

Premium-Saunaheater standing model
„THERMOS“ TM48(S) | „THERMOS-vapo“ TM48-V(S)
Basic and “Superior”-finish



Installation and Operating Instruction en

Dear customer,
with this product you have acquired a high-quality technical device „Made in Germany“.
These installation and operating instructions have been prepared for your information.
Pay special attention to the „Important notes“.
We wish you relaxed and refreshing sauna bathing.

Content

○ Intended use	3
○ General notes	3
○ Other notes	3
○ Important notes	3 + 4
- Saunaheater with integrated vaporizer	4
○ Maintenance	4
- Saunaheater – Sauna stones	
- Cleaning/Descaling of the vaporizer tank	
○ Mounting of Saunaheater	5
○ Electrical connection	6
○ Technical Data	7
- Dimensions, Heating-capacities, Stone filling, Cabin sizes	
- Electrical fuses, Cable cross-sections	
- Connection example of a properly sauna system	
○ Finnish Sauna bath	8
○ Bathing operation with vaporizer	8

Intended use

This sauna heater is only intended for the heating of sauna cabins in combination with an appropriate control unit. Any other use over and above the intended purpose is not considered as appropriate use!

Intended use also includes compliance with these installation and operating instructions.

For deviating, unauthorized changes and resulting damage the manufacturer is not liable!

The risk is borne solely by the polluter.

General Note:

During the first heating up, slight odors may occur from the production processes and the sauna stones. After this process, ventilate your sauna cabin before starting the sauna bath.

Other Notes

Oven noise

The heating elements and metal parts of the sauna heater may cause noise due to the expansion of the material during heating and cooling.

Occasional bangs can sometimes be caused by stones cracking due to the heat.

Saunaheater – Outer casings:

The sauna heater outer casing of our heaters are made of high-quality chrome steel in bare version with protective foil (-Remove foil before using!-) or made of special steel with enamel glaze. On the casing parts in chrome steel with protective foil strip-like residues may remain on the casing part in the production-related partial removal of the foil.

These residues can be removed by a solvent-soaked cotton cloth.

For the outer casings with enamel glaze applies:

Enamel is an industrially processed natural product, which can exhibit color changes and pigmentations in final production. But these do not represent a defect of quality.

Care: The outer casings and stainless steel parts can be cared with common household cleaners, harder buildup (eg. limescale, infusion residues, etc.) can be removed by customary commercial special or stainless steel cleaner.



Recycling

Devices that will not be used any longer have to be handed in a recycling station according to regulation 2012/19/EU.

→ Do not dispose with the normal household waste.



Important notes



Incorrect installation may cause the danger of fire! Please read these installation and operating instructions carefully. Please pay especially attention to the dimensions and the following notes.

- The device is not intended to be used by persons with limited physical, sensory or mental capabilities or for lack of experience and / or lack of knowledge unless they are supervised or advised by a person responsible for your safety to use it.
Children must always be supervised.

- The interior of the sauna cabin must be made of suitable low-resin, untreated material (eg. Nordic spruce).

- In principle, it should be noted that the sauna heater may not be placed on a floor made of combustible material (wood, plastic, etc.).

Appropriate floor coverings are ceramic tiles or similar.

- For controlling the sauna heater a suitable control unit should be used.

The control unit should be mounted on the outer wall of the cabin or another suitable place, the corresponding sensors according to the installation instructions of the control units inside the sauna cabin.

- Only one sauna heating device in the sauna room may be used! If a sauna heating device consists of more than one sauna heater, these must be designed so that the heaters can be monitored by common control and / or regulating devices and protective devices.

- The cabin/sauna lamp must be in the version "splash-proof" used, and is mounted opposite to the sauna heater in the temperature range up to 100°C.

- The sauna heater is not intended for installation or set-up in a niche, under a bench or under a sloping roof.

- The minimum recommended height inside of the sauna cabin is $\geq 1,98$ meter.



Every time before the sauna is used, the sauna room has to be visited, in particular for flammable lay-on or covers above or next to the sauna heater! (eg. towels)



Caution! Covering the sauna heater or incorrectly filled stone container causes a fire hazard!

- Do not operate the sauna heater without stone filling!

- Suitable sauna stones are granites and diabase. Stones made of porous ceramics or soft soapstone are not be used.

- Do not operate the sauna heater with the air intake closed!

- For sauna infusion water there has to be use only water that meets the characteristics of a normal household water (Tap- and rainwater).
- In the infusion water only special aromas designed for sauna water and this purpose may be used.
- The use of humus-, chlorine- or saline-containing essences (eg. sea water, brine solutions) is prohibited!
- Never add more infusion essences to the water than stated. (See manufacturer's instructions).
- The sauna trowel should have a capacity no larger than about 0,2 litres. Only give that many trowels/water on the sauna stones which can be evaporated. Do not pour large quantities of water at once on it.
→ **Danger of scalding!**



Caution! Never pour alcohol or undiluted concentrates on the sauna stones!
→ **Risk of fire!**



Attention! Always pour the infusion water only over the sauna stones and never anywhere else.



Warning! The sauna heater has hot casing surfaces during operation! Do not touch the heater during operation! → **Risk of burns!**

Saunaheaters with integrated vaporizer

For the vaporizer aroma mixtures can be used in liquid, dry or tea bag form. Liquid aroma essences enter into the Aroma-mug. Aroma bags put on the Aroma-tray. Dry fragrance mixtures are to be given on a cloth or in the separate accessory „Herb inlay with fine sieve“.

- Never add essences or herbs directly to the water in the vaporizer tank, they can overflow. Put essences only in the bowls provided.

Once additives have been added to the water, this can lead to a foaming overcooking of the water. In this case, the water must be drained and the cold vaporizer tank inside washed with a cloth soaked in alcohol or spirit.

- After the end of the bathing operation and cooling, the vaporizer tank should be emptied and rinsed out.



Caution!
→ **Scalding danger on the steam outlet.**

- Add essences and herbs only when cold!
- Never fill water on the hot heating element!
In addition to the risk of scalding, this can also damage the heating element.

Maintenance

The sauna infusion-stone is a natural product. Due to the high temperatures and large temperature changes, the sauna stones getting brittle and crumbling. The sauna stones in the heater must be therefore checked regular for wear (porosity and decay), at least once a year, in commercial use, perhaps more often, as needed.

With appropriate wear, the sauna stones must be renewed, and the oven cleaned and vacuumed.

Sauna stones < 5cm size has to be removed!

Always make sure that the openings and radiating plates in the intake area are free. These can easily become clogged with fuzz and dust by the intake of fresh air.

This restricts the air convection of the sauna heater and may cause excessive temperatures.

→ **Caution: Danger of fire!**

On this occasion, please check always by an specialist, the sauna heating elements, as well as the wiring and the terminals.



Caution! >> Before starting any maintenance, the sauna heater must always be disconnected from the mains by the specialist! <<

Cleaning and Descaling of the vaporizer tank

Depending on the lime content and hardness of the water, the vaporizer tank must be cleaned or decalcified. Consult your water company for the degree of hardness of your water.

In the hardness range No. I, the device usually works trouble-free and only needs to be descaled if necessary. If your water is in the hardness ranges No. II – IV, the vaporizer tank must be descaled from time to time.

However, to prevent a strong lime approach in the tank and on the heating element, we generally recommend a decalcification after 5 to 6 times use.

For commercial use **at least once a week!**

This procedure also causes a much higher durability of the heating element.

For cleaning, add decalcifier for household appliances or simple vinegar essence according to the manufacturer's instructions to the water in the vaporizer tank.

Let the water descaler mixture or the vinegar essence boil for about 10 minutes and cooling.

Then drain the mixture and rinse several times with clear water. Please observe the information of the respective descaler manufacturer.

Attention! Do not use a descaling agent based on sulfamic acid, otherwise the warranty will be voided.

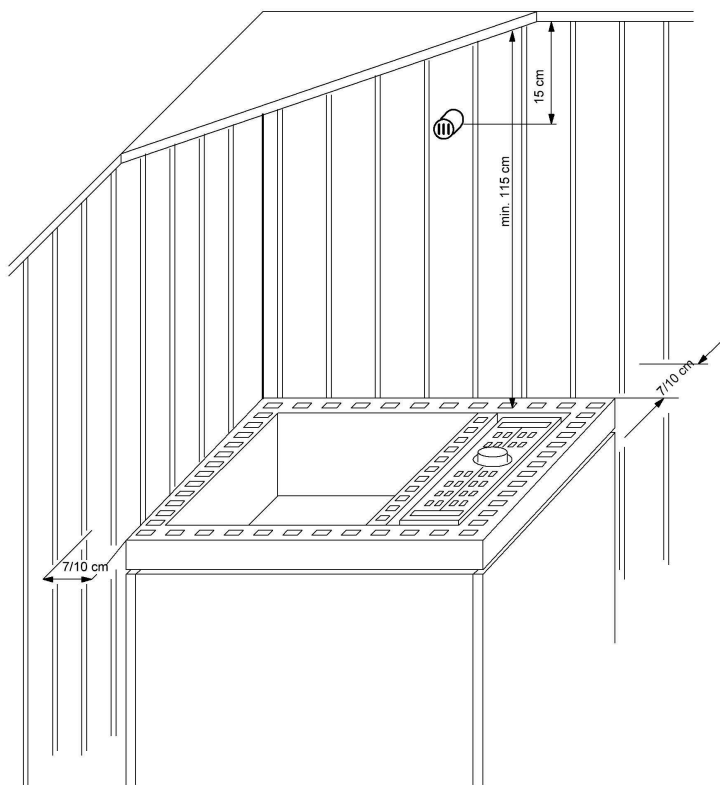
If necessary, we recommend concluding a maintenance contract with your sauna manufacturer or specialist dealer.

Only use the infusion concentrates recommended by your sauna manufacturer / specialist dealer.

Original spare parts, premium sauna infusion concentrates and sauna stones are available from your dealer.

Attention! If cleaning any sharp-edged components, self-protection action must be taken.

Mounting of Saunaheater



Unbox the Saunaheater and remove any protective foil still on the heater.

Place the Saunaheater in front of the air intake opening.

The minimum distance between the Saunaheater and the cabin wall is 7 cm - up to 10.5 kW and 10 cm – from 12 kW heating power.

The distance to other combustible parts (eg. Protection grilles) as well as other enclosures or walls is also 7 cm - up to 10.5 kW and 10 cm - from 12 kW heating power.

Standing models are to be secured on site against tipping and slipping.

The protective grid height must be equal to the foremost height of the heater.

The minimum distance from the upper edge of the Saunaheater to the cabin ceiling is 115 cm !

The stone basket of the sauna heater must be filled with stones.

Clean the sauna stones before (brush off, wash off) and dry. Place the stones in a loose arrangement in the stone basket, so that a convection air flow of the heater remains guaranteed.

Insert the bigger stones first, and then the little stones. Do not stack the stones into a tall pile.

The vaporizer tank must be filled with water up to the marking / notch (= maximum level) on the inside of the tank!

The vaporizer heating element is with an integrated dry-running protection (= temperature limiter) and a warning buzzer equipped. This automatically switches off the heating element in the vaporizer when it is no longer covered with water and the warning buzzer sounds. After new filling of the tank the bathing operation can be continued.

→ Please pay particular attention to the last page of this instruction.

The safety temperature limiter is installed on the sauna wall above the middle of the sauna heater and approx. 15 cm below the cabin ceiling! (see Fig. / and description of the ECU manufacturer.)

Make electrical connection to the control unit!



Caution! The sauna heater, when used with remote control *, may only be operated in conjunction with a suitable protective cover.

**Remote control* = means settings, switching, control and adjustment of the sauna control unit by means of commands transmitted from a remote location beyond sight distance using telecommunication, wire- or wireless signal transmission systems, network and similar systems.

In each sauna cabin must be provided with air intake and exhaust air openings.

The air intake openings should always be placed behind the Saunaheater and about 5 - 10 cm above the floor.

The exhaust air vents are always diagonally placed to the Saunaheater in the lower area of the sauna wall.

The minimum dimensions of the air intake and exhaust air vents can be found in the beside table.

The air intake and exhaust air vents must not be closed.

Please observe also the sauna cabin supplier's instructions.

Heating-Power	Minimum dimensions of air intake + exhaust air vents
6,0 kW	35 x 4 cm*
7,5 kW	35 x 5 cm*
9,0 kW	38 x 6 cm*
10,5 kW	45 x 6 cm*
12,0 kW	45 x 7 cm*
15,0 kW	45 x 9 cm*
* or as specified by the cabin manufacturer	



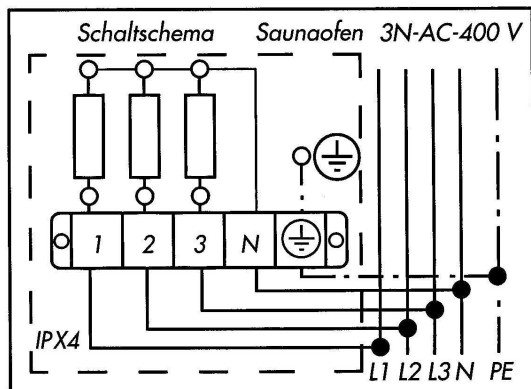
Electrical connection

The sauna equipment (heater, control unit, lighting, etc.) with a fixed mains power connection, may be installed only by a certified electrician, taking into account the applicable regulations, protective rules, and according to the installation instruction of the sauna heater and control unit manufacturer!

Only certified control units may be used to connect the sauna heater.

The heating capacity of the sauna heater and the switching capacity of the control unit and power extension unit has to be matched up.

Attention ! Several circuits !



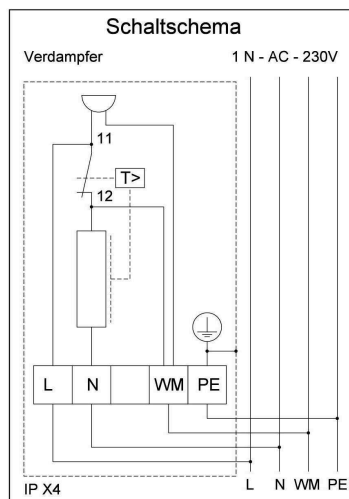
The connection diagram for the room heating section of the sauna heater is attached at the inside of the oven back panel and corresponds to the illustration beside.

Before connecting the sauna heater, check the wiring of the single heating elements and the connection terminal for their strength! (If necessary tighten the screws.)

The connection wiring for the sauna heater and all electrical installation lines inside the cabin must be silicon wires suitable for a temperature at least 170°C.

Cable type: N2GMH 2G-J


Cross-sections: according to heating capacity → see table



The connection diagram for the vaporizer section of the sauna heater corresponds to the illustration beside.

Clamp L = Phase (black)

Clamp N = Neutral (blue)

Clamp  = PE = Ground (yellow-green)

Clamp WM = Water shortage protector (brown)

Attention! → The clamp (WM) may only be connected to control units with water lack alarm (230 V) !

The signal (WM) takes place as a opener circuit.

This setting must be take over to the Control-unit.

OPTIONAL: Connection WITHOUT WM-conductor on control unit.

If no WM connection is obtained only the control unit get no signal.

The safety functions (dry protection + warning buzzer) on the heater itself remain in function.

CAUTION! Always connect the neutral (N) conductors!

Comments:

When installing sauna heaters, the norm **DIN VDE 0100 part 703** must be observed or the corresponding national norms and legal requirements. The norm makes among others the following statement; Quotation:

„The additional protection must be planned for all electric circuits of the Sauna by one or more fault current protection device (RCDs) with a calculation difference stream not more largely than 30 mA, excluded of it is Sauna heating.“

If the appliance is equipped with a protective device for leakage current (ELCB), please pay attention to the fact that no other electrical units will be protected by this ELCB.

According to the current state of technic, it does not make sense to use steam-tight heating elements for sauna heaters. It may happen that the magnesium-oxide filling of the heating elements pulls some moisture out of the ambient air through the steam-diffused silicone seal, which can in some cases leads to the tripping of the ELCB. This is a physical process and not a manufacturer's mistake.

In this case, the sauna heater must be heated by a specialist under supervision, bypassing the function of the ELCB (by unconnected Ground). After approx. 10 minutes heating the moisture has escaped from the heating elements and the ELCB (by reconnected Ground) can be included in the circuit again!

If the sauna heater has not been used for a long time, we recommend heating it up every 6 weeks so that the heating elements can not accumulate with moisture.

If the ELCB triggers during commissioning, the electrical installation must be checked again.

The electrical installer is responsible for the proper connection of the electrical sauna devices and therefore the liability by the manufacturer is excluded.

Technical Data

Type	Dimensions W x D x H (in cm)	Rated power		Stone filling
		Heating capacities 400V 3N AC	Vaporizer 230V 1N AC	
TM48	48 x 38 x 82	6,0 to 15,0 kW	/	ca. 35 kg
TM48-V	48 x 38 x 82	6,0 to 12,0 kW	1,5 kW	ca. 25 kg

-All Saunaheaters are splash-water protected.-

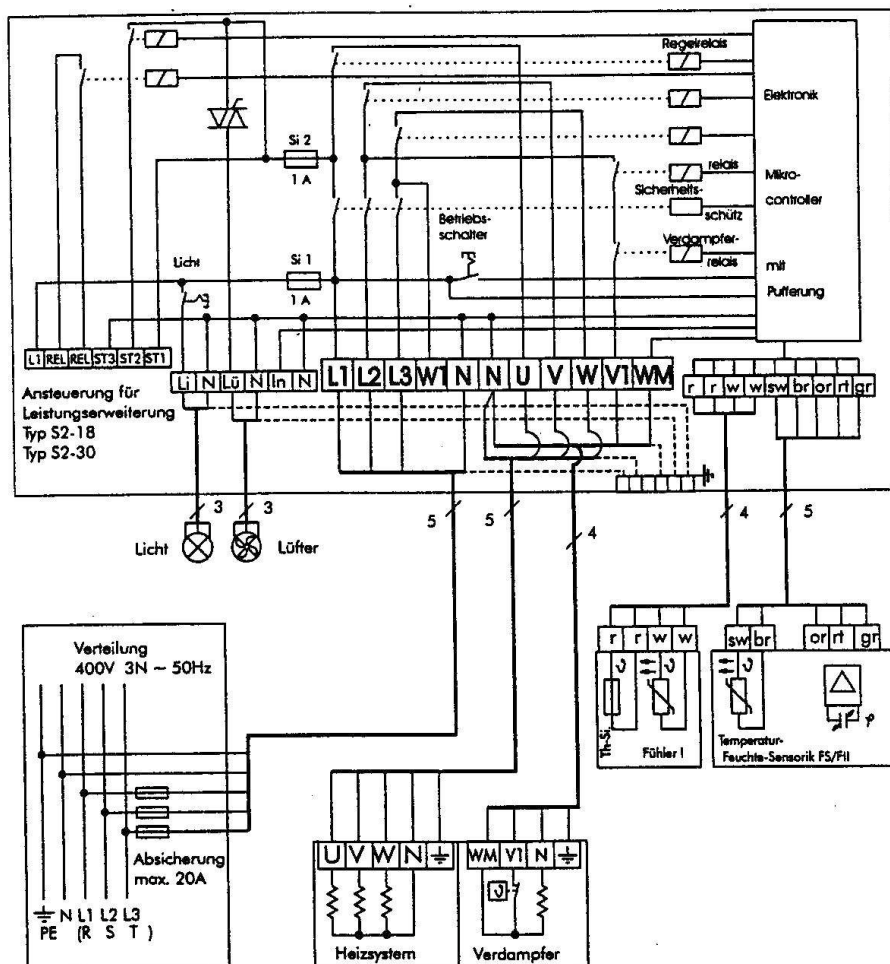
Recommended room size of the sauna cabin according to the table. (Basic = RAL-Guideline for sauna cabins in buildings)

Heating-power kW	6,0	7,5	9,0	10,5	12,0	15,0
Suitable for Sauna cabins m³	5 – 9	7 – 12	9 – 14	10 – 16	12 – 18	15 – 24

Electrical fuses and Cable cross-sections – Saunaheater:

Heater-Type	Heating-power	Fuses Heater One Circuit	Connection cable Heater in mm²	Fuses Heater Two Circuit	Connection cable Heater in mm²	Vapor. 1,5 kW 230V 1N AC			
TM48	till 9,0 kW	3 x 16 A	5 x 2,5 mm²	1.) <u>Circuit</u> till 9 kW = 3x16A 2.) <u>Circuit</u> till 9 kW = 3x16A	1.) 5 x 2,5 + 2.) 5 x 2,5	<u>Electr. Fuse</u> 1 x 16 A <u>Connection cable in mm²</u> 4 x 1,5			
	10,5 kW	3 x 25 A	5 x 4 mm²						
	12,0 kW								
	15,0 kW								
TM48-V	till 9,0 kW	3 x 16 A	5 x 2,5 mm²						
	10,5 kW	3 x 25 A	5 x 4 mm²						
	12,0 kW								

Connection example of a properly sauna system:



If the system is operated with a control unit without lack of water, the Terminal "WM" in control unit unused!

Also by connection without WM-conductor on control unit will the safety functions (dry protection + warning buzzer) on the heater itself remain in function.

Finnish sauna bath

The classic sauna bath:
Temperature 80 – 95°C
Humidity 4 – 10%

The sauna heater is operated with a separate control unit.
Follow the instructions of the manufacturer.

Set the desired Sauna temperature on the control unit.

In the Sauna bath, the vaporizer (if present) is not in operation.



Make sure that on the vaporizer (if present) are no herbs or essences lay on. These can inflame due to overheating.
→ **Danger of fire!**

When infusing the sauna water you should not pour the water from the trowel over the stones too quickly, so that the water evaporates completely and the full infusion effect is reached.

Make sure that only special essences or infusion are used for sauna infusion and added to the infusion water according to the manufacturer's instructions.



Attention! Always pour the infusion water only over the sauna stones and never anywhere else.

→ Further „Important notes“ can be found on page 3 and 4 of this instruction.

Bathing operation with vaporizer

Several bathing-forms possible.

Humidity bath:	Temperature 40 – 60°C Humidity 30 – 50%
Herbal bath:	Temperature 35 – 50°C Humidity 40 – 55%

The vaporizer and the temperature is regulated via the control unit. Either you receive a humidity value, which is controlled by a nominal/actual comparison on the humidity sensor, or determined by a time pulse.

Select the humidity mode with vaporizer on the control unit. The temperature range is here limited to a maximum value (eg. 65°C).

Make settings for temperature and humidity.
(See description of control unit manufacturer).

Bear in mind that due to the different temperature distribution in the cabin, the relative humidity values can differate very much. The display on the cabin hygrometer and the display on the Control unit can therefore be very different.

Before starting the vaporizer into operation, fill the tank with water up to the mark / notch (= maximum level) on the inside of the tank.

Depending on the size of the sauna cabin, this amount is sufficient for a two to three hour humidity bath.

The vaporizer heating element is equipped with a dry-running protection (= temperature limiter).

This automatically switches off the heating in the vaporizer when it is no longer covered with water.

If fresh water is not added to the vaporizer tank in time, the heating element will switch off and a warning buzzer will sound. At the same time, with WM conductor connected, "Fill" (or similar) is shown on the control unit display.

Switch off the operating switch on the control unit or change from operating mode "Climate" to "Sauna".

Let the vaporizer heater cooling before adding fresh water.



Caution! Never fill water on the hot heating element!
→ **Scalding risk!**

In addition to the risk of scalding, this can also damage the heating element.

After cooling, an automatic "reset" on the dry-running thermostat of the heater and after re-activation of the "Climate" operation the vaporizer is ready for use again. The bath can now be continued.

After the end of bathing, the vaporizer tank must be emptied and rinsed out.

→ Further „Important notes“ can be found on page 3 and 4 of this instruction.

→ For „Cleaning and Descaling the Vaporizer Tank“ refer to „Maintenance“ on page 4 of this instruction.

**In the event of deviation or disregard of our installation and operating instructions and any damage attributable to it, any liability is excluded and our guarantee obligation expires.
Please always observe the operating and installation instructions of the sauna control unit manufacturer.**