

# Installation- and Operating Instructions

**nsf** SAUNA *exclusiv* 9kW

CE

## Sauna control 400V

Art.Nr. 3112600003

### Function:

The electronic control unit Sauna-exclusiv consists of a power component and of a flat control panel intended for surface mounting. In the power component there are all connections for the power supply connections, the sauna heater, the ventilator, the cabin lighting, the sensor and for the control panel. The power component controls the temperature in the sauna cabin within the range of 70°C to 110°C. For safety reasons the maximum temperature in the cabin is limited to 139°C by an additional temperature fuse. The built-in counter timer enables an automatic switching on of the heating to an adjustable point of time for a heating period of max. 6 hours. The heater, the cabin lighting and the ventilator may be switched on- and off on the control panel. The temperature selection as well as the setting of the counter timer are also operated on the control panel. Any operational information is displayed on the display of the control panel.

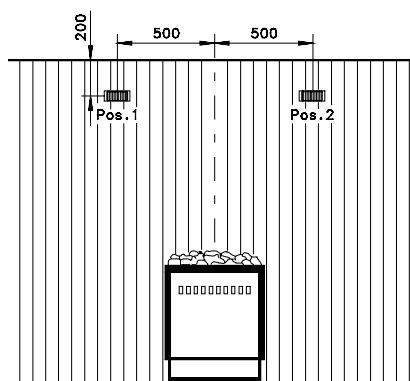
### Technical Specification:

Dimensions:	Power component:	220x218x108mm <sup>3</sup>
	Control unit:	194x157x23mm <sup>3</sup>
Operating voltage:	3N AC 400V	
Control power draw:	ca. 6VA	
Breaking capacity:	9kW (AC1)	
Control range:	70-110°C	
Temperature limit:	139°C	
Protection type:	IP 44 (splash-proof)	
Ambient temperature:	0-40°C	

### Fitting:

According to their protection type both the control unit and the operating unit are to be fitted **outside** the sauna cabin to be protected against damp. The operating panel must be fixed near the sauna cabin door.

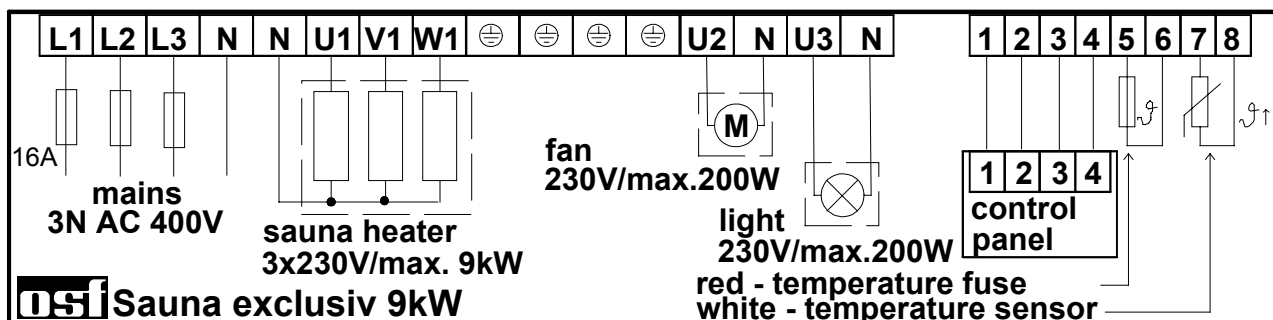
According to the accompanying drawing the temperature sensor should be side-mounted to the heater near the cabin ceiling. The side clearance to the middle of the heater should be around 500mm. The clearance to the ceiling should not exceed 200mm. You should avoid placing the sensor near the exhaust opening or the door as well as near the cabin corner.



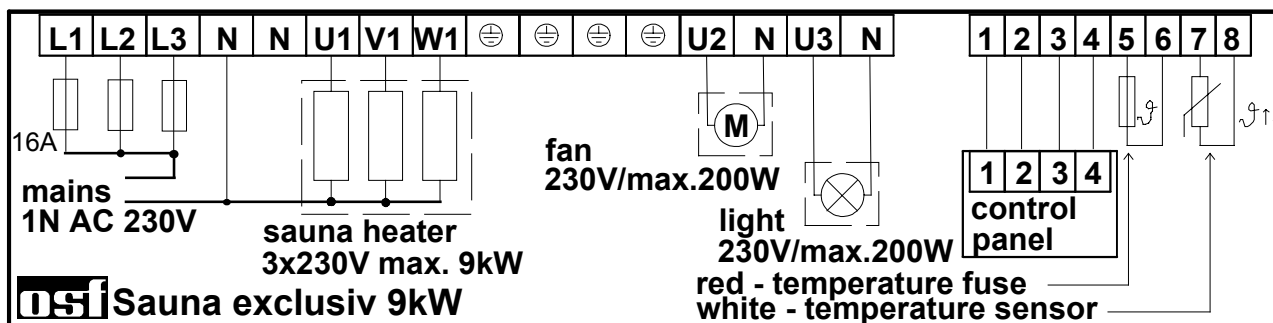
The power supply of the device has to be carried out by an universal-pole main switch having a contact opening width of at least 3mm. **Before opening the casing it is absolutely necessary to discharge the device from voltage.**

### Electric connection:

The electric connection as well as all adjusting and service operations may only be carried out by an approved electrical expert! The enclosed connection plans and the current safety regulations in force are to be followed.



Should only one monopolar 230V mains supply be available, then the mains supply is to be carried out according to the following connection diagram:



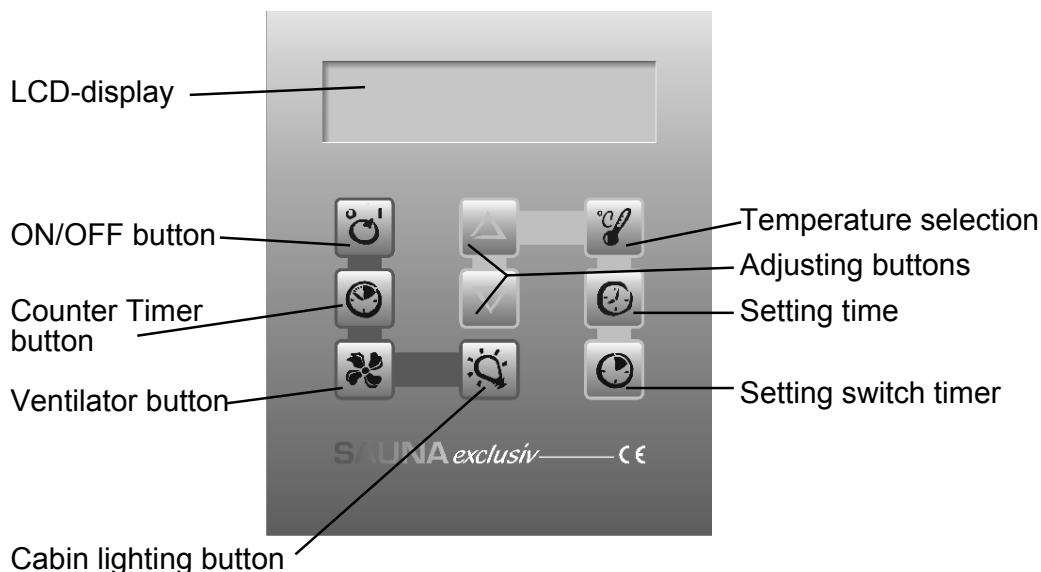
To ensure a smooth distribution of the load among the three switching contacts in the control device, the U1, V1 and W1 connector must **not** be bridged in the control device. The outer conductors are to lead separately to the heating coils. Please note that with a monopolar feeding the zero conductor of the heating will carry the treble amount of current of the outer conductors. **This current must not be fed to the circuit board via the clamps.** The zero conductor of the heating has to be externally connected to the zero conductor of the circuit feeding!

The electronic control is fused on the circuit board by a 0.16A fine fuse. In the control device the connected consumers are not protected against short-circuit. The short-circuit protection has to be ensured by suitable constructional fuses (max. 16A).

The power component is connected with the control panel by a four-conductor telephone line (osf-Art.Nr. 3100000500). The maximum length of the line is 30m.

Lines within the sauna cabin are to be heat resistantly equipped.

## Operational controls on the control panel:



### LCD-Display

16:10

If the control is switched off, then only the current time is displayed.

16:10  
Power failure

If the power supply has been interrupted, this is indicated on the display. The display will disappear on pressing any button.

16:10  
Start in: 22:35h

The counter timer has been activated. Referring to the current time the remaining time up to finally switching on the equipment is displayed.

82,3°C 16:45  
Sauna time 2:35h

The sauna control is in operation. Time, temperature in the cabin and the remaining operational time are displayed.

18:32  
Sensor defect

The temperature sensor in the sauna cabin is defect or the line to the temperature sensor has been interrupted or short-circuited. After the error has been handled this message may be deleted by pressing any button.

144,8°C 12:55  
Temp. fuse


The temperature in the sauna cabin has exceeded 139°C. This could have triggered the temperature safety fuse in the sensor casing. After the cabin has been cooled down this message may be deleted by pressing any button.

98,3°C 21:03  
Unit overheated

The temperature in the power component casing is too high. After cooling down the control, this message may be deleted by pressing any button.


### ON/OFF button



By using the  button the sauna may manually be switched on and –off. Attention! By this the control is not discharged with tension! If the sauna is switched on this button is on.


## Activating counter timer



By using the  button the counter timer can be activated after a prior programming of the switching time and the operating time (see below). This counter timer switches on the sauna at the programmed time. If the counter timer has been activated, this button is on.


## Switching on ventilator



By using the  button the ventilator in the sauna cabin can be switched on. If the ventilator is switched on, this button is on.


## Switching on cabin lighting



By using the  button the lighting in the sauna cabin may be switched on. If the lighting is switched on, this button is on.




## Selecting temperature



With the  button the temperature in the sauna cabin can be selected.

Press the  button ⇒ the display will indicate

78,5°C <----  
Saunatemperature





1. With the  and  buttons you can now adjust the desired temperature within a range of 70°C to 110°C.
2. To store the desired temperature, please press the  button again.

If you do not press any button for more than 10 seconds during the temperature setting, the last selected temperature is automatically stored and the normal operating display will appear again.

## Setting time



With the  button the current time is set.

1. Press the  button ⇒ the display will indicate.
2. Now the time can be set by pressing the  and  buttons
3. To store the time please press the  button again.


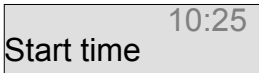






Time 14:44


If you do not press any button for more than 10 seconds during the setting process, then the last displayed time is automatically stored and the normal operating display will appear again.

## Setting counter timer



The  button serves the programming of the built-in counter timer.

1. Press the  button  $\Rightarrow$  the display will indicate  .
2. By pressing the  and  buttons the desired turn-on time may be set.
3. Press the  again  $\Rightarrow$  the display will indicate  .
4. By pressing the  and  buttons the desired operation period may now be set. The counter timer can only be activated (see above) after programming an operation period.

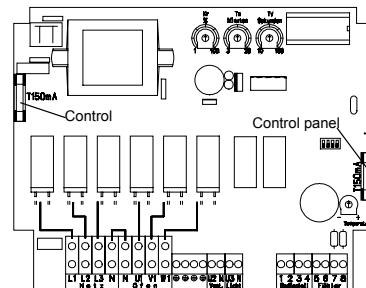
To store the switching times, press the  button again. If you do not press any button for more than 10 seconds during the setting process, then the last displayed switching time is automatically stored and the normal operating display will appear again.

## Check list for probable malfunctions:

Any system components are factory-checked for their functions. Should any disturbances occur even though, the following items should be checked, provided the proper installation in any case, and whereas the connecting lines – soundly operated- need to be fixed properly in the supply terminals.

- 1.) Does the line voltage fit tightly between the supply terminals L1, L2, L3 and N ?
- 2.) Has the temperature sensing system been fitted according to the fitting instructions?
- 3.) In case of a malfunction of the control panel:

Keep the control at the constructional main switch without voltage and check the fine-wire fuse for the control electronic and the control panel. These are situated inside the power component on the circuit board.



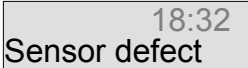
- 4.) If the heating does not work:
  - 4.1. In case of overheating the sauna cabin the thermal electric fuse which is situated in the sensor casing in the cabin, will switch off the heating. After cooling down it is not automatically switched on and the sensing system has to be changed.

Checking the temperature fuses:

- Disconnect from the clamps 5 and 6 located at the power component, both cable conductors of the red line.
- Measure the temperature fuse by using either a resistance meter or a circuit continuity tester.

A defect temperature fuse does not show any conduction.

- 4.2. For safety reasons the heating is automatically switched off in the following cases: the temperature sensor is defect, there has been an interruption or the sensing line

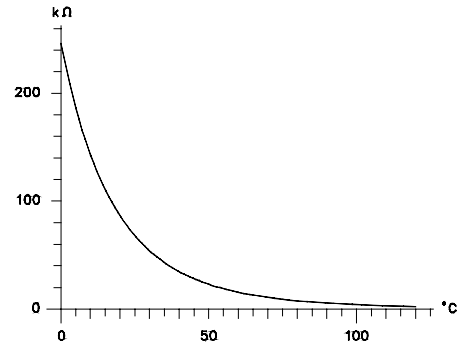


shows a short-circuit.

Checking the temperature sensor:

- Disconnect both cable conductors of the white line from the clamps 7 and 8 located at the the control device.
- Measure the temperature sensor with a resistance meter.

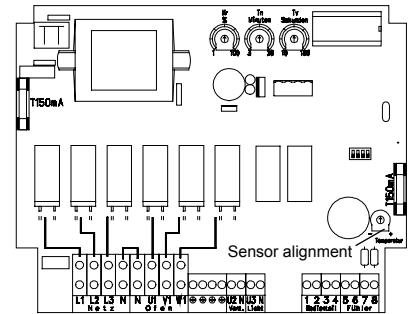
At room temperature an intact temperature sensor shows an electric resistance of approx. 68kOhm (see accompanying coordinate).



5.) Should the set temperature not be reached with a properly working temperature control:

5.1. The temperature sensing system has to be installed according to fitting instructions. Should the sensor have been placed in the warm air flow above the heater, it needs to be moved sideways as far as the rising warm air cannot cause an early switching off of the heater.

5.2. Should the sauna heater be switched off with soundly installed sensing system, this problem is then to be solved by adjusting the temperature range. For this a trimming potentiometer has been placed on the circuit board (see sketch).



***We wish you a lot of pleasure and relaxation in your sauna.***