

Important
documents:

Please enclose these documents with the device documentation and keep them in the immediate vicinity of the device!



Series FNTxx00-Steam

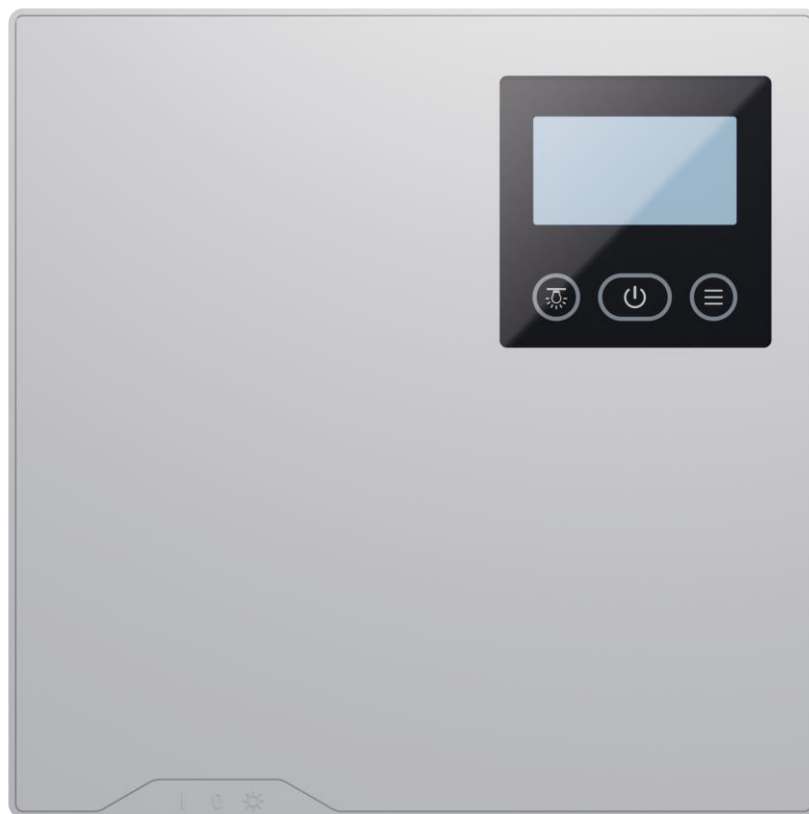
Installation instructions

Steam bath control

Series FNT2000*

Series FNT3000*

(* wall version only)



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Fasel GmbH Electronics
Germany

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1 Security

Important safety instructions

Read carefully and keep for future reference

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 Safety-related assembly and installation instructions



– DANGER!

- The control unit can be mounted directly on the outside of the cabin or at another location, but not inside the cabin
- In accordance with VDE, a pilot lamp displaying that the evaporator is switched on must be installed in the supervisor's room for public steam baths.

This lamp can be connected to the clamps  .

- The mains connection cable must be equipped with a fuse with a contact opening width corresponding to the conditions of overvoltage category III for full disconnection for disconnection from the mains.
- The main switch of the control unit must be freely accessible.
- The temperature sensor must be installed in such a way that it is not influenced by cold air flowing in from outside

1.3 Intended use

This control unit is intended exclusively for the operation and control of steam bath cabins with suitable steam generators. The functions and operating steps described in these instructions are deemed to be the intended use. The control is approved for domestic and commercial use. Any use of the control that goes beyond the described use or any other use can lead to dangerous situations and is therefore prohibited. The operator is liable for improper use.

Foreseeable misuse

Foreseeable misuse includes

- The control is used without knowledge or without observing the safety instructions.
- The plugs or cables of the control and sensor lines are connected incorrectly.
- The operating, maintenance and servicing specifications are not adhered to.
- Changes have been made to the controls.
- It is operated by persons with limited mental abilities or by children and without the necessary instruction.

The person responsible is solely liable for any changes made to the control and any resulting damage. Claims of any kind due to damage resulting from improper use are excluded. The operator alone is liable for all damage resulting from improper use.

1.4 Changes and conversions

Modifications and alterations to the steam bath control unit or the installation can lead to unforeseen dangers.

Written approval must be obtained from the manufacturer before making any technical modifications or extensions to the steam bath control unit.

1.5 Demands on technical personnel

The assembly, installation, commissioning as well as rectification of defects and repairs must be carried out by qualified persons only unless otherwise mentioned.

Inadequate Qualification



WARNING!

Danger of injury due to inadequate qualification

Improper handling can lead to significant personal injuries and material damage.

Therefore:

- The assembly, installation, commissioning as well as rectification of defects, maintenance and repairs must be carried out by qualified persons only unless otherwise mentioned.

■ **Technical personnel**

Due to their technical training, knowledge and experience as well as the knowledge of the relevant regulations these persons are in a position to carry out the tasks assigned to them and to identify possible dangers on their own. Also they are familiar in handling with ESD sensitive devices.

■ **Certified electricians**

Due to their technical training, knowledge and experience as well as the knowledge of the relevant standard specifications and regulations these experts are in a position to carry out jobs on the electrical unit and to identify possible dangers on their own. In Germany certified electricians have to fulfill the stipulations of the accident prevention regulation BGV A3 (e.g. master electrician). In other countries corresponding stipulations are applicable that have to be followed.

1.6 Operational safety and special dangers

Observe the safety instructions listed here and the warnings in the other sections of these instructions to reduce health hazards and avoid dangerous situations.

The following notes must be observed and complied with for your own safety and that of the system:

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 put them out of operation.

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.

2 Technical data

2.1 General Information

General Data		
Designation	FNT2000-Steam	FNT3000-Steam
Dimensions basic device (H x W x D)	250 x 250 x 49 mm	
Max. Distance Basic device to accessories with RJ-45 cable	100 m	
Voltage supply	230 V 1N ~ 50-60Hz	
Number of temperature sensors	1	1 (optional 2)
Seat sensor connectable	No	Yes
Timer	Yes	Yes
Light / Fan dimmable	No	Yes
Ambient condition		
Ambient temperature	0 to +40 °C With protective coating -20 °C to +40 °C	
Rel. Humidity	max. 80 % r. humidity, non-condensing	
Storage temperature	-10 °C to +60 °C	
Storage rel. humidity	max. 80 % r. humidity, non-condensing	
Insulation type	IPx4	

Table 1: Technical Data - General

2.2 Voltage and switching capacity - electrical load

Designation	Value
Nominal Voltage	230 V 1 N ~ 50-60Hz
Seat heating ¹⁾	230 V~ max. 2 kW (Inrush current max. 30A for 5ms)
PS1	230 V~ max. 60 W (Inrush current max. 30A for 5ms)
Enable Evaporator (Steam)	230 V~ max. 120 W (Inrush current max. 30A for 5ms)
Fan (supply air)	230 V~ max. 120 W (Inrush current max. 30A for 5ms)
Fan (exhaust air)	230 V~ max. 120 W (Inrush current max. 10A for 5ms)
Cabin light	230 V~ max. 120 W (Inrush current max. 10A for 5ms)
Cleaning light	230 V~ max. 120 W (Inrush current max. 10A for 5ms)

Table 2: Technical data – voltages and switching capacity consumer

1) Optional

2.3 Cables

Use of inappropriate cables – Electric potential



DANGER!

Danger to life due to electric potential

Use of inappropriate cables can lead to short circuits and subsequent fires.

Damage to the insulation can be dangerous to life.

Therefore:

All the cables, which lead to the sauna, must be designed for at least 150 °C.

When laying the cables in the ground, it is essential to use a cable approved for underground installation. Signal lines must be routed in a separate trench, not in the same trench as the 230 / 400V lines.

Use cables as per specifications in Table 2 and electrical circuit diagram (see annexure). The specified cross sections are designed for copper cables. In case of aluminum cables the cross sections should be appropriately increased.

The cross sections can increase due to the length of the cables, the type of cable laying or special regulations.

Designation		Type
Power supply cables	Type / Cross section / Number of leads	H07RN-FG2,5 (heavy rubber hose 2,5 mm ²) Power supply cables must be polychloroprene-coated and should not be lighter than heavy polychloroprene-coated flexible cables.
230 / 400V cables for supply to oven, evaporator, fan, light etc.	Type	Heat resistant, at least 150°C ambient temperature (= 180°C operating temperature)
Signal cables for sensors	Type	■ In case of longer distances: LiYCY (flexible, shielded cable) ■ Within the cabin: heat resistant, minimum 150°C ambient temperature ■ (= 180°C operating temperature)
Cross section Number of leads		→ See electrical circuit diagram.
Connecting cable Control device to operating element or interior display	The patch cable can be delivered with a standard length of 5 or 10m. If another length is desired then the cable must be configured by the electrician. Another option would be to bridge a stretch by installing two network sockets (CAT 5).	
Specification of the patch cable	■ Minimum CAT 5, minimum AWG26 ■ Plugs should have no rubber covering over the locking mechanism ■ Pin 1 to Pin 1 cable configuration (straight through)	
Conduit for patch cable	Min. M32 (inner diameter min. 24mm), smallest bending radius 30 cm	

Table 2: Technical data – cables

3 Goods receipt, Transport and Storage

3.1 Safety

Inappropriate Transport



ATTENTION!

Damage to the control due to inappropriate transport

The control is a highly sensitive electronic device. It can get damaged due to inappropriate transport.

Therefore:

- Remove the packing only just before starting the installation

3.2 Goods receipt

After receipt, the consignment should be immediately checked for any transport damages.

In case of damages, which are visible from outside, the following course of action should be taken:

- The consignment should not be accepted or accepted conditionally only.
- Note down the scope of damage on the transport documents or on the delivery note of the transporter.
- Initiate claim.



NOTE!

Claim damages as soon as they are identified. Claims for damages can be lodged only within the valid claim period.

3.3 Packing

The packaging should provide protection against transport damages to the individual components till the time of installation. Therefore remove the packaging only just before installation.

3.4 Storage

Store the control device under the following conditions:

- Do not store in open place, store in a dry dust free place.
- Avoid contact with any aggressive media.
- Protect against sunlight.
- Avoid mechanical shocks.
- Storage temperature: –10 to +60 °C
- Relative humidity: max. 80 %, non-condensing

4 Installation



ATTENTION!

Note ESD protection!

Do not touch on electrical parts because of ESD protection reasons. When assembling only touch the circuit board at the plastic case or at the edge of the board.

Also only touch the connection cable to the circuit board, on the connector. Thereby do not touch the contact surfaces.

Therefore:

- Take appropriate protections.
Touch a grounded piece of metal as a minimum protection.

4.1 Installation of sauna control unit

Installation

The sauna control device should be installed sideways, above and below at a distance of at least 5 cm from the walls or other equipment. There should be a distance of 10 cm between other electrical devices.

The control unit and control panel must not be exposed to direct sunlight or rain.

The sauna control device must be mounted on a closed surface (no grid structure) so that no electrical parts can be touched through the openings in the rear panel.

The control unit must be mounted so that it is at any time accessible! (e.g. for service, wear parts, fuses, etc.)

4.2 Mounting the temperature sensor



NOTE!

The temperature sensor must be installed in such a way that it is not influenced by incoming air.



NOTE!

The temperature values displayed on thermometers additionally installed in the cabin may deviate from the control unit display. This can have the following causes:

Depending on the cabin, temperature differences of up to 30 K can occur from floor to ceiling.

Pointer instruments are slower to react than the electronic measuring and display system used for control.

Installation location

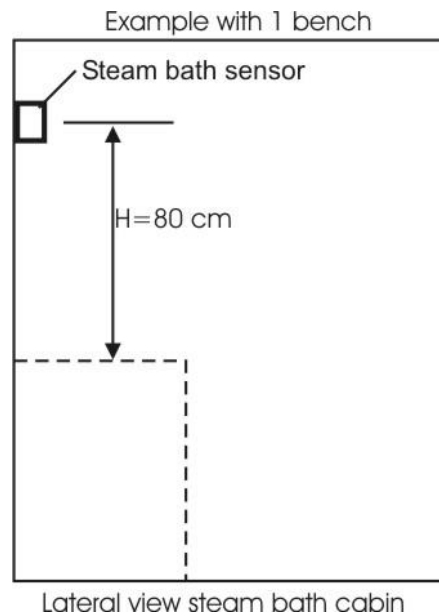


Fig.1 : Installation location Steam bath sensor

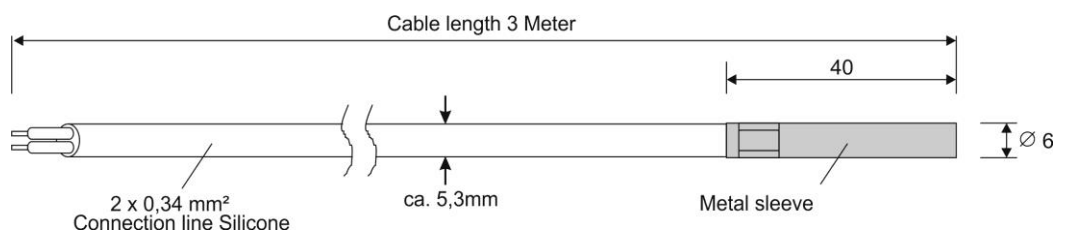
- **ATTENTION:** The installer of the system must take into account cabin-specific conditions, such as the position of the steam outlet, the supply and exhaust air, the door(s), the shape of the ceiling, etc. and then mount the sensor at the appropriate position for this cabin!

4.2.1 Temperature sensor

The following temperature sensor variants are available:

- Temperature rod sensor (FCU-SENSOR-BUSH-A)

Dimensions of rod sensor without STB



Note: When using the rod sensor, clamps 29 and 30 on the control unit must be bridged!

4.3 Electrical connection

4.4 Safety

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 re-starting. 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 put them out of operation.
- 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.

Electro-magnetic damage



ATTENTION!

Electro-magnetic interferences can lead to malfunctions of the control device and to destruction of the components!

The control device is permitted for operation at home and at commercial facilities. Operation under different electro-magnetic conditions can lead to damage or malfunctions.

Malfunctions due to electro-magnetic interferences are disturbances, which affect the device from outside.

Pay attention to the following points:

- Lay the signal cables separate from the power supply cables and cables to the electrical consumers.
- Electrical consumers like e.g. illuminants, pumps, relays and contactors, which are connected to the control device should not emit impermissibly high interferences. If you connect inductors like e.g. a magnet valve, relay, transformer, throttle or engine, the interferences of the consumers must be suppressed.

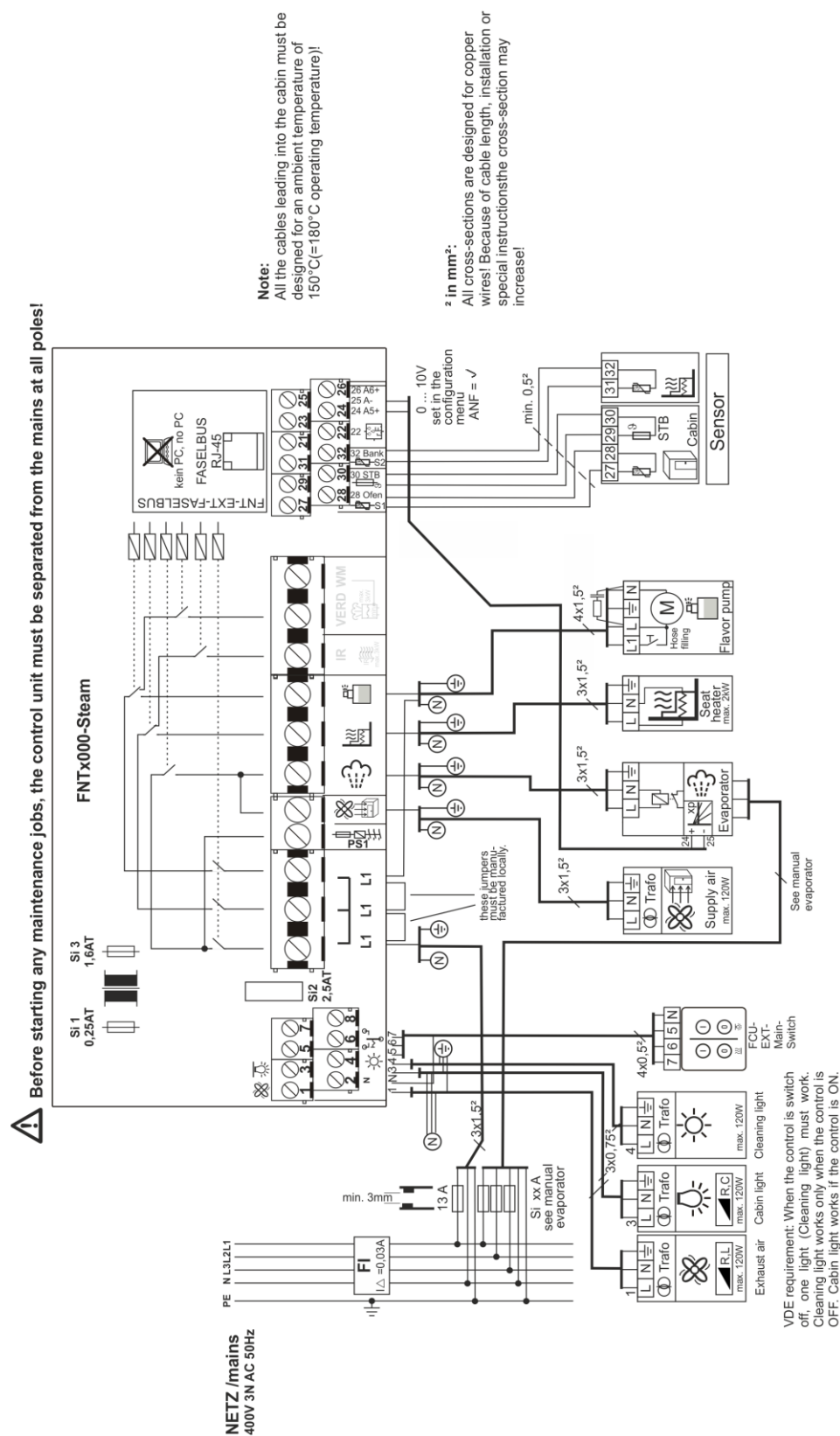
4.5 Connecting the control unit, consumption and sensors

1. Connect the power supply cable to the steam bath control unit according to the electrical connection diagram.
2. Connect consumptions such as seat heaters, fans, lights, etc. to the steam bath control unit according to the electrical connection diagram.
3. Connect the sensor to the steam bath control unit according to the connection diagram.
4. Connect the shield to PE according to the connection diagram. If there is a fault on PE, do not connect the shield.

→ Electrical connection diagram observe the following points:

- Observe the technical data for the mains supply cables, cables to the consumption devices and the signal cables. → See page 8 „
- Lay the cables so that they are not accessible to the cabin user. If this is not possible, the cables must be fitted with a strain relief.
- Connect all neutral conductors to busbar N.
- Connect all protective conductors to busbar PE.

4.6 Electrical connection diagram



Connection diagram for FNT-Steam wall mounting

Connection diagram for FNT-Steam wall mounting		 FASER Technical changes and errors
	created:	changed:
	Kanzinger	An_FNT-Wand.cdr file name: An-FNT-Steam-Wand_EN.pdf
		03.2025

4.7 Light and Fan

Light and fan



ATTENTION!

Light dimming:

At the dimmable outputs of light, only 230V consumer which are suitable for **phase cut off**, will be permitted.

Fan control:

At the dimmable outputs of fan, only 230V consumer which are suitable for **phase cut on**, will be permitted.

ATTENTION



DANGER!

Danger to life due to electric potential!

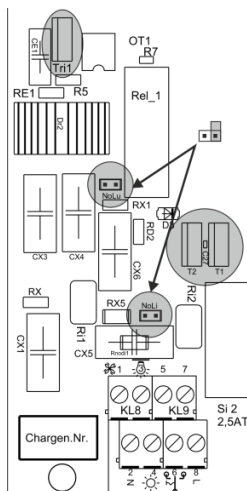
Before starting any maintenance jobs, the control unit must be separated from the mains at all poles!



ATTENTION!

Note ESD protection!

Do not touch on electrical parts because of ESD protection. Take appropriate protections. Touch a grounded piece of metal as a minimum protection.



You can deactivate the light and fan control using jumpers:

- NoLu: Fan control (Terminal 1) activated.
- NoLu: Fan control deactivated, only On/Off.
- NoLi: Dimming of light (Terminal 3) activated.
- NoLi: Dimming of light deactivated, only On/Off.

The jumpers are located only on one side of the pins (as in the picture above) or they are in the by-pack kit of the control unit.

Deactivate user menus for dimming with dip switches:



- DIP 4=ON, Menu for Fan control deactivated.
- DIP 5=ON, Menu for Light dimming deactivated.

If the light dimming no longer works due to a defect in the lamp, the FET T1, T2 and possibly the fuse Si2 have been destroyed. When replacing the FET, place the new component back on the base in the correct position (note the metal flag). Make sure that all connections are correctly inserted into the base and press in carefully.

If the fan control has been destroyed due to a defect, the same applies to triac "Tri1".

4.8 Check the electrical connection

After the electrical connection of the sauna control unit and the sensors, the following points must be checked:

- Does the power supply match the information on the rating plate?
- Have the cable specifications according to page 8 and the electrical connection diagram been complied with?
- Is the control unit connected according to the wiring diagram?
- Are the sensors connected according to the connection diagram?

5 Commissioning

5.1 Safety and notes

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 re-starting. 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 put them out of operation.
- 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 lead to serious injuries.

Therefore:

- Read and observe the operating manual.

Risk of scalding



WARNING
Risk of injury due to scalding!

Objects on the steam inlet or in the immediate vicinity of the evaporator can cause scalding and thus lead to injuries.

Therefore:

- Always keep the vapor inlet and the area around the evaporator free of objects.

Healthy damages



WARNING!
Risk of injury from covering the temperature sensor!

Covering the cabin sensor can lead to increased temperatures. This increased value can lead to damage to health or serious injury.

Therefore:

- Do not cover the cabin sensor.
- Free air circulation must be ensured.

accessories



WARNING!
Danger due to incorrectly connected devices!

Devices and accessories from other manufacturers may be connected to this control system if the technical data . These devices have their own operating instructions.

Observe the safety information, technical data and instructions in the operating instructions for connected devices.

5.2 Checks before initial commissioning

The following points must be checked before initial commissioning:

- Does the power supply match the information on the rating plate?
- Have the cable specifications in accordance with **Table 2** , page 8 and the electrical connection diagram been complied with?
- Is the control unit connected according to the wiring diagram?
- Are the sensors connected according to the connection diagram?
- Have all neutral conductors been connected to the N busbar in the sauna control unit?
- Have all protective conductors been connected to the PE busbar in the sauna control unit?
- Are all screws tightened correctly?

5.3 Switching the steam bath control on and off

Read and follow the operating manual and safety instructions carefully before switching on.

→ See the operating manual for the steam bath control unit.

5.4 Function test of the sauna control unit and consumption

- Check the safety cut-out. To do this, break the STB circuit directly at the steam bath sensor while the steam bath is running. The heating system must switch off automatically. A corresponding message appears on the display.
- Check the steam bath sensor temperature. To do this, break or bridge the steam bath sensor circuit directly at the steam bath sensor while the steam bath is running. The heating system must switch off automatically. A corresponding message appears on the display.
- For the existing "steam bath" bath modes, the seat heater and the fragrance pump, check that phase L1 is connected through to the corresponding clamps (see wiring diagram).
- Check consumptions such as cabin light, cleaning light and fan. It must be possible to switch the consumption on and off using the corresponding operating buttons on the steam bath control unit or the control panel.
- Check the direction of rotation of the fan.
- Check the function of the consumption connected to the optional inputs and outputs.

5.5 Function test of the sensors



NOTE!

- If the sensor or sensors are not connected correctly, a signal sounds and an error message appears on the display. → See also the operating manual

- Check the display of the measured temperature value. If necessary, compare the display with a reference temperature measuring device. After approx. 10 minutes of operating the heating system, the temperature display must rise noticeably.

6 General Information

6.1 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.

6.2 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.

6.3 Scope of delivery

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

6.4 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.

6.5 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..

Address of the installer or dealer of the sauna system: