

# Premium Wifi



# **User Guide**



## Introduction

Your new Helo Premium Wifi control panel control panel is used to control your sauna or steam generator. The screen on the control panel is a touchscreen, meaning that you press the screen to select functions or define various parameters. The screen's appearance depends on the status of your device. Picture 1 shows the screen when the device is switched off, picture 2 when the device is switched off but you have touched the screen, and picture 3 when you have changed something, e.g. the temperature or session time. At the bottom of the screen in pictures 2 and 3 you will see a row of icons. Press these to access a number of functions and settings.

Grey text boxes appear in certain sections. These provide a more in-depth explanation of settings and functions, which you can skip over the first time you read this manual. If you want to define more advanced settings or know more about how something works, you can go back and read these later.

# Initial-set-up process

Set heater switch to ON. The control panel automatically detects what kind of device it is connected to (sauna, steam generator). You then follow a six-step start-up sequence. Follow the instructions on the control panel.



1. Welcome screen. Press >

<	Language	$\rangle$	
	Čeština		
	Dansk		
	Deutsch		
$\checkmark$	English		
	Español		
	Français		
	Nederlands		
	Norsk		

2. Select language. To see all languages, drag your finger upward from the bottom of the screen. To select one, press the desired language. Press >

<	<	Region	$\rangle$	
~	/	EU		
		North America		
		Other		

3. Select region. Press >

The Region will automatically define other values such as the maximum session time and maximum session temperature. These can be modified later.

	<	Date Format	>
		YY/MM/DD	
~	/	DD/MM/YY	
		MM/DD/YY	

4. Select the date format. Press >

<	Date	>	
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5. Enter today's date using the Up and Down arrows. Press >



6. Set the time. Press >

#### Overview

Your screen displays the Overview when you do not touch the control panel for around 15 seconds. The Overview screen that is displayed when your device is switched off shows the current time.



If the device is currently operating, the Overview screen looks as follows:



If a calendar program or weekly program is about to start, the screen will switch on about one hour before this and the following Overview screen will be displayed:



### Home

You can access the Home screen by touching the screen in the Overview mode or by pressing the Home button. This screen includes Off, Standby and On buttons (activity/status buttons) and function/setting buttons that take you to various setting options.



#### **Activity/Status buttons**

These buttons are used to start an activity. The button that is in colour indicates the current status.



The device is switched off.

The device is in Standby mode.

In Standby mode the sauna temperature is reduced. When guests enter the sauna, they press the start button or external switch to quickly heat the sauna to the desired temperature (see picture). You can define the extent to which the temperature is reduced under Configure. The Standby function can be started manually (by pressing the button) and via the calendar/weekly program. The temperature is not reduced for steam generators. The water in the tank is kept at a temperature of 95 °C instead (can be modified under Configure). Pressing On or Start (see below) will cause steam production to start immediately.

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The Standby function can be switched off under Configure. The button will then not appear on the Home screen.



Appearance when the device is in Standby mode and the panel is locked using a PIN. If you press Start, the device will switch to standard operating mode for the time defined under Session Time External Switch. The button changes its appearance and name (see picture below) to Restart session time. The operating time restarts whenever Restart session time is pressed.

Example: The device is in Standby mode and Session time external switch is set to 30 minutes. If you press Start, the button changes to Restart session time and the device switches to standard operating mode. After 15 minutes, if you press Restart session time again, the device will run in standard operating mode for a further 30 minutes. If there is time remaining on the Standby session time when these 30 minutes are up, Standby mode will resume. Otherwise the device will switch off.



The device is operating.

There are more Activity and Status button screens, particularly when the panel is locked. These will be explained under the Code lock function.



The device is in Drying mode.

Steam generators have a Drying mode. If you have a steam room with a fan, the fan will start once you are finished and will operate for 20 minutes (this time can be configured under Configure/Fan). To switch off Drying mode, press the Stop button.

# Function/Settings buttons

These will be explained in more detail in the relevant sections. The buttons that appear on the Home screen are:



Home: Shows information concerning temperature and humidity, along with activity/status buttons and Function/Settings buttons.



Set-up: Setting the temperature, session time, humidity, etc.



Favourites: Saved favourite settings.



Calendar: Create a calendar and/or weekly program.



Configure: System settings.



Under settings you can define all the parameters for the session. Adjust the settings using the – and + buttons.

## Settings (continued)



If the lighting is connected to the device it starts automatically along with the sauna heater, but it can also be switched on or off manually. Press the button quickly to activate or deactivate, or drag the slider/button to the On/ Off position. When the session is finished the lighting stays on for a further 10 minutes. It then switches off automatically. You can also switch the lighting off manually.

If other accessories are connected, these will be shown under the Lighting button. For more information on accessories, see Configure.



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# Settings (continued)



# Favourites



Favorites			
Favorite 1			>
Favorite 2			>
Favorite 3			>
<u> </u>			
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The Favourites that were saved during setting up are found under Favourites. Any of the parameters can be saved and modified later. In order to start, delete or edit a Favourite, press the field with the name of the Favourite.

You can store up to a maximum of 8 Favourites.

<br/>
Start
<br/>
Title
<br/>
Favourite 1
<br/>
Temperature
<br/>
- 70°C +
<br/>
Stop after 3h 0min >
<br/>
Lighting

Opening a Favourite displays its settings. To delete a Favourite, press the rubbish bin. If you change any settings, the rubbish bin changes to a green tick. Press this to save the new settings. To edit a name, press on the field containing the name to open up the keyboard. If this Favourite is used in a calendar program, you will see a warning notice when it is edited. The calendar program will apply the new settings.

Remember that if the session time is changed, you need to confirm the change twice by pressing the green tick, first when setting the time and then for the Favourite.



Activate the Favourite by pressing the Start button. When the Favourite starts, the screen switches to the Overview.



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Date and calendar program

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Day-based programs

Program overview

A magnetic contact must be connected to the door in order to use the calendar functions for the Sauna.

In the calendar function you can create programs for specific dates or programs that repeat every week. Day programs can be deactivated using the slider (see below).

When the door switch is connected this adds an additional layer of safety to the system. The function means that:

1. If you create a program which is due to start later and someone opens the door before the program starts, it will not start.

2. If the door is opened for more than five minutes during operation, the heater will be switched off.

Steam generators do not require a door switch, but if one is connected, the safety feature in point 2, above, will also work.

A maximum of 6 programs a day can be created. If the date programs overlap, a warning will pop up and you will be unable to save the program. The same happens if two day-based programs collide.

C 01 Weekday programs > Mondays > Tuesdays Wednesdays > Thursdays > > Fridays Saturdays > > Sundays

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Activate/deactivate day-based programs

Day-based programs repeat every week. On the days with active programs, you will see a number after the day name indicating the number of programs. If day-based programs are deactivated, the number appears in brackets.

Date calendar programs and day-based programs may overlap. If this happens, the system prioritises programs as follows:

1. Manual start (via panel, external switch or app)

2. Date calendar or delayed start (created in app)

3. Day-based programs

The Programs overview shows all calendar items in the system.

# Calendar (continued)

	01		S			
		I	Мау	r		$\rangle$
М	т	w	т	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

⟨ Jul 20 Programs

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<	Jul 20	~	/
Rea	dy at	18:30	>
Mode	2		
$\checkmark$	Bath		
	Standby		
Setti	ngs		
$\checkmark$	Custom		>
	Favorite		>

	01		C	1		
<			July			$\rangle$
м	т	w	т	F	s	5
26	27	28	29		1	2
З	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6
$\cap$	-	+	5.7	- T-	3	Õ

Set up a date and calendar program Go into the calendar and select the desired date. Add a program by pressing +.

Start by defining when you want the sauna/steam room to be ready for a session. The system will calculate when the device needs to start in order to reach the desired session temperature.

Now choose whether this will be a regular session or Standby mode.

Choose whether to define the temperature, humidity and session time or use a Favourite setting.

Confirm by pressing  $\checkmark$ . The program is indicated by a circle around the date in the calendar overview.

The procedure for creating a day-based program is identical.

"Ready" means that the system learns how long it takes to heat the room to the desired temperature. It does this by calculating the number of degrees by which the temperature increased per minute the last five times it ran. During the first five times the system runs a default value is used for temperature increase, but after this the calculated value for the relevant room is used.

If the Standby function is deactivated under Configure, this option is now shown when you create a program.

If you select Standby for a steam room, the system will start at the time defined as "ready". This is because in Standby mode it is not the temperature in the steam room that is measured, but rather the water temperature in the steam generator.

If the desired "ready" time is not sufficient to heat the room, you will see a notification about this, and will be asked if you still want to use this time. If you answer Yes, the system starts immediately.



Configure: System settings.

Under Configure you will find both information about the system and options for adapting and defining various functions and parameters. It is also possible to configure accessories (such as for example fragrance pumps or extra lighting).

When you press Configure the screen shows a menu with a number of separate sections. In order to see more rows, place your finger on the screen and drag it up or down.

About > > Language > Region Units Display > PIN Time and Dat Time > Date About <

License Info

This Control Panel Facility Type: Time Controlled System: Sauna

Software version: 1.0.4944 Heaternet version: 0.3.4914 Heaternet address: 64

Node 0 Profile: Relay Control Board Product: Premium Software version: 0.3.4919 Heaternet version: 0.3.4914

Node 1 \* Profile: Control Panel Product: Premium WiFi Software version: 1.0.4944 Heaternet version: 0.3.4914

<	Language	
	Čeština	
	Dansk	
	Deutsch	
$\checkmark$	English	
< <	English Region	
< < ~	English Region EU	
< < ~	English Region EU North America	

Configure is divided into:

General (About, Language, Region, Units, Display, PIN)

**Date** and time (Time, Date, Week starts, Clear calendar)

**Limits** (Session temperature, Start not permitted, Water filling time\*, Overheating) **Advanced settings** (Standby, External switch, Fan\*)

**System** (Connections, Wi-Fi\*, Cleaning notification\*, Auto-empty\*, Priority session type\*, Break timer\*, Filter, Relay control, Status, Error list, System type, Software update, Factory reset)

\*Applies to certain systems only

## About

This section contains information about licences for software components that are used. Press Licensing Information to view more information about Linux and Qt. This information is only available in English.

Other information on this screen concerns the system. It shows what is connected (nodes), whether it is for private or public use, which type of system it is and which versions of the software are installed.

In the event of problems with the system, you should write down this information before contacting your dealer or Helo.

#### Language

The language is defined the first time the system is started, but can obviously be changed afterward. Press the desired language to change it. The control panel will then restart. When you change the language, it may be 15–20 seconds before it takes effect.

## Region

The region is set the first time the system starts. To change it: Press the desired region.

Region affects parameters such as the maximum session temperature, maximum operating time and specific regional requirements.



Configure: System settings.

If multiple panels are connected, certain settings are specific to each panel. For example, you can have different language settings, different PIN locks and displays on locked screens, temperature and humidity filtering, different times before the screen switches off and different date and time formats. This is set individually on each panel.

If multiple systems are linked information on these is displayed under About.



Unit Select the unit of temperature that will be displayed.

#### Display

You can set the screen to switch off after a certain time. This can be set to anything from 15 seconds to 15 minutes. There is also an option for the screen never to switch off.

#### PIN

The control panel can be locked so that others cannot modify settings, temperature, etc. You can set certain functions to be available even when the panel is locked.

Activate the code lock via the slider labelled "Activate PIN". The default code is 0000. To change the code, press "Change PIN". You will need to enter the current code followed by the new code, and then confirm the new code.

You can allow certain functions to be visible even when the panel is locked. Tick the functions that should be available even when the panel is locked.



Configure: System settings (continued).







## PIN

With the above settings (access to On/Off, Temperature, Humidity and Lighting, but not to Fragrance 1), the Home and Settings screens will look like the pictures on the left. Note that the Favourites, Calendar programs and Configure buttons have disappeared and are replaced by the padlock button.

To unlock the panel, press the padlock and enter your PIN.

If you forget your pin, the universal reset code is 1995. If this is used, the PIN is restored to the original default of 0000.

## Standby with locked panel

When the panel is locked via PIN and is started in Standby (manually or via a calendar program), a "Start" button appears at the top of the screen. If "Start" is pressed, the button changes to "Restart Bathtime" and the sauna quickly heats up to the defined temperature.

Pressing the Start button starts a session with the bath time defined in "Configure/External switch/ bath time". If the session time runs out before the Standby session is finished it is resumed. If it ends after the Standby session, the device switches off.

Pressing the "Restart Bathtime" button starts a new session with the operating time defined in "Bathtime external switch".



## Configure: System settings.

<	Time	12	
Time	1	13:23	>
Time fo	rmat		
$\checkmark$	0-24		
	AM/PM		
<	Date		
Date		19/07/17	>
Date fo	rmat		
	YY/MM/DD		
$\checkmark$	DD/MM/YY		
	MM/DD/YY		
<	Weeksta	art	
$\checkmark$	Monday		
	Sunday		
<	Erase Cale	ndar	
	Erase caler	ndar	









Time Setting the time and selecting the time format.

## Date

Setting the date and date format. There are several date formats to choose from: YY/MM/DD – Swedish format. Also used in some parts of Asia. DD/MM/YY – Format used in most parts of the world. MM/DD/YY – Usual format in the USA.

## Week starts

Enter the day to be used as the first day of the week. This is defined so that the calendar is displayed correctly.

Erase calendar Pressing Erase calendar will delete all calendar items and day-based programs.

# Bath temperature

Define the maximum temperature that can entered under settings or in calendar programs and Favourites.

#### Not allowed start

This setting allows you to lock the system so it cannot start. Set the times between which the system should be locked. The time lock applies to all days of the week. When the time lock is active, all current programs and manually initiated sessions are shut down. If you try to create a program that starts or finishes at a time when the system is locked, you will see a warning notification about this.

#### Overheating

Circuit boards in sauna devices can overheat in certain situations. When the temperature of the circuit board reaches the PCB limit, the sauna switches off automatically. Overheating may be due to various causes, e.g. poor ventilation. It is possible to change the temperature when the sauna is switched off. If the device overheats, contact a service engineer to investigate the problem. Increasing the limit as to when the sauna is switched off risks substantially shortening the life cycle of the device. We recommend that this setting only be changed by a qualified Helo engineer.

In steam generators, the maximum temperature setting in the water tank applies. If the temperature is exceeded, the water tank will be emptied. If the water temperature reaches this temperature, it is probably because the water quality has deteriorated to the point where the water is foaming. In this situation the heating element is at risk of damage.



<	External	Switch	
Bat	h time	0h 30m	>
Functi	on Renew Ba	athtime	
	On/Off		

#### < Options > Aux 0 > Aux 1 < Aux 0 Title Fragrance Тур Not in use On/Off Fragrance > < Fragrance Pump 0s 100ms > 20min > Stop



Standby

The Standby function is activated and deactivated under Standby. This energy-saving feature is primarily intended for use in public systems. Enter the number of degrees by which the defined temperature should be reduced during Standby sessions.

For steam generators enter the desired water temperature. The default is 95 °C. Steam is quickly produced by pressing Start or external switch.

### External switch

External switch is a separate Start/Stop button which can be purchased as an accessory. In order to use external switches, a door switch must be connected in the sauna. The external switch can be configured for two functions: Restart session time and On/Off. This means that each press on the external switch produces an extension according to the session time that is defined for the external switch, without the machine stopping. The machine stops operating when the session time defined for the external switch ends or when you press Off on the Premium. The On/Off function means that the session time is started by pressing the external switch but stops operating completely if it is pressed again.

The Helo external switch also features an LED status indicator. A continuous light indicates that the device is on. A slow flashing light indicates that the device is programmed to start later, and a fast flashing light indicates that an error has occurred (e.g. the door has been opened when a program was about to start).

## Connections

Connections are used to configure any accessories connected to your device. There are two different kinds of connections. On/Off, which provides continuous control of the connected product; and Fragrance, which is there to control Helo's fragrance pumps. Whichever connection is selected, you must provide a name for it. The fragrance pump is defined by indicating how long you want fragrance fluid to be pumped in and the interval between pumping processes.

As soon as a connection is activated, it will appear as a slider under Settings. It can be started and stopped manually, but can also be started automatically via Favourites. If a connection is activated via Favourites, you can always switch it off manually via Settings.

Connections that are started during operation are automatically switched off when the session time ends or if you switch off manually via the Premium Wifi panel.

In Standby mode, any Connections must be started manually. But the connection starts automatically if you press On or external switch.

All connections have a maximum current of 10A and are potential-free. They must be safeguarded via the distribution board fuse and the cable dimension is determined by said fuse.

<	WiFi		
Enable			
Networ	k		>
Externa	l Units	0	>

<	Network	
Auto	connect	
WiFi N	letworks	
$\checkmark$	Standard network + >	
	Scan	
Name		
THUR I'VE	Sauna	
IP add	resses	
169.25	4.125.26	
192.16	8.101.123	
192.16	8.30.162	
169.254.36.97		
192.168.56.1		
Identit	v	
(226426		

#### Wi-Fi

With the Helo Premium Wi-Fi control panel, you can connect the control panel to your local Wi-Fi network (i.e. not from the Internet). You can then use an app (iOS or Android) or a program on your computer to enter settings, control and monitor your sauna or steam room. The Helo remote control app is available free from the App Store and Google Play.

Bear in mind that the position where the control panel is located affects how well it can communicate with the wireless network. Many kinds of material disturb the Wi-Fi signal. To ensure good wireless coverage, test the area where you intend to place the control panel first using a smartphone.

The system supports WPA personal SSID+Password. If your router uses WPA Enterprise (user + password), you will need to configure it to support WPA personal as well.

In order to use Wi-Fi with a sauna heater, a door switch must be connected. No door switch is required for steam rooms, but its use is strongly recommended. When the door switch is connected to the steam room, this enables the steam generator to switch off automatically if the door is left open for more than five minutes while the device is operating, thus preventing unwanted damp.

In order to connect to your local network, first activate Wi-Fi and press Network. Now press Scan which searches for available networks. In order to connect, press on the desired network; if a password is required press Password, enter the password and then press Connect. In order to connect mobile or computer applications, refer to the app instructions on the Helo website (*www.tylohelo.com*).

Under Name you can name your system. A default name is present to begin with, and this depends on the system you have. Press the name to change or alter it. A keyboard will appear for editing.

Press External units to see what is connected to the control panel.

If you activate Auto connect the Premium Wifi will automatically connect you to the selected network after a power cut.

In order for iPhones, Android phones and computer applications to connect to the Premium Wifi, UDP broadcast for ports 54377 and 54378 must be open in the router to which they are connected. The primary port is port 54377, but if it is busy unexpectedly, port 54378 is used instead.

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Cleaning notification (steam products only)

Set the interval that should elapse between reminders to clean the steam generator. This is not activated by default. This value can be set to between 10 and 3000 operating hours. When the operating time reaches the defined value, a cleaning reminder notification will be displayed every time the steam generator starts. If you answer Yes to the question, the operating time is reset. The number of cleanings is displayed.



Auto-empty tank (steam products only)

This setting is used to define how long the system should go before the tank automatically empties and then refills with clean water. Various intervals may be required depending on water quality. Intervals of between one and eight hours may be defined. A notification is displayed on the control panel when the tank auto-empties. When there are multiple steam generators connected ("multi-steam"), the steam generators empty sequentially one at a time, to minimise any time without steam.

This function is primarily aimed at systems with longer operating times.

For systems with long operating times, it is recommended that this function is always activated to prevent a high concentration of salts and minerals, which may damage level measurements and correct in-flow of water.



Break timer (only for sauna systems in the EU region and timer-controlled systems) Regulatory requirements permit a maximum operating period of twelve hours. After this the system may not operate for the next six hours. In certain cases the system may need to be started for service purposes during this time. The Break timer can then be reset here. This should only be used by authorised personnel.



#### Filter

Used by Helo service personnel. Must be activated to prevent the temperature display in the Premium Wifi control panel reacting too quickly if the door is opened frequently.



#### Relay control

Used by Helo service personnel. A PIN must be entered. When the relay control is accessed, all operation ceases.

The sauna system features a menu for controlling the adjustment mode. It is set to Automatic by default, meaning that the system detects which sensor is connected and adapts to that.

On/Off – all power relays switch on and off at the same time. In a device containing a lot of stone, this may be preferable.

Split – power relays are switched off one by one. The first switches off at 2 °C below the defined temperature, the second switches off at the defined temperature, and the third at 2 °C above the defined temperature. This means no more power than that necessary to maintain the heat in the sauna is used.

<	Status
Total runtim	ne: 1h
Room temp	erature: 23°C
Room humi	dity: 0%
Magnetic co	ontact: Not connected
PCB relays:	
X3-X4: Off	
X5-X6: Off	
X7-X8: Off	
X9-X10: Of	f
X11-X12: C	Off
X13-X14: C	Off
X15-X16: C	Off
X17-X18: C	)ff

#### Status

Primarily used by Helo service personnel. The Status screen displays information about the system. The information differs depending on the system involved. Total operating time, room temperature, whether a door switch is fitted and the status of all relays are always displayed. The water level is also shown for steam products. The water temperature and number of cleanings are also shown for steam products. If multiple steam generators are connected information about all products is displayed.



#### Error list

This list shows any errors that have occurred in the system. It can be deleted using the Clear button. Press the error code to view the full error code notification.

<	Facility Type	System type		
		The system type settings control the maximum session times and temperatures. These are determined by various rules that apply to sauna and steam in the various regions		
	Private	For saunas in the EU and Other regions, the options are Private. Timer-controlled and		
$\checkmark$	Time controlled	Monitored. For both saunas and steam in North America, the options are Private and		
	Supervised	Public.		
		For saunas in the EU and Other regions, the following rules apply: Private: Maximum session time 6 hours and maximum temperature 110 °C. A door switch is required in order to use calendar programs, external switches, phone apps and PC applications in the EU region. Timer-controlled: Maximum session time 12 hours and maximum temperature 110 °C. After twelve hours of operation, six hours of breaks are required. A door switch is required in order to use calendar programs, external switches, phone apps and PC applications in the EU region. Monitored: Maximum session time 24 hours and maximum temperature 110 °C. The sauna must be monitored. Use of calendar programs, external switches, phone apps		
		and PC applications is not permitted in the EU region. For saunas in the USA region, the following rules apply: Private: Maximum session time 1 hour and maximum temperature 90 °C. No require- ment regarding door switch. Public: Maximum session time 24 hours and maximum temperature 90 °C. No requi- rement regarding door switch.		
		For steam in the USA region, the following rules apply: Private: Maximum session time 1 hour and maximum temperature 125 °F. No require- ment regarding door switch. Public: Maximum session time 24 hours and maximum temperature 125 °F. No requi- rement regarding door switch.		
		There is no setting for system type in EU and Other regions. In these areas the maxi- mum session time is 24 hours and the maximum temperature is 55 °C.		
Connect I Press sta Start dow as Heatern	Oftware update C to control board rt button below nload program in PC. This panel het address 64. Start	This should only be used by Helo service personnel. Protected by PIN.		
<	Factory reset	Factory reset You can reset the control papel and device to the settings that applied before first		

Reset

You can reset the control panel and device to the settings that applied before first installation via this menu. This option is protected by a PIN, and confirmation of the reset is required. All changes to settings, favourites, calendar programs, etc. will be deleted.

# Error codes

Should an error occur in a device or associated equipment (control panel, temperature sensor, etc.) an error message will be displayed (see Error list).

The following error codes are used:

No.	Error	Comments/Troubleshooting
1	Temperature sensor in the room not connected or faulty.	Is the sensor at the input intact/interrupted? Is it indica- ting an incorrect value or loose?
2	Temperature sensor in steam tank not connected or faulty.	Is the sensor at the entrance intact/interrupted? Is it indicating an incorrect value or loose? The sensor value is displayed under the water temperature status under Configure. On operation is not interrupted if an error occurs. Standby operation not permitted.
3	The relay board has overheated.	Wait until the temperature drops to 20 °C; it should be possible to start it after that. If the temperature remains too high the error will recur.
4	The level electrodes in the ste- am tank are short-circuited.	Check that the electrode pins are touching the electrode tube or alternatively the cables. Clean the water tank and level pins.
5	The steam tank overfull level electrodes are not working.	The top electrode (high) has not detected the water level within the maximum filling time, or the maximum filling time for the water tank in Configure is too short due to low flow. Default value is 6 minutes. Is the inco- ming water switched on? Is there a loose contact in the electrode wire connection? Coating on electrode pins (level electrodes)? Check the value in Configure/Status at start-up to ensure that the level has changed from low to mid/high during filling. If the level has not changed then both level pins (mid/high) are faulty. If the level has only changed from low to mid, the high pin is faulty.
6	Contact lost with the control panel	Are the control panel's RJ10 connections loose? Poor connection?
7	Contact lost with temperature/ humidity sensor.	Are the temperature/humidity sensor's RJ10 connections loose? Poor connection?
8	The steam tank has overheated.	Temperature in water tank is too high. Check the steam pipe along its length, and its dimensions. Check whether NTC in the tank is intact and showing the correct value: at room temperature/25 °C, this is about: 10 kilo ohm.
9	Real-time clock (RTC) commu- nication error.	Has the system lost power for a long period? Set the time and date.

Error codes (continued)

No.	Error	Comments/Troubleshooting
10	Contact with the add-on board has been lost.	Check the RJ45 cable between the circuit board and the add-on board. Is the green LED lit on the add-on board? Try to start ON operation again to try and restore the contact. Try replacing the RJ45 cable or add-on board.
11	There is a fault in the emptying of water from the steam tank. Switch off the power and per- form service.	Check whether the water tank drain is blocked. Is the draining valve intact? This error may also be caused by High detecting water when Mid does not.
12	Steam tank level electrodes are not working, mid failure.	Check the cable connections between the circuit board and the mid electrode. Check if the mid electrode pin is coated with surface coating; if so, clean the electrode pin.
13	Humidity sensor is not wor- king.	Try restarting the system or replacing the temperature/ humidity sensor that is connected to the RS485 input.
14	Temperature sensor not wor- king.	Try restarting the system or replacing the temperature/ humidity sensor that is connected to the RS485 input.
15	Contact lost with the relay board.	Appears when the primary unit has lost contact with the connected secondary unit. The system will fix itself. Check synchronisation cables and voltage to secondary units. After the error is rectified, the system reboots to include all secondary units in system operation.
16	Temperature cut-out activated and must be reset manually.	Combined temperature cut-out/temperature sensor in sauna is reset via a push button on the sensor.
17	Too many temperature/humidi- ty sensors connected	Only one temperature and humidity sensor may be con- nected to the system's RS485 bus.
18	Too many secondary units connected.	Only two secondary units may be used.
19	Door has been open for longer than the permitted time. Cur- rent session ends.	Close the door and start a new session. If the error recurs immediately, check the door switch. If the error is repe- ated despite the door being closed, check the function/ installation of the door switch. You can see whether the door switch is connected under Configure/Status.
20	Door switch has been open for longer than 60 seconds since the previous session.	Check that nothing is lying on the sauna device, close the door and start session. If the error is repeated despite the door being closed, check the function/installation of the door switch. You can see whether the door switch is connected under Configure/Status.