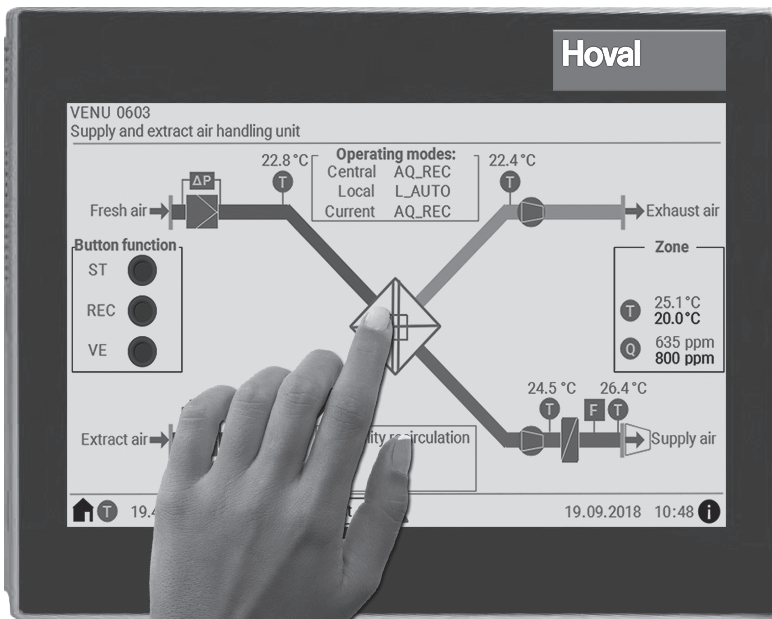


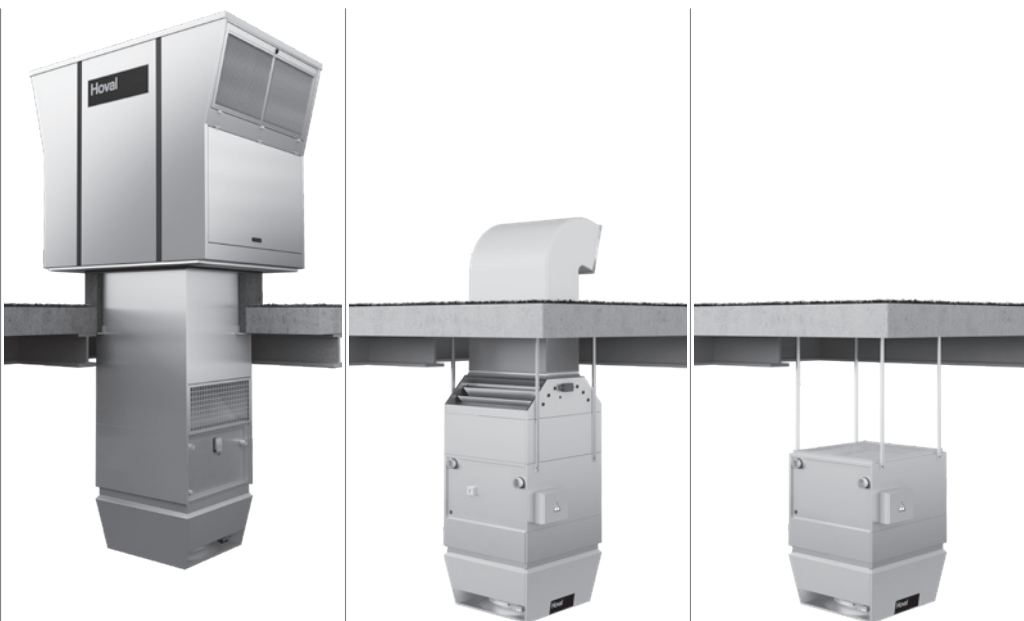
# System operator terminal C-ST

## Operating Instructions



## TopTronic® C

System operator terminal  
C-ST  
4215 033-en-03



# Hoval

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# 1 Use

## 1.1 Intended use

The system operator terminal C-ST is a touchscreen with a colour display, making it simple and clear to operate Hoval indoor climate systems. It gives trained users access to all information and settings of the TopTronic® C control system that are necessary for normal operation:

- Display and setting of operating modes
- Display of temperatures and setting of the room temperature set values
- Display and programming of the weekly and annual calendar
- Display and handling of alarms and maintaining an alarm log
- Display and setting of control parameters
- Password protection



**Notice**

The scope of delivery also includes the C-SSR software package for LAN access to the system operator terminal. Thus the system can be operated easily using a PC.

Intended use also includes compliance with the operating instructions. Any usage over and above this use is considered to be not as intended. The manufacturer can accept no liability for damage resulting from improper use.

## 1.2 User groups

There are 2 operator levels:























Operator level	User group	Access rights	Access
GUEST	Untrained users	■ Read rights	free
USER	Trained users	■ Read rights	Protected by a password
		<ul style="list-style-type: none"> <li>■ Write rights                             <ul style="list-style-type: none"> <li>– Calendar</li> <li>– Set values</li> <li>– Operating parameters</li> <li>– Alarm processing</li> <li>– Control parameters</li> </ul> </li> </ul>	
			Factory setting password: <b>12345</b>

## 2 Basic principles

The system can be operated in 2 ways:

- using touchscreen directly
- using the C-SSR software on PC (LAN access to the system operator terminal)

### 2.1 Icons

Category	Icon	Meaning
Navigation		Go to system overview
		Go to help screen
		Go to Alarm message e-mail
		Go to zone overview / unit overview (e.g. zone No. 03)
		Go to Alarm list
		Go to next screen
		Go to previous screen
Setting		Tap to activate/deactivate a function
General		Temperature
		Air quality
		Air humidity
		Filter
		Temperature sensor
		Fan
		Frost protection
		Damper
		Valve
		Pump
		Airflow
		Air distributor
		Heating or cooling coil
		Plate heat exchanger

### 2.2 Colour coding

Colour	Values
orange	Actual values
white	Setpoints / buttons
grey	Display texts

## 2.3 Abbreviations


Category	Abbreviation	Meaning
Unit types	VENU	Supply and extract air handling units
	REMU	Supply air units
	RECU	Recirculation units
Zone operating modes	AQ_ECO	Air quality Mixed air
	AQ_REC	Air quality Recirculation
	AQ_VE	Air quality Ventilation
	AUTO	Automatic mode
	CPR	Cooling protection
	DES	Destratification
	EA	Exhaust air
	ES	Forced off (zone)
	EXT	External control by building management system
	LS	Load shedding
	NCS	Night cooling
	OPR	Overheat protection
	OPTC	Start optimisation cooling
	OPTH	Start optimisation heating
	REC	Recirculation
	REC1	Recirculation speed 1
	SA	Supply air
	SA1	Supply air speed 1
	SA2	Supply air speed 2
	ST	Standby
VE	Ventilation	
VEL	Ventilation (reduced)	
Unit operating modes	L_AUTO	Automatic mode (according to zone specification)
	L_DEL_ER	Follow-on drying plate heat exchanger (local)
	L_DEL_REC	Follow-on drying cooling coil (local)
	L_DOOR	Air curtain (local)
	L_EA	Exhaust air (local)
	L_ES	Forced off (local)
	L_FCD	Emergency operation (local)
	L_OFF	Off (local)
	L_REC	Recirculation (local)
	L_REC1	Recirculation speed 1 (local)
	L_REC2	Recirculation speed 2 (local)
	L_SA	Supply air (local)
	L_SA1	Supply air speed 1 (local)
	L_SA2	Supply air speed 2 (local)
	L_VE	Ventilation (local)

## 2.4 Operating modes

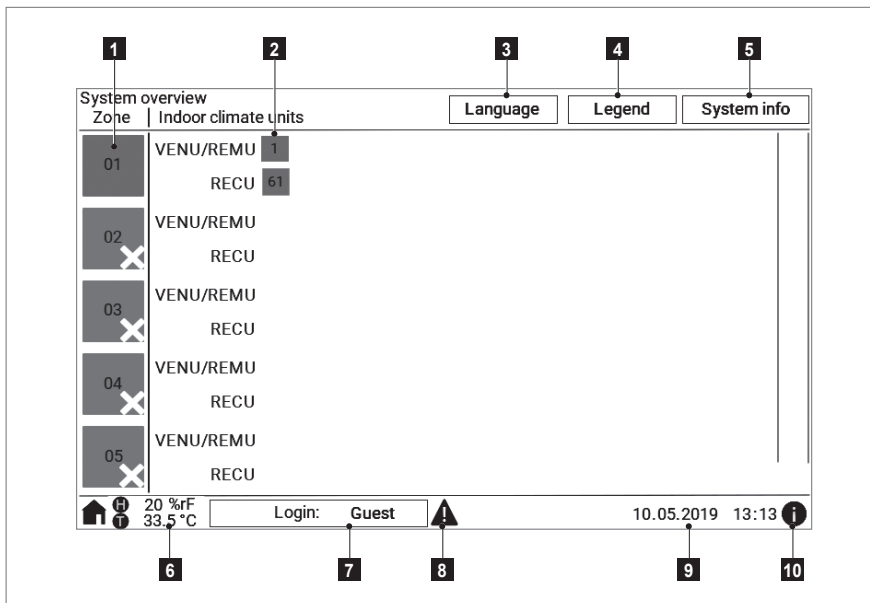
Code	Operating mode	VENU	REMU	RECU
VE	<p><b>Ventilation</b></p> <p>The unit blows fresh air into the room and exhausts polluted room air. The room temperature set value day is active. Depending on the temperature conditions, the system continuously controls:</p> <ul style="list-style-type: none"> <li>■ the energy recovery</li> <li>■ the heating/cooling</li> </ul>	•		
VEL	<p><b>Ventilation (reduced)</b></p> <p>As VE, but the unit only operates with the minimum values for the supply and exhaust air volumes</p>	•		
AQ	<p><b>Air quality</b></p> <p>This is the operating mode for demand-controlled ventilation of the room. The room temperature set value day is active. Depending on the temperature conditions, the system continuously controls:</p> <ul style="list-style-type: none"> <li>■ the energy recovery</li> <li>■ the heating/cooling</li> </ul> <p>Depending on the room air quality or room air humidity, the system operates in one of the following operating states:</p>	•		
AQ_REC	<ul style="list-style-type: none"> <li>■ Air quality Recirculation: When air quality is good and air humidity appropriate, the unit heats or cools the room in recirculation operation.</li> </ul>	•		
AQ_ECO	<ul style="list-style-type: none"> <li>■ Air quality Mixed air: When ventilation requirements are medium, the unit heats or cools in mixed air operation. The supply/exhaust air volume is based on the air quality.</li> </ul>	•		
AQ_VE	<ul style="list-style-type: none"> <li>■ Air quality Ventilation: When ventilation requirements are high or the room air humidity is too high, the unit heats or cools in pure ventilation operation.</li> </ul>	•		
REC	<p><b>Recirculation</b></p> <p>On/Off recirculation operation with TempTronic algorithm: During heat or cool demand, the unit draws in room air, heats or cools it and blows it back into the room. The room temperature set value day is active. The flow rate is controlled in 2 stages.</p>	•	•	•
DES	<ul style="list-style-type: none"> <li>■ Destratification: To avoid heat build-up under the ceiling, it may be appropriate to switch on the fan when there is no heat or cool demand (either in permanent operation or in on/off operation depending on air temperature under the ceiling, as desired).</li> </ul>	•	•	•
REC1	<p><b>Recirculation speed 1</b></p> <p>The same as REC, but the unit operates only at speed 1 (low air flow rate)</p>		•	•
DES	<ul style="list-style-type: none"> <li>■ Destratification: The same as for REC, but the unit operates only at speed 1</li> </ul>	•	•	•
EA	<p><b>Exhaust air</b></p> <p>The unit extracts spent room air. There is no room temperature control. Unfiltered fresh air enters the room through open windows and doors or another system provides air supply.</p>	•		
SA	<p><b>Supply air</b></p> <p>The unit blows fresh air into the room. The room temperature set value day is active. Depending on the temperature conditions, the system controls the heating/cooling. Spent room air passes through open windows and doors or another system provides extraction.</p>	•		

Code	Operating mode	VENU	REMU	RECU
SA2	<b>Supply air speed 2</b> The unit blows fresh air into the room. The fresh air ratio is adjustable. Heating/cooling is controlled according to the heat/cool demand. The room temperature set value day is active. The unit operates at speed 2 (high air flow rate).		•	
SA1	<b>Supply air speed 1</b> The same as SA2, but the unit operates at speed 1 (low air flow rate)		•	
ST	<b>Standby</b> The unit is normally switched off. The following functions remain active:	•	•	•
CPR	■ Cooling protection: If the room temperature drops below the set value for cooling protection, the unit heats up the room in recirculation operation.	•	•	•
OPR	■ Overheating protection: If the room temperature rises above the set value for overheating protection, the unit cools down the room in recirculation operation. If the temperatures also permit fresh air cooling, the units automatically switches to night cooling (NCS) to save energy.	•	•	•
NCS	■ Night cooling: If the room temperature exceeds the set value for night cooling and the current fresh air temperature permits it, the unit blows cool fresh air into the room and extracts warmer room air.	•	•	
L_OFF	<b>Off</b> (local operating mode) The unit is switched off. Frost protection remains active.	•	•	•
–	<b>Forced heating</b> The unit draws in room air, warms it and blows it back into the room. For example, forced heating is suitable for heating the hall before taking the control system into operation or if the controller fails during the heating period.			
	■ Forced heating can be activated and set as required by the Hoval service technician.	•	•	
	■ Forced heating is activated by connecting the unit to a power supply (only if there is no bus connection to the zone controller).			•

## 2.5 System overview

- Tap the icon System overview  on any screen.

The **System overview** screen shows the following information and buttons:



- 1 Zones in the system | Open zone overview
- 2 Units in the zone | Open unit overview
- 3 Select language
- 4 Show legend
- 5 Show system info
- 6 Current fresh air humidity and temperature
- 7 Current operator level | Open **Password entry** screen
- 8 Alarm display | Open **Alarm list** screen
- 9 Setting date and time
- 10 Showing help

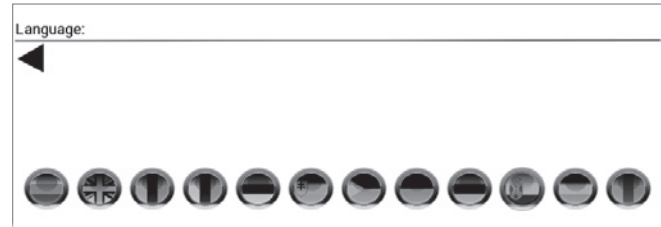


### 2.6 Selecting languages

Choose from the following languages:

- German
- English
- French
- Italian
- Hungarian
- Slovakian
- Czech
- Polish
- Croatian
- Serbian
- Bulgarian
- Romanian

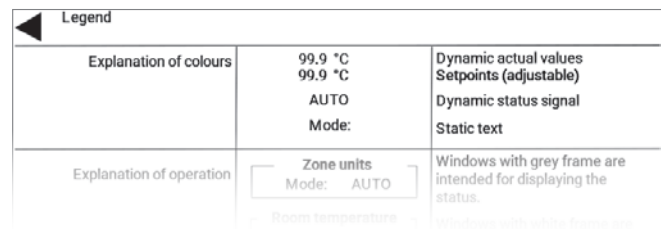
- Tap the 'Language' button in the System overview screen.
  - The **Language** screen appears.
- Select the flag for the desired language.



### 2.7 Showing the legend

The legend shows explanations for the display on the touchscreen.

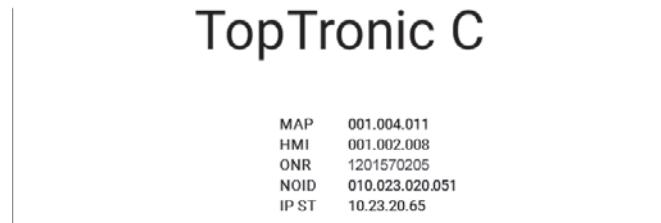
- Tap the 'Legend' button in the System overview screen.
  - The **Legend** screen appears.



### 2.8 Showing system info

The system info contains important information for Hoval customer service.

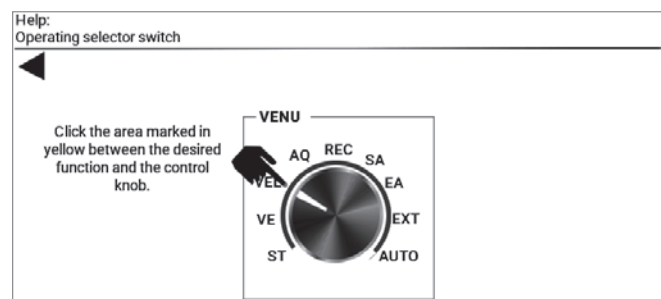
- Tap the 'System info' button on the System overview screen.
  - The **System info** screen appears.



### 2.9 Showing help

All screens have a corresponding help page in the software.

- Tap **i** on any screen.
  - The **Help** screen appears.



## 2.10 Entering password

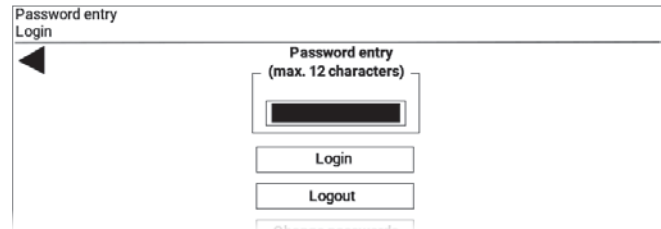
Password entry is required to activate the USER operator level.

- Tap 'Login: Guest' on any screen.
  - The **Password entry Login** screen appears.
- Tap the field for password entry.
  - The keyboard is displayed.
- Enter the password and confirm your entry with 'Enter'.
- Tap 'Login'.



### Notice

The user is automatically logged out after 15 minutes of inactivity.

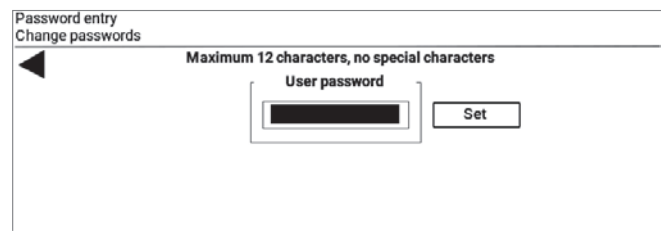


## 2.11 Logging off

- Tap 'Login: User' on any screen.
  - The **Password entry Login** screen appears.
- Tap 'Logout'.
  - GUEST operator level becomes active.

## 2.12 Changing the password

- Log in.
- Tap 'Change passwords' in the **Password entry Login** screen.
  - The **Change passwords** screen appears.
- Tap the field 'User password'.
  - The keyboard is displayed.
- Enter the password and confirm your entry with 'Enter'.
- Tap 'Set' to save the new password.



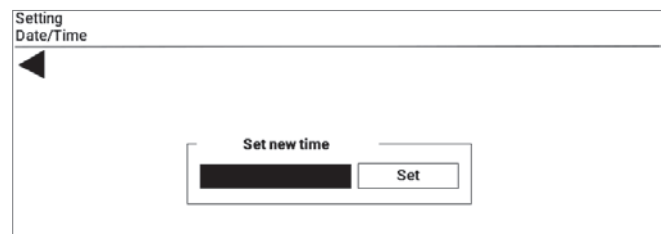
## 2.13 Setting date and time

- Tap on the date display on the bottom right on any screen.
  - The **Setting Date/Time** screen appears.
- Tap the field 'Set new time'.
  - The keyboard is displayed.
- Enter time and date and confirm your entry with 'Enter'.
- Tap 'Set' to save the setting.



### Notice

Set the date and time correctly so that you can use the calendar function and the alarms are given the correct time stamp.

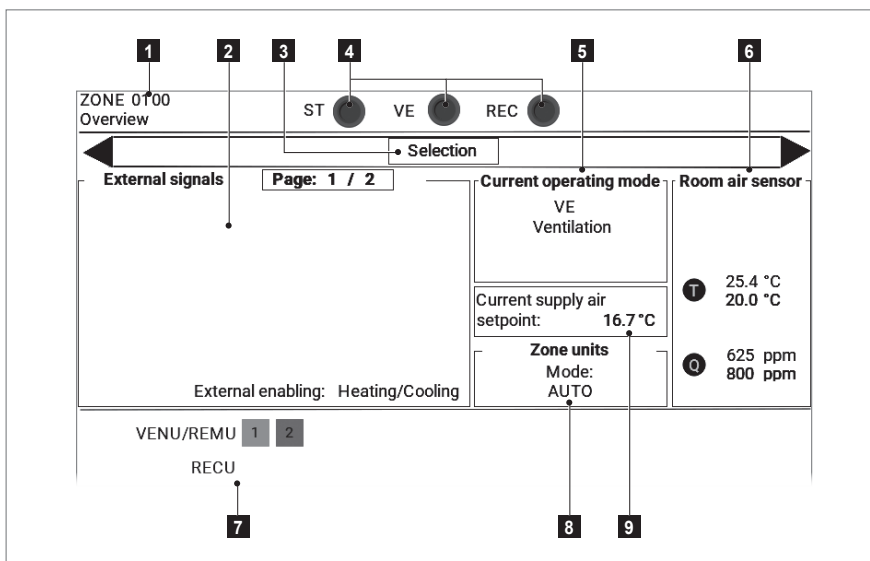


### 3 Operation on the zone level

#### 3.1 Zone overview

- Tap a zone on the **System overview** screen.

The zone overview shows the following information and buttons:



- |   |  |
|---|--|
| 1 | Zone number  |
| 2 | Display of external signals (depending on options)   |
| 3 | Open zone selection menu   |
| 4 | Directly operate the operating selector button   |
| 5 | Display of the current operating mode for the zone   Directly open the <b>Operating selector switch</b> screen |
| 6 | Display of the measured values of the room sensor   Directly open the <b>Room setpoints</b> screen             |
| 7 | Display of the units in the zone   Directly open unit overview   |
| 8 | Display of the operating mode of the units in the zone (Auto/Local)  |
| 9 | Display of the current supply air setpoint   |

#### 3.2 Navigation in the zone

Choose one of the following options:

- Open the **Operating selector switch** or **Room setpoints** screen directly, as shown above.
- Open the zone Selection menu and select the desired screen.
- Use ► to navigate to the next screen or ◀ to navigate to the previous screen.



### 3.3 Operating selector switch

#### Zone operating mode

The operating selector switch makes it possible to specify an operating mode manually for a control zone. The units work in the selected operating mode until the switch is moved back to 'Auto'.

The operating modes displayed vary depending on the unit type (see Section 2.4). Select the desired operating mode directly or:

EXT..... Operation according to the building management system specification

AUTO..... Operation according to the calendar or the external operating selector switch specification

- Tap the desired operating mode.

#### Destratification mode

In some operating modes, the unit fans operate in on/off operation depending on the heat or cool demand. To avoid heat build-up under the ceiling, the fans can be switched on when there is no heat or cool demand (either in permanent operation or controlled depending on the air temperature under the ceiling, as desired).

In controlled operation, the switch-on hysteresis determines the temperature at which the fans are turned on.

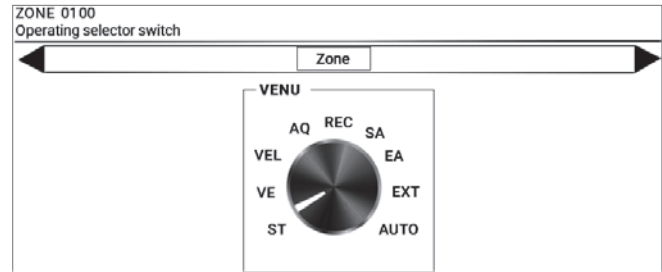
*Example:*

*Room temperature setpoint 20 °C, switch-on hysteresis 4 K, switch off hysteresis 2 K (fixed value):*

→ Fans are switched on at 24 °C in the ceiling area

→ Fans are switched off at 22 °C in the ceiling area

- Tap the setting value for the selector switch and enter the desired value:
  - 0 ..... No destratification mode
  - 1 ..... Fans in permanent operation
    - VENU/REMU: With REC/REC1
    - RECU: With all operating modes except standby
  - 2 ..... On/off operation depending on the stratification sensor below the ceiling
- Tap the setting value for the switch-on hysteresis and enter the desired value.



Destratification	
Selector switch destratification (0=Off/1=Permanent/2=Sensor)	0
Start hysteresis (stop hysteresis 2K)	4 K

### 3.4 Operating selector button

The operating selector button makes it possible to specify a particular operating mode temporarily for a control zone. After the set runtime has expired, the units switch back to the operating mode that was being carried out previously.

- Tap the button for the desired operating mode.
  - The activated button lights up green.
- Tap the setting value for the runtime and enter the desired value.

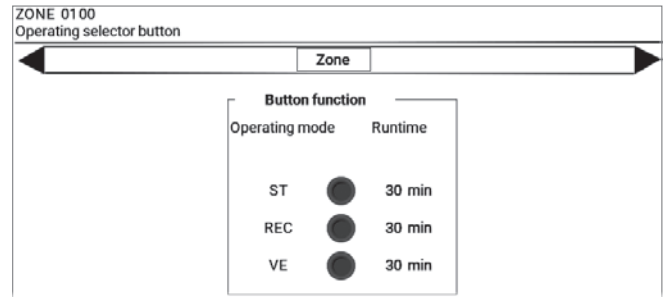
To return to the operating mode that was being carried out previously:

- Tap the button for the selected operating mode again.



#### Notice

The operating selector buttons shown here are automatically synchronised with optional external operating selector buttons.



### 3.5 Calendar

#### Weekly calendar

The weekly calendar is used to define regular weekly switching times and operating modes.



#### Notice

If different unit types are installed in the zone (VENU + RECU or REMU + RECU), the weekly calendar for supply and extract air handling units or supply air units applies. The recirculation units are connected automatically depending on the heat or cool demand.

- Tap the unit type in the **Calendar** screen (e.g. 'VENU' for supply and extract air handling units).
  - The **Weekly calendar** screen appears.
- Program the switching points:
  - Select a weekday from the list.
  - Tap the start time and enter the desired value.
  - Select an operating mode from the list.
  - Tap 'Create'.

To delete a switching point:

- Tap 'Delete' in the line to be deleted.

#### Enabling night cooling

In the 'Standby' operating mode, the system can use fresh air to freely cool the room. If the room temperature exceeds the set value for night cooling and the current fresh air temperature permits it, the unit blows cool fresh air into the room and extracts warmer room air.

- Tap 'Enabling night cooling' in the **Calendar** screen.
  - The **Enabling night cooling** screen appears.
- Set the enable times for night cooling:
  - Select a weekday from the list.
  - In each case, tap the start time and end time and enter the desired values.

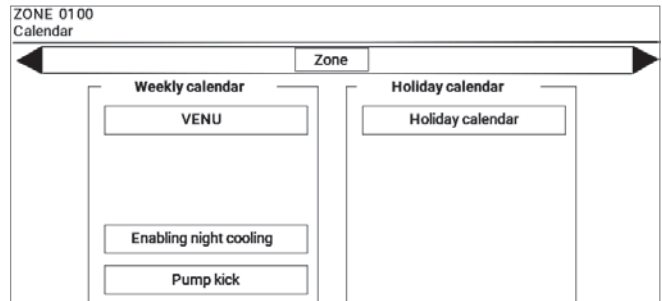
To delete an entry:

- Set the start and end times to 00:00.

#### Pump kick

The TopTronic® C control system switches on the heating/cooling pumps and the heating/cooling demand every day. This prevents the pumps from blocking in case of a long shutdown.

- Tap 'Pump kick' on the **Calendar** screen.
  - The **Pump kick** screen appears.
- In each case, tap the start time and end time for the daily pump kick and enter the desired values.



ZONE 0100  
Weekly calendar VENU Zone

Index	Weekday	Start time	Mode	Action
	Friday	07:00	ST	Create
01	Monday	07:00	VE	Delete
02	Monday	17:00	REC	Delete
03	Tuesday	07:00	VE	Delete
04	Tuesday	17:00	REC	Delete

ZONE 0100  
Enabling night cooling Zone

Index	Weekday	Start time	End time
1	Daily	20:00	06:00
2	Sunday	00:00	23:59

ZONE 0100  
Pump kick Zone

Heating pump		
Index	Start time	End time
1	12:00	12:02
Daily pump kick		

### Holiday calendar

In the holiday calendar, the units in a zone can be switched to the 'Standby' or 'Recirculation' operating modes for a specified or recurring time frame (e.g. during the company holidays).

Up to 15 calendar entries can be saved. The following applies:

- Enter the date using the format DD.MM.YY.
- Use wildcards (\*\*) if the calendar entry should apply to each year or each week.
- For recurring time frames, define either the weekday or the date. If the weekday does not match the set date, the holiday calendar is not activated. In this case, the week calendar continues to be active.
- The time frames may not extend beyond the change of calendar year. Two entries must be created instead (up to the end of December and from the beginning of January).

Examples  
Holiday calendar

Index	Weekday	Start date/time	Weekday	End date/time
Every year on 1 May, all-day				
01	—	01.05.** 00:00	—	01.05.** 23:59
Every year from 24 to 26 December, all-day				
01	—	24.12.** 00:00	—	26.12.** 23:59
Every Thursday all-day				
01	Thursday	**.**.** 00:00	Thursday	**.**.** 23:59
From Thursday 26.05.16 until Friday 27.05.16, all-day				
01	Thursday	26.05.16 00:00	Friday	27.05.16 23:59
From Monday 08.02.16 12:00 until Tuesday 09.02.16 23:59				
01	Monday	08.02.16 12:00	Tuesday	09.02.16 23:59

- In the Calendar screen, click 'Holiday calendar'.
  - The **Holiday calendar** screen appears.
- Program the entries:
  - Select a weekday from the list.
  - Tap the start date/time and enter the desired values.
  - Tap the end date/time and enter the desired values.
  - Select an operating mode from the list.
  - Tap 'Create'.

To delete an entry:

- Tap 'Delete' in the line to be deleted.

ZONE 0100  
Holiday calendar

Index	Weekday	Start date/time	Weekday	End date/time	Mode	Action
01	-	01.01.** 00:00	-	06.01.** 00:00	ST	Delete
02	-	24.12.** 00:00	-	31.12.** 00:00	ST	Delete

### 3.6 Room setpoints

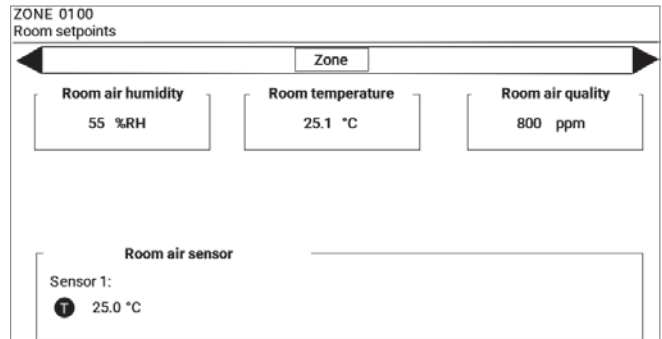
Define the setpoint for the room temperature (optionally also the room air humidity and quality). The current measured value for the room temperature sensor is displayed below.

- In each case, tap the setting value and enter the desired value.



**Notice**

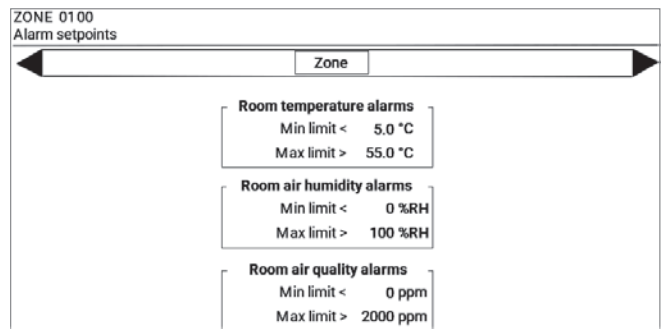
In cooling mode, the setpoint for the room temperature is increased by 1 K to avoid constant switching between heating and cooling.



### 3.7 Alarm setpoints

Define limit values for the room temperature monitoring (optionally also the room air humidity and room air quality). An alarm is displayed if these values are exceeded or under-shot, after a time delay.

- In each case, tap the setting value and enter the desired value.



### 3.8 Settings 1

**Overheat protection**

Define the conditions under which the units switch to overheat protection during standby times.

*Example:*

*Overheat protection setpoint 25 °C, hysteresis 1 K:*

→ Switches to overheat protection at 26 °C

**Cooling protection**

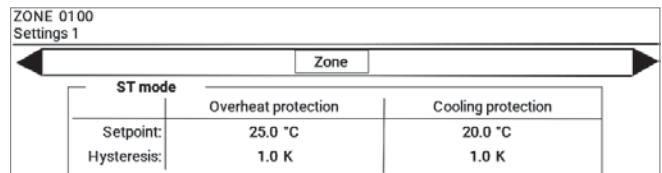
Define the conditions under which the units switch to cooling protection during standby times.

*Example:*

*Cooling protection setpoint 20 °C, hysteresis 1 K:*

→ Switches to cooling protection at 19 °C

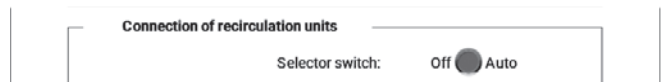
- In each case, tap the setting value and enter the desired value.



**Connection of recirculation units**

If different unit types are installed in a control zone (supply and extract air handling units + recirculation units or supply air units + recirculation units), the recirculation units can be connected automatically if there is a high heat or cool demand.

- Tap the selector switch and select one of the following settings:  
Off ..... Recirculation units are not connected  
Auto... Recirculation units are connected if there is a high heat or cool demand





### Night cooling

Define the conditions under which the units switch to night cooling during standby times.

- Tap the selector switch and select one of the following settings:  
Off ..... Night cooling is off  
Auto... Night cooling takes place automatically depending on the temperature and enable times (see also Section 3.5)
- Tap the value for 'Setpoint room' and enter the room temperature from which the units should switch to night cooling.
- Tap the value for 'Setpoint fans' and define the volume flow for night cooling (as a % of the nominal volume flow).



#### Notice

Reduce the volume flow e.g. for particularly quiet unit operation during the night.

Night cooling		
Selector switch:	Off	<input checked="" type="radio"/> Auto
Setpoint room:	21.0 °C	
Setpoint fans:	100 %	

## 3.9 Settings 2

### Summer/winter compensation

To save energy, the room temperature setpoint can be dynamically adjusted depending on the fresh air temperature:

- Start/stop point 1 and compensation value 1 define the winter compensation.
- Start/stop point 2 and compensation value 2 define the summer compensation.

#### Example of summer compensation:

Start point 2: 26 °C, stop point 2: 32 °C, compensation: 4 K

Room temperature setpoint: 22 °C

Room temperature setpoint in cooling mode:  $22 + 4 = 26$  °C

Fresh air temperature	Effective room temperature setpoint
26 °C	$22 + 0 = 22$ °C
29 °C	$22 + 2 = 24$ °C
32 °C	$22 + 4 = 26$ °C
33 °C	$22 + 4 = 26$ °C

- In each case, tap the setting value and enter the desired value.

### Supply air temperature limits

Define the minimum value and the maximum value for the supply air temperature. The minimum value can be dynamically adjusted depending on the fresh air temperature.

- In each case, tap the setting value and enter the desired value.

ZONE 0100 Settings 2		
Zone		
Summer/winter compensation setpoint room temperature		
	Fresh air temperature	Compensation value
Start point 1:	-10 °C	0 K
Stop point 1:	-15 °C	
Start point 2:	26 °C	4 K
Stop point 2:	32 °C	

Supply air temperature limits		
	Fresh air temperature	Supply air setpoint
Minimum value 1:	5 °C	18 °C
Minimum value 2:	15 °C	17 °C
Maximum value:	—	40 °C

### 3.10 Settings 3

#### Automatic volume flow adaptation

To save energy, the supplied volume flow can be reduced automatically if the maximum air volume is not required in order to meet the setpoints (room temperature, room air quality). The minimum volume flow required at all times can be set according to the customer's requirements by the Hoval service technician.

#### Room temperature

- Tap the selector switch and select one of the following settings:
  - Off ..... Always nominal volume flow
  - Auto... Automatic adaptation depending on the room temperature deviation

#### Room air quality

- Tap the selector switch and select one of the following settings:
  - Off ..... Always nominal volume flow
  - Auto... Automatic adaptation depending on the air quality deviation

#### Master zone

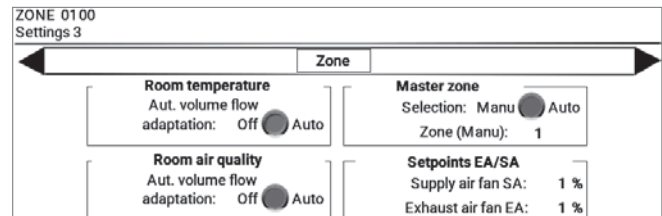
If the system incorporates several control zones with the same unit types, each zone can be assigned to a master zone. It then adopts the operating modes and room setpoints of the master zone.

- Tap the selector switch and select one of the following settings:
  - Manu.. Assign master zone
  - Auto... No master zone
- Tap the value for 'Zone (Manu)' and enter the master zone number.

#### Setpoints EA/SA

Define the volume flow for the operating modes 'Exhaust air (EA)' and 'Supply air (SA)' as a % of the nominal volume flow.

- In each case, tap the setting value and enter the desired value.



### Start optimisation

The start optimisation function saves energy when switching from the 'Standby' operating mode to daytime operation according to the weekly calendar. The room is cost-effectively preheated or precooled in recirculation operation to the daytime room temperature setpoints. The start time is automatically optimised so that the desired room temperature is reached at the programmed switching time.

- In each case, tap the selector switch and select one of the following settings:  
Off ..... Switches directly at the programmed switching time  
On ..... Start optimisation active

### Cooling enable

Define the fresh air temperature from which the cooling function is enabled.

- Tap the setting value and enter the desired value.



## 3.11 Settings 4

### Compensation of room air humidity setpoint

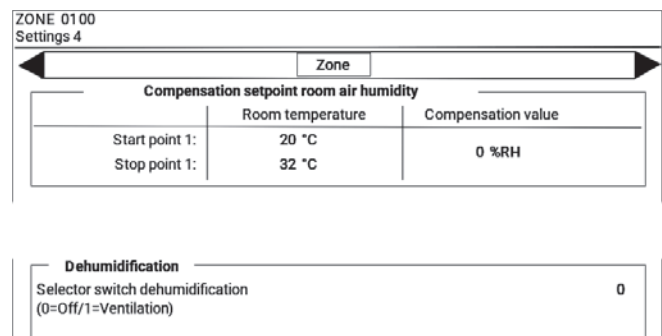
The room air humidity setpoint can be dynamically adjusted depending on the room temperature. Start/stop point 1 and compensation value 1 define the compensation.

- In each case, tap the setting value and enter the desired value.

### Dehumidification mode

If the room air humidity is too high, ventilation units can be switched on to dehumidify the room with fresh air.

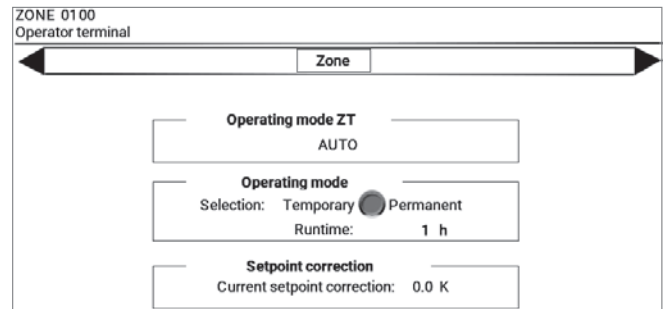
- Tap the setting value for the selector switch and enter the desired value:  
0 ..... No dehumidification  
1 ..... Dehumidification via ventilation (AQ\_VE) if the fresh air is drier than the room air



### 3.12 Operator terminal

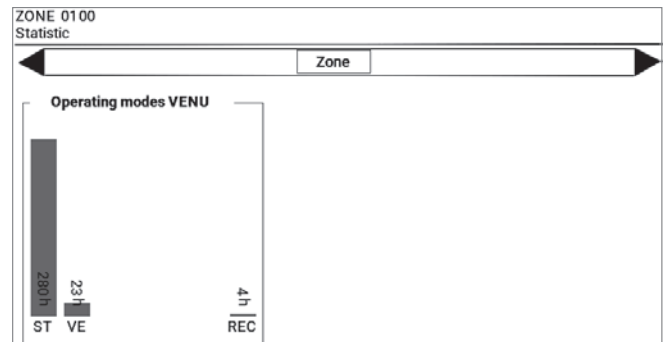
If a zone operator terminal is installed, the values selected on the operator terminal will be displayed here. Define the operating principle of the operating mode switching using the operator terminal.

- Tap the selector switch and select one of the following settings:  
Temporary ..... Operating mode applies for the set runtime  
Permanent ..... Operating mode applies permanently until the mode is switched back to automatic operation on the operator terminal.
- Tap the value for 'Runtime' and enter the desired runtime in hours.



### 3.13 Statistic

The statistic section shows the runtime of the units in the different operating modes.

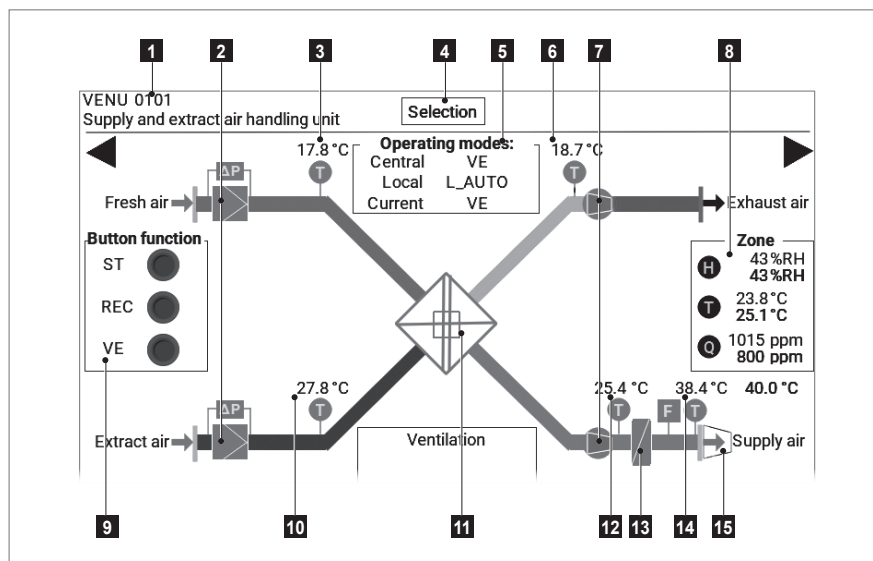


## 4 RoofVent® supply and extract air handling units

### 4.1 VENU unit overview

- Tap a supply and extract air handling unit on the **System overview** screen.

The unit overview shows the following information and buttons:



1	Unit number and unit type
2	Open the <b>Filter maintenance</b> screen directly
3	Air entry temperature energy recovery
4	Open unit Selection menu
5	Display the current operating mode   Open the <b>Operating selector switch</b> screen directly
6	Exhaust air temperature
7	Open the <b>Fans</b> screen directly
8	Display of the measured values of the room sensor   Open the <b>Zone overview</b> screen directly
9	Display the operating selector button   Open the <b>Zone overview</b> screen directly
10	Extract air temperature
11	Open the <b>ER system</b> screen directly
12	Air outlet temperature energy recovery
13	Open the <b>Hydraulics</b> screen directly
14	Supply air temperature
15	Open the <b>Air-Injector</b> screen directly

### 4.2 Navigation at unit level

Choose one of the following options:

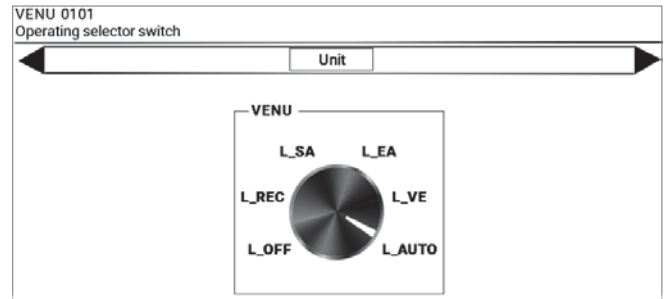
- Open one of the screens directly, as outlined above.
- Open the unit Selection menu and select the desired screen.
- Use ► to navigate to the next screen or ◀ to navigate to the previous screen.



### 4.3 Operating selector switch

The Operating selector switch screen makes it possible to manually specify a local operating mode for the unit. The units work in the selected operating mode until the switch is moved back to 'Auto'.

- Tap the desired operating mode.



### 4.4 Settings

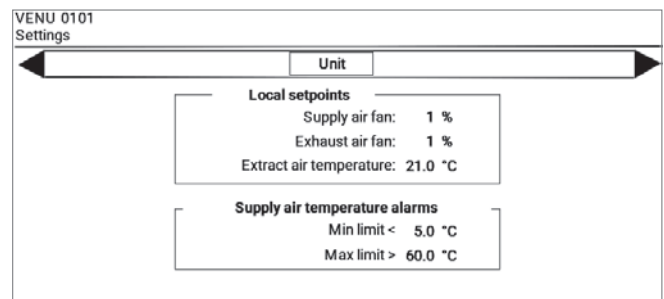
#### Local setpoints

Define the setpoints for local unit operation independent of the zone.

#### Supply air temperature alarms

Define limit values for the supply air temperature monitoring. An alarm is displayed if these values are exceeded or under-shot, after a time delay.

- In each case, tap the setting value and enter the desired value.



### 4.5 Filter maintenance (alarms)

Define the time at which the system should display a filter maintenance reminder (independent of the filter monitoring by the differential pressure switch). This time can be linked to the annual calendar as well as to the unit operating hours. The operating hours since the last reset are displayed.

#### Operating hours for maintenance reminder:

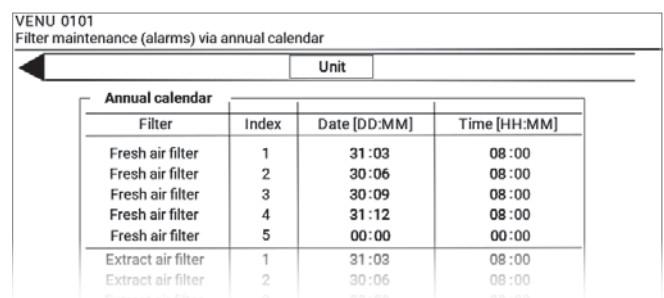
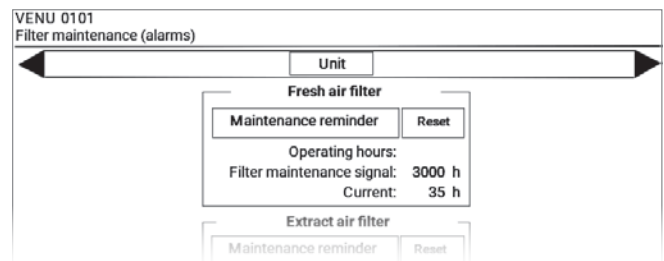
- Tap the value for 'Filter maintenance signal' and enter the desired value.
- The current value of the operating hours counter is displayed.

To set the operating hours counter to '0' after exchanging the filter:

- Tap 'Reset'.

#### Maintenance reminder via annual calendar

- Tap 'Maintenance reminder' in the **Filter maintenance (alarms)** screen.
  - The **Filter maintenance (alarms) via annual calendar** screen appears.
- In each case, tap the values for the date and time and enter the desired values.



#### 4.6 Fans

The following information is displayed:

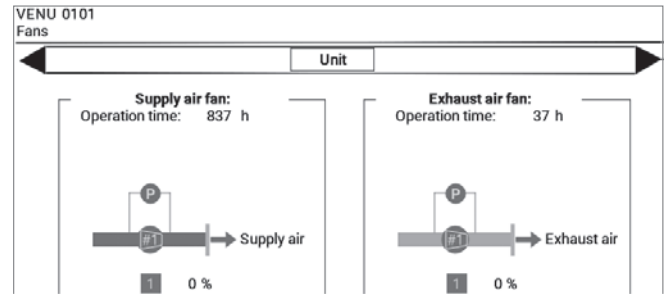
- Total operation time
- Current operating state

For fans with variable air flow rate:

- Current air flow rate  
(in % of the maximum fan speed)

For 2-speed fans:

- Current speed level

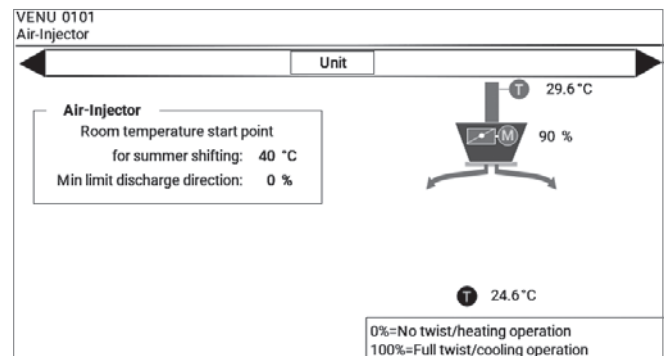


#### 4.7 Air-Injector

The following information is displayed:

- Current supply air temperature
- Current twist setting:  
0% ..... Air is discharged vertically downwards  
100% ..... Air is discharged horizontally
- Current room temperature

Optimally adjust the air distribution to the local conditions using the setting values for summer shifting and the discharge direction:



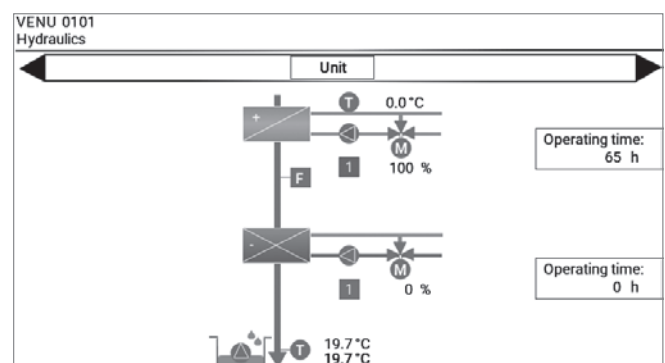
Start point for summer shifting	From the room temperature set here, the twist is reduced and the air is blown more vertically downwards. The cooling effect becomes more strongly felt.
Min limit discharge direction	A minimum value limiting the downward discharge direction of the air flow can prevent draughts in the occupied area.

- In each case, tap the setting value and enter the desired value.

#### 4.8 Hydraulics

Depending on the installed heating/cooling system, the following information is displayed:

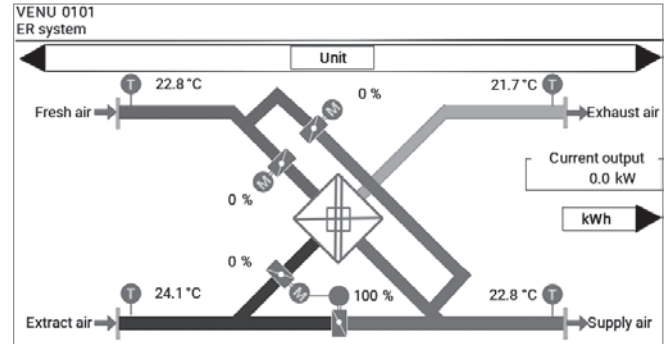
- Heating/cooling operating time
- Heating/cooling valve signal
- Supply air temperature
- Return temperature



#### 4.9 ER system

The **ER system** screen shows the energy recovery with the plate heat exchanger:

- Air temperatures
- Damper positions



#### Energy monitoring

If the 'Energy monitoring' option is installed, you can view a detailed breakdown of the saved energy:

- Tap 'kWh' on the **ER system** screen.
  - The energy monitoring overview appears.

VENU 0101  
ER system

Unit

	Energy monitoring ER system	
	Heat energy	Cooling energy
Current day	0 kWh	0 kWh
Last day	63 kWh	0 kWh
Current week	63 kWh	0 kWh
Last week	240 kWh	0 kWh
Current month	337 kWh	0 kWh
Last month	180 kWh	0 kWh

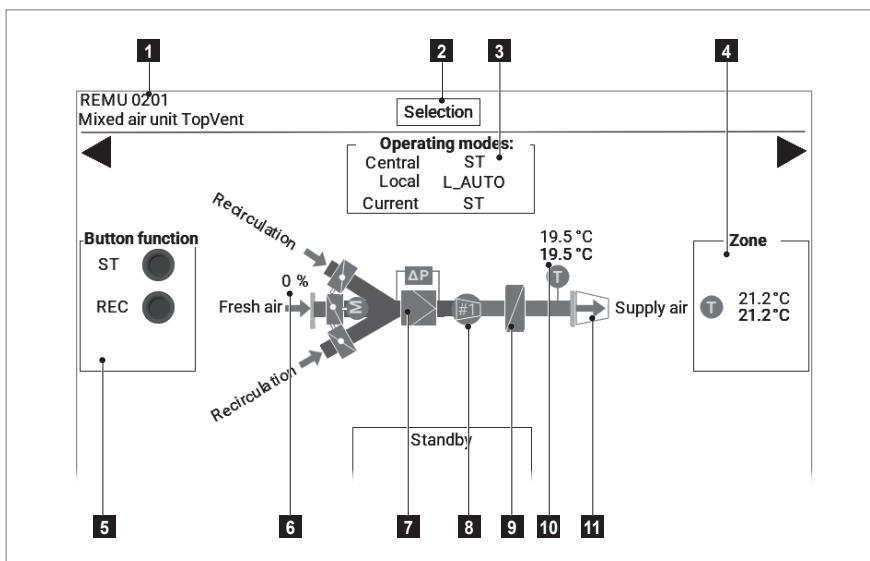


## 5 TopVent® supply air units

### 5.1 REMU unit overview

- Tap a supply air unit on the **System overview** screen.

The unit overview shows the following information and buttons:



- |    |   |
|----|---|
| 1  | Unit number and unit type   |
| 2  | Open unit Selection menu  |
| 3  | Display the current operating mode   Open the <b>Operating selector switch</b> screen directly    |
| 4  | Display of the measured values of the room sensor   Open the <b>Zone overview</b> screen directly |
| 5  | Display the operating selector button   Open the <b>Zone overview</b> screen directly             |
| 6  | Fresh air rate  |
| 7  | Open the <b>Filter maintenance</b> screen directly  |
| 8  | Open the <b>Fan</b> screen directly   |
| 9  | Open the <b>Hydraulics</b> screen directly  |
| 10 | Supply air temperature  |
| 11 | Open the <b>Air-Injector</b> screen directly  |

### 5.2 Navigation at unit level

Choose one of the following options:

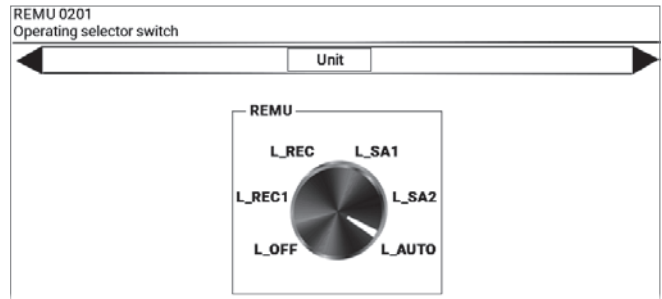
- Open one of the screens directly, as outlined above.
- Open the unit Selection menu and select the desired screen.
- Use ► to navigate to the next screen or ◀ to navigate to the previous screen.



### 5.3 Operating selector switch

The Operating selector switch screen makes it possible to manually specify a local operating mode for the unit. The units work in the selected operating mode until the switch is moved back to 'Auto'.

- Tap the desired operating mode.



### 5.4 Settings

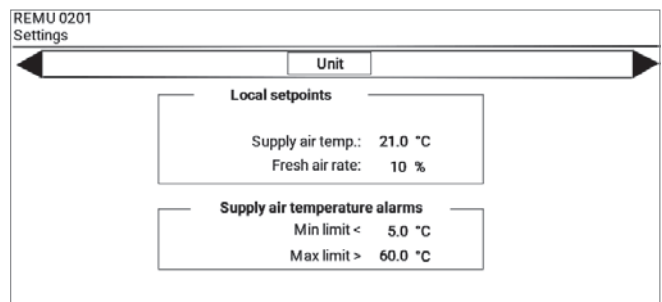
#### Local setpoints

Define the setpoints for local unit operation independent of the zone.

#### Supply air temperature alarms

Define limit values for the supply air temperature monitoring. An alarm is displayed if these values are exceeded or under-shot, after a time delay.

- In each case, tap the setting value and enter the desired value.



### 5.5 Filter maintenance (alarms)

Define the time at which the system should display a filter maintenance reminder (independent of the filter monitoring by the differential pressure switch). This time can be linked to the annual calendar as well as to the unit operating hours. The operating hours since the last reset are displayed.

#### Operating hours for maintenance reminder:

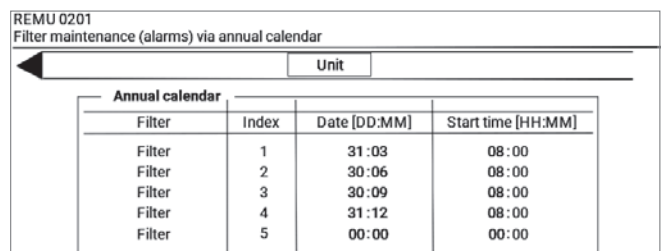
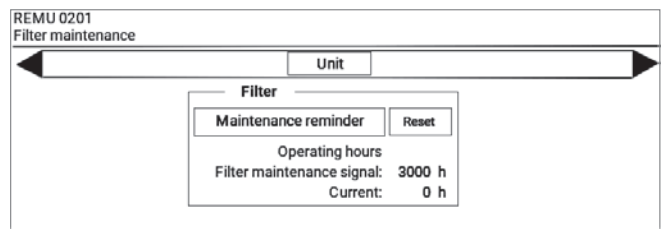
- Tap the value for 'Filter maintenance signal' and enter the desired value.
- The current value of the operating hours counter is displayed.

To set the operating hours counter to '0' after exchanging the filter:

- Tap 'Reset'.

#### Maintenance reminder via annual calendar

- Tap 'Maintenance reminder' in the **Filter maintenance (alarms)** screen.
  - The **Filter maintenance (alarms) via annual calendar** screen appears.
- In each case, tap the values for the date and time and enter the desired values.



## 5.6 Fan

The following information is displayed:

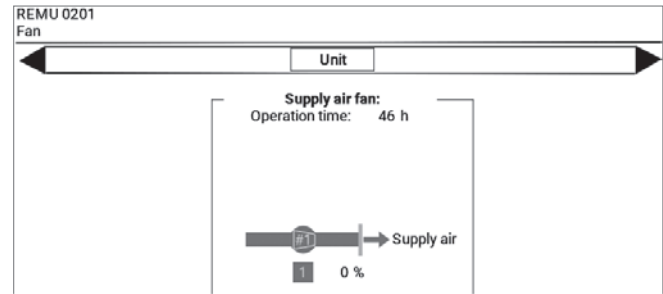
- Total operation time
- Current operating state

For fans with variable air flow rate:

- Current air flow rate  
(in % of the maximum fan speed)

For 2-speed fans:

- Current speed level

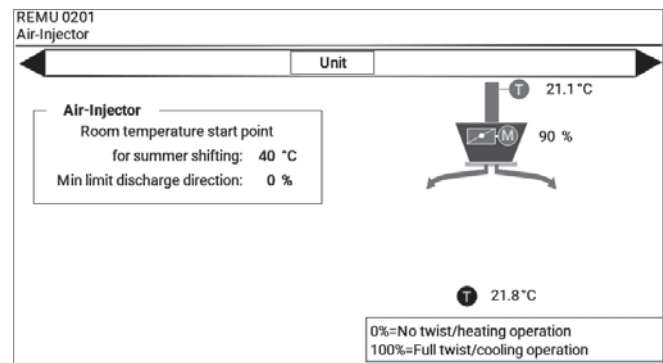


## 5.7 Air-Injector

The following information is displayed:

- Current supply air temperature
- Current twist setting:  
0% ..... Air is discharged vertically downwards  
100% ..... Air is discharged horizontally
- Current room temperature

Optimally adjust the air distribution to the local conditions using the setting values for summer shifting and the discharge direction:



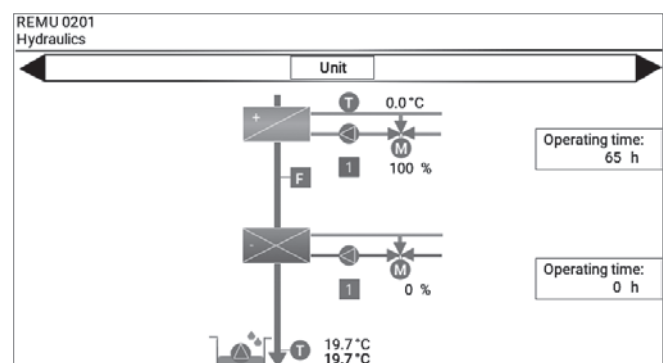
Start point for summer shifting	From the room temperature set here, the twist is reduced and the air is blown more vertically downwards. The cooling effect becomes more strongly felt.
Min limit discharge direction	A minimum value limiting the downward discharge direction of the air flow can prevent draughts in the occupied area.

- In each case, tap the setting value and enter the desired value.

## 5.8 Hydraulics

Depending on the installed heating/cooling system, the following information is displayed:

- Heating/cooling operating time
- Heating/cooling valve signal
- Supply air temperature
- Return temperature

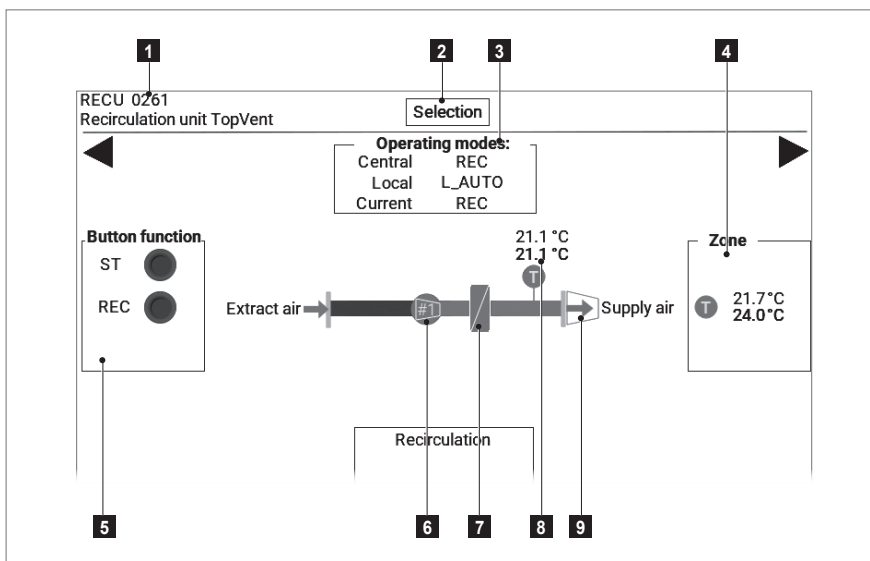


## 6 TopVent® recirculation units

### 6.1 RECU unit overview

- Tap a recirculation unit on the **System overview** screen.

The unit overview shows the following information and buttons:



- 1 Unit number and unit type
- 2 Open unit Selection menu
- 3 Display the current operating mode | Open the **Operating selector switch** screen directly
- 4 Display of the measured values of the room sensor | Open the **Zone overview** screen directly
- 5 Display the operating selector button | Open the **Zone overview** screen directly
- 6 Open the **Fan** screen directly
- 7 Open the **Hydraulics** screen directly
- 8 Supply air temperature
- 9 Open the **Air-Injector** screen directly

### 6.2 Navigation at unit level

Choose one of the following options:

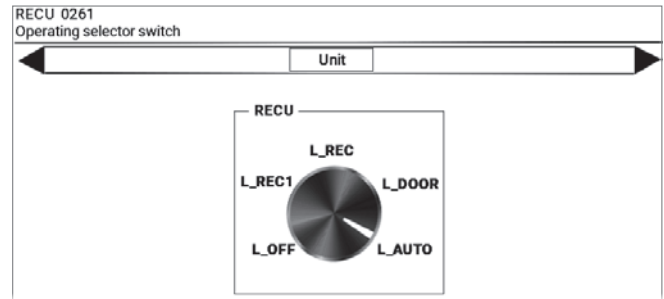
- Open one of the screens directly, as outlined above.
- Open the unit Selection menu and select the desired screen.
- Use ► to navigate to the next screen or ◀ to navigate to the previous screen.



### 6.3 Operating selector switch

The Operating selector switch screen makes it possible to manually specify a local operating mode for the unit. The units work in the selected operating mode until the switch is moved back to 'Auto'.

- Tap the desired operating mode.



### 6.4 Settings

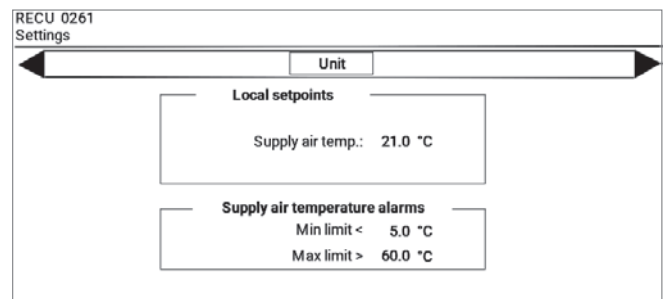
#### Local setpoints

Define the setpoints for local unit operation independent of the zone.

#### Supply air temperature alarms

Define limit values for the supply air temperature monitoring. An alarm is displayed if these values are exceeded or under-shot, after a time delay.

- In each case, tap the setting value and enter the desired value.



### 6.5 Filter maintenance (alarms)

Define the time at which the system should display a filter maintenance reminder (independent of the filter monitoring by the differential pressure switch). This time can be linked to the annual calendar as well as to the unit operating hours. The operating hours since the last reset are displayed.

#### Operating hours for maintenance reminder:

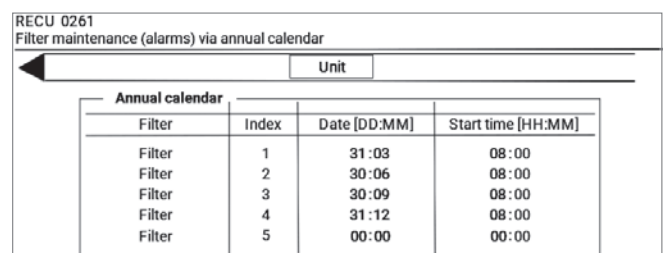
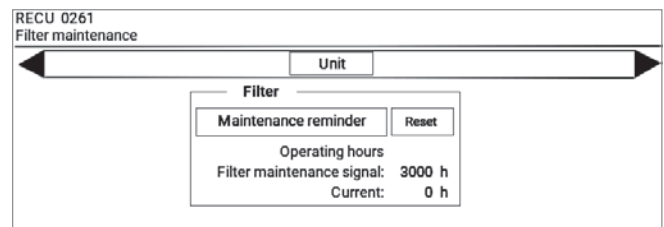
- Tap the value for 'Filter maintenance signal' and enter the desired value.
- The current value of the operating hours counter is displayed.

To set the operating hours counter to '0' after exchanging the filter:

- Tap 'Reset'.

#### Maintenance reminder via annual calendar

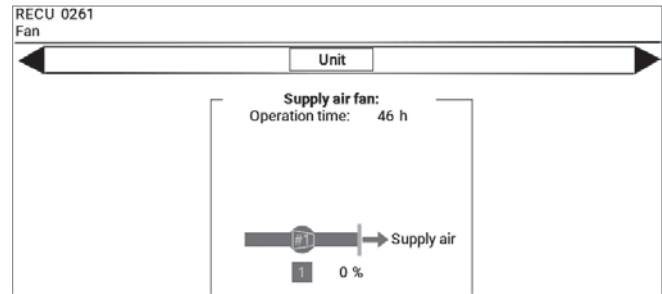
- Tap 'Maintenance reminder' in the **Filter maintenance (alarms)** screen.
  - The **Filter maintenance (alarms) via annual calendar** screen appears.
- In each case, tap the values for the date and time and enter the desired values.



## 6.6 Fan

The following information is displayed:

- Total operation time
- Current operating state
- Current air flow rate  
(in % of the maximum fan speed)

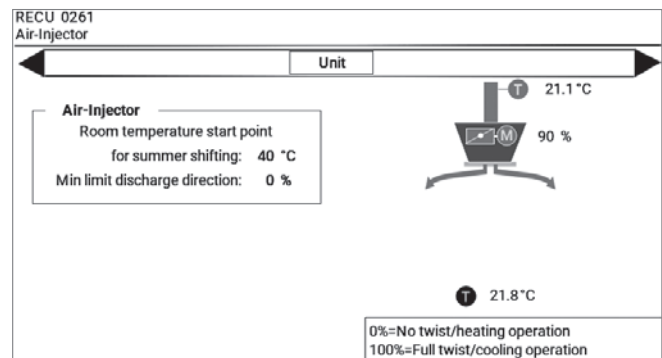


## 6.7 Air-Injector

The following information is displayed:

- Current supply air temperature
- Current twist setting:  
0% ..... Air is discharged vertically downwards  
100% ..... Air is discharged horizontally
- Current room temperature

Optimally adjust the air distribution to the local conditions using the setting values for summer shifting and the discharge direction:



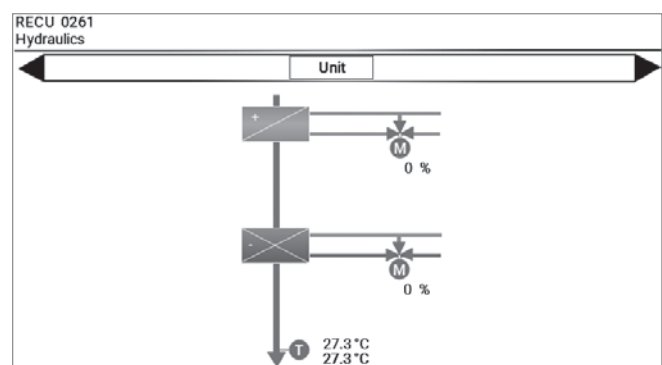
Start point for summer shifting	From the room temperature set here, the twist is reduced and the air is blown more vertically downwards. The cooling effect becomes more strongly felt.
Min limit discharge direction	A minimum value limiting the downward discharge direction of the air flow can prevent draughts in the occupied area.

- In each case, tap the setting value and enter the desired value.

## 6.8 Hydraulics

Depending on the installed heating/cooling system, the following information is displayed:


- Heating/cooling operating time
- Heating/cooling valve signal
- Supply air temperature
- Return temperature

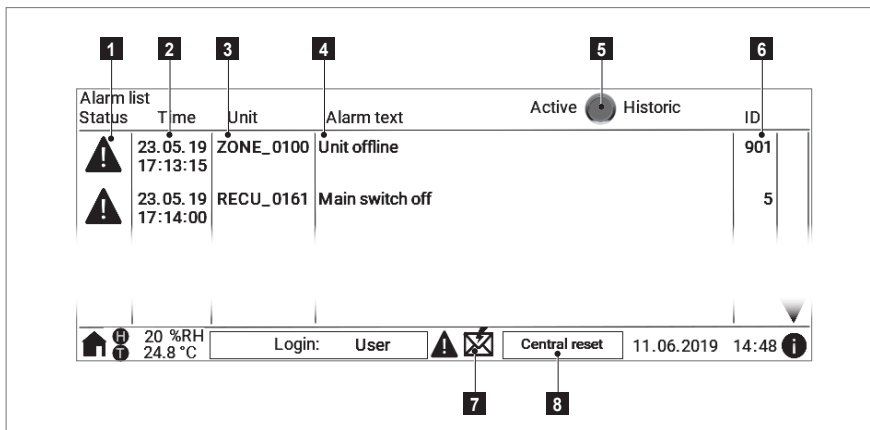




## 7 Alarms

All the alarms are registered in the alarm list and must be acknowledged by the user. Depending on the alarm cause, they are then automatically deleted after the fault has been rectified, or a reset is also required.






### 7.1 Alarm processing

- Tap the alarm icon  on any screen.  
(A flashing alarm icon indicates that there is an alarm in the alarm list that has not yet been acknowledged.)
  - The **Alarm list** screen appears. The following information and buttons are displayed:



Alarm list Status	Time	Unit	Alarm text	Active	Historic	ID
	23.05.19 17:13:15	ZONE_0100	Unit offline	<input type="radio"/>	<input type="radio"/>	901
	23.05.19 17:14:00	RECU_0161	Main switch off	<input type="radio"/>	<input type="radio"/>	5

		20 %RH 24.8 °C	Login: User			Central reset	11.06.2019 14:48	
---	---	-------------------	-------------	---	---	---------------	------------------	---

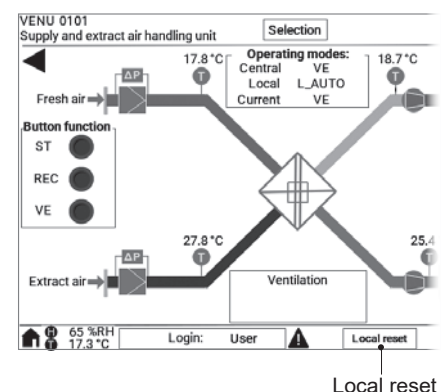
- 1** Alarm status:  
RED .....Shows an alarm that must be acknowledged.  
YELLOW ..Displays an acknowledged alarm for which the fault has not yet been rectified.  
GREEN.....Displays a temporary alarm that must be acknowledged.  
WHITE.....Displays a historical alarm.
- 2** Date and time of the alarm
- 3** Number of the affected unit/zone
- 4** Alarm text
- 5** Alarm display selector switch
- 6** Alarm ID
- 7** Open the **Alarm message** screen
- 8** Central reset: Reset all the alarms for the entire system

#### Acknowledge alarms

- Tap the alarm in question in the alarm list.

#### Reset alarms

- For the entire system:
  - Tap the 'Central reset' button on the **Alarm list** screen.
- For a single unit:
  - Navigate to the unit overview for the unit in question.
  - Tap the 'Local reset' button in the footer.




## 7.2 Alarm message

The system can send alarm messages by e-mail. The e-mail address is set up by the Hoval service technician during commissioning as required.

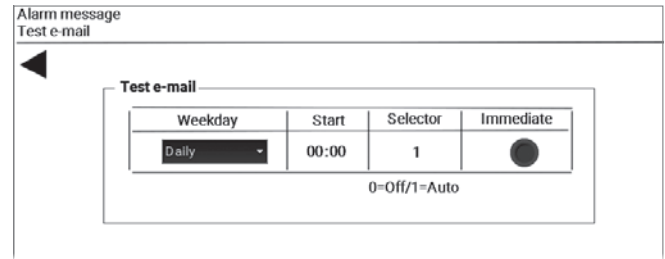
You can also send test alarms to this e-mail address:

- Daily or weekly at a set time
- Once per 'Immediate' function

- Tap the  icon on the **Alarm list** screen.
  - The **Alarm message** screen appears.
- Set the weekday and the time.
- Set the selector switch to '1'.

To send a test alarm immediately:

- Tap the 'Immediate' function switch.



The screenshot shows a mobile application interface for configuring an alarm message. At the top, it says "Alarm message" and "Test e-mail". Below this is a "Test e-mail" configuration box with a table and a legend.

Weekday	Start	Selector	Immediate
Daily	00:00	1	<input checked="" type="checkbox"/>

0=Off/1=Auto



### 7.3 Alarm list

The following table contains an overview of all alarms and their cause.  
Contact Hoval customer service to have faults rectified.

ID	Alarm	Cause	System reaction	Remedy
1	Frost protection (supply air)	The supply air temperature has dropped below 13 °C.	The mixing valve heating opens continuously. The (optional) heating pump switches on.	Check the heat supply and the unit hydraulics, rectify error. Reset alarm.
		The supply air temperature has dropped below 8 °C.	The frost protection alarm (supply air) is tripped. The heating mixing valve opens 100%. The unit switches off.	
2	Frost protection (water return)	The return temperature has dropped below 15 °C.	The mixing valve heating opens continuously. The (optional) heating pump switches on.	
		The return temperature has dropped below 7 °C.	The frost protection alarm (water return) is tripped. The heating mixing valve opens 100%. The unit switches off.	
3	Fault supply air fan 1	The fan motor has a fault or the corresponding circuit breaker has tripped.	The unit switches off.	Switch on automatic circuit breaker again.
4	Fault supply air fan 2			
5	Main switch off	The main switch is set to '0'.	–	Set main switch to position '1'.
6	Frost protection	The temperature has fallen to below 11 °C after the heating coil.	The mixing valve heating opens continuously. The (optional) heating pump switches on.	Check the heat supply and the unit hydraulics, rectify error. Reset alarm.
		The temperature has fallen to below 5 °C after the heating coil.	The 'frost protection' alarm is tripped. The heating mixing valve opens 100%. The unit switches off.	
9	Forced switch-off unit	An external signal has activated the forced switch-off function.	The unit switches off.	Deactivate the external signal. Reset alarm.
10	Forced switch-off zone	An external signal has activated the forced switch-off function.	All units in the zone switch off.	
12	Fault exhaust air fan 1	The fan motor has a fault or the corresponding circuit breaker has tripped.	The unit switches off.	Switch on automatic circuit breaker again.
13	Fault exhaust air fan 2			
14	Fault temperature sensor additional heating coil short-circuit	The sensor or the cabling has a short circuit.	The unit switches off.	Rectify fault. Reset alarm.
15	Fault temperature sensor additional heating coil interruption	The sensor or the cabling has an interruption.		
200	Fresh air filter maintenance	The pressure difference for filter monitoring was exceeded for more than 2 minutes.	–	Change the filter. Reset alarm.
201	Extract air filter maintenance			
202	Fresh air filter maintenance (operating hours)	The operating hours for the maintenance reminder have been reached.	–	Check the filter and renew it if necessary. Reset alarm.
203	Extract air filter maintenance (operating hours)			
204	Fresh air filter maintenance (annual calendar)	The date for the maintenance reminder has been reached.	–	Check the filter and renew it if necessary. Reset alarm.
205	Extract air filter maintenance (annual calendar)			
206	Filter maintenance (operating hours)	The operating hours for the maintenance reminder have been reached.	–	Check the filter and renew it if necessary. Reset alarm.
207	Filter maintenance (annual calendar)	The date for the maintenance reminder has been reached.	–	Check the filter and renew it if necessary. Reset alarm.

ID	Alarm	Cause	System reaction	Remedy
208	Air filter maintenance	The pressure difference for filter monitoring was exceeded for more than 2 minutes.	–	Change the filter. Reset alarm.
220	Fault supply air temperature sensor shortcut	The sensor or the cabling has a short circuit.	The unit switches to L_REC operating mode and controls using the extract air temperature. The unit switches off if the extract air sensor fails at the same time.	Rectify fault. Reset alarm.
221	Fault supply air temperature sensor open	The sensor or the cabling has an interruption.		
222	Fault fresh air temperature sensor shortcut	The sensor or the cabling has a short circuit.	The system operates at a fresh air temperature of 0 °C.	Rectify fault. Reset alarm.
223	Fault fresh air temperature sensor interruption	The sensor or the cabling has an interruption.		
224	Fault extract air temperature sensor shortcut	The sensor or the cabling has a short circuit.	Functions controlled using this sensor are not active.	Rectify fault. Reset alarm.
225	Fault extract air temperature sensor open	The sensor or the cabling has an interruption.	The unit switches off if the supply air sensor fails at the same time.	
226	Fault exhaust air temperature sensor shortcut	The sensor or the cabling has a short circuit.	Functions controlled using this sensor are not active.	Rectify fault. Reset alarm.
227	Fault exhaust air temperature sensor open	The sensor or the cabling has an interruption.		
228	Fault air inlet temperature ER sensor shortcut	The sensor or the cabling has a short circuit.		
229	Fault air inlet temperature ER sensor open	The sensor or the cabling has an interruption.		
230	Fault air outlet temperature ER sensor shortcut	The sensor or the cabling has a short circuit.		
231	Fault air outlet temperature ER sensor open	The sensor or the cabling has an interruption.		
232	Fault return temperature sensor shortcut	The sensor or the cabling has a short circuit.	The unit continues to operate with a return temperature of 99 °C. Functions controlled using this sensor are not active.	Rectify fault. Reset alarm.
233	Fault return temperature sensor open	The sensor or the cabling has an interruption.		
234	Fault room temperature sensor 1 shortcut	The sensor or the cabling has a short circuit.	– If there is only 1 sensor present: All units in the zone switch to L_REC mode and operate without room temperature. – If there are several sensors: The defective sensor is masked out. All units in the zone use the value of the other sensors.	Rectify fault. Reset alarm.
235	Fault room temperature sensor 1 open	The sensor or the cabling has an interruption.		
236	Fault room temperature sensor 2 shortcut	The sensor or the cabling has a short circuit.	The defective sensor is masked out. All units in the zone use the value of the other sensors.	Rectify fault. Reset alarm.
237	Fault room temperature sensor 2 open	The sensor or the cabling has an interruption.		
238	Fault room temperature sensor 3 shortcut	The sensor or the cabling has a short circuit.		
239	Fault room temperature sensor 3 open	The sensor or the cabling has an interruption.		
240	Fault room temperature sensor 4 shortcut	The sensor or the cabling has a short circuit.		
241	Fault room temperature sensor 4 open	The sensor or the cabling has an interruption.		
280	Fault room air quality sensor	The sensor or the cabling has a fault.	In AQ operating mode, all devices in the zone operate in AQ_VE operating state.	Rectify fault. Reset alarm.
281	Fault room air humidity sensor	The sensor or the cabling has a fault.	Functions controlled using this sensor are not active.	Rectify fault. Reset alarm.

ID	Alarm	Cause	System reaction	Remedy
282	Fault pressure differential sensor supply air	The sensor, the cabling or the tubing has a fault.	The unit continues to run with a default value. Functions controlled using this sensor are not active.	Rectify fault. Reset alarm.
283	Fault pressure differential sensor exhaust air	The sensor, the cabling or the tubing has a fault.		
284	Fault heat pump 1	Fault of the heat pump	At cold outside temperatures, the unit switches to L_REC operating mode.	Rectify fault.
287	Fault heating pump	The pump has a fault or the corresponding circuit breaker has tripped.	At cold outside temperatures, the unit switches to L_REC operating mode.	Rectify fault.
288	Fault cooling pump	The pump has a fault or the corresponding circuit breaker has tripped.	The unit continues to run without cooling.	Rectify fault.
289	Fault heat generation	Fault heat supply	At cold outside temperatures, all units in the zone switch to REC operating mode.	Rectify fault.
290	Fault cold generation	Fault cold supply	All units in the zone continue to run without cooling.	Rectify fault.
291	Fault condensate pump	The pump has a fault or the corresponding circuit breaker has tripped.	The unit continues to run without cooling.	Rectify fault.
293	Fault heat pump 2	Fault of the heat pump	At cold outside temperatures, the unit switches to L_REC operating mode.	Rectify fault.
294	Fault electric heating coil	Fault of the thyristor controller	The electric heater and the heat pump are locked. VENU: The unit switches to the L_REC operating mode if the temperature downstream of the electric heating coil falls below 14 °C.	Rectify fault.
295	Safety temperature limiter electrical heater	Overheating of the heating coil > 90 °C	The electric heater and the automatic unit function are locked. The unit switches to permanent fan operation until the safety temperature limiter is unlocked mechanically.	Call Hoval customer service.
296	Air flow monitoring supply air	Volume flow too low	The electric heater and the heat pump are locked. VENU: The unit switches to the L_REC operating mode if the temperature downstream of the electric heating coil falls below 14 °C.	Call Hoval customer service.
300	Max limit room temperature	The room temperature has exceeded the maximum warning limit.	–	Reduce the room temperature below the warning limit or adjust the limit value.
301	Min limit room temperature	The room temperature has dropped below the minimum warning limit.	–	Increase the room temperature above the warning limit or adjust the limit value.
302	Max limit supply air temperature	The supply air temperature has exceeded the maximum warning limit.	–	Eliminate the reason why the supply air temperature was exceeded or adjust the limit value.
303	Min limit supply air temperature	The supply air temperature has dropped below the minimum warning limit.	–	Eliminate the reason why the supply air temperature was under-shot or adjust the limit value.
304	Max limit room air humidity	The room air humidity has exceeded the maximum warning limit.	–	Reduce the room air humidity below the warning limit or adjust the limit value.
305	Min limit room air humidity	The room air humidity has dropped below the minimum warning limit.	–	Increase the room air humidity above the warning limit or adjust the limit value.
306	Max limit room air quality	The room air quality has exceeded the maximum warning limit.	–	Reduce the room air quality below the warning limit or adjust the limit value.
307	Min limit room air quality	The room air quality has dropped below the minimum warning limit.	–	Increase the room air quality above the warning limit or adjust the limit value.

ID	Alarm	Cause	System reaction	Remedy
319	Fault external signal fresh air temperature	The signal or the cabling has a fault.	The system operates at a fresh air temperature of 0 °C.	Rectify fault. Reset alarm.
320	Fault external setpoint supply air fan	The signal or the cabling has a fault.	All units in the zone continue to run with a default value for both fans.	Rectify fault.
321	Fault external setpoint exhaust air fan	The signal or the cabling has a fault.		
322	Fault external setpoint room air quality	The signal or the cabling has a fault.	All units in the zone continue to run with the internal set value.	Rectify fault. Reset alarm.
323	Fault external setpoint room air humidity	The signal or the cabling has a fault.		
324	Fault external setpoint room temperature day	The signal or the cabling has a fault.		
325	Fault external setpoint extract air/recirculation damper	The signal or the cabling has a fault.		
326	Fault external operating mode signal ventilation units	The signal or the cabling has a fault.	All units in the zone switch to REC operating mode.	Rectify fault. Reset alarm.
327	Fault external operating mode signal mixed air units	The signal or the cabling has a fault.		
328	Fault external operating mode signal recirculation units	The signal or the cabling has a fault.		
329	Load shedding	An external signal has activated the load shedding function.	All units switch to the operating mode defined for load shedding.	Deactivate the external signal.
600	Feedback alarm heating valve	The valve is sticking or the actuator is defective or a manual intervention is in progress.	-	Check the mechanical and electrical systems of the valve and actuator, rectify the error. Reset alarm.
601	Feedback alarm cooling valve			
602	Fresh air damper feedback alarm	The damper is sticking or the actuator is defective or a manual intervention is in progress.	-	Check the mechanical and electrical systems of the damper and actuator, rectify the error. Reset alarm.
603	Feedback alarm bypass damper			
605	Feedback alarm recirculation damper			
606	Feedback alarm actuator Air-Injector	The Air-Injector is sticking or the actuator is defective or a manual intervention is in progress.	-	Check the mechanical and electrical systems of the Air-Injector and actuator, rectify the error. Reset alarm.
607	Feedback alarm heating pump	The control for feedback has a fault or a manual intervention is in progress.	-	Rectify fault. Reset alarm.
608	Feedback alarm cooling pump			
610	Feedback alarm electric heater steps			
612	Feedback fault heat pump 1			
613	Feedback alarm changeover valves heating			
614	Feedback alarm changeover valves cooling			
615	Feedback alarm supply air fan speed 1			
616	Feedback alarm supply air fan speed 2			
617	Feedback alarm exhaust air fan speed 1			
618	Feedback alarm exhaust air fan speed 2			
619	Feedback fault heat pump 2			
700	Fault supply air temperature control	The actual value is no longer in the defined range around the set value.	-	Call Hoval customer service.
701	Fault room temperature control			
702	Fault room air quality control			
703	Fault supply air flow rate control			
704	Fault exhaust air flow rate control			
721	Local protection mode L_REC active	Protection mode was activated as the result of another alarm.	The unit continues to run in L_REC protection mode.	Rectify fault.
722	Central protection mode REC active	Protection mode was activated as the result of another alarm.	All units in the zone continue to run in protection mode REC.	Rectify fault.
723	Emergency operation active	An external signal has activated the emergency operation function.	The unit runs in emergency operation.	Deactivate the external signal.

ID	Alarm	Cause	System reaction	Remedy
724	De-icing energy recovery	Due to ice formation, the pressure difference in the plate heat exchanger is too high.	The unit runs in local 'Exhaust air' mode (L_EA) until the ice has defrosted (at least 10 minutes).	If the unit does not switch back to automatic mode after 1 hour at the latest: Switch off the unit (L_OFF) and call Hoval customer service.
900	Zone offline	There is no longer any communication with this zone.	All units in the zone run in offline mode. Online functions are not active.	Check IP network. Rectify fault.
901	Unit offline	There is no longer any communication with this unit.	The unit runs in offline mode with predefined parameters. Online functions are not active. The frost protection function is not ensured.	Check cabling. Rectify fault.
902	Recirculation unit offline			
903	Forced datapoint	There is manual intervention on a data point.	The system or the unit is working with the forced data point.	Call Hoval customer service.
905	Operator terminal offline	There is no longer any communication with this unit.	Not all functions are active.	Check cabling. Rectify fault.
906	Test alarm	A test alarm was sent as an e-mail.	–	–
907	Expansion offline	There is no longer any communication with this controller.	Not all functions are active.	Call Hoval customer service.
908	Fault universal I/O port	There is a signal fault on a controller connection.	Not all functions are active.	Call Hoval customer service.
909	Fault universal I/O port expansion 1			
910	Fault universal I/O port expansion 2			
911	Battery replacement required	The backup battery is empty.	The date is wrong after an interruption to the power supply.	Correct the date. Call Hoval customer service.
912	BACnet client offline	The client has not communicated with the zone controller in the last 300 s.	The system continues to run with the last-received values.	Check the BACnet communication. Rectify fault.

## 8 Adjustable parameters

The following list shows the parameters that can be set in the operator level:

Parameters	Setting range	Default value	Unit
Alarm room air humidity MAX limit	0 ... 100	100	% RH
Alarm room air humidity MIN limit	0 ... 100	0	% RH
Alarm room air quality MAX limit	0 ... 2000	2000	ppm
Alarm room air quality MIN limit	0 ... 2000	0	ppm
Alarm room temperature MAX limit	5 ... 60	55	°C
Alarm room temperature MIN limit	5 ... 60	5	°C
Alarm supply air temperature MAX limit	0 ... 70	60	°C
Alarm supply air temperature MIN limit	0 ... 70	5	°C
Fresh air temperature threshold DOOR function	-99 ... 99	10	°C
Fresh air temperature threshold for cooling enable	10 ... 50	15	°C
Selection of master zone for central operation (takeover operating mode/setpoint)	1 ... 64	Own address	–
Operating selector switch VENU ventilation unit	ST/REC/SA/EA/VE/VEL/AQ/EXT/AUTO	ST	–
Operating selector switch REMU mixed air unit	ST/REC/REC1/SA1/SA2/EXT/AUTO	ST	–
Operating selector switch RECU recirculation unit	ST/ REC/REC1/EXT/AUTO	ST	–
Operating hours extract air filter exchange	0 ... 99999	3000	h
Operating hours fresh air filter exchange	0 ... 99999	3000	h
Operating hours filter exchange	0 ... 99999	3000	h
Destratification switch-on hysteresis	3 ... 10	4	K
Holiday calendar	15 entries ST/REC		–
Hysteresis cooling protection	0.5 ... 9.9	1	K
Hysteresis overheat protection	0.5 ... 9.9	1	K
Calendar function extract air filter exchange	5 entries	–	–
Calendar function fresh air filter exchange	5 entries	–	–
Calendar function filter exchange	5 entries	–	–
Compensation start point 1 fresh air temperature (winter)	-50 ... 50	-10	°C
Compensation stop point 1 fresh air temperature (winter)	-50 ... 50	-15	°C
Compensation start point 2 fresh air temperature (summer)	0 ... 50	26	°C
Compensation stop point 2 fresh air temperature (summer)	0 ... 50	32	°C
Compensation value X (winter)	0 ... 15	0	K
Compensation value Y (summer)	0 ... 15	4	K
Compensation start point 1 room temperature (humidity)	0 ... 50	20	°C
Compensation stop point 1 room temperature (humidity)	0 ... 50	32	°C
Compensation setpoint increase for room air humidity	-40 ... 0	0	% RH
Local set value fresh air ratio (REMU)	0 ... 100	10	%
Local setpoint room air temperature	10 ... 50	21	°C
Ventilation unit setpoint exhaust air fan EA mode	1 = MIN / 100 = MAX	1	%
Ventilation unit setpoint supply air fan SA mode	1 = MIN / 100 = MAX	1	%
Min limit discharge direction	0 ... 100	0	%
Follow-on DOOR operation	0 ... 999	60	s
Room temperature start point for summer shifting	20 ... 40	40	°C
Room temperature setpoint cooling protection	5.0 ... 40.0	19	°C
Room temperature setpoint day	5.0 ... 40.0	21	°C
Room temperature setpoint overheat protection	5.0 ... 40.0	25	°C

Parameters	Setting range	Default value	Unit
Set value fresh air ratio (only with REMU)	0 ... 100	10	%
Setpoint exhaust air fan all local operating modes	0 ... 100	1	%
Setpoint runtime for change of operating mode at operating terminal	1 ... 999	2	h
Setpoint room air humidity	0 ... 100	55	% RH
Setpoint room air quality	250 ... 2000	800	ppm
Setpoint room temperature night cooling	15 ... 50	21	°C
Setpoint volume flow night cooling	50 ... 100	100	%
Setpoint supply air fan all local operating modes	0 ... 100	1	%
Selector switch alarm e-mail	0 = OFF / 1 = ON	0	–
Selector switch selection master zone for central operation (takeover operating mode/setpoint)	0 = MANU / 1 = AUTO	1	–
Selector switch automatic AQ volume flow adjustment	0 = OFF / 1 = AUTO	1	–
Selector switch destratification	0 = OFF / 1 = PERMANENT / 2 = SENSOR	0	–
Selector switch dehumidification	0 = OFF / 1 = VENTILATION / 2 = DEHUMIDIFICATION / 3 = AUTO	0	–
Selector switch dehumidification with ventilation	0 = OFF / 1 = VENTILATION	0	–
Selector switch function time/duration for change of operating mode at operating terminal	0 = TIME / 1 = PERMANENT	0	–
Selector switch heating optimisation	0 = OFF / 1 = ON	1	–
Selector switch cooling optimisation	0 = OFF / 1 = ON	1	–
Selector switch local operation RECU	L_OFF/L_REC1/L_REC2/L_DOOR/ L_AUTO	L_AUTO	–
Selector switch local operation REMU	L_OFF/L_REC1/L_REC2/L_SA1/L_SA2/ L_AUTO	L_AUTO	–
Selector switch local operation VENU	L_OFF/L_REC/L_SA/L_EA/L_VE/ L_AUTO	L_AUTO	–
Selector switch night cooling	0 = OFF / 1 = AUTO	1	–
Selector switch room temperature - volume flow adjustment	0 = OFF / 1 = AUTO	1	–
Selector switch test alarm	0 = OFF / 1 = AUTO	0	–
Selector switch connection of recirculation units	0 = OFF / 1 = AUTO	1	–
Weekly calendar ventilation unit	50 entries ST/REC/SA/EA/VE/VEL/AQ		–
Weekly calendar recirculation unit	50 entries ST/REC/REC1/SA1/SA2		–
Weekly calendar test alarm	1 entry	Monday / 12:00-12:01	–
Weekly calendar recirculation unit/curtain	50 entries ST/REC/REC1		–
Week clock enabling night cooling	5 entries	Mo-Su / 20:00-06:00	–
Week clock pump kick heating pump	1 entry	Mo-Su / 12:00-12:02	–
Week clock pump kick cooling pump	1 entry	Mo-Su / 12:00-12:02	–
Duration of temporary REC operation	1 ... 9999	30	min
Duration of temporary ST operation	1 ... 9999	30	min
Duration of temporary VE operation	1 ... 9999	30	min
Supply air setpoint (WMax)	15 ... 60	40	°C
Supply air setpoint (WMin) - Support point 1 (fresh air)	-50 ... 50	5	°C
Supply air setpoint (WMin) - Support point 1 (supply air)	12 ... 30	18	°C
Supply air setpoint (WMin) - Support point 2 (fresh air)	-50 ... 50	15	°C
Supply air setpoint (WMin) - Support point 2 (supply air)	12 ... 30	17	°C

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