

CONNECTION/WIRING DIAGRAM

TAB	208 V 1 Phase			240 V 1 Phase		
Model	Amperage Amps	Output kW	Wire Size AWG	Amperage Amps	Output kW	Wire Size AWG
Sense Combi-U 7	26	5,3	10	30	7,0	8
Sense Combi-U 8	30	6,3	8	35	8,3	8

Note: Heating elements do not change for voltage changes. The heater output will change based on the voltage applied to heater. Most North American homes are 240v.

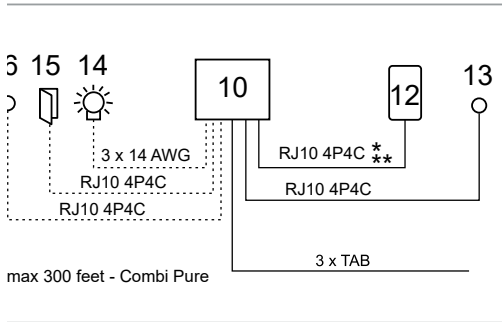
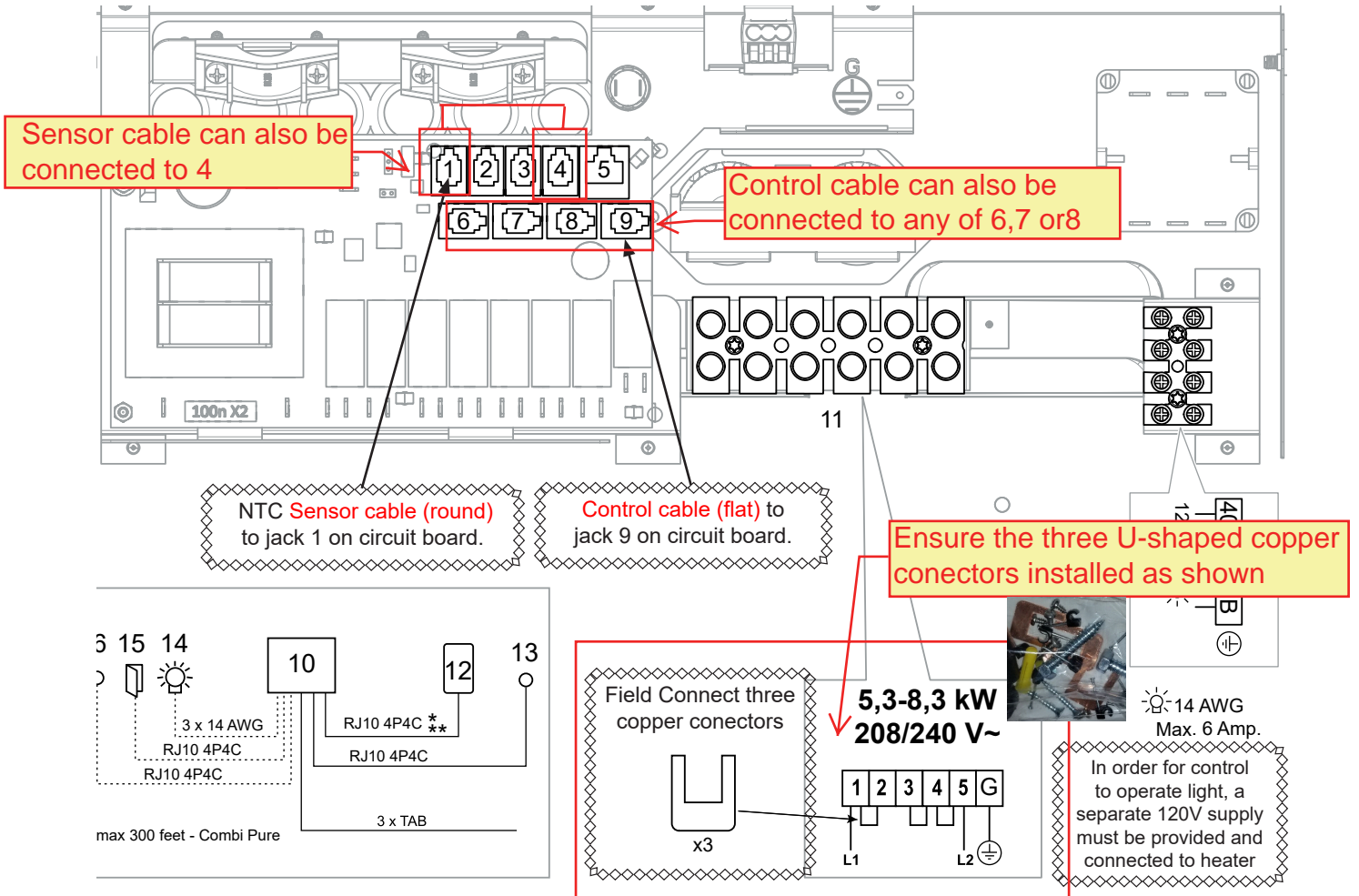


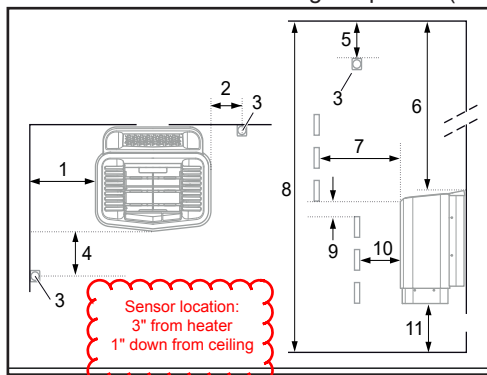
Figure 19: Wiring diagram

1. 1. NTC Sensor - Combi Pure.
2. Ext switch (External switch Optional)
3. N/A
4. N/A
5. N/A
6. N/A
7. N/A
8. N/A
9. Control Pure Control
10. Heater
11. Terminal for connection of electrical cable
12. Control panel (connect to position 9)
13. Sensor - Combi Pure (connect to NTC position 1)
14. Light/terminal for connection of light
15. N/A
16. External switch (option)

Sensor Installation Tip

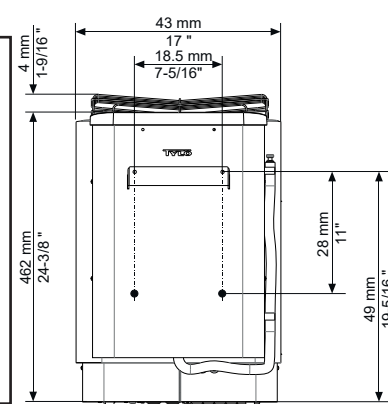
1. (1) If using Sensor Cover, you are supposed to feed the sensor wire through the sensor holder FIRST before running wire inside the wall. If not done first, do one of the following:
2. (2) Sensor with metal tab is usually installed without cover with one screw through the sensor tab directly to the finished wall.
3. (3) Mount sensor holder close to sensor. Surface mount sensor as show in picture. Install cover to hide sensor wire and any hole made for wire.
4. (4) **DO NOT** install cover on top of sensor after installation. It can affect heat sensitivity and cause heater high limit to trip.

Position the sensor according to the picture (see Figure 3).



1. Minimum distance from side wall: 4" (10 mm)
2. **Sensor position alt 1: 3" (7.5 mm) from heater**
3. Sensor
4. Sensor position alt 2: 3" (7.5 mm) from heater front
5. **Sensor position: 1" (2.5 mm) from ceiling**
6. Minimum distance from ceiling: 44" (110 mm)
7. Minimum distance from heater guard: 4" (10 mm)
8. Minimum ceiling height: 75" (1900 mm)
9. Minimum distance: 1" (2.5 mm)
10. Minimum distance from heater guard: 2" (5 mm)
11. Distance from floor: 7" (17.5 mm)

** Combi Pure Control distance to heater is max 300 feet



To prevent build up of lime-scale and higher salt/mineral levels, empty the reservoir after each use. If this is not done and water is added each time you take a sauna, foam build-up could occur which can cause the level sensor to detect a higher water level than usual. There is a risk the heating element may break.

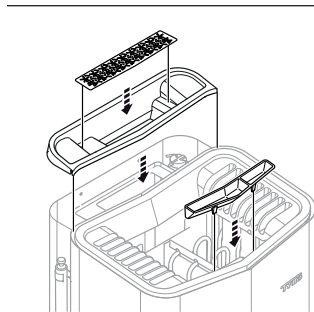


Fig 14: Fitting the cover for the water reservoir, herb grille and fragrance holder/air humidifier

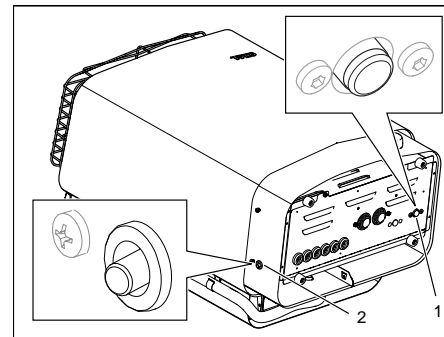


Figure 9: Resetting the temperature cut-out
1. Temperature cut-out water reservoir
2. Temperature cut-out sauna heater



Positioning the control panel

The control panel can be installed inside or outside of the sauna room. (Outside is Typical)

Pure Control Installation Instructions

The control panel can be installed inside or outside the sauna room. If the control is installed inside the room, install no higher than 3' (90 cm) above the floor. No closer than 12" (30 cm) to heater.

Installation Without Mounting Bracket (Typical)

Cut a 1-3/16" (3 cm) hole through the wall big enough for the control panel connector.

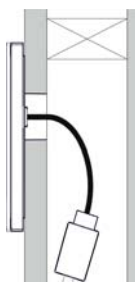
Attach the double-sided adhesive to the control panel. Before applying the control to the wall, connect it to the heater and electrically test everything first. Clean the surface where the control will be applied to remove all dust. Remove the protective backing from the adhesive. Silicone sealant can be applied in the groove on the back of the panel as an extra seal. Connect the control wire, push the excess wire through the hole in the wall and press the control panel firmly to the wall.

Installation Bracket

Use the mounting bracket as a template to mark screws holes on the wall. Tighten the screws a little until the bracket is nearly secured.

Remove the bracket from the wall. Use adhesive to mount the control to the bracket. Remember to position the switch according to the picture.

Installation without Bracket (Typical)



Install without bracket
Control stuck directly to the wall. Control cable in the stud cavity.

Installation with Bracket



Install with bracket
Generally only used when control wire is surface mounted; i.e. sold log style outdoor sauna.

Error message

If an error should occur on the heater or other equipment (control panel, temperature sensor etc.) an error message will be shown using LED indicators. The indicator LEDs will flash whilst one LED on the 1-10 scale is continuously lit or flashes. If it lights continuously, it refers to error message 1-10 and if it flashes, it refers to error messages 11-20.

Error messages (– indicates not relevant to this application):

1. Temperature sensor not connected or faulty
2. -
3. Heater circuit board overheated
4. The level electrodes in the tank are short-circuited (Combi)
5. -
6. Contact between heater and control panel lost
7. Contact with temperature/humidity sensor lost
8. -
9. Communication with timer lost
10. Current to timer disrupted
11. -
12. The level electrodes are not working. Mid. failure. (Combi)
13. Humidity sensor faulty
14. Temp. sensor faulty
15. Communication problem with heater
16. Temperature cut-out activated and must be reset
17. -
18. -
19. Door has been open for more than 5 minutes when the sauna is on.
20. Door has been opened. Check sauna.

For certain errors, disconnecting current to the heater for a brief period and then reconnecting can be tried. This mostly concerns problems that have occurred with communication between units connected.

In the event of error number 3, the heater will be automatically switched off. When the temperature has dropped approx. 20°C, the sauna heater can be restarted. Always investigate why the heater overheated. It can be the result of insufficient ventilation or that the heater needs crumbled stone removed.

Contact your dealer for other errors or if an error cannot be corrected according to the above. Check the heater's type plate and note the type, serial number, year of manufacture and make a note of any error code on the control panel before contacting Tylö Customer Support.

Information!

Contact the dealer during the guarantee period in the event of faults.
See the instructions for the control panel for details of faults not covered in this user guide.

Table 1: Troubleshooting the sauna heater

Symptom	Possible cause	Remedy
First time use. Heater does not operate	<ol style="list-style-type: none"> 1. Breaker off 2. U-shape copper connectors not installed. 3. Sensor or control cable plugged into wrong jack 	<ol style="list-style-type: none"> 1. Turn on Breaker 2. Have electrician confirm proper installation (fig.19) 3. Have electrician confirm proper installation (fig.19)
Heater is on but does not create steam.	<ol style="list-style-type: none"> 1. Water level incorrect. Below minimum water level for safety sensor? 2. Humidity settings not programmed as intended 3. Water reservoir temperature cut-out activated? 4. Heater element in reservoir faulty? 5. If the sauna structure has deficient ventilation in conjunction with dry sauna and high sauna temperature (operating with no water in reservoir), the temperature cut-out can activate because of higher radiating temperature in the heater. 	<ol style="list-style-type: none"> 1. Fill up reservoir. 2. Confirm control setting-review control manual. (For max. steam, set humidity to "10 & temp. to "1") 3. Reset temperature cut-out. For more information, see the section on temperature cut-out on figure 9 page 15 in full manual. If the steam function does not work after reset, there is a risk of the reservoir being damaged. 4. An authorized electrician is required to find the fault. 5. Check for possible deficient ventilation.
Heater element in heater stone compartment does not warm up.	<ol style="list-style-type: none"> 1. Temperature settings not programmed as intended 2. Water reservoir in operation? Only two of the three heater elements in the stone compartment can operate at the same time as the tank, otherwise excessive current is drawn from the electricity supply. This is not a fault outside normal operation. 3. Some of the heater fuses on the main switchboard can have tripped out? 4. Resistor coil in the heater element faulty? 5. Internal heater PCB fault? 	<ol style="list-style-type: none"> 1. Confirm control setting-review control manual. (For max. temp, set humidity to "1" & temp. to "10") 2. See the instructions supplied with the control panel. 3. Check and replace/reset the fuses in the main switchboard. 4. An authorised electrician is required to find the fault. 5. An authorised electrician is required to find the fault.
Lights in the sauna do not come on when switched on at the control panel.	<ol style="list-style-type: none"> 1. Light was not connected to the heter. (Requires a separate 120 volt supply to heater) 2. Internal heater PCB fault? 	<ol style="list-style-type: none"> 1. Verify with authorized electrician who performed installation of heater/lighting. 2. An authorized electrician is required to find the fault.
Heater does not work, control panel does not light up.	<ol style="list-style-type: none"> 1. The main power switch is off? 2. Circuit breaker tripped on main electrical panel. 3. Loose contact in cabling between heater and control panel? 4. Modular jack is not properly installed at heater PCB circuit board. The specific 12VDC output on one of the PCB's RS485 modular jack to the control panel is faulty due to short-circuit? 5. Transformer on PCB in heater faulty? 6. Control panel faulty? 	<ol style="list-style-type: none"> 1. Turn heater main power switch. 2. Check and replace/reset the fuses in the main switchboard. 3. Switch off heater main power switch and connect each/paired cable to the control panel. Switch on heater main power switch again. If this does not help, an authorized electrician is required to find the fault. 4. Requires an authorized electrician to find the fault, faulty 12VDC output is indicated by LED out next to the RS485 output. Note: if the fault is in the RJ10 cable to the control panel, do not click into a working vacant RS485 outlet to avoid causing a fault in that outlet. RJ10 cable must be replaced/contacts fitted in the event of a fault. 5. An authorized electrician is required to find the fault. 6. An authorized electrician is required to find the fault.
The fuses or circuit breaker in the building breaker panel trips as soon as the heater is turned on.	<ol style="list-style-type: none"> 1. There is a short-circuit at the heater GND. Can be due to a faulty heater element? 2. Lighting connected to and controlled via the heater faulty? 3. The heater has not been used for a long period, causing an insulation fault in the heater element? 4. Heater has had too much water poured on it? 5. Other internal heater fault? 6. GFCI breaker tripped 	<ol style="list-style-type: none"> 1,2,3,4,5. Do not use the heater, switch off at main heater main switchboard trip and disconnect heater fuses on the main switchboard. An authorized electrician is required to find the fault. 6. Saunas should not have GFCI breaker. Have electrician replace with standard breaker
Water reservoir temperature cut-out activated	<ol style="list-style-type: none"> 1. Dry boiling, incorrect minimum water level. 2. Foam in the water reservoir. 	<ol style="list-style-type: none"> 1. Drain and clean water reservoir. 2. Clean level electrodes.
Heater does not work, control panel does not light up	<ol style="list-style-type: none"> 1. Temperature cut-out activated. 2. Change, rearrange stones, clean stone compartment. Possible deficient ventilation. 	<ol style="list-style-type: none"> 1. Reset High limit switch.(See page 5 in full manual) 2. Possible deficient ventilation. Improper ventilation can cause high limit to trip.(See page 5 in full manual)
Heater works but do not reach set temperature.	<ol style="list-style-type: none"> 1. Incorrect placement of sensor. 2. Incorrect ventilation. 3. Incorrect heater. 	<ol style="list-style-type: none"> 1. Confirm sensor is placed as per instructions.(fig.3) 2. Check ventilation. 3. Check that heaters size is according to recommendation for the sauna volume.