	HAB_RES_POR_IMP_MIN_FRIO	Config.	0: no	1: yes	Supply air temperature control with electrical heaters
103	R/W	HAB_VALVULA_CALOR	Config.	0: no	1: yes	Enable the auxiliary hot water coil (3-way valve)
104	R	HAB_CO2	Status	0: no	1: yes	CO2 sensor installed
105	R/W	RESET_ON_HORAS_COMP1	Service	0: no	1: yes	Reset operating hours of compressor 1 of circuit 1
106	R/W	RESET_ON_HORAS_COMP2	Service	0: no	1: yes	Reset operating hours of compressor 1 of circuit 2
107	R/W	RESET_ON_HORAS_MAQUINA	Service	0: no	1: yes	Reset operating hours of the unit
108	R	AL_SET_HOR_ON_EQUIPO	Alarm	0	1	Alarm due to cumulative unit operating hours
109	R	AL_TEMP_RET	Alarm	0	1	Return air temperature sensor alarm
110	R	AL_SONDA_SHRD	Alarm	0	1	Virtual shared sensor alarm (SHRD shared network)

Digital variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
111	R	AL_TEMP_EXT	Alarm	0	1	Outdoor temperature sensor alarm
112	R	AL_HUM_INT	Alarm	0	1	Return (indoor) humidity sensor alarm
113	R	AL_HUM_EXT	Alarm	0	1	Outdoor humidity sensor alarm
114	R	AL_TEMP_IMP	Alarm	0	1	Supply air temperature sensor alarm
115	R	AL_SETPOINT_AUTO	Alarm	0	1	Alarm setpoint HEATING mode (winter) > COOLING mode (summer)
116	R	DIN_AP_CR	Digit. input	0	1	HP and LP pressure switch recovery circuit (only with cooling recovery)
117	R	COMPRESOR_REC	Digit. output	0	1	Recovery compressor switch (only with cooling recovery)
118	R	AL_AP_BP_CR	Alarm	0	1	HP and LP pressure switch recovery circuit alarm (with cooling recovery)
119	R	AL_SET_HOR_CR	Alarm	0	1	Recovery compressor maintenance (only with cooling recovery)
120	R/W	ARR_FORZADO	RTC	0: no	1: yes	Forced start-up
121	R/W	NEW_DATE	RTC	0: no	1: yes	Activate time and date change
122	R	AL_SET_HOR_COMP1_2	Alarm	0	1	Maintenance of compressor 2 of circuit 1
123	R	AL_SET_HOR_COMP2_2	Alarm	0	1	Maintenance of compressor 2 of circuit 2
124	R/W	RESET_ON_HORAS_COMP1_2	Service	0: no	1: yes	Reset operating hours of compressor 2 of circuit 1
125	R/W	RESET_ON_HORAS_COMP2_2	Service	0: no	1: yes	Reset operating hours of compressor 2 of circuit 2
126	R	AL_KLD1	Alarm	0	1	Discharge temperature limit of compressor(s) of circ. 1 exceeded
127	R	AL_KLD2	Alarm	0	1	Discharge temperature limit of compressor(s) of circ. 2 exceeded
128	R/W	HAB_PROT_ANTIHIELO_BAC_GF	Config.	0: no	1: yes	Enabling of the antifreeze protection of the hot water coil with low outdoor temperatures
129	R/W	HAB_BAC_DESESCARCHE	Config.	0: no	1: yes	Enable the auxiliary hot water coil during defrosting
130	R	AL_TEMP_MEZCLA	Alarm	0	1	Alarm of fixed air temperature probe or air quality sensor
131	R/W	TIPO_BLOQ_COMP_CALOR	Compresor	0: no	1: yes	Disable compressors in HEATING mode (winter) according to outdoor temperature
132	R/W	HAB_PRIORIDAD_VALV_CALOR	Regulation	0: no	1: yes	Enable priority of the hot water coil or the heat recovery coil with respect to compressors
133	R/W	RESET_ON_HORAS_CR	Service	0: no	1: yes	Reset operating hours of the recovery compressor
134	R/W	HAB_PRES_BEXT	Config.	0	1	Enable the high pressure transducer: 0= temperature; 1= pressure
135	R	DIN02_INC	Digit. input	0: no	1: yes	Digital input detection of smoke or fire
136	R	AL_INCENDIO	Alarm	0	1	Anti-fire safety / Smoke detector alarm
137	R/W	HAB_BINATI_EVAP	Fan	0: no	1: yes	Evaporation fan by minimum pressure
138	R/W	HAB_DES_TIME	Defrosting	0: no	1: yes	Enable defrosting by time
139	R/W	HAB_DES_MIN	Defrosting	0: no	1: yes	Enable defrosting by minimum pressure/temperature
140	R/W	HAB_DES_DIF	Defrosting	0: no	1: yes	Enable defrosting by difference between outdoor and evaporation temperatures
149	R	VENTILADOR_EXT_1_2	Digit. output	0	1	Outdoor fans of circuit 1 at high temperature
150	R	VENTILADOR_EXT_2_2	Digit. output	0	1	Outdoor fans of circuit 2 at high temperature
163	R	AL_OFFLINE_SONDA_AMB_1	Alarm	0	1	Alarm no communication with ambient sensor RS485 No.1
164	R	AL_BROKEN_TEMP_PROBE_AMB_1	Alarm	0	1	Alarm due to ambient temperature sensor No.1 broken or disconnected
165	R	AL_BROKEN_HUM_PROBE_AMB_1	Alarm	0	1	Alarm due to ambient humidity sensor No.1 broken or disconnected
166	R	AL_IMPULSION_ALTA	Alarm	0	1	High supply air temperature alarm
167	R/W	HAB_SONDA_AMB	Config.	0: no	1: yes	Enabling the ambient probe
168	R/W	HAB_FILTRO_CAL_IMP	Service	0: no	1: yes	Enabling the supply air setpoint calculation with ambient probe
169	R/W	HAB_COMP_REG_PRES_U_EXT	Config.	0: no	1: yes	Enabling the pressure control gate in the outdoor unit
170	R/W	COMP_OFF_ALL_INCENDIO	Alarm	0	1	Fresh air damper status with fire alarm: 0= open; 1= closed
171	R/W	HAB_C_COND_VENT_EXT	Fan	0: no	1: yes	Enabling the condensation control of outdoor unit
172	R/W	HAB_C_EVAP_VENT_EXT	Fan	0: no	1: yes	Enabling the evaporation control of outdoor unit
173	R/W	HAB_DETECCION_FALLO_COM_BMS	Special	0	1	Enabling detection of failure of BMS communicationt to load the default values
174	R/W	VAR_DETECCION_FALLO_BMS	Special	0	1	Variable to write by the BMS to avoid the detection of failure of BMS communication (1 -> 0)
175	R	AL_OFFLINE_SONDA_AMB_2	Alarm	0	1	Alarm due to no communication with ambient sensor RS485 No.2
176	R	AL_BROKEN_TEMP_PROBE_AMB_2	Alarm	0	1	Alarm due to ambient temperature sensor No.2 broken or disconnected
177	R	AL_BROKEN_HUMID_PROBE_AMB_2	Alarm	0	1	Alarm due to ambient humidity sensor No.2 broken or disconnected
178	R/W	CONTROL_P_PI_C_EVAP_VEXT	Fan	0	1	Type of control for outdoor unit evaporation control: 0= Proportional (P); 1= Proportional+Integral (P+I)
179	R/W	CONTROL_P_PI_C_COND_VEXT	Fan	0	1	Type of control for outdoor unit condensation control: 0= Proportional (P); 1= Proportional+Integral (P+I)
180	R/W	SEL_ALARMA_POR_MASK	Alarm	0: no	1: yes	Relay activation with selected active alarms on display
181	R/W	HAB_RES_SIN_COMPRESOR	Config.	0: no	1: yes	Enable electrical heaters for replacing the compressors
182	R/W	RESET_TIME_COMPRESOR	Service	0: no	1: yes	Compressor timers reset
183	R	ON_DESESCARCHE	Status	0	1	Signal from defrosting unit
184	R	ON_FREECOOL	Status	0	1	Display of the free-cooling operation
185	R	ON_FREEHEAT	Status	0	1	Display of the free-heating operation

Digital variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
186	R	ON_COMPRESOR	Status	0	1	Display of the compressors status
187	R	ON_RESISTENCIA	Status	0	1	Display of the electrical heaters operation
188	R	NOT_SYSON1	Status	0	1	Display of the unit OFF
189	R/W	CONTROL_SOND_AMB	Config.	0	1	Temperature control by means of ambient temperature sensor: 0= return temperature; 1= ambient temperature
190	R/W	HAB_MB_ENERGY_METER	Config.	0: no	1: yes	Enable energy meter connected as Modbus Lag
191	R/W	RESET_ENERGY	Config.	0: no	1: yes	Reset of energy meter counter
192	R	AL_OFFLINE_MB_ENERGY_METER	Alarm	0	1	Alarm due to no communication with energy meter
200	R/W	HAB_ON_VEXT_INI_DES	Defrosting	0: no	1: yes	Enable outdoor fan connection at start of defrosting
201	R	AL_OFFLINE_MB_FAN1	Alarm	0	1	Alarm due to no communication with supply plug-fan
202	R	AL_SENSOR_PRES_DIF_AIRE_FAN1	Alarm	0	1	Alarm due to the differential pressure sensor for supply fan flow control
203	R/W	HAB_BOMBA_CALOR_COMP_REC	Config.	0	1	Recovery compressor: 0= cooling only; 1= heat pump
204	R/W	HAB_OFF_VINT_POR_CO2	Fan	0: no	1: yes	Supply fan stop when compressor stops if there is no demand for air renewal by CO2 sensor
205	R	AL_OFFLINE_MB_FAN2	Alarm	0	1	Alarm due to no communication with return plug-fan
206	R	AL_SENSOR_PRES_DIF_AIRE_FAN2	Alarm	0	1	Alarm due to the differential pressure sensor for return fan flow control
207	R/W	HAB_RED_CAUDAL_CON_COMP_TANDEM	Comands	0: no	1: yes	Enable the automatic reduction of flow with 50% power in tandem compressors
208	R/W	HAB_VALVULA_FRIO	Config.	0: no	1: yes	Enable the auxiliary cold water coil (3-way valve)
209	R/W	HAB_PRIORIDAD_VALV_FRIO	Regulation	0: no	1: yes	Enable the hot water cold priority with respect to compressors
210	R	AL_IO_PCOE_2	Alarm	0	1	Alarm expansion card c.pCOe inputs/outputs malfunction addr.8
211	R	AL_OFFLINE_PCOE_2	Alarm	0	1	Alarm no communication with expansion card c.pCOe addr.8
212	R/W	AL_T_P_LP_C1	Alarm	0	1	Alarm due to the low pressure tranducer of circuit 1 (possible gas leak in the circuit)
213	R/W	AL_T_P_LP_C2	Alarm	0	1	Alarm due to the low pressure tranducer of circuit 2 (possible gas leak in the circuit)
216	R/W	HAB_C_EVAP_VENT_INT	Fan	0: no	1: yes	Enable evaporation control of indoor unit
217	R/W	HAB_C_COND_VENT_INT	Fan	0: no	1: yes	Enable condensation control of indoor unit
218	R/W	HAB_VALV_CALOR_POR_IMP_MIN_CALOR	Config.	0: no	1: yes	Control of minimun supply with hot water coil with unit in HEATING mode
219	R/W	HAB_COMP_CALOR_POR_IMP_MIN_CALOR	Config.	0: no	1: yes	Control of minimun supply with compressors in heating with unit in HEATING mode
220	R/W	HAB_RES_POR_IMP_MIN_CALOR	Config.	0: no	1: yes	Control of minimun supply with electrical heaters in HEATING mode
221	R	AL_TEMP_ENTRADA_BAC	Alarm	0	1	Alarm of water inlet temperature of the hot water coil probe
222	R	AL_TEMP_SALIDA_BAC	Alarm	0	1	Alarm of water outlet temperature of the hot water coil probe
223	R	AL_ANTIHIELO_AGUA_BAC	Alarm	0	1	Water anti-freeze alarm of hot water coil
224	R	AL_TEMP_AMB	Alarm	0	1	Alarm of ambient air temperature sensor
225	R	AL_BP1_DESESCARCHE	Alarm	0	1	Alarm of low pressure of circuit 1 by continuous defrosting by minimun pressure or temperature (possible gas leak in the circuit)
226	R	AL_BP2_DESESCARCHE	Alarm	0	1	Alarm of low pressure of circuit 2 by continuous defrosting by minimun pressure or temperature (possible gas leak in the circuit)
229	R/W	HAB_MB_TERMOSTATO_TCO	Config.	0: no	1: yes	Enabling of the TCO terminal by MODBUS
230	R/W	TH_TUNE_BLOQUEADO	Config.	0: no	1: yes	Keypad lockage of the TCO terminal
231	R/W	HAB_EQUIPO_100_AIRE_EXTERIOR	Config.	0: no	1: yes	Enabling of unit operation with 100% fresh air
232	R/W	MODO_FRIO_CALOR_AUTO	Config.	0	1	COOLING/HEATING switching in AUTO mode: 0= indoor temperature; 1= outdoor temperature
233	R/W	HAB_RENOVACION_AIRE	Config.	0: no	1: yes	Enabling of fresh air renewal
234	R/W	REG_ANTI_INCENDIO_FRA_ERP	Alarm	0: no	1: yes	Enabling ERP French fire safety
235	R	MODO_CALOR_SIN_FC_INV	Status	0: no	1: yes	HEATING operating mode without freecooling winter
236	R	MODO_VENT	Status	0: no	1: yes	ONLY VENTILATION operating mode
237	R/W	HAB_MB_THERMAL_ENERGY_METER	Config.	0: no	1: yes	Enabling COOLING / HEATING power meter
238	R	ON_LIMITE_TEMP_IMPULSION	Status	0: no	1: yes	Signal of unit operating with supply temperature limit
239	R/W	HAB_ZONIFICACION_POR_COMPUERTAS	Config.	0: no	1: yes	Enabling of the zoning by dampers (expansion module I/O)
240	R/W	PGD1_BLOQUEADO_SEL_FRIO_CALOR	Config.	0: no	1: yes	Enabling of the locking of summer / winter selection in the VecticGD terminal
241	R/W	HAB_LIM_POT_COMP_TANDEM_POR_AP	Service	0: no	1: yes	Enabling power limitation in tandem compressor by high pressure
242	R	OFF_PROG_HOR	Status	0: no	1: yes	Signaling of the OFF by scheduling by TCO terminal or VecticGD terminal
243	R/W	POS_COMPUERTA_FRIO_AL_INICIO	Regulation	0	1	Select fresh air damper position at start-up in COOLING mode: 0= normal position; 1= closed
244	R/W	HAB_COMPENSACION_POWER_FACTOR	Config.	0: no	1: yes	Enabling the power factor compensation

Digital variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
245	R	AL_TEMP_EXTRACCION_RUEDA	Alarm	0	1	Alarm on the sensor of the extraction air temperature of the wheel
246	R	AL_TEMP_RECUPERACION_RUEDA	Alarm	0	1	Sensor alarm of the recovery air temperature of the wheel
247	R/W	HAB_REC_ROTATIVO_VARIABLE	Config.	0: no	1: yes	Enabling of rotary recovery with variable wheel
248	R/W	HAB_ZONA1_PARA_ZONIF_COMPUERTAS	Regulation	0: no	1: yes	Enabling of the zone 1 in the optional zoning by dampers
249	R/W	HAB_ZONA2_PARA_ZONIF_COMPUERTAS	Regulation	0: no	1: yes	Enabling of the zone 2 in the optional zoning by dampers
250	R/W	HAB_CONTROL_COMPUERTA_IMP_RET	Config.	0: no	1: yes	Enabling of dampers control for supply and return of unit
251	R	APERTURA_COMPUERTA_IMP_ZONA1	Status	0	1	Signal for opening the supply damper
252	R	APERTURA_COMPUERTA_RET_ZONA1	Status	0	1	Signal for opening the return damper
253	R	COMPUERTA_IMP_ZONA1_ABIERTA	Status	0	1	Signal of supply damper open
254	R	COMPUERTA_RET_ZONA1_ABIERTA	Status	0	1	Signal of return damper open
255	R	AL_COMPUERTA_IMP_Z1_NO_ABIERTA	Alarm	0	1	Alarm of supply damper not open
256	R	AL_COMPUERTA_RET_Z1_NO_ABIERTA	Alarm	0	1	Alarm of return damper not open
257	R/W	AL_OFFLINE_SONDA_AMB_3	Alarm	0	1	Alarm no communication with ambient sensor RS485 No.3
258	R/W	AL_BROKEN_TEMP_PROBE_AMB_3	Alarm	0	1	Alarm due to ambient temp. sensor No.3 broken or disconnected
259	R/W	AL_BROKEN_HUMID_PROBE_AMB_3	Alarm	0	1	Alarm due to ambient humidity sensor No.3 broken or disconnected
260	R/W	AL_OFFLINE_SONDA_AMB_4	Alarm	0	1	Alarm no communication with ambient sensor RS485 No.4
261	R/W	AL_BROKEN_TEMP_PROBE_AMB_4	Alarm	0	1	Alarm due to ambient temp. sensor No.4 broken or disconnected
262	R/W	AL_BROKEN_HUMID_PROBE_AMB_4	Alarm	0	1	Alarm due to ambient humidity sensor No.4 broken or disconnected
263	R/W	HAB_COMPRESOR_REC	Alarm	0	1	Enable de cooling recovery circuit
264	R/W	HAB_BOILER	Alarm	0	1	Enable the gas boiler
265	R	AL_CPCOE_CR_OFFLINE_ALRM	Alarm	0	1	Communication fault with the R-410A gas leakage detector
266	R	AL_AP_CR	Alarm	0	1	High pressure alarm in the recovery circuit
267	R	AL_BP_CR	Alarm	0	1	Low pressure alarm in the recovery circuit
269	R	AL_TERM_COMP_VEXT_CR	Alarm	0	1	Alarm of thermal protection of compressor and outdoor fan of the recovery circuit
271	R	AL_SET_HOR_COMP1_CR	Alarm	0	1	Operating hours of recovery compressor
272	R	AL_SET_HOR_ON_UPC_CR	Alarm	0	1	Operating hours limit of recovery compressor
273	R	AL_T_P_LP_CR	Alarm	0	1	Alarm of the low pressure transducer of the recovery circuit
274	R	AL_T_P_HP_CR	Alarm	0	1	Alarm of the high pressure transducer of the recovery circuit
275	R	AL_TEMP_ASP_CR	Alarm	0	1	Alarm of suction temperature of the recovery circuit
278	R	OUT_VIC_CR	Status	0	1	Status of cycle reversing valve of recovery circuit
280	R	REC_ROTATIVO	Status	0	1	Status of the rotary heat exchanger
281	R/W	PASS_LEVEL_3_OK	Config.	0	1	Reserved
282	R/W	STOP_BITS_NUMBER_MB	Config.	0	1	Number of stop bits for the MODBUS protocol (0 = 2 stop bits, 1= 1 stop bit)
284	R	COMPUERTA_IMP_ZONA1_CERRADA	Status	0	1	Supply damper in zone 1 closed: 0= open; 1= closed
285	R	COMPUERTA_RET_ZONA1_CERRADA	Status	0	1	Return damper in zone 1 closed : 0= open; 1= closed
286	R	AL_COMPUERTA_IMP_Z1_NO_CERRADA	Alarm	0	1	Alarm because the supply damper in zone 1 not closed
287	R	AL_COMPUERTA_RET_Z1_NO_CERRADA	Alarm	0	1	Alarm because the return damper in zone 1 not closed
288	R	Fan2_Alarm_Present	Alarm	0	1	Return plug-fan without communication
289	R/W	HAB_OFF_REMOTO_CON_PROTECTION	Config.	0: no	1: yes	Enabling of the remote OFF with BUILDING PROTECTION mode
290	R/W	HAB_G_PRINC	Config.	0: no	1: yes	Enabling of automatic return to the MAIN screen
291	R/W	HAB_OFF_ETAPAS_POR_DIN	Config.	0: no	1: yes	Enabling of the stages disconnection by digital input
293	R	BLOQUEO_COMPRESORES_POR_TENSION	Config.	0: no	1: yes	Enabling of compressors lockage due to a power cut-off for a period longer than 2 hours (to ensure the heating of the crankcase heater)
294	R/W	HAB_SONDA_HUM	Config.	0: no	1: yes	Enabling of the humidity probe
295	R/W	HAB_ZONIFICACION_4_ZONAS	Config.	0: no	1: yes	Enabling of the air zoning up to 4 zones by motorised dampers
296	R/W	HAB_CONTROL_RESIST_TRIAC	Config.	0	1	Enabling of the preheater with electrical heater in fresh air
297	R	HAB_CONTROL_RESIST_TRIAC	Alarm	0	1	Alarm due to the thermistor of electrical heater for preheating in the fresh air
298	R	ON_RESIST_TRIAC	Status	0	1	Status of electrical heater for preheating in the fresh air
299	R/W	HAB_OFF_POR_SOND_AMB_CON_100_EXT	Config.	0	1	Enable the unit OFF by ambient probe in operation with 100% fresh air
300	R/W	HAB_CONTROL_DESHUM_REHEAT	Config.	0	1	Enable the active dehumidification with condensation coil. Note: The indoor humidity probe always has to be selected
301	R	VALV_SOLENOIDE_1_REHEAT	Status	0	1	Status of soleniod valve SV1 of the active dehumidification
302	R	VALV_SOLENOIDE_2_REHEAT	Status	0	1	Status of soleniod valve SV2 of the active dehumidification

Digital variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
303	R/W	CONTROL_P_PI_HUM_DESHUM	Config.	0	1	Type of humidity control with active dehumidification: 0= Proportional (P); 1= Proportional+Integral (P+I)
304	R	DESHUMIDIFICA	Status	0	1	Display of active dehumidification activated
305	R	DESHUMIDIFICA_SUBCOOLING	Status	0	1	Display of active dehumidification activated in SUBCOOLING
306	R	DESHUMIDIFICA_REHEAT	Status	0	1	Display of active dehumidification activated in REHEATING
307	R/W	HAB_MB_TERMOSTATO_TCO_11_T	Config.	0	1	Enable the terminal of zone 1 (zoning of the air flow)
308	R/W	HAB_MB_TERMOSTATO_TCO_12_T	Config.	0	1	Enable the terminal of zone 2 (zoning of the air flow)
309	R/W	HAB_MB_TERMOSTATO_TCO_13_T	Config.	0	1	Enable the terminal of zone 3 (zoning of the air flow)
310	R/W	HAB_MB_TERMOSTATO_TCO_14_T	Config.	0	1	Enable the terminal of zone 4 (zoning of the air flow)
311	R	ON_COMPUERTA_Z1	Digital output	0	1	Display of zone 1 activated (zoning of the air flow)
312	R	ON_COMPUERTA_Z2	Digital output	0	1	Display of zone 2 activated (zoning of the air flow)
313	R	ON_COMPUERTA_Z3	Digital output	0	1	Display of zone 3 activated (zoning of the air flow)
314	R	ON_COMPUERTA_Z4	Digital output	0	1	Display of zone 4 activated (zoning of the air flow)
315	R/W	HAB_ON_EQUIPO_POR_4ZONAS	Status	0	1	Activation of the reduction of flow with zoning (zoning of the air flow)
316	R/W	HAB_EVDEVO_MANUAL	Config.	0: no	1: yes	Enabling the communication module for EVDEVO
317	R	HAB_EVDEVO_MANUAL_OK	Status	0	1	Status of the communication module for EVDEVO
321	R/W	REBOOT_FIRMWARE_MSK_FAN1	Config.	0	1	Reset of the supply plug-fan
322	R/W	REBOOT_FIRMWARE_MSK_FAN2	Config.	0	1	Reset of the return plug-fan
323	R/W	CONFIRM_NEW_VALUES_MSK_FAN1	Config.	0	1	Confirmation of writing new values to the supply plug-fan
324	R/W	CONFIRM_NEW_VALUES_MSK_FAN2	Config.	0	1	Confirmation of writing new values to the return plug-fan
325	R/W	HAB_CAMBIO_CAUDAL_POR_TCO	Config.	0	1	Enabling flow change using the TCO terminal (supply plug-fan)
326	R/W	HAB_PROT_BAJA_TEMP_EXTERIOR	Config.	0	1	Enabling outdoor low-temperature protection
327	R/W	CLOCK_SOURCE_THTUNE_OR_PCO	Config.	0	1	Date and time source of the TCO terminal or control board: 0= TCO terminal; 1= board
328	R/W	PCO_THTUNE_SCHEDULER	Config.	0	1	Schedule programming of the TCO terminal or control board: 0= TCO terminal; 1= board
329	R	AL_CO2	Alarm	0	1	CO2 probe alarm
330	R/W	DISABLE_COMP1	Config.	0: no	1: yes	Force OFF compressor 1 of circuit 1
331	R/W	DISABLE_COMP1_2	Config.	0: no	1: yes	Force OFF compressor 2 of circuit 1
332	R/W	DISABLE_COMP2	Config.	0: no	1: yes	Force OFF compressor 1 of circuit 2
333	R/W	DISABLE_COMP2_2	Config.	0: no	1: yes	Force OFF compressor 2 of circuit 2
334	R	TYPE_INDUCTIVE_O_CAPACITIVE	Status	0: L	1: C	Equivalent electric charge of the unit inductive or capacitive in character
335	R	COMP_REC_1	Status	0	1	Display of the operating status of the recovery compressor
336	R	AL_OFFLINE_MODBUS_EVDEVO1	Status	0	1	Communication failure with EVDEVO driver
337	R	AL_EEPROM_EVDEVO1	Status	0	1	EVDEVO driver alarm due to damaged or broken EEPROM
338	R	AL_EEV_A_EVDEVO1	Status	0	1	EVDEVO driver alarm due to broken or disconnected A valve
339	R	AL_EEV_B_EVDEVO1	Status	0	1	EVDEVO driver alarm due to broken or disconnected B valve
340	R	AL_IO_PCOE_3	Alarm	0	1	Alarm mismatch inputs/outputs of the c.pCOe expansion module with Address 9
341	R	AL_OFFLINE_PCOE_3	Alarm	0	1	Communication failure with c.pCOe expansion module Address 9
342	R	AL_DEV_A2L_SENSOR	Status	0	1	Damaged or non-operational A2L sensor alarm (R-454B refrigerant leak detector)
343	R	AL_LFL_A2L_SENSOR	Status	0	1	A2L Refrigerant leak alarm (R-454B refrigerant leak detector)
344	R	AL_CRIT_A2L	Status	0	1	Critical A2L sensor alarm (R-454B refrigerant leak detector)
345	R	AL_DEV_A2L_SENSOR_OFFLINE	Status	0	1	Communication failure with A2L sensor(R-454B refrigerant leak detector)
346	R/W	HAB_CTRL_PRES_IMP_CTE	Config.	0	1	Enable the constant supply pressure control
347	R/W	HAB_A2L_SENSOR	Config.	0	1	Enable the A2L sensor and the mitigation logic (R-454B refrigerant leak detector)
348	R	AL_PRES_DIF_IMP	Alarm	0	1	Alarm due to the differential pressure sensor for constant supply pressure control or overpressure control with return fan
349	R	AL_MIN_CAUDAL_PRES_IMP_CTE	Alarm	0	1	Minimum flow alarm with constant supply pressure control
350	R	AV_BAJO_CAUDAL_PRES_IMP_CTE	Alarm	0	1	Low flow warning with constant supply pressure control
351	R/W	HAB_DES_TIME_RESCATE	Defrosting	0	1	Enable the defrosting by time (rescue defrosting)
352	R/W	H_SONDA_ FIN_VEXT_DES_BEXT	Defrosting	0	1	Enable the outdoor coil temperature probe for defrosting in 1-circuit units
353	R/W	H_FIN_VEXT_DES_BEXT	Defrosting	0	1	Enable the stoppage of the outdoor fan during defrosting in 1-circuit units
354	R	AL_CONTACTOR_RES_ELECTRICA	Alarm	0	1	Closed contactor lockage alarm without electrical heaters demand
355	R	ON_FREECOOL_FREEHEAT	Status	0	1	Unit signal running in freecooling or freheating mode

Digital variables (...continuation)

Modbus Extended	Read / Write	Variable	Parameter type	Min. value	Max. value	Description
356	R/W	HAB_ON_ZONIF_4_ZONAS_POR_CO2	Config.	0	1	Enabling demand of 4 zones by CO2 demand (zoning of the air flow)
357	R	MODO_DEMANDA_4Z_POR_CO2	Status	0	1	Demand signal of 4 zones by CO2 demand (zoning of the air flow)
358	R/W	HAB_MODO_AUTO_TCO_4_ZONAS	Config.	0	1	Enabling AUTO mode on TCO zone terminals (zoning of the air flow) If when the COOLING mode is activated, in one or more zones the temperature drops below its HEATING mode setpoint (and the other zones have no demand or there are a smaller number of zones with COOLING demand), the change to HEATING mode occurs. The same happens in the opposite case, from HEATING to COOLING.
359	R	MODO_FRIO_4_ZONAS	Status	0	1	COOLING demand signal with zoning 4 zones (zoning of the air flow)
360	R	AL_SETPOINT_AUTO_Z1	Alarm	0	1	Alarm due to HEATING (winter) mode setpoint > COOLING (summer) mode setpoint, in zone 1, with AUTO mode by indoor temperature (zoning of the air flow)
361	R	AL_SETPOINT_AUTO_Z2	Alarm	0	1	Alarm due to HEATING (winter) mode setpoint > COOLING (summer) mode setpoint, in zone 2, with AUTO mode by indoor temperature (zoning of the air flow)
362	R	AL_SETPOINT_AUTO_Z3	Alarm	0	1	Alarm due to HEATING (winter) mode setpoint > COOLING (summer) mode setpoint, in zone 3, with AUTO mode by indoor temperature (zoning of the air flow)
363	R	AL_SETPOINT_AUTO_Z4	Alarm	0	1	Alarm due to HEATING (winter) mode setpoint > COOLING (summer) mode setpoint, in zone 4, with AUTO mode by indoor temperature (zoning of the air flow)
364	R/W	SYS_ON_T11	Comands	0: Off	1: On	OFF / ON of zone 1 (zoning of the air flow)
365	R/W	SYS_ON_T12	Comands	0: Off	1: On	OFF / ON of zone 2 (zoning of the air flow)
366	R/W	SYS_ON_T13	Comands	0: Off	1: On	OFF / ON of zone 3 (zoning of the air flow)
367	R/W	SYS_ON_T14	Comands	0: Off	1: On	OFF / ON of zone 4 (zoning of the air flow)
368	R	AL_OFFLINE_MODBUS_XVD71	Alarm	0	1	Alarm on the Eliwell bipolar EEV driver with address 71 offline
369	R	AL_OFFLINE_MODBUS_XVD72	Alarm	0	1	Alarm on the Eliwell bipolar EEV driver with address 72 offline
370	R/W	HAB_EVD_ELIWELL	Config.	0	1	Manufacturer of bipolar EEV driver: 0= Carel; 1= Eliwell
404	R	DIN_FBC1_FULL	Digital input	0	1	Digital input of the level float of the condensate pump: 0= not full; 1= full
405	R	ACTIVAR_FBC1	Status	0: Off	1: On	Status of the condensate pump
406	R/W	HAB_SONDA_AMB_BMS_INPUT_BMS	Config.	0: no	1: yes	Enabling ambient temperature reading by BMS
407	R	AL_CONDUCTO_BQ	Alarm	0	1	Airflow reduction due to the duct lockage
408	R/W	HAB_CTRL_PRES_COMP_IMP	Config.	0: no	1: yes	Enabling the pressure control with supply damper
409	R	DIN_Extractor_EXTERNO	Digital input	0	1	Status of external extractor digital input
410	R	AL_OFF_MMS_C1	Alarm	0	1	Manual motor starter (MMS) of compressor 1
411	R	AL_OFF_MMS_C1_2	Alarm	0	1	Manual motor starter (MMS) of compressor 1_2
412	R	AL_OFF_MMS_C2	Alarm	0	1	Manual motor starter (MMS) of compressor 2
413	R	AL_OFF_MMS_C2_2	Alarm	0	1	Manual motor starter (MMS) of compressor 2_2
414	R	AL_OFF_MMS_CR	Alarm	0	1	Manual motor starter (MMS) of the recovery compressor

Analogue variables

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
1	R	TEMP_RET	Analog. input	°C	-99.9	99.9	Return air temperature
2	R	TEMP_EXT	Analog. input	°C	-99.9	99.9	Outdoor air temperature
3	R	T_P_HP_C1	Analog. input	Bar	-99.9	99.9	Pressure of the high pressure transducer of circuit 1
4	R	T_P_HP_C2	Analog. input	Bar	-99.9	99.9	Pressure of the high pressure transducer of circuit 2
5	R	HUM_INT	Analog. input	%rH	-999.9	999.9	Return air relative humidity
6	R	HUM_EXT	Analog. input	%rH	-999.9	999.9	Outdoor air relative humidity
7	R	TEMP_IMP	Analog. input	°C	-99.9	99.9	Supply air temperature
8	R	TEMP_MEZCLA	Analog. input	°C	-99.9	99.9	Mixing air temperature
9	R	TEMP_AMB	Analog. input	°C	-99.9	99.9	Ambient air temperature
10	R/W	AOUT_COMPUERTA	Analog. output	---	0	32767	Opening of the damper of outdoor air
11	R/W	AOUT_VALV_O_RES_ PROP_O_COMP_INV	Analog. output	---	0	32767	Modulating output for the valve of the hot water coil or the heat recovery coil
12	R/W	AOUT_VEN_EXT1	Analog. output	---	0	32767	Modulating output for electronic outdoor fan circuit 1
13	R/W	AOUT_VEN_EXT2	Analog. output	---	0	32767	Modulating output for electronic outdoor fan circuit 2
14	R	TEMP_TCO	Analog. input	°C	-99.9	99.9	Air temperature of the User terminal
15	R/W	SET_POINT_TEMP_FRIO	Comands	°C	0.0	50.0	Return air temperature setpoint in COOLING mode (summer)
16	R/W	SET_POINT_TEMP_CALOR	Comands	°C	0.0	50.0	Return air temperature setpoint in HEATING mode (winter)
17	R/W	BANDA_HUMEDAD	Regulation	%rH	0	99.9	Humidity control differential in COOLING mode (summer)
18	R/W	SET_POINT_HUM	Comands	%rH	0.0	100.0	Humidity control setpoint in COOLING mode (summer)
19	R/W	LIM_SUP_TEMP_FRIO	Regulation	°C	20.0	50.0	Upper limit of temperature setpoint in COOLING mode (summer)
20	R/W	LIM_INF_TEMP_FRIO	Regulation	°C	0.0	30.0	Lower limit of temperature setpoint in COOLING mode (summer)
21	R/W	BANDA_TEMP_FRIO	Regulation	°C	0	99.9	Differential for temperature regulation in COOLING mode (summer)
22	R/W	BANDA_TEMP_CALOR	Regulation	°C	0	99.9	Differential for temperature regulation in HEATING mode (winter)
23	R/W	LIM_SUP_HUM	Regulation	%rH	0.0	100.0	Upper limit of humidity setpoint
24	R/W	LIM_INF_HUM	Regulation	%rH	0.0	100.0	Lower limit of humidity setpoint
25	R	TEMP_ENTRADA_BAC	Analog. input	°C	-99.9	99.9	Water inlet temperature of the hot water coil
26	R	TEMP_SALIDA_BAC	Analog. input	°C	-99.9	99.9	Water outlet temperature of the hot water coil
27	R/W	DELTA_FREE_COOL	Regulation	°C	-5.0	5.0	Temperature differential for free-cooling
28	R/W	OFFSET_FCOOL_VER	Regulation	°C	-5.0	5.0	Free-cooling ramp in COOLING mode (summer): Offset
29	R/W	BANDA_FCOOL	Regulation	°C	0	99.9	Free-cooling ramp in COOLING mode (summer): Differential
30	R/W	OFFSET_FHEAT	Regulation	°C	-5.0	5.0	Free-heating ramp in HEATING mode (winter): Offset
31	R/W	BANDA_FHEAT	Regulation	°C	0	5.0	Free-heating ramp in HEATING mode (winter): Differential
32	R/W	SET_IMPULSION_FRIO_MIN	Regulation	°C	0	30.0	Setpoint for minimum supply air temperature control in COOLING mode (summer)
33	R/W	BANDA_IMP_FRIO	Regulation	°C	0	20.0	Minimum supply air temperature control differential in COOLING mode (summer)
34	R/W	SET_COMP_EXT_FRIO	Regulation	°C	-99.9	99.9	Outdoor temperature compensation setpoint in COOLING mode (summer)
35	R/W	VAL_DIF_COMP_EXT_FRIO	Regulation	°C	-99.9	99.9	Outdoor temperature compensation differential in COOLING mode (summer)
36	R/W	MAX_COMP_EXT_FRIO	Regulation	°C	0	99.9	Maximum compensation in COOLING mode (summer)
37	R/W	VAL_INI_DES	Regulation	Bar	-10.0	10.0	Defrosting start-up setpoint
38	R/W	VAL_FIN_DES	Regulation	Bar	0	50.0	Defrosting stop setpoint
39	R/W	ZONA_MUERTA_TEMP	Regulation	°C	0	3.0	Dead zone of temperature control
40	R/W	ZONA_MUERTA_HUM	Regulation	%rH	0	50.0	Dead zone of humidity control
41	R/W	SET_ALTA_TEMP_FRIO	Alarm	°C	0	60.0	Setpoint of high temperature on the return air in COOLING mode (summer)
42	R/W	SET_BAJA_TEMP_FRIO	Alarm	°C	0	60.0	Setpoint of low temperature on the return air in COOLING mode (summer)
43	R/W	SET_ALTA_TEMP_CALOR	Alarm	°C	0	60.0	Setpoint of high temperature on the return air in HEATING mode (winter)
44	R/W	SET_BAJA_TEMP_CALOR	Alarm	°C	0	60.0	Setpoint of low temperature on the return air in HEATING mode (winter)
45	R/W	TAR_TEMP_RET	Service	°C	-9.9	9.9	Calibration of return air sensor
46	R/W	TAR_TEMP_EXT	Service	°C	-9.9	9.9	Calibration of outdoor air sensor
47	R/W	TAR_TEMP_IMP	Service	°C	-9.9	9.9	Calibration of supply air sensor
48	R/W	TAR_T_P_AP_C1	Service	Bar	-9.9	9.9	Calibration of high pressure transducer of circuit 1
49	R/W	TAR_T_P_AP_C2	Service	Bar	-9.9	9.9	Calibration of high pressure transducer of circuit 2
50	R/W	TAR_TEMP_MEZCLA	Service	°C	-9.9	9.9	Calibration of mixing air sensor
51	R/W	OFFSET_TEMP_AGUA_BAC	Config.	°C	0	10.0	Offset of water temperature of the hot water coil with the unit stopped
52	R/W	OFFSET_RES	Regulation	°C	-5.0	5.0	Offset for control of electrical heaters or gas burner/boiler
53	R/W	BANDA_RES	Regulation	°C	0	99.9	Differ. or control of electrical heaters or gas burner/boiler
54	R/W	TAR_HUM_INT	Service	%rH	-9.9	9.9	Calibration of return humidity sensor
55	R/W	TAR_HUM_EXT	Service	%rH	-9.9	9.9	Calibration of outdoor humidity sensor
56	R/W	SET_TEMP_AGUA_BAC	Config.	°C	0	20.0	Water temperature setpoint of the hot water coil
57	R/W	BANDA_TEMP_AGUA_BAC	Config.	°C	0	5.0	Band of the water temperature setpoint of the hot water coil

Analogue variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
58	R/W	SET_EXT_CALOR	RTC	°C	-99.9	99.9	Time schedule with setpoint change: HEATING mode (winter) outdoor setpoint
59	R/W	SET_EXT_FRIO	RTC	°C	-99.9	99.9	Time schedule with setpoint change: COOLING mode (summer) outdoor setpoint
60	R/W	SET_INT_CALOR	RTC	°C	-99.9	99.9	Time schedule with setpoint change: HEATING mode (winter) indoor setpoint
61	R/W	SET_INT_FRIO	RTC	°C	-99.9	99.9	Time schedule with setpoint change: COOLING mode (summer) indoor setpoint
62	R/W	OFFSET_VALV_CALOR	Regulation	°C	-10.0	0	Auxiliary hot water coil offset (heat valve)
63	R/W	BANDA_VALV_CALOR	Regulation	°C	0	99.9	Auxiliary hot water coil differential (heat valve)
64	R/W	SET_COMP_EXT_CALOR	Regulation	°C	-99.9	99.9	Outdoor temperature compensation setpoint in HEATING mode (winter)
65	R/W	VAL_DIF_COMP_EXT_CALOR	Regulation	°C	-99.9	99.9	Outdoor temperature compensation differential in HEATING mode (winter)
66	R/W	MAX_COMP_EXT_CALOR	Regulation	°C	0	99.9	Maximum compensation in HEATING mode (winter)
67	R/W	SET_C_COND_VEXT	Fan	Bar	0	60.0	Outdoor fan condensation control setpoint
68	R/W	VAL_INI_VEXT_ALTA_VEL_COND	Config.	Bar	0	60.0	Initial value of the outdoor fan at high speed in condensation
69	R/W	BANDA_C_COND_VEXT	Fan	Bar	0	10.0	Outdoor fan condensation control differential
70	R/W	VAL_FIN_VEXT_ALTA_VEL_COND	Config.	Bar	0	60.0	Final value of the outdoor fan at high speed in condensation
71	R/W	FS_SONDA_HUM	Service	%rH	0	100.0	Maximum humidity limit
72	R/W	IS_SONDA_HUM	Service	%rH	0	100.0	Minimum humidity limit
73	R/W	OFFSET_RES_EN_FRIO	Regulation	°C	-99.9	0	Offset for backup with electrical heaters in COOLING mode (summer) due to low return temperature
74	R/W	OFFSET_VALV_CALOR_EN_FRIO	Regulation	°C	-99.9	0	Offset for backup with hot water coil in COOLING mode (summer) due to low return temperature
75	R	VER_SOFT	Status	---	0	99.9	Control board software version
76	R/W	SET_EXT_LIM_CALOR	RTC	°C	-99.9	99.9	Time schedule on by limit setpoint in HEATING mode (winter): limit setpoint
77	R/W	SET_EXT_LIM_FRIO	RTC	°C	-99.9	99.9	Time schedule on by limit setpoint in COOLING mode (summer): limit setpoint
78	R/W	SET_INT_LIM_CALOR	RTC	°C	-99.9	99.9	Time schedule on by limit setpoint in HEATING mode (winter): indoor setpoint
79	R/W	SET_INT_LIM_FRIO	RTC	°C	-99.9	99.9	Time schedule on by limit setpoint in COOLING mode (summer): indoor setpoint
80	R/W	DIF_LIM_FRIO	RTC	°C	0	99.9	Time schedule on by limit setpoint in COOLING mode (summer): limit differential
81	R/W	DIF_LIM_CALOR	RTC	°C	0	99.9	Time schedule on by limit setpoint in HEATING mode (winter): limit differential
82	R/W	SET_ON_VALV_CALOR_POR_BAJA_TEXT	Config.	°C	-10.0	10.0	Setpoint for hot water coil ON with unit OFF due to low outdoor temperature
83	R/W	SET_IMPULSION_CALOR_MAX	Regulation	°C	30.0	55.0	Setpoint for maximum supply air temperature control in HEATING mode (winter)
84	R/W	BANDA_IMP_CALOR	Regulation	°C	0	99.9	Differential for maximum supply air temperature control in HEATING mode (winter)
85	R/W	SET_IMPULSION_CALOR_FC	Config.	°C	0	50.0	Supply air temperature setpoint for turning OFF the fresh air damper in HEATING mode (winter)
86	R/W	SET_TEMP_OFF_FC_CALOR	Config.	°C	0	50.0	Return air temperature setpoint for turning OFF the fresh air damper in HEATING mode (winter)
87	R/W	BANDA_TEMP_OFF_FC_CALOR	Config.	°C	0	5.0	Control band for turning OFF the fresh air damper in HEATING mode (winter)
88	R/W	SET_IMPULSION_FRIO_FC	Config.	°C	0	50.0	Supply air temperature setpoint for turning OFF the fresh air damper in COOLING mode (summer)
89	R/W	SET_TEMP_OFF_FC_FRIO	Config.	°C	0	50.0	Return air temperature setpoint for turning OFF the fresh air damper in COOLING mode (summer)
90	R/W	BANDA_TEMP_OFF_FC_FRIO	Config.	°C	0	5.0	Control band for turning OFF the fresh air damper in COOLING mode (summer)
91	R/W	SET_TEMP_MEZCLA_CALOR	Config.	°C	0	20.0	Mixed air temperature setpoint for turning OFF the fresh air damper in HEATING mode (winter)
92	R/W	SET_TEMP_BLOQ_COMP_FRIO_FC	Compresor	°C	-99.9	99.9	Setpoint for compressor locking in COOLING mode (summer) with free-cooling by outdoor temperature
93	R/W	VAL_DIF_BLOQ_COMP_FRIO_FC	Compresor	°C	-99.9	99.9	Setpoint for compressor locking in COOLING mode with free-cooling by delta ambient T - outdoor T
94	R/W	SET_TEMP_BLOQ_COMP_CALOR	Compresor	°C	-99.9	99.9	Locking setpoint to disconnect all of the compressors in HEATING mode due to the low outdoor temperature (the optional recovery compressor is authorized to operate). In this case the fan will be activated for 60 sec every 30 min
95	R/W	VAL_ON_VEXT_DES_OBL	Defrosting	Bar	10.0	45.0	Setpoint for the outdoor fan connection during the defrosting procedure
96	R/W	VAL_OFF_VEXT_DES_OBL	Defrosting	Bar	10.0	45.0	Setpoint for the outdoor fan disconnection during the defrosting procedure
97	R/W	IS_PRESION	Service	Bar	-2.0	50.0	lower limit of pressure on the pressure transducer
98	R/W	FS_PRESION	Service	Bar	0	50.0	Upper limit of pressure on the pressure transducer
99	R/W	SET_TEMP_CO2_CALOR	Config.	°C	10.0	20.0	Temperature setpoint for turning OFF the fresh air damper in HEATING mode (winter) with CO2 sensor

Analogue variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
100	R/W	SET_C_EVAP_VEXT	Fan	Bar	0	60.0	Outdoor fan evaporation control setpoint
101	R/W	VAL_FIN_VEXT_ALTA_VEL_EVAP	Config.	Bar	0	60.0	Final value for the outdoor fan working at high speed in evaporation
102	R/W	BANDA_C_EVAP_VEXT	Fan	Bar	0	10.0	Outdoor fan evaporation control differential
103	R/W	VAL_INI_VEXT_ALTA_VEL_EVAP	Config.	Bar	0	60.0	Initial value for the outdoor fan working at high speed in evaporation
104	R/W	VAL_DES_MIN	Defrosting	Bar	-25.0	10.0	Setpoint to start the defrosting by minimum pressure
105	R/W	VAL_DES_DIF	Desesc.	°C	5.0	20.0	Initial defrosting setpoint by difference between outdoor T and evaporation T
108	R/W	TAR_TEMP_AMB	Service	°C	-9.9	9.9	Calibration of ambient air temperature sensor
111	R/W	SET_TEXT_VEXT_OFF_DES	Desesc.	°C	-9.9	0	Outdoor temperature setpoint for non-activation of outdoor fans during defrosting
112	R/W	OFFSET_CAL_IMP_CALOR	Regulation	°C	0	30.0	Ambient T compensation in order to calculate supply air setpoint in HEATING mode (winter)
113	R/W	SET_IMPULSION_CALOR_MIN	Regulation	°C	25.0	55.0	Setpoint for minimum supply air temperature control in HEATING mode (winter)
114	R/W	OFFSET_CAL_IMP_FRIO	Regulation	°C	0	30.0	Ambient temperature compensation to calculate supply air setpoint in COOLING mode (summer)
115	R/W	SET_IMPULSION_FRIO_MAX	Regulation	°C	0	30.0	Setpoint for maximum supply air temperature control in COOLING mode (summer)
116	R/W	SET_AL_INCENDIO	Alarm	°C	40.0	80.0	Fire alarm setpoint (return air temperature)
117	R/W	DIF_AL_INCENDIO	Alarm	°C	10.0	50.0	Fire alarm differential (return air temperature)
118	R/W	OFFSET_AL_IMPULSION_ALTA	Alarm	°C	0	20.0	Setpoint compensation for high supply air temperature alarm
119	R/W	DIF_AL_IMPULSION_ALTA	Alarm	°C	1.0	10.0	Differential for high supply air temperature alarm
120	R/W	SET_QUEMADOR_BAJA_TEXT	Comands	°C	-10.0	10.0	Outdoor temperature setpoint to activate gas burner instead of the compressors
121	R	SET_IMPULSION_CALOR_CAL	Status	°C	0	55.0	Supply air setpoint calculated in HEATING mode (winter)
122	R	SET_IMPULSION_FRIO_CAL	Status	°C	0	30.0	Supply air setpoint calculated in COOLING mode (summer)
123	R	TEMP_CAL_HP_C1	Ent. analóg	°C	-99.9	99.9	Temperature calculated by the high pressure transducer of circuit 1
124	R	TEMP_CAL_HP_C2	Ent. analóg	°C	-99.9	99.9	Temperature calculated by the high pressure transducer of circuit 1
127	R/W	VAR_ANALOGICA_AUX_PVPRO_1	Especial	---	-3276.8	3276.7	Analogue variable No.1 saved for the PVPRO
128	R/W	VAR_ANALOGICA_AUX_PVPRO_2	Especial	---	-3276.8	3276.7	Analogue variable No.2 saved for the PVPRO
129	R/W	SET_HAB_RES_TEMP_EXT	Regulation	°C	-20.0	40.0	Setpoint for enabling electrical heaters or gas burner by low outdoor temperature
130	R/W	SET_HUM_OFF_COMPUERTA	Config	%rH	0	100.0	Humidity setpoint for closing the fresh air damper
131	R	CURRENT_L1	Status	A	0	999.9	Current line 1
132	R	CURRENT_L2	Status	A	0	999.9	Current line 2
133	R	CURRENT_L3	Status	A	0	999.9	Current line 3
134	R	REACTIVE_POWER_L1	Status	kVAr	0	999.9	Reactive power line 1
135	R	REACTIVE_POWER_L2	Status	kVAr	0	999.9	Reactive power line 2
136	R	REACTIVE_POWER_L3	Status	kVAr	0	999.9	Reactive power line 3
137	R	POWER_L1	Status	kW	0	999.9	Effective power line 1
138	R	POWER_L2	Status	kW	0	999.9	Effective power line 2
139	R	POWER_L3	Status	kW	0	999.9	Effective power line 3
140	R	POWER_TOTAL	Status	kW	0	999.9	Equivalent power
141	R	VT	Status	---	0	9999	Multiplier of the voltage transformer
142	R	FREQUENCY	Status	Hz	0	99,9	Frequency of power supply
145	R/W	DIF_TEMP_RENOVACION_CAL	Service	°C	0	9.9	Temperature differential for the calculated air renewal
146	R/W	LIM_MIN_HUM_ALARMA	Service	%rH	0	100.0	Minimum humidity limit for alarm signalling
147	R/W	LIM_MAX_HUM_ALARMA	Service	%rH	0	100.0	Maximum humidity limit for alarm signalling
148	R/W	LIM_SUP_TEMP_CALOR	Regulation	°C	20.0	50.0	Upper limit of temperature setpoint in HEATING mode (winter)
149	R/W	LIM_INF_TEMP_CALOR	Regulation	°C	0.0	30.0	Lower limit of temperature setpoint in HEATING mode (winter)
150	R/W	PORC_CAUDAL_50_PORC_ COMP_TANDEM	Comands	%	50	75	% flow of fan with selection of automatic flow reduction
151	R	Sobrepresion	Status	%	0	99,9	Calculation of the overpressure
152	R/W	SET_AJUSTE_SOBREPRESION	Service	---	0	10	Constant adjustment of the calculation of the overpressure
153	R	AOUT_COMPUERTA_ EXTRACCION	Sal. Analogue	---	0	999,9	Output for the extraction air damper
154	R/W	SET_HUM_BLOQ_COMP_FRIO_ FC	Compresor	%rH	0	100	Setpoint of compressor locking in summer with free-cooling with high outdoor humidity
159	R/W	Speed_Input_perc_VENTIL_Fan1	Service	%	0	100	% of speed modulation of the supply fan in VENTILATION mode
160	R/W	Speed_Input_perc_FRIO_Fan1	Service	%	0	100	% of speed modulation of the supply fan in COOLING mode
161	R/W	Speed_Input_perc_CALOR_Fan1	Service	%	0	100	% of speed modulation of the supply fan in HEATING mode

Analogue variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
161	R/W	Speed_Input_perc_CALOR_Fan1	Service	%	0	100	% of speed modulation of the supply fan in HEATING mode
174	R/W	Speed_Input_perc_VENTIL_Fan2	Service	%	0	100	% of speed modulation of the return fan in VENTILATION mode
175	R/W	Speed_Input_perc_FRIO_Fan2	Service	%	0	100	% of speed modulation of the return fan in COOLING mode
176	R/W	Speed_Input_perc_CALOR_Fan2	Service	%	0	100	% of speed modulation of the return fan in HEATING mode
185	R/W	NUM_WO_DIG_1	Config.	---	0	9	Work Order Number of the unit - Digit 1
186	R/W	NUM_WO_DIG_2	Config.	---	0	9	Work Order Number of the unit - Digit 2
187	R/W	NUM_WO_DIG_3	Config.	---	0	9	Work Order Number of the unit - Digit 3
188	R/W	NUM_WO_DIG_4	Config.	---	0	9	Work Order Number of the unit - Digit 4
189	R/W	NUM_WO_DIG_5	Config.	---	0	9	Work Order Number of the unit - Digit 5
190	R/W	NUM_WO_DIG_6	Config.	---	0	9	Work Order Number of the unit - Digit 6
191	R/W	NUM_WO_DIG_7	Config.	---	0	9	Work Order Number of the unit - Digit 7
192	R/W	NUM_WO_DIG_8	Config.	---	0	9	Work Order Number of the unit - Digit 8
193	R/W	SONDA_AMB_1_TEMP	Status	°C	-99.9	99.9	Ambient probe No. 1 - temperature value
194	R/W	SONDA_AMB_1_HUM	Status	%rH	0.0	99.9	Ambient probe No. 1 - humidity value
195	R	SONDA_AMB_1_ROCIO	Status	°C	-99.9	99.9	Ambient probe No. 1 - dew point
196	R	SONDA_AMB_2_TEMP	Status	°C	-99.9	99.9	Ambient probe No. 2 - temperature value
197	R	SONDA_AMB_2_HUM	Status	%rH	0.0	99.9	Ambient probe No. 2 - humidity value
198	R	SONDA_AMB_2_ROCIO	Status	°C	-99.9	99.9	Ambient probe No. 2 - dew point
199	R/W	SEL_TEMP_SONDAS_AMB_FRIO	Config.	---	0	2	Selection of temperature value with 2 to 4 ambient probes in COOLING mode (0: average; 1: minimal; 2: maximum)
200	R/W	SEL_TEMP_SONDAS_AMB_CALOR	Config.	---	0	2	Selection of temperature value with 2 to 4 ambient probes in HEATING mode (0: average; 1: minimal; 2: maximum)
201	R	CAUDAL_RENOVACION_MSK	Status	x10 m^3/h	0	9999	Renovation flow of the outdoor air
204	R	T_P_LP_C1	Ent. analóg	Bar	-99.9	99.9	Low pressure transucer of circuit 1
205	R	T_P_LP_C2	Ent. analóg	Bar	-99.9	99.9	Low pressure transucer of circuit 2
206	R	TEMP_CAL_LP_C1	Ent. analóg	Bar	-99.9	99.9	Temperature calculated by the low pressure transducer of circuit 1
207	R	TEMP_CAL_LP_C2	Ent. analóg	Bar	-99.9	99.9	Temperature calculated by the low pressure transducer of circuit 2
212	R/W	TAR_T_P_LP_C1_AIN06	Service	Bar	-9.9	9.9	Calibration of low pressure transducer of circuit 1
213	R/W	TAR_T_P_LP_C2_AIN09	Service	Bar	-9.9	9.9	Calibration of low pressure transducer of circuit 2
216	R/W	SET_C_COND_VINT	Fan	Bar	0	60.0	Differential for condesation control of the supply fan
217	R/W	BANDA_C_COND_VINT	Fan	Bar	0	10.0	Differential for condesation control of the supply fan
218	R/W	SET_C_EVAP_VINT	Fan	Bar	0	60.0	Setpoint for evaporation control of the supply fan
219	R/W	BANDA_C_EVAP_VINT	Fan	Bar	0	10.0	Differential for the evaporation control of the supply fan
220	R/W	OFFSET_VALV_FRIO	Regulation	°C	0	10.0	Offset of cold water coil (cold valve)
221	R/W	BANDA_VALV_FRIO	Regulation	°C	0	99.9	Differential of cold water coil (cold valve)
222	R/W	SET_TEMP_EXT_CAMBIO_CALOR	Comands	°C	-99.9	99.9	Outdoor temperature setpoint to change to HEATING mode
223	R/W	SET_TEMP_EXT_CAMBIO_FRIO	Comands	°C	-99.9	99.9	Outdoor temperature setpoint to change to COOLING mode
224	R/W	SET_TEMP_MEZCLA_FRIO	Config.	°C	20.0	50.0	Mixed air temperature setpoint for turning OFF the fresh air damper in COOLING mode (summer)
225	R/W	SET_TEMP_CO2_FRIO	Config.	°C	20.0	50.0	Temperature setpoint for turning OFF the fresh air damper in COOLING mode (summer) with CO2 sensor
226	R/W	SET_TEMP_EXT_DES	Desesc.	°C	0.0	50.0	Outdoor temperature setpoint to allow the defrosting by difference between outdoor T and evaporation T
227	R/W	TAR_TEMP_ENTRADA_BAC	Service	°C	-9.9	9.9	Adjust of the water inlet temperature of hot water coil
228	R/W	TAR_TEMP_SALIDA_BAC	Service	°C	-9.9	9.9	Adjust of the water outlet temperature of hot water coil
229	R/W	SET_ANTIHIELO_AGUA_BAC	Config.	°C	-20.0	10.0	Water antifreeze setpoint of the hot water coil
230	R/W	DIF_ANTIHIELO_AGUA_BAC	Config.	°C	0.0	10.0	Differential to reset the water antifreeze of the hot water coil
231	R/W	SONDA_MEZCLA_TEMP	Status	°C	-99.9	99.9	Mixing probe - temperature value
232	R/W	SONDA_MEZCLA_HUM	Status	%rH	0.0	99.9	Mixing probe - humidity value
233	R	SONDA_MEZCLA_ROCIO	Status	°C	-99.9	99.9	Mixing probe - dew point
234	R	SONDA_IMPULSION_TEMP	Status	°C	-99.9	99.9	Supply probe - temperature value
235	R	SONDA_IMPULSION_HUM	Status	%rH	0.0	99.9	Supply probe - humidity value
236	R	SONDA_IMPULSION_ROCIO	Status	°C	-99.9	99.9	Supply probe - dew point
237	R	ENTALPIA_MEZCLA_KCAL	Status	Kcal/ Kg	0.0	99.9	Mixing enthalpy
238	R	ENTALPIA_IMPULSION_KCAL	Status	Kcal/ Kg	0.0	99.9	Supply enthalpy
239	R	Pot_termica	Status	KW	0	3276,7	Calculation of COOLING and HEATING power: total power display
240	R	EER_COP	Status		0	3276,7	Calculation of COOLING and HEATING power: EER or COP value
241	R	SONDA_AMB_3_TEMP	Status	°C	-99.9	99.9	Ambient probe No. 3 - temperature value

Analogue variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
242	R	SONDA_AMB_3_HUM	Status	%rH	0.0	99.9	Ambient probe No. 3 - humidity value
243	R	SONDA_AMB_3_ROCIO	Status	°C	-99.9	99.9	Ambient probe No. 3 - dew point
244	R	SONDA_AMB_4_TEMP	Status	°C	-99.9	99.9	Ambient probe No. 4 - temperature value
245	R	SONDA_AMB_4_HUM	Status	%rH	0.0	99.9	Ambient probe No. 4 - humidity value
246	R	SONDA_AMB_4_ROCIO	Status	°C	-99.9	99.9	Ambient probe No. 4 - dew point
247	R	TEMP_EXTRACCION_RUEDA	Entr. analóg	°C	-99.9	99.9	Extraction air temperature of the wheel
248	R/W	TAR_TEMP_EXTRACCION_RUEDA	Service	°C	-9,9	9,9	Sensor calibration of extraction air temperature of the wheel
249	R	TEMP_RECUPERACION_RUEDA	Entr. analóg	°C	-99.9	99.9	Recovery air temperature of the wheel
250	R/W	TAR_TEMP_RECUPERACION_RUEDA	Service	°C	-9,9	9,9	Sensor calibration of recovery air temperature of the wheel
251	R	TEMP_ASP_C1	Entr. analóg		-99.0	99.0	Suction temperature of circuit 1
252	R	TEMP_ASP_C2	Entr. analóg		-99.0	99.0	Suction temperature of circuit 2 / External coil temperature (unit 1 circuit)
253	R	SH_A_EVOS	Entr. analóg		-3276.8	3276.7	Overheating of circuit 1
254	R	SH_B_EVOS	Entr. analóg		-3276.8	3276.7	Overheating of circuit 2
255	R	A17_EEV_POSITION_PERCENT	Entr. analóg	%	0	100.0	Percentage of opening of the valve in the circuit 1
256	R	A66_EEV_POSITION_PERCENT_2ND	Entr. analóg	%	0	100.0	Percentage of opening of the valve in the circuit 2
257	R/W	A50_SH_SET_msk	Config.	°C/°F	-72.0	324.0	Overheating setpoint of the valve in the circuit 1
258	R/W	A83_SH_SET_2ND_msk	Config.	°C/°F	-72.0	324.0	Overheating setpoint of the valve in the circuit 2
259	R	TEMP_ASP_CR	Entr. analóg	°C/°F	0	3276.7	Suction temperature on the recovery circuit valve
260	R	SH_EVOS_CR	Entr. analóg	%	0	99.9	Overheating of the valve of the recovery circuit
261	R	EEV_POS_PERCENT_CR	Entr. analóg	%	0	999	% of opening of the valve in the recovery circuit
262	R/W	SH_SET_CR	Config.	---	0	99.9	Overheating setpoint of the valve in the recovery circuit
263	R	T_P_HP_CR	Entr. analóg	bar	-99.0	99.0	High pressure transducer of the recovery circuit
264	R	T_P_LP_CR	Entr. analóg	bar	0	9.9	Low pressure transducer of the recovery circuit
265	R	TEMP_CAL_HP_CR	Entr. analóg	°C	-99.0	99.0	Calculated temp.for high pressure of the recovery circuit
266	R	TEMP_CAL_LP_CR	Entr. analóg	°C	-99.0	99.0	Calculated temp. for low pressure of the recovery circuit
267	R	SET_TEMP_DISPLAY	Status	°C	-99.9	99.9	Active setpoint temperature
268	R	DIF_ENTALPIA_POT_TERMICA_KCAL	Status	KJ/Kg	-3276.8	3276.7	Calculation of cooling and heating capacities: display of the input-output enthalpy difference
269	R/W	PORC_CAUDAL_ZONIFICA_MIN	Config.	%	25.0	100.0	Limit of minimum flow % (zoning of the air flow)
270	R/W	PORC_CAUDAL_ZONIFICA_MAX	Config.	%	25.0	100.0	Limit of maximum flow % (zoning of the air flow)
271	R/W	PORC_CAUDAL_ZONIFICA_ZONA1	Config.	%	25.0	100.0	% of flow in the zone 1 (zoning of the air flow)
272	R/W	PORC_CAUDAL_ZONIFICA_ZONA2	Config.	%	25.0	100.0	% of flow in the zone 2 (zoning of the air flow)
273	R/W	PORC_CAUDAL_ZONIFICA_ZONA3	Config.	%	25.0	100.0	% of flow in the zone 3 (zoning of the air flow)
274	R/W	PORC_CAUDAL_ZONIFICA_ZONA4	Config.	%	25.0	100.0	% of flow in the zone 4 (zoning of the air flow)
275	R/W	SET_RES_TRIAC	Regulation	°C	0	30.0	Minimum return temperature to control the electrical heater of preheating in fresh air (unit 100% fresh air)
276	R/W	SET_RET_MAX_RES_TRIAC	Regulation	°C	0	30.0	Maximum return temperature to control the electrical heater of preheating in fresh air (unit 100% fresh air)
277	R/W	SET_HAB_RES_TEMP_EXT_TRIAC	Regulation	°C	-20.0	40.0	Outdoor temperature setpoint for enabling the preheater with electrical heater
278	R/W	BANDA_RET_MAX_RES_TRIAC	Regulation	°C	0	20,0	Control band of the maximum return temperature with PID control of the electrical heater of preheating
279	R/W	BANDA_RES_TRIAC	Regulation	°C	0	20,0	Control band of the minimum return temperature with PID control of the electrical heater of preheating
280	R/W	BANDA_IMP_RES_TRIAC	Regulation	°C	0	20,0	Control band of the minimum supply temperature with PID control of the electrical heater of preheating
281	R/W	BANDA_REHEAT_INT	Regulation	°C	0	20.0	Control band of the dehumidification temperature setpoint with PID control
282	R/W	VAL_VS2_ON_POR_HP	Comands	bar	0	45.0	High pressure value for the activation of the solenoid valve SV2 (active dehumidification)
283	R/W	SET_POINT_TEMP_FRIO_T11_T	Comands	°C	0	50.0	Temperature setpoint in COOLING mode (summer) in the terminal of zone 1 (zoning of the air flow)
284	R/W	SET_POINT_TEMP_CALOR_T11_T	Comands	°C	0	50.0	Temperature setpoint in HEATING mode (winter) in the terminal of zone 1 (zoning of the air flow)
285	R/W	SET_POINT_TEMP_FRIO_T12_T	Comands	°C	0	50.0	Temperature setpoint in COOLING mode (summer) in the terminal of zone 2 (zoning of the air flow)
286	R/W	SET_POINT_TEMP_CALOR_T12_T	Comands	°C	0	50.0	Temperature setpoint in HEATING mode (winter) in the terminal of zone 2 (zoning of the air flow)
287	R/W	SET_POINT_TEMP_FRIO_T13_T	Comands	°C	0	50.0	Temperature setpoint in COOLING mode (summer) in the terminal of zone 3 (zoning of the air flow)
288	R/W	SET_POINT_TEMP_CALOR_T13_T	Comands	°C	0	50.0	Temperature setpoint in HEATING mode (winter) in the terminal of zone 3 (zoning of the air flow)
289	R/W	SET_POINT_TEMP_FRIO_T14_T	Comands	°C	0	50.0	Temperature setpoint in COOLING mode (summer) in the terminal of zone 4 (zoning of the air flow)

Analogue variables (...continuation)

Modbus Address	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
290	R/W	SET_POINT_TEMP_CALOR_T14_T	Comands	°C	0	50.0	Temperature setpoint in HEATING mode (winter) in the terminal of zone 4 (zoning of the air flow)
291	R	TEMP_INT	Entr. analóg	ºC	-99.9	99.9	Indoor temperature for regulation of the unit
292	R	SET_TEMP_DISPLAY_FRIO	Status	ºC	-99.9	99.9	Current setpoint in COOLING mode displayed
293	R	SET_TEMP_DISPLAY_CALOR	Status	ºC	-99.9	99.9	Current setpoint in HEATING mode displayed
294	R	TEMP_TCO11	Entr. analóg	ºC	-99.9	99.9	Display of temperature measured by the terminal probe of zone 1 (zoning of the air flow)
295	R	TEMP_TCO12	Entr. analóg	ºC	-99.9	99.9	Display of temperature measured by the terminal probe of zone 2 (zoning of the air flow)
296	R	TEMP_TCO13	Entr. analóg	ºC	-99.9	99.9	Display of temperature measured by the terminal probe of zone 3 (zoning of the air flow)
297	R	TEMP_TCO14	Entr. analóg	ºC	-99.9	99.9	Display of temperature measured by the terminal probe of zone 4 (zoning of the air flow)
298	R/W	SET_TEMP_BLOQ_COMP_ CALOR_50_PORC	Compresor	°C	-99.9	99.9	Locking setpoint to disconnect half of the compressors in HEATING mode due to the low outdoor temperature
299	R	TEMP_RET_Z1	Entr. analóg	ºC	-99.9	99.9	Display of temp. measured by the optional NTC remote probe in the terminal of zone 1 (zoning of the air flow)
300	R	TEMP_RET_Z2	Entr. analóg	ºC	-99.9	99.9	Display of temp. measured by the optional NTC remote probe in the terminal of zone 2 (zoning of the air flow)
301	R	TEMP_RET_Z3	Entr. analóg	ºC	-99.9	99.9	Display of temp. measured by the optional NTC remote probe in the terminal of zone 3 (zoning of the air flow)
302	R	TEMP_RET_Z4	Entr. analóg	ºC	-99.9	99.9	Display of temp. measured by the optional NTC remote probe in the terminal of zone 4 (zoning of the air flow)
307	R/W	VALUE_AI_sensor_pda_Fan1	Fan	V	0,0	10,0	Minimum value for alarm in supply plug-fan differential pressure sensor
308	R/W	VALUE_AI_sensor_pda_Fan2	Fan	V	0,0	10,0	Minimum value for alarm in return plug-fan differential pressure sensor
309	R/W	SET_POINT_FRIO_ON_EQUIPO	Comands	°C	-99,9	99,9	Temperature setpoint value in COOLING mode for ON of the unit with 100% fresh air
310	R/W	SET_POINT_CALOR_ON_EQUIPO	Comands	°C	-99,9	99,9	Temperature setpoint value in HEATING mode for ON of the unit with 100% fresh air
312	R/W	TAR_TEMP_ASP_C1_AIN08	Regulation	°C/°F	-36,0	36,0	Offset of the suction probe of circuit 1
314	R/W	TAR_TEMP_ASP_C2_AIN11	Regulation	°C/°F	-36,0	36,0	Offset of the suction probe of circuit 2
315	R	REACTIVE_POWER_TOTAL	Status	kVAr	-999,9	999,9	Energy meter reading: total reactive power
316	R	A2L_SENSOR_PERCENT_LFL	Status	%	0,0	100,0	LFL percentage of A2L sensor in the indoor circuit (R-454B gas leak detector)
317	R	A2L_SENSOR_PERCENT_VOL	Status	%	0,0	100,0	Percentage in volume of the A2L sensor in the indoor circuit (R-454B gas leak detector)
318	R	A2L_SENSOR_TEMP	Status	°C	0,0	100,0	Temperature of the A2L sensor of the A2L sensor in the indoor circuit (R-454B gas leak detector)
319	R/W	SP_FIN_VEXT_DES_BEXT	Defrosting	°C	0,0	30,0	Setpoint for the stop of the outdoor fan during defrosting in 1-circuit units
320	R/W	TEMP_SONDA_AMB_BMS_INPUT_ BMS	Status	°C	-99,9	99,9	Ambient temperature written by BMS (digital variable 406 HAB_ SON_AMB_BMS_INPUT_BMS must have value 1)
321	R	SEER	Status	---	0,0	10,0	Seasonal efficiency in COOLING mode with at least one active compressor
322	R	SCOP	Status	---	0,0	10,0	Seasonal efficiency in HEATING mode with at least one active compressor
323	R	SPERF	Status	---	0,0	10,0	Seasonal efficiency in AUTO mode with at least one active compressor
324	R	TH_ENERGY_AUTO	Status	MWh	0,0	4294967,0	Thermal energy in AUTO mode with at least one active compressor
325	R	TH_ENERGY_CALOR	Status	MWh	0,0	4294967,0	Thermal energy in HEATING mode with at least one active compressor
326	R	TH_ENERGY_FRIO	Status	MWh	0,0	4294967,0	Thermal energy in COOLING mode with at least one active compressor

Integer variables

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
1	5002	R/W	TIPO_VENT_EXT	Config.	---	1	4	Outdoor fan type: 3= 2 speeds axial fan; 4= electronic axial fan or plug-fan
2	5003	R/W	CONTROL_QUEMADOR_GAS	Comands	---			Gas burner/boiler control: 0: burner 2nd stage 1: only burner 2: only burner with low outdoor T
3	5004	R	CO2	Status	ppm	0	32767	Reading of the CO2 air quality sensor
4	5005	R/W	SP_CO2	Regulation	ppm	-32767	32767	CO2 air quality control setpoint
5	5006	R/W	DIF_CO2	Regulation	ppm	-32767	32767	CO2 air quality control differential
6	5007	R	Concentration_ppm_Gas_Leakag	Status	ppm	0	32767	Ppm concentration in the R-410A gas leakage detector
7	5008	R	Concentration_Percent_Gas_Leakag	Status	%	0	100	Percentage concentration in the R-410A gas leakage detector
8	5009	R/W	Alarm_Setp_ppm	Alarma	ppm	0	32767	Alarm limit in ppm for R-410A gas leakage detector
9	5010	R/W	TIME_MIN_APERTURA_ON_REC	Config.	s	0	999	Time required with minimum opening fresh air damper for turning ON the recovery compressor
10	5011	R	N_HOR_COMP1	Status	h	0	32767	Operating hours of compressor 1 circuit 1
11	5012	R	N_HOR_COMP2	Status	h	0	32767	Operating hours of compressor 1 circuit 2
12	5013	R	N_HOR_CR	Status	h	0	32767	Operating hours of recovery compressor
13	5014	R/W	SET_HOR_CR	Service	h	0	32000	Operating hours limit of recovery compressor
14	5015	R	ENTALPIA_EXT	Status	kc/kg	0	99999	Outdoor enthalpy (multiplied value x1000)
15	5016	R						
16	5017	R	ENTALPIA_INT	Status	kc/kg	0	99999	Indoor enthalpy (multiplied value x1000)
17	5018	R						
18	5019	R/W	TIME_RET_AL_TEMP	Alarma	s	0	999	Delay in return air temperature alarm (high/low temp.)
19	5020	R/W	TIME_RET_AL_BP	Compressor	s	0	9999	Delay in low pressure alarm
20	5021	R/W	ENTALPIA_DIF_H	Regulation	kc/kg	0	99999	Difference between outdoor and indoor enthalpy
21	5022	R/W						
22	5023	R/W	NUM_COMP_DESHUM	Regulation	---	0	4	Number of compressors during dehumidification
23	5024	R/W	TIME_RET_OFF_VINT_FRIO	Fan	s	0	999	Delay when stopping the supply fan in COOLING mode (summer)
24	5025	R/W	TIME_RET_OFF_VINT_CALOR	Fan	s	0	999	Delay when stopping the supply fan in HEATING mode (winter)
25	5026	R/W	TIME_RET_ON_COMP_ON_VINT	Fan	s	0	999	Delay when starting the compressors after starting the supply fan
26	5027	R/W	TIME_RET_AL_TERM_VENT_INT	Alarma	s	0	999	Delay for the interlock alarm
27	5028	R/W	TIME_MIN_OFF_COMP	Compressor	s	0	9999	Minimum stop time for the compressors
28	5029	R/W	PASS_LEVEL_1_T	Seguridad	---	0	9999	New USER password
29	5030	R/W	PASS_LEVEL_2_T	Seguridad	---	0	9999	New MAINTENANCE password
30	5031	R/W	PASS_LEVEL_3_T	Seguridad	---	0	9999	New MANUFACTURER password
31	5032	R/W	TIME_MIN_ON_ON_COMP	Compressor	s	0	9999	Minimum time between start-ups of the same compressor
32	5033	R/W	TIME_MIN_ON_ON_COMP_DIST	Compressor	s	0	9999	Time between start-ups of different compressors
33	5034	R/W	TIME_MIN_ON_COMP	Compressor	s	0	9999	Minimum start-up time of a compressor
34	5035	R/W	TIME_RET_INICIO_DES	Defrosting	s	0	999	Delay period before start of defrosting procedure
35	5036	R/W	TIME_MAX_DUR_DES	Defrosting	min	0	999	Maximum defrosting time
36	5037	R/W	SET_RENOVACION	Regulation	%	0	99	% of outdoor air for renewal
37	5038	R/W	SET_HOR_ON_EQUIPO	Service	h	0	32000	Operating hours limit of the unit
38	5039	R/W	SET_HOR_COMP1	Service	h	0	32000	Operating hours limit of compressor 1 circuit 1
39	5040	R/W	SET_HOR_COMP2	Service	h	0	32000	Operating hours limit of compressor 1 circuit 2
40	5041	R/W	TIME_ENTRE_DES_DIF	Defrosting	min	0	99	Minimum time between defrosting of the same circuit by difference with outdoor temperature
41	5042	R/W	NUM_RES	Config.	---	0	4	Number of electrical heater stages: 1: 1 elec. heater 2: 2 elec. heater 4: proportional
42	5043	R/W	TIME_INTEGRACION	Fan	s	0	999	Integral time for proportional + integral control (P+I)
43	5044	R/W	TIPO_REFRIGERANTE	Config.	---	0	5	Type of refrigerant: 4: R410A 5: R454B
44	5045	R	N_ARR_CR	Status	---	0	99999	Number of starts of recovery compressor
45	5046	R						
46	5047	R/W	TIPO_SONDA_AMB	Config.	---	1	7	Type of ambient probe: 1: 1 probe RS485 2: 2 probes RS485 3: in SHRD network 4: 1 probe NTC 5: 3 probes RS485 6: 4 probes RS485 7: 1 probe 4/20mA
47	5048	R	MINUTO	Status	min	0	99	Clock setting: minute
48	5049	R	HORA	Status	h	0	99	Clock setting: hour

Integer variables (...continuation)

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
49	5050	R	DIA	Status	---	0	99	Clock setting: day
50	5051	R	MES	Status	---	0	99	Clock setting: month
51	5052	R	ANO	Status	---	0	99	Clock setting: year
52	5053	R	DIA_SEMANA	Status	---	0	9	Clock setting: weekday
53	5054	R	N_HOR_COMP1_2	Status	---	0	32767	Operating hours of compressor 2 of circuit 1
54	5055	R/W	TIPO_TEMP_EXT	Config.	---	0	2	Type of outdoor air temperature sensor: 0= No; 1= Actual, 2= in SHRD network
55	5056	R/W	TIPO_SONDA_HUM_EXT	Config.	---	0	2	Type of outdoor air relative humidity sensor: 0= No; 1= Actual, 2= in SHRD network
56	5057	R/W	TIPO_SONDA_HUM_INT	Config.	---	0	3	Type of indoor relative humidity sensor: 0= No; 1= Actual, 2= in SHRD network; 3= RS485
57	5058	R/W	TIPO_RELOJ	Config.	---	0	2	Type of clock board: 0= No; 1= Actual, 2= in SHRD network
58	5059	R/W	MODELO_EQUIPO	Config.	---	0	99	Selection of the unit model
59	5060	R/W	SEL_FRIO_CALOR	Config.	---	0	4	COOLING/HEATING mode selection: 0: by keyboard 1: remote (by digital input) 2: auto 3: only ventilation 4: ventil. 100% fresh air
60	5061	R/W	NUM_COMP_CIRC	Config.	---	0	7	Number of compressors: 0: no compresor 2: 2 comp./ 1 circuit 6: 4 comp./ 2 circuits
61	5062	R/W	NUM_RES_DES	Config.	---	0	3	Number of electrical heater stages during defrosting
62	5063	R	N_HOR_ON_EQUIPO	Status	---	0	32767	Operating hours of the unit
64	5065	R/W	TIME_MIN_DUR_DES	Defrosting	min	0	999	Minimum defrosting time
65	5066	R/W	TIME_AL_VIRT	Alarma	s	0	9999	Delay of alarm for disconnection of the sensor in the SHRD shared network
66	5067	R	NUM_AL	Status	---	0	99	Number of active alarms
67	5068	R/W	SET_HOR_COMP1_2	Service	h	0	32000	Operating hours limit of compressor 2 of circuit 1
68	5069	R/W	MIN_APERTURA_ON_REC	Config.	%	0	99	% opening of damper to enable the start-up of the recovery compressor
69	5070	R	N_HOR_COMP2_2	Status	h	0	32767	Operating hours of compressor 2 of circuit 2
70	5071	R/W	SET_HOR_COMP2_2	Service	h	0	32000	Operating hours limit of compressor 2 of circuit 2
71	5072	R/W	TIPO_PROG_HORARIA	RTC	---	0	4	Start-up type for the time schedule: 0: ON-OFF 1: only setpoint change 2: ON-OFF + limit setpoint 3: Manual (Forced) 4: 3 setpoint + unit ON/OFF
72	5073	R/W	TIPO_BLOQ_COMP_FRIO_FC	Compressor	---	0	2	Disable the compressors with free-cooling in COOLING mode (summer): 0: no 1: delta ambient T - outdoor T 2: oudoor set
73	5074	R/W	TIME_ARR_FORZADO	RTC	s	1	999	Minimum running time with forced start-up (h)
74	5075	R/W	H_ARR_1A	RTC	h	0	23	Start-up hour slot 1 programme 1
75	5076	R/W	M_ARR_1A	RTC	min	0	59	Start-up minute slot 1 programme 1
76	5077	R/W	H_PAR_1A	RTC	h	0	23	Stop hour slot 1 programme 1
77	5078	R/W	M_PAR_1A	RTC	min	0	59	Stop minute slot 1 programme 1
78	5079	R/W	H_ARR_1B	RTC	h	0	23	Start-up hour slot 2 programme 1
79	5080	R/W	M_ARR_1B	RTC	min	0	59	Start-up minute slot 2 programme 1
80	5081	R/W	H_PAR_1B	RTC	h	0	23	Stop hour slot 2 programme 1
81	5082	R/W	M_PAR_1B	RTC	min	0	59	Stop minute slot 2 programme 1
82	5083	R/W	H_ARR_1C	RTC	h	0	23	Start-up hour slot 3 programme 1
83	5084	R/W	M_ARR_1C	RTC	min	0	59	Start-up minute slot 3 programme 1
84	5085	R/W	H_PAR_1C	RTC	h	0	23	Stop hour slot 3 programme 1
85	5086	R/W	M_PAR_1C	RTC	min	0	59	Stop minute slot 3 programme 1
86	5087	R/W	H_ARR_2A	RTC	h	0	23	Start-up hour slot 1 programme 2
87	5088	R/W	M_ARR_2A	RTC	min	0	59	Start-up minute slot 1 programme 2
88	5089	R/W	H_PAR_2A	RTC	h	0	23	Stop hour slot 1 programme 2
89	5090	R/W	M_PAR_2A	RTC	min	0	59	Stop minute slot 1 programme 2
90	5091	R/W	H_ARR_2B	RTC	h	0	23	Start-up hour slot 2 programme 2
91	5092	R/W	M_ARR_2B	RTC	min	0	59	Start-up minute slot 2 programme 2
92	5093	R/W	H_PAR_2B	RTC	h	0	23	Stop hour slot 2 programme 2
93	5094	R/W	M_PAR_2B	RTC	min	0	59	Stop minute slot 2 programme 2
94	5095	R/W	H_ARR_2C	RTC	h	0	23	Start-up hour slot 3 programme 2
95	5096	R/W	M_ARR_2C	RTC	min	0	59	Start-up minute slot 3 programme 2

Integer variables (...continuation)

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
96	5097	R/W	H_PAR_2C	RTC	h	0	23	Stop hour slot 3 programme 2
97	5098	R/W	M_PAR_2C	RTC	min	0	59	Stop minute slot 3 programme 2
98	5099	R/W	H_ARR_3A	RTC	h	0	23	Start-up hour slot 1 programme 3
99	5100	R/W	M_ARR_3A	RTC	min	0	59	Start-up minute slot 1 programme 3
100	5101	R/W	H_PAR_3A	RTC	h	0	23	Stop hour slot 1 programme 3
101	5102	R/W	M_PAR_3A	RTC	min	0	59	Stop minute slot 1 programme 3
102	5103	R/W	H_ARR_3B	RTC	h	0	23	Start-up hour slot 2 programme 3
103	5104	R/W	M_ARR_3B	RTC	min	0	59	Start-up minute slot 2 programme 3
104	5105	R/W	H_PAR_3B	RTC	h	0	23	Stop hour slot 2 programme 3
105	5106	R/W	M_PAR_3B	RTC	min	0	59	Stop minute slot 2 programme 3
106	5107	R/W	H_ARR_3C	RTC	h	0	23	Start-up hour slot 3 programme 3
107	5108	R/W	M_ARR_3C	RTC	min	0	59	Start-up minute slot 3 programme 3
108	5109	R/W	H_PAR_3C	RTC	h	0	23	Stop hour slot 3 programme 3
109	5110	R/W	M_PAR_3C	RTC	min	0	59	Stop minute slot 3 programme 3
110	5111	R/W	LUN_A	RTC	---	0	3	Selection of the schedule programme for Monday
111	5112	R/W	MAR_A	RTC	---	0	3	Selection of the schedule programme for Tuesday
112	5113	R/W	MIE_A	RTC	---	0	3	Selection of the schedule programme for Wednesday
113	5114	R/W	JUE_A	RTC	---	0	3	Selection of the schedule programme for Thursday
114	5115	R/W	VIE_A	RTC	---	0	3	Selection of the schedule programme for Friday
115	5116	R/W	SAB_A	RTC	---	0	3	Selection of the schedule programme for Saturday
116	5117	R/W	DOM_A	RTC	---	0	3	Selection of the schedule programme for Sunday
117	5118	R/W	CONF_OUT07	Config.	---	0	5	Type of element connected on the digital output OUT07: 0: Humidifier 1: Pump in HWC circuit 2: Pump in boiler circuit 3: Alarm 4: Inverter compressor 5: Rotary heat exchanger
118	5119	R/W	TIPO_FREECOOLING	Config.	---	0	2	Type of free-cooling: thermal, enthalpic or thermal enthalpic: 0: thermal 1: enthalpic 2: thermoenthalpic
119	5120	R/W	_NEW_HOUR	RTC	h	0	23	Clock setting: new hour
120	5121	R/W	_NEW_MINUTE	RTC	min	0	59	Clock setting: new minutes
121	5122	R/W	_NEW_DIA	RTC	---	1	31	Clock setting: new day
122	5123	R/W	_NEW_MES	RTC	---	1	12	Clock setting: new month
123	5124	R/W	_NEW_ANO	RTC	---	0	99	Clock setting: new year
124	5125	R	RENOVACION_CAL	Status	%	0	99	Calculation of air renewal % depending on mixing temperature
125	5126	R	CAL_APER_RENOV_2	Status	%	0	99	Calculation of damper opening % depending on renewal
126	5127	R	SET_RENOVACION_CAL	Status	%	0	99	Calculation of outdoor air % allowed for renewal
127	5128	R/W	TIPO_SONDA_RENOVACION	Config.	---	0	7	Type of sensor installed on the analogue input B8: 0: None 1: Mixed air temperature 2: Actual air quality probe 3: Air quality probe in SHRD network 4: Actual air quality probe (2 probes) 5: Ambient air quality + Outdoor air quality probe 6: Differ. pressure sensor 7: Air quality - RS485
128	5129	R/W	DESCONEXION_NUM_COMPRESORES	Comands	---	0	4	Number of stages of compressors to disconnect
129	5130	R/W	DESCONEXION_NUM_RESISTENCIAS	Comands	---	0	3	Number of stages of electrical heaters to disconnect
130	5131	R	NUM_ETAPAS_COMPRESOR	Status	---	0	4	Number of compressor stages
131	5132	R/W	MAX_APERTURA_COMPUERTA	Regulation	%	0	100	Maximum opening of the fresh air damper
132	5133	R/W	TIME_INT_C_EVAP_VEXT	Fan	s	0	999	Integral time for PI control for outdoor unit evaporation control
133	5134	R/W	TIME_INT_C_COND_VEXT	Fan	s	0	999	Integral time for PI control for outdoor unit condensation control
134	5135	R	NUM_WO	Status	---	0	9999	Number of work order of the unit (WO)
135	5136	R						
136	5137	R	N_HOR_VENT	Status	h	0	32767	Operating hours of the supply fan
137	5138	R	N_HOR_RES1	Status	h	0	32767	Operating hours of electrical heater No. 1
138	5139	R	N_HOR_RES2	Status	h	0	32767	Operating hours of electrical heater No. 2
139	5140	R	N_ARR_V_INT	Status	---	0	9999	Number of starts of the supply fan
140	5141	R						
141	5142	R	N_ARR_COMP1	Status	---	0	9999	Number of starts of compressor 1 circuit 1
142	5143	R						
143	5144	R	N_ARR_COMP1_2	Status	---	0	9999	Number of starts of compressor 2 circuit 1
144	5145	R						

Integer variables (...continuation)

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
145	5146	R	N_ARR_COMP2	Status	---	0	9999	Number of starts of compressor 1 circuit 2 (high level)
146	5147	R						
147	5148	R	N_ARR_COMP2_2	Status	---	0	9999	Number of starts of compressor 2 circuit 2 (high level)
148	5149	R						
149	5150	R	N_ARR_RES1	Status	---	0	9999	Number of starts of elec.l heater stage No. 1 (high level)
150	5151	R						
151	5152	R	N_ARR_RES2	Status	---	0	9999	Number of starts of ele. heater stage No. 2 (high level)
152	5153	R						
153	5154	R	N_DES_C1	Status	---	0	9999	Number of defrosting procedures for circuit 1 (high level)
154	5155	R						
157	5158	R	N_DES_C2	Status	---	0	9999	Number of defrosting procedures for circuit 2 (high level)
158	5159	R						
161	5162	R	N_SEG_ULT_DES_C1	Status	---	0	999	No. of seconds since the last defrosting procedure circuit 1
163	5164	R	N_SEG_ULT_DES_C2	Status	---	0	999	No. of seconds since the last defrosting procedure circuit 2
165	5166	R/W	MIN_APERTURA_COMPUERTA	Regulation	%	0	100	Minimum opening of the fresh air damper
166	5167	R/W	TIME_ON_AUTOSTART	Regulation	s	5	999	Automatic start-up time after locking
167	5168	R	VOLTAGE_L1_L2	Status	V	0	9999	Reading of the energy meter: Voltage between lines 1 and 2
168	5169	R	VOLTAGE_L2_L3	Status	V	0	9999	Reading of the energy meter: Voltage between lines 2 and 3
169	5170	R	VOLTAGE_L3_L1	Status	V	0	9999	Reading of the energy meter: Voltage between lines 3 and 1
170	5171	R	VOLTAGE_L1	Status	V	0	9999	Reading of the energy meter: Voltage line 1
171	5172	R	VOLTAGE_L2	Status	V	0	9999	Reading of the energy meter: Voltage line 2
172	5173	R	VOLTAGE_L3	Status	V	0	9999	Reading of the energy meter: Voltage line 3
173	5174	R	POWER_FACTOR	Status	---	0	32	Reading of the energy meter: Power factor of the energy meter
174	5175	R	REACTIVE_ENERGY	Status	kVArh	0	9999	Reading of the energy meter: Reactive energy
175	5176	R						
176	5177	R	ENERGY	Status	KWh	0	9999	Reading of the energy meter: Energy
177	5178	R						
178	5179	R	CT	Status	---	0	9999	Reading of the energy meter: Multiplier of the current transformer
179	5180	R	SYSTEM_TYPE	Status	---	0	5	Type of power supply system of the energy meter: Gavazzi: 0: 3p, 1: 3P.n, 2: 2P, 3: 1P, 4: 3P.A Onrom Onrom: 0:1P2W; 1:1P3W; 2:3P3W; 3: 1P2W2; 4:1P3W2; 5:3P4W
180	5181	R	HOURMETER_EM	Status	h	0	9999	Operating hours of the energy meter
181	5182	R						
182	5183	R/W	TIPO_EQUIPO	Config.	---	0	1	Selection of the type of unit: 0: air-air
184	5185	R/W	MIN_AOUT_VENT_EXT	Config.	%	0	100	Minimum analogue output for outdoor fan
185	5186	R/W	TIME_ON_VEXT_INI_DES	Defrosting	s	0	120	Outdoor fan connection time at the start of defrosting
186	5187	R/W	TIME_VINT_ON_ANTIESTRATIF	Fan	min	0	999	Anti-stratification: supply fan ON time
187	5188	R/W	TIME_VINT_OFF_ANTIESTRATIF	Fan	min	0	999	Anti-stratification: supply fan OFF time
188	5189	R/W	PORCEN_TEMP_OFF_DESH	Config.	%	0	100	% return air temperature with regard to the setpoint for disconnection of compressor in dehumidification
189	5190	R/W	PORCEN_TEMP_ON_DESH	Config.	%	0	100	% return air temperature with regard to the setpoint for the connection of compressor in dehumidification
190	5191	R/W	HAB_HUMIDIFICA	Config.	---	0	2	Enabling humidification function: 0: no 1: on/off 2: proportional
191	5192	R	INFO_EQUIPO_1	Status	---	0	1	Type of air-air unit: 0: air-air cooling only 1: air-air heat pump
192	5193	R	INFO_EQUIPO_2	Status	---	0	17	Unit information: compressors-circuits: 2: 2 comp/1 circ 6: 4 comp/2 circ 10: recovery comp (RC) 12: 2 comp/1 circ + RC 16: 4 comp/2 circ + RC
193	5194	R	INFO_EQUIPO_3	Status	---	0	4	Unit information: heating backup 0: --- 1: electrical heaters 2: gas burner/boiler 4: hot water coil
194	5195	R/W	TIME_CAL	Service	s	0	99	Damper opening calculation time
195	5196	R/W	V_CAL	Service	%	0	99	% damper opening in calculation time
196	5197	R/W	TIPO_VENT_INT	Config.	---	0	3	Type of supply fan: 3: plug-fan
197	5198	R/W	SET_CAUDAL_VINT_VENTILACION	Service	x10 m^3/h	0	9999	Flow setpoint in ventilation with the plug-fan supply fan
198	5199	R	CAUDAL_VINT_MEDIDO_AJUSTE	Status	x10 m^3/h	0	9999	Flow rate measured with plug-fan supply fan

Integer variables (...continuation)

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
199	5200	R	actual_speed_msk_Fan1	Status	rpm	0	9999	Speed measured with plug-fan supply fan
200	5201	R/W	SET_CAUDAL_VINT_FRIO	Service	x10 m^3/h	0	9999	Flow rate setpoint in cooling mode with plug-fan supply fan
201	5202	R/W	SET_CAUDAL_VINT_ CALOR	Service	x10 m^3/h	0	9999	Flow rate setpoint in heating mode with plug-fan supply fan
202	5203	R/W	TIPO_VENT_RET	Config.	---	0	3	Type of return fan: 0: none 2: radial 3: plug-fan
203	5204	R/W	SET_CAUDAL_VRET_ VENTILACION	Service	x10 m^3/h	0	9999	Flow rate setpoint in ventilation mode with return plug-fan
204	5205	R	CAUDAL_VRET_MEDIDO_ AJUSTE	Status	x10 m^3/h	0	9999	Flow rate measured with return plug-fan
205	5206	R	actual_speed_msk_Fan2	Status	rpm	0	9999	Speed measured with return plug-fan
206	5207	R/W	SET_CAUDAL_VRET_FRIO	Service	x10 m^3/h	0	9999	Flow rate setpoint in cooling mode with return plug-fan
207	5208	R/W	SET_CAUDAL_VRET_ CALOR	Service	x10 m^3/h	0	9999	Flow rate setpoint in heating mode with return plug-fan
--	5209	R/W	MAX_APERTURA_ COMPUERTA_FREE	Regulation	%	0	100	Maximum opening of the fresh air damper with freecooling or freeheating
--	5211	R/W	TIME_RET_OFF_BOMBA_ BAC	Config.	s	0	999	Delay time to stop the pump of the hot water coil
--	5212	R/W	MIN_APERTURA_VALV_ CALOR	Config.	%	0	100	Minimum opening of heat valve (HWC) with low outdoor temperature and the unit working
--	5213	R	N_HOR_VALV_CALOR	Status	h	0	32767	Operating hours of the hot water coil
--	5214	R	N_HOR_FREEC_FREEH	Status	h	0	32767	Operating hours of the free-cooling or free-heating
--	5215	R	N_HOR_REC_ROTATIVO	Status	h	0	32767	Operating hours of the rotary heat exhanger
--	5216	R/W	TAR_CO2	Service	ppm	-9999	9999	Air quality probe set
--	5217	R/W	TIME_RET_ON_VINT	Fan	s	0	999	Delay time to start the indoor with unit “ON”
--	5218	R/W	CONTROL_TCO_SONDA	Config.	---	0	2	Selection of the control probe with User terminal: 0: TCO terminal 1: Ambient 2: Return
--	5219	R/W	CONF_OUT01_MOD_N8	Config.	---	0	8	Element on the digital output 01 of c.pCOe expansion card with addr.8: 0: Humidifier 1: Pump of the HWC circuit 2: Pump of the boiler circuit 3: General alarm 4: Inverter compressor 5: Rotary heat exchanger 6: Preheating electrical heater of fresh air with dehumidification 7: compressor OFF by crankcase resistance timing 8: freecooling ON for damper by-pass on the rotary heat exchanger
--	5220	R/W	CONF_OUT04_MOD_N8	Config.	---	0	8	Element on the digital output 04 of c.pCOe expansion card with addr.8: 0: Humidifier 1: Pump of the HWC circuit 2: Pump of the boiler circuit 3: General alarm 4: Inverter compressor 5: Rotary heat exchanger 6: --- 7: compressor OFF by crankcase resistance timing 8: freecooling ON for damper by-pass on the rotary heat exchanger
--	5221	R/W	CO2_FISICA_zona2	Status	ppm	0	32767	Reading of the second CO2 air quality probe (installation in the environment or outdoor) or zone 2 probe (zoning into 2 zones)
--	5222	R/W	TAR_CO2_zona2	Service	ppm	-9999	9999	Calibration of the second CO2 air quality probe (installation in the environment or outdoor) or zone 2 probe (zoning into 2 zones)
--	5223	R/W	Power_factor_setpoint	Service	---	0	99	Power factor setpoint
--	5224	R	AOUT_REC_ROT_ VARIABLE	Status	%	0	100	Analogue output for the rotary heat exchanger with variable wheel
--	5225	R	Analog_IN2_Ebm_Fan1	Status	---	0	32767	Current value on the differential pressure sensor with supply plug-fan
--	5226	R	Analog_IN2_Ebm_Fan2	Status	---	0	32767	Current value on the differential pressure sensor with return plug-fan
--	5227	R/W	MIN_APERTURA_ON_REC_ CALOR	Config.	%	0	99	% of minimum opening of fresh air damper to allow the start of the recovery compressor
--	5228	R/W	TIPO_PROT_COM	Config.	---	0	1	Type of protocol in supervision network: Modbus RTU
--	5229	R/W	BMS_ADDRESS	Config.	---	1	207	Address of the unit in the supervision network of the BMS port it is connected to (BMS1 or BMS2)
--	5230	R/W	BAUD_RATE	Config.	---	0	5	Bits rate in the supervision network of the BMS port it is connected to (BMS1 or BMS2): 0=1200, 1=2400, 2=4800, 3=9600, 4=19200, 5= 38400
--	5231	R/W	Parity_Type_MB	Config.	---	0	2	Type of parity for the MODBUS protocol in the supervision network of the BMS port it is connected to (BMS1 or BMS2): 0= no; 1= pair; 2= odd
--	5232	R	Densidad_aire_impulsion	Status	x10 g/m^3	0	9999	Calculation of cooling and heating capacities: display of air density

Integer variables (...continuation)

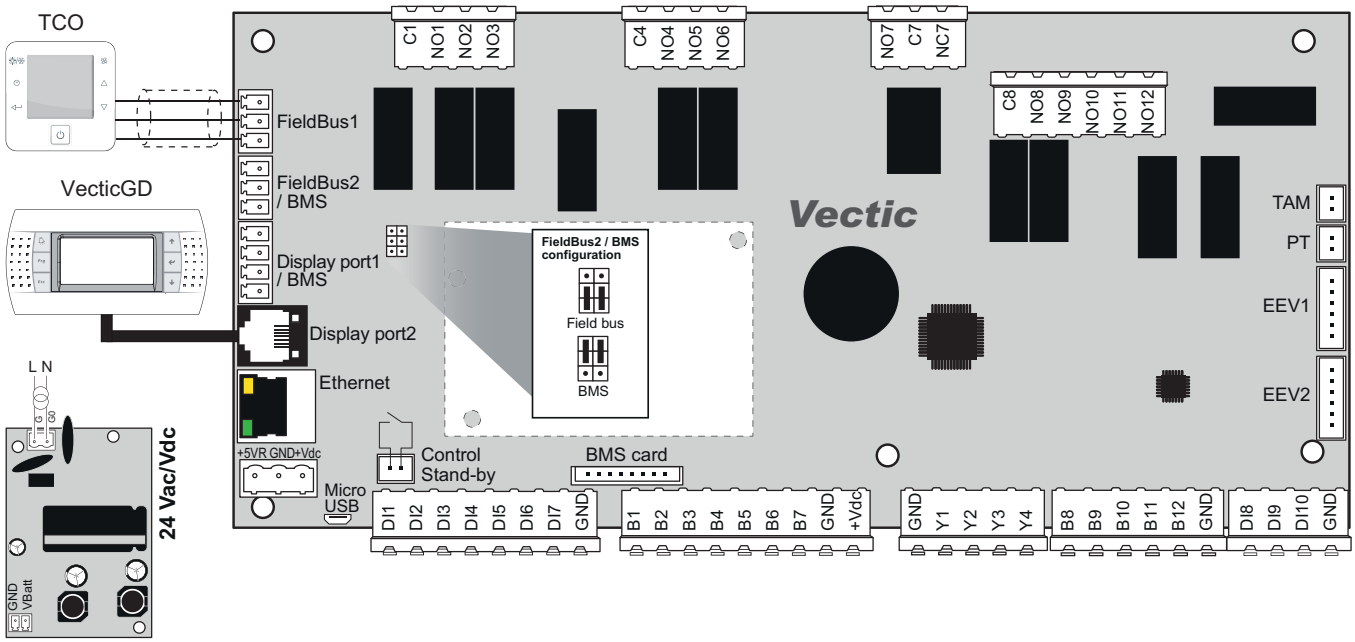
Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
--	5233	R	PORC_COMPRESORES	Status	%	0	999	Calculation of cooling and heating capacities: display of compressor stages (%)
--	5234	R/W	LIM_MAX_SET_RENOVACION_ CON_CO2	Config.	%	0	100	Maximum opening of the fresh air damper for AIR RENEWAL with CO2 probe
--	5235	R/W	SEL_CO2_SONDAS_CO2	Config.	---	0	2	Selection of CO2 value with two CO2 probes (0=average, 1=minimum; 2=maximum)
--	5236	R/W	TIME_INTEGRACION_RET_M_ RES_TRIAC	Config.	s	0	999	Integration time of the maximum return temperature with PID control of the electrical heater of preheating
--	5237	R/W	TIME_INTEGRACION_RES_ TRIAC	Config.	s	0	999	Integration time of the minimum return temperature with PID control of the electrical heater of preheating
--	5238	R/W	TIME_INTEGRACION_IMP_RES_ TRIAC	Config.	s	0	999	Integration time of the minimum supply temperature with PID control of the electrical heater of preheating
--	5239	R	AOUT_RESISTENCIAS_TRIAC	Status	%	0	32767	Display of % for the TRIAC opening to control the supply temperature with electrical heater of preheating
--	5240	R/W	MIN_AOUT_RESISTENCIAS_ TRIAC	Config.	%	0	100	Maximum % for the TRIAC opening to control the supply temperature with electrical heater of preheating
--	5241	R/W	MAX_AOUT_RESISTENCIAS_ TRIAC	Config.	%	0	100	Maximum return temperature to control the electrical heater of preheating in fresh air (unit 100% fresh air)
--	5242	R/W	TIME_INTEGRACION_REHEAT_ INT	Config.	s	0	999	Integration time of the dehumidification temperature setpoint with PID control
--	5243	R	AOUT_REHEAT_TEMP_INT	Status	%	0	32767	Display of % for the TRIAC opening to control the dehumidification temperature with electrical heater of preheating
--	5244	R/W	MIN_AOUT_DESHUM_REHEAT	Config.	%	0	100	Minimum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)
--	5245	R/W	MAX_AOUT_DESHUM_REHEAT	Config.	%	0	100	Maximum opening of the 3-way valve (3-WV) of the condensation coil (active dehumidification)
--	5246	R/W	TIME_RET_OFF_VS2_ DESPUES_KG	Config.	s	0	999	Activation of the solenoid valve SV2 during the first 300 seconds of the compressor start-up in COOLING mode (active dehumidification)
--	5247	R/W	TIME_RET_OFF_VS2_ DESPUES_HP	Config.	s	0	999	Activation of the solenoid valve SV2 during the first 300 seconds after having passed a pressure of 40.0 bar (active dehumidification)
--	5248	R/W	TIME_INTEGRACION_HUM_ DESHUM	Config.	s	0	9999	Integration time with PI humidity control
--	5249	R	SP_LIM_CO2_EXTERIOR	Regulation	ppm	0	5000	Setpoint of the outdoor probe for CO2 air quality control (ppm). From this value the oudoor damper is closed.
--	5250	R	DIF_LIM_CO2_EXTERIOR	Regulation	ppm	0	1000	Differential of the outdoor probe for CO2 quality control (ppm)
--	5251	R/W	MAX_AOUT_VENT_EXT_FRIO	Config.	%	30	100	Maximum analogue output for the outdoor fan in COOLING mode
--	5252	R/W	MAX_AOUT_VENT_EXT_CALOR	Config.	%	30	100	Maximum analogue output for the outdoor fan in HEATIING mode
--	5253	R/W	MAX_AOUT_VENT_EXT_FRIO_ EN_ON	Config.	%	30	100	Maximum analogue output to connect the outdoor fan in COOLING mode
--	5254	R/W	MAX_AOUT_VENT_EXT_ CALOR_EN_ON	Config.	%	30	100	Maximum analogue output to connect the outdoor fan in HEATING mode
--	5255	R/W	MAX_AOUT_VENT_EXT_FRIO_ EN_OFF	Config.	%	30	100	Maximum analogue output to disconnect the outdoor fan in COOLING mode
--	5256	R/W	MAX_AOUT_VENT_EXT_ CALOR_EN_OFF	Config.	%	30	100	Maximum analogue output to disconnect the outdoor fan in HEATING mode
--	5257	R	CO2_FISICA_zona1	Status	ppm	0	32767	Reading of the CO2 probe (zone 1) (zoning into 2 zones)
--	5258	R/W	LIM_MIN_SET_RENOVACION_ CON_CO2	Regulation	%	0	99	Minimum opening of the fresh air damper for AIR RENEWAL with CO2 probe
--	5259	R/W	TIME_SET_RENOVACION_CON_ CO2	Regulation	%	0	99	Time with minimum opening of the fresh air damper for AIR RENEWAL with CO2 probe
--	5266	R/W	AIN1_Max_Value_Ebm_Fan1	Fan	Pa	0	5000	Maximum limit of the air pressure differential sensor with supply plug-fan
--	5267	R/W	AIN1_Max_Value_Ebm_Fan2	Fan	Pa	0	5000	Maximum limit of the air pressure differential sensor with return plug-fan
--	5268	R/W	AIN1_Min_Value_Ebm_Fan1	Fan	Pa	0	5000	Minimum limit of the air pressure differential sensor with supply plug-fan
--	5269	R/W	AIN1_Min_Value_Ebm_Fan2	Fan	Pa	0	5000	Minimum limit of the air pressure differential sensor with return plug-fan
--	5270	R/W	TIME_RET_Al_sensor_pda_Fan1	Fan	s	10	120	Delay time to start the supply fan for alarm signalling of the air pressure differential sensor
--	5271	R/W	TIME_RET_Al_sensor_pda_Fan2	Fan	s	10	120	Delay time to start the return fan for alarm signalling of the air pressure differential sensor
--	5276	R/W	Speed_Input_Rpm_FRIO_Fan1	Fan	rpm	0	2950	Speed (rpm) in COOLING mode with supply plug-fan
--	5277	R/W	Speed_Input_Rpm_FRIO_Fan2	Fan	rpm	0	2950	Speed (rpm) in COOLING mode with return plug-fan
--	5278	R/W	Speed_Input_Rpm_CALOR_Fan1	Fan	rpm	0	2950	Speed (rpm) in HEATING mode with supply plug-fan
--	5279	R/W	Speed_Input_Rpm_CALOR_Fan2	Fan	rpm	0	2950	Speed (rpm) in HEATING mode with return plug-fan
--	5280	R/W	Speed_Input_Rpm_VENTIL_Fan1	Fan	rpm	0	2950	Velocidad (rpm) en modo VENTILACIÓN con ventilador de impulsión plug-fan

Integer variables (...continuation)

Modbus Address	Ext. Add.	Read / Write	Variable	Parameter type	UOM	Min. value	Max. value	Description
--	5281	R/W	Speed_Input_Rpm_VENTIL_ Fan2	Fan	rpm	0	2950	Speed (rpm) in VENTILATION mode with return plug-fan
--	5282	R/W	Control_mode_SET1_Fan1	Fan	---	0	2	Type of flow control with supply plug-fan: 0= RPM control 1= Flow control 2= PWM control
--	5283	R/W	Control_mode_SET1_Fan2	Fan	---	0	2	Type of flow control with return plug-fan: 0= RPM control 1= Flow control 2= PWM control
--	5284	R/W	ThTune_Fan_Status	Config.	---	1	3	Speed of the supply plug-fan with TCO terminal: 1=speed 1 2=speed 2 3=speed 3
--	5285	R/W	TIME_RETURN_MENU	Config.	s	0	9999	Time for the automatic return to the MAIN screen
--	5286	R/W	VIS_Y6	Status	%	0	32767	Display of % proportional humidifier or exhaust damper or 3-way valve (3-WV) of the condensation coil with active dehumidification
--	5287	R	Cont_horas_bloqueo_ compresor	Status	h	0	9	Remaining hours of compressor locking due to a voltage outage
--	5288	R	Cont_min_bloqueo_compresor	Status	min	0	99	Remaining hours of compressor locking due to a voltage outage
--	5289	R	Cont_seg_bloqueo_compresor	Status	s	0	99	Remaining hours of compressor locking due to a voltage outage
--	5290	R/W	TIPO_PRESION_VENT_INT	Regulation	---	1	6	Type of supply fan pressure: 1=low 2=nominal 3=high 4=low, metallic type 5=normal, metallic type 6=high, metallic type
--	5291	R/W	TIPO_PRESION_VENT_RET	Regulation	---	1	4	Type of return fan pressure: 1=nominal 2=high 3=normal, metallic type 4=high, metallic type
--	5292	R	PRES_DIF_IMP	Status	Pa	0	32767	Differential pressure measured in the supply duct for control of constant supply pressure or differential pressure measured for overpressure control or differential pressure measured for pressure control with supply damper
--	5293	R/W	SET_PRES_DIF_IMP	Fan	Pa	0	10000	Differential pressure setpoint in the supply duct for control of constant supply pressure or differential pressure setpoint for overpressure control or differential pressure setpoint for pressure control with supply damper
--	5294	R	A2L_SENSOR_LIFE	Status	días	0	32767	A2L sensor life (in days) (R-454B gas leak detector)
--	5295	R/W	TIME_INI_DES_RESCATE	Defrosting	min	0	999	Time to start the rescue defrosting if the pressure measured by the low transducer is below the defrosting start setpoint, ignoring the outdoor temperature
--	5296	R/W	TIME_DES_C1_2	Defrosting	s	0	999	Time between defrosting of different circuits
--	5297	R/W	TIME_MAX_DUR_DES_MIN	Defrosting	s	0	999	Time of connection of the outdoor fan during the defrosting procedure by minimal pressure
--	5298	R/W	TIME_MAX_DUR_DES_DIF	Defrosting	s	0	999	Time of connection of the outdoor fan during the defrosting procedure by difference between the outdoor temperature and the evaporation temperature
--	5299	R/W	PORC_CAUDAL_VINT_MIN	Config.	%	-100	0	Percentage for minimum flow rate of the supply plug-fan
--	5300	R/W	PORC_CAUDAL_VINT_MAX	Config.	%	0	100	Percentage for maximum flow rate of the supply plug-fan
--	5301	R/W	PORC_CAUDAL_VRET_MIN	Config.	%	-100	0	Percentage for minimum flow rate of the return plug-fan
--	5302	R/W	PORC_CAUDAL_VRET_MAX	Config.	%	0	100	Percentage for maximum flow rate of the return plug-fan
--	5303	R/W	SET_PRES_COMP_IMP	Config.	Pa	0	1000	Differential pressure setpoint for pressure control with supply damper

20 - CONNECTIONS

20.1. Main control board



Analog inputs

Temperature, pressure and humidity reading sensors:

B1: return air temperature probe

B2: outdoor air temperature probe

B3: supply air temperature probe

B4: mixing air temperature probe

B5: NTC ambient air temperature probe (by default) or outdoor air relative humidity probe (optional)

B6: low pressure transducer circuit 1

B7: high pressure transducer circuit 1

B8: suction temperature probe circuit 1

B9: low pressure transducer circuit 2 (units with 2 circuits)

B10: air quality probe or differential air pressure sensor (optionals)

B11: suction temperature probe circuit 2 (units with 2 circuits) or outdoor coil probe (optional in units with 1 circuit)

B12: high pressure transducer circuit 2 (units with 2 circuits)

Digital inputs

Safety devices and failure indication:

DI1: supply fan protection

DI2: smoke detector (optional)

DI3: high pressure switch circuit 1

DI4: compressor and outdoor fan protection circuit 1

DI5: safety thermistor for the electrical heater or gas burner/boiler alarm signal (optionals)

DI6: clogged filter control (optional)

DI7: remote On / Off

DI8: antifreeze safety for the hot water coil

DI9: high pressure switch circuit 2 (units with 2 circuits) or level float of the condensate pump (optional in units with 1 circuit)

DI10: compressor and outdoor fan protection circuit 2 (units with 2 circuits)

Analog outputs

Proportional control of the unit components and optional elements:

Y1: control of the opening of the fresh air damper (optional)

Y2: control of the 3-way valve of the hot water coil or the heat recovery coil or proportional electrical heater or gas burner/boiler or extraction air damper or proportional humidifier (optionals)

Y3: outdoor fan circuit 1: electronic fan (standard in PJ units) or high-speed (optional 2-speed fan in PJ units) or plug-fan (standard in ISPV units)

Y4: outdoor fan circuit 1: electronic fan (standard in PJ units) or high-speed (optional 2-speed fan in PJ units) or plug-fan (standard in ISPV units)

Digital outputs

On/off control of the unit components:

NO1: compressor 1 of circuit 1

NO2: cycle reversing valve circuit 1

NO3: low-speed outdoor fan circuit 1 (optional 2-speed fan)

NO4: supply fan

NO5: 1st stage of electrical heater or gas burner/boiler (optionals)

NO6: 2nd stage of electrical heater (optional)

NO7: signal of remote general alarm or pump in the hot water coil circuit or pump in the boiler circuit or heat recovery coil or on-off humidifier or rotary heat exchanger (optionals)

Note: outputs NO1 or NO4 of the expansion card c.pCOe with address 8 can also be used to connect some of the above optional elements.

NO8: compressor 1 of circuit 2 (units with 2 circuits)

NO9: cycle reversing valve circuit 2 (units with 2 circuits)

NO10: low-speed outdoor fan circuit 2 (optional 2-speed fan)

NO11: compressor 2 of circuit 1

NO12: compressor 2 of circuit 2 (units with 2 circuits) or condensate pump (optional in units with 1 circuit)

Electronic expansion valves

EEV1: valve of circuit 1

EEV2: valve of circuit 2 (units with 2 circuits)

Fieldbus1

Serial connection of TCO terminal, RS485 sensors, c.pCOe expansion cards (addresses 4, 8 and 9), SMALL board (address 11), driver EVDEVO (address 7, 71 or 72), etc

Display port2

Connection of VecticGD graphic terminal

Display port1/BMS

Connection of the pLAN local network

BMS card

Connection of the BMS communication card

Unit power supply

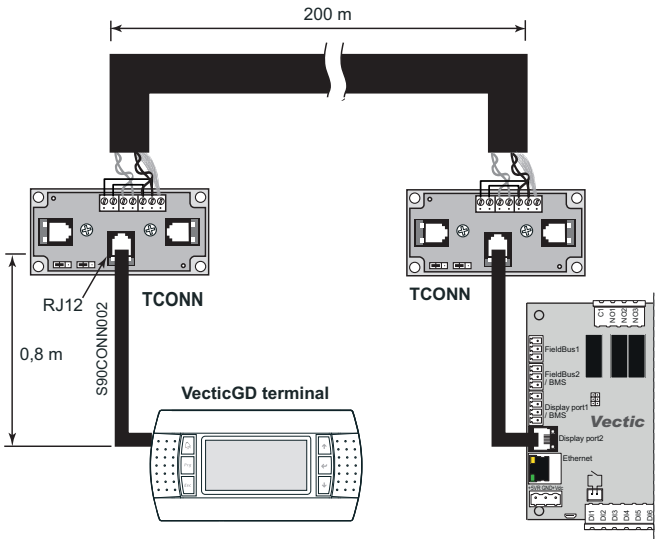
Power: 24 Vac

20.2. Connection of terminals to the control board

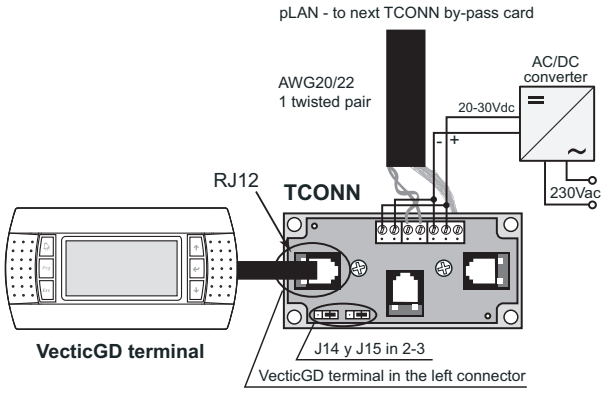
Connection of the VecticGD terminal (standard)

The terminal can be installed at a maximum distance of 500 metres from the microPC control board.

- Up to 50 metres, it can be connected directly with telephone wire.
- From 50 to 200 metres, it is necessary to use the TCONN bypass cards and AWG 20/22 shielded cable with 2 twisted pairs.



- From 200 to 500 metres, it is necessary to use the TCONN bypass cards, AWG 20/22 shielded cable with 1 twisted pair and external 20...30Vdc (150 mA) power supply.



Configuration:

To ensure communication between the VecticGD terminal and the control board, the terminal must be configured with address 16.

In the event of a terminal supplied separately, this is not sent addressed and the following procedure must be carried out:

1) Simultaneously press the ↑ + ↓ + ↵ keys.
2) On the screen accessed, set address 16 in:
   `Display address setting`.

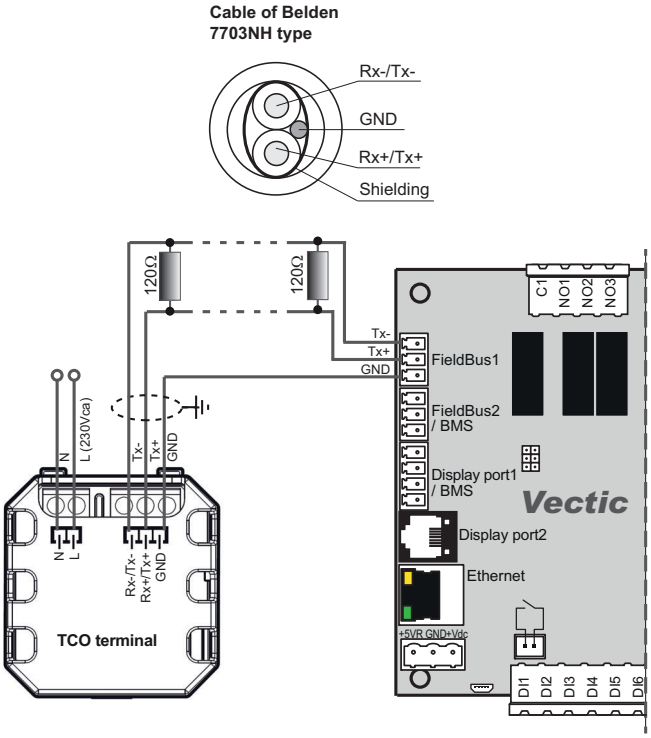
Connection of the TCO user terminal (optional)

The terminal can be installed on the RS485 Filed-bus at a maximum distance of 100 metres from the control board.

The connection requires the following:

- Power supply at 230Vac 50/60Hz (L&N): 2 wires (section 0.5 at 1.5 mm^2).

  Note: The power supply of the electrical cabinet (230 V) must be used for terminal power.
- Communication with the board (RX+/TX+ & RX-/TX-): shielded cable type AWG20 or AWG22 with 1 braided pair + drainwire + shielding (e.g., model BELDEN 7703NH).



Important: It is recommended to insert an electrical resistance of 120Ω, between connectors TX+ and TX- of the board output (connector J10) and on the final component of the RS485 network, to avoid potential problems of communication.

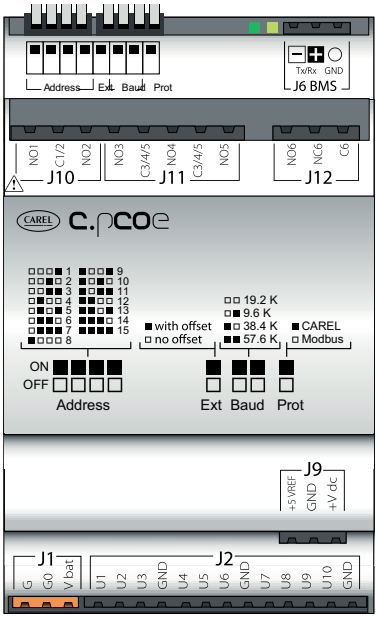
Configuration:

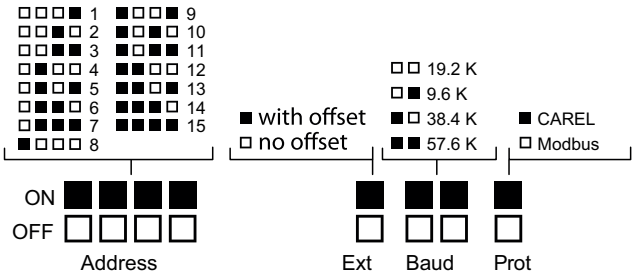
To ensure communication between the TCO terminal and the control board, the terminal must be configured with address 10 and speed 19200 bps.

The terminal is sent addressed, and on the power up, the screen should display the firmware version "1.1" on the power up and, then, the "`init`" symbol. The terminal will be fully operational after a few seconds.

In the unlikely event of a communications failure the screen will display "`Cn`". Please make sure to check connections and the firmware version.

20.3. Connection of the Basic c.pCOe expansion modules to the control board (optional)





Basic c.pCOe module, address 8: ■□□□ □□□□

This module is needed to manage the options:

- Low outdoor temperature (GREAT COLD).
- Remote COOLING / HEATING.
- Mechanical disconnection of stages.
- Proportional humidifier or overpressure control with exhaust damper.
- Active dehumidification with condensation coil.
- Unit with 100% fresh air.
- Failure signaling of compressors manual motor starters (MMS).

Analog inputs

U1: remote COOLING / HEATING

U2: ventilation mode with 100% fresh air

U3: temperature probe on the HWC inlet with GREAT COLD

U4: temperature probe on the HWC outlet with GREAT COLD

Digital inputs

U5: disconnection of 1 compressor stage or alarm signal or pump in the hot water coil circuit or compressor in the recovery circuit or on-off humidifier or rotary heat exchanger or status of the manual motor starter (MMS) of compressor 1

U6: disconnection of 2 compressor stages or status of the manual motor starter (MMS) of compressor 1_2

U7: disconnection of 4 compressor stages or status of the manual motor starter (MMS) of compressor 2

U8: disconnection of electrical heaters or status of the manual motor starter (MMS) of compressor 2_2

U10: status of the manual motor starter (MMS) of the recovery compressor

Analog output

U9: proportional humidifier or exhaust damper or control of proportional 3WV of the condensation coil with actve dehumidification

Digital outputs

NO1: electical heating for the piping layout of the water circuit with GREAT COLD or configurable output (humidifier, HWC pump, general alarm, rotary heat exchanger, Preheater in fresh air for units with active dehumidification, compressor OFF by timing of crankcase heater, free-cooling ON on bypass damper of the rotary heat exchanger)

NO2: compressor with supplementary crankcase heater or ventilation mode with 100% fresh air

NO3: electrical heater for protection of fresh air damper or solenoid valve SV1 with actve dehumidification

NO4: configurable output (same outputs as NO1) or solenoid valve SV2 with actve dehumidification

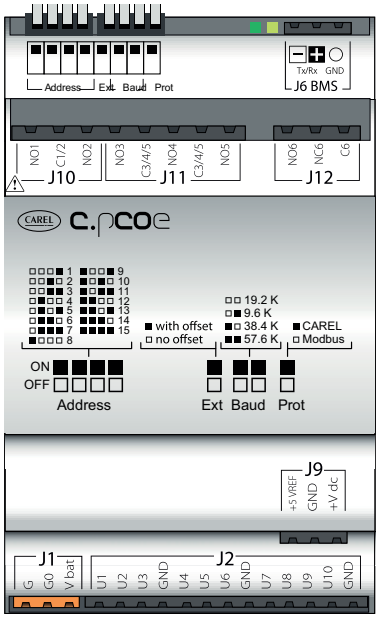
Connection to µPC3 board

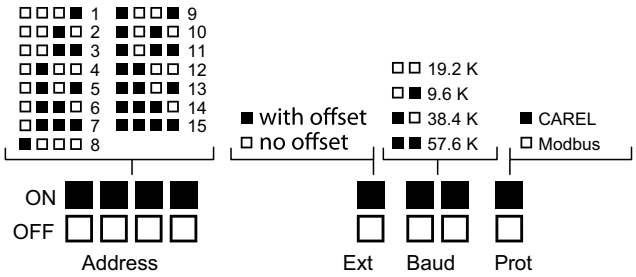
J9: connection on Fieldbus1

Power supply

J1: 24 Vac

20.3. Connection of the Basic c.pCOe expansion modules to the control board (optional)





Basic c.pCOe module, address 9: ■□□■ □□□□

This module is needed to manage the options:

- Second air quality probe (CO_2) for installation in the environment or outdoor.
- Preheater (electrical heater) in fresh air (for units with 100% fresh air).
- Rotary heat exchanger with variable speed.
- Zoning into 2 zones with dampers.
- Control of supply and return dampers (external to the unit).
- Constant supply pressure control or overpressure control with return fan or pressure control with supply damper.
- Control of air renewal through an external extractor.
- Failure signaling of compressors manual motor starters (MMS).

Analog inputs

U1: second air quality probe for installation in the environment or outdoor (4-20mA / 0…5000 ppm) or air quality probe for the zone 2 (4-20mA)

U2: differential pressure sensor for constant supply pressure control or overpressure control with return fan or or pressure control with supply damper

U3: exhaust temperature probe (prop. rotary heat exchanger)

U4: exhaust temperature probe (prop. rotary heat exchanger)

Digital inputs

U5: opening status of the supply damper of zone 1 or the supply damper external to the unit) or alarm on the thermistors of the electrical heater for preheating or status of the manual motor starter (MMS) of compressor 1

U6: opening status of the supply damper of zone 2 or status of the manual motor starter (MMS) of compressor 1_2

U7: opening status of the return damper of zone 1 or return damper external to the unit or status of the manual motor starter (MMS) of compressor 2

U8: opening status of the return damper of zone 2 or status of the manual motor starter (MMS) of compressor 2_2

U10: status of the manual motor starter (MMS) of the recovery compressor or 0-10V signal for pressure control with supply damper or external extractor status

Analog output

U9: 0...10Vdc output for wheel control (prop. rotary heat exchanger) or preheater with electrical heater (100% fresh air)

Digital outputs

NO1: opening signal of supply damper of the zone 1 or supply damper (external to the unit) or ON/OFF signal of the electrical heater for preheating

NO2: opening signal of supply damper of the zone 2

NO3: opening signal of return damper of the zone 1 or return damper (external to the unit)

NO4: opening signal of return damper of the zone 2

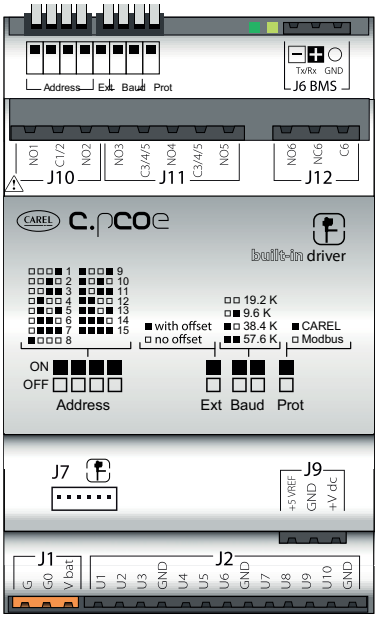
Connection to µPC3 board

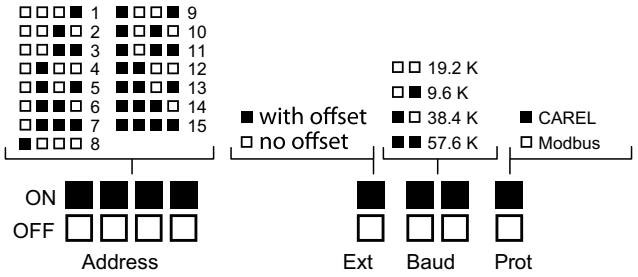
J9: connection on Fieldbus1

Power supply

J1: 24 Vac

20.4. Connection of the Enhanced c.pCOe expansion module to the control board (optional)





Enhanced c.pCOe module, address 4: □■□□ □□□□

The management of the cooling circuit for the recovery of the extracted air energy (optional) is done with this module.

It can also be used instead of modules with addresses 8 and 9 with the following optional:

- Low outdoor temperature (GREAT COLD).
- Remote COOLING / HEATING.
- Proportional humidifier or overpressure control with exhaust damper.
- Active dehumidification with condensation coil.
- Second air quality probe (CO_2) for installation in the environment or outdoor.
- Constant supply pressure controlor overpressure control with return fan.

Analog inputs

U5: second air quality probe for installation in the environment or outdoor (4-20mA / 0…5000 ppm) or air quality probe for the zone 2 (4-20mA)

U6: differential pressure sensor for constant supply pressure control or overpressure control with return fan

U8: suction temperature probe of the recovery circuit

U9: low pressure transducer of the recovery circuit

U10: high pressure transducer of the recovery circuit

Digital inputs

U1: remote off of the recovery circuit

U2: high pressure switch of the recovery circuit

U3: compressor thermal protection of the recovery circuit

U4: remote COOLING / HEATING

Analog output

U7: proportional humidifier or exhaust damper or control of the proportional 3WV of the condensation coil with actve dehumidification

Digital outputs

NO1: compressor of the recovery circuit

NO2: cycle reversing valve of the recovery circuit

NO3: compressor with supplementary crankcase heater

NO4: electrical heater for protection of fresh air damper or solenoid valve SV1 with actve dehumidification

NO5: configurable output (humidifier, HWC pump, alarm signal,...) or solenoid valve SV2 with actve dehumidification

NO7: signal of alarm of the recovery circuit

Electronic expansion valve

J7: valve of the recovery circuit

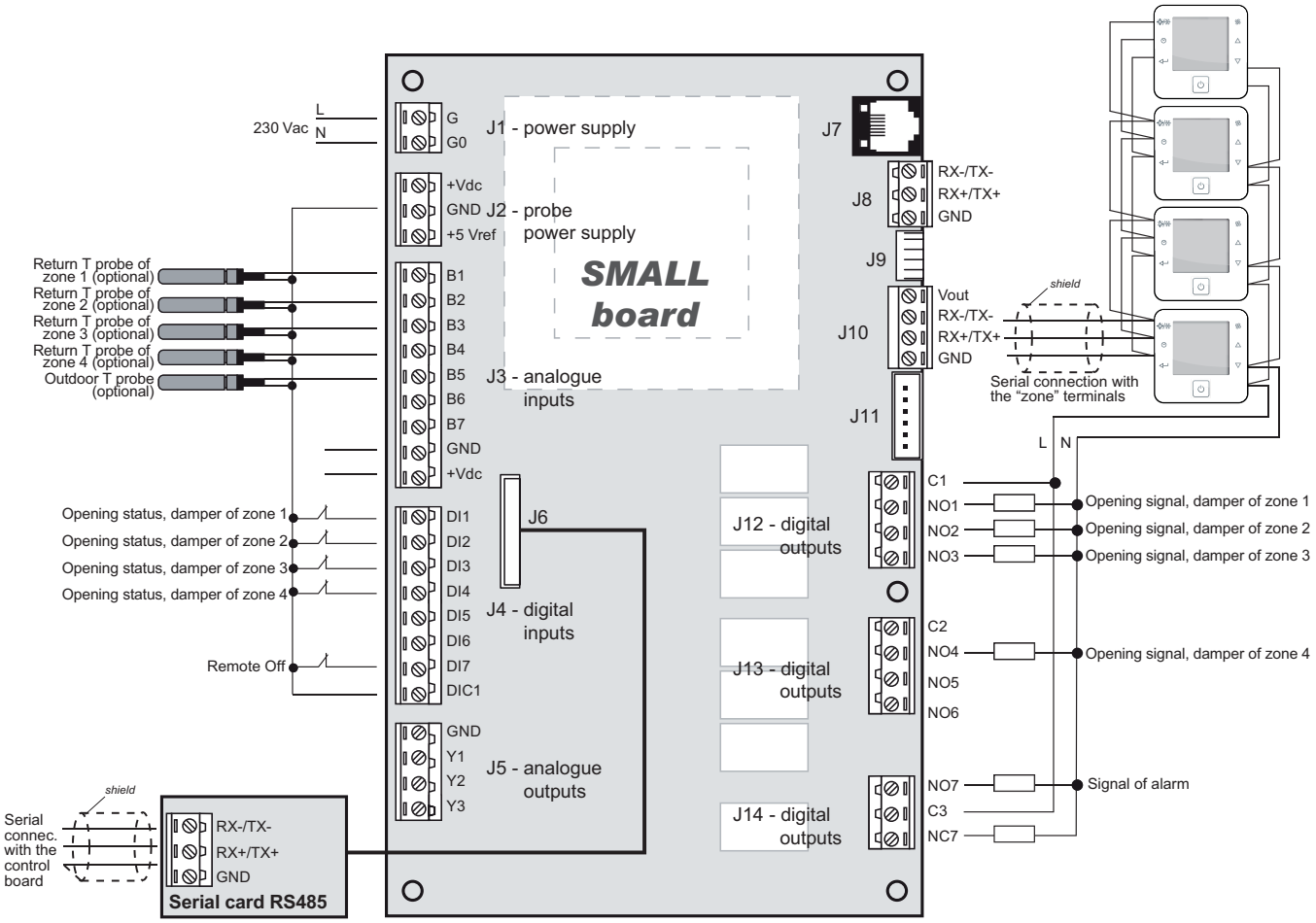
Connection to µPC3 board

J9: connection on Fieldbus1

Power supply

J1: 24 Vac

20.5. Connection of the SMALL board to the control board (optional)



SMALL board with address 11

This plate is necessary for the management of the zoning of the air flow up to 4 different zones through dampers (optional).

Connector J1

Unit power supply

Connector J2

Sensors power supply

Connector J3 (Analog inputs)

Temperature reading sensors:

B1: return temperature probe of the zone 1 (optional) (1)

B2: return temperature probe of the zone 2 (optional) (1)

B3: return temperature probe of the zone 3 (optional) (1)

B4: return temperature probe of the zone 4 (optional) (1)

B5: outdoor temperature probe (optional) (2)

Connector J4 (Digital inputs)

Status:

DI1: opening status of the supply damper of the zone 1

DI2: opening status of the supply damper of the zone 2

DI3: opening status of the supply damper of the zone 3

DI4: opening status of the supply damper of the zone 4

DI7: remote off

Connector J6

RS485 Fieldbus serial connection with the µPC3 control board.

Board address = 11

Connector J10

RS485 Fieldbus serial connection with the “Zone” terminals (up to 4 terminals.

Connector J12 (Digital outputs)

On/off control of dampers:

NO1: opening signal of the supply damper of the zone 1

NO2: opening signal of the supply damper of the zone 2

NO3: opening signal of the supply damper of the zone 3

Connector J13 (Digital outputs)

On/off control of dampers:

NO4: opening signal of the supply damper of the zone 4

Connector J14 (Digital outputs)

On/off control of the unit components:

NO7: signal of alarm

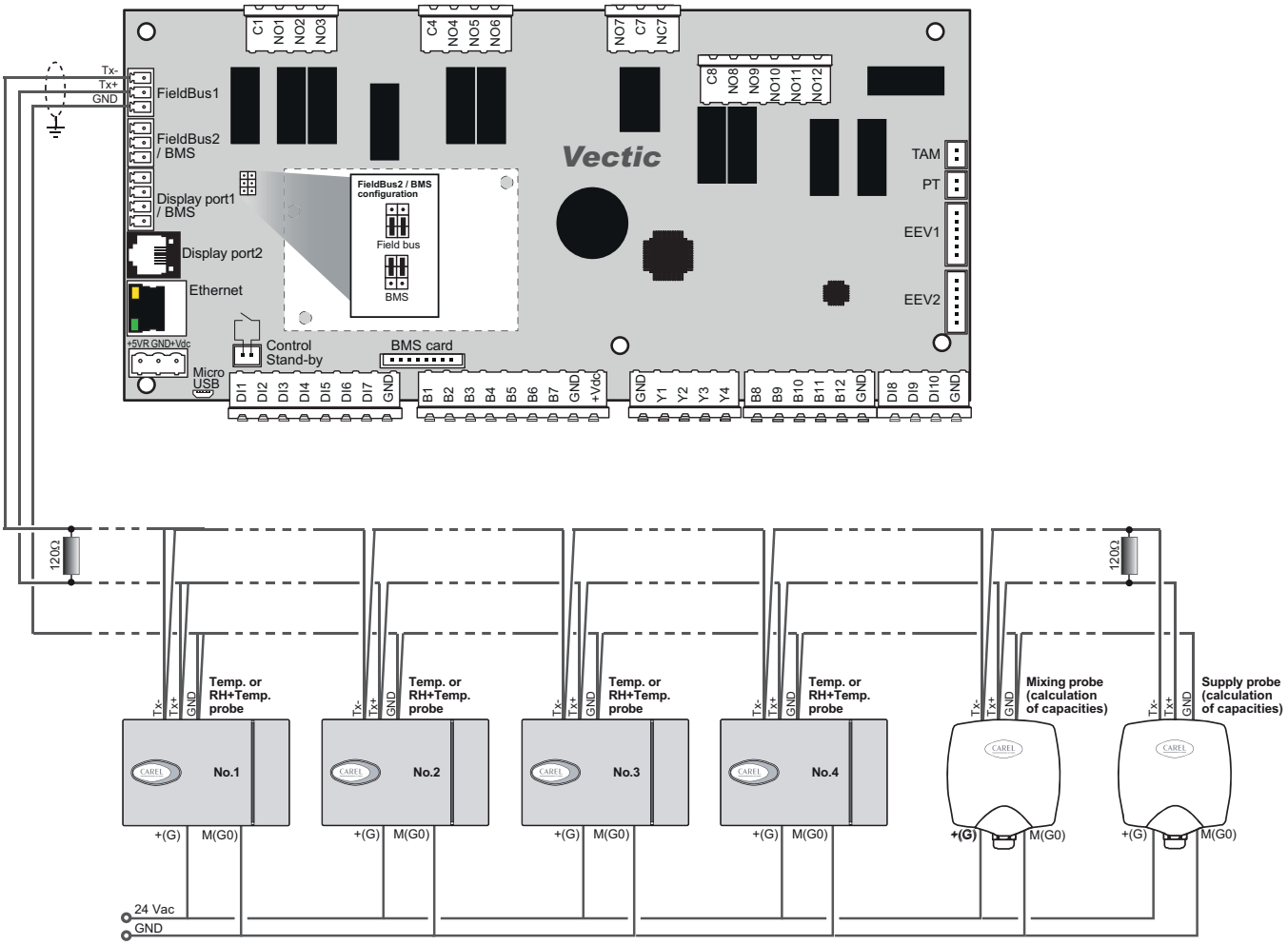
(1) By default, the probes of ambient temperature built-in the zone terminals are used by the control

(2) By default, the probe of outdoor temperature connected on the main control board (B2) is used by the control

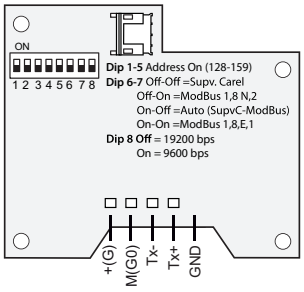
20.6. Serial connection of RS485 probes to the Field-bus of the control board (optional)

The following serial probes can be connected on the RS485 Field-bus, configured with different addresses:

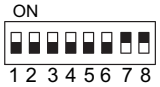
- 1 to 4 probes of ambient temperature or temperature + humidity.
- RS485 enthalpy probes on the mixing air and the supply air. Combined with an energy meter, these probes allow the calculation of cooling and heating capacities, thermal and electrical energy, and seasonal energy efficiencies.



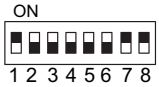
RS485 probes configuration:



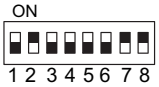
Ambient probe of T or T+RH No.1:
Address: 128
Modbus 1, 8, N, 2
19200 bps



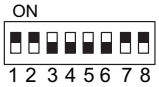
Ambient probe of T or T+RH No.2:
Address: 129
Modbus 1, 8, N, 2
19200 bps



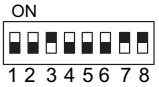
Ambient probe of T or T+RH No.3:
Address: 130
Modbus 1, 8, N, 2
19200 bps



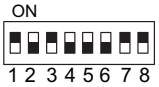
Ambient probe of T or T+RH No.4:
Address: 131
Modbus 1, 8, N, 2
19200 bps



Mixing enthalpic probe:
Address: 132
Modbus 1, 8, N, 2
19200 bps



Supply enthalpic probe:
Address: 133
Modbus 1, 8, N, 2
19200 bps



Important: It is recommended to insert an electrical resistance of 120Ω, between TX+ and TX- at the output of the control board and on the final component of the RS485 network, to avoid potential problems of communication.

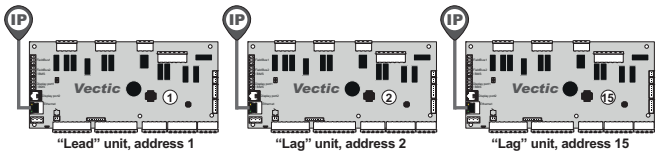
21.1. SHRD shared network

By default, the electronic control is configured for a stand-alone unit, but it is also possible to include it in an SHRD shared network as "Lead", "Lag" or "Backup".

The Lead/Lag network allows the exchange of data and information between the units, and depending on the conditions of the installationThe maximum number of units that can be integrated into a Lead/Lag network is 15.

The Backup network allows to configure one unit as a “Backup”, for activation in case of malfunction of the other unit. The maximum number of units that can be integrated into a Backup network is 2.

Communication between network units is via the Ethernet port of each control board.



“Lead” unit, address 1 “Lag” unit, address 2 “Lag” unit, address 15

Addressing of the boards

The address of the board within the shared network is configured on the A11e screen of group **08. Service Par. → a. Configuration** (protected by level 2 password).

If the unit is set to "Lead" it must always have address 01.

In this case, the screen will also select the number of "Lag" units in the network (for example: 5).

```
SHRD NETWORK CONF.   A11e

Unit:   Lead

Lead unit addr: 01
Number of Lags:  5
```

For all other units in the network, on this screen "Lag" will be selected and the address will be assigned.

```
SHRD NETWORK CONF.   A11e

Unit:   Lag

Lag unit addr:  2
```

On the unit configured as "Lead", the A11f screen will then appear. It will set the IP address corresponding to the control board of each "Lag" unit.

```
LAGS UNITS CONFIG.   A11f
Lag no:   2

    000.000.000.000


Confirm?   YES
```

Changing the "Lag" number on the screen, each one can be configured. When the configuration of all Lag unis is finished, under "Confirm" select "YES".

```

Confirm
Lags IP:        YES

After confirmation,
the board will reboot!
```

The IP address of each control board can be queried from each VecticGD terminal by simultaneously pressing [🔔] + [↵].

A menu is accessed where it can be selected "SETTINGS" → "TCP/IPv4 SETTINGS". The screen that appears after this shows the IP:

```

Enable: DHCP/AutoIP
IP:      10.122. 17.208
Mask:  255.255.252.  0
GW:      10.122. 16.254
DNS:     10.231.130. 50

Update config? No
```

Lead/Lag configuration

The Lead/Lag configuration is done on the CU19 screen of group **07. Par.Constructor → a. Unit Config.** (protected by level 3 password).

It can also be configured from the A11g screen of group **08. Service Par. → a. Configuration** (protected by level 2 password).

```
 LEAD / LAG CONF.     CU19

LEAD/LAG EXTENDED    ON
TEMP. SET SHRD       ON
HUM. SET SHRD        ON
CO2 SET SHRD         ON

LEAD/LAG OPER.MODE   ON
```

The SHRD network allows to have the following functionalities depending on the parametrized configuration:

- **Lead/Lag:**

  It allows to share some probes installed in the unit configured as "Lead" (address 1):

  - Outdoor temperature and ambient temperature (TEMP. SET).
  - Outdoor humidity and ambient temperature + humidity (HUM. SET).
  - CO_2 air quality (CO2 SET).

- **Extended Lead/Lag:**

  It includes “Lead/Lag” functionalities and the unit configured as "Lead" provides ambient temperature setpoints to the other units (LEAD/LAG EXTENDED).

- **Lead/Lag with the same operating mode:**

  It includes the “Extended Lead/Lag” functionalities and the unit configured as "Lead" also provides the status (Cooling- Heating - Ventilation) to the other units (LEAD/LAG OPER.MODE).

Backup configuration

The Backup configuration is done on the CU20 screen of group **07. Par.Constructor → a. Unit Config.** (protected by level 3 password).

It can also be configured from the A11h screen of group **08. Service Par. → a. Configuration** (protected by level 2 password).

```
  Backup              CU20

Backup BY ALARM:   YES
ALARM LEVEL 1:     ON
ALARM LEVEL 2:     ON
DEL.ALARM LEV2:    20min
Backup EXTENDED:   YES
Backup EACH:       TUE
```

21 - NETWORK CONFIGURATION

The SHRD network allows to have the following functionalities:

- **Backup by alarm:**

  One of the two units is configured as a backup unit, for activation in case of malfunction of the other one.

  On the previous screen it can be configured that there is no backup with alarm levels 1 and 2. In this case the units only are switched with a level 3 alarm.

  The alarm levels set are:

  - Level 0: no alarm
  - Level 1: mild alarm
  - Level 2: severe alarm
  - Level 3: critical alarm

  In the “DELAY LEVEL 2” parameter It is possible to change the alarm level, from level 1 to level 2, if it persists for a period of time (default 20 minutes).

- **Extended Backup:**

  It includes the “Backup by alarm” functionalities and also, the control manages the automatic switching between the two units weekly, to compensate the operation times of both units.

  The “Backup EACH” parameter sets the day of the week for alternation in operation between the two units.

  Important: the “Backup by alarm” function always prevails over “Extended Backup”

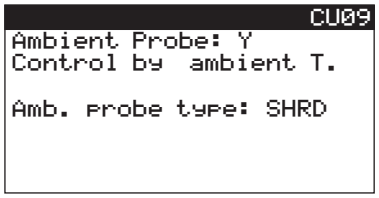
Configuration of the shared sensors

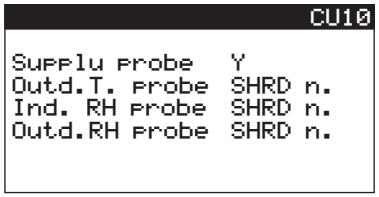
The configuration of sensors can also be done in the Group of screens **07. Par.Constructor → a. Unit Config.** (protected by level 3 password):

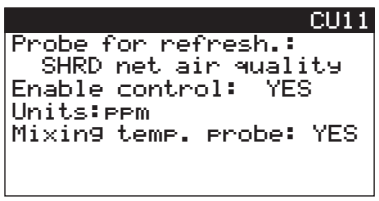
- ambient temperature: CU09
- outdoor temperature: CU10
- ambient (indoor) humidity: CU10
- outdoor humidity: CU10
- air quality: CU11

All of the units will read from these sensors, except those which have incorporated their own sensors.

Note: In the case of installations with Backup units, it is not possible to share the probes, since both units must be fully autonomous in their operation.







21.2. pLAN local network

This connection on a pLAN local network allows reducing the number of VecticGD terminals, since a single shared terminal can monitor all units in the network.

The pLAN network will be made up of a maximum of:

- 15 control boards: addresses 1 to 15. Address 1 shall be reserved for the board with the shared terminal.
- 1 shared terminal: address 16.
- 15 private terminals: addresses 17 to 31. The address of each private terminal will coincide with the address total for the corresponding board + 16.

Important: Both, units and VecticGD terminals, are shipped configured from the factory.

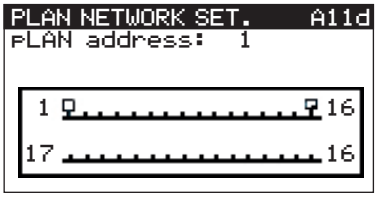
Important: If the units are also to be included in a SHRD shared network, the same addresses must be used on both networks to avoid errors.

Note: Units configured as "Backup" cannot be connected in a local pLAN network, since the two units must be fully autonomous in their operation.

Addressing of the boards

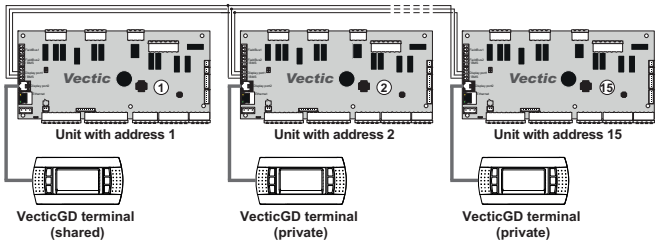
Important: To assign addresses to the boards, they **cannot** be connected to that network.

The address of the board within the pLAN network is configured on the A11d screen of group **08. Service Par. → a. Configuration** (protected by level 2 password).



When all the boards have their address assigned, they can be connected to the network again.

Communication between the units of the pLAN network is carried out using the Display port1/BMS of each control board.

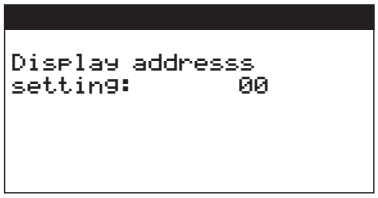


Configuration of the shared terminal

All of the control boards that make up the network can also be monitored from a single terminal, known as the shared terminal.

This operation only has to be performed once, with a terminal that is connected to any unit.

- To start the procedure, it is necessary to supply power to the unit to which the terminal has been connected.
- By simultaneously pressing the UP ↑ + DOWN ↓ + ENTER ↵ keys, the following display appears:

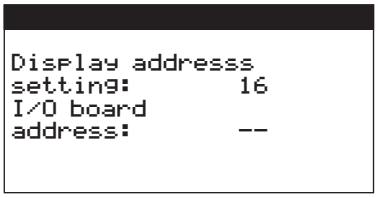


To change this address, press the ENTER ↵ key, and the cursor will be above the terminal's address.

Change the address value with the UP ↑ and DOWN ↓ keys until 16 appears.

The "I/O board address" (address of the board) appears at the same time with the value "- -".

Press the ENTER ↵ key to confirm the value 16.



If the procedure has been performed correctly "Display address setting" (address of the modified terminal) appears on the screen.

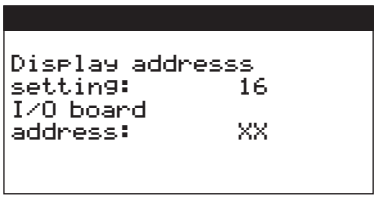
If "NO LINK" (no communication) appears instead of the previous screen, power must be cut-off and restarted. The entire procedure must be repeated.

Addressing of the private terminals

Next, the addresses will be assigned to the private terminal and the shared terminal for each of the boards which make up the network. .

The address for the private terminal must coincide with the sum of the corresponding board number + 16.

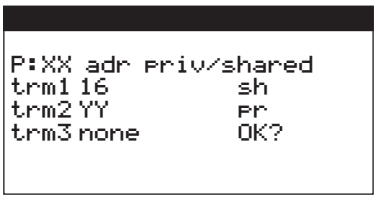
- By simultaneously pressing the UP ↑ + DOWN ↓ + ENTER ↵ keys, the following screen appears:



Where "XX" represents the address of the board in which the terminal is connected (values 1 to 15).

The values for this screen are confirmed by pressing the ENTER ↵ key 3 times.

- From this screen, pressing the ENTER ↵ key, grants access to the display in which the addresses of the private and common terminals are assigned for the board with address XX.



Pressing the ENTER ↵ key on this display moves the cursor from one field to another, while the cursor keys change the current value of the field.

The text "P:XX" indicates that, in this case, the I/O board with address XX has been selected.

trm1=16 (terminal 1: address 16) → shared (to switch between the different control boards).

trm2=YY (terminal 2: address YY) → private (only for displaying the board output with address XX).

As shown above: YY = XX + 16. For example:

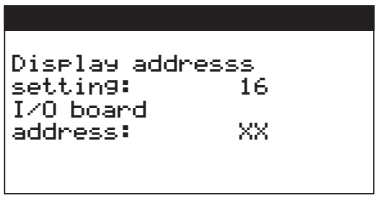
- a private terminal with address 17 will correspond to the board with address 01, i.e., 17 = 01 + 16
- a private terminal with address 18 will correspond to the board with address 02, i.e., 18 = 02 + 16

To exit the configuration procedure and save, select the 'OK ? NO' field, place the cursor over the 'YES' text and then press ENTER ↵.

To exit without saving, leave the terminal alone without touching any key for 30 seconds.

- With the terminal connected to the above board, the addresses of the terminals can be assigned for the rest of the boards without needing to change the unit.

  To do so, simultaneously press the UP ↑ + DOWN ↓ + ENTER ↵ keys, and the following screen appears:



From this point, repeat the above steps to assign addresses.

- When the network is completely configured, with the shared terminal placed on any board, the other boards of the network can be supervised.

  To move from one board to another, press the ESC Esc +DOWN ↓ keys.

22 - TECHNICAL AND ELECTRICAL CHARACTERISTICS

Main CPU board installed in the unit's electric panel, which allows data to be input, treated by the microcontroller and the operation of the unit to be managed completely.

The program and the parameters are stored in non-volatile memory, there by ensuring their storage even in the case of a power failure (without needing an auxiliary coil). The program can be loaded through the PC or from a program key.

µPC3 control boad	
TECHNICAL CHARACTERISTICS	
Storage conditions / Operating conditions	-40T70 ºC; %HR 90 non-condensing / -40T60 ºC; %HR 90 non-condensing
Protection index	IP00
Environmental pollution	Category 3
Classification according to protection against electric shocks	To be incorporated in class I and/or II appliances
PTI of the insulating materials	PCB: PTI 250 V; insulating materials: PTI 175
Period of electric stress across the insulating parts	Long
Type of relay action	1C
Type of disconnection or microswitching	Micro-switch for all of the relay outlets
Category of resistance to heat and fire	Category D (UL94-V0)
Immunity from voltage surge	Category III
Software class and structure	Class A
Dimensions: Length x height x width	228 x 113 x 72 mm
ELECTRICAL CHARACTERISTICS	
Power supply (controller with terminal connected)	230 Vca
Maximum current with the connected terminal	28 VA
Terminal strip	with removable male/female connectors
CPU	32 bit, 100 MHz
Data memory	FLASH memory: 128 MB Data memory: 16MB/8MB Battery type: Lithium button battery
Working cycle with applications of average complexity	0,2 s
Analogue inputs	
Maximum number	12 (B1...B12)
Input type: B1	NTC CAREL (-50T90°C; R/T 10 kΩ ±1% a 25°C), NTC HT (0T150°C) input type: free contact
Input type: B2, B3, B4	NTC CAREL (-50T90°C; R/T 10 kΩ ±1% a 25°C), NTC HT (0T150°C) input type: free contact
Input type: B5, B10	NTC CAREL (-50T90°C; R/T 10 kΩ ±1% a 25°C), NTC HT (0T150°C) input type: 0...20 mA /4...20 mA
Input type: B6, B7, B8, B9, B12	NTC CAREL (-50T90°C; R/T 10 kΩ ±1% a 25°C), NTC HT (0T150°C) 0...5 V radiometric pressure sensor
Input type: B11	NTC CAREL (-50T90°C; R/T 10 kΩ ±1% a 25°C), NTC HT (0T150°C) 0 ...10 Vdc
Time constant for each input	0.5 s
Input precision	± 1% of the complete scale
Digital inputs	
Number	10
Analogue outputs	
Maximum number	4
Type	0…10 Vdc
Precision	± 3% of the complete scale
Resolution	8 bit
Maximum current	2 mA
Digital outputs	
Combination of outputs	NO1, NO4: A, B, C NO2, NO3, NO5, NO8, NO9: A NO6/NC6, NO7/NC7: D, F, G NO10: A, B NO11, NO12: A, B, F, G
Type A (SPST)	EN60730: 3(1)A, NO, 230Vac, 100k cycles
Type B (SPST)	EN60730: 4A, NO, 230Vac, 100k cycles
Type C (SPST)	EN60730: 10A, 250Vac, NO, 100k cycles 5A (cosφ 0.4), NO, 250 Vac, 100k cycles
Type D (SPDT)	EN60730: 1A, NO,NC,CO, 230Vac, 100k cycles 1A (cosφ 0.5), NO, 250Vac, 30k cycles
Type F (SSR HV)	110/230 15VA
Type G (SSR LV)	24V 15VA

22 - TECHNICAL AND ELECTRICAL CHARACTERISTICS

c.pCOe expansion modules	
TECHNICAL CHARACTERISTICS	
Storage conditions	-40T70 ºC; %HR 90 non-condensing
Operating conditions	-20T70 ºC; %HR 90 non-condensing
Protection index	IP40 only on the front panel
Environmental pollution	Level 3
Classification according to protection against electric shocks	To be incorporated in class I and/or II appliances
Period of electric stress across the insulating parts	Long
Type of relay action	1C
Type of disconnection or microswitching	Micro-switch for all of the relay outlets
Category of resistance to heat and fire	Category D
Immunity from voltage surge	Category III
Software class and structure	Class A
Dimensions: Length x height x width	110 x 70 x 60 mm (4 DIN modules)
ELECTRICAL CHARACTERISTICS	
Power supply	24 Vca +10/-15% 50/60 Hz, 28 to 36 Vdc +10/-15%, 15 VA / 6 W
Basic model maximum power consumption	15 VA / 6 W
Enhanced model maximum power consumption	30 VA / 12 W
Maximum connector voltage (NO1…C6)	250 Vac
Meaning of the LEDs	
Yellow LED	flashing when setting the address (setting the off set); on in the event of incorrect address setting
Green LED	flashing if BMS port communication online, on steady if offline.
Universal channels	
Number	10
Analogue / digital conversion	14 bits
Type of input selectable	NTC, PT1000, PT500, PT100, 4 to 20 mA, 0 to 1 V, 0 to 5 V, 0 to 10 V, 0 to 2 kHz (resolution ±1Hz) on/off or open collector digital input (2 kOhm)
Type of output selectable	PWM 0/3.3 V 100 Hz, PWM 0/3.3 V, 2 mA 2 kHz, 0 to 10 V analogue output
Maximum current output	2 mA
Precision of analogue input reading	± 0,3% of full scale
Analogue output precision	± 2% of full scale
Digital outputs	
Number	6
Group 1 (R1, R2); Group 2 (R3, R4, R5)	2(1) A (100,000 cycles); UL60730: 5 A resistive, 250 Vac, 30k cycles, 105°C,Defined Purpose, 1FLA, 6LRA, 250 Vac, 30k cycles, 105°C, pilot duty C300, 250 Vac, 30k cycles, 105°C.
Group 3 (R6)	1(1) A (100,000 cycles) Maximum switchable voltage: 250 Vac; UL 60730-1: 1 A resistive, 1 A FLA, 6 A LRA, 250 Vac, D300 pilot duty, 30,000 cycles.
Single-pole valve output (Enhanced model only)	
Number / type	1 / single-pole
Maximum output	8 W
Connector	6-pin, fixed sequence
Power supply	13 Vdc ±5%
Maximum current:	0.35 A for each winding
Minimum winding resistance	40 Ω

22 - TECHNICAL AND ELECTRICAL CHARACTERISTICS

VecticGD terminal	
TECHNICAL CHARACTERISTICS OF THE DISPLAY	
Type	FSTN graphic
Back-lighting	Blue LED (controlled using software)
Resolution	132 x 64 pixel
TECHNICAL CHARACTERISTICS OF THE POWER SUPPLY	
Voltage	Power supply through the telephone cable or external source 18/30 Vdc protected by an external 250 mAT fuse
Maximum power input	1.2 W
CONNECTION WITH THE microPC BOARD	
Type	asynchronous half duplex, 2 dedicated wires
Connector for the terminal	6-way telephone plug
Driver	CMR 7 V (type RS485) balanced differential
GENERAL CHARACTERISTICS	
Protection index	IP65 for assembly in panel / IP40 for wall assembly
UL	type 1
Operating conditions	-20T60 ºC, 90% RH non-condensing
Storage conditions	-20T70 ºC, 90% RH non-condensing
Software class and structure	A
Classification according to protection against electric shocks	To be incorporated in class I or II appliances
PTI of the insulating material	250V
Dimensions: Length x Height x Depth	156 x 82 x 31 mm

TCO terminal	
TECHNICAL CHARACTERISTICS OF THE POWER SUPPLY	
Voltage	Power supply 230Vac(+10/-15) 50/60Hz
Maximum power	1 VA
CONNECTION WITH THE microPC BOARD	
Type	AGW20 or AGW22 with 1 braided pair + drainwire + shielding
GENERAL CHARACTERISTICS	
Protection index	IP20
Operating conditions	-10T60 ºC, 10 to 90% RH non-condensing
Storage conditions	-20T70 ºC, 10 to 90% RH non-condensing
Software class and structure	A
Environmental pollution	2
Category of resistance to heat and fire	Category D
Immunity from voltage surge	Category 2
Classification according to protection against electric shocks	To be incorporated in class I and/or II appliances
Electric safety	IEC EN 60730-1, IEC EN 60730-2-9
Electromagnetic compatibility	IEC EN 61000-6-1, IEC 61000-6-3, IEC EN 61000-6-2, IEC EN 61000-6-4
PTI of the insulating material	275 V
Precision of the temperature measurement	0T40 ºC ± 1%
Dimensions: Length x Height x Depth	Model to fit: 86 x 86 x 51 mm Surface model: 86 x 142 x 23 mm or 142 x 86 x 23 mm

22 - TECHNICAL AND ELECTRICAL CHARACTERISTICS

22.1. Ambient probe

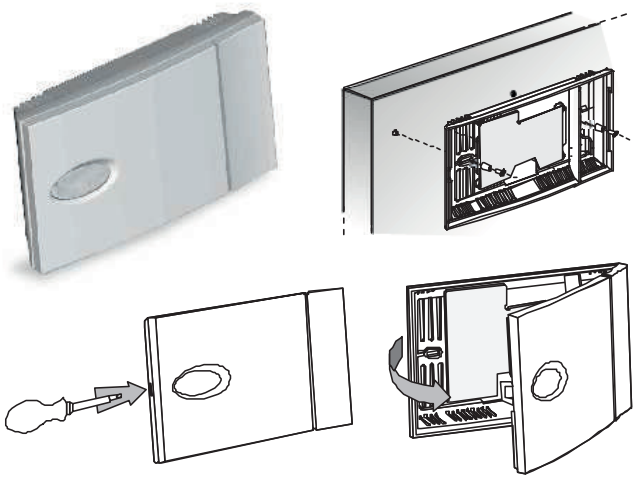
Wall version (DPW)

Case index of protection: IP30

Sensor index of protection: IP30.

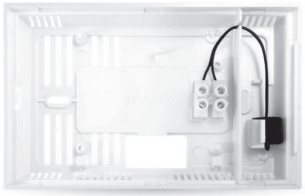
Assembly and setting instructions

- This probe must be fixed to the panel or the wall of the room to be conditioned, at ca. 1.5 m height.
- Open the case using a flathead screwdriver in the slot, paying extra care not to damage the electronic parts.



- Fasten the rear of the sensor case to the panel or the wall (for fastening the case, use the screws supplied with the fastening kit, paying attention to use the proper spacers, to not damage the sensor's electronics).
- The electrical connection must be carried out depending on the unit setting:
  - NTC probe S5a (B5): with 2 x 1,5 mm² section cable, within a maximum distance of 30 metres.
  - RS485 with AWG20 section cable, single braided pair preferably shielded with drain wire + Power supply 24 Vac (2 wires).
    * Temperature: S21 to S24.
    * Temperature + humidity: S31 to S34.

    Note: in the case of more than one probe, connection of the probes in series, in the RS485 network.
- Close the sensor with the top cover by pressing lightly.



Inside view, bottom shell

Inside view, top shell

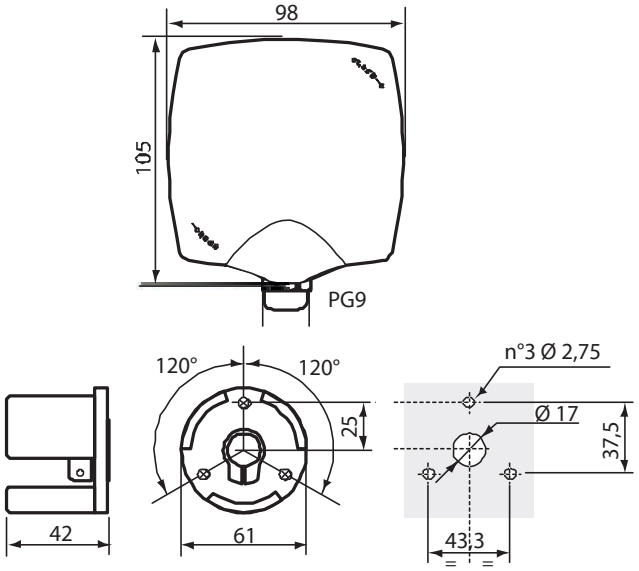
Duct version (DPD)

Case index of protection: IP55

Sensor index of protection: IP40.

Assembly and setting instructions

- The duct version is connected to the air duct using the special fastening bracket.
- Fasten the bracket to the air duct.
- Insert the rod on the bracket to the required depth.
- Tighten the screw on the bracket to fasten.



- For the electrical connections, remove the top cover of the sensor. Remove the cover by rotating it anticlockwise

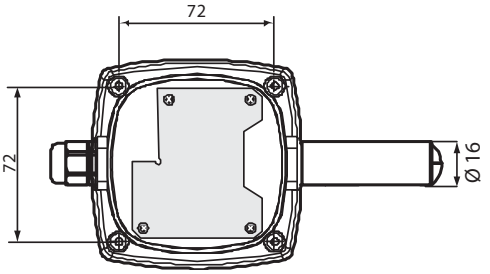
View of sensor without cover

Interior view

Industrial environment version (DPP)

Case index of protection: IP55

Sensor index of protection: IP54.



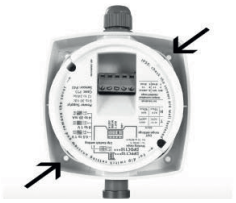
Assembly and setting instructions

The industrial environment version is wall or panel mounted.

- Open the case by turning the top cover anticlockwise (fig.1).
- Fasten the rear of the sensor case to the panel or the wall (use the screws supplied together with the sensor) placing the screws in the holes provided. (fig.2).
- Make sure that the screws that hold the board protective cover are fastened tightly (fig.3).

- Close the sensor by turning the cover clockwise (fig.4).

(fig.1)



(fig.2)

(fig.3)

(fig.4)

Cleaning and maintenance

When cleaning the instrument do not use ethyl alcohol, hydrocarbons (petrol), ammonia and derivatives. Use neutral detergents and water.

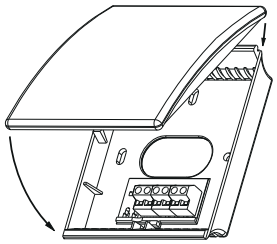
Periodically check the aeration slits on the sensor to make sure that air can flow freely through, without obstructions due to impurities or dust in the site of installation.

22.2. Air quality probe 4.. 20 mA

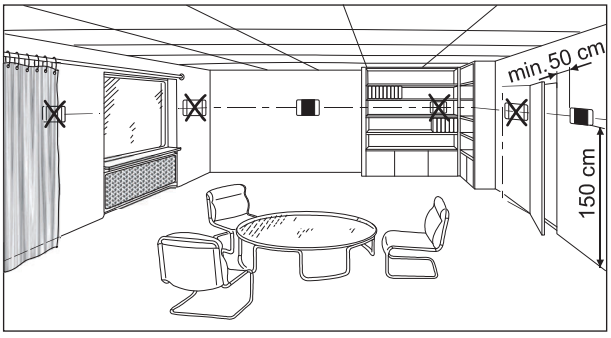
There are different options:

- Ambient air quality probe (intallation in the environment).
- Return air quality probe (duct-mounted).
- Probe installed on the "Lead" unit of the SHRD shared network.
- Double quality probe:
  - two ambient air probes;
  - one ambient air probe and one outdoor air probe;
  - one return air probe (duct-mounted) and one outdoor air probe.

Installation in the environment

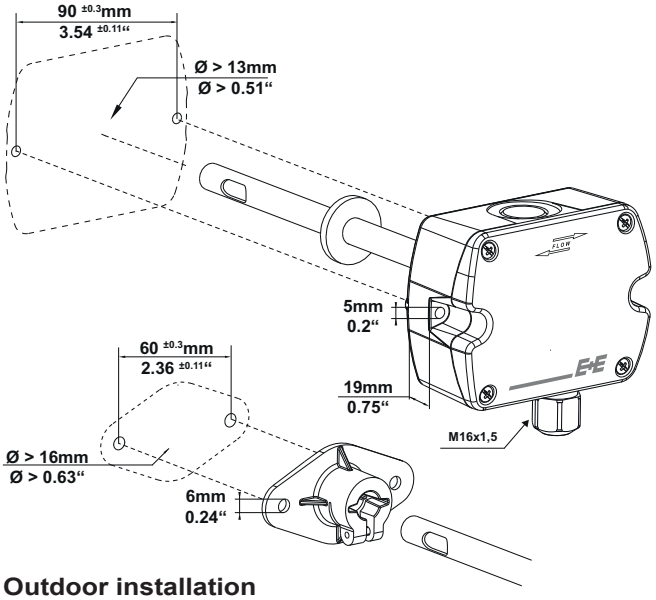


- This probe must be fixed to the interior wall of the room to be conditioned, at ca. 1.5 m height in the room and at least 50 cm from the next wall.
- It should never be mounted:
  - On outside walls.
  - In niches or behind curtains.
  - Above or near heat sources or shelves.
  - On walls covering heat sources such as a chimney.
  - In the radiation range of heat sources and lighting bodies e.g. spotlights.
  - In areas exposed to direct solar radiation.

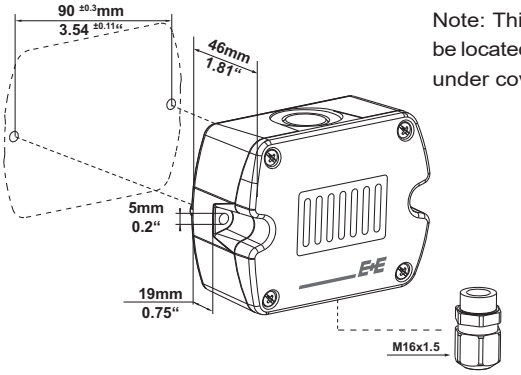


Duct-mounted

This version can be connected to the air duct in these two ways:



Outdoor installation

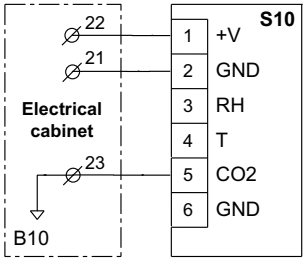


Note: This probe must be located outdoors but under cover.

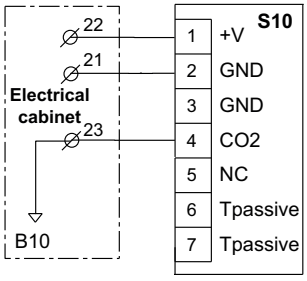
Electrical connection

This probe (S10) is configured as analogue output 4…20 mA (0..2000 ppm), in the analogue input B10 of the control board). Recommended cable section: 1,5 mm^2.

Ambient probe

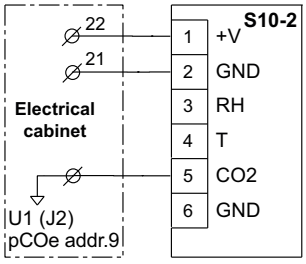


Return probe (duct-mounted)



The second probe (S10-2) is confi gured as analogue output 4…20 mA (0..2000 ppm for ambient probe or 0..5000 ppp for outdoor probe) in the analogue input U1 of the expansion module c.pCOe with address 9 (connector J2). Recommended cable section: 1,5 mm^2.

Ambient or outdoor probe:



23 - TROUBLESHOOTING

- *The unit does not switch on (the power LED on the main board is switched off).*

  Check:

  1. The presence of main power;
  2. The transformer output voltage;
  3. That the power supply connector is correctly inserted;
  4. That the overload fuse is intact.

- *When switching on, there are general problems with the LCD (strange characters, blank display).*

  Check:

  1. That the software in the flash is correct;
  2. The addresses of the µPC3 control board and the VecticGD terminal (check that they comply with the requirements of the current application);
  3. The connection between the VecticGD terminal and the µPC3 board.

- *Erroneous readings of the input signals.*

  Check:

  1. The correct power supply to the control board and probes;
  2. The separation between the power supply of the digital inputs and that of the control board;
  3. That the cables from the probes are connected according to the instructions;
  4. That the probe cables are located far enough away from possible sources of magnetic interference (power cables, contactors, high voltage cables or cables connected to units with high current peaks);
  5. That there is not a high level of heat resistance between the probe and the sensor cap (if present). If necessary, apply conductive paste or oil into the caps to ensure good temperature transfer.
  6. If there is a probe error or µPC3 board conversion error, the checks to be carried out would vary depending on the type of probe:

     Active temperature/humidity probes with 0/1V signal:

     Using a voltmeter, measure the probe signal between the Bn and GND terminals and check that the voltage corresponds to the temperature/humidity value: 1 mVdc corresponds to 0.1% HR.

     Example: reading 200 mVdc (0.2 Vdc), the probe sends a signal which corresponds to 20%RH; applying the same logic, 0 mVdc corresponds to 0ºC/0% RH;

     Pressure sensors:

     If there are errors when reading these probes, check that:

     - The analogue inputs of these sensors are set to receive 4/20 mA signals;
     - Check that the probe capillary is not blocked.
     - The full scale set by the software corresponds to that used by the sensors.

     Using a voltmeter to measure the voltage between the Bn and GND terminals, an indication is obtained of the current probe signal, considering that the input has an impedance of 100Ω, by applying the formula I= V/R.

     The pressure value “Ps” sent by the probe could be calculated as follows (FS = full scale):

     Ps = (Vmed/100 - 0.004) x (FSmax - FSmin) / 0.016 + Fsmin

     Example: the probe used has Fsmin = -0.5 bar, Fsmax = 7 bar; the voltage read is equal to Vmed = 1.0 Vdc.

     The pressure Ps that the probe is measuring is thus:

     Ps = (1.0/100 - 0.004) x [7 - (-0.5)] / 0.016 + (-0.5) = 2.3 bar

     NTC probes:

     The probe signal is a resistive value which depends on the temperature.

     The following table indicates some of the resistance values for different temperatures. By disconnecting the input probe and measuring the resistance with a multimeter, the table can be consulted for the corresponding temperature value.

°C	kΩ	°C	kΩ	°C	kΩ
-20	67,7	0	27,2	20	12,0
-15	53,3	5	22,0	25	10,0
-10	42,2	17	17,9	30	8,3
-5	33,8	15	14,6	35	6,9

- *To check the setting of the probe inputs.*

  Switch off the control board and perform the following measurements with a tester between the Bn and AVSS probe inputs:

probe type	voltage measured
NTC	2.5 V
4/20mA	0 V
0/1V; 0/5v; 0/10V	0 V

- *Unusual alarm signal from the digital input.*

  Check whether the alarm signal is present in the input, measure the voltage between the “IDC" common terminal and the digital input terminal which indicates the alarm “IDn”:

  - if voltage is present (24 Vac or Vdc, depending on the power supply used for the digital inputs), the contact of the connected alarm device is closed;
  - if the voltage is near 10 Vac or 10 Vdc (see above) the contact is open.

  Unless otherwise expressly stated, the control generates an alarm when detecting open contacts.

The quality management system of this product's assembly site has been certified in accordance with the requirements of the ISO 9001 standard (latest current version) after an assessment conducted by an authorized independent third party.
The environmental management system of this product's assembly site has been certified in accordance with the requirements of the ISO 14001 standard (latest current version) after an assessment conducted by an authorized independent third party.
The occupational health and safety management system of this product's assembly site has been certified in accordance with the requirements of the ISO 45001 standard (latest current version) after an assessment conducted by an authorized independent third party.
Please contact your sales representative for more information.

Order No.: 11671, 10.2024.Supersedes order No.: 08.2024
Manufacturer reserves the right to change any product specifications without notice.

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