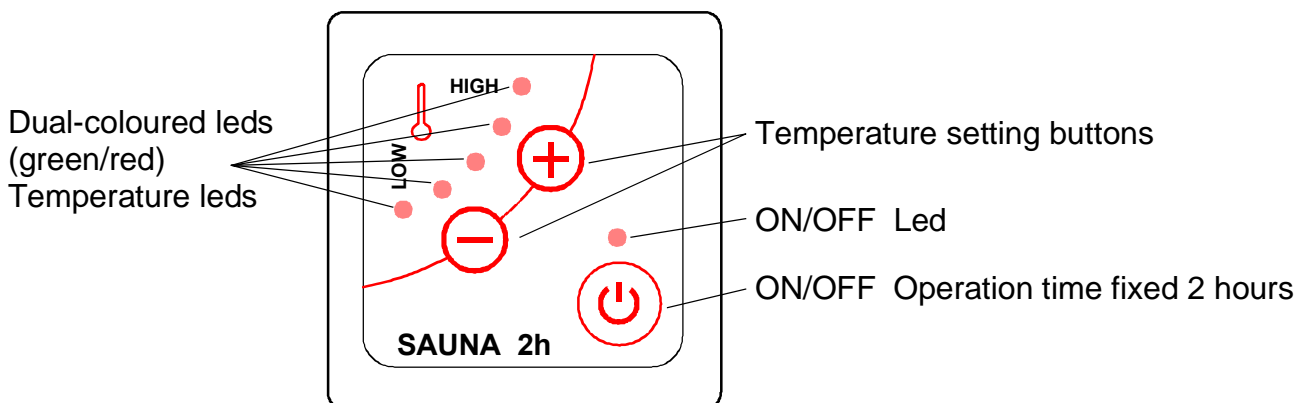


BOX CONTROLLER 1601 - 16 USER MANUAL:



ON/OFF green led flashes when functions are being activated. In approximately 3 seconds the led will stay on permanently and activates the heater. The same occurs when changing temperature settings.

General:

- The controller is intended to be installed and sunk into the control box or to be installed into a surface box outside the sauna room. Protection class IP X4.
- Package includes:
 - The control centre
 - Thermostat sensor with a heat resistant cable.
 - 3 pcs of different frames, which fit the following furniture series.
 - Strömfors general, Ensto Jussi, Elko traditional.
- This control centre fits the following heaters.
 - 1712 – x – 0405 (SKSM DE)
 - 1712 – x – 040520 (SKSM DEW)
 - 1116 – x – 0405 (Pikkutonttu DE)
- Heating time fixed 2 hours.
- Follow the given installation measurements.
- Only one heater may be installed into a sauna.
- The heater and the control centre installation into the mains can only be done by a person authorised to do so according to electricity regulations in force.
- **NOTE** Before you switch on the heater, ensure that the sauna room is ready to be heated.
- **NOTE** The control cable between the controller and the heater is not included in the package. Cable type LiYY 8 x 0.25 must be used. SSTL N:o 02 621 09, maximum cable length is 15 metres.
- **NOTE** In the event of a power failure, the control centre turns off and it needs to be switched on again.

Buttons:

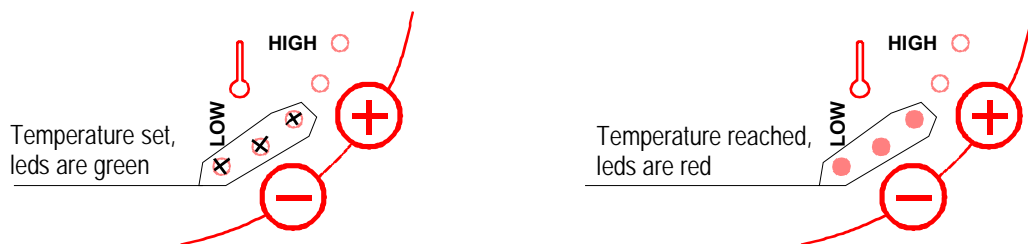
On/Off	Turns the heater on and off (green led is on during operation).
Plus	Increases the set temperature.
Minus	Decreases the set temperature.

Led-lights:

Setting value	Five-step scale (green led) Settings are stored in the equipment's memory.
Measurement value	Five-step scale (red led)

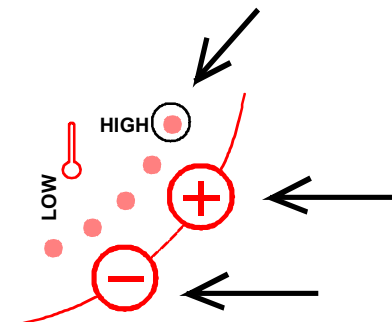
Example:

1. Activate using the On/Off button (stays on for 2 hours)
 - The equipment will remember the most recent temperature setting and will suggest it when the heater is switched on using the On/Off button.
 - Green On/Off light will flash slowly for approx. 3 seconds, after which the heater will turn on.
 - Setting value leds will glow green.
 - Changes to the suggested temperature can be made using the Plus or Minus buttons.
 - The heater can be turned off pressing the On/Off buttons before the 2 hour timer cut-off.
2. Temperature setting can be changed while the heater is on. Change the temperature setting using the Plus or Minus buttons, On/Off light will flicker for 3 seconds, after which the heater will apply the new temperature setting. The latest setting will be stored in the memory.
3. Set temperature has been reached when all green temperature leds have turned red. As the temperature rises in the sauna room, the green led "column" will turn red.



Keypad lock:

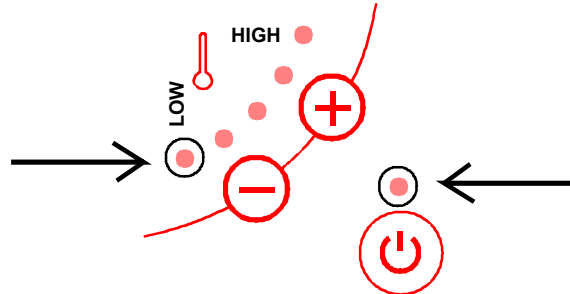
- Heater must be turned off.
- Press plus and minus buttons simultaneously, keypad lock activates.
- The top temperature led is red.
- Keypad lock is turned off by pressing the plus and minus buttons simultaneously.
- The top temperature led will switch off.



Alarms:

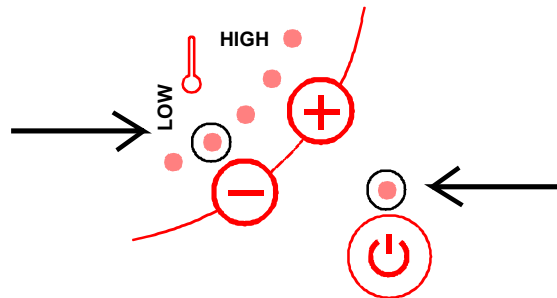
Temperature guard has activated:

- The first (1) led of the column will be red and the green On/Off led will flicker rapidly.
- Alarm delay is 10 seconds from detection of the fault.



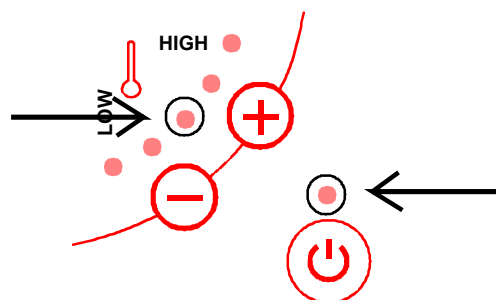
Sensor cable or temperature sensor is short-circuited.

- The second (2) led in the column will be red and the green On/Off led will flicker rapidly.
- Alarm activates after a 10 second delay from the detection of the fault.



Sensor cable or temperature sensing device cut:

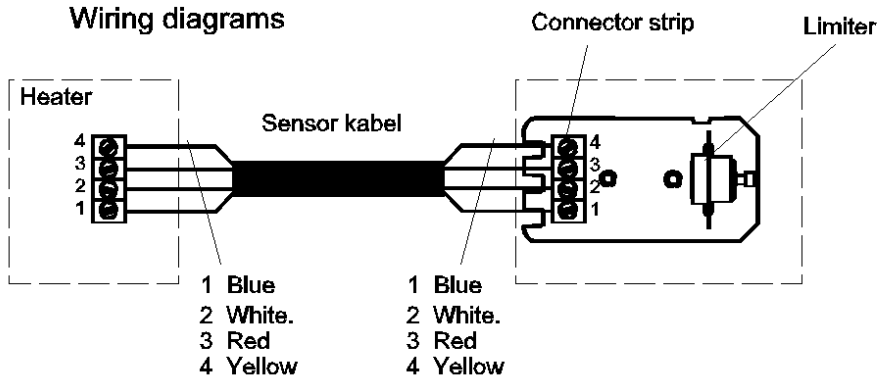
- The third (3) led in the column will be red and the green On/Off led will flicker rapidly.
- Alarm activates after a 240 second delay from the detection of the fault.



Once the alarm has activated, the heater will switch off. Alarm will continue until the heater is switched off using the On/Off button.

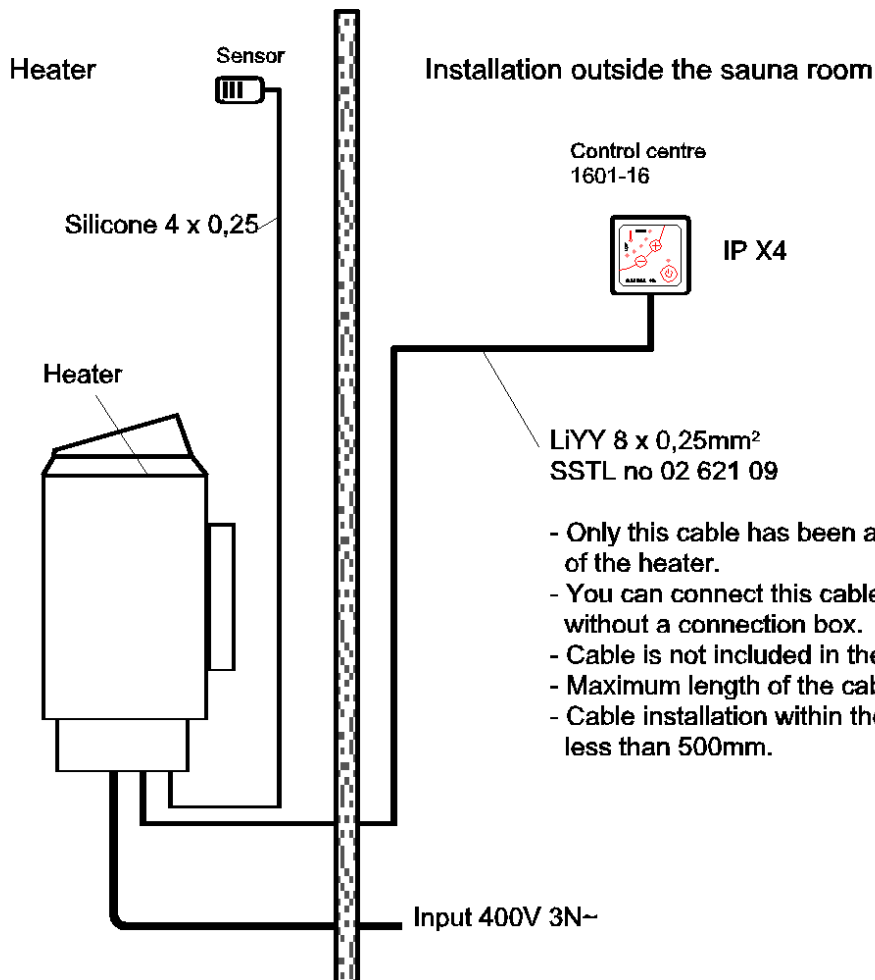
CONTACT A SERVICE REPRESENTATIVE WHEN NECESSARY. Repairs can only be carried out by a competent electrical professional authorised to do so.

Wiring diagrams



A1	Valk	Vit	White	Wiss	B1	Kelt	Gul	Yellow	Gelb
A2	Ruskea	Brun	Brown	Braun	B2	Harm	Grå	Grey	Grau
A5	Vihreä	Grön	Green	Grün	B3	Pink	Ljusröd	Pink	Rose
					B4	Sin	Blå	Blue	Blau
					B5	Pun	Röd	Red	Rot

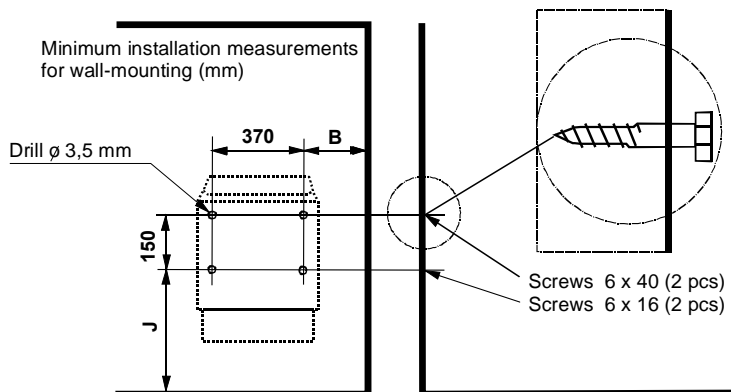
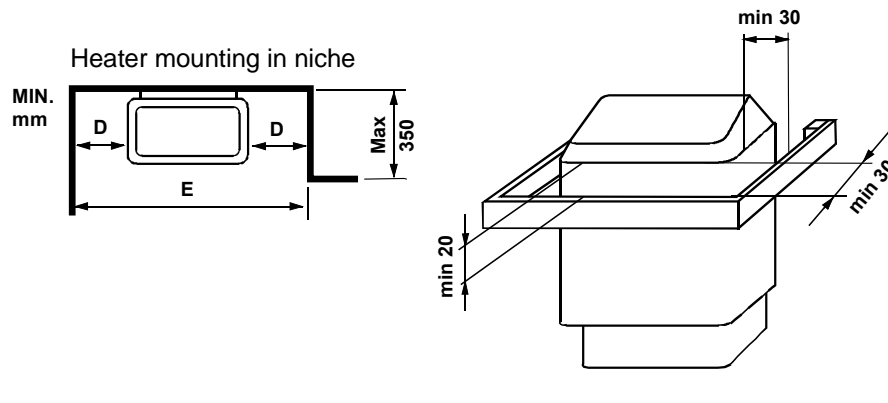
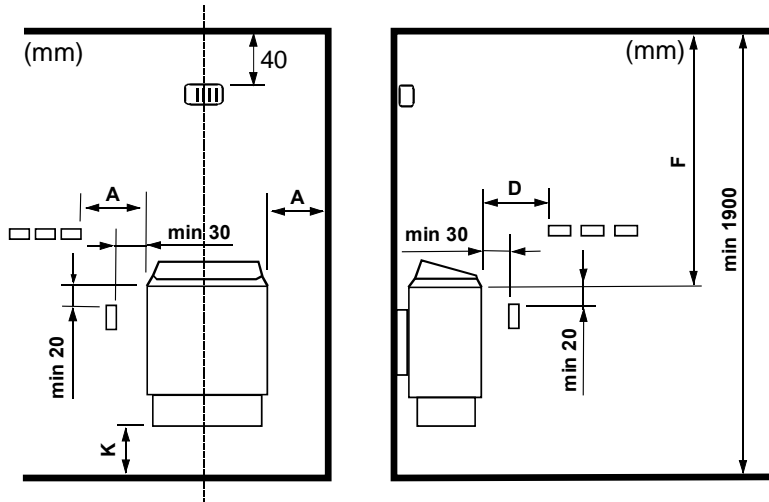
Principle picture



- Only this cable has been approved for the control of the heater.
- You can connect this cable directly into the heater without a connection box.
- Cable is not included in the packaging.
- Maximum length of the cable is 15 m
- Cable installation within the sauna room must be less than 500mm.

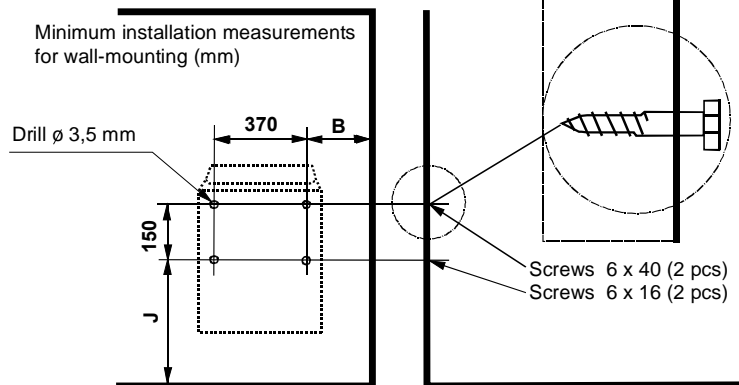
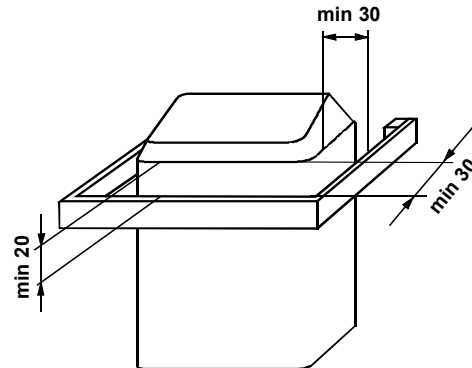
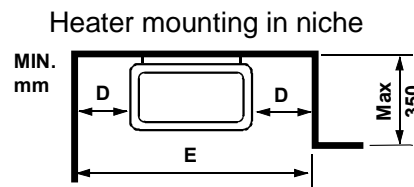
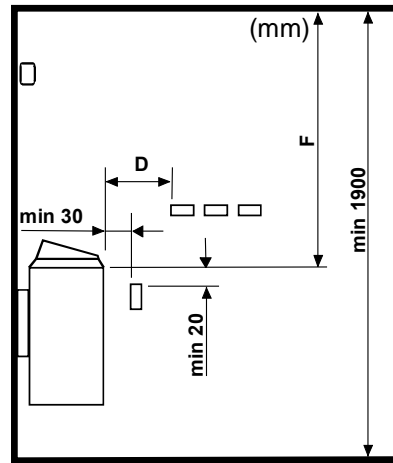
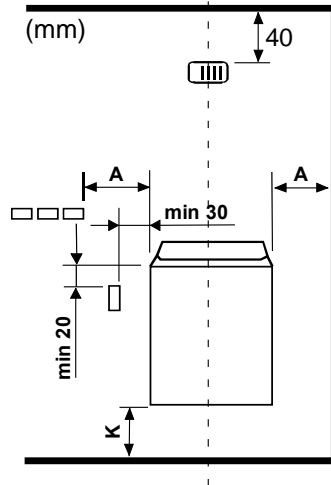
HEATER'S MINIMUM 1712-...-0405 INSTALLATION MEASUREMENTS (MM)

Type		Sauna room		Minimum distance to:				Minimum distance for the wall bracket		Width of the niche	Stone
		kW	Volume m ³	Height mm	Side wall A mm	Brackets and bench D mm	Ceiling F mm	Floor K mm	B mm	J mm	E mm
1712-30-0405	3,0	2 - 4	1900	30	50	1200	120	50	390	540	15
1712-45-0405	4,5	3 - 6	1900	50	80	1200	120	70	390	580	15
1712-60-0405	6,0	5 - 9	1900	70	100	1250	120	90	390	650	23
1712-80-0405	8,0	8 - 13	1900	100	150	1250	120	120	390	750	23
1712-90-0405	9,0	9 - 14	1900	100	200	1250	120	120	390	-	23



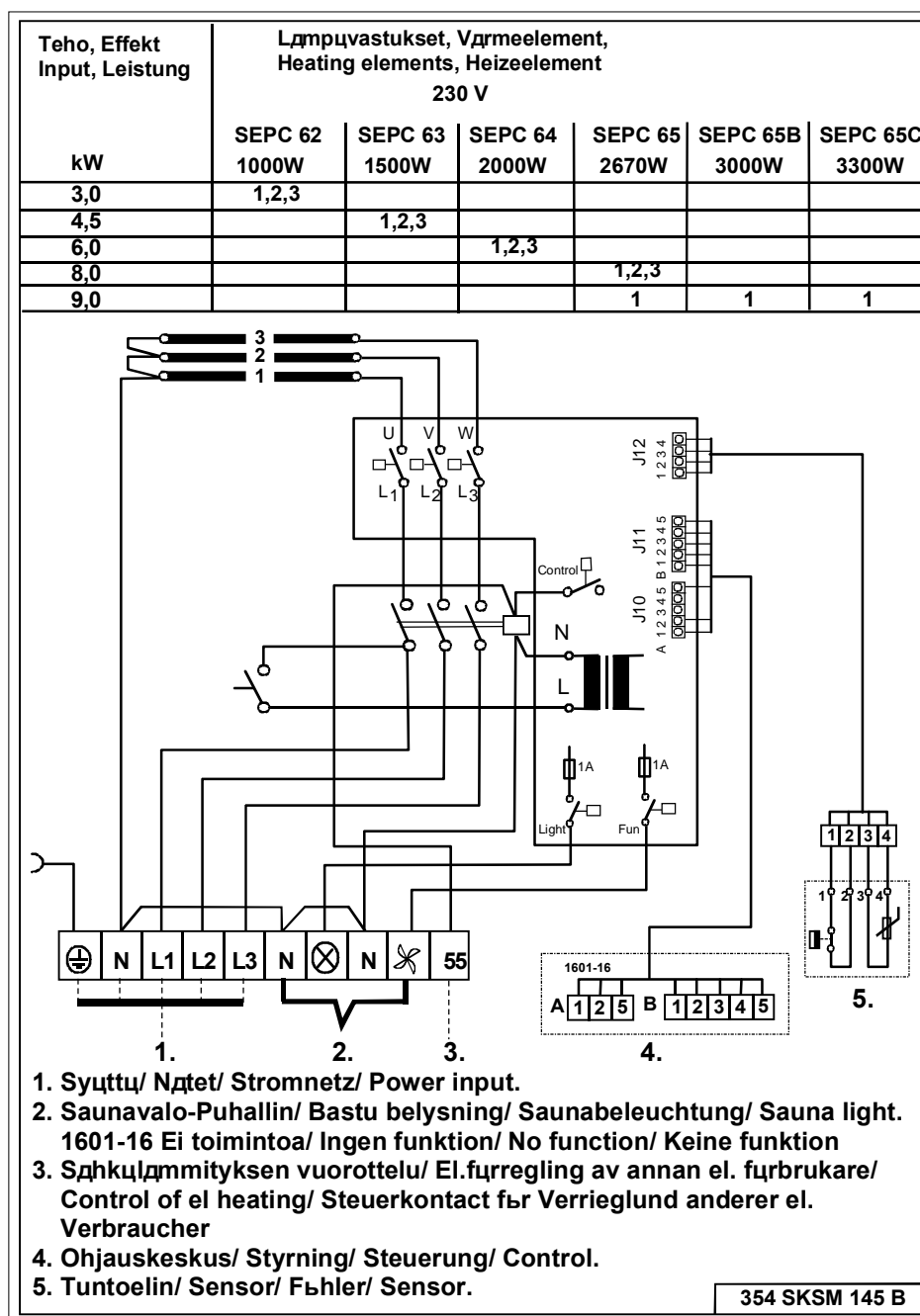
HEATER'S MINIMUM 1712-...-040520 INSTALLATION MEASUREMENTS (MM)

Type		Sauna room		Minimum distance to:				Minimum distance for the wall bracket		Width of the niche	Stone
		Volume	Height	Side wall	Brackets and bench	Ceiling	Floor	B	J		
	kW	m ³	mm	A mm	D mm	F mm	K mm	B mm	J mm	E mm	approx
1712-30-040520	3,0	2 - 4	1900	30	50	1200	120	50	390	540	15
1712-45-040520	4,5	3 - 6	1900	50	80	1200	120	70	390	580	15
1712-60-040520	6,0	5 - 9	1900	70	100	1250	120	90	390	650	20
1712-80-040520	8,0	8 - 13	1900	100	150	1250	120	120	390	750	20
1712-90-040520	9,0	9 - 14	1900	100	200	1250	120	120	390	-	20



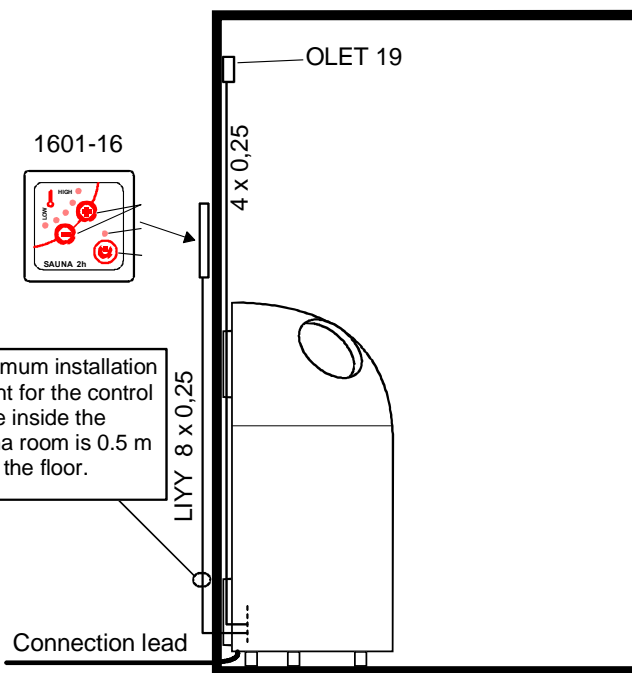
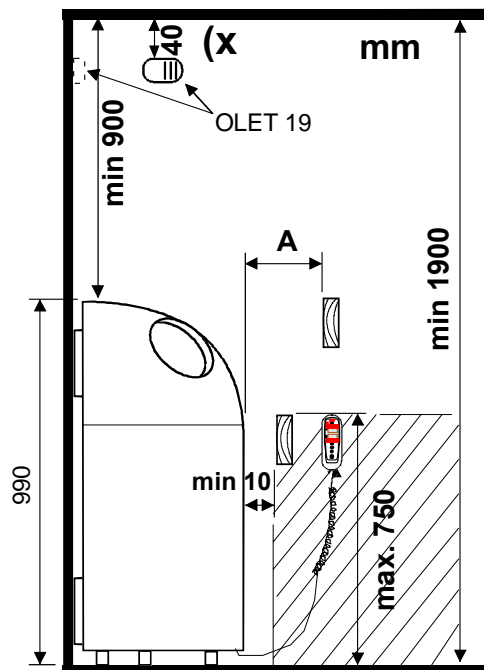
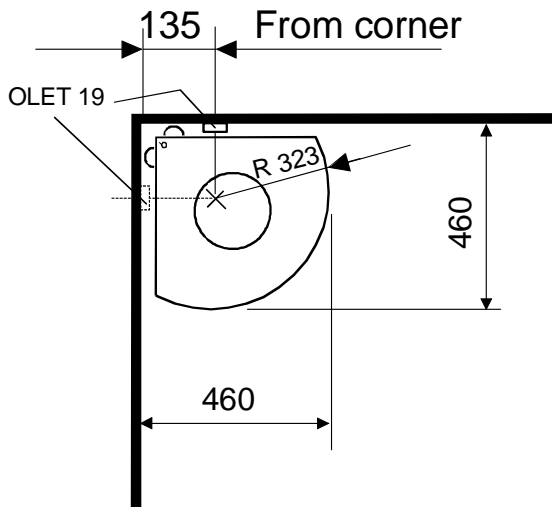
Connecting heaters 1712-...-0405 and 1712...-040520 into the mains.

kW	Fuse	Heater's connection Cable H07RN-F	Fixed installation
	A	mm ²	mm ²
3,0	3 x 10	5 x 1,5	5 x 1,5
4,5	3 x 10	5 x 1,5	5 x 1,5
6,0	3 x 10	5 x 1,5	5 x 1,5
8,0	3 x 16	5 x 1,5	5 x 2,5
9,0	3 x 16	5 x 1,5	5 x 2,5



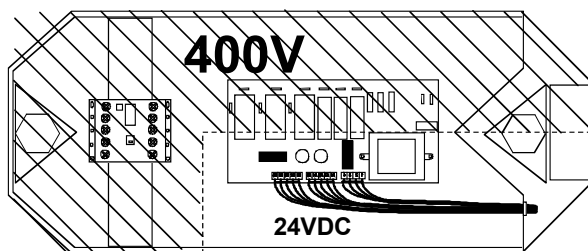
Minimum installation measurements (mm) for 1116-...-0405 heater

(x = This measurement is absolute)



Maximum installation height for the control cable inside the sauna room is 0.5 m from the floor.

Heater	Minimum installation distance
kW	A mm
4,5	40
6,5	150
9,0	150

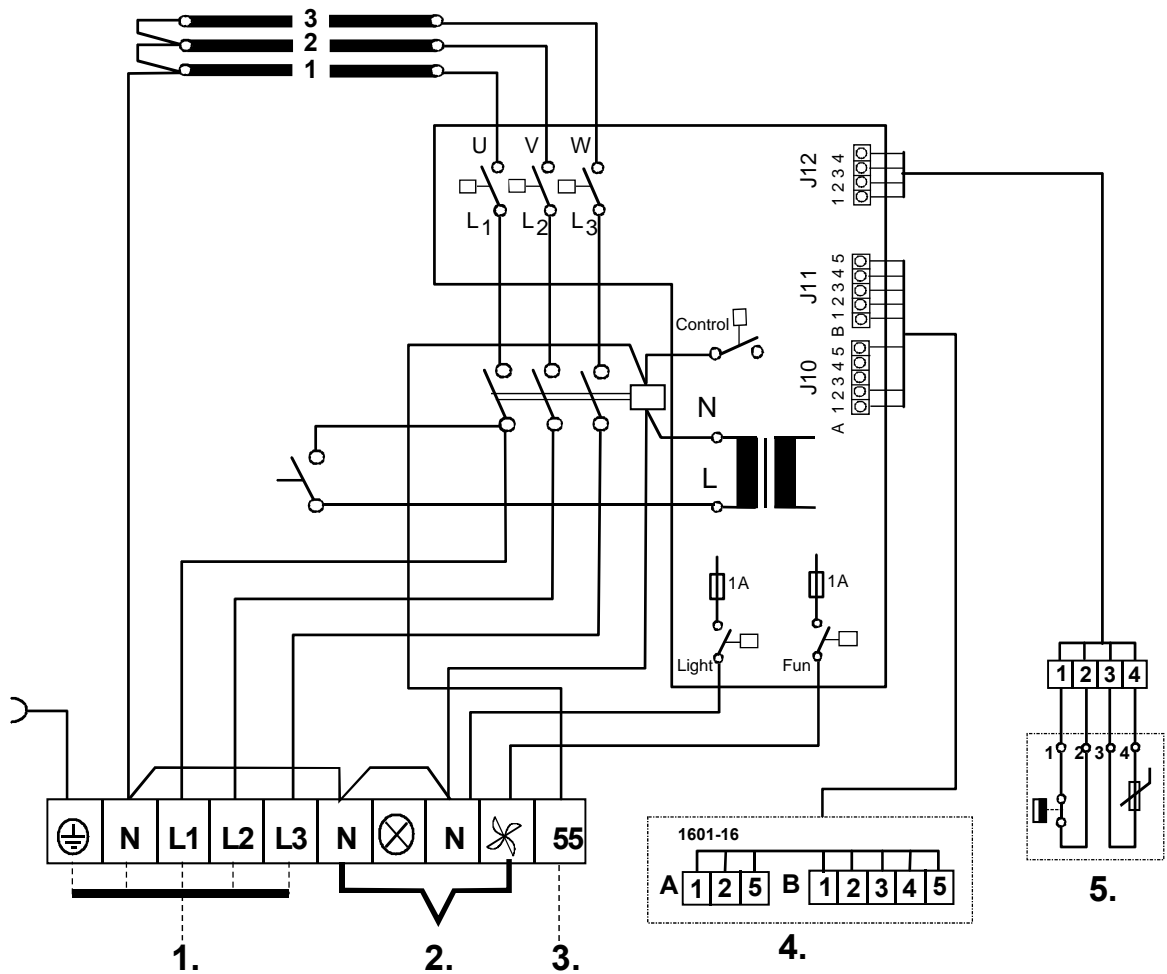


Sensor and control unit leads cannot be so long that they reach into the 400V dotted area

Connecting the heater into the mains

Type	kW	Fuse A	Heater's connection lead H07RN-F mm ²	Fixed installation mm ²	Sauna room Volume m ³	Height mm
1116-45-0405	4,5	3 x 10	5 x 1,5	5 x 1,5	3 - 6	1900
1116-65-0405	6,5	3 x 10	5 x 1,5	5 x 1,5	5 - 10	1900
1116-90-0405	9,0	3 x 16	5 x 1,5	5 x 2,5	9 - 14	1900

Teho, Effekt Input, Leistung	Lämpyvastukset, Värmeelement, Heating elements, Heizelement 230 V		
kW	SEPC 185 1500W	SEPC 186 2170W	SEPC187 3000W
4,5	1,2,3		
6,5		1,2,3	
9,0			1,2,3



1. Суцтту/ Nдтет/ Stromnetz/ Power input.
2. Saunavalo-Puhallin/ Bastu-Flдkt/ Saunabeleuchtung-ventilerung/
Sauna light-fan.
1601-16 Ei toimintoa/ Ingen funktion/ No Function/ Keine funktion
3. Sдhкцлдmmityksen vuorottelu/ El.fцrregling av annan el. fцrbrukare/
Control of el heating/ Steuercontact fцr Verrieglung anderer el.
Verbraucher
4. Ohjauskeskus/ Styrning/ Control/ Steuerung.
5. Tuntoelin/ Sensor/ Fцhler/ Sensor.

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