WEGER
quality air / quality life

Operating instructions
Control system
for ventilation systems

IMPERIA 51

English

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1 Display

1.1 Touchscreen, buttons



Figure 1 – Information screen

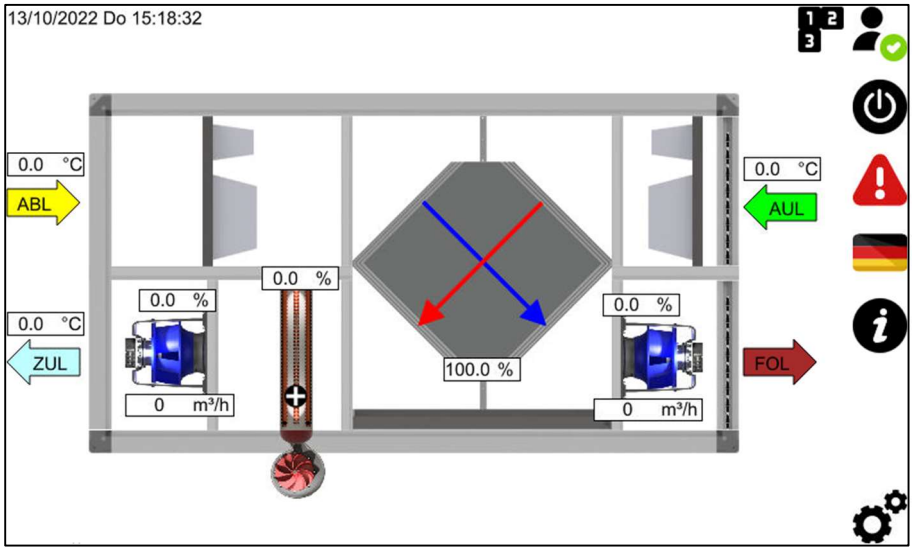
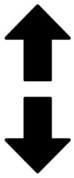


Figure 2 - Device view

Operation is performed directly via the touchscreen by tapping the buttons located on the right:

	Language	Language switching according to the flag icon
	User	User level selection, password change, user rights management
	Operation	Operating mode settings and setpoint input black/white = Device off black/green = Device on Flashing = Standby, fan overrun (E- Register)
	Alarm	Alarm list, Alarm archive, alarm e-mail black = trouble free yellow = warning red = critical trouble leading to shutdown of the device or device components
	Home	Return to device view
	Trend	Online trend curves and trend configuration (only if the trend function was ordered)
	Configuration	Configuration of control and communication parameters
	Airflow	Airflow/duct pressure
	Date/Time	Setting the date and time

	Manually	Manual switching active
	Temperature	Temperature operating pages
	Humidity	Operating pages humidity
	Air quality	Air quality operating pages
	Up/Down	Switch between different pages within a menu. Switch between the device view and individual zones (if configured)
	Back	Go to previous page, exit menu
	Delete	alarms/delete archive

1.2 Username/Password

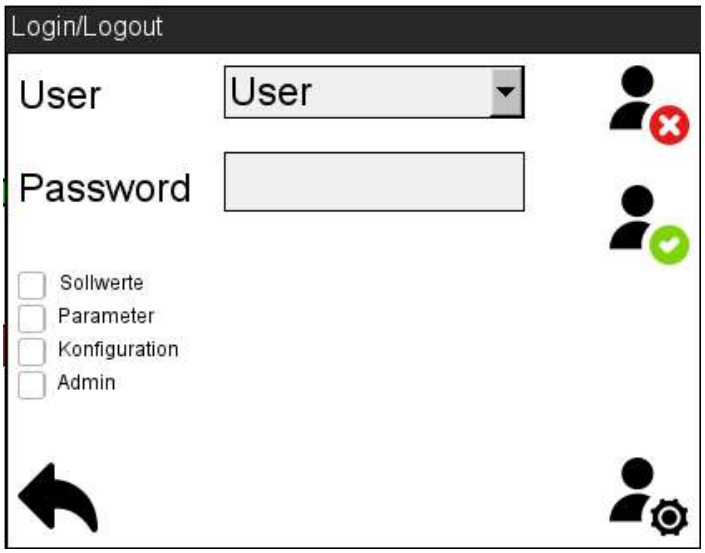


Figure 3 - Registration

To operate the device, you must select a user and enter a password. Without a valid username/password, or at access level 0 (-), only the device view is displayed; changing the language is possible. Enter your username/password using the user icon . After entering the password, you must confirm it by pressing the button . The current login level is also displayed next to the user icon.

To log out, press the button . Automatic logout occurs if the touchscreen has not been touched for a predefined period (default 30 minutes). The logout time can be changed in the user settings .

User	Default Password	Level	Description
Logged out	-	-	Display Device/Zones
User	3000	1	Setpoint input, viewing and resetting alarms
Par	4000	2	User interface pages (additional parameter input)
Service	*****	3	Level reserved for service technicians
Admin	*****	4	Level reserved for manufacturers

Tabel 1 – Username/Password

1.3 Operation, Value input

To operate the display, simply tap the corresponding icons, tabs, text, and setpoints. Display values are white, adjustable values are gray.

Selection fields are marked with an arrow on the right edge (e.g., operating mode). Tapping the triangle displays a drop-down menu with the available settings, from which you can select one.

The individual menu items, represented by icons, are located at the bottom of the display. The submenus are divided into tabs, which you will find at the top of the display. Tapping the tab with the three dots provides access to further submenus.

The date and time can be set by tapping the date/time display in the upper left corner of the device view. The switch between summer and winter time is automatic but can be changed by tapping the settings icon.

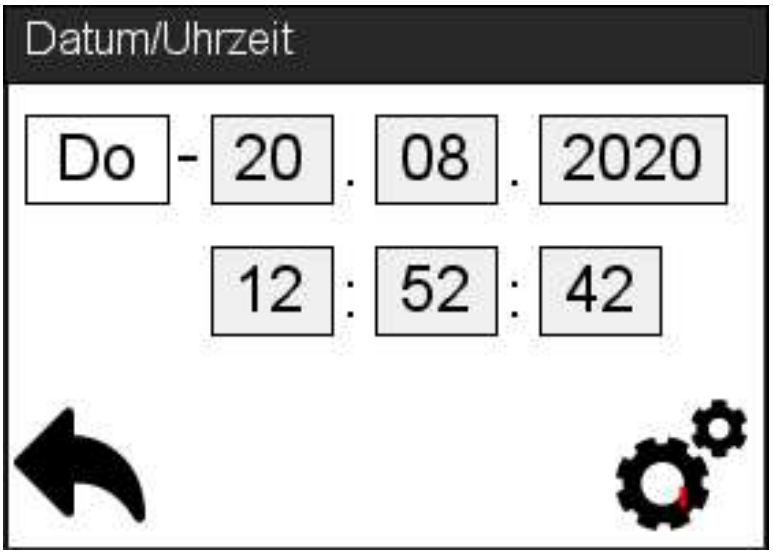


Figure 4 - Date/time

2 Operating mode, timer, calendar, date/time

Tapping the *operation* button opens the control pages. werden die Bedienseiten aufgerufen. The current operating mode, timer, and calendar are selected, and the timer and exception calendar are set via the *Operating Mode*, *Timer*, and *Calendar* tabs

2.1 Operating mode

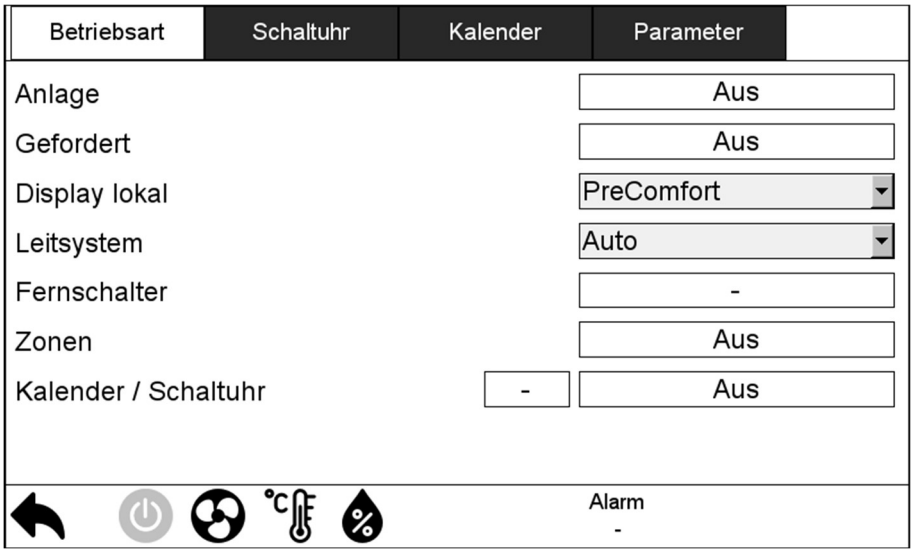


Figure 5 – Operating mode selection

Operating Mode	Description	Selectable	Remarks
Off	Device off	X	
Standby	Support mode, automatically switches on	X	Only with room sensor
Night cooling	Cooling outside of operating hours with cool outside air	X	
Eco	Eco mode - Configurable setpoint for temperature/humidity/air quality/fan control	X	
Comfort	Comfort mode – Configurable setpoint for temperature/humidity/air quality/fan control	X	
Auto	Use the next lower control level	X	

Tabel 2 – Operating modes

This page displays the current operating mode and the operating modes of the various sources. Each of these sources has a different priority, and their order from top to bottom reflects their priority. If an operating mode is set to Auto, the operating mode with the next lower priority is used (the row below).

The operating mode of the operator panel has the highest priority; this selection window is used to permanently switch the device on and off. In normal operation, this is set to Auto to enable operation via the desired source.

The operating mode of the control system is determined by a higher-level system (communication via Modbus RTU, Modbus TCP/IP, BACnet, etc.).

The operating mode of the remote switch is determined by a physically present remote switch.

With active zone control, the operating mode is determined by the configured zones; if one zone switches another zone on, the device also switches on. Conversely, if the operating mode is set to operator panel/control system/remote switch, the zones are controlled automatically (operator panel zone, control system zone, remote switch zone = Auto).

The operating mode of the timer is determined by the integrated timer. If BACnet is used for connection to a control system, the BACnet timer can be used (see Configuration).

The operating mode Standby is displayed when the standby function is configured and as soon as it is active; the standby function provides backup operation for heating/cooling, humidification/dehumidification, and air quality and is only possible when a room sensor is used.

2.2 Time switch

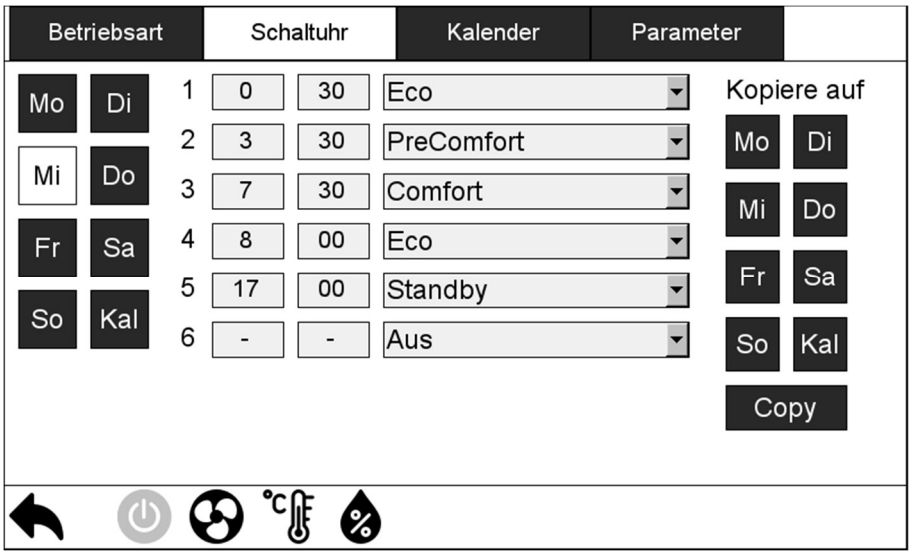


Figure 6 – Time switch

The timer offers a separate program for each day of the week, including a separate program for exception days programmed in the calendar. Each day of the week has six switching points.

A switching point is entered by selecting a day of the week from the drop-down menu on the left. Then, enter the time at which the switching point should trigger on a separate line and select the desired operating state for that time. If "Calendar" is selected as the day of the week, the switching times will apply to the days entered in the exception calendar.

The setting for any day of the week can be copied to multiple days of the week using the *Copy* button. To do this, select the source day of the week on the left, the target days of the week on the right, and then press the *Copy* button.

2.3 Exceptional Calendar

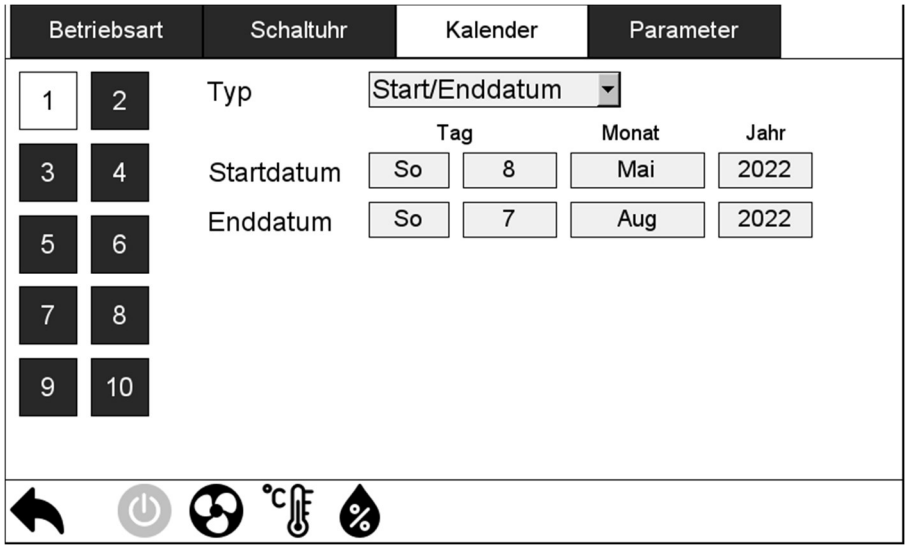
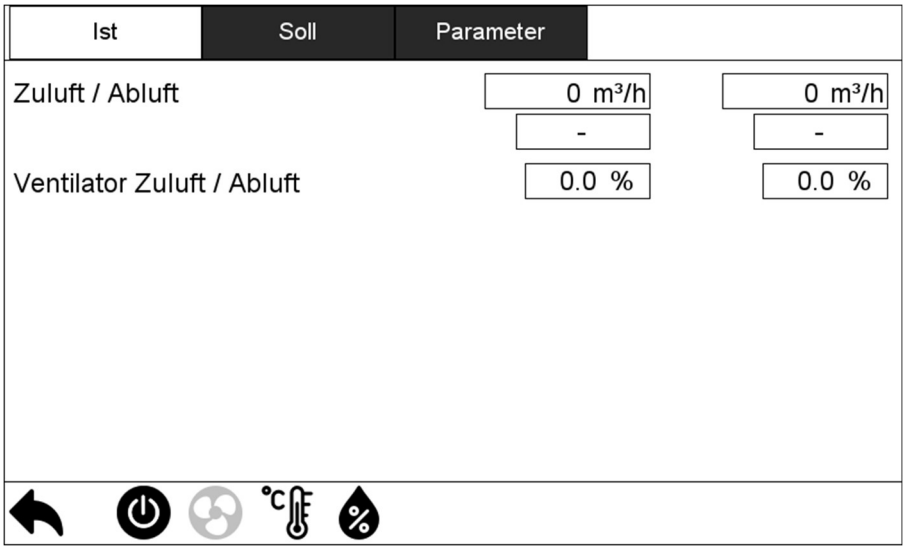


Figure 7 – Exceptional Calendar

The exception *calendar* allows you to program individual days or time periods during which the calendar's timer program is used. This makes it possible to program the operation of the device outside of normal operating hours or its shutdown due to holidays in advance. To enter an exception period, you must first specify the type of period. You can choose between "Date" (a specific date must be entered), "Start/End Date" (a start and end date must be entered), and "Week".

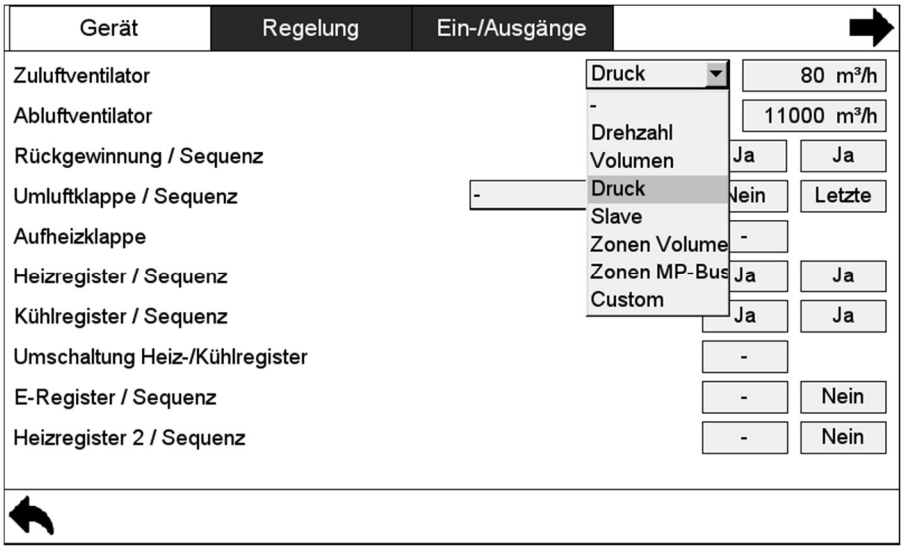
2.4 Fan control

Depending on the configuration, the volume flow, duct pressure, speed or switching stage is displayed in the a*ctual* tab and set in the *target* tab.



2.4.1 Rule strategy

Die The control strategy is preset at the factory and can be changed by a service technician if necessary. (This menu is only available after logging in.)



Control	Setpoints	Remarks
Speed	Speed Setpoint	The fan rotates constantly at the speed set as the setpoint.
Volume	Volume Setpoints	The fan speed is adjusted based on the set volume flow setpoint, which is determined by a measuring device. A constant air volume is ensured even with dirty filters.
Duct Pressure	Setpoint Duct Pressure	The fan speed is adjusted based on the set pressure flow setpoint. Self-regulating dampers in the duct network determine the airflow.
Master	Master controls based on duct pressure	No offset remote switch, no air quality/humidity control, duct pressure adjustable from access level PAR3.
Slave	Slave controls the volume flow; the volume setpoint is the actual volume value from the master.	Offset Master/Slave
Stage	Stage setting	
Zones	Volume setpoints as the sum of the zone dampers	e.g. for zone dampers open/closed
Custom	Special solution	

Tabl 3 – Operating mode fan control

2.4.2 Actual/Target Values

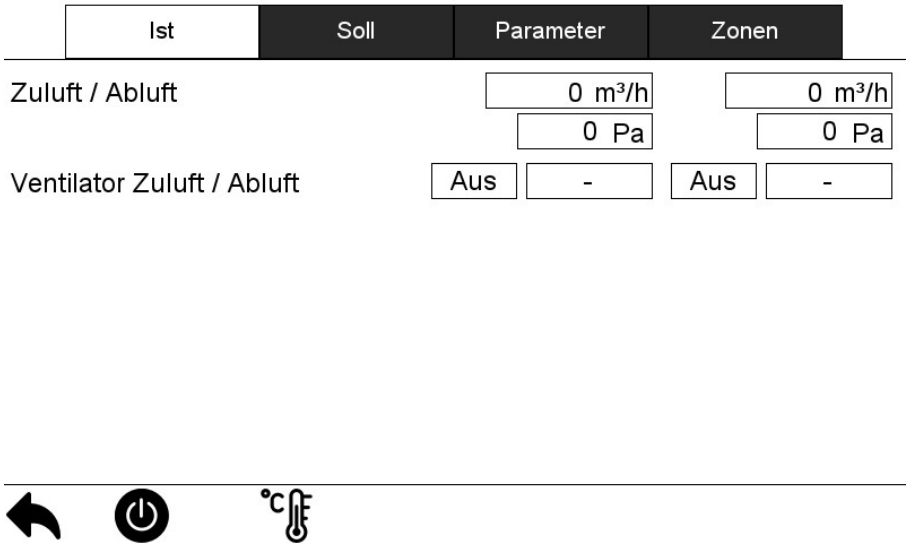


Figure 8 – Fan Actual Values

The values displayed in the "Actual" tab reflect the currently measured values. Depending on the selected control mode and/or the installed sensors, the values indicate the air volume, duct pressure, rotational speed, or current switching stage.

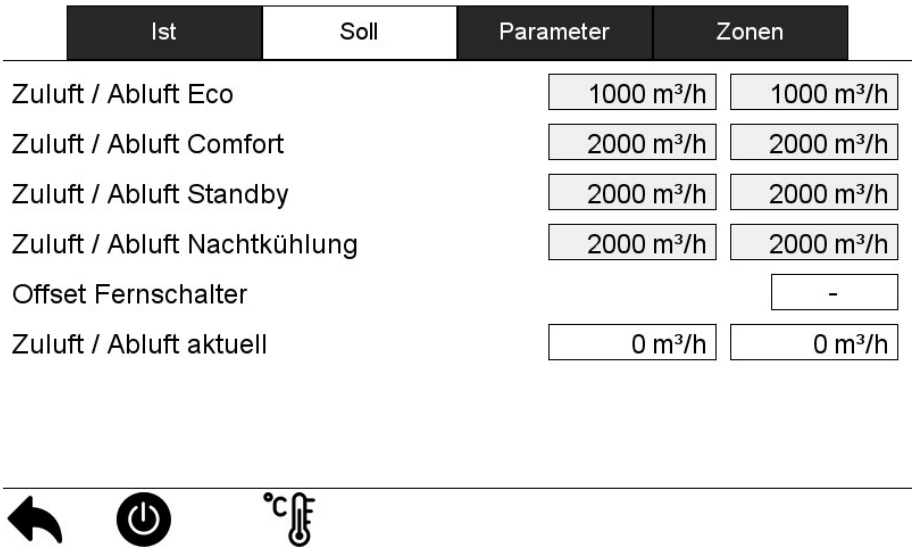


Figure 9 – Fan setpoints

In the "Setpoint" tab, the air volume, pressure, or fan speed can be entered for the various operating modes, depending on the selected control type. Setting the pressure point is reserved for the service level.

2.4.3 Parameter

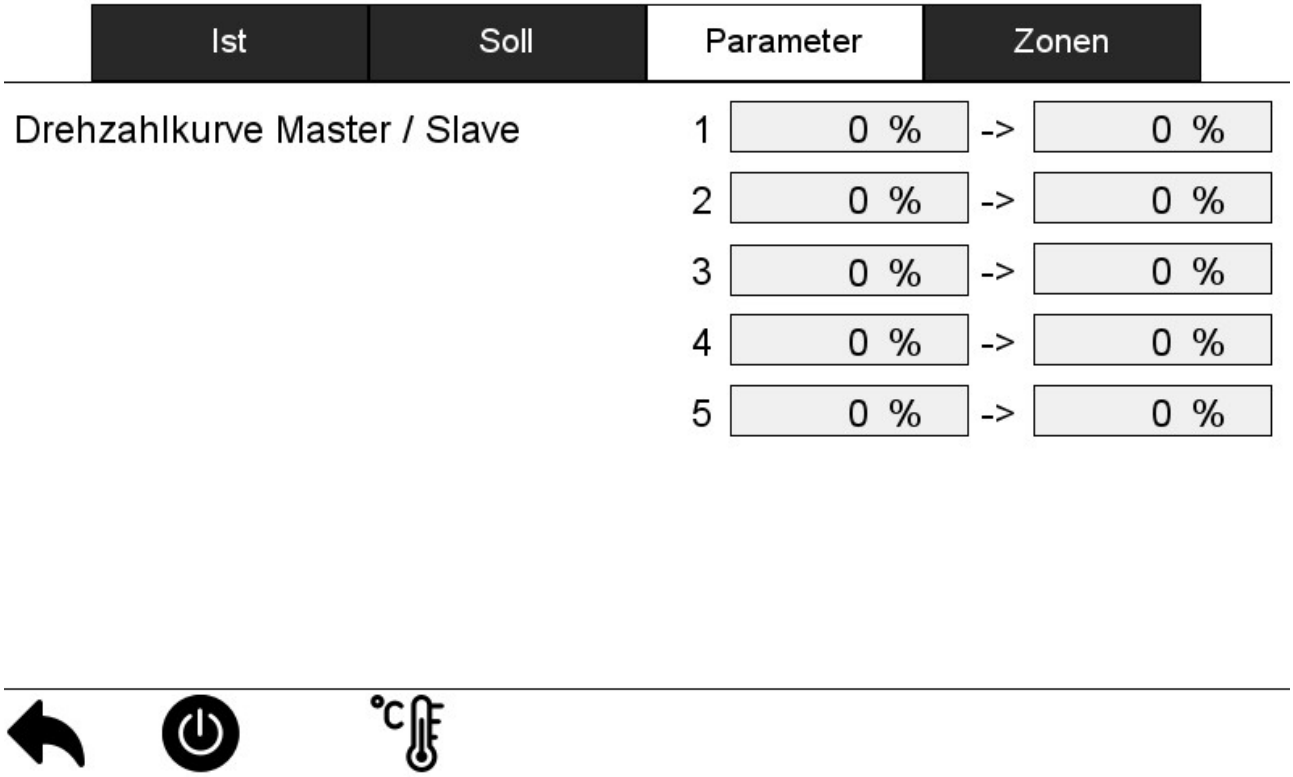


Figure 10 - Fan Parameters

The volume difference between the master and slave fans can be set in the *Parameters* tab; accessible from access level *Par*.

3 Temperatur control

Tapping the *temperature* button will bring up the temperature control pages.

3.1 Actual/Target Values

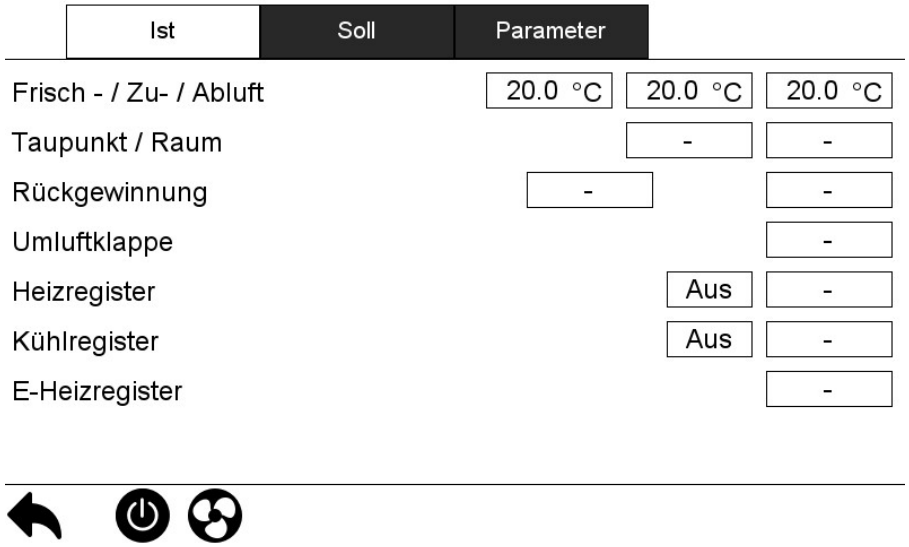


Figure 11 – Actual temperarure values

The values displayed in the „Actual“ tab represent the currently measured actual values. Depending on the configuration (number of tabs), the values are displayed on one or more pages.



Figure 12 - Temperature setpoints

In the "Setpoint" tab, you can enter the temperature setpoints for the various operating modes. Depending on the selected control type (set in the Parameters tab), the respective setpoint applies to the room, supply air, or room temperature. The entered values form the base setpoint, to which the remote switch offset and outdoor temperature compensation are added or subtracted, if necessary. The currently valid setpoint is displayed in the "Heating/Cooling" row.

3.2 Parameter

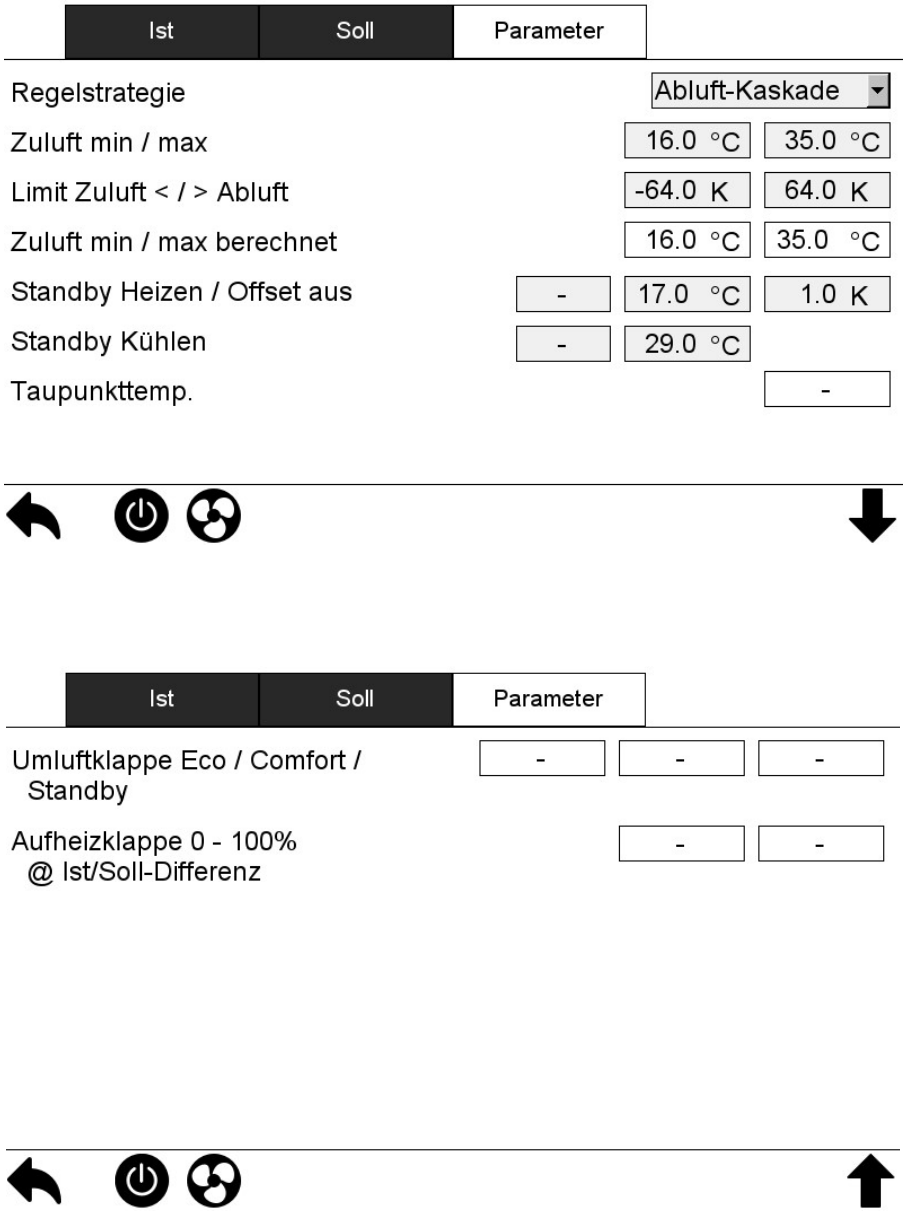


Figure 13 - Temperature Parameters

The *Parameters* page displays various special settings; access is required form access level *Par*.

3.2.1 Rule strategy

The temperature control strategy can be configured according to requirements as shown in the following table.

Control strategy	**controlled variable**	**Remark**
-		No temperature control
Supply air	Supply air	Direct setting of the supply air temperature The register regulates the supply air temperature
Cascade	Exhaust air	Calculation of supply air setpoints from the difference between exhaust air and setpoint
Exhaust air	Exhaust air	Direct specification of the exhaust air temperature The control unit regulates to the exhaust air temperature
Room Cascade	Room	Calculation of supply air setpoints from the difference between room temperature and setpoint Regulator regulates to the supply air setpoint
Room	Room	Direct setting of the room air temperature The regulator regulates to the room air temperature

Table 4 – Temperature Control Strategy

3.2.2 Limiting the supply air temperature

The supply air temperature is limited both absolutely and relative to the exhaust air temperature.

The absolute limit is set using the *"Supply air min./max."* setting; these limits cannot be exceeded or fallen below by the relative limit.

The *"Limit supply air </> exhaust air"* setting sets the maximum difference between supply and exhaust air temperatures to prevent drafts. A setting of -3K/+10K means that with an exhaust air temperature of 22°C, the supply air temperature is limited to a minimum of 19°C and a maximum of 32°C. The maximum values determined by this function are displayed in the "Supply air min/max calculated" row.

3.2.3 Night cooling

The desired exhaust air or room temperature during night cooling operation is set via the night cooling setpoint; during the night hours (timer setting), the room is cooled with cooler outside air. If no room sensor is present, the temperatures are checked cyclically, and the unit continues to operate if all conditions are met.

Parameters	**Condition**
Outdoor temperature	Minimum 12°C 5K below current exhaust air or room temperature
Exhaust air/room temperature	Above setpoint for night cooling
Test cycle	If no room and outdoor sensor are present, then every hour for 5 minutes
Operating time	If conditions are met, minimum 30 minutes, maximum 12 hours

Table 5 – Nighttime cooling

3.2.4 Winter/Summer Compensation

Winter compensation adjusts the heating setpoint at low outside temperatures, e.g., to compensate for losses. Summer compensation adjusts the cooling setpoint at high outside temperatures, e.g., to save cooling energy or reduce the temperature difference between indoor and outdoor air. Both compensations are always active and affect the heating and cooling setpoints.

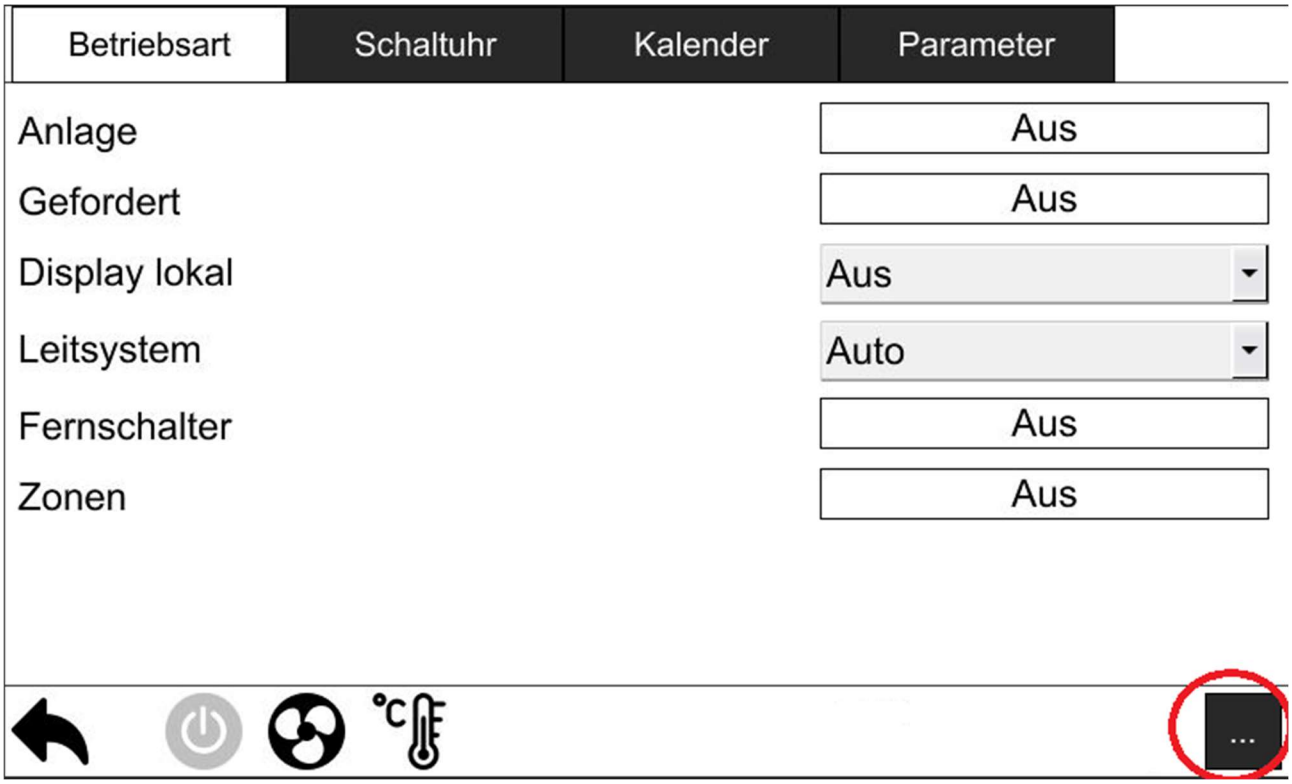
3.2.5 Standby

The standby function can only be used with a configured room sensor and serves as a backup. This means that if the temperature falls below the setpoint for heating or exceeds the setpoint for cooling, the unit starts in the selected operating mode to restore the room temperature (e.g., frost protection with a minimum room temperature of 10°C). If the temperature falls below the setpoint for heating or below the setpoint for cooling, the unit switches off again.

Caution: If the heating setpoint is lower than the standby heating setpoint, the switch-off temperature will not be reached because the heating output is insufficient. This also applies to cooling.

3.2.6 Zones

If the system has zones, these can also be configured. In the user menu, there is a field with three dots in the lower right corner where the respective zone can be selected.



Once the zone to be set has been selected, the settings from point 2 to 3.2.5 are repeated.

4 Alarms / Warnings

4.1 Treatment of disorder

Faults can be caused by external contacts, sensor errors, limit exceedances, or internal events. When a fault occurs, it is displayed in the alarm list, and the alarm icon on the home screen changes color to yellow for a warning and red for an alarm.

Alarms require acknowledgment; that is, once the fault is resolved, this is displayed in the alarm list, but the alarm is only truly cleared and the ventilation system restarts after acknowledgment using the 🗑 button. If acknowledgment is not desired, automatic acknowledgment after three cycles or fully automatic acknowledgment by a service technician can be configured.

4.1.1 Alarm list

Tapping the *Alarm* button on the home screen displays the alarm list.

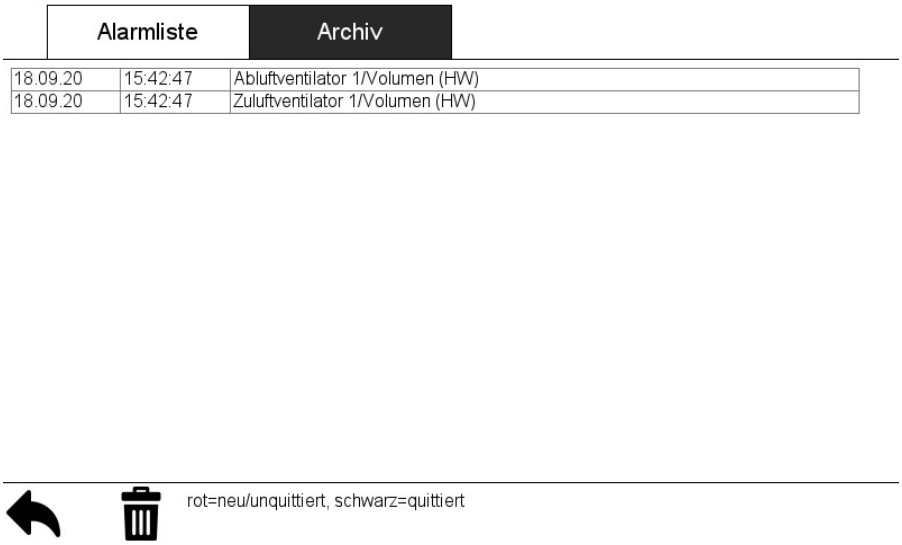


Figure 14 - Alarm list

The alarm list displays currently pending alarm notifications with the date of occurrence and the alarm text. New notifications are shown in red. Notifications in black have already been acknowledged, but the cause of the notification has not yet been resolved.

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4.1.2 Alarm Archive

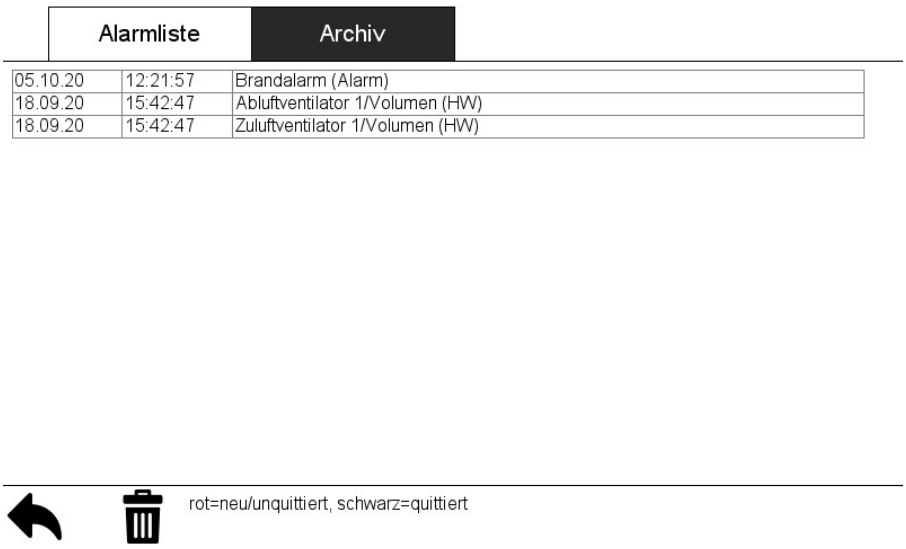


Figure 15 – Alarm Archive

Tapping the Archive tab opens the alarm archive. The alarm archive contains the history, displaying the last 100 alarm events. The entire list can be deleted using the *Delete* button, and the arrow keys can be used to scroll through the list.

The alarm list is retained during a power outage.

5 WebHMI/ VNC

Imperia 51 offers remote monitoring via VNC **ILA** (Imperia local access). For this, the network connection is established via the network switch in the control cabinet or via LAN 1 of the HMI.

The HMI can then be accessed. The default IP address when connected via the switch is 192.168.1.43. This address must not be changed. Alternatively, the connection can be established via the LAN 1 interface of the HMI. This address is freely configurable.

In addition, Imperia 51 offers the option of global access to the device via IGA (Imperia global access). A paid account is provided to the customer for this purpose.

6 Leonis room unit

The Leonis room unit consists of a color display that provides various information and 14 touch-sensitive buttons for operation. Configuration is done via the controller.

If a PIN and logout time are configured (see Login Configuration), the display will switch to the login screen after the set time if no user input is received; the room unit can only be used again after entering the configured PIN.

Symbol/button	**Function**
Main screen:	
Button 1 + 5	Switch operating mode
Button 2, 3, 4	Decrease offset *Temperature, humidity, air quality, recirculation rate, volume*
Button 6, 7, 8	Increase offset *Temperature, humidity, air quality, recirculation rate, volume*
- ◢ +, ESC	No function
- / +	Set overtime/party time (Off – 1h – 2h – 3h)
ENTER	Alarm acknowledgement
Alarm symbol	Current Alarm Status Red = A/Danger, orange=B/Alarm, yellow=C/Warning, gray=no Alarm
Party symbol	Overtime Function, with numbers 1..3 = 1..3h *Displayed when configured*
Temperature/Humidity	Display of Temperature/humidity Sensor Room Unit *Displayed when configured*
Operating mode	Current Operating Mode Display
Date/time	Date/Time Controller
Login screen:	
Button 1..8	Pin-entry
- ◢ +, ESC, - / +, ENTER	No function

Table 6 – Leonis – Buttons/Symbols

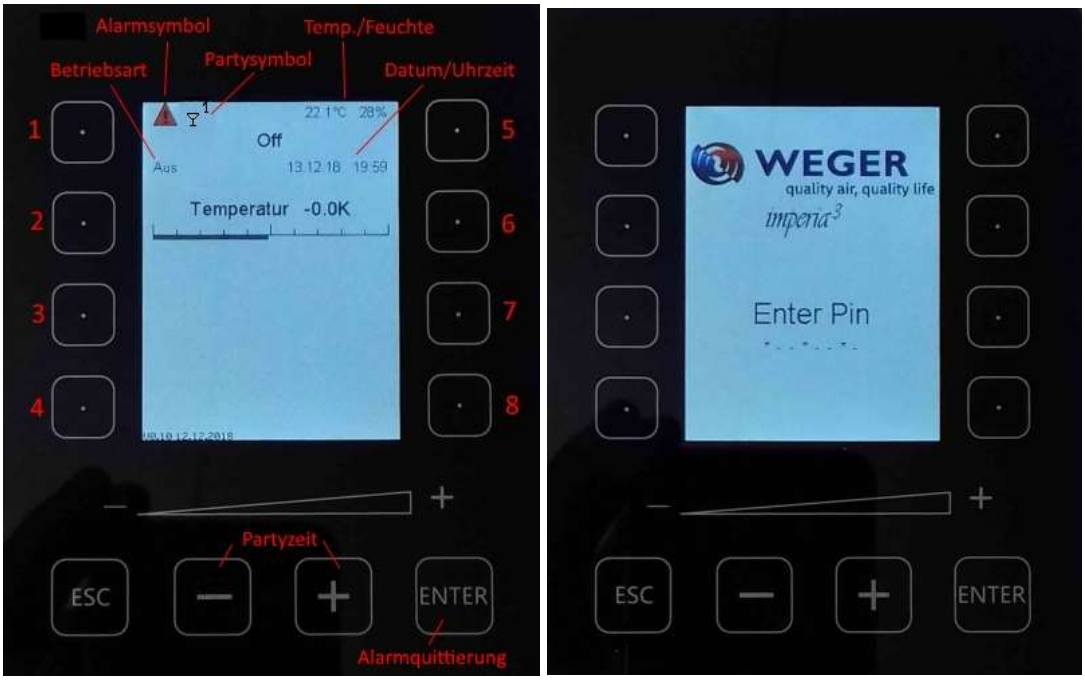


Figure 16 – Leonis room unit – main screen (left) and login screen (right)