

Further [information, images, manuals and prices for this product](#) and many other products are available from your specialist dealer [Kühlzelle24](#).

Refrigeration unit control system



1	User support.....	3	10	Service app.....	18
1.1	Structure of the operating manual.....	3	10.1	Establishing a connection to the control system	18
1.1.1	Warnings.....	3	10.2	Overview of functions for the home screen.....	18
1.1.2	Other symbols	3	10.3	Service area.....	19
1.2	Personnel requirements.....	3	10.4	Configurations	19
1.3	Target groups.....	4	10.5	Trends	20
1.3.1	Maintenance personnel.....	4	10.6	Time programme	21
1.3.2	Qualified electricians	4	10.7	Status of inputs and outputs	21
1.3.3	Refrigeration engineer	5	10.8	Test mode	22
1.3.4	Heating engineers	5	10.9	Alarms.....	23
1.3.5	Setup personnel.....	6	10.10	Parameters.....	23
1.3.6	Authorised qualified personnel.....	6			
1.4	Other applicable documents	7			
2	Safety and hazards.....	7			
3	Intended use.....	7			
4	Foreseeable misuse	7			
5	Operation.....	8			
5.1	Control unit.....	8			
5.2	Navigation.....	9			
5.3	Display symbols.....	9			
5.4	Programming mode	9			
5.4.1	Menu item PSd - Service password entry.....	9			
5.4.2	Menu item Ctl - Control system	10			
5.4.3	Menu item dir - Direct functions.....	10			
5.4.4	Menu item Pro - Sensor display	10			
5.4.5	Menu item dEF - Defrosting.....	10			
5.4.6	Menu item CnF - Configuration	10			
5.4.7	Menu item ALM - Alarm.....	10			
5.4.8	Temperature control setpoint differential	11			
5.4.9	Humidity control system.....	11			
5.4.10	Temperature monitoring	11			
5.4.11	Eco operation	12			
5.4.12	Continuous operation	12			
5.4.13	Defrost parameters.....	12			
5.4.14	Alarm parameters.....	12			
5.4.15	Door control.....	12			
6	Messages.....	13			
7	Alarm messages.....	13			
8	List of parameters.....	15			
9	Service app download.....	17			

1 User support

The user manual contains all the important information for operation and use. Some functions are available exclusively via the smartphone app Carel **Applica** (See 10 Service app on page 18).

If you have any questions, please contact your local Viessmann trade partner. You will find the current address on the back page.

1.1 Structure of the operating manual

1.1.1 Warnings

Structure of warnings

Warnings are structured as follows:

	SIGNAL WORD!	Source of danger! Consequences of non-compliance. ➞ Action to avoid the risk.
---	---------------------	--

Classification of warnings

Warnings are classified as follows, according to the type of hazard:

	DANGER!	This signal word indicates an imminent danger. Failure to avoid this source of danger will result in death or serious injury.
---	----------------	---

	WARNING!	This signal word indicates a potential source of danger. Failure to avoid this source of danger may result in death or serious injury.
---	-----------------	--

	CAUTION!	This signal word indicates a potentially dangerous situation. If this dangerous situation is not avoided, it may result in minor to moderate injuries.
---	-----------------	--

NOTE	This signal word indicates actions that must be taken to prevent damage to property. Observing these notes will prevent damage or destruction of the overall system or its components.
-------------	--

Tips, advice and recommendations

- ① Provides the user with tips, advice or recommendations on how to efficiently use the product.

1.1.2 Other symbols

Action instructions

Action instructions prompt the reader to carry out an action or a work step. Always carry out the action instructions one at a time and in the specified order.

Structure of the action instructions:

- ➞ Instructions for an action.

Outcome statement, if required.

Lists

Structure of unnumbered lists:

- List level 1
- List level 2

Structure of numbered lists:

1. List level 1
- 1.1 List level 2

1.2 Personnel requirements

- ➞ Make sure that exclusively authorised and trained personnel operate, service or repair the machine.
- ➞ Make sure that all persons operating, servicing or repairing the machine meet the prescribed minimum age.
- ➞ Make sure that personnel training covers theoretical information (technical and safety aspects) and hands-on training on the machine.
- ➞ Make sure that the personnel have read and understood the operating manual and the documentation supplied.
- ➞ Make sure that personnel undergoing apprenticeship, induction, instruction or general training operate the machine exclusively under the constant supervision of an experienced person.
- ➞ Regularly monitor personnel to ensure they work in a safety-conscious and risk-aware manner.
- ➞ Clearly define the responsibilities of personnel in terms of operation, set-up, service and repair.

1.3 Target groups

This manual is intended exclusively for authorised technicians.

- Electrical work must exclusively be carried out by qualified electricians. For further information, refer to VDE 0105-100 and IEC 60050-826.
- Assembly and initial commissioning must be carried out exclusively by the manufacturer or by authorised qualified personnel appointed and authorised by the manufacturer.
- Work on the refrigeration system must exclusively be carried out by qualified refrigeration engineers.

1.3.1 Maintenance personnel

Responsibilities

Maintenance personnel has the following duties:

- Read the assembly and operating manual.
- Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers
 - Additional instructions and manuals
- Service the machine to ensure safe and reliable operation.
- Carry out all the prescribed maintenance tasks.
- Wear protective clothing.
- Observe the safety regulations at the site of operation.
- Inform the owner of any changes to the machine that may compromise safety.
- Modifications to the machine must be carried out exclusively after consulting the manufacturer.
- Always use original spare parts if possible.

Requirements

Maintenance personnel has the following qualifications and abilities:

- Has reached the minimum age required by law.
- Is physically and mentally capable of servicing the machine.
 - Has good eyesight
 - Can hear well
 - Is fast to react
- Holds the necessary authorisation to carry out maintenance on the machine.
- Is able to judge distance, height and spacing.
- Has good knowledge of the machine and the associated hazards.
- Is familiar with all maintenance procedures and precautions that must be taken.

- Knows how to use specialised tools for maintenance and repair work.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.3.2 Qualified electricians

Responsibilities

Duties of qualified electricians:

- Read the operating manual.
- Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers (tools for add-ons, etc.)
 - Special publications
- Service and repair the machine to ensure it operates safely and reliably.
- Carry out all prescribed maintenance and repair work.
- Disconnect the main isolator of the power supply system and ensure that it cannot be switched back on accidentally.
- Clearly define and mark the work area.
- Wear protective clothing.
- Use the right tools for the job.
- Observe the safety regulations at the site of operation.
- Inform the owner of any changes to the machine that may compromise safety.
- Modifications to the machine must be carried out exclusively after consulting the manufacturer.
- Always use original spare parts if possible.

Requirements

Qualifications and abilities of qualified electricians:

- Has reached the minimum age required by law.
- Is physically and mentally capable of servicing the machine.
 - Has good eyesight
 - Can hear well
 - Is fast to react
- Holds the necessary authorisation to carry out maintenance on the machine.

- Is able to:
 - ▣ Judge distance, height and spacing.
 - ▣ Assess work properly.
 - ▣ Identify sources of danger.
 - ▣ Take safety measures.
- Has good knowledge of the machine and the associated hazards.
- Is familiar with all maintenance procedures and precautions that must be taken.
- Knows how to use specialised equipment for maintenance and repair work.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.3.3 Refrigeration engineer

Responsibilities

Duties of refrigeration engineers:

- Read the operating manual.
- Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers (tools for add-ons, etc.)
 - Special publications
- Service and repair the machine to ensure it operates safely and reliably.
- Carry out all prescribed maintenance and repair work.
- Disconnect the main isolator of the power supply system and ensure that it cannot be switched back on accidentally.
- Clearly define and mark the work area.
- Wear protective clothing.
- Use the right tools for the job.
- Observe the safety regulations at the site of operation.
- Inform the owner of any changes to the machine that may compromise safety.
- Modifications to the machine must be carried out exclusively after consulting the manufacturer.
- Always use original spare parts if possible.

Requirements

Qualifications and abilities of refrigeration engineers:

- Has reached the minimum age required by law.

- Is physically and mentally capable of servicing the machine.
 - ▣ Has good eyesight
 - ▣ Can hear well
 - ▣ Is fast to react
- Holds the necessary authorisation to carry out maintenance and repair work on the machine.
- Is able to:
 - ▣ Judge distance, height and spacing.
 - ▣ Assess work properly.
 - ▣ Identify sources of danger.
 - ▣ Take safety measures.
- Has good knowledge of the machine and the associated hazards.
- Is familiar with all maintenance procedures and precautions that must be taken.
- Knows how to use specialised equipment for maintenance and repair work.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.3.4 Heating engineers

Responsibilities

Duties of heating engineers:

- Read the operating manual.
- Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers (tools for add-ons, etc.)
 - Special publications
- Service and repair the machine to ensure it operates safely and reliably.
- Carry out all prescribed maintenance and repair work.
- Disconnect the main isolator of the power supply system and ensure that it cannot be switched back on accidentally.
- Clearly define and mark the work area.
- Wear protective clothing.
- Use the right tools for the job.
- Observe the safety regulations at the site of operation.
- Inform the owner of any changes to the machine that may compromise safety.
- Modifications to the machine must be carried out exclusively after consulting the manufacturer.
- Always use original spare parts if possible.

Requirements

Qualifications and abilities of heating engineers:

- Has reached the minimum age required by law.
- Is physically and mentally capable of servicing the machine.
 - ▣ Has good eyesight
 - ▣ Can hear well
 - ▣ Is fast to react
- Holds the necessary authorisation to carry out maintenance and repair work on the machine.
- Is able to:
 - ▣ Judge distance, height and spacing.
 - ▣ Assess work properly.
 - ▣ Identify sources of danger.
 - ▣ Take safety measures.
- Has good knowledge of the machine and the associated hazards.
- Is familiar with all maintenance procedures and precautions that must be taken.
- Knows how to use specialised equipment for maintenance and repair work.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.3.5 Setup personnel

Responsibilities

Responsibilities of setup personnel:

- ➞ Read the operating manual.
- ➞ Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers
 - Additional instructions and manuals
- ➞ Set up the machine for safe and reliable operation.
- ➞ Wear personal protective equipment.
- ➞ Observe the safety regulations at the site of operation.
- ➞ Inform the owner of any changes to the machine that may compromise safety.
- ➞ Modifications to the machine must be carried out exclusively after consulting the manufacturer.
- ➞ Always use original spare parts if possible.

Requirements

Qualifications and abilities of setup personnel:

- Has reached the minimum age required by law.
- Is physically and mentally capable of setting up the machine.
 - ▣ Has good eyesight
 - ▣ Can hear well
 - ▣ Is fast to react
 - ▣ Is able to judge distance, height and spacing.
- Holds the authorisation required to set up the machine.
- Is familiar with the machine and the associated hazards.
- Is familiar with all setup procedures and precautions that must be taken.
- Knows how to use specialised tools for setup.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.3.6 Authorised qualified personnel

Responsibilities

Responsibilities of authorised qualified personnel:

- ➞ Read the operating manual.
- ➞ Read the documentation supplied.
 - Operating manuals for components
 - Operating manuals from third-party manufacturers
 - Additional instructions and manuals
- ➞ Service, repair, adjust and modify the machine to ensure safe and reliable operation.
- ➞ Carry out all maintenance and repair tasks specified in the maintenance schedule for authorised qualified personnel.
- ➞ Adjust all the necessary parameters.
- ➞ Carry out all the planned modifications.
- ➞ Clearly define and mark the work area.
- ➞ Wear personal protective equipment.
- ➞ Use tools that are suitable for the intended task.
- ➞ Observe the safety regulations at the site of operation.
- ➞ Inform the owner of any changes to the machine that may compromise safety.
- ➞ Always use original spare parts if possible.

Requirements

Qualifications and abilities of authorised qualified personnel:

- Has reached the minimum age required by law.
- Is physically and mentally capable of servicing, repairing, adjusting and modifying the machine.
 - ▣ Has good eyesight
 - ▣ Can hear well
 - ▣ Is fast to react
 - ▣ Is able to judge distance, height and spacing.
- Authorised qualified personnel has undergone training that complies with country-specific laws, standards and regulations.
- Abilities of authorised qualified personnel:
 - ▣ Is able to assess work properly.
 - ▣ Is able to identify sources of danger.
 - ▣ Is able to implement safety measures.
- Has knowledge and experience in the relevant field of work.
- Is familiar with the relevant national standards.
- Holds the necessary authorisation to carry out maintenance, repairs, adjustments and modifications to the machine.
- Is familiar with the machine and the associated hazards.
- Is able to provide evidence of their documented qualifications.
- Is familiar with all procedures and precautions relating to maintenance, repairs, adjustment and modification.
- Knows how to use specialist tools for maintenance, repair, adjustment and modification.
- Has no physical or mental impairment that would compromise any of the prescribed requirements.
- Is not under the influence of alcohol.
- Is not under the influence of drugs.

1.4 Other applicable documents

- Please refer to the additional documentation supplied and the relevant standards and laws to ensure the machine is used safely and correctly.

Documents that must be observed:

- Safety data sheets for operating media
 - ▣ R290 (propane: C3H8)
- Assembly and operating manual

2 Safety and hazards

NOTE

Damage, decreased performance or radiator failure due to incorrectly configured control parameters!

- Make sure that control parameters are exclusively changed by trained qualified personnel.

NOTE

Property damage caused by a lack of training!

- Make sure that exclusively trained and qualified personnel operate the Refrigeration unit control system.

NOTE

Property damage caused by a faulty unit!

- Make sure that exclusively trained and qualified personnel operate the Refrigeration unit control system.
- Use the Refrigeration unit control system exclusively in its original condition, without any unauthorised modifications, and in a technically perfect condition.

3 Intended use

Use the control system exclusively in conjunction with the intended refrigeration units.

4 Foreseeable misuse

Use the control system exclusively for its intended purpose.

- Use this control system exclusively within the approved operating limits of the refrigeration unit (see the refrigeration unit's installation and operating manual).

5 Operation

5.1 Control unit

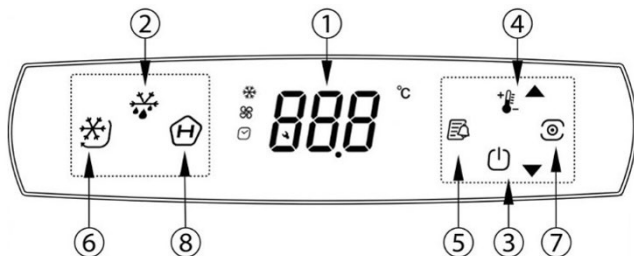


Abbildung 1: Control element

- 1 Display
- 2 Control button: Manual defrosting
- 3 Control button: Down/Standby
- 4 Control button: Up/Setpoint
- 5 Control button: Display alarm archive
- 6 Control button: Continuous operation
- 7 Control button: Programme
- 8 Control button: Temperature monitoring archive

- ① In the factory-set condition, the value shown on the display corresponds to the cold room temperature

NOTE

Property damage caused by improper operation!

- ➔ Exclusively operate the control buttons with your fingers.

Control button lock

- ① When the control button lock is active, the control button functions are inactive.

Control button lock is active:

- after switching on the power unit
- if there is no input within 10 seconds.

- ➔ To disable the control button lock: press control button Programme **7** for 3 seconds.

-- appears on the display.

- ➔ Operate desired control button.

Control button 2 - Manual defrosting

- ➔ Press control button **Manual defrosting 2** to
- start or stop manual defrosting.

During the defrosting cycle, the display shows the value "def".

Control button 3 Standby/Up

- ➔ Briefly press control button **Up 3** to:
- Scroll up through the parameters.
 - Increase input values.
 - Put the unit to standby mode.

Control button 4 Up/Setpoint

- ➔ Briefly press control button **Down 4** to:
- Scroll down through the parameters.
 - Decrease input values.
 - Show and adjust the setpoint.

Control button 5 Display alarm archive

- ➔ Press control button **Display alarm archive 5** to show the last five alarms.

Control button 6 Continuous operation

- ➔ Press control button **Continuous operation 6** to activate continuous operation (See 5.4.12 Continuous operation on page 12).

Control button 7 Programme

- ➔ Briefly press control button **Programme 7** to:
- Open programming mode (See 5.4 Programming mode on page 9).
 - Open menu items
 - Confirm input and modified parameter values.

Control button 8 Temperature exceedance archive

- ➔ Briefly press control button **Temperature exceedance archive 8** to access temperature monitoring.

- ① The temperature exceedance archive is disabled in the factory-set condition.

5.2 Navigation

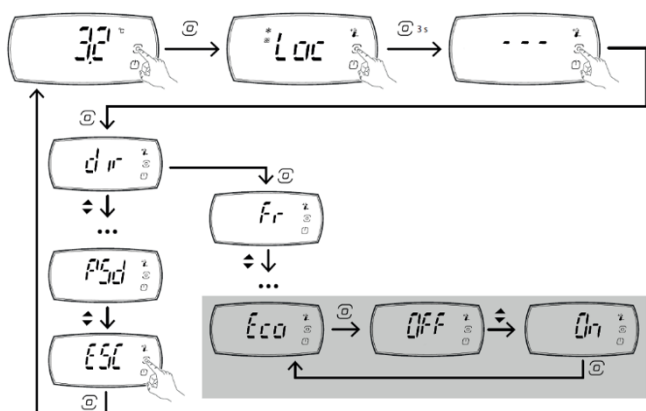


Abbildung 2: Figure 2: Navigation

Functions of control button Programme 7:

- Unlock the control button.
- Open parameter/menu item.
- Confirm modified parameter.

The **ESC** function can be used in every menu item.

- You can return to the previous menu level by pressing the function **ESC**.

5.3 Display symbols

Symbol	Meaning
	Compressor active
	Evaporator fan active
	Time programme active
	Alarm active/service icon (contact Service dept.)

Tabelle 1: Display symbols

5.4 Programming mode

- ① Viessmann recommends using the smartphone app **Carel Applica** to change the control system's configuration. The app's Access service provides access to additional parameters that are not available via the control button (See 10 Service app on page 18).

To open Programming mode:

- ➔ Press the control button Programme 7.

The Value "dir" appears on the display.

- ➔ Use the control buttons **Down/Standby 3** and **Up/Setpoint 4** to scroll through the menu item.

Programming mode is subdivided into the following menu items:

Menu item	Abbreviation
dir	Direct functions
CtL	Control system
Pro	Sensor display
dEf	Defrosting
CnF	Configuration
ALM	Alarms
PSd	Service password input
ESC	Exit menu

Tabelle 2: Programming mode menu item

Programming mode settings:

- If no control button is pressed for approximately 20 seconds, the input will end automatically.
 - Unconfirmed values will be lost.
 - Programming mode exclusively shows functions that are accessible to the active user profile.
 - The default User profile is enabled unless the service password (See 5.4.1 Menu item PSd - Service password entry on page 9) is entered.
- ➔ Default values for the parameters See 8 List of parameters on page 15.

5.4.1 Menu item PSd - Service password entry

To enter the Service password:

- Open the menu item **PSd** with control button Programme 7.
- Use the control button Up/Setpoint 3 or Down/Standby 4 to enter the Service password **15**.
- Confirm your input by pressing the control button Programme 7.

- ① In the tables below, the functions shown in **bold** are exclusively accessible after having entered the Service password.

5.4.2 Menu item Ctl - Control system

Parameter	Abbreviation
St	Setpoint
rd	Temperature control setpoint differential (hysteresis, see Section 5.4.8).
Sth	Humidity setpoint (See 5.4.9).
rdh	Humidity switching difference (See 5.4.9)
HU	Humidity level (See 5.4.9)
rM	Temperature monitoring (See 5.4.10)
rt	Monitoring period (See 5.4.10)
rSC	Factory settings The factory settings for the control system do not correspond to the default settings for the refrigeration unit.

Tabelle 3: Menu item Ctl

5.4.3 Menu item dir - Direct functions

Parameter	Abbreviation
Fr	Firmware version
Eco	Eco mode (See 5.4.11)
SrG	Room sensor value
Sm	Room sensor value
rL	Room sensor minimum value (See 5.4.10)
rH	Room sensor maximum value (See 5.4.10)
rtL	Reset room sensor min./max. (See 5.4.10)
Sd	Defrost sensor value
Sc	Condensing sensor value
BtE	Bluetooth interface
dFM	Manual defrost activation
St	Setpoint

Tabelle 4: Menu item dir

5.4.4 Menu item Pro - Sensor display

Parameter	Abbreviation
/5	Unit of measurement (°C -> °F)
/6	Decimal place
/t1	Default display on the control panel

Tabelle 5: Menu item Pro

5.4.5 Menu item dEF - Defrosting

Parameter	Abbreviation
dl	Defrost interval
dP1	Maximum defrost duration
dt1	Defrost end temperature
dP2	Maximum defrosting time for auxiliary evaporator
dt2	Defrost end temperature of auxiliary evaporator
d6	Display shown during defrosting
d8	High and low temperature alarm exclusion period after defrosting

Tabelle 6: Menu item dEF

➔ Description of defrost parameters See 5.4.13 Defrost parameters on page 12.

5.4.6 Menu item CnF - Configuration

Parameter	Abbreviation
Hb	Buzzer
H0	Serial address
H10	Baud rate for serial interface
H11	Stop bits and parity for serial interfaces

Tabelle 7: Menu item CnF

5.4.7 Menu item ALM - Alarm

Parameter	Abbreviation
AH	High-temperature alarm threshold
AL	Low-temperature alarm threshold
Ad	High and low temperature alarm delay
Add	Alarm delay when door is open and alarm exclusion period for high and low temperatures
rSA	Acknowledgement of active alarm
rAL	Clear alarm trend

Tabelle 8: Menu item ALM

➔ Description of alarm parameters See 5.4.14 Alarm parameters on page 12.

5.4.8 Temperature control setpoint differential

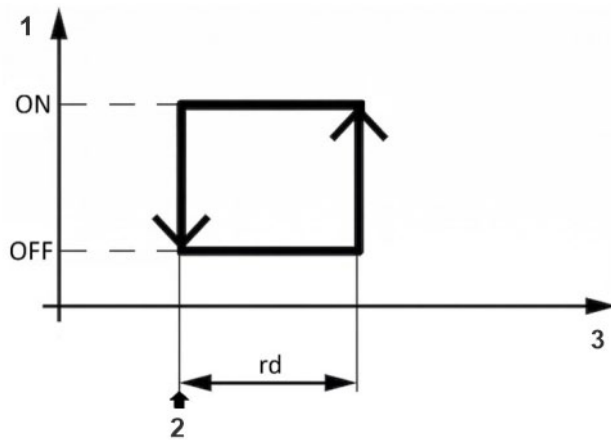


Abbildung 3: Temperature control setpoint differential rd

- 1 Refrigeration requirement
- 2 Setpoint (St)
- 3 Cold room temperature

The temperature switching differential rd is two Kelvin in the factory-set condition.

5.4.9 Humidity control system

The standard model does not come fitted with a humidity sensor. The parameters **Sth** and **rdh** for adjusting the humidity control system are available but have no effect.

To regulate the humidity in the cold room, the evaporator fan can be controlled cyclically via the **HU** parameter when the compressor is inactive (see Figure 4).

To activate the evaporator fan cycles, change the value of parameter **F2** to the value **dehumidification cycles**. The parameter **F2** is exclusively available in the smartphone app **Applica** (See 10 Service app on page 18).

There are three humidity levels available.

Humidity level	TON [min]	TOFF [min]
0	1	2
1	2	2
2	3	2

Tabelle 9: Switch-on and switch-off times for the humidity levels

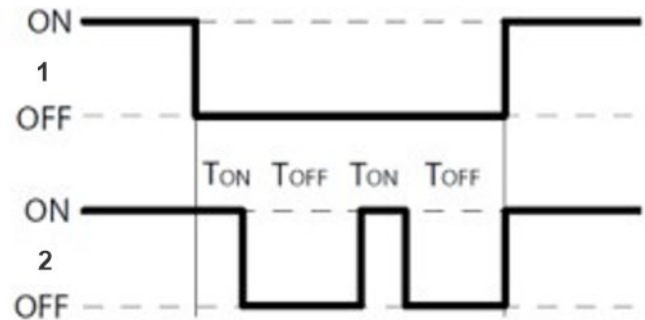


Abbildung 4: Evaporator fan cycles

- 1 Compressor
- 2 Evaporator fan

5.4.10 Temperature monitoring

- ① Temperature monitoring is exclusively available if the RTC is set correctly. To set the time and date See 10 Service app on page 18).

The minimum and maximum values of the room sensor recorded within the time interval rt are stored in the parameters **rL** and **rH**.

To reset the monitoring period:

- ➔ Set parameter **rtL** to **ON**.

Monitoring will be restarted.

Parameter **rtL**:

- ➔ Set via the direct functions (see Section 5.4.3).

or

- ➔ Set in the Service app (See 10 Service app on page 18)).

5.4.11 Eco operation

- ① The Service app lets you set the increase in the setpoint and the hysteresis on a timed basis (See 10 Service app on page 18).

Eco operation:

- Increasing the setpoint by two Kelvin (r4)
- Increasing the temperature setpoint difference (r4d) to three Kelvin
- ➔ Change values using the smartphone app Carel Applica (See 10 Service app on page 18)).
- ① If the door is opened whilst the unit is in Eco mode, it will switch to normal mode.
- ① When ECO mode is activated, the display alternates between the cold room temperature and the ECO value.

5.4.12 Continuous operation

In continuous operation, the refrigeration unit can be run continuously for a maximum of three hours until the temperature in the cold room has fallen to 1.5 K (ccE) below the setpoint.

If the door contact switch is installed and the door is opened, continuous operation is interrupted.

Continuous operation resumes once the door has closed.

5.4.13 Defrost parameters

In the factory-set condition, hot-gas defrosting is time-controlled. The time interval set in the parameter **dl** corresponds to the time between two consecutive defrosting cycles.

For deep-freeze units, the default setting is four hours.

For normal refrigeration units, the default setting is six hours.

Defrosting can be initiated (automatically or manually) when the temperature at the defrost sensor falls below the defrost end temperature **dt1**.

If hot-gas defrosting takes longer than the time set in the parameter **dp1**, the defrosting cycle is aborted and the error code **Ed1** is displayed.

The parameters **dp2** and **dt2** are available and have no effect on defrosting.

- ① If the defrost end temperature **dt1** is too high, the high-pressure switch may trip during hot-gas defrosting.

During defrosting, the display shows the value **dEF**. The output value can be changed using parameter **d6** (See 8 List of parameters on page 15).

Once defrosting is complete, the alarm message **AH** (high temperature) will not be triggered for the time interval set in parameter **d8**.

5.4.14 Alarm parameters

HI alarm triggers:

- The cold room temperature exceeds the setpoint by the value of the parameter **AH** (see Section 8).

LO alarm triggers:

- The cold room temperature is below the setpoint by the value of the parameter **AL** (see Section 8).

Condition:

- The deviation persists continuously throughout the entire duration of the **Ad** time interval.

Resetting alarms:

Automatically, once the cold room temperature returns to within 2 Kelvin above (**HI**) or below (**LO**) the setpoint.

If the door is opened during the delay time **Ad**, the time until the HI alarm is triggered is extended by the value specified in parameter **Add**.

- ➔ Acknowledge alarms that are not reset automatically (see Section 7) using the **rSA** parameter.

Condition:

- The malfunction has been rectified.

- ➔ Clear alarm archive via parameter **rAL**.

5.4.15 Door control

Normal-cooling refrigeration unit

In the factory-set condition, the control system identifies the door as being closed when the contact is open.

Deep-freeze refrigeration unit

In the factory-set condition, the control system identifies the door as being open when the contact is closed.

To change the contact logic:

- ➔ Change parameter **rIE** from **Normally open** to **Normally closed**.

The parameter **rIE** is exclusively available in the Service app (See 10 Service app on page 18)).

If the door is detected as being open, the control system deactivates the compressor and evaporator fan for the time interval specified in parameter **Add**.

If the door remains open for any length of time, the control system reactivates the compressor and evaporator fan and triggers the alarm **dor**.

Once the door has been closed, the alarm is automatically reset.

6 Messages

Display messages are used for visualising operating states (e.g. defrosting) or to provide feedback on button commands that are deemed non-compliant as a result of the current system state.

Messages are acknowledged automatically or manually.

If the cause of the message has been rectified or the function has been terminated, the message will be automatically acknowledged. When acknowledging manually, it is necessary to acknowledge the message additionally with the parameter **rSA** (See 5.4.14 Alarm parameters on page 12) or to reset the refrigeration unit (by disconnecting and reconnecting the power supply).

Display code	Description
bLE	Establishing/active Bluetooth connection
dEF	Defrosting is in progress
Loc	Display locked
Off	Unit in standby mode
tSt	Test mode for the active serial BMS connection outputs
ECO	ECO mode active
MAAn	Manual operation of the outputs active
ETC	Alarm time and date
Ed1	Alarm: Defrosting terminated due to time-out
rE	Room sensor alarm
dor	Door open alarm
cht	Early alarm: condenser blocked
Cht	Alarm: condenser blocked
LO	Low temperature alarm
HI	High temperature alarm
IOC	I/O configuration alarm
LP	Pressure malfunction alarm

Tabelle 10: Display messages

7 Alarm messages

The control distinguishes between two types of malfunctions.

Warnings:

- The display alternates between the cold room temperature and error code.
- The alarm relay is not activated.

Alarms:

- The display alternates between the cold room temperature and error code.
- The service symbol shows on the display.

Alarms are acknowledged in the same way as messages.

In addition to automatic and manual acknowledgement, the pressure error alarm **LP** is acknowledged semi-automatically. Once the cause of the error has been rectified (high or low pressure), the control system automatically resets the pressure error alarm **LP**. If the alarm is triggered three times within an hour, it can exclusively be acknowledged manually once the cause has been rectified.

To view the alarm trend, press control button Display alarm archive **5** (See 5.1 Control unit on page 8).

Display	Description	Delay	Acknowledge- ment	Effects
CE	Error writing the configuration	-	Automatic	-
cht	Early alarm for high condenser temperature	-	Automatic	-
CHt	Alarm for high condenser temperature	Acd (0 min)	Manual	Compressor deactivated
dor	Door open	Add (5 min)	Automatic	See 5.4.15
E1	Room sensor is faulty or disconnected	-	Automatic	Emergency operation The evaporator sensor functions as a control sensor. The setpoint is reduced automatically. The cold room temperature must be monitored manually..
E2	Evaporator sensor is faulty or disconnected	-	Automatic	Unable to determine defrost end temperature. Defrosting is interrupted once the maximum time has been reached.
E4	Condenser sensor faulty or interrupted	-	Automatic	Unable to determine control signal for condenser. Unable to activate condenser fan.
Ed1	Defrosting terminated after having reached maximum time	-	Automatic	-
Etc	Clock error	-	Manual	Time programme deactivated
HI	High temperature	Ad (10 min)	Automatic	-
LO	Low temperature	Ad (10 min)	Automatic	-
LP	Pressure malfunction	-	Semi-automatic	Compressor deactivated
rE	Room sensor and evaporator sensor are faulty or disconnected	-	Automatic	It is not possible to determine the control temperature. Compressor deactivated
SF	Configuration did not complete successfully	-	Manual	-

Tabelle 11: Alarm messages

8 List of parameters

NOTE!

Property damage caused by a lack of technical knowledge!

- ➔ Make sure that exclusively trained and qualified personnel operate the Refrigeration unit control system.

- ① For information on accessing and changing the listed parameters, see Section 5.4 Programming mode. This manual lists the parameters that can be accessed via control buttons. Various other parameters are available via the Service app Carel Applica (See 10 Service app on page 18).

- ① In the tables below, the functions shown in **bold** are exclusively accessible after having entered the Service password.

Display	Description	Unit	min.	max.	DF default value	NR default value	Modified parameter value
8.1 Menu item dir - Direct functions							
Fr	Show firmware version.	-	-	-	-	-	
Eco	Activate Eco mode.	-	0	1	0	0	
SrG	Show room sensor value.	°C	-	-	-	-	
Sm	Show room sensor value.	°C	-	-	-	-	
rL	Show minimum value for room sensor.	°C	-	-	-	-	
rH	Show maximum value for room sensor.	°C	-	-	-	-	
rtL	Reset room sensor min./max.	-	0	1	-	-	
Sd	Show defrost sensor value.	°C	-	-	-	-	
Sc	Show condenser sensor value.	°C	-	-	-	-	
BtE	Bluetooth interface 0 = deactivated; 1 = activated	-	0	1	1	1	
dFM	Enable manual defrosting.	-	0	1	-	-	
St	Setpoint	°C	-25	-5	-20	5	
8.2 Menu item CtL - Control system							
St	Setpoint	°C	-25	-5	-20	5	
rd	Temperature control differential (hysteresis)	K	0.1	99.9	2	2	
Sth	Humidity setpoint No humidity sensor fitted. Changing this parameter has no effect.	%rH	0.1	100	-	-	
rdh	Humidity switching differential No humidity sensor fitted. Changing this parameter has no effect.	%rH	0.1	99.9	5	5	
HU	Humidity level To change the humidity level, you must also adjust parameter F2. The parameter F2 is available in the Service app only (See 10 Service app on page 18)	-	0	2	0	0	

Display	Description	Unit	min.	max.	DF default value	NR default value	Modified parameter value
rM	Temperature monitoring 0 = deactivated; 1 = activated	-	0	1	1	1	
rt	Monitoring period display	h	0	-	-	-	
rSC	Resets the control system to its factory settings. The factory settings for the control system do not correspond to the default settings for the refrigeration unit. To transfer complete configurations See 10 Service app on page 18).	-	0	1	-	-	
8.3 Menu item Pro - Sensor display							
/5	Change unit of measurement 0 = °C; 1 = °F	°C/°F	0	1	0	0	
/6	Show decimal place 0 = Yes; 1 = No	-	0	1	1	1	
/t1	Control button default display 1 = room sensor; 2 = evaporator sensor; 4 = condenser sensor	-	1	250	60	60	
8.4 Menu item dEf - Defrosting							
dI	Defrost interval	h	0	240	12	6	
dP1	Maximum defrost duration	min	1	240	45	45	
dt1	Defrost end temperature	°C	-50	50	6	6	
dP2	Maximum defrosting time for auxiliary evaporator No auxiliary evaporator is fitted. Changing this parameter does not have any effect.	min	1	240	45	45	
dt2	Defrost end temperature of auxiliary evaporator No auxiliary evaporator is fitted. Changing this parameter does not have any effect.	min	1	240	4	4	
d6	Display shown during defrosting 0 = temperature alternating with dEF ; 1 = display lock; 2 = dEF	-	0	2	2	2	
d8	High and low temperature alarm exclusion period after defrosting	h	0	240	1	1	
8.5 Menu item CnF - Configuration							
Hb	Switch summer time On/Off 0 = deactivated; 1 = activated	-	0	1	0	0	
H0	Serial address	-	1	247	1	1	
H10	Baud rate for serial interface 0 = 1200; 1 = 2400; 3 = 9600; 4 = 19200; 5 = 38400; 6 = 57600; 7 = 115200	-	0	7	4	4	

Display	Description	Unit	min.	max.	DF default value	NR default value	Modified parameter value
H11	Stop bits and parity for serial interfaces 0 = stop bit 1, parity none; 1 = stop bits 2, parity none; 2 = stop bit 1, parity even; 3 = stop bits 2, parity even; 4 = stop bit 1, parity odd; 5 = stop bits 2, parity odd	-	0	5	1	1	
8.6 Menu item ALM - Alarm							
AH	High-temperature alarm threshold	K	0	555	3	3	
AL	Low-temperature alarm threshold	K	0	200	3	3	
Ad	High and low temperature alarm delay	min	0	120	10	10	
Add	Alarm delay when door is open and alarm exclusion period for high and low temperatures	min	0	240	5	5	
rSA	Acknowledgement of active alarm	-	0	1	-	-	
rAL	Clear alarm trend.	-	0	1	-	-	

Tabelle 12: Parameter

9 Service app download

The Service app Carel Applica is available for iPhone (iOS) and Android.

- ➔ Use the QR codes to download the Service app from the App Store or Google Play.
- ➔ How to use the app See 10 Service app on page 18.

	
Service app QR code for Android	Service app QR code for iOS

10 Service app

10.1 Establishing a connection to the control system

- ➔ Open your smartphone's settings.
- ➔ Make sure that the Carel Applica app has access to the Bluetooth interface.
- ➔ Open Carel Applica on your smartphone.
- ➔ Open the **Search** tab.
- ➔ Select unit.

The value BLE appears on the refrigeration unit's display.

- ➔ Select the desired user profile.
- ① Selecting the **Service** user profile allows you to access the service parameters that are not available via the control buttons.
- ① Service user profile password: 15
- ➔ Synchronise the date and time if you are connecting the app to the control system for the first time.
- ① Functions such as timers are exclusively available once synchronisation has been carried out.

10.2 Overview of functions for the home screen

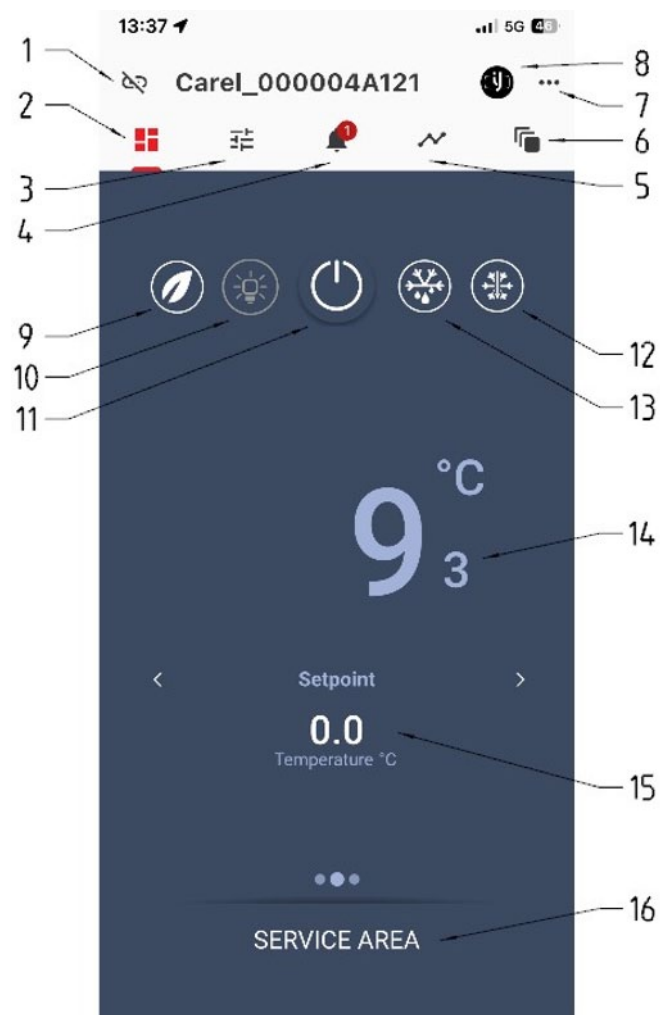


Abbildung 5: Applica home screen

- 1 Disconnect connection
- 2 Home screen tab
- 3 Parameters tab (Section 10.10)
- 4 Current alarms and alarm archive tab (Section 7)
- 5 Trend tab (Section 10.5)
- 6 Configurations tab (Section 10.4)
- 7 Settings app
- 8 Control system information
- 9 ECO mode (Section 5.4.11)
- 10 Light (disabled)
- 11 Switch off refrigeration unit (Standby)
- 12 Continuous operation (Section 5.4.12)
- 13 Manual defrosting
- 14 Current cold room temperature
- 15 Current setpoint (select for changing)
- 16 Service area (Section 10.3)

10.3 Service area

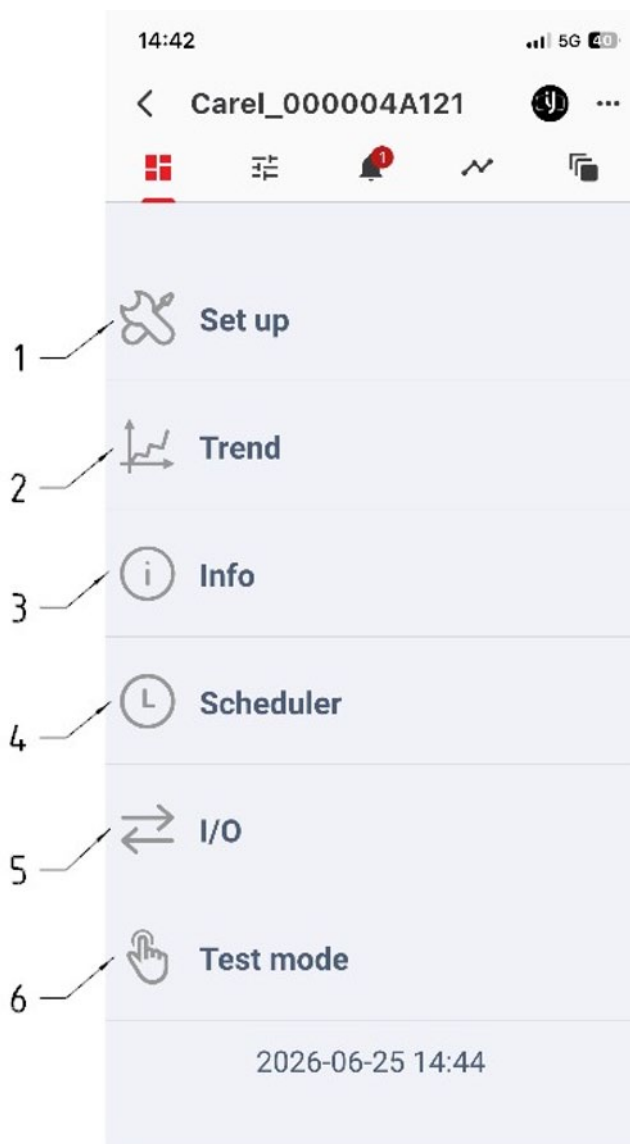


Abbildung 6: Service area

- 1 Parameter
- 2 Trends (Section 10.5)
- 3 Control system information
- 4 Time programme (Section 10.6)
- 5 Status of inputs and outputs (Section 10.7)
- 6 Test mode (Section 10.8)

10.4 Configurations

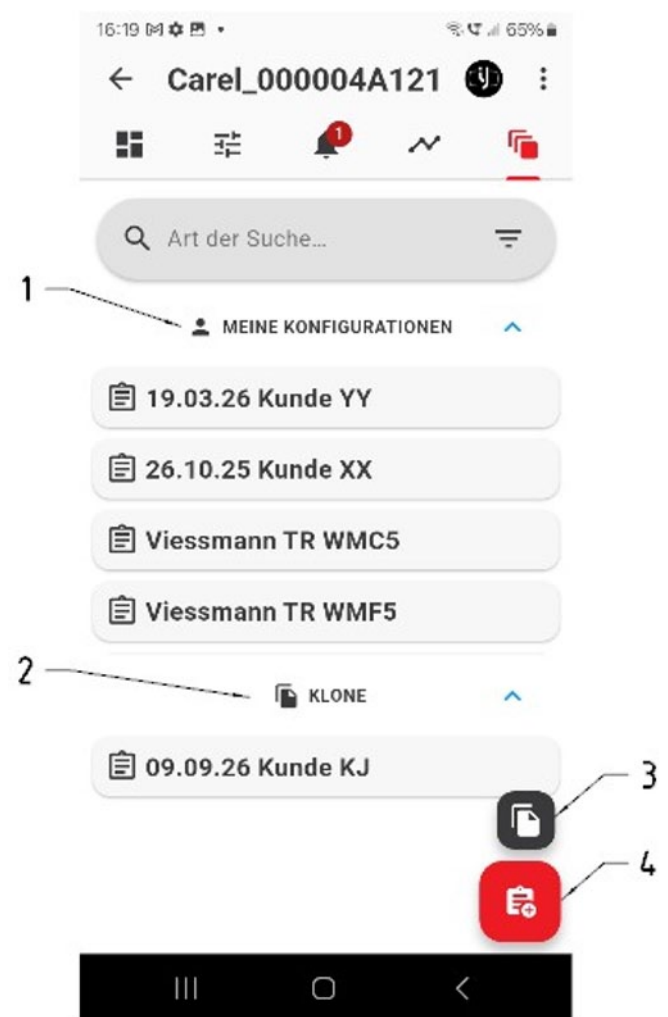


Abbildung 7: Configurations

In the Configurations menu, you can save complete sets of parameters and transfer them to the currently connected unit.

Difference:

- Configurations **1** contain the parameters visible to the current user profile.
- Clones **2** contain the full set of parameters.

To create a clone of the currently connected refrigeration unit:

- ➔ Press button 3.
- ➔ Enter name.
- ➔ Save clone.

To create a configuration for the currently connected refrigeration unit: press button 4.

- ➔ Enter name.
- ➔ Save configuration.

You can compare the parameters of saved configurations and clones with the current parameters of the refrigeration unit.

- ➔ Select the clone or configuration you want to compare.

A menu opens, allowing you not only to compare, but also to share and apply the settings to the current set of working parameters.

- ① You can edit configurations.

10.5 Trends

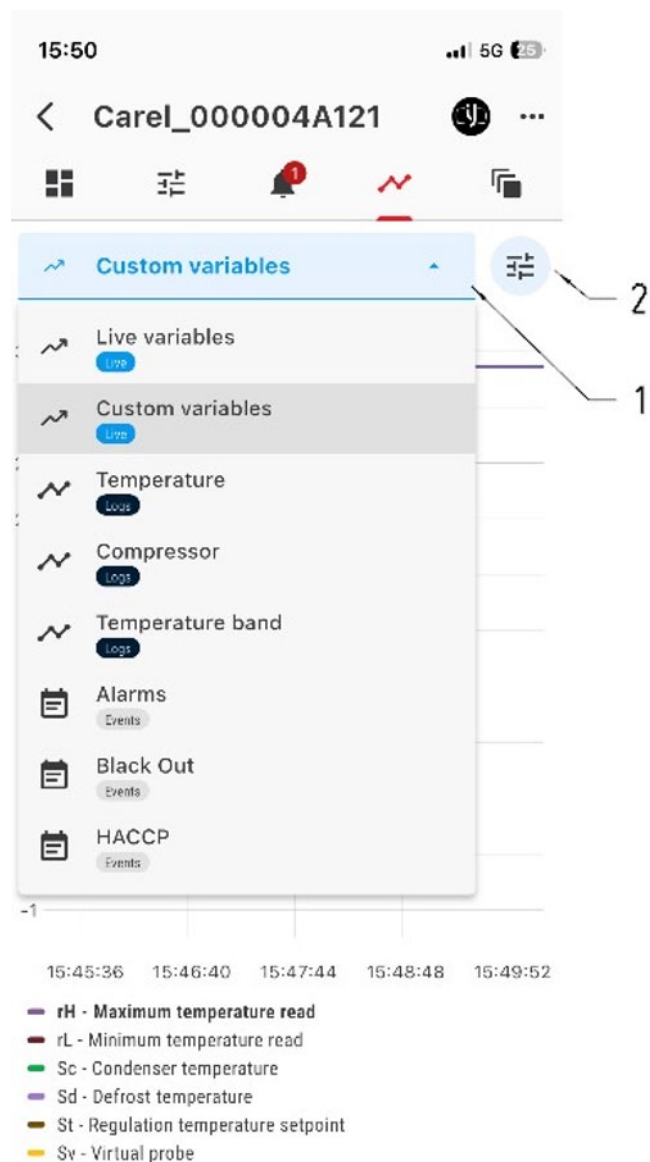


Abbildung 8: Trends

- 1 Dropdown list for trend selection
- 2 Editing tool

In the Trend menu, you can view periodic and event-based trends. The trends show the progression of preset parameters.

You can change the display using the editing tool. The time period for which periodic historical data (e.g. cold room temperature) is stored is 30 days.

10.6 Time programme

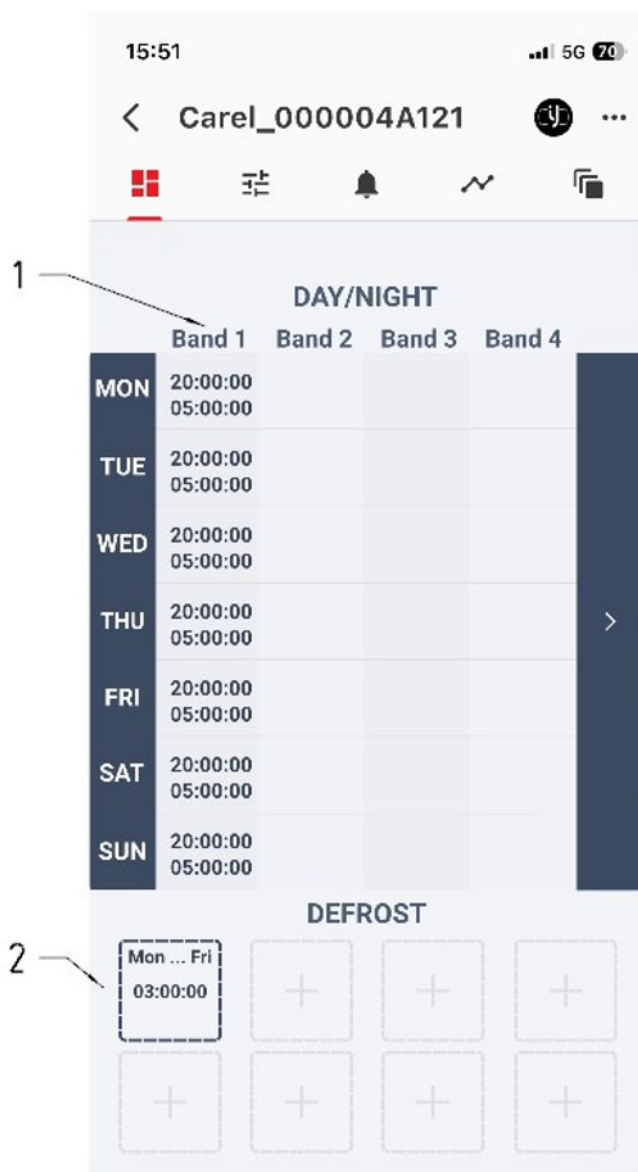


Abbildung 9: Time programme

- 1 Night mode start and end times
- 2 Defrosting

In the Time programme menu:

- You can set the start and end times for normal mode. Night mode is enabled outside this time range.
- You can set fixed times for a defrosting cycle.

During Night mode:

- The setpoint will be raised by the value stored in parameter **r4** (default value 2 K) and the temperature switching differential increases to the value stored in parameter **r4d** (default value 3 K).
- The display alternates between the cold room temperature and the value **ECO**.

10.7 Status of inputs and outputs



Abbildung 10: Status of outputs

- 1 Condenser fan speed
- 2 Compressor status (active)
- 3 Hot gas valve status (inactive)
- 4 Evaporator fan status (active)
- 5 Status of auxiliary heating systems (inactive)
- 6 Condenser fan status (active)
- 7 Alarm status (inactive)

In the I/O menu, you can:

- Show the current status of inputs and outputs
- Change relay outputs
- Change digital and sensor inputs.

- ① Two compressors are set as the default value for the digital outputs. Here, output NO1 (auxiliary parallel compressor) is the relay output for controlling the compressor and output NO5 (compressor) is the relay output for controlling the condenser fan.
- ① The digital input DI2 is identified as a **Low pressure switch**. If the input is active, there is a high-pressure or low-pressure malfunction.



Abbildung 11: Status of inputs

- 1 Inputs
- 2 Outputs
- 3 Room sensor temperature
- 4 Defrost sensor temperature
- 5 Condenser sensor temperature
- 6 Door contact switch status (inactive)
- 7 Pressure malfunction status (inactive)

10.8 Test mode

22

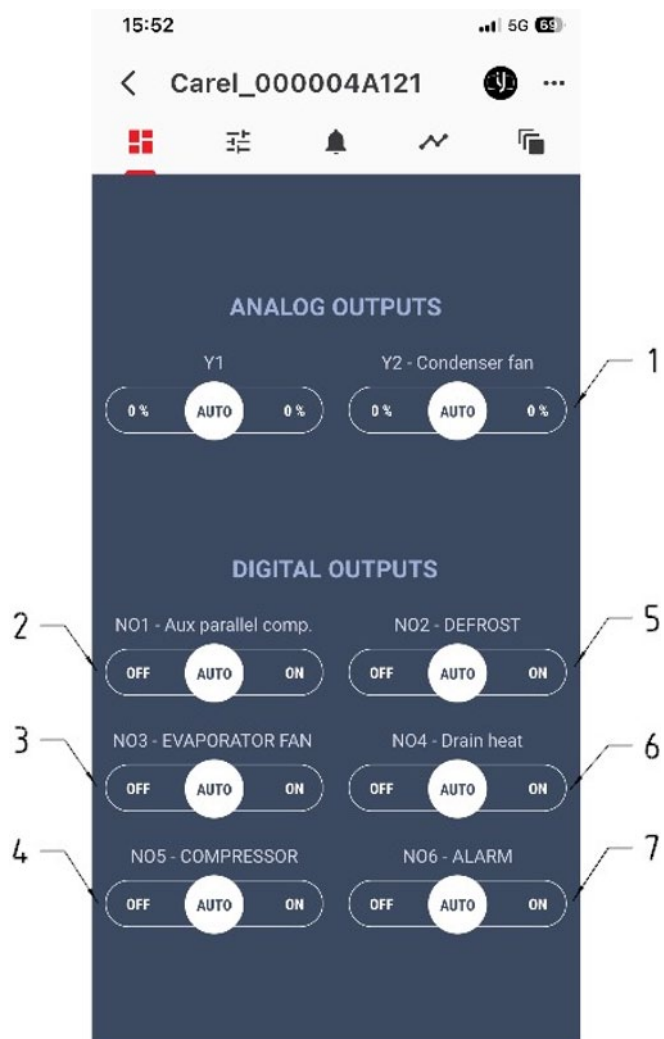


Abbildung 12: Test mode

- 1 Condenser fan speed
- 2 Compressor
- 3 Evaporator fan
- 4 Condenser fan
- 5 Hot gas valve
- 6 Auxiliary heating systems
- 7 Alarm

In the Test mode menu, you can:

- Control the outputs manually.
- Adjust the speed of the condenser fan.

- ① If at least one relay output or the speed of the condenser fan has been adjusted manually, the error message **MAN** appears. The error message clears once all sliders are set to the middle position (Auto).

- ➔ To switch On or Off manually, move the slider to the appropriate position.
- ➔ Make sure that all sliders are set to the middle position (Auto) before exiting test mode.
- ① After exiting test mode, all manual settings remain active.

10.9 Alarms

In the Alarms menu, you can view the current alarms and the alarm trend.

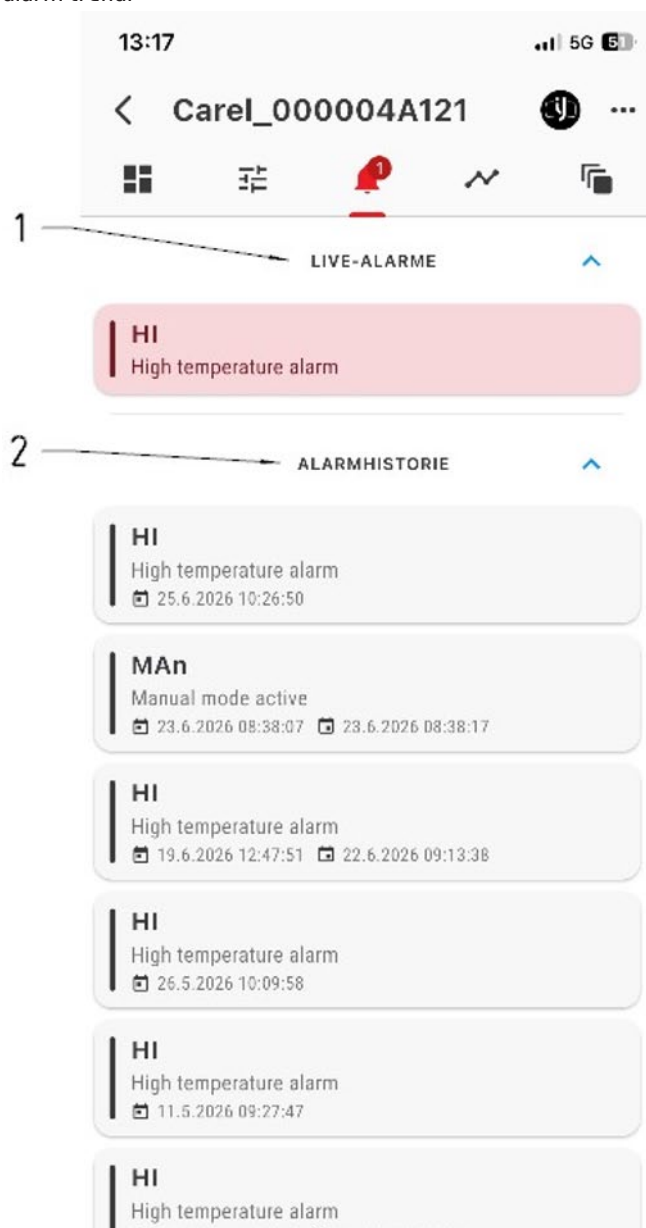


Abbildung 13: Alarms

- 1 Current alarms
- 2 Alarm trend

10.10 Parameters

In the Parameters menu, you can change all parameters (depending on your user profile). There is a search function.

The menu shows the parameters and status (e.g. of outputs).

To change a parameter:

- ➔ Select blue value.
- ➔ Enter value in input field.

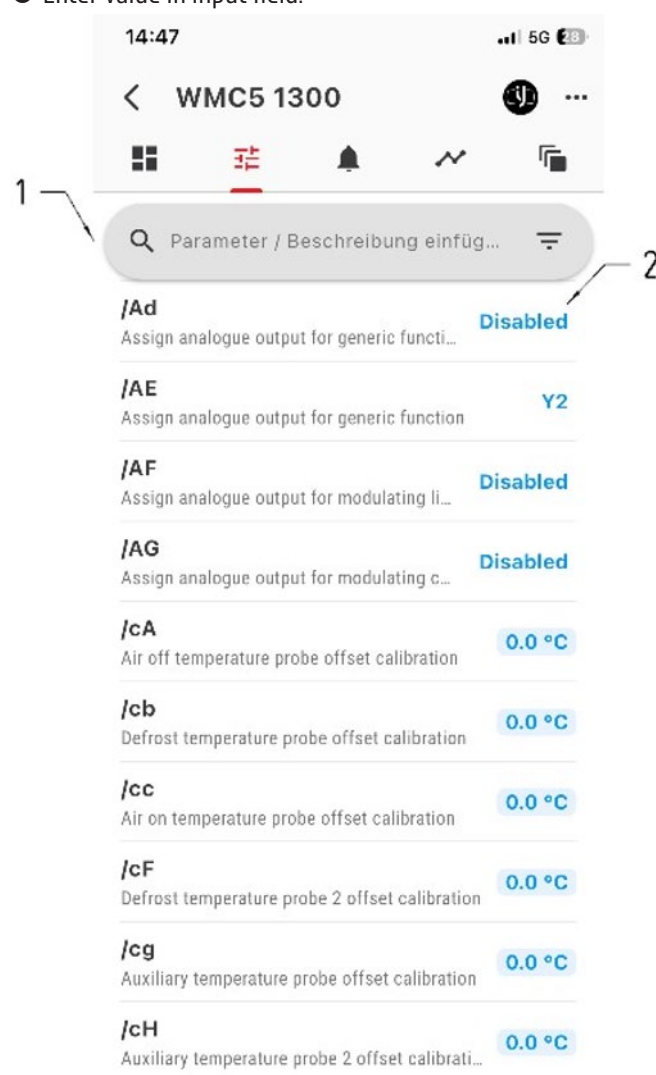


Abbildung 14: Parameter

- 1 Search function
- 2 Parameter

Further [information, images, manuals and prices for this product](#) and many other products are available from your specialist dealer [Kühlzelle24](#).

Viessmann Kühleysteme GmbH

Dr.-Vießmann-Strasse 1
95030 Hof, Germany
+49 9281 814 0
cleancold@vi-ccs.com
www.viessmann-cold.com

Viessmann Kältetechnik Österreich GmbH

IZ NÖ Süd Strasse 7, Objekt 58c, Stiege 3, Top
5, A-2355 Wiener Neudorf, Austria
+43 2236 677656
vk.at.info@vi-ccs.com

Viessmann Kältetechnik Schweiz AG

Industriestrasse 124
8957 Spreitenbach, Switzerland
+41 56 418 67 11
info.ch@vi-ccs.com

Viessmann Technique du Froid

27 rue du Champ de Mars, CS 60919 57209
SARREGUEMINES Cedex, France
+33 3 87 13 08 13
refrigeration-france@vi-ccs.com

Viessmann Refrigeration Solutions Benelux

Nijverheidsweg-Noord 60-94, NL-3812 PM
Amersfoort, The Netherlands
+31 85 018 7460
info-ref-nl@vi-ccs.com

Viessmann Refrigeration Systems Ltd.

Suite 22, Lake View House, Wilton Drive,
Warwick CV34 6RG, United Kingdom
+44 1952 457 157
uksales@vi-ccs.com