

emotion of sauna.



Installation and User's Guide

ECON 09



CE IP x4

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The sauna control units are delivered equipped for a voltage of 400 V 3 N AC with a maximum breaking capacity of 9 kW and with a safety shutdown as standard.

Installation and connection of the sauna systems and other electrical equipment may be undertaken only by a expert; this is subject to VDE 0100, Part 703/2006-2
Sauna systems may only be connected to the power supply by hard wire.

1. Installation of the control units

Attention: It is forbidden to install the control box in a closed switch cabinet or behind a wooden panelling!

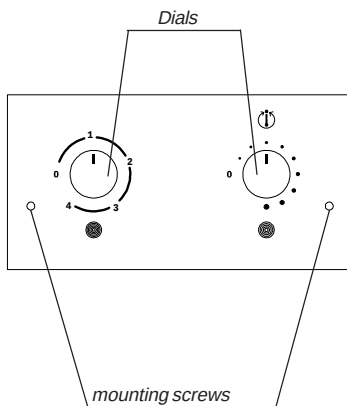
Before the control unit can be fastened to the outer wall of the cabin, the covering of the control unit must be removed. For this, the dials are pulled from their spindles with a slight tug, and the two mounting screws (Illust. 1) are loosened.

These screws are attached beneath the control panel dials as captive screws, but may be screwed open and closed through the visible holes in the operating panel with a small Phillips screwdriver. After the screws are loosened, the cover is removed. For practical purposes, the control unit should always be fastened to the outer wall of the cabin, to which the sauna oven inside the cabin is also attached.

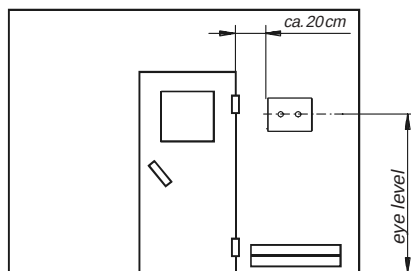
The sensorlines (capillary tubes) which as explained later need to be mounted in the sauna cabin above the sauna oven, are roughly 120 cm long.

These capillary tubes cannot be elongated.

Please observe that most sauna cabins have already been equipped with cable conduits for electrical wiring. In this case, the position of the control unit is pre-determined.



Illust. 1



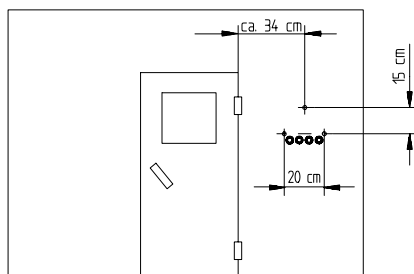
Illust. 2

For the mounting of the control unit, the mounting holes $\varnothing 3$ are drilled in accordance with the dimensions given in Illust. 3, and one of the provided wood screws 4 x 20, see Illust. 3.1, is screwed into the wood through the upper middle hole, leaving a 3mm section of the screw projecting out from the wall. The lower part of the control unit is hooked onto this wood screw by its upper mounting hole. Finally all connecting lines—see Illust. 4—are conducted through the respective feed-through conduits into the control unit. The lower part is finally fastened to the cabin wall through the two lower pre-drilled holes.

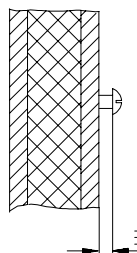
If the sauna cabin is not equipped with cable conduits for the connecting lines, these lines must be laid directly onto the cabin wall, where they will be visible. For this purpose, the three mounting holes must be pre-drilled, as shown in Illust. 3. Finally, align the lower part of the control unit over the drilled holes and sketch the right-hand feed-through hole for the sensor lines onto the cabin wall. Drill a roughly 10 mm feed-through hole at this spot.

Because the connecting lines must be laid between the control unit and the cabin wall in this type of installation, for practical purposes in a recess of the grooved panels, the control unit must be installed in such a way as to provide for adequate clearance. For this purpose, 3 spacer tubes are provided with the control unit. Using these tubes, the lower part is installed to provide for this clearance as shown in Illust. 3.2. After the connecting lines are fed through the respective feed-through channels into the control unit, bolt the lower part, again with help of the spacers, into the lower mounting holes on the cabin wall.

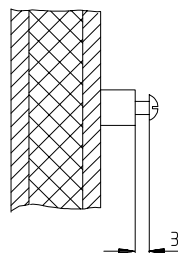
At delivery, the capillary tube sensors may be found in the control unit. Unroll the sensors carefully and pull them through the afore drilled hole into the cabin. The capillary tubes must not be bent or damaged. The smallest bending radius should not be less than 3-4 cm during and after installation. Pull the capillary tubes completely into the cabin. No excessive length should be in the control unit.



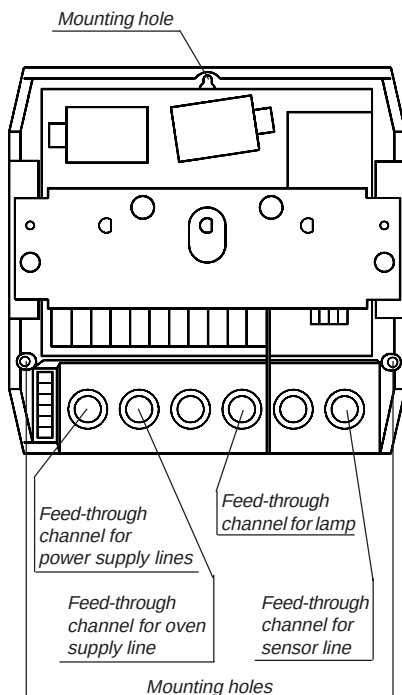
Illust. 3



Illust. 3.1



Illust. 3.2



Illust. 4

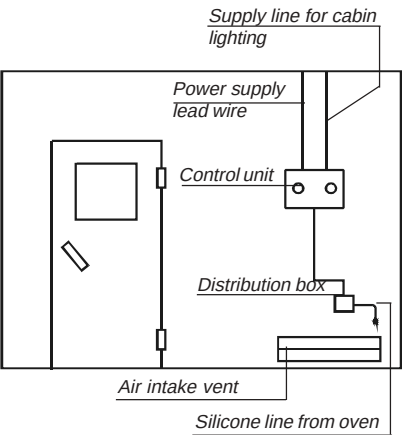
2. Electrical installation

(see Illust. 5)

The electrical installation may be undertaken only by an authorized electrician subject to the regulations of the local power utility company and the VDE.

The 5-wire power supply lead is brought to the control unit and connected, as can be seen from Illust. 5. A wiring diagram is posted in the area of the main terminal. Install the sauna oven according to the installation guide in front of the air intake vent, and drill a roughly 10 mm hole beside the air intake vent.

Lead the oven connecting cable through this hole to the outside, install a distribution box near the air intake vent which is suitable for use in wet areas, lay a 5-wire power supply lead between distribution box and control unit, connect in the distribution box with the silicon connecting line in accordance with the wiring diagram. The minimum diameter of the connecting line is shown in the chart below.



Illust.5

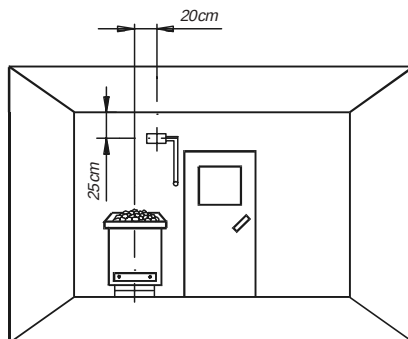
Power supply capacity in KW	suitable for cabin size in m³	Minimum diameters in mm² (copper wiring) connection to 380-400 V 3N AC		
		Power supply lead wire, power supply to control unit	Oven connecting line, control unit to oven	Fuse protection in A
4,5	4 - 6	5 x 2,5	5 x 1,5	3 x 16
6,0	6 - 10	5 x 2,5	5 x 1,5	3 x 16
7,5	8 - 12	5 x 2,5	5 x 1,5	3 x 16
9,0	10 - 14	5 x 2,5	5 x 1,5	3 x 16

When connecting the sauna system, a device which allows the unit to be disconnected from the power source with a contact distance of at least 3 mm from all terminals must be provided. LS switches, fuses and relays are considered suitable devices for disconnecting the unit.

2.1 Installation of the cabin lighting

All electrical installations in the sauna cabin must be able to withstand surrounding temperatures of at least 140° C. The connecting cable must be led through the previously drilled hole and connecting in the control unit in accordance with the circuit diagram.

The sauna lamp must always be mounted as far as possible from site of installation of the sauna oven. To this end, the sauna wall opposite the oven or the adjacent corners may be chosen.



Illust.6

3. Installation and Operation

3.1 Sensor installation

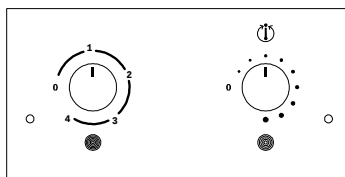
The thermostatic control unit is equipped with a thermostat and an overheat safety shutdown device. Pull the capillary tube sensors through the afore drilled hole into the cabin and affix them in the retainer slots of the sensor retainer provided. The capillary lines must not be bent or damaged. The smallest bending radius should not be under 3-4 cm.

Use the provided wood screws to center the sensor mount over the free air exhaust vents of the oven which face the cabin door, 25 cm below the cabin ceiling on the cabin wall in accordance with Illust. 6.

The previously described position must be observed in any case; otherwise, the target temperatures will not be reached. The capillary tube lines can be mounted to the cabin wall with the mounting screws provided.

The excess length of the capillary tube sensors should be rolled up and must be placed into the cabin. Don't push back the sensors into the control unit under any circumstances.

3.2 Startup



Illust.7

Operation of the sauna system is started with the left-hand timer switch. The maximum activation time is 4 hours due to safety precautions. During this time the green signal lamp lights up. After 4 hours the sauna oven and the cabin light will shut itself down. The cabin temperature is pre-selected with the right-hand thermostat dial. The total control range is between ca. 70 and 110°C. As soon as the sauna oven reaches heat mode, the red signal lamp for "Heating" lights up. When the desired sauna temperature is reached, the heat mode will be stopped (the signal lamp goes out).

3.3 Safety shutdown

The control unit is equipped with an overheat safety shutdown device. The sensor of the overheat safety shutdown with the sensor mount is, as previously explained, installed 25 cm below the cabin ceiling on the cabin wall. If the sauna oven does not turn off after reaching the maximum pre-selected temperature due to a defective control unit, the safety shutdown mechanism will turn off the oven before a critical sauna temperature is reached.

After a safety shutdown of this nature, the covering of the control unit (see Illust.1) must be removed and the red button in the center of the control unit activated by a expert after disconnection of the system from the power source using the main switch. Should the overheat safety shutdown device switch off again during further operation, the complete sauna system must be checked by an electrician.

4. Fuse protection of the sauna lighting

These tasks may only be accomplished by a expert!

The sauna lighting and the control circuit are protected by a microfuse in the control unit. To replace the fuse, the system must be disconnected from the power source, as with all tasks on the control unit.

After you have become familiar with the function of the control unit through this text, we wish you many relaxing hours in your sauna!

Note

Is there a problem reaching the required bathing temperature, or is the temperature different from that indicated on the thermometer in the cabin?

Please note that the temperature sensor is positioned in the area of the heating system. The thermometer is always located in a different place (for ex. on the back wall of the cabin over the recliner bench). The sensor, however, can only measure the temperature in its immediate vicinity; even differences of only 25 cm between sensor and thermometer can lead to temperature differences of up to 15° C. In addition, many bimetallic strip thermometers react very sluggishly, so that the actual temperature is sometimes displayed only after about one hour. The thermometer should not be installed with the complete housing surface flush with the cabin wall but rather with some clearance in relation to the wall. This way you will reduce the reaction time.

It is therefore entirely possible that your thermometer will show a lower value than the one you have set at the control unit.

5. Safety cutoff

The sauna control unit is equipped with a temperature limiter for security.

In case of a malfunction this temperature limiter cuts off all 3 phases by safety reasons.

Once the temperature limiter has cut off the current, he must be reset mechanically.

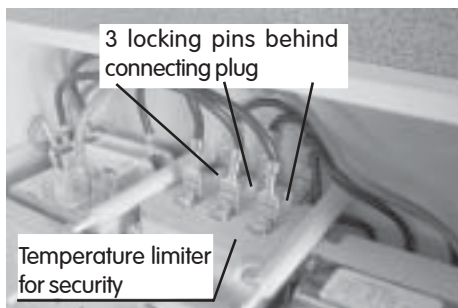


Attention:

Cut off the control unit from the mains at first.

Open the control unit.

There are 3 control elements visible now. In the middle is the temperature limiter for security.

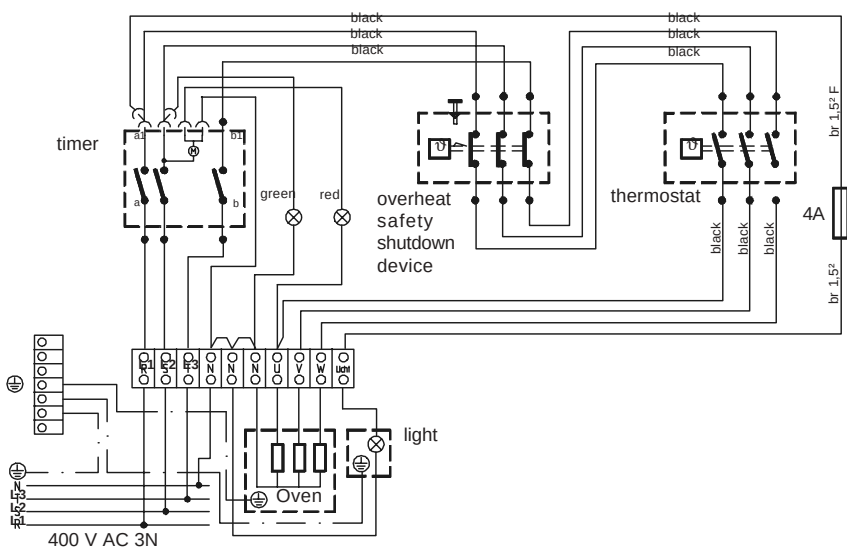


Press the 3 locking pins behind the connecting plug until you feel a switching point.

Close the control unit again before setting-up operation.

In case the temperature limiter should cut off again immediately after taking into operation, the unit has to be checked by a specialist.

Wiring diagram control unit Econ 09



Guarantee

The guarantee is taken over according to the legal regulations at present.

Manufacturer's warranty

- The period of warranty starts from the date of purchase and lasts up to 2years for commercial use and 3 years for private use.
- Always include the completed warranty certificate when returning equipment.
- The warranty expires for appliances which have been modified without manufacturer's explicit agreement.
- Damages caused by incorrect operation or handling through non-authorized persons are not covered under the terms of warranty.
- In the event of a claim, please indicate the serial number as well as the article code number and type name with expressive description of the fault.
- This warranty covers damaged parts but no defects due to wear and tear.

In case of complaint please return the equipment in its original packaging or other suitable packaging (caution: danger of transport damage) to our service department.

Always include the completed warranty certificate when returning equipment.

Possible shipping costs arising from the transport to and from point of repair cannot be borne by us.

Outside of Germany please contact your specialist dealer in case of warranty claims. Direct warranty processing with our service department is in this case not possible.

Equipment start-up date:

Stamp and signature of the authorized electrician:

Attention!

Dear customer,
according to the valid regulations, the electrical connection of the sauna heater and the control box has to be carried out through the specialist of an authorized electric shop.

We would like to mention to the fact that in case of a warranty claim, you are kindly requested to present a copy of the invoice of the executive electric shop.

Service address:
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Adolf-Weiß-Str. 43
35759 Driedorf-Germany
tel +49 (0)2775 82 240
fax +49 (0)2775 82 455
servicecenter@eos-werke.de
www.eos-werke.de