HTRS230V(30) THERMOSTAT - FULL USER MANUAL

TABLE OF CONTENTS

1. Introduction

1.1 Product Compliance

This product complies with the essential requirements and other relevant provisions of Directives 2014/53/EU and 2011/65/EU. The full text of the EU Declaration of Conformity is available at the following internet address: www.saluslegal.com.

1.2 Safety Informations

• Before starting installation work and before using the product, read the entire manual.
• The information contained in the instructions is essential for proper functioning.
• To avoid accidents resulting in personal injury and material damage, please follow all safety precautions, specified in this manual.
• The device should not be used by people with limited mental, sensory or mental abilities, without experience, of insufficient knowledge as well as children.
• Do not use an unassembled device (eg without a cover).
• The device may only be opened by a qualified person.
• Keep electrical devices out of the reach of children and ensure that they do not play with it. Children should not be left unattended. If necessary, disconnect the control system for the entire room.
• Do not leave the packaging, cabinet, or any loose parts of the device unattended, as they pose a risk to children.

WARNING!
• Installation must be carried out by a qualified person with appropriate electrical qualifications in accordance with standards and regulations in force in the given country and in the EU.
• Never try to connect the device other than as described in the manual.
• Before assembly, repair or maintenance as well as during any connection works it is absolutely necessary disconnect the mains supply and make sure that the terminals and electric wires are not live.
• The device may not be exposed to extreme temperatures, strong vibrations or subjected to mechanical shock.
• The device should not be used in unfavorable environmental conditions or in rooms where there is a concentration of flammable gases, fumes or dust.

WARNING!
• There may be additional protection requirements for the entire installation that the installer is responsible for maintaining.

Care for the natural environment is of paramount importance to us. The awareness that we manufacture electronic devices obliges us to dispose of used electronic components and devices safely. Therefore the company has received a registration number issued by the Chief Inspector for Environmental Protection. The crossed out symbol the trash can on the product means that the product must not be disposed of with ordinary waste containers. Sorting waste for recycling helps to protect the environment. It is the user's responsibility to surrender used equipment to a designated collection point for recycling waste from electrical and electronic equipment.

1.3 Product Overview

The HTRS230V(30) from SALUS Controls is a digital, wired and surface-mounted (or on a flush-box) non programmable room thermostat, dedicated for surface heating / cooling control, characterized by high thermal inertia. It is connected to the wiring centre. The thermostat does not have the function of creating schedules - it lowers the set temperature via wiring centre after receiving the NSB signal from the weekly thermostat.

The room thermostat works by turning the heating system on and off as needed by measuring the air temperature. When the air temperature drops below the thermostat setting, it turns on the heating, and turns it off when the set temperature is reached.

Setting the thermostat to a higher temperature will not heat up the room faster. How quickly a room heats up depends on the designed heating system, for example the temperature of the heating medium. Likewise, reducing the temperature even more while cooling the room will not result in faster cooling.

By setting the thermostat to a lower setpoint, the room will be controlled at a lower temperature and will save energy.

The best way to find the temperature that is right for you is to set the room thermostat to a low temperature value - let's say 18^0C - and then increase it one degree each day until you are comfortable.

Room thermostats need free airflow to sense the temperature and therefore must not be obstructed by curtains or obstructed by furniture. Nearby electrical heating devices, televisions, wall or table lamps, fireplaces or heaters may prevent the correct temperature measurement and thus the correct operation of the thermostat.

PRODUCT ADVANTAGES:

- absolutely silent operation (TRIAC)
- has a PWM control algorithm
- protection of thermostatic valves against stagnation (VP)
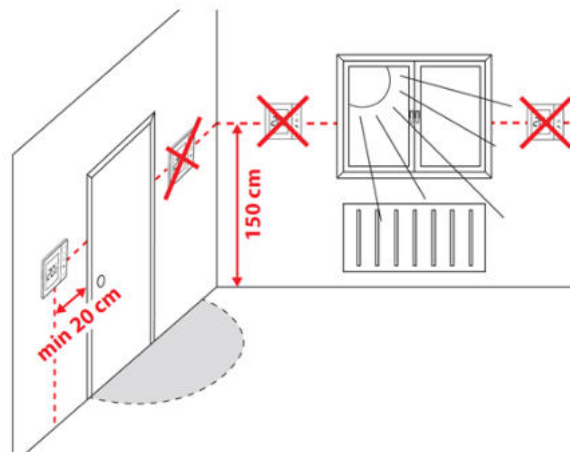- has frost protection mode

2. Montage

2.1 Package content

1) HTRS230V(30) thermostat
2) Short instruction
3) Mounting screws

2.2 Proper thermostat location

⚠️ **Please note:**

The ideal position to thermostat mounting is about 1,5m under floor level far from heating or cooling sources. Thermostat can't be exposed to sunlight or any extreme conditions like for example draft.

Because of fire and explosion risk there is not allowed to use thermostat in atmosphere of explosive gases and flammable liquids (eg coal dust). In case if any of listed dangers occur you have to use additional protection measures – anti-dust and explosive gases (tight cover) or prevent their formation. Furthermore, thermostat can't be used in condensation of water vapor conditions and be exposed to water action.

2.3 Wall mounting

Mounting: to mount thermostat you can use accesories included with the set (mounting screws). Remove back cover to mount the plate to the wall. After this just attach thermostat to the plate right into designed holes in the plate.
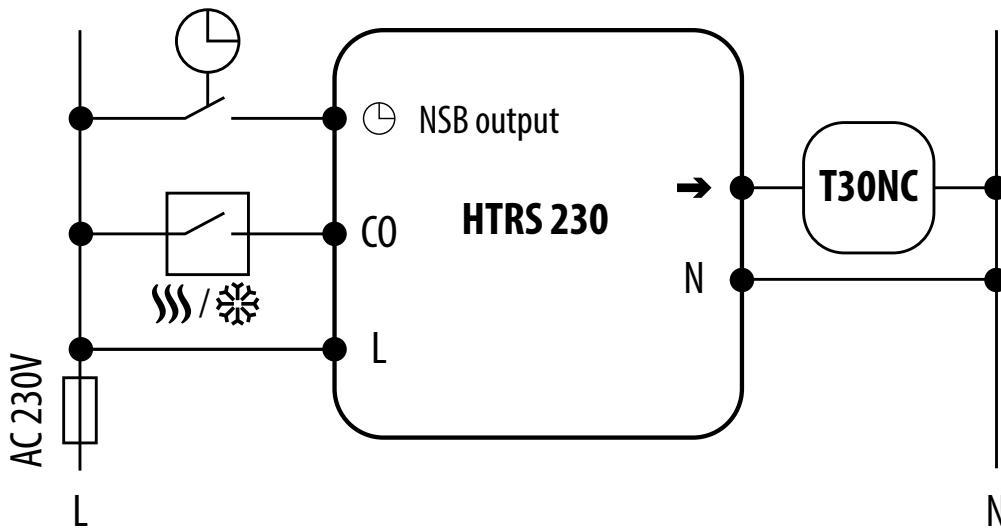

Open the housing with a screwdriver - as shown in the pictures above.

Connect wires properly, mark the correct possition on the wall and mount the rear case to the wall.

2.4 Connection description

NSB output

HTRS 230

CO

\\\\\ / ❄

L

AC 230V

L

→

T30NC

N

N

Legend:

T30NC — Thermal actuator

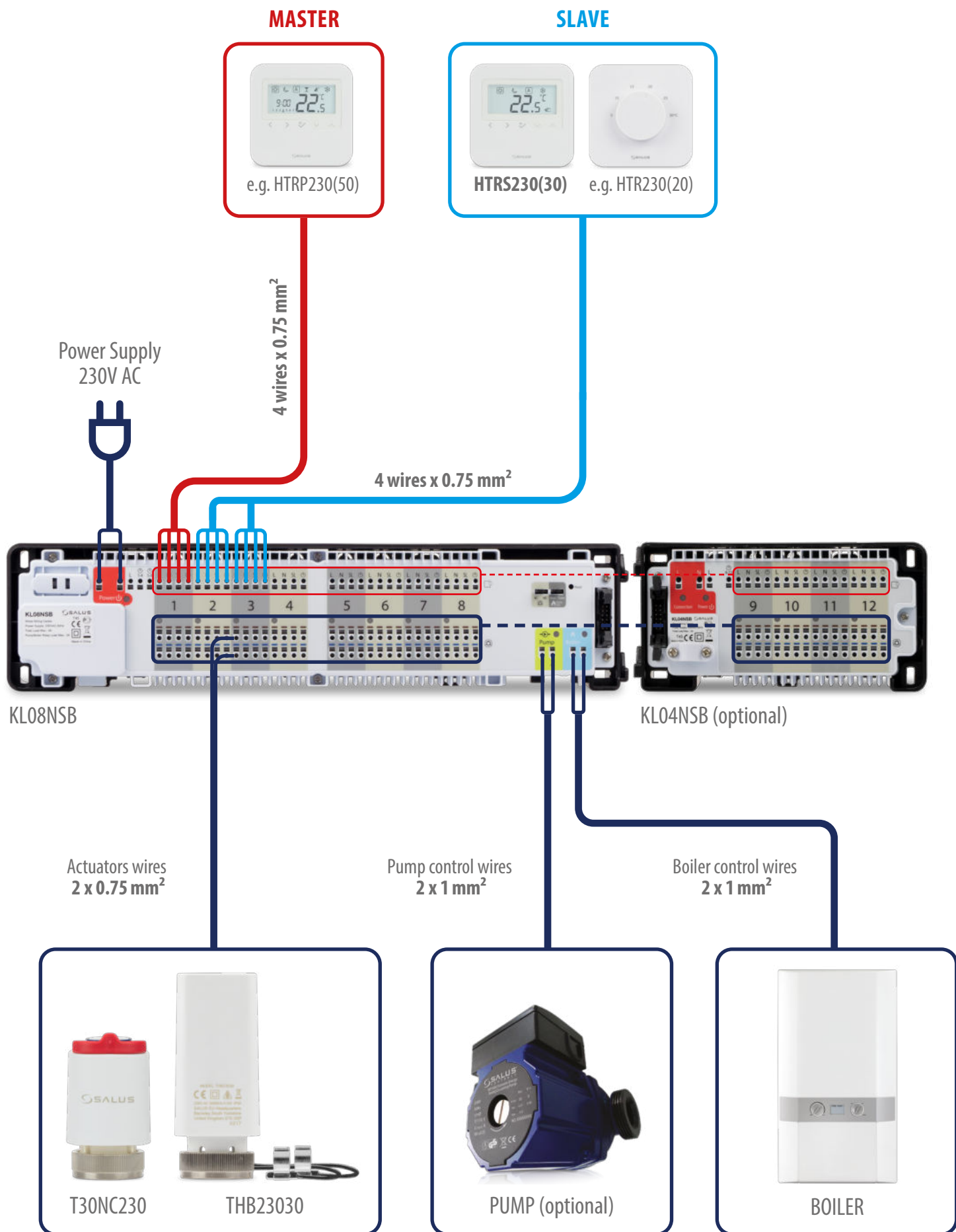**Symbols explanation:**

L, N - power supply 230V

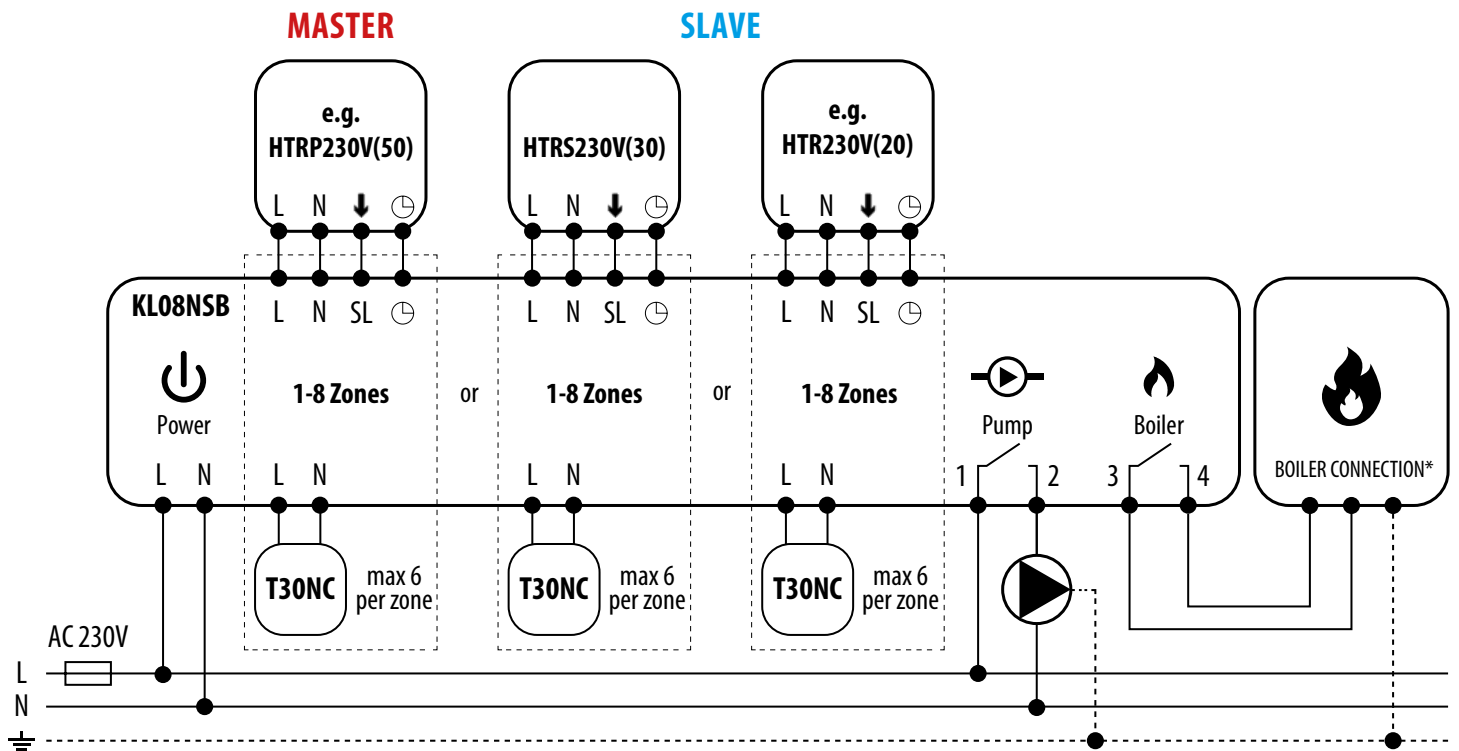🕐 - **NSB** - Night temperature reduction (230V output)

➡ - **SL** - 230 V AC output signal

CO - Switching jumper between heating and cooling (input 230V AC)

I A - 4 wire installation with KL08NSB wiring centre

HTRS230V(30) works mainly as a SLAVE thermostat (group thermostat) which means that it can be controlled by a MASTER thermostat e.g. HTRP230V(50). MASTER thermostat controls SLAVE thermostat only when SLAVE thermostat is in AUTO mode. Comfort (SUN) and economy (MOON) setpoint temperatures are set individually on each thermostat but switching between those temperature is based on time schedule taken from HTRP230(50) thermostat which works like a group controller. Functions such as: setpoint temperature change or frost protection mode are not managed by MASTER thermostat.

MASTER

e.g. HTRP230(50)

SLAVE

HTRS230(30)   e.g. HTR230(20)

Power Supply
230V AC

4 wires x 0.75 mm²

4 wires x 0.75 mm²

KL08NSB

KL04NSB (optional)

Actuators wires
2 x 0.75 mm²

Pump control wires
2 x 1 mm²

Boiler control wires
2 x 1 mm²

T30NC230   THB23030

PUMP (optional)

BOILER

MASTER **SLAVE**

e.g. HTRP230V(50) HTRS230V(30) e.g. HTR230V(20)

KL08NSB

Power

1-8 Zones or 1-8 Zones or 1-8 Zones

Pump Boiler

T30NC max 6 per zone T30NC max 6 per zone T30NC max 6 per zone

BOILER CONNECTION*

AC 230V
L
N

Legend:

Boiler - Boiler connection* - Boiler's contacts for ON/OFF thermostat (according to the boiler's instructions)

Pump
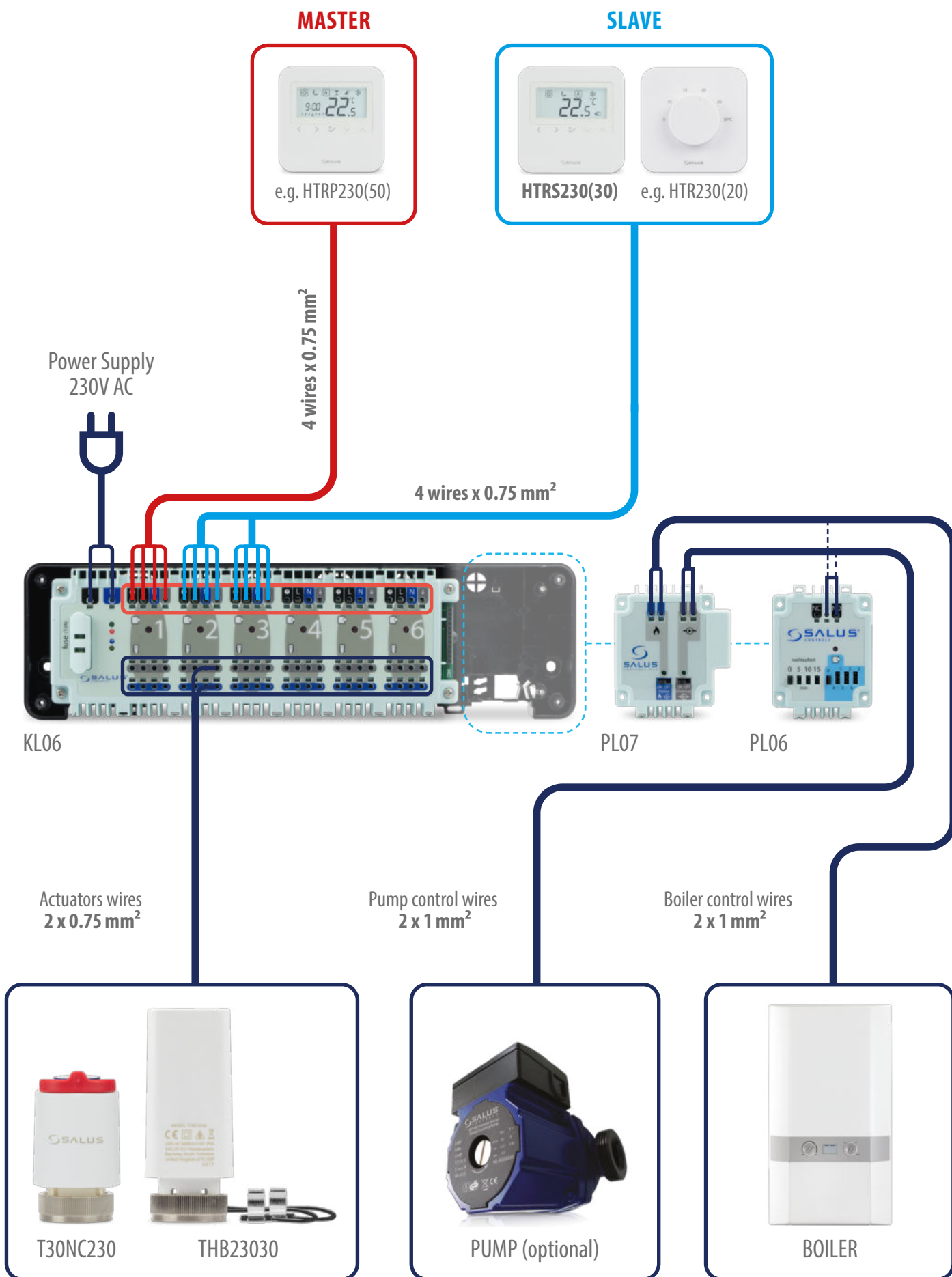
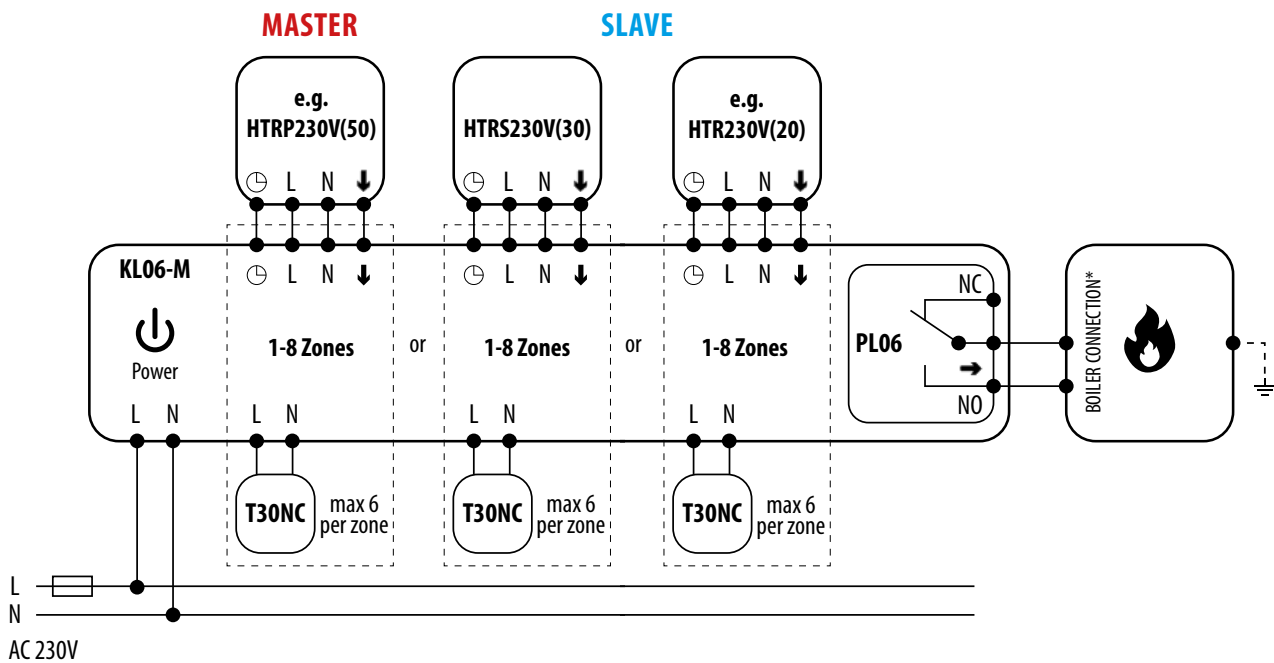T30NC Thermal actuator

Symbols explanation:

L, N - power supply 230V

- **NSB** - Night temperature reduction (230V output - in MASTER thermostat) (230V input - in SLAVE thermostat)

- **SL** - 230 V AC actuator control signal

- fuse

I B - 4 wire installation with KL06 wiring centre

MASTER

e.g. HTRP230(50)

SLAVE

HTRS230(30)   e.g. HTR230(20)

Power Supply
230V AC

4 wires x 0.75 mm²

4 wires x 0.75 mm²

KL06

PL07   PL06

Actuators wires
2 x 0.75 mm²

Pump control wires
2 x 1 mm²

Boiler control wires
2 x 1 mm²

T30NC230   THB23030

PUMP (optional)

BOILER

MASTER   SLAVE

e.g. HTRP230V(50)   HTRS230V(30)   e.g. HTR230V(20)

KL06-M

Power

1-8 Zones   or   1-8 Zones   or   1-8 Zones

PL06

BOILER CONNECTION*

T30NC   max 6 per zone   T30NC   max 6 per zone   T30NC   max 6 per zone

L
N
AC 230V

Pump logic module (for KL06) connection diagram

PL07

BOILER CONNECTION*

MAX 5 (2) A

L N

AC 230V

Legend:

Boiler - Boiler connection* - Boiler's contacts for ON/OFF thermostat (according to the boiler's instructions)

Pump

T30NC   Thermal actuator

Symbols explanation:

L, N - power supply 230V

- **NSB** - night temperature reduction (230V output - in MASTER thermostat) (230V input - in SLAVE thermostat)

- **SL** - 230 V AC actuator control signal

NC, NO - voltage-free output

- fuse
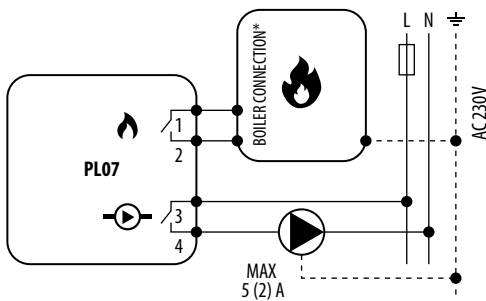
Pump and boiler logic module (for KL06) connection diagram

PL06   BOILER CONNECTION*

PL06

MAX 5 (2) A

L N

AC 230V
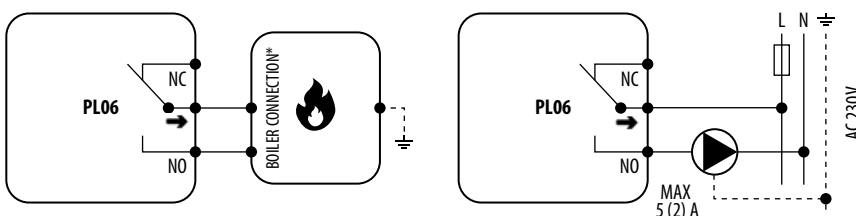
II - 3 wire installation with KL08NSB wiring centre

3 wire installation with KL08NSB wiring center. Description of the operation rule:
- HTRS230V(30) thermostat's functionality is limited because of 3 wire installation. NSB function is disabled and HTRS230V(30) thermostat doesn't work as a SLAVE group thermostat - no effect from potential MASTER thermostat, which means that it can be just a simple pump, boiler or actuator controller)

⚠ PLEASE NOTE!
The same operating rules apply to wiring center KL06.
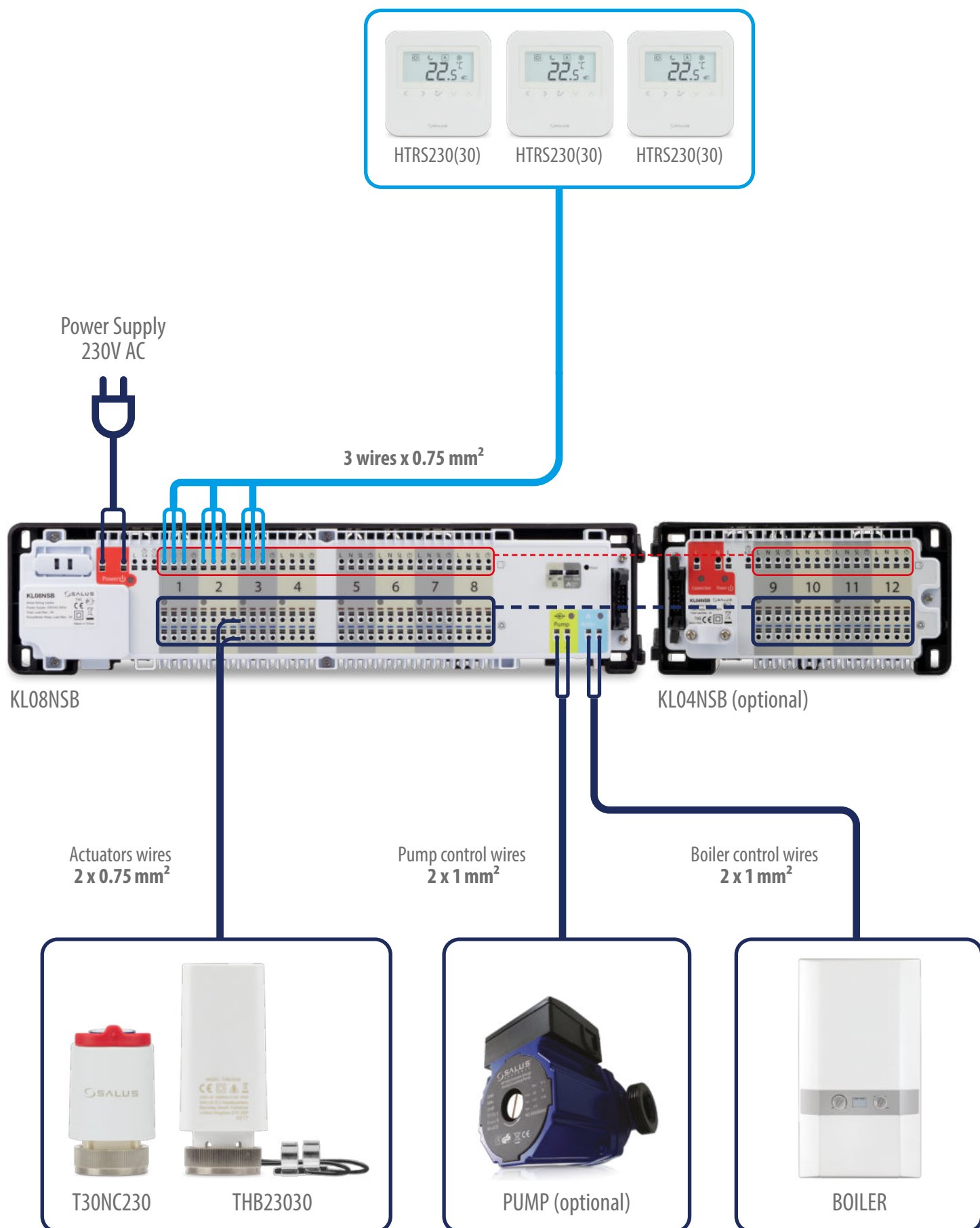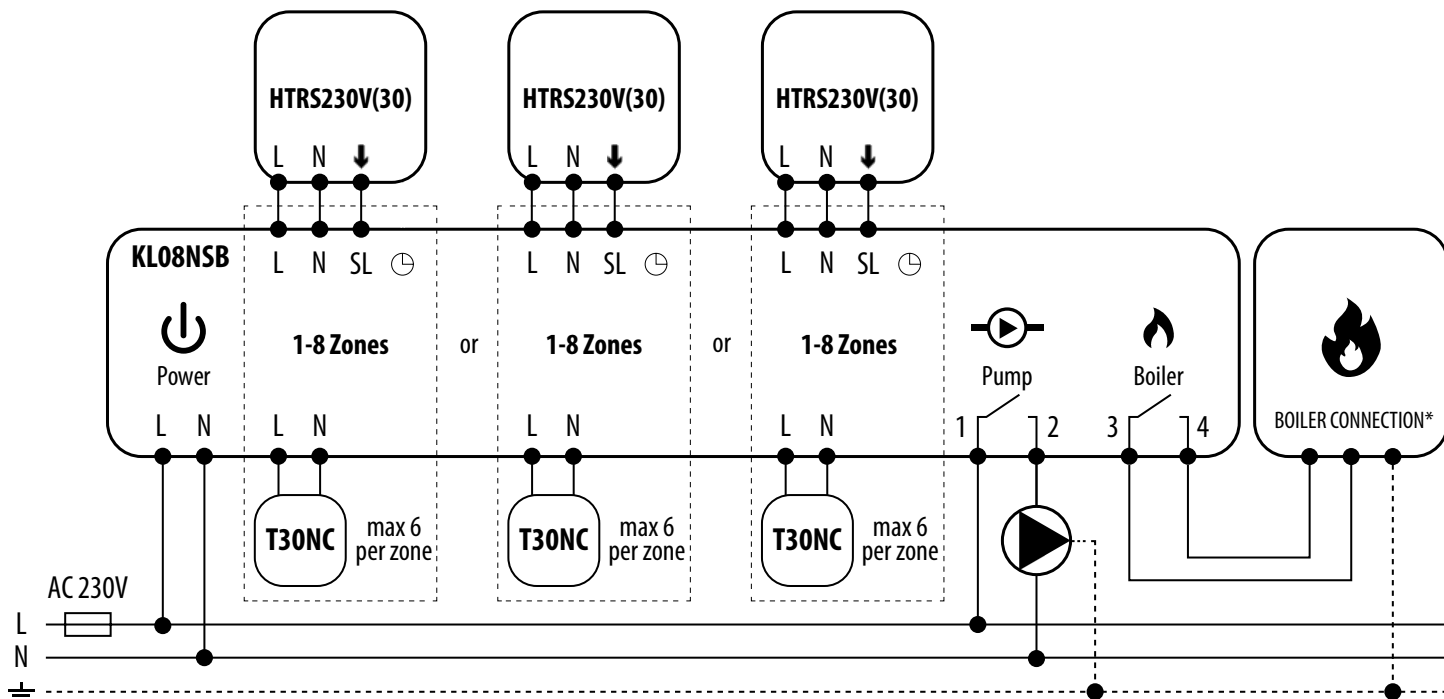
HTRS230(30)   HTRS230(30)   HTRS230(30)

Power Supply
230V AC

3 wires x 0.75 mm²

KL08NSB   KL04NSB (optional)

Actuators wires
2 x 0.75 mm²

Pump control wires
2 x 1 mm²

Boiler control wires
2 x 1 mm²

T30NC230   THB23030   PUMP (optional)   BOILER

HTRS230V(30) — L N ↓

HTRS230V(30) — L N ↓

HTRS230V(30) — L N ↓

KL08NSB

L N SL ⊕   or   L N SL ⊕   or   L N SL ⊕

⏻ Power   **1-8 Zones**   **1-8 Zones**   **1-8 Zones**   Pump   Boiler

L N   L N   L N   L N   1   2   3   4   BOILER CONNECTION*

T30NC max 6 per zone   T30NC max 6 per zone   T30NC max 6 per zone

AC 230V

L

N

Legend:

Boiler - Boiler connection* - Boiler's contacts for ON/OFF thermostat (according to the boiler's instructions)

Pump

T30NC — Thermal actuator

Symbols explanation:

L, N - power supply 230V

⊕ - **NSB** - Night temperature reduction (230V output)**

→ - **SL** - 230 V AC actuator control signal

— - fuse

** - not used in 3 wire installation

III A - work with RM-16A relay module - heating source control
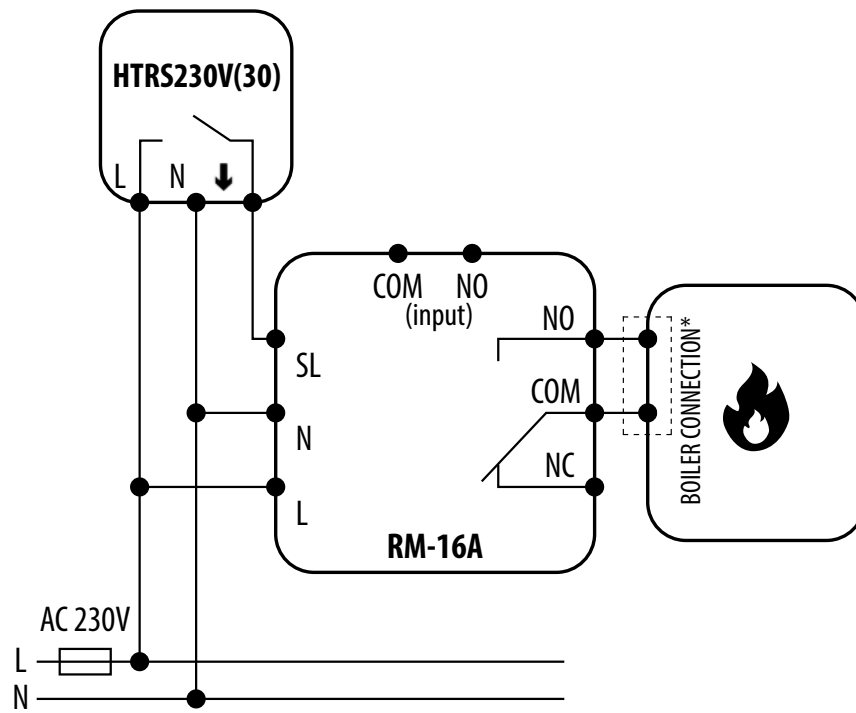
Connection of a 230 V AC voltage thermostat to a boiler
(or other device) with an ON - OFF contact.

III B - work with RM-16A relay module - connection to a solid fuel boiler controller
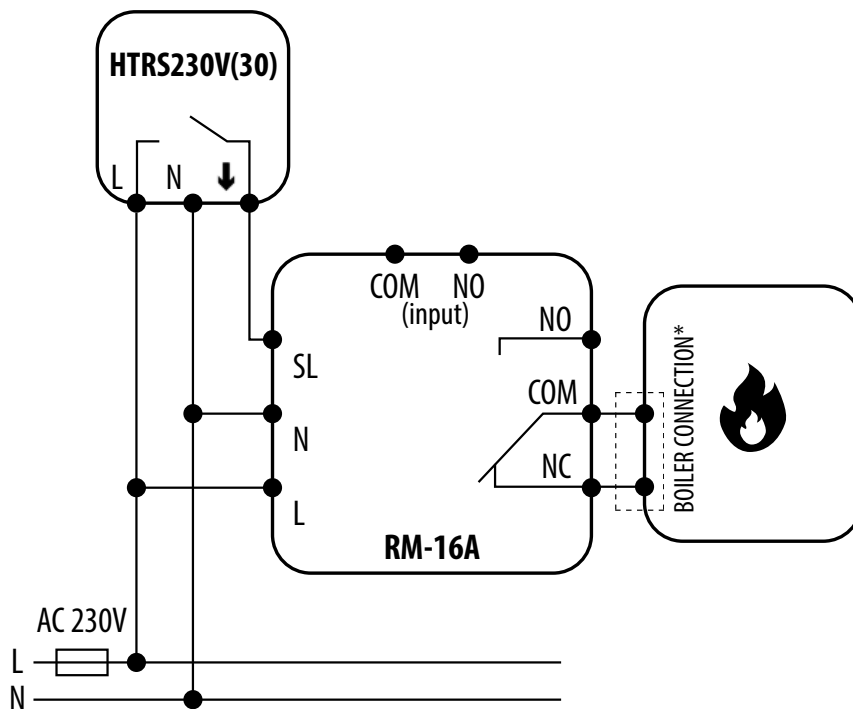
Connection of a 230 V AC voltage thermostat to a solid fuel
boiler controller with an ON - OFF contact.

⚠ **PLEASE NOTE!** Activate the thermostat in the solid fuel boiler controller.

III C - work with RM-16A relay module - connecting an electrical device with a higher power than the thermostat relay allows

⚠️ **PLEASE NOTE!** The maximum current consumption of an electrical device shouldn't exceed 16A.
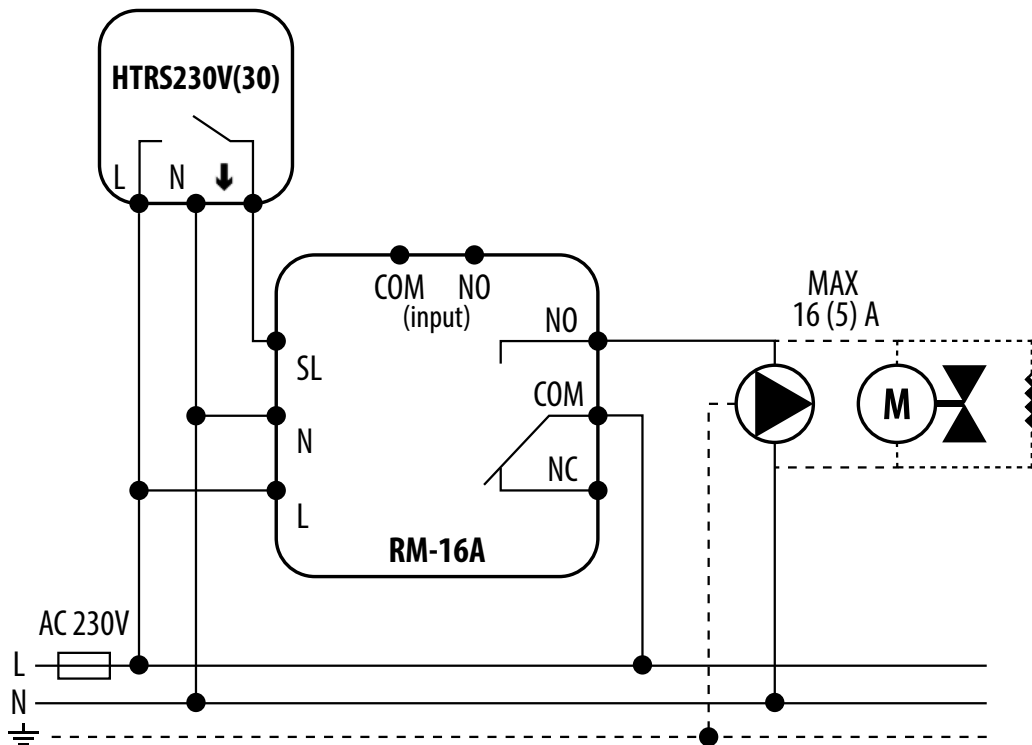
Legend:

▶	Pump
Ⓜ ◄►	Valve actuator
〰	Heating mat

Symbols explanation:

L, N - power supply 230V

⬇ - **SL** - 230 V AC actuator control signal

NO, COM, NC - voltage-free output

⊡ - fuse

3. Before you start (first power up)

3.1 LCD icon description
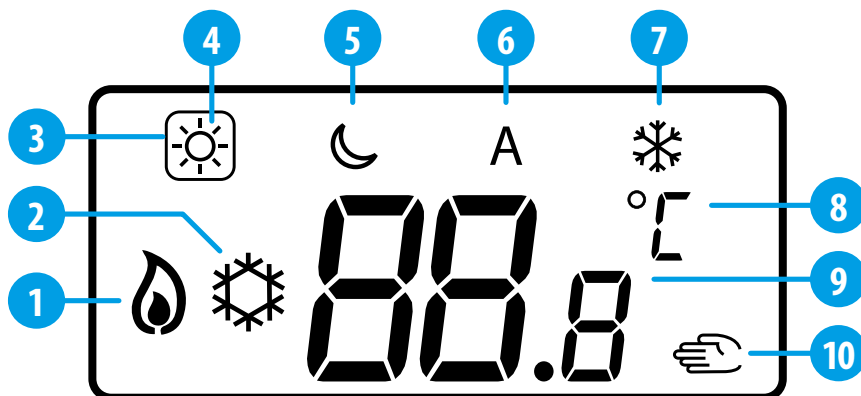
1. Heating mode ON
2. Cooling mode ON
3. ▢ Current active mode
4. Comfort temperature
5. Economic temperature
6. Automatic mode
7. Frost protection mode
8. Temperature unit
9. Current / set temperature
10. Manual mode / override temp.

3.2 Button description

Button Description	
Button	**Function**
⌃ OR ⌄	1. Increase or decrease setpoint temperature. 2. Select installer parameter value.
⟨ OR ⟩	1. Mode selection. 2. Moving between parameters.
✓	1. OK key: Short press to confirm selection. 2. Long press to save and exit. 3. When Main Screen – long press to enter the user settings.
⟨ + ⌃	Hold down these buttons for 3 SECONDS to enter installer parameter settings.

⚠ **PLEASE NOTE!** The LCD screen can be activated by using any button.

16

3.3 First power up sequence

1
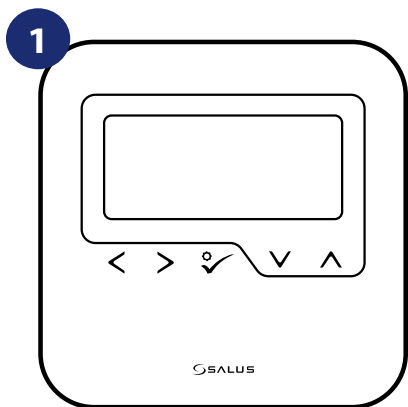
To power on the thermostat you have to connect it to the 230V power supply then...

2
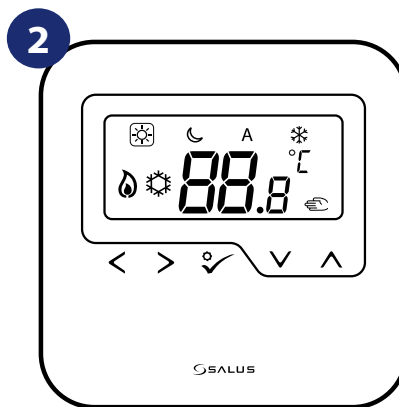
...display will show all icons...

3
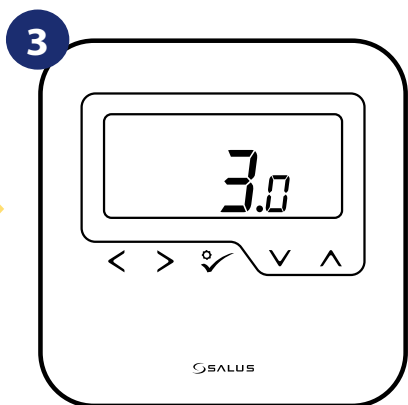
...then thermostat will display the software version.

4
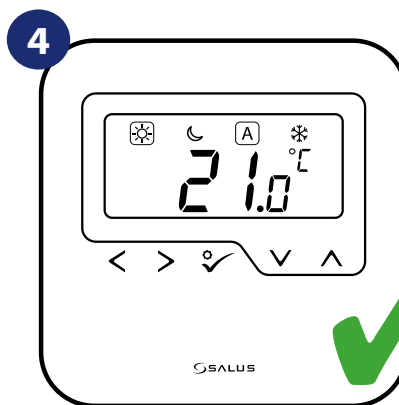
After all, the main screen will be displayed.

4. Work modes

HTRS230V(30) offers a few work modes. Frame on a given icon indicates which mode is currently active. In manual mode ⚙ or 🌙 only one temperature level is maintained. HTRS230V(30) follows MASTER thermostat when AUTO mode is active („A" icon) - please refer to 2.5 connection description chapter. Detailed description of work modes is located below:

☐ - **Frame -** means that the work mode is active (the icon of the work mode must be in the center of the frame). For example:

⚙ - means that comfort temperature mode **is active**

☀ - means that comfort temperature mode **is inactive**

⚙ - **Comfort temperature mode -** pre-defined setpoint temperature. Usually set when we are indoors. The highest maintained temperature in heating mode or the lowest if thermostat works in the cooling system. Acting alone works as a manual mode. Temperature range: from 5℃ to 35℃.

🌙 - **Economic temperature mode -** pre-defined setpoint temperature. Usually set at night or when we are out of the house. Acting alone works as a manual mode. Temperature range: from 5℃ to 35℃.

Ⓐ - **Automatic mode temperature (schedule) -** follows MASTER thermostat. It adopts it's mode. You can override the auto mode by changing the temperature setpoint. ✋ - the hand icon will appear.

❄ - **Frost protection mode -** usually used during extended periods of absence or during the holidays (only available in heating mode). Temperature range: from 5℃ to 17℃.

Example - comfort temperature mode setpoint editing:
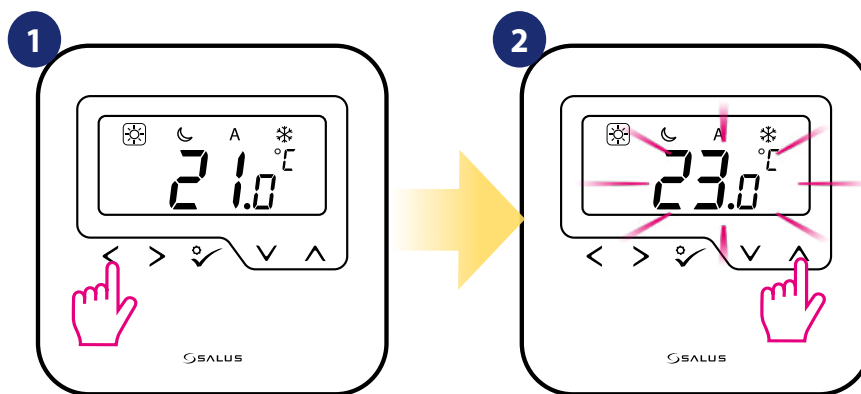
Use ‹ or › buttons to switch between work modes. Choose ⚙ in this case.
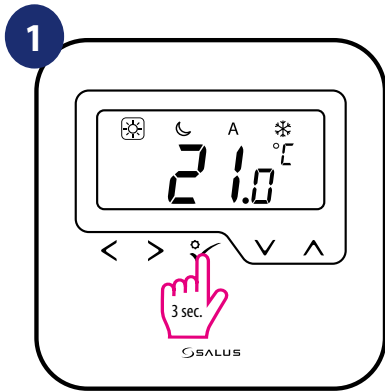
Use ⌄ or ⌃ buttons set temperature setpoint.
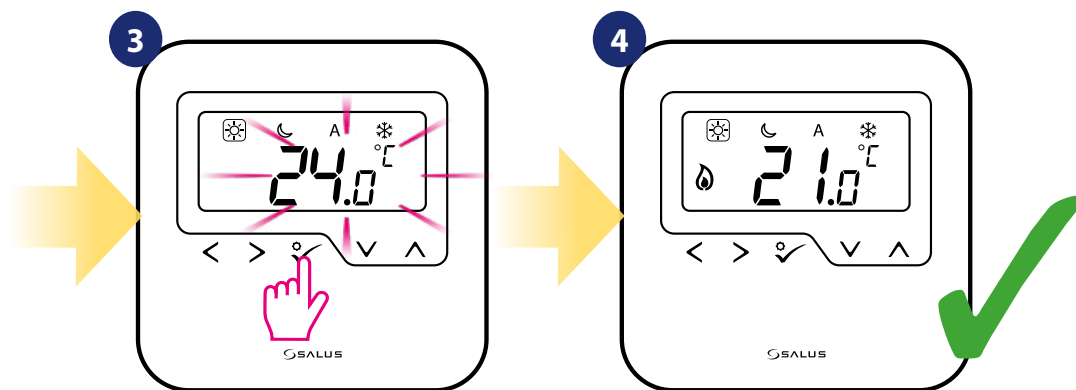
Confirm by ✓ button.

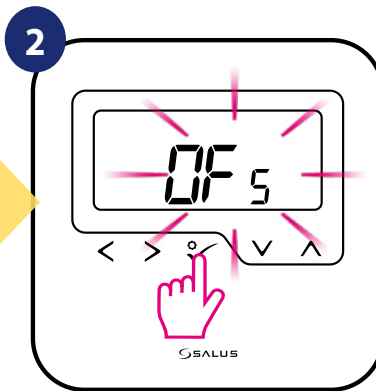Thermostat will go back to the main screen after saving the settings.

5. User settings (basic settings)
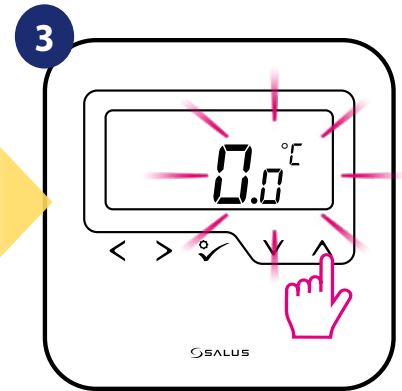
5.1 Thermostat calibration

Thermostat calibration is a function which allows user to recalibrate internal thermostat's temperature sensor by a given number of degrees (in the range from -3,0 °C to 3,0 °C in 0,5 °C steps). To calibrate thermostat's temperature sensor please follow steps below:
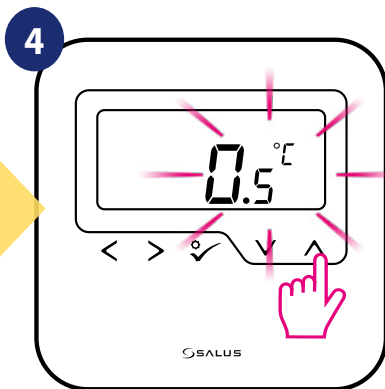

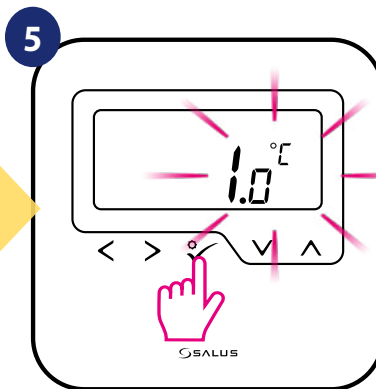**1** Hold ✓ button for 3 seconds to enter the menu.

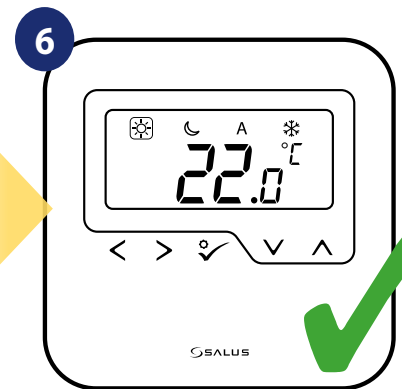**2** Go to the thermostat calibration settings using ❯ button. Confirm by ✓ button.

3 Set temperature calibration value using ∨ and ∧ buttons.

4 To increase/decrease value use ∨ and ∧ buttons.

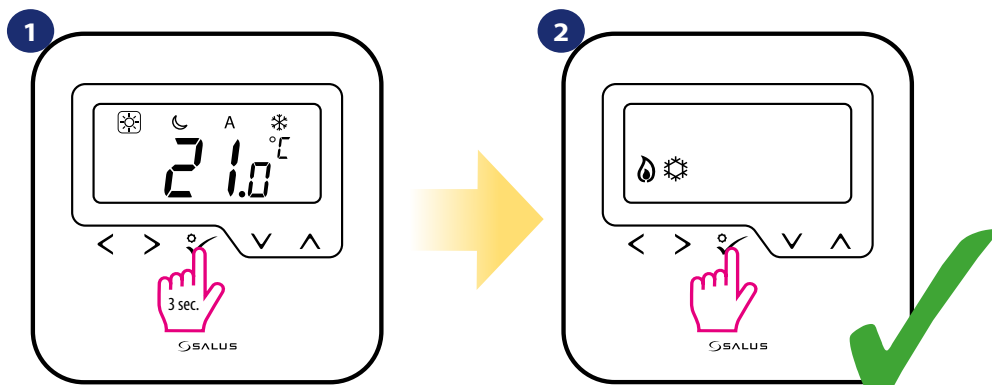**5** Confirm by ✓ button.

6 Thermostat will go back to the main screen after saving the settings.

5.2 Heat/cool mode change

The heating / cooling mode for the thermostat can be changed manually or automatically via „CO" terminal. If 230V power is applied to the „CO" terminal - then thermostat automatically switches to cooling mode. If you use this function in automatic mode, set the d18 parameter value to „1".
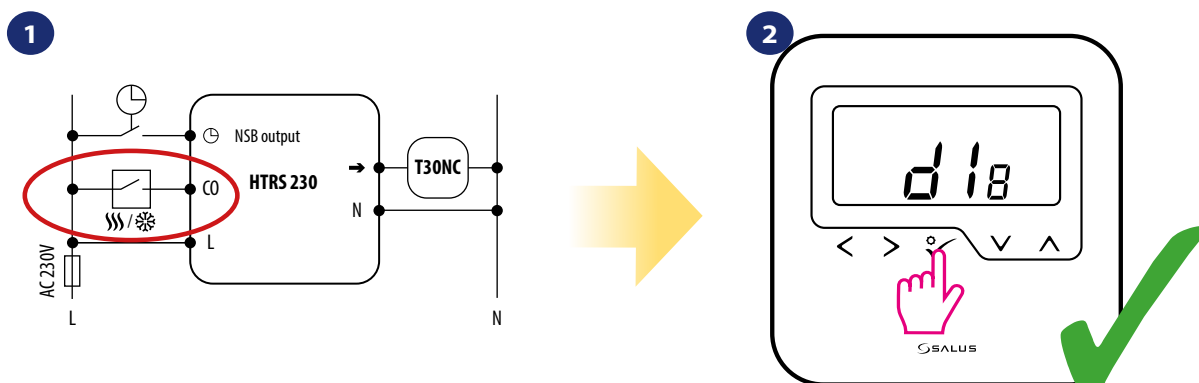
MANUALLY:

Hold ✌ button for 3 seconds to enter the menu.
Then use ‹ and › to choose heating/cooling settings.
Confirm by ✌ button.

Set thermostat for heating using ∨ and ∧ buttons.
Confirm by ✌ button.

AUTOMATICALLY:

By external ON/OFF switch:

The heating / cooling mode for the thermostat can be changed manually or automatically via „CO" terminal. If 230V power is applied to the „CO" terminal - then thermostat automatically switches to cooling mode.

If we are using this option then d18 parameter should be set to „1".
Move in settings using ‹ and › buttons.
Confirm by ✌ button.

6. Installer parameters

To enter installer parameters please follow steps below. Please refer to parameters table description before any changes. Use ∨ or ∧ buttons to move up or down between all parameters. Every change/selection confirm by ✓ button:
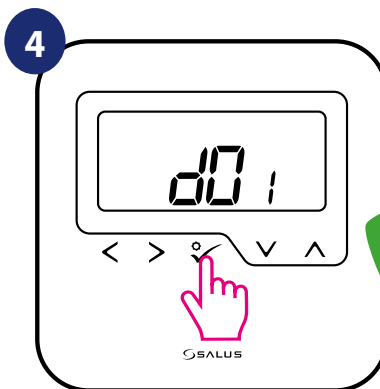
1

Hold ‹ + ∧ buttons for 3 seconds to enter the installer mode.

2
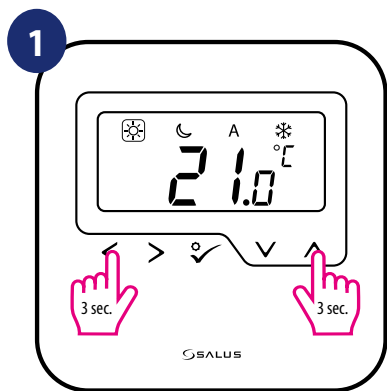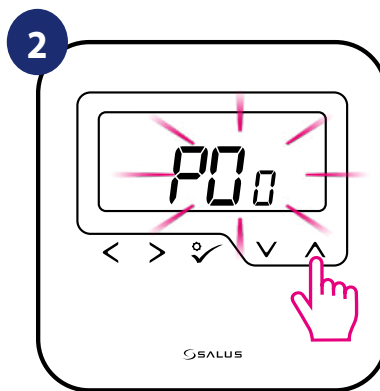
Use ∨ or ∧ to choose code „49".

3

Press ✓ button to confirm.

4
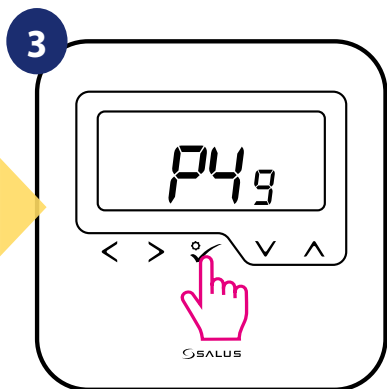
Select installer parameter by ‹ or › buttons. Use ∨ or ∧ buttons to change parameter value. Confirm choice by ✓ button.

dXX	Function	Parameter Values	Description	Default Values
d01	Heating Control		This parameter defines the algorithm of the room temperature control.	
		0	PWM (Pulse-width modulation) algorithm ensures reduction of overdrive states and economic operation of the system. It is an advanced algorithm designed to precisely maintain room temperature.	0
		1	SPAN ± 0.25℃ (± 0.5°F)	
		2	SPAN ± 0.5℃ (± 1.0°F)	
d02	Room temp. offset	-3.0℃ to + 3.0℃	Offset room temperature measuring is a function which allows user to recalibrate internal thermostat's temperature sensor by a given number of degrees (in the range from -3,0 ℃ to 3,0 ℃ in 0,5℃ steps).	0.0℃
d05	Cooling Control	1	SPAN ± 0.25℃ (± 0.5°F)	2
		2	SPAN ± 0.5℃ (± 1.0°F)	

dXX	Function	Parameter Values	Description	Default Values
d07	Valve Protection	0	Enable/Disable. Valve protection function is intended to protect thermostatic valves against getting stuck or jamming (e.g. in summer time when heating system is disabled). If thermostat doesn't send a signal for heating for a period of 7 days, then heating is turned on for a very short period of time just to move the actuators.	1
		1		
d08	Frost Setpoint	5℃ - 7℃	In Frost protection mode the thermostat is displaying actual room temperature and maintain „frost protection" setpoint temperature specified in thermostat settings. When thermostat works in Frost protection mode then you have no possibilities to change temperature setpoint.	5.0℃
d12	Maximum limitation of heating setpoint	5℃ - 35℃	This parameter allows to limit temperature setpoint range by setting maximum setpoint for heating and cooling modes. Default temperature setting range: $5^0C - 35^0C$	35℃
d13	Minimum limitation of cooling setpoint	5℃ - 40℃	This parameter allows to limit temperature setpoint range by setting minimum setpoint for heating and cooling modes. Default temperature setting range: $5^0C - 40^0C$	5℃
d18	Heat/Cool Mode Selection	0	No connection	0
		1	Connection	
d19*	Cooling Blocked	0	Cooling allowed	0
		1	Cooling disabled	
d20	Actuators loading selection for different temperature compensation.	1	x1 actuator loading	1
		2	x2 actuators loading	
		3	x3 actuators loading	
		4	x4 actuators loading	
		5	x5 actuators loading	

*Cooling Blocked - at „1" we block cooling for a single room until the device receives a heating command. During the blocking of the cooling function no message is displayed.
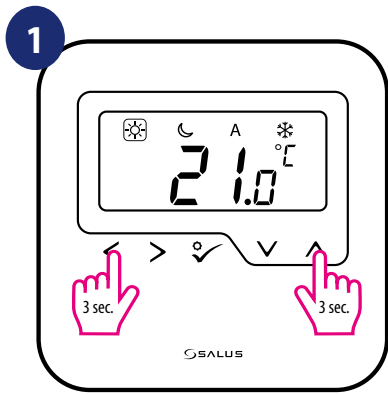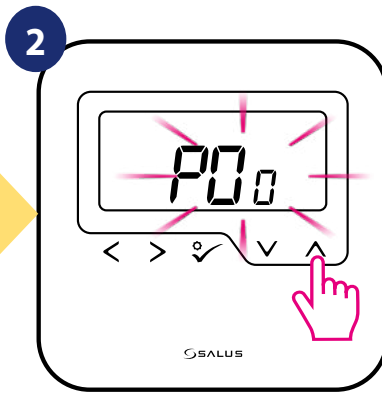
*Please note!
d19 parameter will be available only if d18 is set on 1 (Heat/Cool Mode selection Connected).
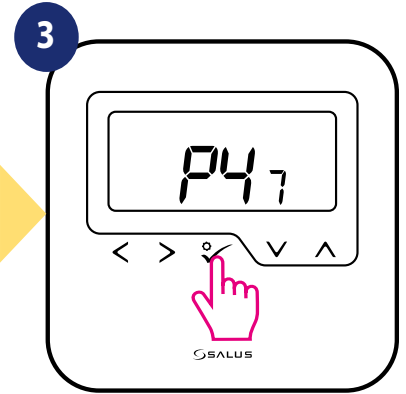
7. Factory Reset

To **RESET** HTRS230V(30) thermostat to it's factory default settings please follow steps below:
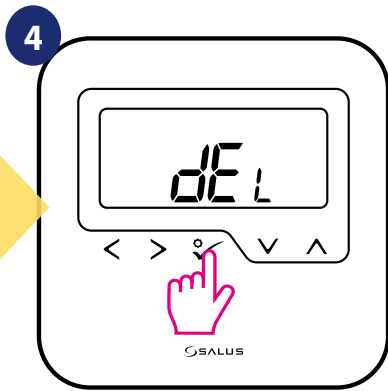
Hold $< + \wedge$ buttons for 3 seconds to enter the installer mode.

Use $\vee$ or $\wedge$ buttons to choose code „47".
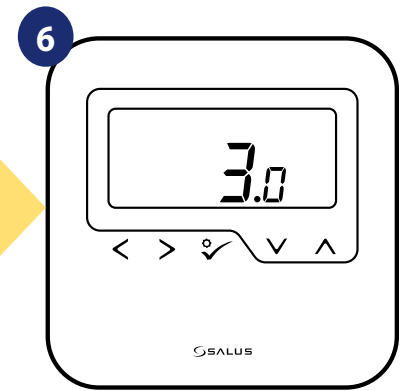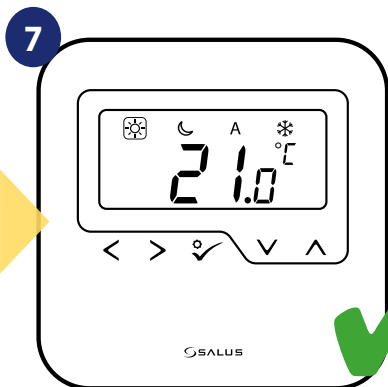
Press $\checkmark$ button to confirm.

Select „del" and confirm choice by pressing $\checkmark$ button.
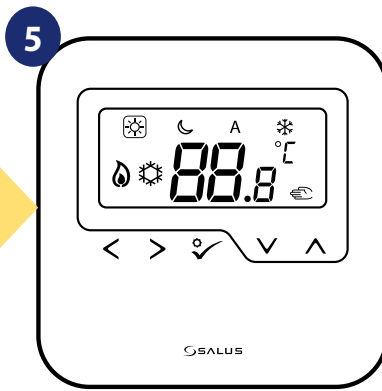
Wait few moments to finish factory reset procedure...

...thermostat will display the software version...

...after all - main screen will appear. Thermostat has been succesfully reseted.

8. Cleaning and Maintenance

The **HTRS230V(30) thermostat** requires no special maintenance. Periodically, the outer casing can be wiped clean using a dry cloth (please DO NOT use solvents, polishes, detergents or abrasive cleaners, as these can damage the thermostat). There are no user serviceable parts within the unit; any servicing or repairs could only be carried out by **Salus Controls** or their appointed agents.

9. Technical Informations

Power supply	230 VAC, +/-10%, 50/60 Hz
Rating max	0,5 A
Temperature setback	Adjustable
Temperature range	5℃ – 35℃
Span	+/-0,5℃ or +/-0,25℃
Storage temperature	-20℃ to +60℃
Ambient temperature	0 ℃ up to 45 ℃
Degree of protection	IP 30
CE conformity according to	Class II (EN60730)
Housing material	PC, V2
Color	RAL 9010 pure white
Control method	PWM algorithm Hysteresis +/-0,5℃ or +/-0,25℃
Connection	Screw terminal
Weight	125 g net / 170 g gross
Puls-wide-modulation (PWM)	Yes
Heating and Cooling	Yes, automatic modes changeover through CO terminal
Parameter adjustment	Yes, in Installer Mode
Dimensions	85mm x 85mm x 25mm

85 mm   85 mm

85 mm   25 mm
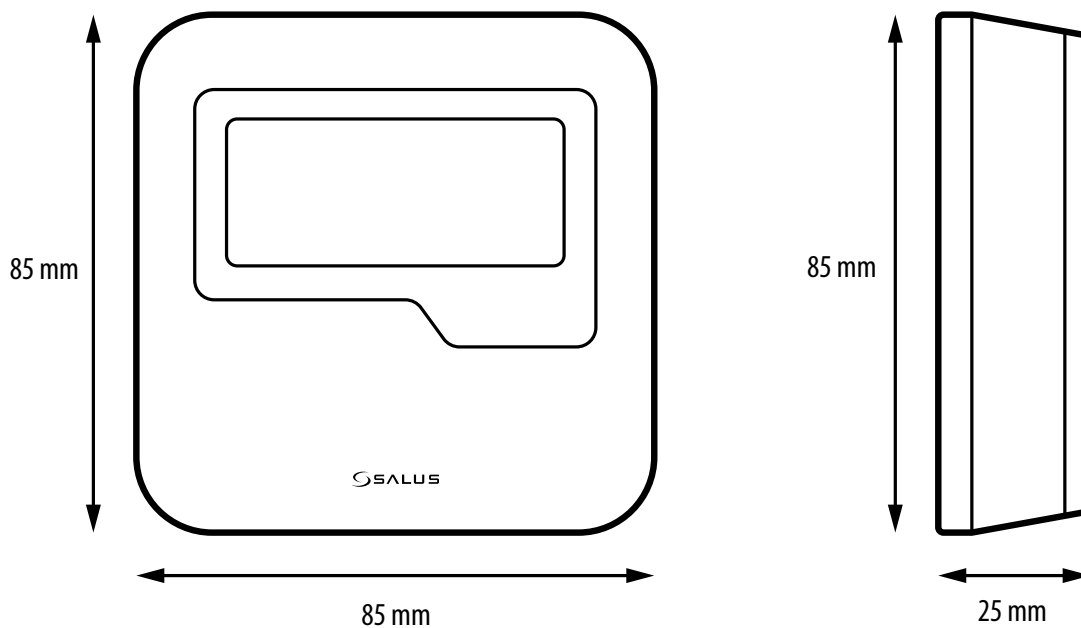
10. Warranty

SALUS Controls warrants that this product will be free from any defect in materials or workmanship, and shall perform in accordance with its specification, for a period of five years from the date of installation. SALUS Controls sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.

Customer Name: ....

Customer Address: ....

.... Post Code: ....

Tel No: .... Email: ....

Company Name: ....

Tel No: .... Email: ....

Installation Date: ....

Installer Name: ....

Installer Signature: ....

Computime

www.salus-controls.com

SALUS Controls is a member of the Computime Group.