

# STEAMIST®

ETL LISTED  
CONFORMS TO  
UL STD 875  
CERTIFIED TO  
CAN/CSA STD  
E60335-2-53-05



## Steamist Digital Sauna Control

Models: S170-1 and S170-3

*These instructions for installation and use are intended for owners of saunas, heaters and control units, person in charge of managing saunas, heaters and control units, and for electricians responsible for installing heaters and control units. Once the control is installed, these instructions for installation and use must be handed over to the owner of the sauna, heater and control unit, or to the person in charge of maintaining them. Congratulations on making an excellent choice in choosing a Steamist Sauna Product!*

### Steamist Digital Sauna Control

*Control unit's purpose of use: The control unit is meant for controlling the functions of an electric sauna heater. It is not to be used for any other purpose.*

## Contents

### 1. Steamist Digital Sauna Control

- 1.1 General
- 1.2 Technical Data
- 1.3 Troubleshooting

### 2. Instructions For Use

- 2.1 Using the Heater
- 2.2 Using Accessories
  - 2.2.1 Lighting
  - 2.2.2 Ventilations

### 3. Instructions For Installation

- 3.1 Installing the Control Panel
- 3.2 Installing the Power Unit
  - 3.2.1 Electrical Connections
  - 3.2.2 Resetting the Overheat Protector

### 4. Spare parts

### Steamist Limited Warranty

## 1. Steamist Digital Sauna Control

### 1.1 General

The Steamist Digital Sauna Control unit can be used to control sauna heaters within an output range of 2.3 - 15 kW. The control unit consists of a control panel, a power unit and a sensor. See Figure 1.

The control unit regulates the temperature in the sauna room based on information given by the sensor. The temperature sensor and the overheat protector are located in the sensor box. The temperature is sensed by an NTC thermistor and is a resettable overheat protector.

The control unit can be used to preset the start of the heater (pre-setting time). See Figure 3.

## Steamist Digital Sauna Control



### 1.2 Technical Data

#### Control Panel:

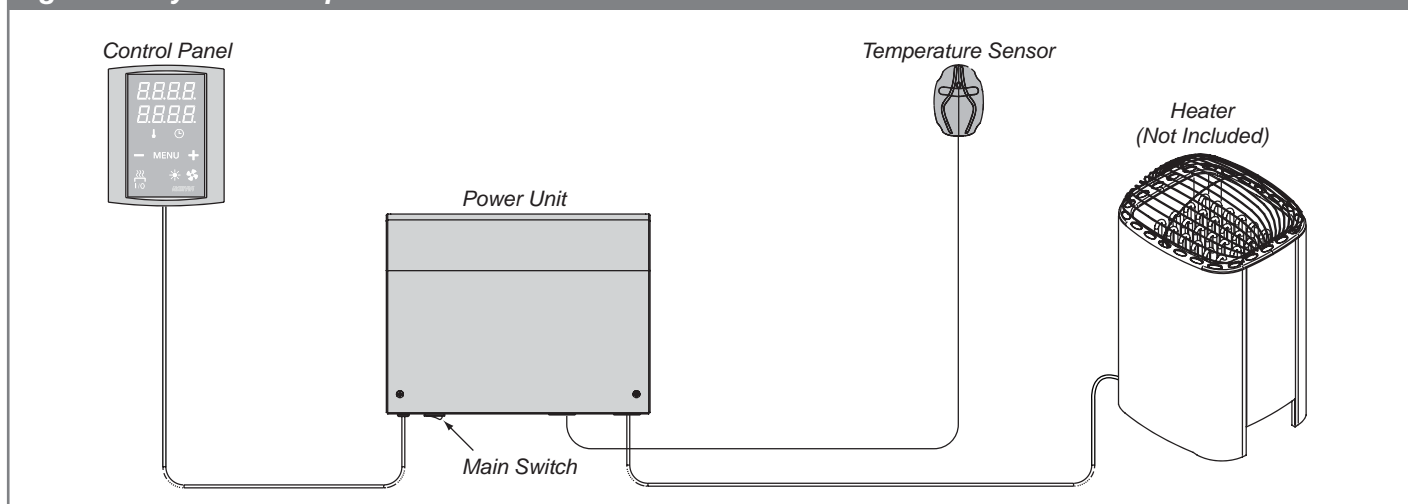
- Temperature adjustment range 104 - 194°F.
- Pre-setting time adjustment range 0 - 12 h.
- Lighting control, max. power 100W, 120V / 1PH
- Fan control, max. power 100W, 120V / 1PH
- Dimensions: 3.7" x 1.1" x 4.4"

#### Power Unit:

- Supply voltage
  - S170-1: 240V / 1PH
  - S170-3: 208V / 3PH
- Max. load
  - S170-1: 14.8kW / 240V / 1PH
  - S170-3: 14.4 kW / 208V / 3PH
- Dimensions: 10<sup>5</sup>/<sub>16</sub>" x 3" x 10<sup>3</sup>/<sub>4</sub>"

#### Sensor

- Temperature sensor NTC thermistor 22 kΩ / T= 77°F
- Resettable overheat protector
- Dimensions: 2" x 2.9" x 1.1"
- Cable Length: 13 ft.

**Figure 1 - System Components**

### 1.3 Troubleshooting

If an error occurs, the power to the heater will be cut off and the control panel will show an error message " (number)", which helps troubleshooting the cause of the error. Table 1.

**NOTE:** The overheat protector can be reset by user. All other maintenance must be done by professional maintenance personnel. No user-serviceable parts inside.

**Table 1 - Error Messages**

E1	Temperature sensor's measuring circuit broken.	Check the red and yellow wires to the temperature sensor and their connections (see Figures 6 and 7) for faults.
E2	Temperature sensor's measuring circuit short-circuited.	Check the red and yellow wires to the temperature sensor and their connections (see Figures 6 and 7) for faults.
E3	Overheat protector's measuring circuit broken.	Press the overheat protector's reset button (see section 3.4). Check the blue and white wires to the temperature sensor and their connections (see Figures 6 and 7) for faults.
E9	Connection failure between the control panel and the power unit.	Check the cable and the connectors for faults.

**NOTE:** The overheat protector can be reset by user. All other maintenance must be done by professional maintenance personnel. No user-serviceable parts inside.

## 2. Instructions For Use

### 2.1 Using the Heater

**WARNING:** Before switching the heater on always check that there isn't anything on top of the heater or inside the given safety distance.



Start the heater by pressing the I/O button on the control panel.

When the heater starts, the top row of the display will show the set temperature and the bottom row will show the set on time for five seconds.

When the desired temperature has been reached in the sauna room, the heating elements are automatically turned off. To maintain the desired temperature, the control unit will automatically turn the heating elements on and off in periods.

The heater will turn itself off when the set on time runs out, the I/O button is pressed or an error occurs.

Changing the setting for remaining on time, pre-setting time

and the desired sauna room temperature is shown in Figure 3. Changing the temperature unit (Fahrenheit/Celsius) is shown in Figure 3.

### 2.2 Using Accessories

Lighting and ventilation can be started and shut down separately from their own operating buttons.

#### 2.2.1 Lighting

The lighting in the sauna room can be set up so that it can be controlled from the control panel (Max. 100W).



Switch the lights on/off by pressing the button on the control panel.

#### 2.2.2 Ventilation

If there is a fan installed in the sauna room, it can be connected to the control unit and be controlled from the control panel.



Start/stop the fan by pressing the button on the control panel.

Figure 2 - Control Panel

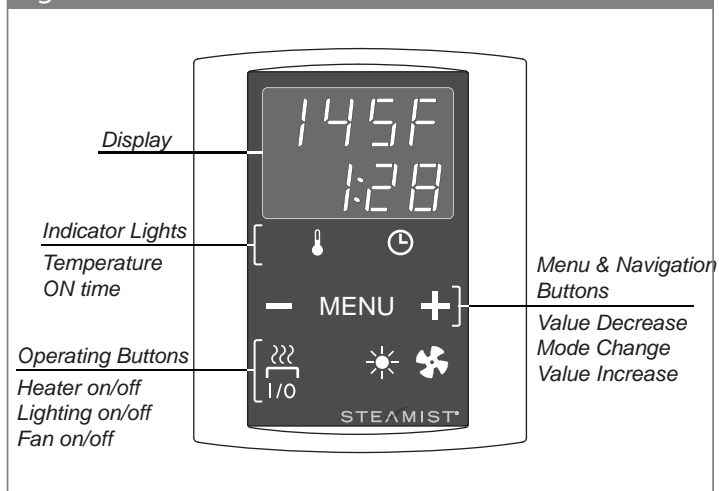


Figure 3 - Settings Menu Structure

**Basic Settings**

**Changing the settings: sauna room temperature, ON time, and delay time**

The top row shows the temperature in the sauna room. The bottom row shows the remaining ON time. Both indicators lights glow.

**Press the MENU button to open the settings menu.**  
The display shows the sauna room temperature setting. Temperature indicator light blinks.

**Change the setting to the desired temperature with the "+" and "-" buttons.**  
The range is 104 - 194°F.  
The programmed temperature is stored in memory and will also apply when the heater is switched ON next time.

**Press the MENU button to access the next setting.** The display shows the remaining ON time. Time indicator light blinks. Choose either to set the ON time or Delay time.

**Set the ON time (heater on):**

- Press the "-" button to decrease the ON time to a value of less than the maximum (1:00 hr). The adjustment is made in 10 minute increments.  
The programmed time is NOT stored in memory and will default back to 1:00 hr when the heater is switched on next time.

**Set the delay time (heater off):**

- Press the "+" button to set the ON time to maximum (1:00 hr).
- Press the "+" button again to enter the delay time mode. The temperature indicator light switches off. Delay time symbol "[ - ]" blinks on the screen.
- Select the desired delay time using "-" and "+" buttons. The adjustment is made in 10 minute increments. Press and hold the button to make the time change faster. The adjustment range is from 10 minutes to 12 hours.

**Exit by pressing the MENU button.**

**Advanced Settings**

**Changing between Fahrenheit to Celsius**

**Open the settings menu by simultaneously pressing the control panel buttons -, MENU, and +. Press for 5 seconds.**

**Change the temperature unit with the "-" and "+" buttons.** The options are Fahrenheit (FAHR)\* and Celsius (CELS).

**Exit by pressing the MENU button.**

**WARNING:** Do NOT unlock these following settings unless sauna is in a supervised spa environment.

**Commercial Settings**

**Unlocking and changing maximum ON time**

- Switch the power off from the main switch (Figure 1).
- Press and hold the buttons and .
- Switch the power ON from the main switch.
- Wait 5 seconds and release the buttons.

**1**

**Set value ON.**

**Press the MENU button. The control unit switches to standby mode.**

**2**

**Open the settings menu by simultaneously pressing the control panel buttons -, MENU, and +. Press for 5 seconds.**

**Maximum ON time**  
The maximum ON time can be changed with the "-" and "+" buttons. The range is 1-18 hours or continuous (24 hours).

**Press the MENU button 5 times. The control unit switches to standby mode.**

### 3. Instructions for Installation

The electrical connections of the control unit may only be made by a licensed electrician and in accordance with the current regulations. When the installation of the control unit is complete, the person in charge of the installation must pass on to the user the Instructions for Installation and Use that comes with the control unit and must give the user the necessary training for using the heater and the control unit.

#### 3.1 Installing the Control Panel

Install the control panel outside the sauna room, in a dry place with an ambient temperature of above 32°F (0°C) where it can be accessed conveniently. See Figure 4.

#### 3.2 Installing the Power Unit

Install the power unit to a wall outside the sauna room, in a dry place with an ambient temperature of above 32°F (0°C). See Figure 5 for instructions on how to open the power unit cover and how to fix the unit to the wall.

**NOTE:** Do not embed the control unit into the wall, since this may cause excessive heating of the internal components of the unit and lead to damage. See Figure 5.

Figure 4 - Installing the Control Panel

- A. Thread the data cable through the hole in the back panel.
- B. Fasten the back cover to a wall with screws.
- C. Push the data cable to the connector.
- D. Press the front cover into the back cover.

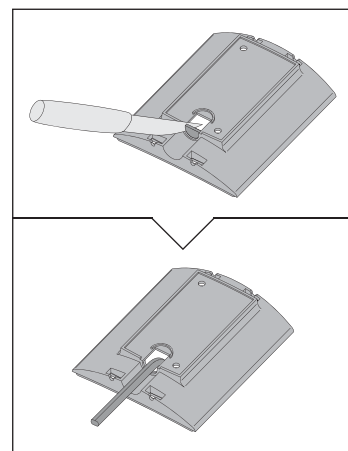
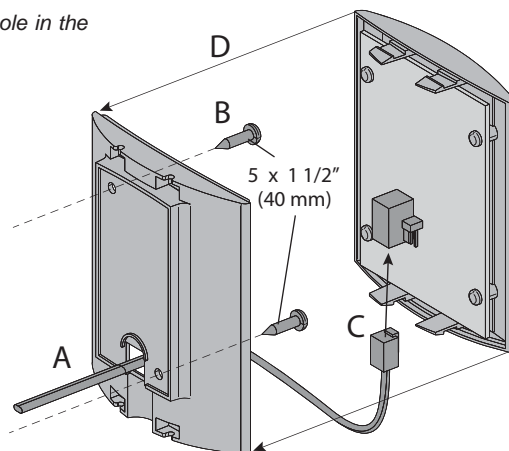
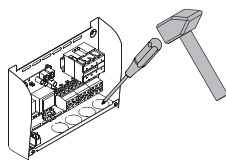
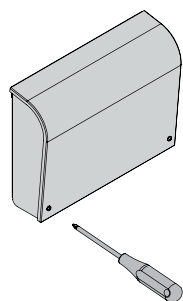
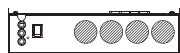


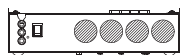
Figure 5 - Opening the Power Unit Cover and Mounting the Unit to a Wall



SMS-60R, SMS-80R



SMS-100, SMS-125, SMS-145



SMS-100-3, SMS-125-3, SMS-145-3

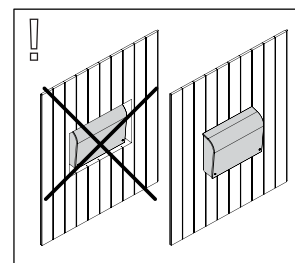
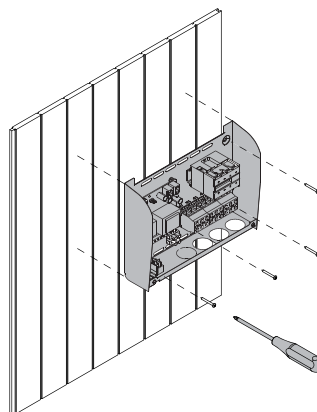
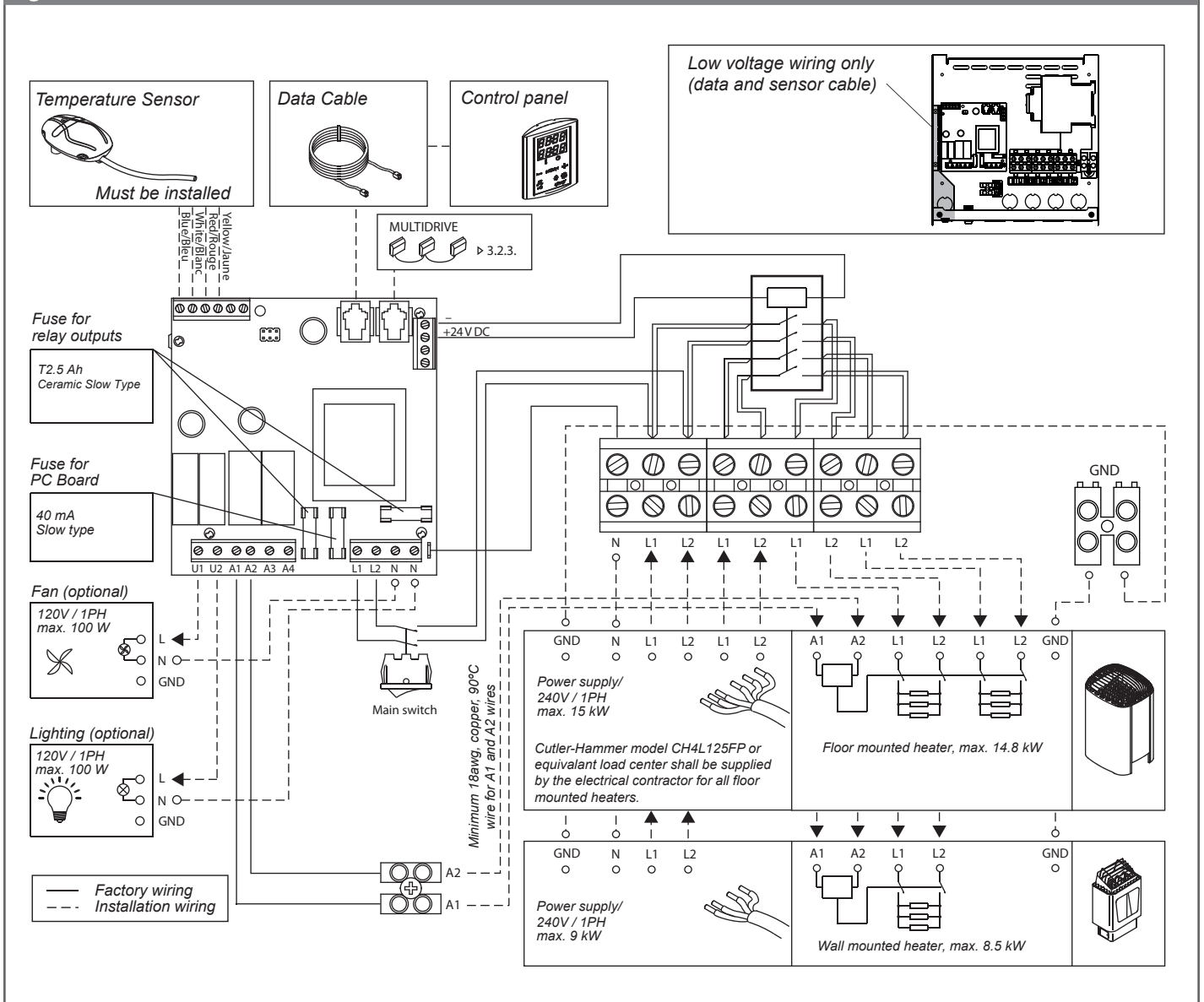


Table 2 - Wire and Fuse sizes (S170-1)

Model	Watts	Amps	Voltage	Phase	Breaker to Power Unit		Power Unit to Heater			
SMS-60R	6,000	25.0	240	1	1 @35A - #8 AWG copper 90°C		#8 AWG copper 90°C			
SMS-80R	8,000	33.3	240	1	1 @45A - #6 AWG copper 90°C		#8 AWG copper 90°C			
					Breaker to Load Center		Load Center to Power Unit		Power Unit to Heater	
SMS-100	10,000	41.7	240	1	1 @70A - #4 AWG copper 90°C		2 @35A - #8 AWG copper 90°C		#8 AWG copper 90°C	
SMS-125	12,600	52.5	240	1	1 @70A - #4 AWG copper 90°C		2 @35A - #8 AWG copper 90°C		#8 AWG copper 90°C	
SMS-145	14,800	61.7	240	1	1 @80A - #3 AWG copper 90°C		2 @40A - #8 AWG copper 90°C		#8 AWG copper 90°C	

**Note:** neutral wire required

Figure 6 - Electrical Connections (S170-1)



### S170-1 (240V / 1PH power unit)

#### Instructions for Installation

The power unit of the S170-1 is controlled by the digital control.

- Control panel is connected to power unit via data cable.
- Only one control panel can be connected to the power unit.

#### Temperature Sensor:

- Temperature Sensor is needed to operate S170-1. See section 3.3 for correct temperature sensor placement.

### Two relay outputs (120V / 1PH)

- For driving a fan (max. 100W) and lighting (max. 100W).

#### Fuses on the electronics card (if a fuse has blown, see section 3.2.2):

- 40mA fuse for electronic unit.
- Two 2.5 Ah fuses for relay outputs U1, U2, A1, A2.

#### Technical Specifications:

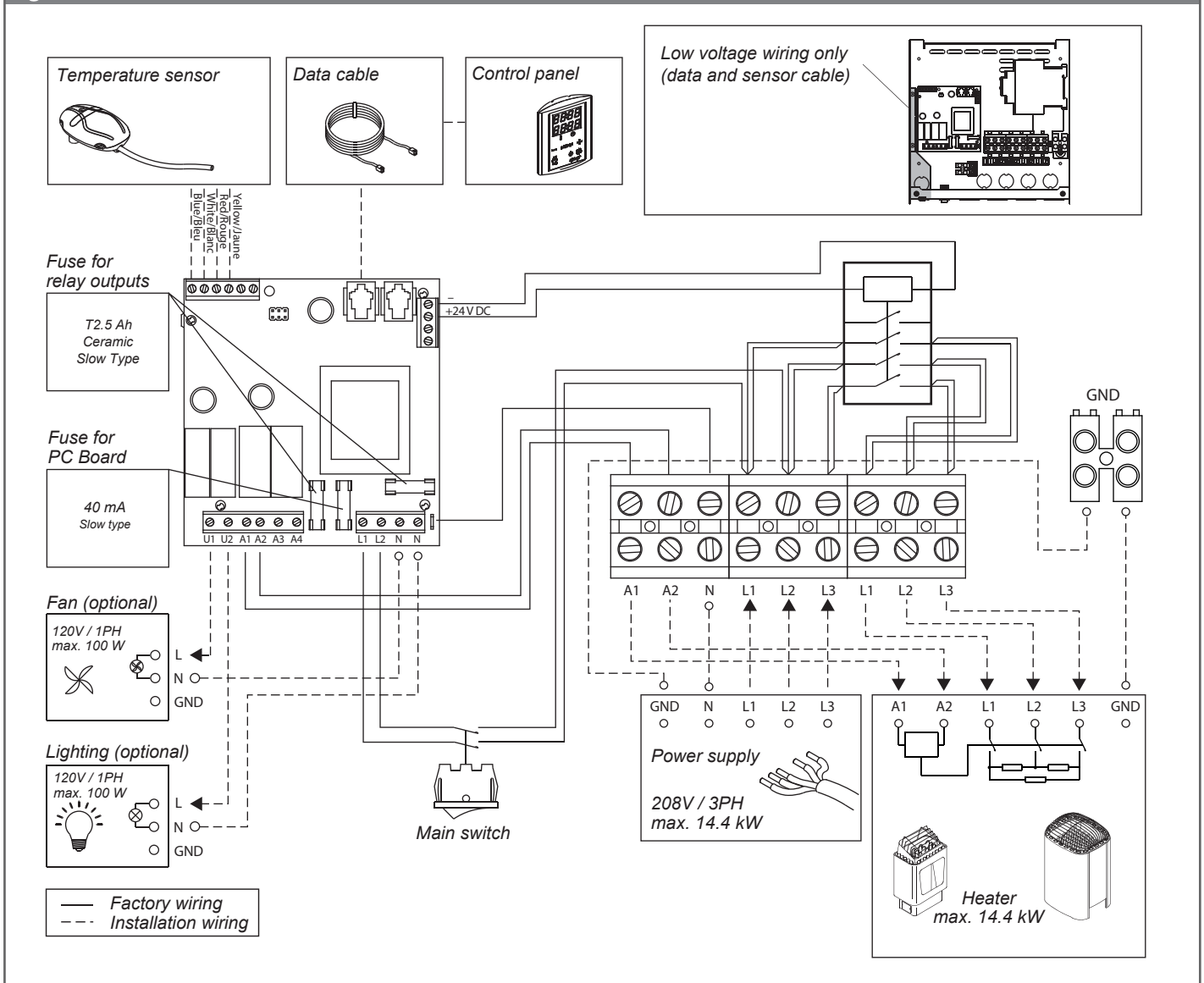
- Max. heater power rating: 14.8 kW.
- Max. length of data cable: 75 feet.

Table 3 - Wire and Fuse sizes (S170-3)

Model	Watts	Amps	Voltage	Phase	Wire Size AWG 90°C	
					Breaker to Power Unit	Power Unit to Heater
SMS-80R-3	8,000	22.2	208	3	1 @ 30A - #10 AWG copper 90°C	#10 AWG copper 90°C
SMS-100-3	9,800	27.3	208	3	1 @ 35A - #8 AWG Copper 90°C	#8 AWG Copper 90°C
SMS-125-3	12,300	34.1	208	3	1 @ 50A - #6 AWG Copper 90°C	#6 AWG Copper 90°C
SMS-145-3	14,400	40.0	208	3	1 @ 50A - #6 AWG Copper 90°C	#6 AWG Copper 90°C

*Note: neutral wire required*

Figure 7 - Electrical Connections (S170-3)



### S170-3 (208V / 3PH power unit)

#### Instructions for Installation

**The power unit of the S170-3 is controlled by the digital control.**

- Control panel is connected to power unit via data cable.
- Only one control panel can be connected to the power unit.

#### Temperature Sensor:

- Temperature Sensor is needed to operate S170-3. See section 3.3 for correct temperature sensor placement.

#### Two relay outputs (120V / 1PH)

- For driving a fan (max. 100W) and lighting (max. 100W).

#### Fuses on the electronics card (if a fuse has blown, see section 3.2.2):

- 40mA fuse for electronic unit.
- Two 2.5 Ah fuses for relay outputs U1, U2, A1, A2.

#### Technical Specifications:

- Max. heater power rating: 14.4kW.
- Max. length of data cable: 75 feet.



### 3. Instructions for Installation

#### 3.2.1 Electrical Connections

Figures 6 and 7 show the electrical connections of the power unit. Tables 2 and 3 show the wire and fuse sizes. For more detailed installation instructions see The Instructions for Installation and Use of the selected heater model.

#### 3.2.2 Power Unit Fuse Faults

Replace a blown fuse by a new one with the same resistance. The placement of the fuses in the power unit is shown in Figures 6 and 7.

- If the fuse for the electronic unit has blown, there is likely a fault in the power unit and service is required.
- If the fuse in the line U1 or U2 has blown, there is a problem with the lighting or fan. Check the wiring and functioning of light and fan.
- If the fuse in the line A1 or A2 has blown, there is a problem with the heater's overheat protector circuit. In the heater, check the safety contactor, overheat protector and their wiring.

#### 3.3 Installing the Temperature Sensor Floor-mounted heaters (see Figure 8)

- Option 1: The temperature sensor is mounted on the wall above the heater, along the vertical center line running parallel to the sides of the heater, at a distance of  $3 \frac{15}{16}$ " from the ceiling.
- Option 2: The temperature sensor is mounted to the ceiling above the heater, along the vertical center line running parallel to the sides of the heater, and half the distance between the wall and the heater side.

#### Wall-mounted heaters (see Figure 9)

- The temperature sensor is wall-mounted above the heater, along the vertical center line running parallel to the sides of the heater, at a distance of  $3 \frac{15}{16}$ " from the ceiling.

Do not install the temperature sensor closer than  $3'-3 \frac{3}{8}"$  to an air vent. The air flow near an air vent cools down the sensor which gives inaccurate temperature readings to the control unit. As a result, the heater might overheat. See Figure 10.

Figure 8

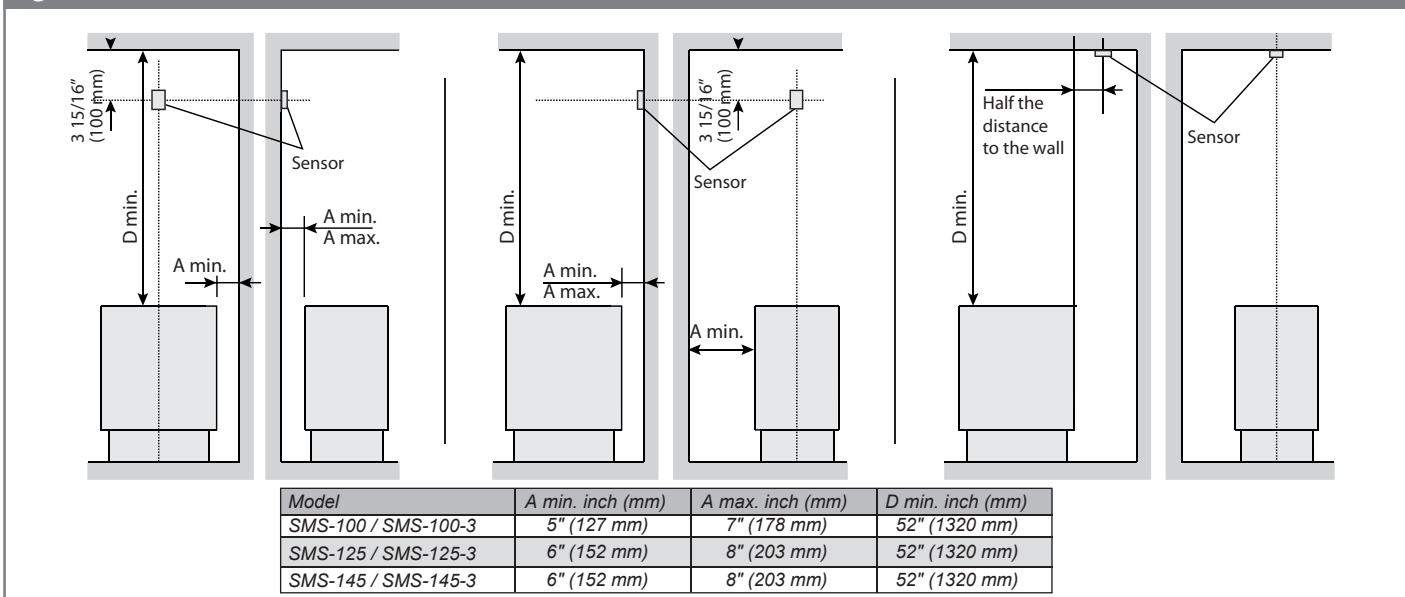


Figure 9

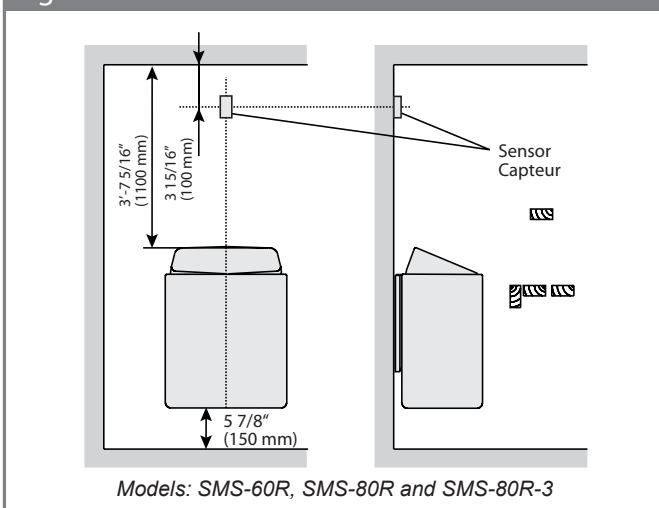
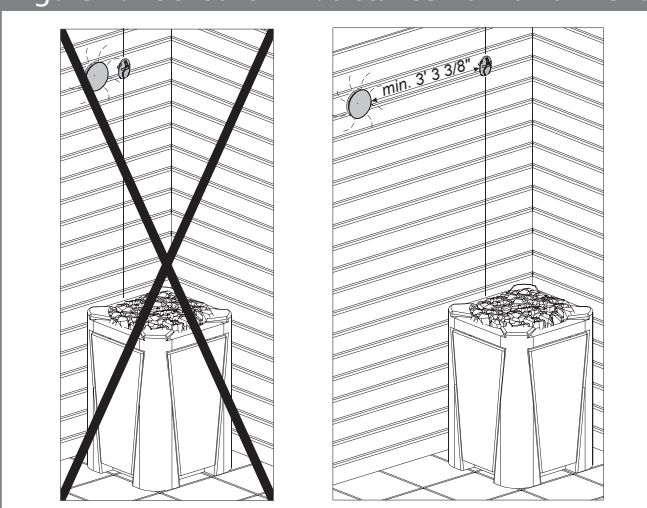


Figure 10 - Sensor's min. distance from an air vent



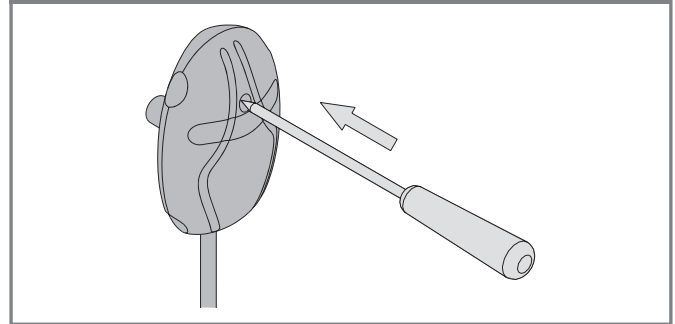
### 3. Instructions for Installation

#### 3.4 Resetting the Overheat Protector

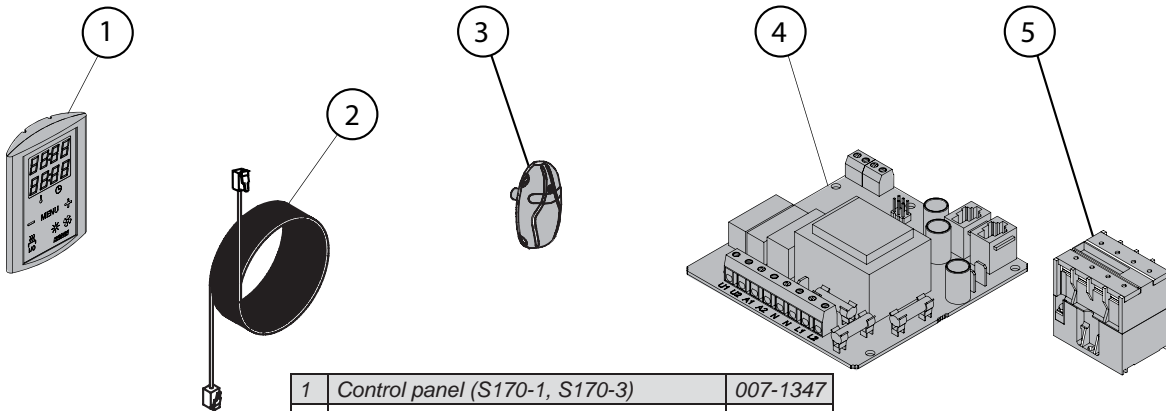
The sensor box contains a temperature sensor and a overheat protector. The temperature sensor senses the temperature and the resettable overheat protector cuts off the heater power in case of a malfunction after which the protector can be reset. See Figure 11.

**NOTE:** The reason for the overheat must be determined before the button is pressed.

Figure 11 - Reset button of the overheat protector



### 4. Spare Parts



1	Control panel (S170-1, S170-3)	007-1347
2	Data cable	007-1348
3	Temperature sensor	007-1350
4	Circuit board	007-1351
5	Contactor 40amp, 10kW MAX	007-1352

### Steamist Limited Warranty

#### Residential Applications

Steamist will replace any defective components in their sauna heaters, contactors, controls, used in residential applications, for the period of 5 years from the original purchase date. This limited warranty covers faults in manufacture and material only, and includes the exchange of new parts supplied by the manufacturer or the manufacturer's agent, after the defective parts are returned to Steamist. The replacement of parts under warranty does not extend the warranty period beyond the original five year period. In addition, Steamist will perform the required labor to repair or install the component, at the factory, for the period of one year from the original purchase date. All costs for removal and reinstallation of the component(s) on the job site, shipment to the factory and shipment back to the job site will be the responsibility of the owner of the equipment.

#### Commercial Applications

Steamist will replace any defective components in their sauna heaters, contactors, controls used in commercial applications, for the period of one year from the original purchase date.

This limited warranty covers faults in manufacture and material only, and includes the exchange of new parts supplied by the manufacturer or the manufacturer's agent, after the defective parts are returned to Steamist. The replacement of parts under warranty does not extend the warranty period beyond the original one year

period. In addition, Steamist will perform the required labor to repair or install the component, at the factory, for the period of one year from the original, purchase date. All costs for removal and reinstallation of the component(s) on the job site, shipment to the factory and shipment back to the job site will be the responsibility of the owner of the equipment. This limited warranty does not cover damage to the heater caused by normal wear and tear, damages caused by improper installation, improper use and care or alterations made to the sauna product.

This limited warranty is void if the heater is used improperly. Chemically treated water, such as spa or pool water should not be poured over the sauna stones. The sauna room must be heated for a minimum of 30 minutes prior to the application of water to the sauna stones. The limited warranty is void if a shower or faucet has been installed in the sauna. Damages resulting from the misuse of the heater will not be covered in the warranty.

This limited warranty is void if the installation and wiring is not performed by a certified electrician or authorized and qualified service representative.

The limited warranty applies only to the original purchaser and installation of the product.

A return authorization number assigned by Steamist is required prior to returning any product for repair. Components returned without a return authorization number may not be repaired or replaced.