Operating Manual

For the specialist

Unit regulation

5471980-01 GB 06-2018

Please save!
Subject to technical changes!

1 User Guide

All important information for operation and control is summarized in the Operating Manual.

Read the Operating Manual completely and use the product only after you have first understood the Operating Manual.

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

1.1 Target group

These instructions are aimed exclusively at authorized specialists.

➲ Electrical work to be performed exclusively by qualified electricians.

➲ Initial commissioning to be be performed exclusively by the manufacturer or by a specialist designated and authorized by the manufacturer.

1.2 Structure of Operating Manual

1.2.1 Warnings

Structure of the warnings

Warnings are structured as follows:

⚠ SIGNAL WORD!	**Source of danger!** Consequences of non-compliance. ► Measure to avoid the danger.

Gradation of the warnings

Warnings differ according to the type of danger as follows:

⚠ DANGER!	Warns against an imminent threat of danger, which will lead to death or serious injuries if it is not avoided.
⚠ WARNING!	Warns against a possibly dangerous situation, which will lead to death or serious injuries if it is not avoided.
⚠ CAUTION!	Warns against a possibly dangerous situation, which will lead to moderate or minor injuries if it is not avoided.
NOTE!	Warns against a possibly dangerous situation, which will lead to damage to property or the environment if it is not avoided.

Tips, notes, and recommendations

ⓘ *Gives the user tips, notes, or recommendations on using the product efficiently.*

1.2.2 Additional symbols

Handling instructions

Handling instructions ask you to carry out an operation or a work step. Handling instructions should always be carried out individually and in the specified sequence.

Structure of the handling instructions:

➲ Instructions for an operation.

Results if required.

Lists

Structure of the unnumbered lists:

- List level 1
  - List level 2

Structure of the numbered lists:

1. List level 1

1.1 List level 2

1.3 Related documents

For safe and correct use of the device:

➲ Follow the additionally provided Installation and Operating Instructions.

➲ Follow the applicable standards and laws.

1.4 Safekeeping

Keep the Operating Manual, including the related documents, handy in the vicinity of the device.

2 Safety and Dangers

NOTE!	**Damage, reduced performance, or cooler breakdown due to improper modification of the control parameters!** ► Ensure that only trained qualified personnel modify the control parameters.

NOTE!	**Property damage due to a lack of instruction!** ► Ensure that only trained qualified personnel operate the control.

NOTE!	**Property damage due to a defective device!** ► Ensure that only trained qualified personnel operate the control. ► Use control exclusively in original condition without unauthorized modifications and in technically perfect condition.

3 Intended Use

Use regulation exclusively in connection with the units intended for it.

4 Foreseeable Misuse

Use regulation exclusively as intended.

Use regulation exclusively for the approved use limits of the unit (see the Installation and Operating Instructions for the unit).

5 Operation

5.1 Control unit

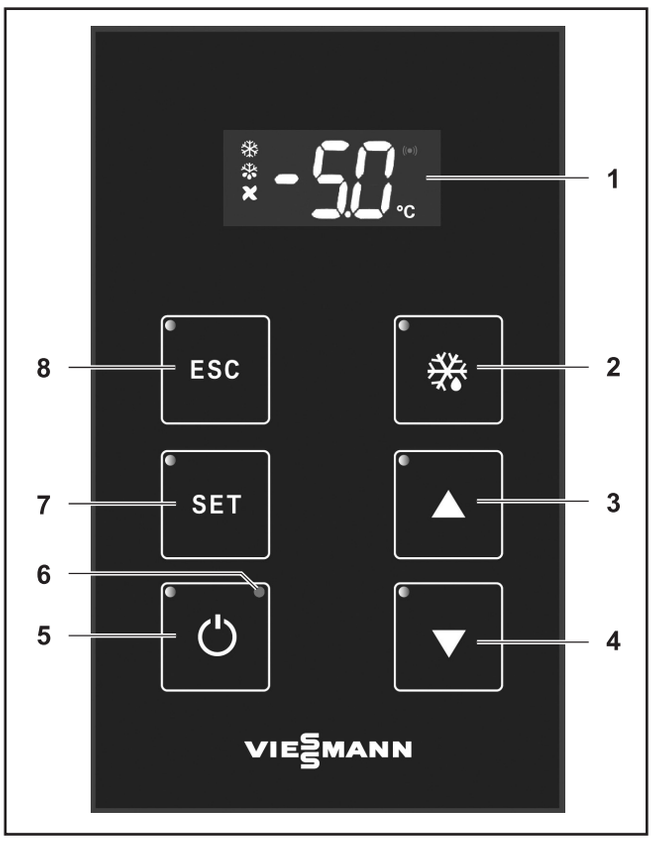

Figure 1: Control element

1 Display
2 Manual defrosting control field
3 Up control field
4 Down control field
5 Stand-by control field
6 LED lights up red in Stand-by
7 SET control field
8 ESC control button

The confirmation LEDs (upper left in the control field) light up if the buttons are operated.

NOTE	**Property damage due to improper operation!** ► Operate control fields exclusively with the fingers.

Deactivate control field lock

➲ Press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the button lights up.

Manual defrosting 2 control field:

➲ Press **Manual defrosting 2** control field for at least 5 seconds to:
- Start or stop manual defrosting.

During defrosting, the display shows the last measured cold room temperature immediately before the defrosting.

ⓘ *If the evaporator temperature is higher than the temperature set in parameter dS1, the display will flash 3x. No defrosting will take place.*

Up 3 control field:

➲ Press **Up 3** control field briefly to:
- Scroll up the parameters.
- Increase input values.

Down 4 control field:

➲ Press **Down 4** control field briefly to:
- Scroll down the parameters.
- Decrease input values.

Stand-by 5 control field:

➲ Press **Stand-by 5** control field for at least 5 seconds to activate or deactivate the stand-by function.

SET 7 control field:

➲ Press **SET 7** control field briefly to:
- Open the user menu.
- Confirm entries and modified parameter values.

➲ Press **SET 7** control field for at least 5 seconds to:
- Open the password entry to the installer level.

ESC 8 control field:

➲ Press **ESC 8** control field briefly to:
- Move up one level.
- Cancel entry of parameter values.

5.2 Display symbols

Meaning Symbol	Symbol lights up	Symbol flashes	Symbol does not light up
Defrosting 	Defrosting in progress Defrosting started automatically	Defrosting in progress Defrosting started manually	Defrosting not running
Alarm 	Alarm on		Alarm off
Evaporator fan 	Evaporator fan running		Evaporator fan not running
Compressor 	Compressor running	Cooling request pending Compressor not running (e.g. minimum downtime of compressor not yet elapsed, door open)	Compressor not running No cooling request

5.3 Normal mode

5.3.1 Standard display

Display shows current cold room temperature.

5.3.2 Control field lock

ⓘ *When the control field lock is active, the functions of the control fields are inactive.*

Control field active:
- After switching on Unit (see unit's Installation and Operating Instructions)
- If no entry is made within 90 seconds.

➲ To deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press desired control field.

5.3.3 Stand-by function

ⓘ *In the active stand-by mode, nothing appears in the display and LED 6 lights up red.*

To activate stand-by function:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **Stand-by 5** control field for at least 5 seconds.

Control switches to stand-by. **LED 6** lights up red.

To deactivate stand-by function:

➲ Press **Stand-by 5** control field for at least 5 seconds.

Display shows current cold room temperature.

5.4 User menu

To access the user menu:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field briefly.

Display shows *SEt.*

To scroll in the user menu:

➲ Scroll through the parameters using **Up 3** or **Down 4** control fields.

Parameters of the user menu:

Parameters:	Abbreviated designation
SEt	Setting required temperature in the cold room
AL	Display alarm list
Pb1	Display of actual cold room temperature
Pb2	Display of actual evaporator temperature
Pb3	Display of actual condenser temperature
IdF	Firmware mask
rEL	Software status
LAn	No function assigned

ⓘ *If no control field is pressed for approx. 90 seconds, the parameter entry is automatically terminated. Unconfirmed values are not adopted.*

5.4.1 Setting required temperature

To set the required value:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field briefly.

Display shows *SEt.*

➲ Select parameter *SEt* in the user menu.

➲ Press the **SET 7** control field.

➲ Set the desired target temperature using the **Up 3** or **Down 4** control fields.

- Normal refrigeration: -5° C to + 20° C
- Freezer -25° C to -5° C

➲ Confirm selection with **SET 7** control field.

5.4.2 Setting time (RTC)

ⓘ *Setting the time is only possible if RTC is activated in the installer menu (Parameter H68 = yes; cf. Section 5.5.7 - page 9).*

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field briefly.

Display shows *SEt.*

➲ Select parameter rtc in the user menu.

➲ Press **SET 7** control field.

DAY appears in the display.

To set the *days of the week:*

➲ Press **SET 7** control field again.

➲ Set day of the week.

- 0 = Sunday
- 1 = Monday ... 6 = Saturday

➲ Confirm selection with **SET 7** control field.

To set time (hour):

➲ Select time (h) using **Up 3** control field.

➲ Confirm selection with **SET 7** control field.

➲ Set hour.

- 0 -23 hours

➲ Confirm selection with **SET 7** control field.

To set time (minute):

➲ Select time (‘) using **Up 3** control field.

➲ Confirm selection with **SET 7** control field.

➲ Set minutes.
- 0-59 minutes

➲ Confirm selection with **SET 7** control field.

Display		Description	min.	max.
rtc				
	DAY	Day of the week 0 = Sunday 1 = Monday ... 6 = Saturday	0	6
	h	Time (hour)	0	23
	‘	Time (minute)	0	59

5.4.3 Display current temperature

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field briefly.

Display shows *SEt*.

➲ Select parameter *Pb1* in the user menu.

➲ Press **SET 7** control field.

Cold room temperature is displayed.

ⓘ *Cold room temperature is identical with standard display.*

➲ Select parameter *Pb2* in the user menu.

➲ Press **SET 7** control field.

Evaporator temperature is displayed

➲ Select parameter *Pb3* in the user menu.

➲ Press **SET 7** control field.

Condenser temperature is displayed.

Display	Description	Unit
Pb1	Display of cold room temperature	°C
Pb2	Display of evaporator temperature	°C
Pb3	Display of condenser temperature	°C

5.4.4 Display alarm list

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field briefly.

Display shows *SEt.*

➲ Select parameter *AL* in the user menu.

➲ Press **SET 7** control field.

Alarm list is displayed.

➲ Scroll through the alarm messages using **Up 3** or **Down 4** control fields

➲ Meanings of the abbreviations of the alarm messages See Section 6. “Alarm messages” on page 12.

5.5 Installer menu

To access the installer menu:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.
- Password: **22**

➲ Confirm selection with **SET 7** control field.

To scroll in the installer menu:

➲ Scroll through the parameters using **Up 3** or **Down 4** control fields

ⓘ *The parameter SP1 (set required temperature) is identical to the parameter SEt of the user menu (See Section 5.4.1 “Set required temperature” on page 6).*

ⓘ **E***nter changed parameters in the parameter list.*

5.5.1 Set types of defrosting

ⓘ *Follow the parameter list for all defrosting settings.*

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: **22**

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *dCt* in the installer menu.

Types of defrosting

- 0 = Deactivate defrosting
- 1 = According to cycle time *(dit)*, depending on run time of compressor
- 2 = According to cycle time *(dit)*, independent of run time of compressor
- 3 = Compressor shut down; defrosting after each shutdown of compressor
- 4 = According to real time (RTC), See Section “5.5.7 Activating time (RTC) for defrosting” on page 9

➲ Confirm selection with **SET 7** control field.

➲ Select type of defrosting.

5.5.2 Manual defrosting

➲ Press **Manual defrosting 2** control field for at least 5 seconds to start or stop manual defrosting.

During defrosting, the display shows the last measured cold room temperature immediately before the defrosting.

ⓘ *If the evaporator temperature is higher than the temperature set in parameter dS1, the display will flash 3x. No defrosting will take place.*

5.5.3 Periodic defrosting

ⓘ *It is possible when defrosting according to RTC to defrost periodically.*

ⓘ *When periodically defrosting using the parameters dPH, dPn, and dPd, it is possible to set the time as well as the interval for when defrosting should take place (e.g., once daily, every 2 days).*

ⓘ *Periodic defrosting possible maximum once a day.*

ⓘ *Periodic defrosting is usable exclusively when RTC is activated and set.*

To activate periodic defrosting:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: ***22***

➲ Confirm selection with **SET 7** control field.

➲ Set the time (hours) (*dPH*): 0 to 23 hours, 24 = deactivated

➲ Set the time (minutes) (dPn): 0 to 59 minutes

➲ Set the defrosting interval (*dPd*): 1 = every day, 2 = every other day, etc.

5.5.4 Defrosting according to time lines

ⓘ *It is possible when defrosting according to RTC to defrost according to time lines.*

ⓘ *It is possible when defrosting according to time lines to defrost several times daily. Working days are differentiated from holidays.*

To activate defrosting:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: **22**

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *dCt* operating mode defrosting in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Select *value 4* using the **Up 3** or **Down 4** control fields.

➲ Select *Fd1* to define 1st holiday (See Section “8 List of Parameters” on page 14)

➲ Select *Fd2* to define 2nd holiday (See Section “8 List of Parameters” on page 14)

➲ Select *d1H* to *d6n* to define defrosting times on workdays (See Section “8 List of Parameters” on page 14)

➲ Select *F1H* to *F6n* to define defrosting times on holidays (See Section “8 List of Parameters” on page 14)

➲ Confirm selection with **SET 7** control field.

5.5.5 Adjusting humidity

ⓘ *It is possible to affectthe humidity in the cold room using the evaporator fan operating mode.*

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: **22**

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *FCO* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Set humidity.

- Value 0: Fan runs together with condenser: low relative humidity.
- Value 1: Fan also runs during clock breaks of the condenser: high relative humidity.

5.5.6 Activating time (RTC) for defrosting

ⓘ *Serves to set defrosting according to defined times.*

To activate *RTC*:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: **22**

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *H68* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Using the **Up 3** or **Down 4** control fields, set the value **YES**.

➲ Select parameter *dCt* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Set value 4 and confirm with **SET 7** control field.

➲ Confirm selection with **SET 7** control field.

➲ To set day of the week and time, See Section “5.4.2 Setting time (RTC)” on page 6.

To deactivate *RTC* (time):

➲ Select parameter *H68* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Using the **Up 3** or **Down 4** control fields, set the value **no**.

➲ Confirm selection with **SET 7** control field.

5.5.7 Activating door contact switch

If door contact switch is installed, set as follows:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: **22**

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *H17* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Set value 1 and confirm with **SET 7** control field.

Additional setting options:

- Parameter *tDO:* Delay until alarm is activated (standard delay: 1 minute)
- Parameter *dFO*: Delay until evaporator fan is switched off (standard delay: 0 minutes)
- Parameter *dCO*: Delay until condenser is switched off (standard delay: 1 minute)

5.5.8 Protecting the control against

ⓘ *It is possible to block the control for unauthorized access. Defrosting and stand-by function are locked but access to the installer menu and required temperature display continue to be possible.*

To lock user entries:

➲ Deactivate control field lock: press any control field for at least 2 seconds.

Signal sounds and confirmation LED of the control field lights up.

➲ Press **SET 7** control field for at least 5 seconds.

PA1 (password entry) appears in the display.

➲ Press **SET 7** control field.

➲ Enter password using **Up 3** or **Down 4**.

- Password: ***22***

➲ Confirm selection with **SET 7** control field.

➲ Select parameter *LOC* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Using the **Up 3** or **Down 4** control fields, set the value **YES**.

➲ Confirm selection with **SET 7** control field.

To unlock user entries:

➲ Select parameter *LOC* in the installer menu.

➲ Confirm selection with **SET 7** control field.

➲ Using the **Up 3** or **Down 4** control fields, set the value **no**.

➲ Confirm selection with **SET 7** control field.

5.5.9 Reset to factory settings

ⓘ *It is possible if necessary to reset all parameters to the factory settings.*

➲ Disconnect unit briefly from the power supply.

➲ Start unit

➲ After restarting and within 30 seconds, press any control field for at least 2 seconds.

Contact protection is canceled.

➲ Press **SET 7** and **Down 4** contact fields at the same time for at least 5 seconds.

Display shows *AP1.*

➲ Confirm selection with **SET 7** control field.

RUN appears in the display.

ⓘ *Display shows* **YES** *after successful reset.*

-or-

ⓘ *Display shows* **no** *after failed reset.*

The standard display appears.

6 Alarm messages

ⓘ *Alarm messages are automatically acknowledged as soon as the cause of the malfunction is resolved. Sole exception: High pressure fault (depending on setting of the parameters PEn and PEi). In this case, acknowledge parameter rAP as required.*

➲ To see alarm list, See Section “5.4.4 Display alarm list” on page 7.

Display	Meaning	Cause	Impact	Troubleshooting
Ad2	End of defrosting due to timeout	Defrosting terminated by timeout, parameter *dE1*, not by reaching the defrosting final temperature, parameter *dS1*	None	➲ Wait for next defrosting. ➲ Set *dAt* = 0 (NO) to suppress the message in the future.
AH1	High temperature alarm	Room temperature higher than *SP1* + *HA1* after the time *tA1*	None	➲ Ensure that the room temperature falls below *SP1* + *HA1* - AFd value.
AL1	Low temperature alarm	Room temperature lower than *SP1* + *LA1* after the time *tA1*	None	➲ Ensure that the room temperature stays above *SP1* + *LA1* + *AFd* value.
E1	Room sensor defective	Measurement of values outside of operating range Sensor open/short-circuited/defective	Control of the unit with the help of parameters *Ont* and *OFt*	➲ Check sensor cable. ➲ Replace sensor.
E2	Evaporator package sensor defective	Measurement of values outside of operating range Sensor open/short-circuited/defective	Control of evaporator fan subject to compressor Maximum duration of defrosting	➲ Check sensor cable. ➲ Replace sensor.
E3	Condenser sensor defective	Measurement of values outside of operating range Sensor open/short-circuited/defective	Condenser fan rotates at full speed	➲ Check sensor cable. ➲ Replace sensor.
E7	Communication between remote control and motherboard interrupted	Cable between remote control and motherboard not connected correctly	None, if only the cable has been connected incorrectly Cooling failure if motherboard is out of order	➲ Check cable for correct connection ➲ Disconnect unit from the power grid and reconnect ➲ Relace motherboard
E10	Real-time clock (RTC) defective	Battery is empty Time not correctly set	Fault during defrosting when defrosting is controlled by *RTC.*	➲ Set time. ➲ Supply power to unit for at least 1 hour if necessary.

Display	Meaning	Cause	Impact	Troubleshooting
HPA	High pressure fault	High pressure pressostat is activated Possible causes: Ambient temperature too high Condenser fan not running Condenser heavily soiled.	Cooling mode has been interrupted Cooling mode is later continued when: High pressure fault is no longer present maximum number of permissible high pressure faults (*PEn*) has not yet been reached	➲ Acknowledge fault or restart Unit. ➲ Lower ambient temperature. ➲ Clean condenser ➲ Check whether the condenser fan is rotating.
nPA	Phase monitoring	No release signal from phase monitor Possible causes: Phases reversed (wrong rotating field) Failure of one or more phases Asymmetry of the phases Supply voltage too high or too low	Cooling mode has been interrupted	➲ Reverse phases. ➲ Check power supply.
	Hot gas thermostat switch	Hot gas temperature too high Possible causes: Ambient temperature too high Condenser fan not running Condenser heavily soiled. Compressor is defective	Cooling mode has been interrupted	➲ Lower ambient temperature. ➲ Clean condenser ➲ Check whether the condenser fan is rotating.
OPd	Door alarm	Door is open longer than specified in *tdO*.	Compressor and evaporator fan are switched off as per parameters *dCO* and *dFO*.	➲ Close door.

7 Diagrams

7.1 Switch hysteresis principle – evaporator fan

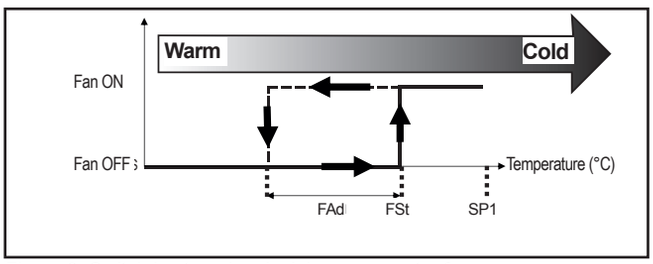

Figure 2: Switch hysteresis principle – evaporator fan

- *SP1* = Required temperature
- *FSt* = Switching threshold – evaporator fan (evaporator temperature)
- *FAd* = Switch hysteresis – evaporator fan
- Switch-on point: *FSt*
- Switch-off point *FSt* + *FAd*
  - Example: *SP1* = 0° C; *FSt* = 5° C; *FAd* = 20 K
  - Cooling of the refrigeration cell: Fan switches on at 5° C (evaporator temperature)
  - Warming of the refrigeration cell: Fan switches off at 25° C (evaporator temperature)

7.2 Condenser fan speed principle

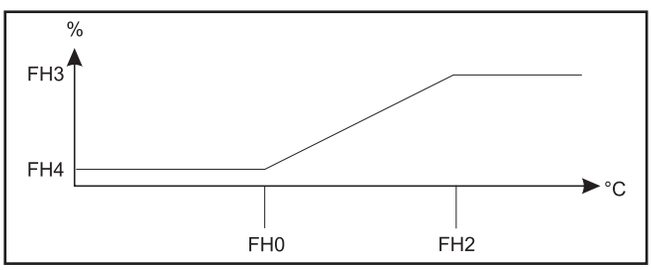

Figure 3: Condenser speed principle

- Example: *FH0* = 0° C *FH2* = 35° C *FH3* = 100% *FH4* = 0%
- At a condenser temperature below *FHO*, the condenser speed is *FHO* (0 °C) (0%).
- The speed begins to increase linearly starting at 0° C until the upper threshold *FH3* (100%) is reached at 35° C (*FH2*).
- At higher temperatures, the speed remains static at the upper threshold *FH3.*

7.3 Hysteresis temperature alarm

- Example: *SP1* = 0° C, *HA1* = 10K, *LA1* = -5K, *AFd* = 4K *tA1* = 60 min
- When the cold room temperature of *SP1* + *HA1*, thus 10° C, is exceeded, the high temperature alarm is activated after the time *tA1* (1 hour).
- When the cold room temperature falls below *SP1* + *HA1* - *AFd*, thus 6° C, the alarm is canceled.
- When the cold room temperature falls below *SP1* + *LA1 (LA1* negative), thus -5° C, the low temperature alarm is activated after the time *tA1* (1 hour).
- When the cold room temperature exceeds *SP1* + *LA1* + *AFd*, thus -1° C, the alarm is canceled.

8 List of Parameters

NOTE!	**Property damage due to lack of specialist knowledge!** ► Ensure that only trained qualified personnel operate the control.

ⓘ *Opening and dealing with the list or parameters is described in Section “5.5 Installer menu” on page 7.*

Display	Description	Unit	min.	max.	Freezer (TK) set point value	Standard refrigeration (NK) set point value	Modified parameter value
8.1 Setting target temperature							
SP1	Required temperature NK	°C	-5 °C	20 °C		0	
	Required temperature TK	°C	-25 °C	-5 °C	-20		
dF1	Switch hysteresis (≠ 0)	K	-58	302	-2	2	
8.2 Compressor run time							
Ont	Compressor run time with a defective room temperature sensor	Min	0	250	10	10	
OFt	Compressor downtime with defective room temperature sensor	Min	0	250	5	5	
dOF	Minimum downtime, compressor (compressor protection)	Min	0	250	3	3	
OdO	Compressor downtime after switching on the unit	Min	0	250	1	1	
Pot	Pump out time	Sec	0	250	5	5	
8.3 Defrosting							
dit	Defrosting cycle [h] ⓘ *If there is too much icing, the defrost cycle can be reduced.*	Hour	0	250	4	4	
dCT	Defrosting operating mode 0 = Defrosting deactivated 1 = According to cycle time *(dit)*, depending on run time of the compressor 2 = According to cycle time *(dit)*, independent of run time of the compressor 3 = Compressor shut down; defrosting after each shutdown of the compressor 4 = According to real time clock (RTC), Parameter *H68* = 1		0	5	2	2	
dE1	Maximum duration of defrosting (timeout)	Min	1	250	20	15	
dS1	Defrosting final temperature	°C	-58	302	15	10	
PrH	Preheating time trace heating	Min	0	255	3	3	
dPH*	Start of periodic defrosting: Hour 24 = deactivated	Hour	0	24	24	24	
dPn*	Start of periodic defrosting: Minute	Min	0	59	0	0	

Display	Description	Unit	min.	max.	Freezer (TK) set point value	Standard refrigeration (NK) set point value	Modified parameter value
dPd*	Defrosting interval of periodic defrosting: Days	Days	1	7	1	1	
Fd1*	Select 1st holiday 0 = Sunday, 1 = Monday to 6 = Saturday; 7 = deactivated		0	7	0	0	
Fd2*	Select 2nd holiday 0 = Sunday, 1 = Monday to 6 = Saturday; 7 = deactivated		0	7	7	7	
d1H*	Start defrosting 1 on a workday: Hour 24 = deactivated	Hour	0	24	7	7	
d1n*	Start defrosting 1 on a workday: Minute	Min	0	59	0	0	
d2H*	Start defrosting 2 on a workday: Hour 24 = deactivated	Hour	d1H	24	21	21	
d2n*	Start defrosting 2 on a workday: Minute	Min	0	59	0	0	
d3H*	Start defrosting 3 on a workday: Hour 24 = deactivated	Hour	d2H	24	24	24	
d3n*	Start defrosting 3 on a workday: Minute	Min	0	59	0	0	
d4H*	Start defrosting 4 on a workday: Hour 24 = deactivated	Hour	d3H	24	24	24	
d4n*	Start defrosting 4 on a workday: Minute	Min	0	59	0	0	
d5H*	Start defrosting 5 on a workday: Hour 24 = deactivated	Hour	d4H	24	24	24	
d5n*	Start defrosting 5 on a workday: Minute	Min	0	59	0	0	
d6H*	Start defrosting 6 on a workday: Hour 24 = deactivated	Hour	d5H	24	24	24	
d6n*	Start defrosting 6 on a workday: Minute	Min	0	59	0	0	
F1H*	Start defrosting 1 on a holiday: Hour 24 = deactivated	Hour	0	24	12	12	
F1n*	Start defrosting 1 on a holiday: Minute	Min	0	59	0	0	
F2H*	Start defrosting 2 on a holiday: Hour 24 = deactivated	Hour	F1H	24	23	23	
F2n*	Start defrosting 2 on a holiday: Minute	Min	0	59	0	0	
F3H*	Start defrosting 3 on a holiday: Hour 24 = deactivated	Hour	F2H	24	24	24	
F3n*	Start defrosting 3 on a holiday: Minute	Min	0	59	0	0	
F4H*	Start defrosting 4 on a holiday: Hour 24 = deactivated	Hour	F3H	24	24	24	
F4n*	Start defrosting 4 on a holiday: Minute	Min	0	59	0	0	

Display	Description	Unit	min.	max.	Freezer (TK) set point value	Standard refrigeration (NK) set point value	Modified parameter value
F5H*	Start defrosting 6 on a holiday: Hour 24 = deactivated	Hour	F4H	24	24	24	
F5n*	Start defrosting 5 on a holiday: Minute	Min	0	59	0	0	
F6H*	Start defrosting 5 on a holiday: Hour 24 = deactivated	Hour	F5H	24	24	24	
F6n*	Start defrosting 6 on a holiday: Minute	Min	0	59	0	0	
8.4 Evaporator fan							
FSt	Switching threshold – evaporator fan (evaporator temperature)	°C	-58	302	-18	10	
FAd	Switch hysteresis – evaporator fan: *FSt + FAd*	K	0.1	25	25	25	
Fdt	Minimum downtime for evaporator fan after defrosting Includes drip-off time *dt*	Min	0	250	5	5	
dt	Drip-off time after a defrosting	Min	0	250	5	5	
FCO	Operating mode evaporator fan 0 = Fan runs together with compressor (low relative humidity) 1 = fan runs continuously (high relative humidity)		0	1	0	1	
FdC	Switch-off delay evaporator fan after switching off the compressor (using the remaining cold in the evaporator unit)	Min	0	250	0	0	
8.5 Alarms and times							
Afd	Hysteresis temperature alarm: *SP1 + HA1 - AFd*; *SP1 + LA1 + AFd*	K	0.1	25	4	4	
HA1	Upper alarm temperature: *SP1 + HA1*	K	LA1	302	5	5	
LA1	Lower alarm temperature *SP1 + LA1*	K	-58	HA1	-5	-5	
PAO	Blocking time of temperature alarms after switching on the unit	Hour	0	10	3	3	
dAO	Blocking time of temperature alarms after a defrosting	Min	0	250	30	30	
tdO	Time delay of alarm, door open	Min	0	250	1	1	
tA1	Delay of temperature alarm	Min	0	250	60	60	

Display	Description	Unit	min.	max.	Freezer (TK) set point value	Standard refrigeration (NK) set point value	Modified parameter value
dAt	Select whether end of defrosting due to timeout (*dE1*) is alarm condition: 0 (no) = no alarm 1 (YES) = alarm		0	1	1	1	
dCO	Switch-off delay for compressor when door is open	Min	0	250	1	1	
dFO	Switch-off delay for evaporator fan when door is open	Min	0	250	0	0	
PEn	Maximum number of high pressure faults within the time *PEi* until the fault must be acknowledged by the user	Number	0	15	15	15	
PEi	Time interval within which the number of high pressure faults defined in PEn has to occur before acknowledgment by the user is required	Min	1	250	1	1	
8.6 Condenser fan							
FH0	Condenser fan speed: lower temperature set point for 400V devices	°C	-58	302	0	0	
	Condenser fan speed: lower temperature set point for 230V devices	°C	-58	302	7	7	
FH2	Condenser fan speed: upper temperature set point	°C	0	100	35	35	
FH3	Condenser fan speed: upper percentage set point	%	0	100	100	100	
FH4	Condenser fan speed: lower percentage set point	%	0	100	0	0	
LOC	Locking user entries: ■0 (no) = control fields not locked ■1 (YES) = control fields locked		0	1	0	0	
CA1	Offset room temperature sensor	K	-30	30	0	0	
CA2	Offset evaporator temperature sensor	K	-30	30	0	0	
CA3	Offset condenser temperature sensor	K	-30	30	0	0	

Display	Description	Unit	min.	max.	Freezer (TK) set point value	Standard refrigeration (NK) set point value	Modified parameter value
8.7 Door contact switch							
H17	Select door contact switch 0 = Without door contact switch 1 = With door contact switch		0	1	0	0	
8.8 Real-time clock (RTC)							
H68	Real-time clock (RTC) no = RTC is missing YES = RTC is present		no	YES	no	no	
8.9 Manual defrosting							
dEF	Start manual defrosting ⓘ *Same function as* **Manual defrosting 2** *control field*						
8.10 Other parameters							
Aon/ AoF	No function						
rAP	Acknowledge high pressure fault: contact service if the fault occurs repeatedly.						
OFF	Switch device to stand-by ⓘ *Same function as* **Stand-by 5** *control field*						

* Only visible when *dct* = 4 or 5

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