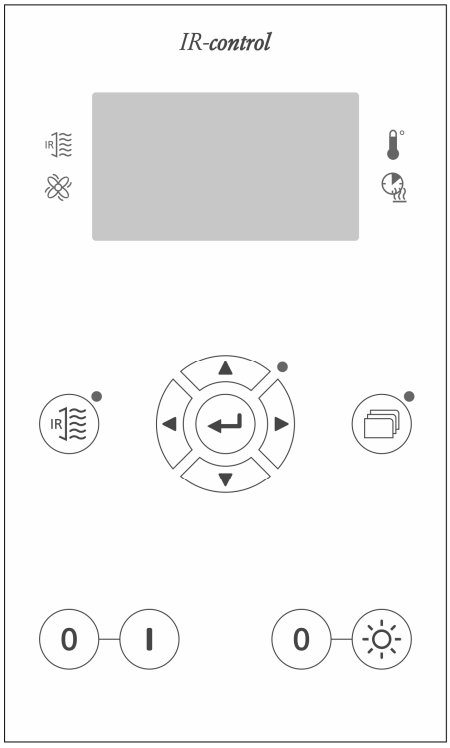
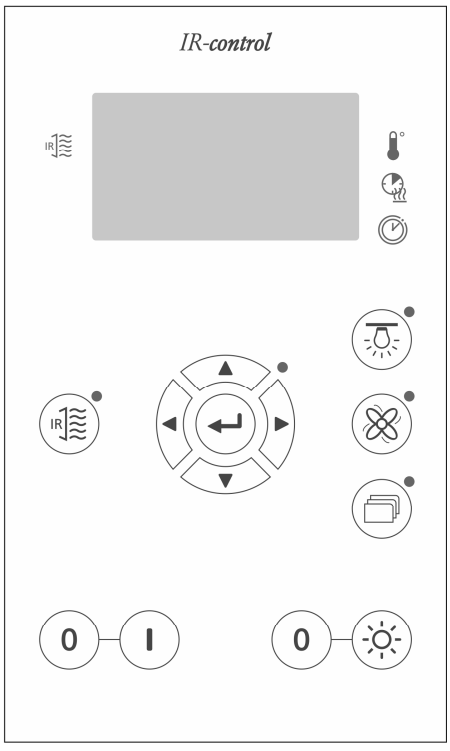
FASEL ELEKTRONIK

Operating manual

Infrared control
Series FCU2000/3000/4000-IR





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Germany

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1 Safety

1.1 Explanations of symbols

Warnings

Warnings in this operating manual are indicated through symbols. The instructions are introduced through signal words, which express the degree of danger.

Follow these instructions strictly and take care to avoid accidents, personal injuries and property damage.

DANGER!

…indicates an imminent dangerous situation, which could lead to loss of life or cause serious injuries if not avoided.

WARNING!

…indicates a possible dangerous situation, which can be fatal or cause serious injuries if not avoided.

CAUTION!

…indicates a possible dangerous situation, which could lead to small or slight injuries if not avoided.

ATTENTION!

…indicates a possible dangerous situation, which could lead to property damage if not avoided.

Tips and recommendations

NOTE!

…highlights useful tips and recommendations as well as information for an efficient and smooth operation.

1.2 Demands on the operator and technicians

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appli-

ance. Cleaning and user maintenance shall not be made by children without supervision.

The operating instructions are to be read carefully before switching on the unit! To ensure safe operation and safe working practices you must comply with all the given safety and handling instructions.

If you have any doubts, please contact your customer service.

Inadequate qualifications

WARNING!
Danger caused by inadequate qualifications!

Improper handling could lead to considerable personal injuries and damages to property.

Therefore:

The assembly, installation, commissioning, troubleshooting, maintenance and repair work should be carried out only by qualified persons unless otherwise mentioned.

1.3 Intended use

The FASEL Infrared controls of the series FCU2000/3000/4000-IR are solely intended for operating and controlling infrared cabins. The control units are approved for private and commercial use.

Intended use

CAUTION!
Danger caused by improper use!

Using the Infrared control for purposes other than the intended use could lead to dangerous situations.

Therefore:

- Use the Infrared control only for the intended purpose.
- Operate the Infrared control only within the permissible ambient temperature and humidity range. → See page 9.
- All the information in the operating and installation manual are to be strictly followed.
- When the Infrared control is not in use, then switch off the main switch (230V) or the fuses.
- Before switching on the Infrared control, make sure that nothing is on the infrared heater.

Any damage claims which arise due to improper use are excluded. Only the user is responsible for damages caused by improper use.

1.4 Changes and modifications

Changes and modifications to the control unit or to the installation could lead to unpredictable dangers.

The written approval of the manufacturer must be obtained before making any technical changes and enhancements to the Infrared control.

1.5 Operational safety and special dangers

Pay attention to the safety and warning notes in the following chapters of this manual to minimize health hazards and to avoid dangerous situations.

The following instructions are to be adhered to for your own safety and the safety of the unit:

Electric potential

DANGER!
Danger to life due to electric potential!

Contact with live components can be fatal.

Damage of the insulation of the individual components can be dangerous to life.

Therefore:

- For switching off the mains, the power supply cable must be equipped with a fuse with a contact opening width corresponding to the requirements of the excess voltage category III for total disconnection.
- Disconnect the unit from the mains before carrying out any work on it (switch off the fuse in the distribution box) and secure against restarting. Check for zero potential. The control device should be disconnected from the mains before opening the casing.
- In case of damage to the insulation, switch off the power supply immediately and carry out the repair.
- Work on electrical unit should be carried out by certified electricians only.
- Never bypass fuses or switch them off.
- While replacing fuses, pay attention to correct current specifications.
- Keep moisture away from live components, since it can lead to short circuit.

WARNING!

If a short circuit occurs in a 230V/400V load, the relay contact can be welded by the high short-circuit current. Is turned on before removing the short circuit, the safety relay can be also welded. This can lead to the continuous operation of the load. Turn off the circuit breaker in the junction box. Send the unit back to the factory for check/repair.

Improper operation

WARNING!
Improper operation can result in serious injuries!

Therefore:

- read and note the operating manual.

Information on the operating and installation manual

An operating manual as well as an installation manual are available for the FASEL control unit.

The operating manual is meant for the user and gives important instructions for handling the FASEL control unit.

The installation manual describes the assembly, installation, commissioning, rectification of defects and repair and is provided exclusively for the technical personnel.

To ensure safe operation and working practices, all the prescribed safety instructions and guidelines have to be followed.

Furthermore, the local accident prevention regulations and general safety regulations applicable for the fields of use of the control unit are to be adhered to.

The operating manual must be read carefully before switching on the device. The operating manual as well as the installation manual are an integral part of the product and must be kept in the immediate vicinity of the control unit so that they are always accessible.

The number of available connections and functions depends on the version of the device. The keys and the display text can be customized depending on the particular model and can differ from the figures shown.

If you pass on the control unit to a third party, make sure you hand over also the operating and installation manual.

Components from other suppliers have their own operating manuals, safety regulations and guidelines, which must be followed as well.

2 Identification

2.1 Nameplate

The nameplate is located on the control unit on the left side:

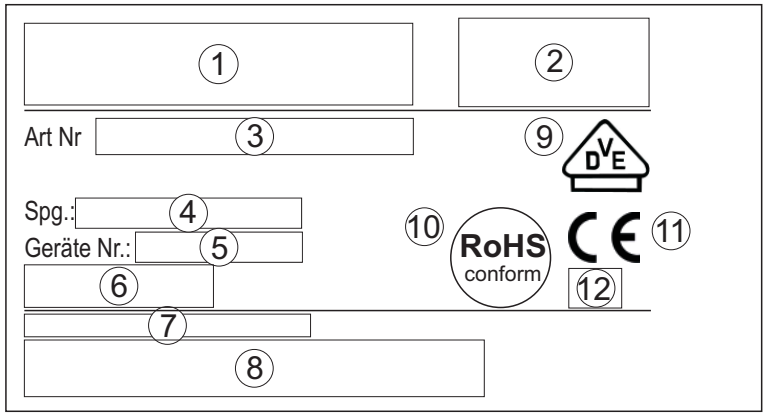


Fig.1 Control unit nameplate

1 Type designation
2 Company logo
3 Article number
4 Voltage and max. power
5 Device number
6 Barcode
7 article number
8 Barcode article number
9 VDE mark (for devices that are approved by VDE)
10 RoHS marking
11 CE mark
12 Protection category

3 Technical Data:

Label	Type		
	Series FCU2000	**Series FCU3000**	**Series FCU4000**
Ambient temperature	0 to +40 °C		
Rel. humidity	max. 80 % r.H., non condensing		

Table 1: Technical Data

4 Design and function

4.1 Function

Die the control unit is suitable for the following mode:

- Infrared

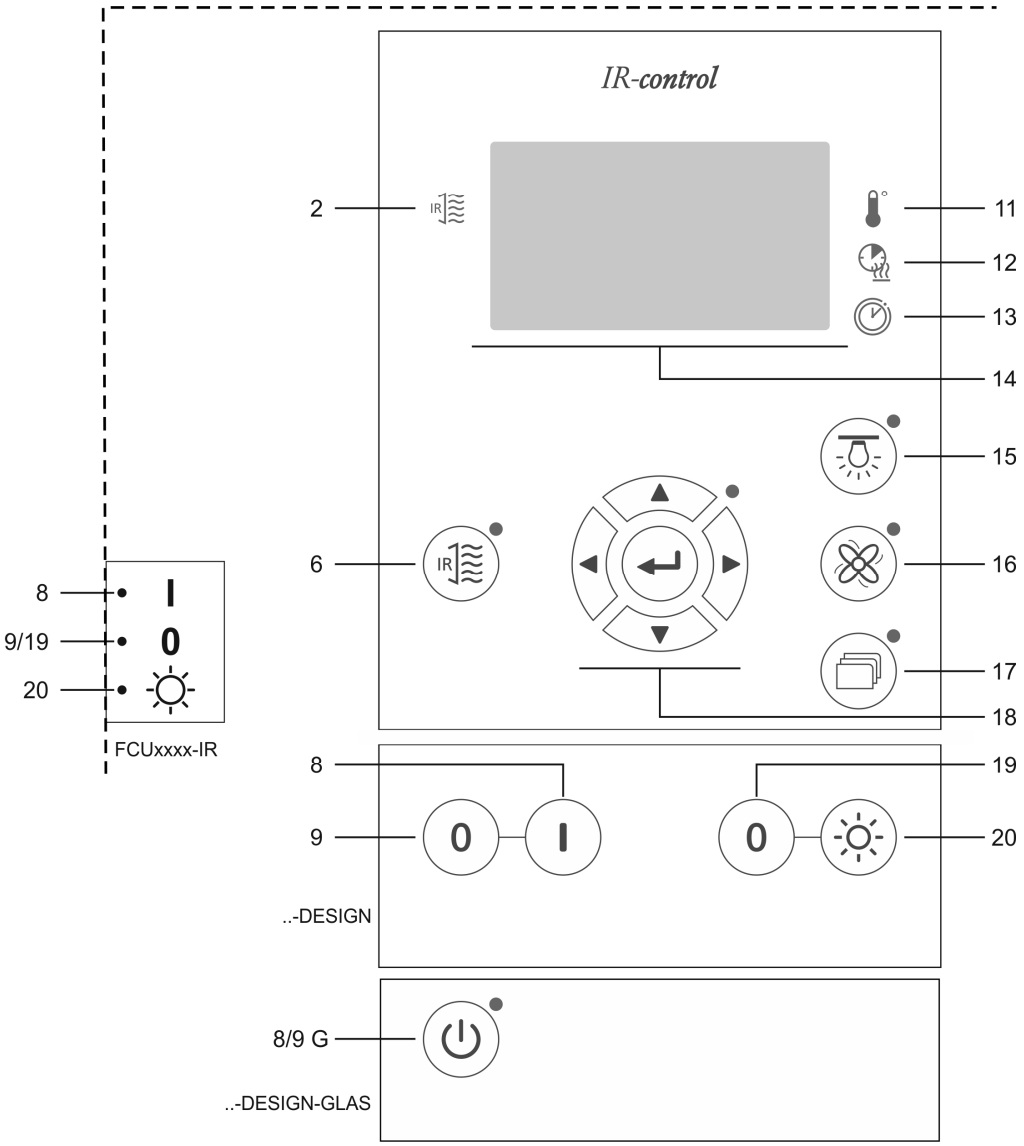
4.1.1 Infrared

In the "Infrared" mode, an infrared heater (infrared lamp or heating surfaces) produces an IR-radiation. This heats the air in the cabin.

As long as the infrared heater heats up, the status LED shows "IR" and the display shows heat-up phase. Once 2/3 of the desired temperature is reached, this message disappears. The cabin is ready for use.

4.2 Operating and display elements

4.2.1 FCU2000/3000/4000-IR-Design



2 "IR-heater" symbol
6 "IR" key

8 Control unit ON (only design)
9 Control unit OFF (only design)

11 "Set temperature" symbol
12 "Set heating time / remaining heating time "
13 "Timer" symbol
14 Display
15 key "light"
16 key " fan"
17 key "basic settings""
18 Navigation keys
19 Cleaning light OFF
20 Cleaning light ON

4.2.2 Control keys infrared control

The Infrared control is equipped with the following control keys:

<table>
<tr><th>Key</th><th colspan="2">Description</th></tr>
<tr><td rowspan="6"> </td><td colspan="2">"Infrared mode" key
Depending on the status of the green lamp, the "Infrared mode" key has different functions.</td></tr>
<tr><td>Status lamp next to the key</td><td>Meaning</td></tr>
<tr><td>Does not light up</td><td>■ Mode is not selected.
■ The lamp flashes after pressing the "Infrared mode" key.</td></tr>
<tr><td>Flashes</td><td>■ Mode can be adjusted.
■ Control unit can be turned off using the "Control unit OFF" switch.
■ The lamp lights up after pressing the " Infrared mode" key.</td></tr>
<tr><td>Lights up</td><td>■ "Infrared" mode is turned on.
■ The lamp flashes after pressing the "Infrared mode" key.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td> </td><td colspan="2">“Cabin light”-key
Switch ON and OFF the cabin light. By pressing the key, the light can be switched on or off. Automatically the menu for setting brightness is shown.
If the special function Light “LIS” is active, the light output is active only as long as the key “light” is pushed. With this function, external dimmers can be controlled. The internal dimmer is out of action.</td></tr>
<tr><td> </td><td colspan="2">„Fan“-key
Switch ON and OFF the fan. By pressing the key, the fan can be switched on or off. Automatically the menu for setting the speed is shown.</td></tr>
<tr><td> </td><td colspan="2">"Basics menu settings" key
Call "Basic settings menu".</td></tr>
<tr><td> </td><td colspan="2">■ Navigate upwards within the menu.
■ Scroll one line upwards on the display
■ Increase the value by one.
■ Select option</td></tr>
<tr><td> </td><td colspan="2">■ Navigate downwards within the menu.
■ Scroll one line downwards on the display
■ Reduce the value by one.
■ Select option.</td></tr>
</table>

Key	Description
◀	■ Change mode ON: (the green lamp next to navigation keys lights up): Move cursor to the left. ■ Change mode OFF: (the green lamp next to navigation keys does not light up): Go back to the parent menu.
▶	■ Change mode ON: (the green lamp next to navigation keys lights up): Move cursor to the right. ■ Change mode OFF: (the green lamp next to navigation keys does not light up): Call sub-menu.
↵	■ Call sub-menu. ■ Turn on change mode. Point flashes. ■ Accept value.
0 ☼	**Keys "Cleaning light OFF" and "Cleaning light ON"** (not for FCU-4x00-Design-Glas) Use these keys to turn the cleaning light on and off. The control unit need not be turned on.
0 I	**Keys "Control unit mains OFF" and "Control unit mains ON"** Turn the control unit mains on and off.
⏻	**Key "Standby Control Unit"** **(only for FCU-4x00-Design-Glas)** ■ Turn On / Off the standby of control unit ■ For avoiding an uncontrolled switching ON and OFF while cleaning the keyboard, the control unit switches off automatically after 2 minutes. In this mode, only the LED of the standby-key lights. For restarting or for starting a mode please press the corresponding key of 0,5 – 1 second. (from software-version 3 upwards)

Table: 2 Control keys Sauna control

4.3 Display symbols

The following symbols can appear in the display:

Display elements	Description
	Selection checkmark
	0 / 1
	Enter

Table: 3 Display symbols FCU2/3000-IR

Display elements	Description
	Temperature
	Heating time
	Remaining heating time
	Time
	Colour light
	Light
	Weekly timer
	Display lighting
	Display contrast
	Start time

Table: 4 Display symbols FCU4000-IR

5 Operation

5.1 Safety and instructions

Electric potential

DANGER!
Danger to life due to electric potential!

Touching live parts can cause immediate danger to life.

Therefore:

– Control unit should be opened only by authorised electricians.
– Electrical work on the machine should be carried out only by qualified electricians.

Improper operation

WARNING!
Improper operation can result in serious injuries!

Therefore:

– Carry out all the operating steps according to this operating manual.

Danger of fire

WARNING!
Danger of injury caused by fire!

Objects on the heater or in the vicinity of the heater can cause a fire and thus result in injuries.

Therefore:

– Always keep the heater and the area around the heater free of objects.

Health hazard

WARNING!
Danger of injury caused by covering the temperature sensor and / or the humidistat!

Covering the temperature sensor and / or the humidistat could lead to increased temperatures and humidity. These increased levels could lead to health hazards or serious injuries.

Therefore:

– Do not cover the temperature sensor and humidistat.
– Ensure free circulation of air.

NOTE!

The temperature values displayed on the control unit may vary from that displayed on the thermometers mounted additionally in the cabin. This may be because of the following reasons:

Depending on the cabin, temperatures differences of up to 40K can occur from the floor to ceiling.

Analogue instruments are slower to react than the electronic measurement and display system used in the control unit.

5.2 Turn Infrared control on and off

5.2.1 Turn on Infrared control

Ensure that the heater, the surroundings and the sensors are free of objects.

1. Turn on the Infrared control using the "Control unit ON" key. → See page 11.
2. The set point temperature and the heating time are displayed. The green lamp flashes.

5.2.2 Turn off Infrared control

PLEASE NOTE!
The electronic components can be damaged by repeated improper turning off!

Therefore:

– Turn off the Infrared control as described.

A mode is selected. The corresponding green lamp lights up.

1. Press the key of the selected mode. The green lamp next to the key flashes.
2. The green lamp of the selected mode flashes. Turn off the Infrared control using the "Control unit OFF" key. → See page 11

6 “General settings” menu

6.1.1 Select or start the mode

Mode select or start

1. Turn on Infrared control according to chapter 5.2.1.
2. The green lamp flashes.
3. Press the key for Infrared mode. The desired mode has been started only when the green lamp stops flashing.

Key	Description
IR	Infrared mode

Table 5: Mode control keys

6.2 Adjust "Infrared" mode

NOTE!

There are two menu navigations available for the control unit. All the menus are displayed only in the "Professional" menu. These menus are indicated accordingly in this chapter. If these menus are not displayed, your control has been set to the "Small" menu

Furthermore, the control unit can be equipped with extension boards like for e.g. for aroma feeding. This requires additional menus, which are indicated accordingly in this chapter. For information about the fittings of your control unit, please contact the installer or the dealer of your infrared system.

The control unit is turned on.

1. Press the key (infrared mode). The lamp next to the key must flash or light up.
2. The symbol (adjust the temperature) lights up. → See Page 17, chapter 6.3
3. Press the ▼ botton.
4. The symbol (adjust heating / remaining heating time) lights up.
5. Depending on the status of the lamp next to the mode key, adjust the heating time or the remaining heating time. → See page 17, chapter 6.3
6. Press the ▼ key.
7. Optional: "Adjust colour light mode" view is displayed.
8. Press the ▼ key.
9. Press the ▼ key. The "Infrared" view is displayed again.

NOTE!

If the key is not operated for a few seconds, the program automatically switches back to the "main" view. (If the controller has a timer and it is active, he switches into the timer menu.)

6.3 Adjust the set point temperature, heating time, remaining heating time, timer

The following example describes how to adjust the set point temperature.

The heating time, the remaining heating time and the timer are adjusted similarly.

Note the following points:

- If you want to adjust the set point temperature, set point humidity, heating time, remaining heating time or the timer, the corresponding symbol must light up at the right of the display. That is, the symbol "Temperature" should light up if you want to adjust the temperature.
- The heating time and the remaining heating time use the same symbol. The value which you adjust depends on the status of the lamp next to the mode key.

Heating time	Remaining heating time
The heating time is the operating time for the selected mode..	The remaining heating time is the remaining time when the mode is turned on. The remaining heating time is reduced automatically.
The heating time can be adjusted if the lamp next to the mode key flashes.	The remaining heating time can be adjusted if the lamp next to the mode key lights up. The modified remaining heating time does not change the programmed heating time.

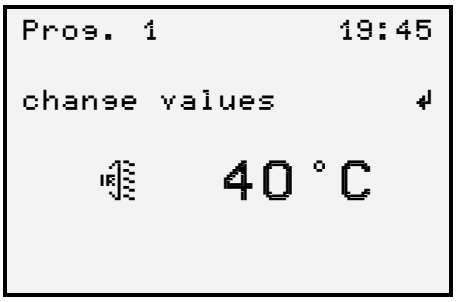
Table 6: Heating time / remaining heating time

- Timer can be released or blocked. The models FCU2x00 and FCU3x00 have no timer.

6.3.1 Set temperature

6.3.1.1 Set temperature of IR-heater

1. Press ▼ -key until the symbol (IR-heater) lights.
2. The following view is shown:



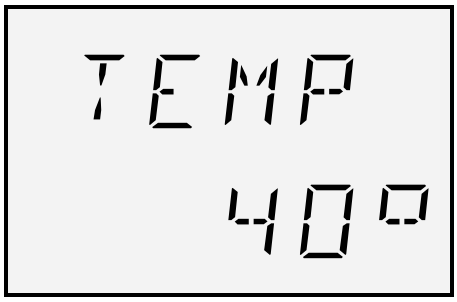


fig. 2: View "Infrared" (example)

3. Press ↵ -key. The last digit flashes.
4. Select desired value:
   Press ▼ -key to reduce value.
   Press ▲ -key to increase value.

   Note!

   After the digit „9" or „0" the higher digit of the temperature value is changed. That is: "40" is displayed after "39".
   You can also select the higher digit using the ◄ -key or ► -key and change then.
5. Press ↵ -key to confirm value

6.3.2 Adjust heating time

1. Press the ▼ -key until the symbol (adjust heating time) lights up.
2. Press the ↵ -key
3. Adjust the desired value (see above)
4. Press the ↵ -key to accept value
5. Key "mode" flashes

6.3.3 Adjust timer

1. Press the ▼ -key until the symbol (adjust timer) lights up.
2. Adjust desired time (see above)
3. Press the ↵ -key to adjust the value.
4. Press the mode-key (flashes)
5. Symbol flashes.
6. For turning off the timer, please turn off the control unit or press mode-key once for starting and once again for stopping.

6.3.4 Maximum allowed heating time

After starting a mode, the remaining heating time is displayed in place of the full heating time. The heating time can be changed only in standby mode.

The EN 60335-2-53 "Specific requirements for sauna heating devices" allows the following maximum heating times:

Max. heating time	Description
more than 12 hours	Public cabins which are supervised by trained personnel.
max. 12 hours	Hotels, apartment blocks, etc.
max. 6 hours	All other cabins / private households

Table: 7 Maximum heating time

The control devices are delivered with a maximum adjustable heating time of 6 hours. If you need heating times exceeding 6 hours, please contact the installer or the dealer of your sauna system.

6.4 Menu for Options

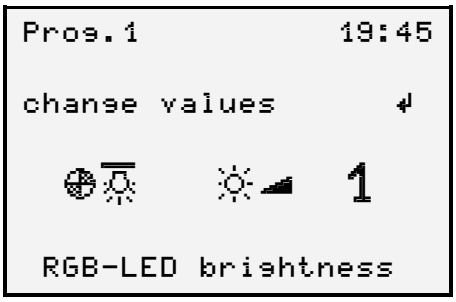
6.4.1 RGB-LED brightness (only for FCU4xxx and menu "Pro")

NOTE!

The "RGB-LED brightness" menu is only available for control devices which are connected to a RGB-LED control from the company Licht2000.

In this menu you can set the brightness of the RGB-LEDs.

1. ▼-Press the key until you see the following view:



Not available with FCU2000 and FCU3000!

Fig. 3: View "RGB-LED brightness"

2. Press ↵ key.
3. Select RGB-LED brightness. Digit flashes.
   Press the ▲ key: Increase value.
   Press the ▼ key: Reduce value.
   There are 4 brightness levels possible.
4. Press the ↵ key. The selection is saved.

6.4.2 Colour light mode (including parameter description)

NOTE!

The "Colour light mode" menu is only available for control devices with the extension board type FCU-EXT-COLOR LIGHT or a RGB-LED control from the company Licht2000.

In this menu, you can adjust the coloured lights. The following table shows the parameters and their explanations.

Parameter	Description
OFF / ON	■ OFF: The colour light mode is off. ■ ON: The colour light mode is on. The colour lights are controlled either directly (manual) or by an automatic program (auto).
Manual / Auto	The option "ON" must be selected. ■ Manual: The colour lights are manually controlled using this "Colour light mode". See parameters “1 / 2 / 3 / 4". ■ Auto: The colour lights are controlled automatically. Select the desired colour program using the parameter "colour program”. For the "Auto" option, you can make further adjustments in the "Colour light automatic" menu.
Colour program	The options "ON" and "auto" must be selected. 2 colour programs are available. These programs can be setup in the menu. "basic settings"
Lamps 1 / 2 / 3 / 4	The options "ON" and "manual" must be selected. Depending on the settings in the service menu, you can select single or mixed colours. Single colours are: 1 / 2 / 3 or 4. Mixed colours are combinations of two colour lights. The following combinations are possible: 1 + 2 / 2 + 3 or 3 + 4.

Table: 8 Parameter description menu "mode colour light"

1. Select "colour light mode".
2. Following view is displayed:

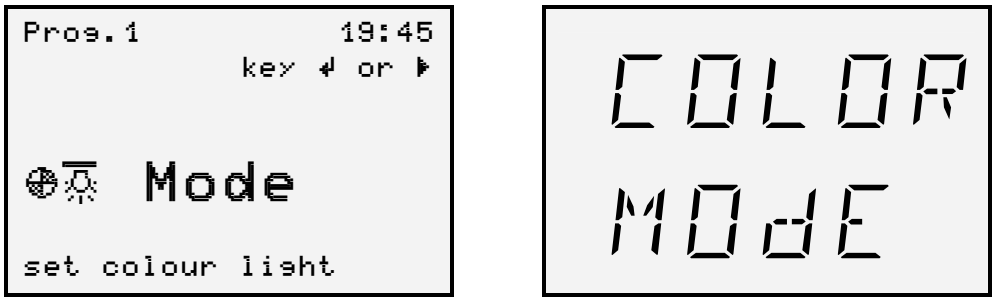


Fig. 4: View "colour light mode"

3. Press ↵ key or ▶ -key.
4. Following view is displayed:

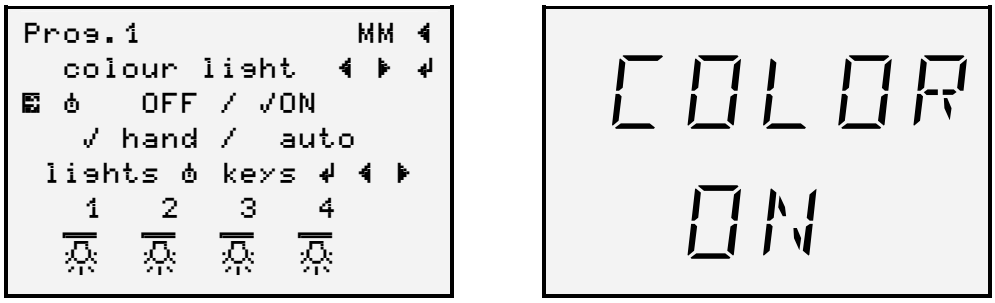


Fig. 5: View "Set colour light – change mode" (example)

5. Select one of the following lines with the ▼ or ▲ key:
   - OFF / ON COLOR ON (→ point 7)
   - Manual / Auto COLOR HA/AU (→ point 10)
   - Colour program COLOR Pr. 1 (→ point 13)
   - Lamps COLOR LAMP (→ point 16)
6. Press the ↵ key. Selected line is enabled.
7. Select option OFF or ON. "OFF / ON" line is enabled.
   - OFF is enabled.
     - ▶ Key: without function
     - ◀ Key: Select "ON".
   - ON is enabled.
     - ▶ Key: Select "OFF".
     - ◀ Key: without function
8. Press the ↵ key. The selection is saved.
9. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
10. Select option "manual" or "auto". "Manual / Auto" line is enabled. The options "manual" or "auto" do only work if the "ON" option is enabled.
    - "manual" is enabled.
      - ◀ Key: without function
      - ▶ Key: Select "auto".
    - "auto" is enabled. The symbol "auto" (symbol no. 10) appears in the display.
      - ◀ Key: Select "manual".
      - ▶ Key: without function
11. Press the ↵ key. The selection is saved.
12. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
13. If the option "auto" is selected, the line "colour program no." is displayed. Select "colour program no." and enable.
    - "1" is displayed for "colour program no.”
      - ▼ Key: without function

▲ Key: Select colour program no. 2.

– "2" is displayed for "colour program no."

▼ Key: Select colour program no. 1.

▲ Key: without function

14. Press the ↵ key. The selection is saved.
15. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
16. If the option "manual" is selected, the active colour lamps are displayed. With the option "lamps", the number of colour lamps can be edited.
17. Select one or two (mixed colour) colour lights with the ◀ or ▶ key. The following combinations are possible:

    – 1 / 1 + 2 / 2 / 2 + 3 / 3 / 3 + 4 and 4

    Note!

    The possibility of selecting mixed colours is set in the service menu. For modification requests, contact the installer or dealer of your sauna system.
18. Press the ↵ key. The selection is saved.
19. Exit the menu using the ◀ key. The "colour light mode" view (fig. 10) is displayed.

6.4.3 Colour light start (only for menu "Pro")

NOTE!

The "Colour light start" menu is only available for control devices with the extension board type FCU-EXT-COLOR LIGHT or a RGB-LED control from the company Licht2000.

Here you can set the starting time for the colour light.

Option		Description
FCU4x00	**FCU2x00/FCU3x00**	
If power on	IFPO	Start, as soon as control device is switched on.
On heat-up phase	HEUP	Start, as soon as a mode is active.
If bath is ready	bARE	Start, as soon as the set point temperature is reached.

Table 9: Parameter description menu "colour light"

1. Select "colour light start".
2. Following view is displayed:

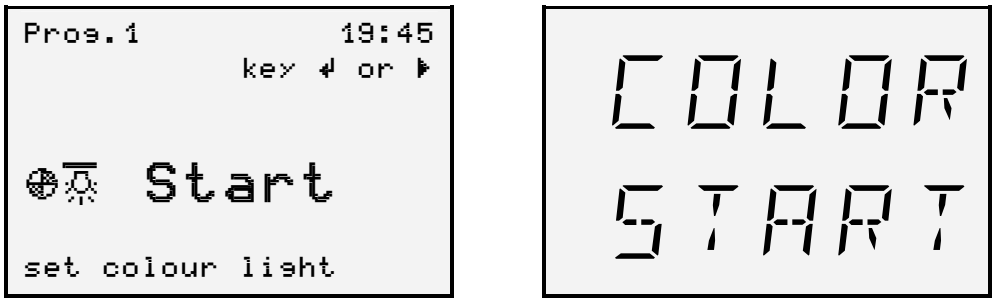


Fig. 6: View "colour light start"

3. Press ↵ key or ▶ -key.
4. Following view is displayed:

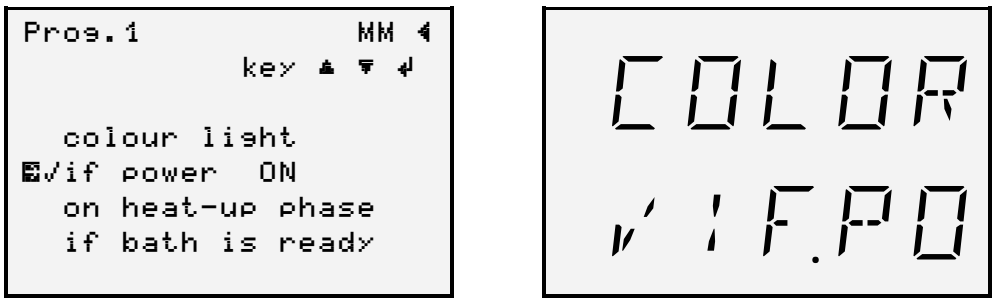


Fig. 7: View "Set colour light start – change mode" (example)

5. Select one of the following lines with the ▼ or ▲ key:
   - If power ON IF.PO
   - On heat-up phase HE.UP
   - If bath his ready bARE
6. Press the ↵ key. Selected line is enabled. The selection is saved. Check mark behind the cursor is placed.
7. Exit the menu using the ◀ key. The view "colour light start" (Fig. 6) is displayed.

NOTE!

If the key is not operated for a few seconds, the program automatically goes back to the "main" view. (If the controller has a timer and it is active, he jumps into the timer menu.)

7 „Basic settings“ menu

For using the menu „basic settings“ please press the key (basic settings).

The lamp next to the key must light.

7.1 General basic settings

7.1.1 Time and Weekday

In this menu you can set the time and the weekday.

1. Press key (basic settings). The lamp next to the key must light. The weekday appears only, if the weekly timer is released.
2. The following view is shown:

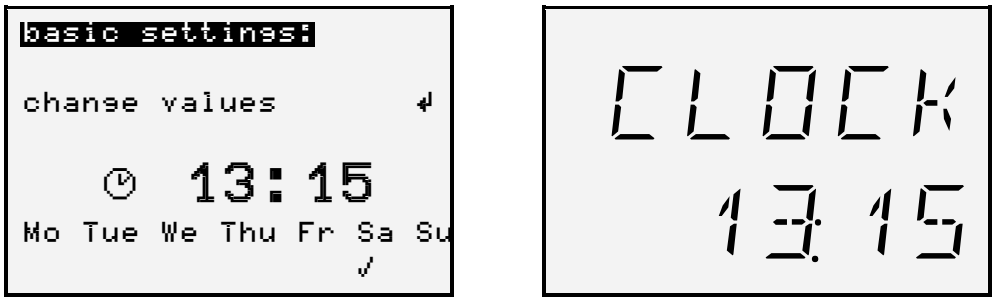


Fig. 8: View „Change values“ (example)

3. Press ↵-key.
4. The following view is shown:

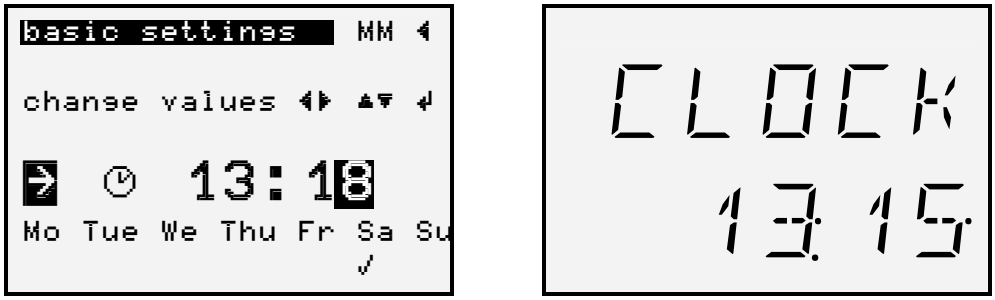


Fig. 9: View „Change values – change mode“ (example)

5. Select one of the following lines with the keys ▼- or ▲:
   - Time (→ point 7)
   - Weekday (→ point 10) (only at FCU4xxx and if the weekly timer is enabled)
6. Press ↵-key. Selected line is activated.
7. Set the desired time. Last digit flashes.
   Press ▼-key: reduce value.
   Press ▲-key: increase value.
   Press ◄-key: move cursor left.
   Press ►-key: move cursor right.
8. Press ↵-key. The selection is saved.

9. Exit the menu by using the ◀ -key or select the next line with the ▼ or ▲ -key.
10. Select desired weekday. Check mark flashes.
    Press ◀ -key: move cursor left.
    Press ▶ -key: move cursor right.
11. Press ↵ -key. Selection is saved.
12. Leave menu with ◀ -key.

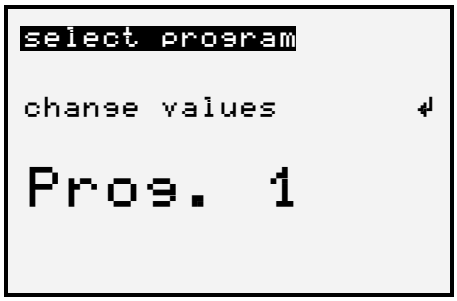
7.1.2 Select program (only for FCU4xxx)

Note!

For each mode there exist 8 programs which are freely adjustable. . The program numbers are shown on the display. (These 8 freely adjustable programs may be locked by the service engineer.)

In this menu you can select 1 of 8 programs.

1. Press key “basic settings”. The lamp next to the key must light.
2. Press ▼-key until the following view is shown:



Not available with FCU2000 and FCU3000

Abb. 10: View "select program" (example)

3. Press ↵-key
4. Select desired program with the keys ▲ or. ▼
5. Confirm with key ↵

7.1.3 Adjust display lighting (not for FCU2xxx)

In this menu you adjust the brightness of the display.

1. Press (basic settings) key. The lamp next to the key must light up.
2. Press the ▼ key until you see the following view:

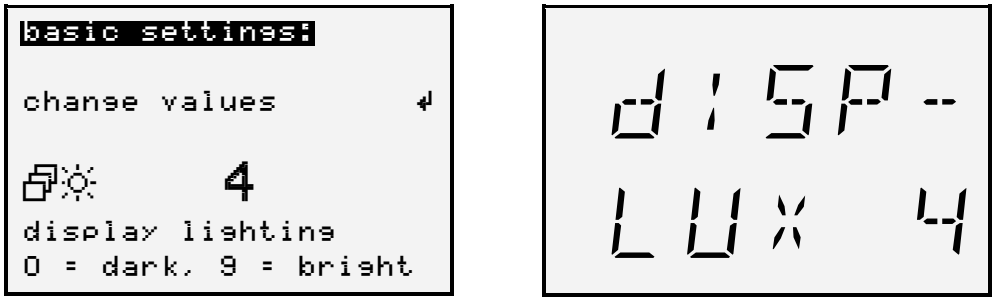


Fig. 11: "Display lighting" view (example)

3. Press the ↵ key.
4. Value flashes.
5. Adjust the desired value:
   Press the ▼ key: Reduce value.
   Press the ▲ key: Increase value.
   0: dark
   9: bright
6. Press the ↵ key. The adjusted value is accepted.
7. Exit the menu using the ◄ key.

7.1.4 Adjust display contrast (only for FCU4xxx)

In this menu you can change the contrast of your display.

1. Press key “basic settings“. The lamp next to the key must light.
2. Press the ▼ -key until the following view is shown:

Not available with FCU2xxx and FCU3xxx

Fig. 12: View "light settings" (example)

3. Press ↵ -key.
4. Select desired contrast with the keys ▲ or ▼.
5. Press ↵ -key to confirm selection.

7.1.5 Light settings (only for menu "Pro")

In this menu you can set the time, when the light should go on and how long it should stay on after the end of a mode.

1. Press (basic settings) key. The lamp next to the key must light up.
2. Press the ▼ key until you see the following view:

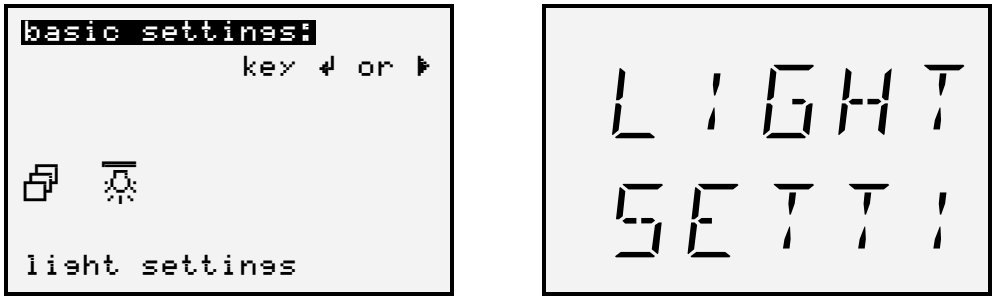


Fig. 13: “Light settings" view (example)

3. Press the ↵ key.
4. Following view is displayed:

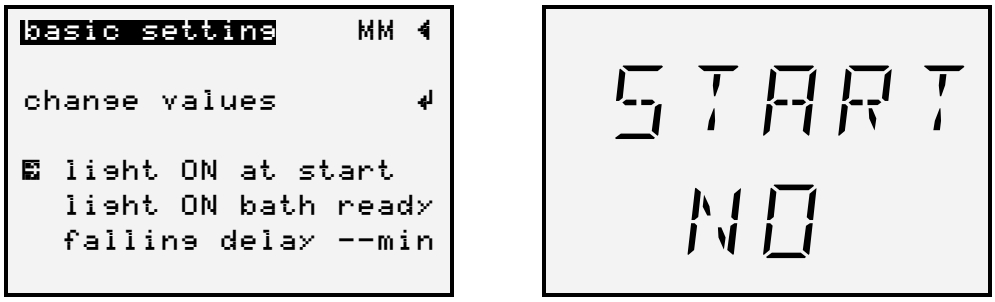


Fig. 14: "Light settings – change mode" view (example)

5. Select one of the following lines with the ▼ or ▲ key:
   - Light ON at start — START NO (→ point 7)
   - Light ON if bath ready — bARE NO (→ point 11)
   - Falling delay time x min — dELA --MIN (→ point 15)

   Note!

   Only the option "light ON at start" or "light ON if bath ready" can be selected.
6. Press the ↵ key. Selected line is enabled.
7. Option "light ON upon starting" is enabled. Cursor flashes on the selected line.
   Press the ▲ key. Check mark is set (option selected).
   Press the ▼ key: Check mark is deleted (option not selected).
8. Press the ↵ key. The selection is saved.
9. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
10. Press the ↵ key. The selected line is enabled.
11. Option "light ON after heat-up phase" is enabled. Cursor flashes on the selected line.
    Press the ▲ key. Check mark is set (option selected).
    Press the ▼ key: Check mark is deleted (option not selected).

12. Press the ↵ key. The selection is saved.
13. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
14. Press the ↵ key. The selected line is enabled.
15. Adjust the time for turn off delay. Digit flashes.
    Press the ▼ key: Reduce value.
    Press the ▲ key: Increase value.
    Press the ◀ key: Select left digit.
    Press the ▶ key: Select right digit.
16. Press the ↵ key. Selected value is accepted.
17. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
18. Option "light OFF at drying" is enabled. Cursor flashes on the selected line.
    Press the ▲ key. Check mark is set (option selected).
    Press the ▼ key: Check mark is deleted (option not selected).
19. Press the ↵ key. The selected line is enabled.
20. Exit the menu using the ◀ key.

7.2 „Basic settings“ for Options

NOTE!

This menu appears only, if the corresponding options board is installed in the control device.

7.2.1 Colour light automatic

In this menu you can adjust the program sequence, if you selected the option „Auto“ in the menu „colour light mode“. → See manual for program settings.

1. Press key ▭ (basic settings). The lamp next to the key must light

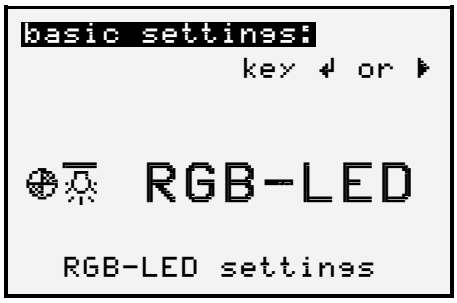
7.2.2 RGB-LED settings (only for FCU4xxx and menu "Pro")

HINWEIS!

The "RGB-LED settings" menu is only available for control devices which are connected to a RGB-LED control from the company Licht2000.

In this menu you can program the fading time (the time for a smooth colour transition from one colour to another) for RGB-LEDs.

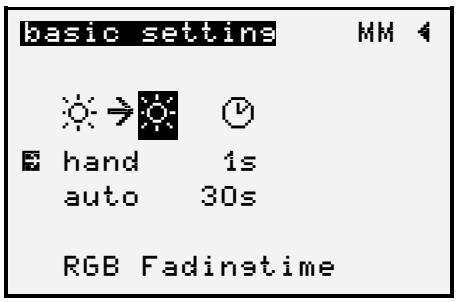
1. Press key ▭ (basic settings). The lamp next to the key must light.
2. ▼ - Press the key until you see the following view:



Not available with FCU2000 and FCU3000!

Fig. 15: "RGB-LED settings" view

3. Press the ↵ key.
4. Following view is displayed:



Not available with FCU2000 and FCU3000!

Fig. 16: "RGB fading time – change mode" view (example)

5. Select one of the following lines with the ▼ or ▲ key:
   - hand (→ point 7)
   - auto (→ point 10)
6. Press the ↵ key. The selected line is enabled.
7. Select hand. Cursor flashes on the selected line.
   Press the ▲ key: Increase value.
   Press the ▼ key: Reduce value.
   There is a maximum time period of 3 seconds possible.
8. Press the ↵ key. The selection is saved.
9. Exit the menu using the ◀ key or select the next line with the ▼ or ▲ key.
10. Adjust auto. Last digit flashes.
    Press the ▲ key: Increase value.
    Press the ▼ key: Reduce value.
    Press the ◀ key: Select left digit.
    Press the ▶ key: Select right digit.
    There is a maximum time period of 50 seconds possible.
11. Press the ↵ key. The selection is saved.
12. Exit the menu using the ◀ key.

7.2.3 Colour light automatic (only for menu "Pro")

Note!

The "Colour light automatic" menu is only available for control devices with the extension board type FCU-EXT-COLOR LIGHT or a RGB-LED control from the company Licht2000.

In this menu you can program the sequence, if you have selected the "Auto" option in the "Colour light mode". → See operating instructions for program settings.

1. Press (basic settings) key. The lamp next to the key must light up.
2. Press the ▼ key until you see the following view:

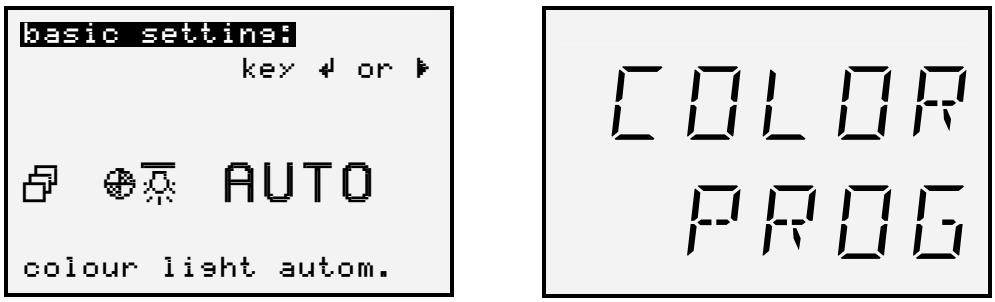


Fig. 17: "Colour light automatic" view (example)

3. Press the ↵ key.
4. Following view is displayed:

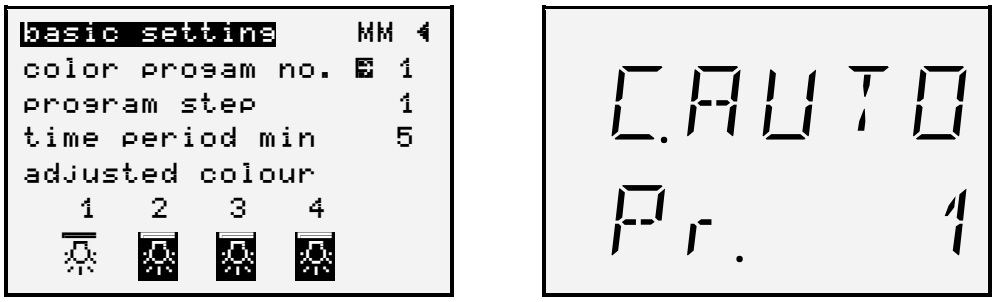


Fig. 18: "Colour light automatic – change mode" view (example)

5. Select one of the following lines with the ▼ or ▲ key:
   - Colour program no. C.AUTO PR. 1 (→ point 7)
   - Program step C.AUTO PHA 1 (→ point 10)
   - Duration in min C.AUTO MIN 5 (→ point 13)
   - Adjusted colour C.AUTO LAMP (→ point 16)
6. Press the ↵ key. Selected line is enabled.

7. Select colour program no. Cursor flashes on the selected line.
   Press the ▲ key. Increase value.
   Press the ▼ key: Reduce value.
8. Press the ↵ key. The selection is saved.
9. Exit the menu using the ◄ key or select the next line with the ▼ or ▲ key.
10. Select program step. Digit flashes.
    Press the ▲ key. Increase value.
    Press the ▼ key: Reduce value.
    16 program steps are possible.
11. Press the ↵ key. The selection is saved.
12. Exit the menu using the ◄ key or select the next line with the ▼ or ▲ key.
13. Adjust duration. Last digit flashes.
    Press the ▲ key. Increase value.
    Press the ▼ key: Reduce value.
    Press the ◄ key: Move cursor to the left.
    Press the ► key: Move cursor to the right.
    A maximum duration of 32 minutes is possible.

    Important!

    If you enter "0", the colour light programme automatically goes back to programme step no. 1 during the programme run, i.e. after you enter the colour combination for the last programme step, you must enter a "0" in the next programme step.
14. Press the ↵ key. The selection is saved.
15. Exit the menu using the ◄ key or select the next line with the ▼ or ▲ key.
16. Select adjusted colour. Cursor flashes. Select one or two (mixed colour) colour lights with the ◄ or ► key. The following combinations are possible:
    – 1 / 1 + 2 / 2 / 2 + 3 / 3 / 3 + 4 and 4
17. Press the ↵ key. The selection is saved.
18. Exit the menu using the ◄ key.

7.3 Versions and data (only in menu mode "Professional")

This menu (only available in professional mode!) is used for service to, for e.g., quickly find the cause of fault with the versions given here. (only in menu option "Professional").

1. Press (basic settings) ▭ key. The lamp next to the key must light up.
2. Press the ▼ key until the following view is shown:

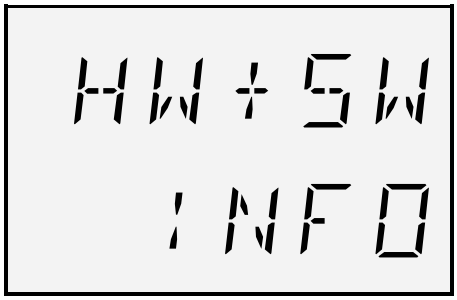


Fig. 19: View "Versions and data"

3. Press the ↵ key.
4. The following view is shown:

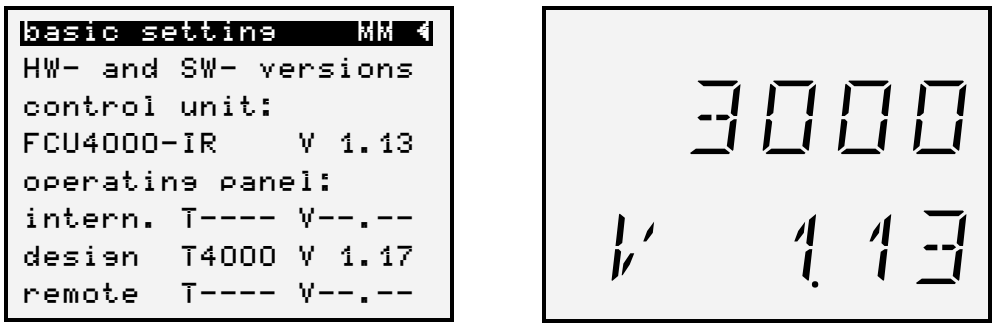


Fig. 20: View "HW- and SW-versions" (example)

5. With the keys ▼or ▲ you can navigate within the menu. The following information is displayed here:
   - Software version of the control board and the keyboard PCB
   - Device configuration
   - Customer configuration
   - Configuration of the optional inputs and outputs
6. Exit the menu with the ↵ key.

8 Options menu

8.1 Small/professional

The control unit offers two menu navigations "small" and "professional".

The menu "small" includes the main menu items. The menu "professional" includes all menu items. Typically, the menu navigation "small" is sufficient.

You can change the menu as follows:

1. Press the ▲ key.
2. Press the ▲ and the key “basic settings” simultaneously.
3. Press the ↵ key.
   - Switch from "small" to "professional" menu: Press the ▲ key.
   - Switch from "professional" to "small" menu: Press the ▼ key.
4. Press the ↵ key to confirm the selection.

8.2 Parental/Keypad lock

From this menu it is also possible to lock or unlock various keys.

You can lock or unlock the keys as follows:

1. Press the ◄ and ► key simultaneously.
2. In the display appears the text "Lock and unlock individual keys. If the LED next to the key lights up, this key is locked".
3. Now press the keys that need to be locked or unlocked.
4. Press the ◄ and ► keys simultaneously to apply changes and navigate back to the "Small / Professional" menu.

8.3 Select language

Besides, there is the possibility to change the language of the menu guide. You can change the language from menu "Small/Profi" in the following way:

1. Press the ▲ or ▼ key to get to the language selection menu.
2. Press the ↵ key.
3. Press the ▲ or ▼ key to select the desired language.
4. Press the ↵ key to confirm the selection.

9 Maintenance

The infrared controls are maintenance free.

9.1 Cleaning

Aggressive cleaning agents and additives

PLEASE NOTE!
Device damage possible!

Aggressive cleaning agents and additives can damage or destroy the electrical components and cable.

Therefore:

– Do not use cleaning agents and additives with aggressive substances.

1. Turn off control device and secure against turning on (turn off circuit breakers.)
2. Clean the housing only from the outside with a damp soft cloth. The housing must not be opened.

10 Malfunctions

10.1 Safety

General

WARNING!
Danger of injury caused by improper troubleshooting!

Improper troubleshooting can result in serious injury or death.

Therefore:

– In case of malfunctions turn off the control unit, disconnect from mains and secure against reconnection. Contact the customer service.
– Troubleshooting must be carried out only by qualified technicians, unless stated otherwise.
– Ensure that there is adequate assembly space available before starting work.
– Ensure that the work area is clean and tidy! Components lying loosely on one another or lying around the work area can cause accidents.
– If parts were replaced: Ensure correct installation of spare parts. Mount all the fastening elements properly again. Only use original spare parts.
– Before turning on again ensure that all covers are properly installed.

WARNING!

If a short circuit occurs in a 230V/400V load, the relay contact can be fused by the high short-circuit current. This can lead to the continuous operation of the load. Turn off the circuit breaker in the junction box. Contact the customer service.

10.2 Malfunction messages

Possible malfunctions and troubleshooting measures are described in this chapter.

Contact the installer or the dealer of your sauna systems for malfunctions that are not described below. See the invoice, delivery note or the reverse of this manual for the address.

If an error occurs during operation, the display shows the error number.

If the error cannot be rectified by the end user, please note down the displayed error number and contact your service technician.

No.	Malfunction	Possible causes	Troubleshooting	To be carried out by
000	Internal time error	Internal time error		Service engineer
100	STB circuit open, STB	The connection to the safety temperature limiter (STB) is broken or the thermal fuse was destroyed by very high temperature.	■ Check STB. ■ Check cable. ■ Check terminals 29 and 30.	Electrician / service engineer
200	IR Heater sensor short circuit	Short circuit IR heater sensor	■ Check cable. ■ Check terminals 31 and 32.	Electrician / service engineer
201	IR Heater sensor interruption	Cable break IR heater sensor Contact terminals	■ Check cable. ■ Check terminals 31 and 32.	Electrician / service engineer
210	Bench sensor short circuit	Short circuit bench sensor	■ Check cable. ■ Check terminals 27 and 28.	Electrician/ Service engineer
211	Bench sensor interruption	Cable break bench sensor Contact terminals	■ Check cable. ■ Check terminals 27 and 28.	Electrician / service engineer
400	External malfunction message	Optional input for malfunction of external control unit.	Acknowledge error. Rectify malfunction in external device.	User / Service engineer
11C	I²C error	Error on I²C bus	Disconnect mains, wait for some time and turn on again. If error occurs again then contact the service technician.	Service engineer
485	RS485 error	Error on RS485 bus	Disconnect mains, wait for some time and turn on again. If error occurs again then contact the service technician.	Service engineer
999	Internal time error	Internal time error		Service engineer

Table 10: Malfunction messages

10.3 Acknowledge malfunction message

1. Rectify the cause of the message.
2. ↵ -Press the key for about 2 seconds. Message disappears.

11 Decommissioning and disposal

- Do not dispose the sauna control with household waste.
- Dispose the control unit according to the respective country-specific regulations.

12 General Information

12.1 Liability limitation

All the details and instructions in this manual have been compiled taking into consideration the relevant standard specifications and stipulations and the state-of-the-art technology as well as our knowledge and experience of many years.

The manufacturer does not take any liability for damages caused by:

- Non-compliance to the operating and installation manual
- Improper use
- Unauthorized alterations
- Technical changes
- Use of unapproved spare parts and consumables.

The actual scope of delivery can deviate from the explanations and the presentation given here in case of special designs, additional orders or technical updates.

Otherwise the obligations agreed upon in the delivery contract, the general business conditions as well as the delivery terms of the manufacturer and the legal regulations valid at the time of concluding the agreement are applicable

Guarantee

The guarantee period of the manufacturer starts from the time of dispatch by the manufacturer and is valid for 24 months. The delivery date can be determined from the device number on the nameplate.

The manufacturer does not assume any liability which differs from this regulation. Guarantee claims must be submitted to the sauna manufacturer or dealer.

12.2 Copyright

Handing over the operating and installation manual to a third party without the written consent of the manufacturer is not permitted.

NOTE!

The details, texts, drawings, pictures and other representations in this manual are protected by copyright and subjected to the industrial proprietary laws. Any misuse is liable to punishment.

Reproduction in any manner or form – even as excerpt- as well as use and/or conveying of the content without written consent of the manufacturer is not permitted.

12.3 Scope of delivery

For information on the scope of delivery, pl. see the delivery note.

12.4 Spare parts

CAUTION
Danger of injury due to incorrect spare parts

Incorrect or defective spare parts could lead to damage, incorrect functioning or total breakdown and can impair the safety.

Therefore:

– Use only original spare parts of the manufacturer.
– Repairs of the sauna control should be carried out only by the technical experts.

Obtain spare parts from the installer or the dealer of the sauna unit. For address see the invoice, delivery note or the reverse of the manual.

12.5 Customer service

Your dealer or the installer of the sauna unit can provide technical information on request.

The address you can find on the invoice, delivery note or the reverse of this manual.

NOTE!

For quick processing, before calling note down the data on the nameplate as well as the model, serial number, version etc..

13 Setting values

13.1 Range of Adjustment Infrared

	min.	max.
Temperature	30°C	90 °C(45°C**)
Operating time	00:15 h	02:00 h (20:00 h *)

- We deliver the control units with a max. heating time of 2 hours. If you need a longer heating time than 2 hours, please contact the installer or the dealer of your sauna systems.

** For Austria, the temperature can be limited to 45°C.

14 Declaration of Conformity

The electronics of the FCU2000 and FCU3000 equipment are identical to the FCU4400 equipment.

The current Declaration of Conformity can be found on the Internet at www.fasel-gmbh.de under „Control units for wellness, sauna and spa / Service / Downloads“

The electronics of the FCU-IR equipment is identical to the FCU4400 equipment.

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Address of the installer or dealer of the sauna system: