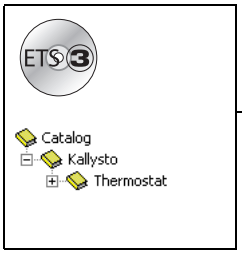
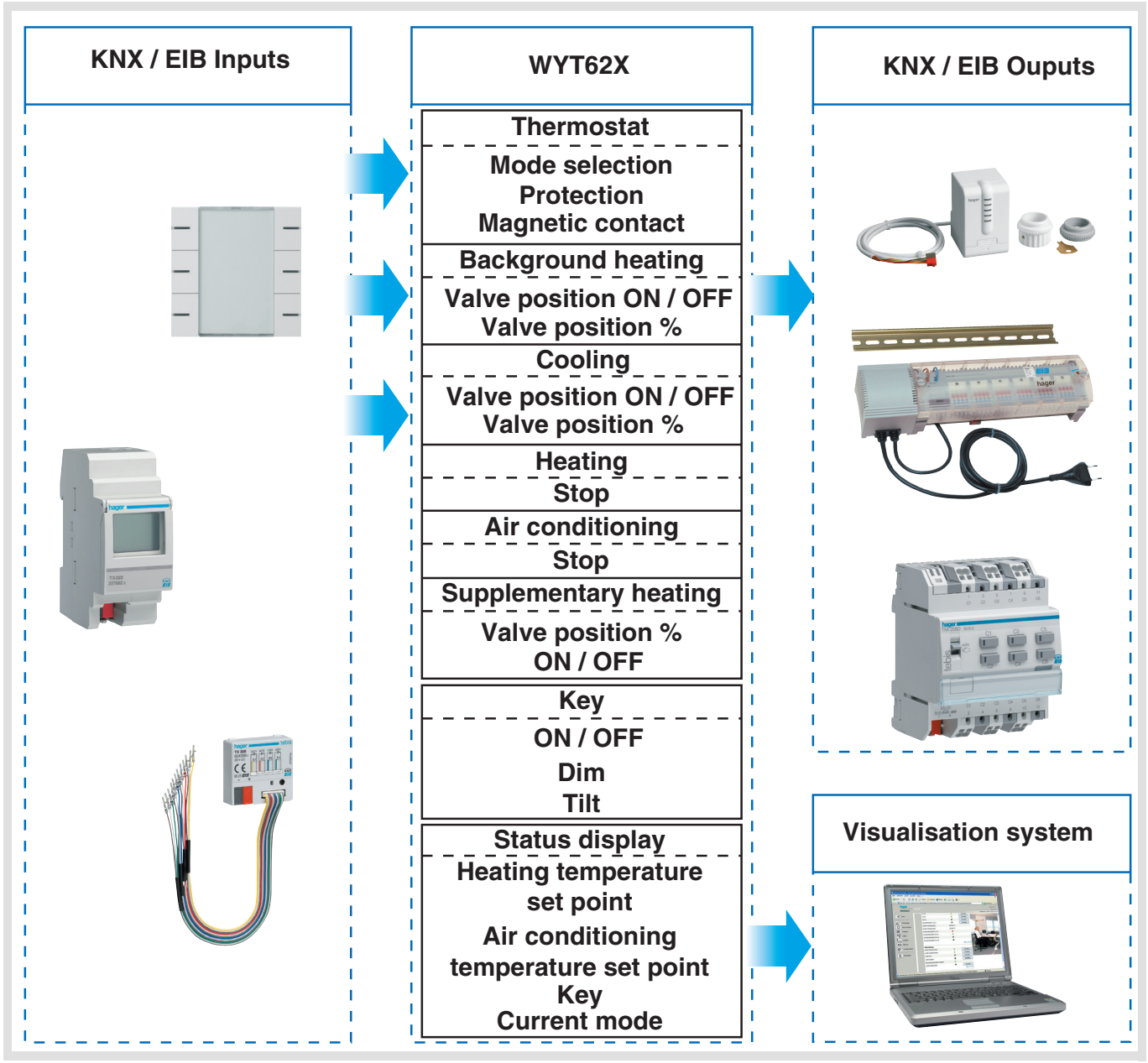


Tebis application software

WDL620A V1.x Tebis KNX Button
Room controller and regulator and key 3 sensors Tebis
Electrical / Mechanical characteristics: see user's instructions

	Product reference	Designation
	WYT62x WHT62x	Room controller and regulator and triple multifunction key sensors
	WUT06 V2	BAU for WYT61x,WYT62x and WHT62x



Summary

1. Presentation of the functions

The product WHT620 is only sold on the Swiss market.
The WYT62x, WHT62x device is a multifunction room controller and regulator with LCD display. It works according to 3 modes: thermostat and 4 generic push buttons, thermostat and 6 generic push buttons and thermostat for fan coil.
The display shows the following information:

- Current ambient temperature,
- Current mode (Comfort, Standby, Night set-point, Frost / heating protection),
- Current temperature setpoint,
- Speed of ventilation.

The functions may be assigned to the 6 push buttons according to use. (Lighting, Shutter, Scene settings).
The WYT62x, WHT62x can be used with the Bus Access Unit WUT06 V2.

1.1 Presentation of the room controller and regulator functions

Control of the ambient temperature of the heating and air-conditioning systems

The Thermostat function of the room temperature regulator allows controlling the following applications:

- Heating.
- Air-con.
- Heating and air-conditioning (2-circuit systems).
- Heating / Air-conditioning switching (1-distribution system).

The room controller and regulator allows controlling heating systems with background heating and supplementary heating. Mixed systems may be driven using separate outputs or one single output. Switching between heating and air-conditioning may be automatic or manual (**Heating / Air-conditioning - Heating / Air-conditioning Switching** object).

The control is based on the measurement of the ambient temperature. This temperature is compared with the setpoint defined by the user.

The table below indicates, for each system:

- the type of heating or air-conditioning transmitter that can be controlled by the product,
- the temperatures used as input data for the regulation algorithm,
- the type of algorithm available for the regulation.

System	Transmitter type	Regulation temperatures		Regulation type			
		Ambient T°	Outside T°	Floor T°	2 point	Chrono proportional cycle	PID
Background heating or background + supplementary heating	Radiator	X					X (Default value)
	Hot water underfloor heating	X		X Power limitation possible			X (Default value)
	Fan convector (2 or 4 pipe system)	X					X (Default value)
	Electrical floor heating	X	X Power limitation possible				X (Default value)
	Electrical wall transmitter	X	X Power limitation possible				X (Default value)
	Electrical floor heating	X	X Power limitation possible				X (Default value)
	Customized setting	X	X Power limitation possible	X Power limitation possible			X adjustable
	Supplementary heating	X			X	X	
Air-con	Fan convector (2 or 4 pipe system)	X					X (Default value)
	Customized setting	X	X Power limitation possible	X Power limitation possible			X adjustable

Operating modes

The room controller and regulator can operate in the following modes:
- Comfort.
- Night set-point.
- Standby.
- Frost / heating protection.

Mode selection may occur by means of a push button, priority, derogation, a timer, a clock or by activating a scene.
A temperature setpoint is associated with each mode.

Frost / heating protection

The Protection function allows protecting a building (installation) against the risks linked with frost in winter and with a too high temperature in summer. The Frost protection function is active in Heating mode and the Equipment protection function is active in Air-conditioning mode.

Time limited comfort

The regulator may be switched over to Comfort mode for a duration that can be defined in the parameters. It returns automatically to the last mode set when this time has elapsed.

Priority

The Priority allows switching the regulator to Protection mode as well as to Comfort mode.

Fan speed

The Fan speed function allows setting the ventilation speed of a fan convector. The speed may be fixed according to 3 levels: speed 1 to 3 increasing.

Power limitation

The call for energy (heating rate %) can be limited.
Limitation is possible for the following installations:
- Electrical heating.
- Heating floor (electrical or water).
- Customized installation (Customized setting).

The heating / cooling power called for by the room controller and regulator may be limited:
- according to the outside temperature.

The temperatures are measured using separate sensors and sent to the regulator by means of the **Temperature External temperature** and **Temperature Floor temperature** objects.

Valve protection function

The room controller and regulator can open the controlled valves and circulation pumps periodically to prevent them from jamming.

Jamming

The functions of the control push buttons (− ⌂ + M) may be blocked (jammed) via the bus. The parameters allow defining which buttons are jammed and with which value (0 or 1) they are jammed.

Scene

The room controller and regulator can be integrated in up to 32 scenes. Calling the scenes allows switching the room controller and regulator to the following modes:
- Comfort.
- Standby.
- Night set-point.
- Frost protection.

Storing the mode (Comfort, Standby, etc.) for the scenes (1 to 8) via the bus may be authorized or forbidden via the parameters.

Status indication

The following values may be displayed via the bus:
- Current mode (Comfort,...).
- Ambient temperature.
- System selection (heating, air-conditioning).
- Heating temperature setpoint.
- Air-conditioning temperature setpoint.

Windows contact

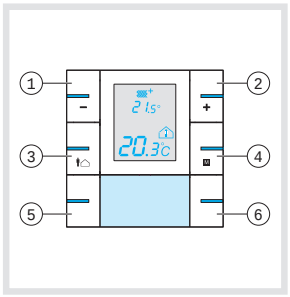
A magnetic contact may be integrated in the system for the selection of the Frost protection or Equipment protection mode. The regulator is controlled by the **Thermostat - Magnetic contact** object.

1.1.1 Thermostat with 4 buttons

Keys 1 and 2 are used to control the thermostat and the status LED are OFF.
By default, key 3 to 6 are generic with green / red status LED.

The access to functions is described in the user instructions.

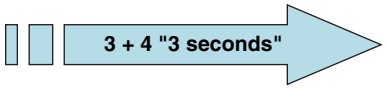
Thermostat

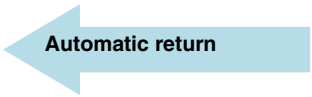


1: + **2: +**

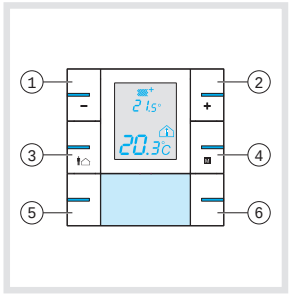
3: Button **4: Button**

5: Button **6: Button**





Temporary access 



1: + **2: +**

3:  **4: M**

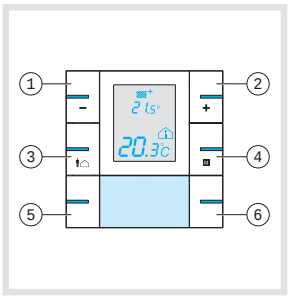
5: Button **6: Button**

° C
blinks slowly

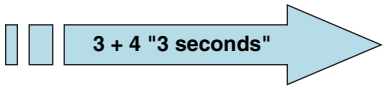
1.1.2 Thermostat with 6 buttons

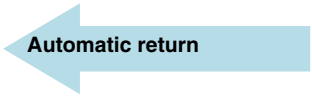
The 6 keys are generic with green / red status LED. To access the thermostat functions, keys 3 and 4 must be pressed simultaneously. It is possible to define the preferred application in ETS (thermostat, push buttons or both).

6 generic buttons

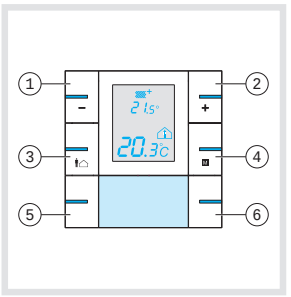


1 to 6 buttons and
6 status LED
green / red





Thermostat use



1: + **2: +**

3:  **4: M**

5: Button **6: Button**

° C
blinks slowly

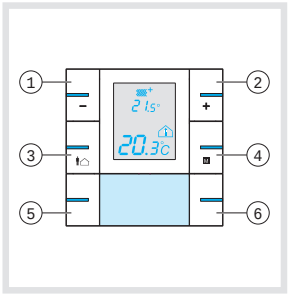
1.1.3 Thermostat for fan coil

Key 5 is used to control the speed of ventilation (with successive push) and key 6 sets the ventilation on. The status LED from keys 1, 3, and 5 like the LCD display show the speed of ventilation.

The status LED of key 6 shows if the ventilation (or heating) is ON or OFF.

This control is only possible when the parameter "Heat fan speed" mode is not in automatic mode.

Thermostat use



1: + **2: +**

3: **4:** M

5: Speed **6: fan or heat ON / OFF**

Fan control:

- **Button 6**
- **LED 6 is ON**

Speed Control:

- **Push button 5 to change speed**
- **LED 5 is ON Speed 1**
- **LEDs 3 and 5 are ON speed 2**
- **LEDs 1, 3, 5 are ON speed 3**

1.2 Presentation of the push buttons functions

The WDL620A application software allows the push buttons and the indicators to be individually configured for WYT62x, WHT62x products.

Its main functions are:

Sending commands and values

The push buttons are used to send commands for lighting, blinds and shutters, heating setpoints or scenes. They send commands (e.g.: ON / OFF, up / down) or values (percentage, temperature, brightness, dimming or value coded as 2 bytes).

Sending commands:

- Lighting control
  Toggle switch (ON = toggle), toggle switch (time limited toggle switch), ON, OFF, ON / OFF, Timer.
  1-button or 2-button dimmer.
- Shutters / Blinds control
  Up, Down, Stop, Blind slat angle, Secured Down.
  1 button or 2 button control.
- Heating set point (Thermostat)
  Comfort (Day), Standby (Absence), Reduced (night), Frost protection.

Priority

The Priority function sends priority-start or priority-stop commands.
The forcing action depends on the type of application controlled: Lighting, Shutters / blinds, Heating, etc.

Scene

The Scene function sends group controls to different kinds of outputs to create ambiences or scenarios.
Example of scene 1: Leaving the house (with centralised lighting control OFF, shutters on South side lowered to 3/4, the other shutters open, heating set to Economy (Absence)).

Status indication by indicator

Each push button is equipped with an indicator to confirm pressing or to indicate the statuses of the controlled outputs. The indicator (brightness, colour, flashing) and its operation mode (always ON, always OFF, status indication or status confirmation) are settable.

Using mode

Key operation can be defined.

- Linked push buttons: Key operation is linked (e.g. left key = shutter lowering and right key = shutter raising).
- Independent push buttons: Key operation is linked (e.g. left key = shutter raising / lowering / stop and right key = light dimming).

Jamming

The Jamming function locks the push button via a bus object. No commands or values can be sent to the bus during jamming.

2-channel mode

The 2-channel mode is used to perform two different functions using the same push button. The distinction between the two functions is made by a short key-press or a long key-press (the length of the long key-press is adjustable).

Selection second level

The second level (controlled by the object) can be used to either deactivate the button's function or to change it. Additional functions cannot be assigned. This function is not for linked push buttons or infrared channels.

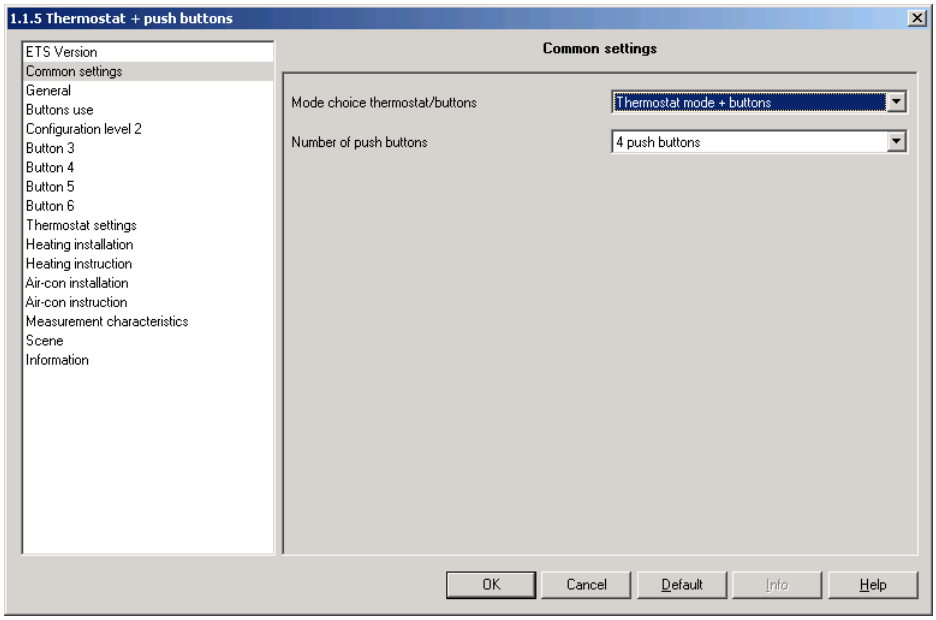
2. General configuration and parameterising of the thermostat functional modes

The thermostat offers 3 different functional modes:

- Thermostat modus + 4 push buttons
- Thermostat modus + 6 push buttons
- Thermostat for fan coil control

The number of available generic buttons and LEDs indicator is directly related to the selected mode.

Control type	LEDs use	Push button use
Thermostat modus + 4 push buttons	LED 1 and 2 are unused 4 Status LEDs: LED 3 to 6	Button 1: + and Button 2: - 4 generic buttons: button 3 to 6
Thermostat modus + 6 push buttons	6 Status LEDs: LED 1 to 6	Button 1: + and Button 2: - When thermostat is displayed 6 generic buttons: button 1 to 6
Thermostat for fan coil control	No status LEDs LEDs 1, 3, 5 Fan speed LED 6: Fan control	Button 5: Fan speed Button 6: Fan control



Screen 1

Parameter	Description	Value
Mode choice thermostat / button	This parameter defines the functional mode used.	Thermostat mode + buttons Thermostat for fan coil control Default value: Thermostat mode + buttons
Number of used buttons *	The number of used generic button is defined with this parameter.	4 push buttons 6 push buttons Default value: 4 push buttons
Preferred mode *	This parameter defines the application for the preferred mode. The 6 push buttons are by default used a generic push buttons when that parameter is set to Push buttons. The thermostat can than be temporarily selected when pushing button 3 + 4 during 3 seconds. The buttons 1 to 4 are used to control the thermostat when the preference is Thermostat. The switch to generic button is temporarily possible when pushing buttons 3 + 4 during 3 seconds. In case of No preference, the buttons 1 to 6 are used to control the thermostat or to activate the thermostat. The transfer from one function to the next is also done by pressing the Buttons 3 and 4 simultaneously.	Prefered push buttons Prefered thermostat No preference Default value: Prefered push buttons
Label holder backlight **	This parameter defines how the label holder backlight should operate.	Value: Linked with object, Always OFF, Always ON. Default value: Always OFF

* Only displayed when the selected Mode choice thermostat / buttons is Thermostat + 4/6 buttons.
** Only displayed when the selected Mode choice thermostat / buttons is Thermostat for fan coil.

3. Configuration and parameterising of the push buttons

3.1 List of objects operated by independent push buttons

Object name \ Function	Not used	ON / OFF	Button	Time limited toggle switch	Timer	1-button dimmer (Up / Down / Toggle)	2-button dimmer	1-button control (Up or Down)	2-button shutters / blinds	Heating	Priority	Scene	Value	2-channel mode, ON / OFF (ON or OFF)	2-channel mode, ON / OFF (Button)	2-channel mode, Value
ON / OFF		X	X			X	X									
Status indication			X	X		X		X								
Time limited toggle switch				X												
Timer					X											
Dimming						X	X									
Stop / Angle								X	X							
Up / Down								X	X							
Heating set point										X						
Priority											X					
Scene												X				
Value													X			
ON / OFF Channel A														X	X	
ON / OFF Channel B														X	X	
Status indication channel A															X	
Status indication channel B															X	
Channel A value																X
Channel B value																X
Jamming	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$
LED Luminosity level selection	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$
Selection second level	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$
Label holder backlight	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$
Antitheft alarm 1 bit / 1 byte	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$
Status indication by indicator	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$

1) The **Jamming** object can be activated or deactivated for each of the keys or infrared channels. It is nevertheless always visible.
2) The indicator **Brightness selection** object defines the indicator brightness and is always visible.
3) The Level section function can be selected for every button individually.
4) The label **Holder backlight** object appears when this light is defined as object-controlled.
5) The **Antitheft alarm** object only appears when the Antitheft alarm function is activated.
6) The **Signalling indicator** object is visible when the indicator is used for status indication.

3.1.1 List of objects operated by linked push buttons

Function / Object name	Not used	ON / OFF	Button	1-button dimmer (Up / Down / Toggle)	Dimming (Increase / Decrease or Decrease / Increase) (	Dimming (Increase (Toggle) / Decrease (Toggle) or Decrease (Toggle) / Increase (Toggle))	1-button control (Up or Down)	2-button shutters / blinds	Heating	Priority	2-channel mode, ON / OFF (ON or OFF)
ON / OFF		X	X	X	X						
Status indication			X	X		X	X				
Dimming				X	X	X					
Stop / Angle							X	X			
Up / Down							X	X			
Heating set point									X		
Priority										X	
ON / OFF Channel A											X
ON / OFF Channel B											X
Jamming	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$
LED Luminosity level selection	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$
Selection second level	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$
Label holder backlight	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$
Antitheft alarm 1 bit / 1 byte	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$
Status indication by indicator	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$	$X_{6)}$

1) The **Jamming** object can be activated or deactivated for each pair of linked push buttons. It is nevertheless always visible.
2) The indicator **Brightness selection** object defines the indicator brightness and is always visible.
3) The Level selection function is not available for linked push buttons. The object is always visible.
4) The label **Holder backlight** object appears when this light is defined as object-controlled.
5) The **Antitheft alarm** object only appears when the Antitheft alarm function is activated.
6) The **Signalling indicator** object is visible when the indicator is used for status indication.

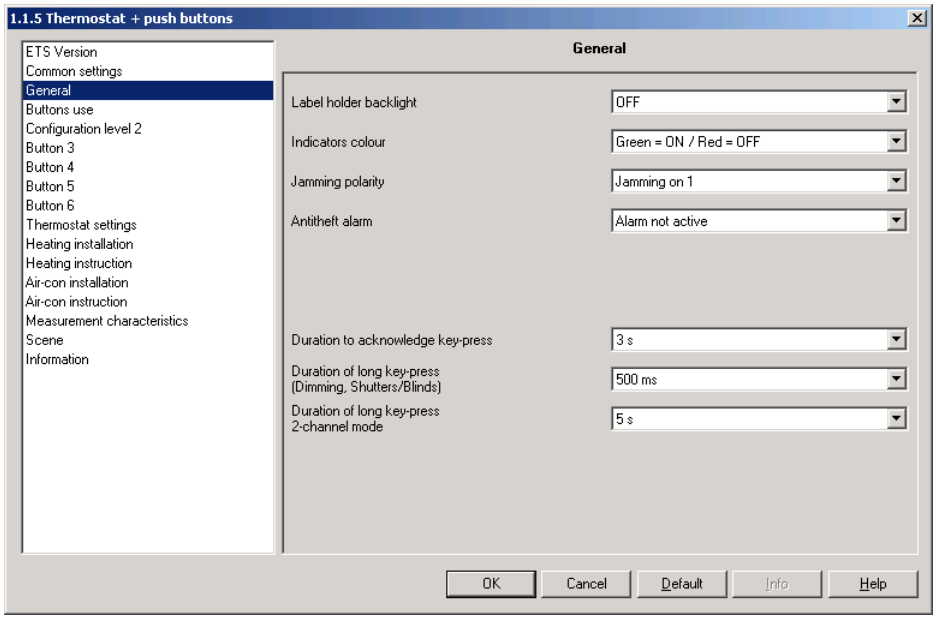
3.2 Common settings

3.2.1 Label holder backlight and indicator colours

The label holder backlight can be defined as always OFF, always ON or controlled by the bus via the **Label holder backlight** object. The functions of the indicators can be parameterised and controlled individually. When the indicator's function is configured as Status Indication, an **LEDx** object is available for controlling each indicator.

The indicator brightness level can be defined by the **Indicator brightness selection** object.
The **Indicator brightness selection** object defines two brightness levels: standard (= 0) or reduced (= 1).

➜ Parameter



Screen 2

Parameter	Description	Value
Label holder backlight	This parameter defines how the label holder backlight should operate.	Linked with object, Always OFF, Always ON. Default value: Always OFF
LED colour	This parameter defines the colour of the indicators associated to each push button.	Green = ON / Red = OFF, Red = ON / Green = OFF, Green = ON, Red = ON. Default value: Green = ON / Red = OFF.

3.2.2 Key jamming and Antitheft alarm

Key locking can be individually defined for each key. Key locking is activated by the **Jamming** object.
When the Theft protection function is used, the BCU detects that the push button sensor has been removed and sends an alarm signal to the bus via the **Antitheft alarm** object.
The information is transmitted via the **1-bit antitheft alarm** object or the **1-byte antitheft alarm** object.

➜ Parameter Setting screen: See "Screen 2".

Parameter	Description	Value
Rocker jamming	The Jamming function authorizes product locking. Jamming forbids sending commands.The parameter defines which value is used to activate jamming.	On 1, On 0. Default value: On 1.
Antitheft Alarm	This parameter defines the type of object sent upon push button removal. In the case of removal: - In 1-bit configuration, a "1" is sent regularly. If the mechanism is turned on, a "0" will be sent regularly. - In 1-byte configuration, the defined value is sent regularly. If the mechanism is removed, value sending is stopped.	Not active, Alarm 1 bit, Alarm 1 byte. Default value: Not active.
Alarm emission period*	This parameter defines the emission periodicity of the Antitheft alarm.	1 min, 5 min, 10 min, 30 min. Default value: 10 min.
Alarm value 0...255**	This parameter defines the value sent if the 1-byte alarm is active.	0 up to 255 in steps of 1. Default value: 0.

* This parameter is only visible if the **Antitheft alarm** parameter has the values: Alarm 1-bit or alarm 1-byte.
** This parameter is only visible if the **Antitheft alarm upon dismantling** parameter has the value: 1-byte alarm.

3.2.3 Indicator ON period and length of (long / short) key-presses

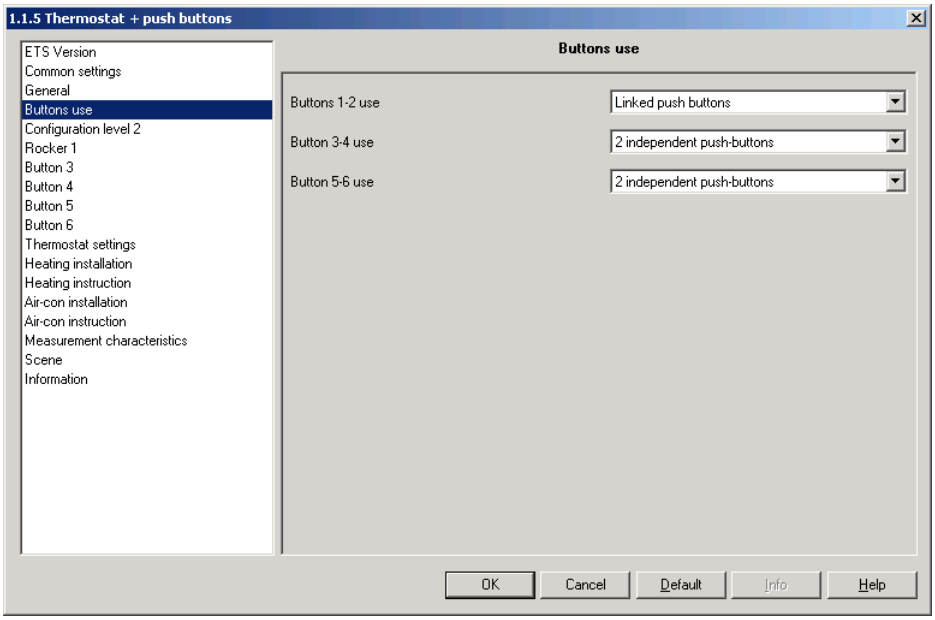
➜ Parameter Setting screen: See "Screen 2".

Parameter	Description	Value
Duration to acknowledge key-press.	This parameter defines the indicator ON period for confirming push button presses.	0.5 s,1 s, 2 s, 3 s. Default value: 3 s.
long key-press (Dimming and Up / Down)	This parameter defines the duration of a long push button press for sending Dimming or Up / Down commands. In Timer mode, the length of this long key-press is used to define a timer interruption.	400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s. Default value: 500 ms.
Duration of long key-press B-channel (key-function 2-channel mode)	This parameter defines the length of a long push button press for activating 2-channel mode.	500 ms, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 7 s, 8 s, 9 s, 10 s. Default value: 5 s.

3.3 Buttons use parameters

These parameters define whether the push buttons are independent or linked by groups of 2 to form a key.

➜ Parameter



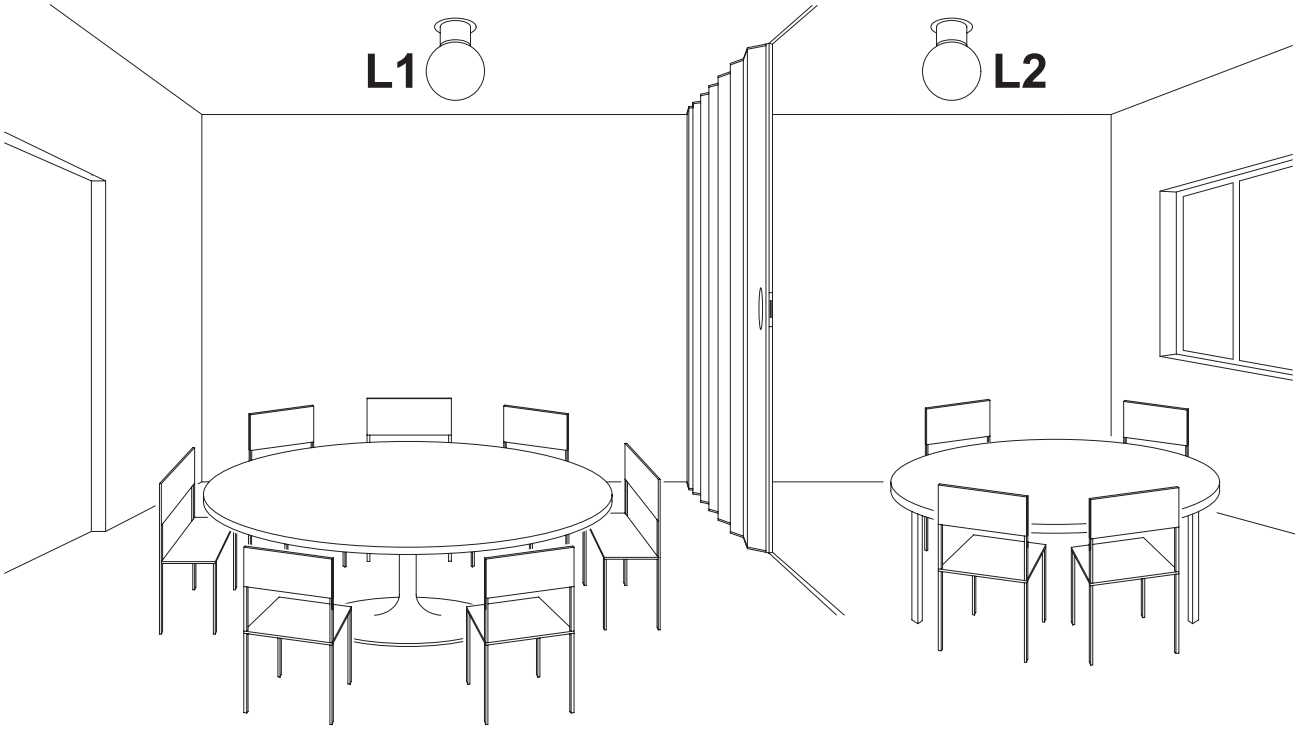
Screen 3

Parameter	Description	Value
Buttons 1-2 use	This parameter defines the setting of the push buttons.	Independent push buttons, Linked push buttons. Default value: Independent push buttons.

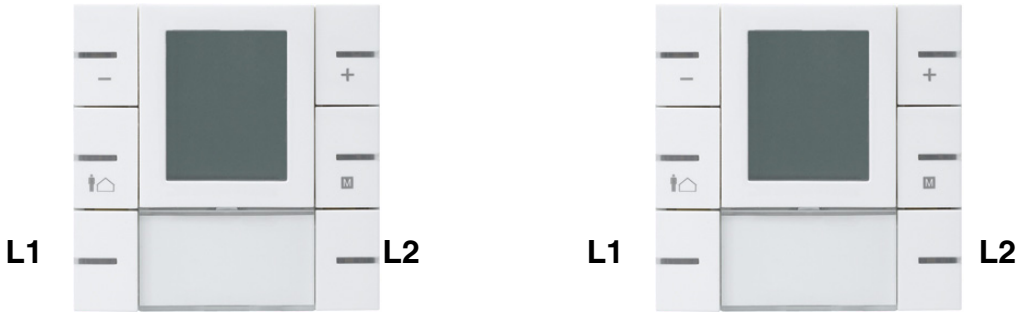
3.4 Level selection parameters

The second level (controlled by the object) can be used to either deactivate the button's function or to change it. Additional functions cannot be assigned.

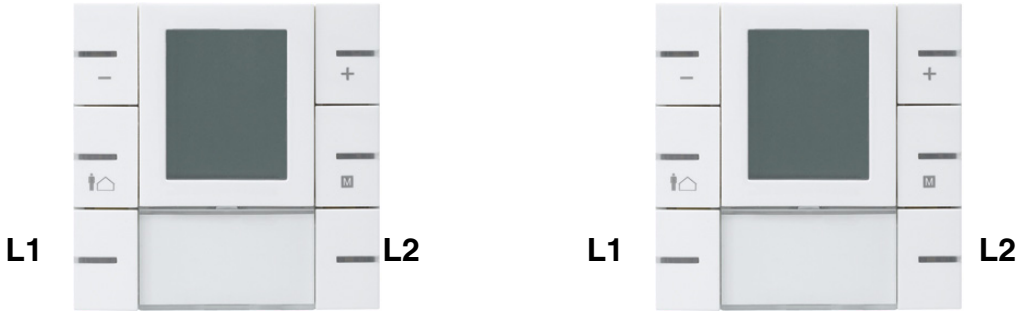
For example:
Room with separation wall: Push buttons configured as ON / OFF

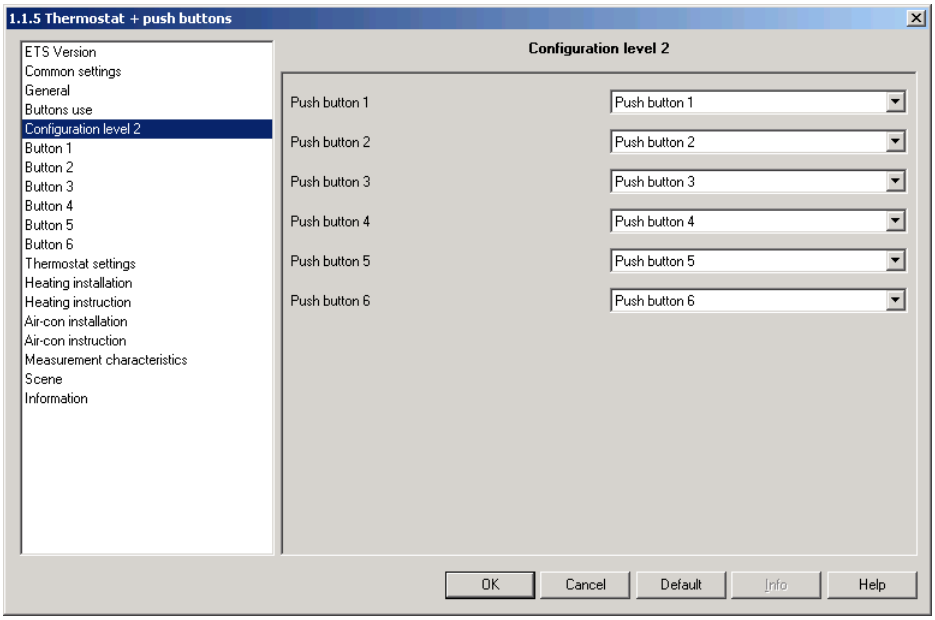


Situation: Separation wall open



Situation: Separation wall closed (The "divided wall open / closed" information can come from, for example, a control switch)





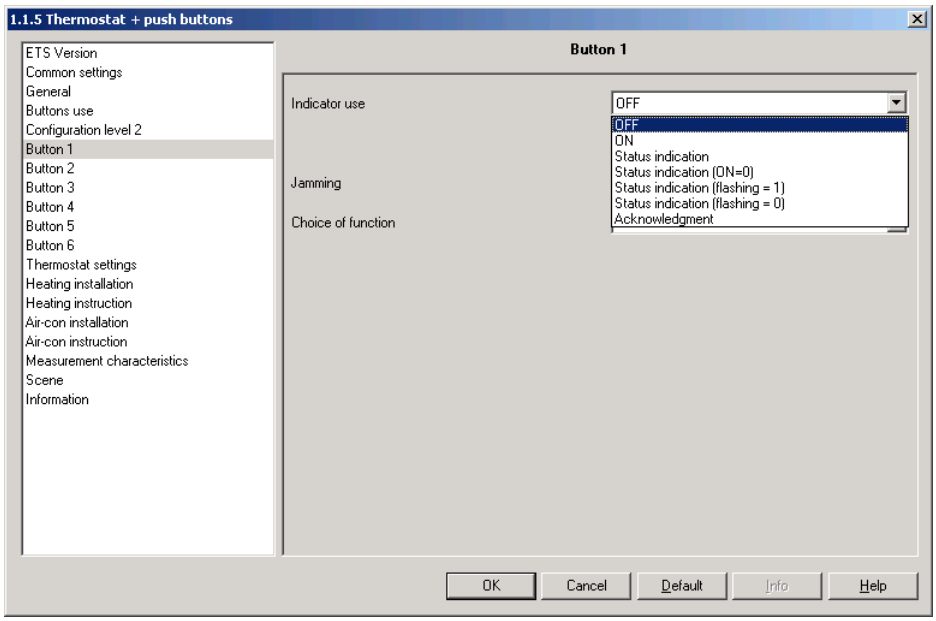
Screen 4

Parameter	Description	Value
Rocker n (n= 1, 2)*	This parameter defines the key order for a Situation 2 / Situation 1 level selection (Key 1 in Situation 2 = Key 2 in Situation 1), for ex., if each key must have the same function as Key 1 for use in public buildings.	Not active, Rocker 1, Rocker 2. Default value: Rocker n = Rocker n.

* The key number only appears when the key is defined as an independent push button.

3.5 Linked or independent push button parameters

3.5.1 Indicator parameters



Screen 5

Parameter	Description	Value
Indicator use	This parameter defines indicator utilization. 3 types of utilization are possible. - Permanently OFF or ON. - Status indication associated to the **Indication** object. - Confirm key*.	Always OFF, Always ON. Status indication Status indication (flashing = 0) Status indication (flashing = 1), Status indication (flashing = 0). Default value: Always OFF.
Duration of flashing (indicator)**	Defines the duration of flashing (flashing frequency 1Hz).	Continuous flashing, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s, 45 s, 50 s, 55 s, 60 s. Default value: Continuous flashing.

* When used to confirm pressing, the indicator ON period can be defined on the General Parameters screen.
** This parameter is only visible if the Indicator utilization parameter has the value: Status indication (flashing = 1) or Status indication (flashing = 0).

3.5.2 Jamming function parameters

The Jamming function authorizes product locking. Jamming forbids sending commands. This function is started by the **General - Jamming** object. Jamming is indicated by the indicator flashing (5 seconds) when the push button is pressed.

Parameter	Description	Value
Jamming	This parameter defines whether push button jamming by a distinct object is permitted.	Not used, Used. Default value: Not used.

3.5.3 Parameters for linked or independent push buttons

Key 1 to Key 2 or Linked keys 1 parameters will be available depending on the type of operation defined for the keys (linked or independent). These parameters define the functions of the keys or linked keys. The functionalities available for independent or linked keys are not exactly identical.

3.5.3.1 Description of the ON / OFF, Toggle switch, Time-limited toggle switch and Timer functions

ON / OFF:
Pressing the independent push button or the linked push button switches the circuit ON or OFF (no change after pressing again).

Description: After pressing the independent push button or a side of the linked push button, an ON or OFF command will be sent to the bus via the **ON / OFF** object. The command sent is not linked to the output's previous status. The command to be sent (ON or OFF) can be defined in the parameters.

Furthermore, in independent push button operation, it can be specified whether the command must be sent when the push button is pressed or released (see parameter settings).

Toggle switch / Button:
In independent push button operation, the Toggle switch function consists in inverting the output status each time that the independent push button is pressed. Each new key-press modifies the output status.

In linked push button operation, the Toggle switch function consists in inverting the output status each time that a side of the linked push button is pressed. Each new key-press modifies the output status.

Description: When an independent push button or a side of a linked push button is pressed, depending on the **Status** object, an ON or OFF command is sent to the bus via the **ON / OFF** object. The command sent to the bus is the inverse of the previous command (previous command: ON -> OFF command sent; previous command: OFF -> ON command sent).

Button - Time limited toggle switch:
This function is only available for an independent push button.

A short push button press: The output status is inverted. The status changes after each short key press. If there is no short key-press, the output will be switched OFF once the delay time has elapsed. A long push button press restarts the delay time.

Description: A short key-press sends the **Time limited toggle switch** object to the bus with the value of the inverse of the **Status indication** object. A long press on the pushbutton transmits an ON command via the **Time-limited toggle switch** object.

Upon reception of an ON command from the object **Time limited toggle switch**, TXA-type products switch the output to ON for the set time. Upon reception of an OFF command from the **Time limited toggle switch**, the outputs switch to OFF. An ON command received while the output is still ON, will restart the time delay.

Timer:
This function is only available for an independent push button.

A short push button press: The output contact switches to ON for the set time.
A long push button press: Timer interruption and output stopped.

Description: A short key-press sends an ON command to the bus via the **Timer** object. A long key-press sends an OFF command to the bus via the **Timer** object.

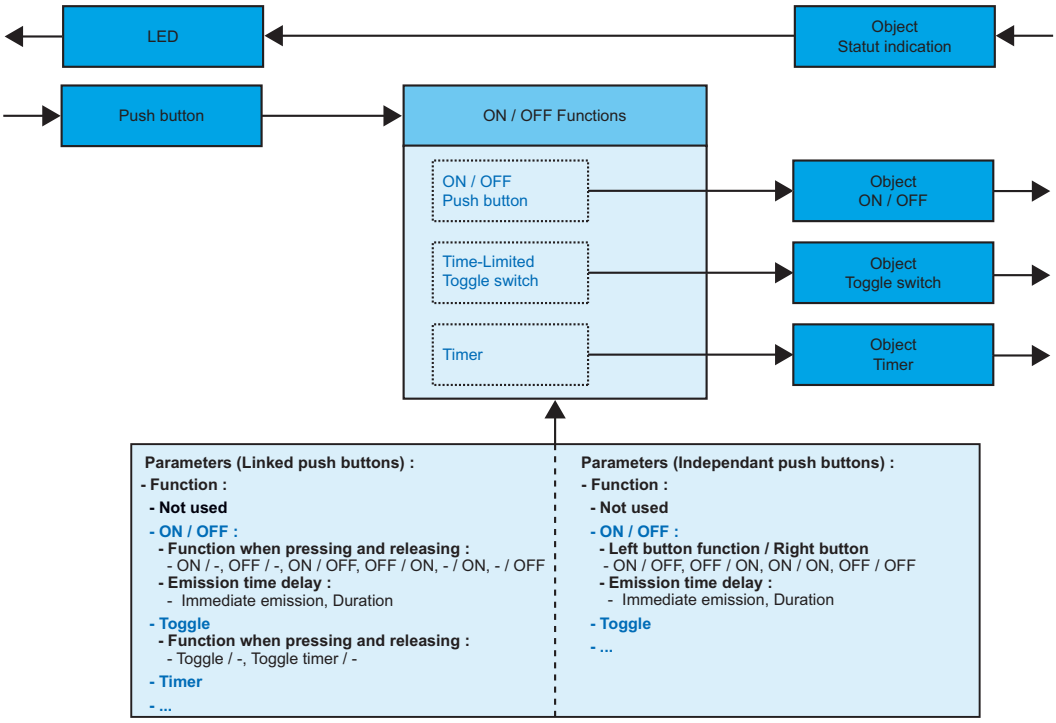
Upon reception of an ON command from the **Timer** object, TXA-type products switch the output to ON for the time defined..

Additional ON commands on the **Timer** object within 10 s. increase the output's delay time period (for our TXA products) as follows:

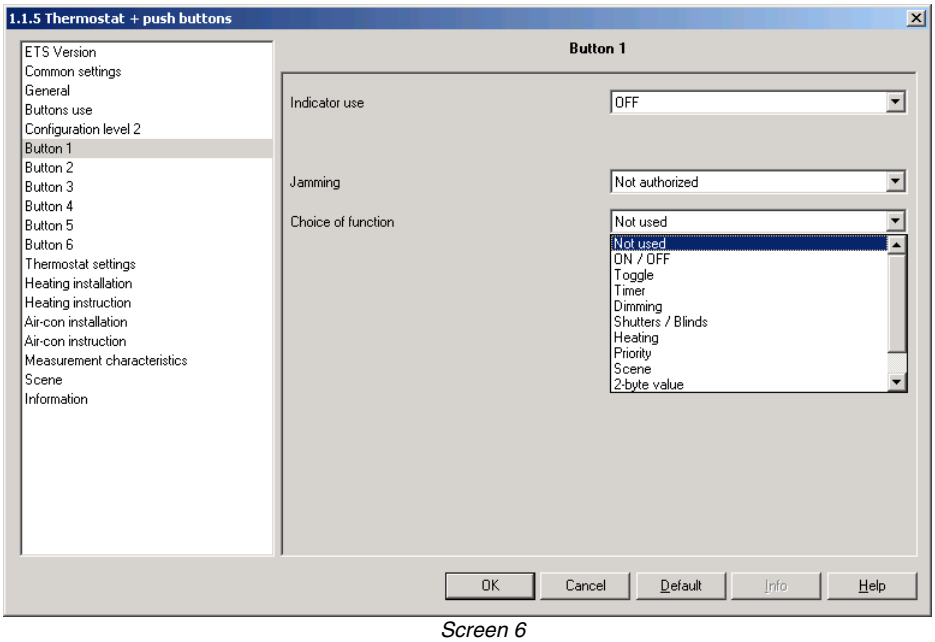
ON-switching time = (1 + Number of addiional operations) * Set time.

The delay time starts after the last key-press. An ON command received after the 10 s restarts the set turn-on time. An OFF command switches immediately the output to OFF.

Description of the ON / OFF, Toggle switch, Time-limited toggle switch and Timer functions



3.5.3.2 ON / OFF function parameters for independent push buttons



Screen 6

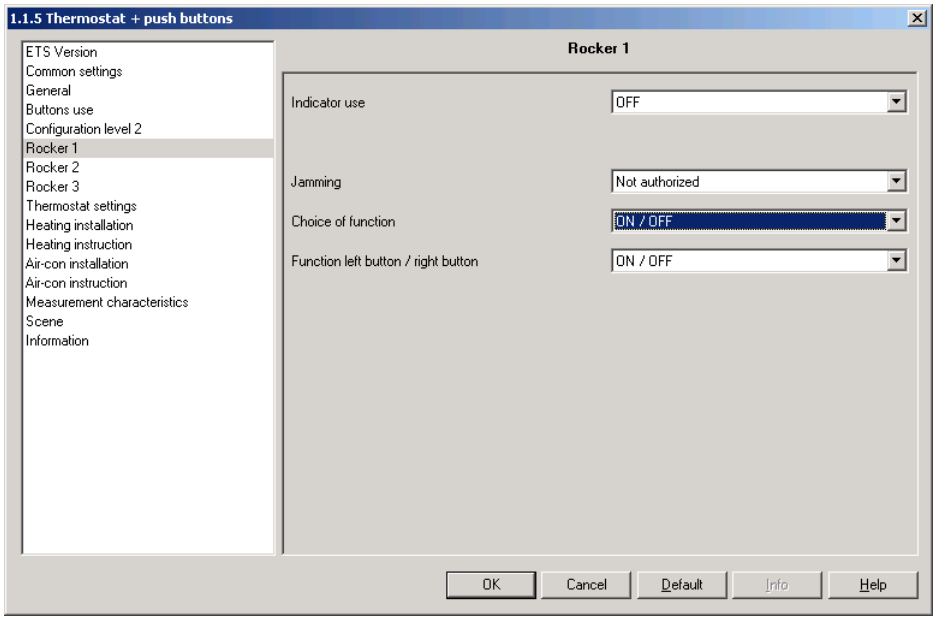
Parameter	Description	Value
Function on press and release	This parameter defines the commands sent when the push button is pressed and released.	ON / -, OFF / -, ON / OFF, OFF / ON, - / ON, - / OFF. Default value: ON / -. Command when pressing / Command when releasing ("-" = No action).
Emission time delay*	This parameter sends commands with a set delay in relation to pressing or releasing.	Immediate emission, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s, 40 s, 50 s, 1 min, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 3 min 30 s, 4 min, 4 min 30 s, 5 min. Default value: Immediate emission.

* The emission time delay is not available for the ON / OFF or OFF / ON functions.

3.5.3.3 Toggle switch function setting for independent push buttons

Parameter	Description	Value
Function on press and release	This parameter defines the commands sent when the push button is pressed and released.	Toggle / -, Time limited toggle switch / -, - / Toggle switch. Default value: Toggle / -. Command when pressing / Command when releasing ("-" = No action).

3.5.3.4 ON / OFF function parameters for linked push buttons



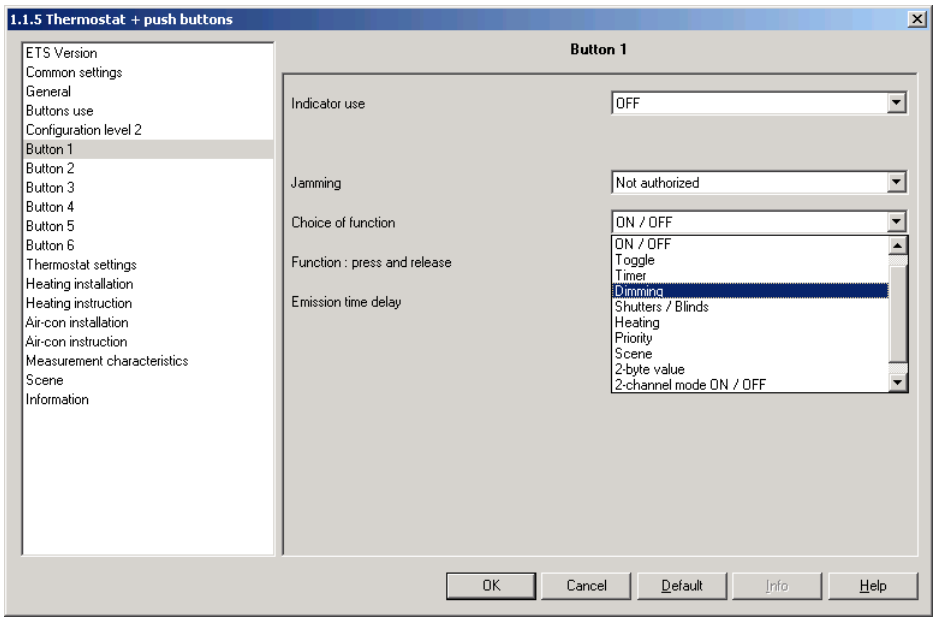
Screen 7

Parameter	Description	Value
Function left button / right button	This parameter defines the commands sent when the left button and the right button are pressed.	ON / OFF, OFF / ON, ON / ON, OFF / OFF. Default value: ON / OFF.

3.5.3.5 Dimming function

This function dims / switches a lighting circuit using one or two push buttons.
A short key-press sends ON / OFF commands to the bus via the **ON / OFF** object.
A long key-press sends a dimming command (increase or decrease) to the bus via the **Dimming** object.

3.5.3.5.1 Dimming function parameters for independent push buttons

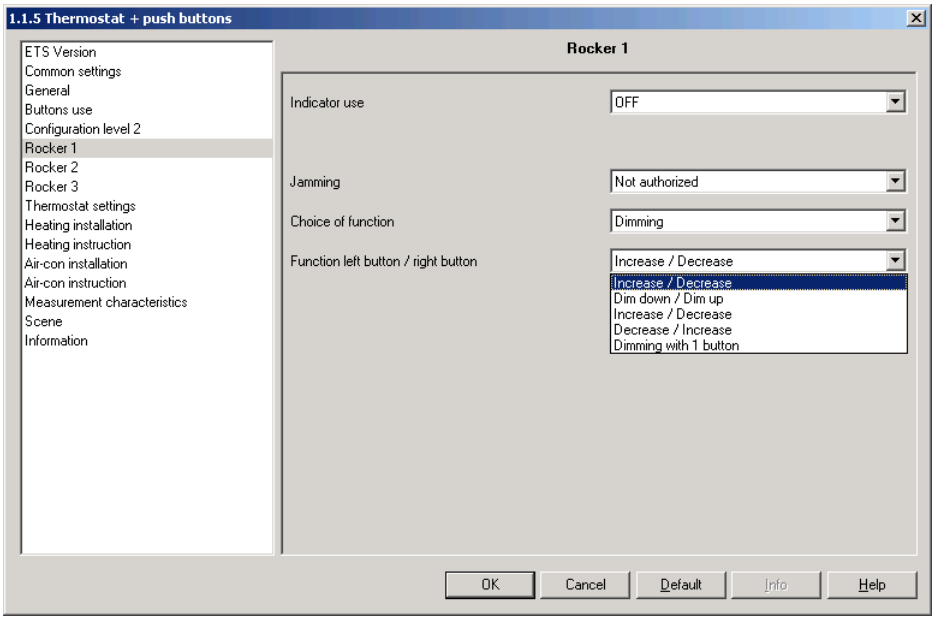


Screen 8

Parameter	Description	Value
Choice of function	This parameter selects the utilization mode: 1 button dimmer (Up / Down / Toggle) or 2 button dimmer.	1-button dimmer (Up / Down / Toggle), 2-button dimmer. Default value: 1-button dimmer (Up / Down / Toggle).
Dimming direction*	This parameter defines the dimming direction associated to the button.	Increase of the lighting level, Reduction of the lighting level. Default value: Increase of the lighting level.

* This parameter only appears when the Function parameter has the value 2 Button Dimmer.

3.5.3.5.2 Dimming function parameters for linked push buttons



Screen 9

Parameter	Description	Value
Function left button / right button	This parameter selects the utilization mode: 1 button dimmer (Up / Down / Toggle) or 2 button dimmer.	1-button dimmer (Up / Down / Toggle) * Increase / Decrease, Decrease / Increase, * Increase / Decrease Toggle switch, Decrease / Increase Toggle switch. Default value: Increase / Decrease.

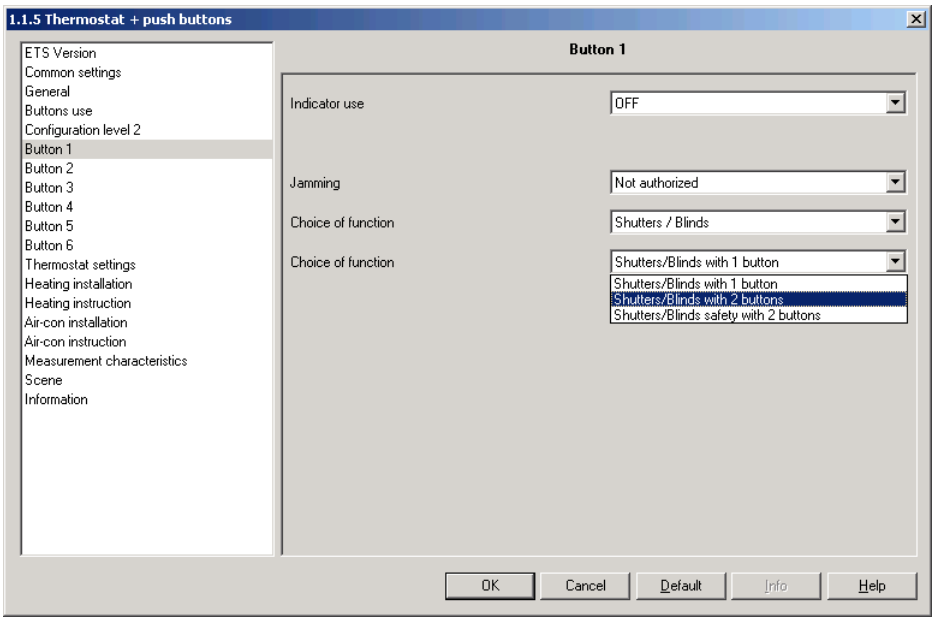
*For example:
Increase / Decrease
➜ Left key increase and switching ON / Right key decrease and switching OFF.

Increase / Decrease Toggle switch
➜ Left key increase / Right key decrease, and the two keys allow switching ON or OFF.

3.5.3.6 Up / Down function

This function controls a shutter or a blind using one or two push buttons.
A long key-press sends raising or lowering commands to the bus via the **Up / Down** object.
A short key-press sends stop or slat angle value commands to the bus via the **Stop / Angle** object.

3.5.3.6.1 Up / Down function parameters for independent push buttons

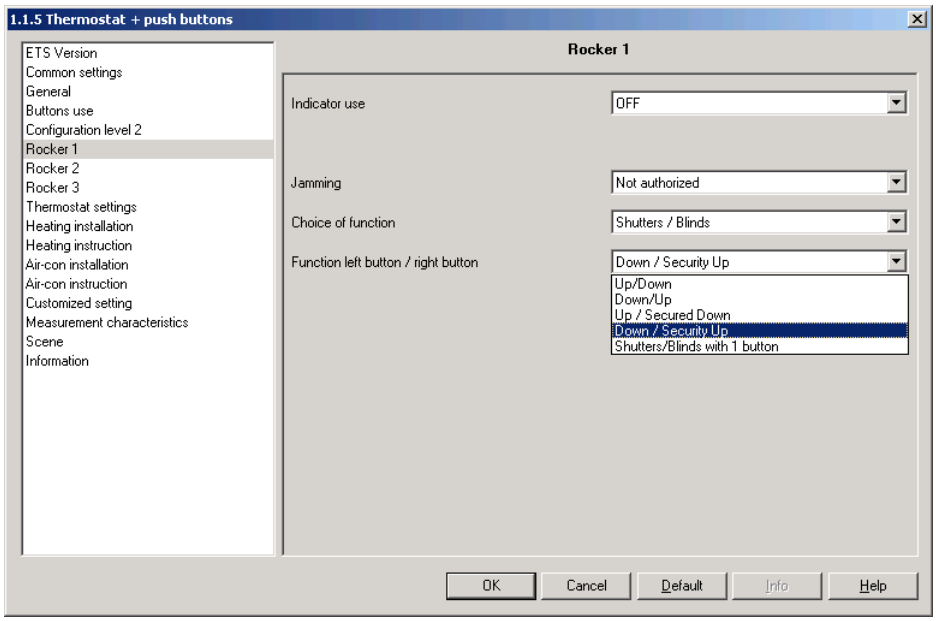


Screen 10

Parameter	Description	Value
Choice of function	This parameter selects the utilization mode.	1 button (Up / Stop / Down / Stop) Shutter / Stop, * Moving as long as button pressed Default value: 1 button (Up / Stop / Down / Stop) Shutter / Stop.
Control **	This parameter defines the movement direction associated to the button.	Up, Down. Default value: Up.

* Pressing the push button sends Up or Down commands to the bus via the **Up / Down** object. When the push button is released, a Stop command is sent via the **Stop / Angle** object.
This parameter is only visible if the **Choice of function parameter has the value: Move / stop or moving as long as button pressed.

3.5.3.6.2 Up/ Down function parameters for linked push buttons



Screen 11

Parameter	Description	Value
Function left button / right button	This parameter selects the utilization mode.	Up / Down Down / Up * Up / Down as long as button pressed * Down / Up as long as button pressed ** 1 buttons shutters Default value: Down / Up as long as button pressed.

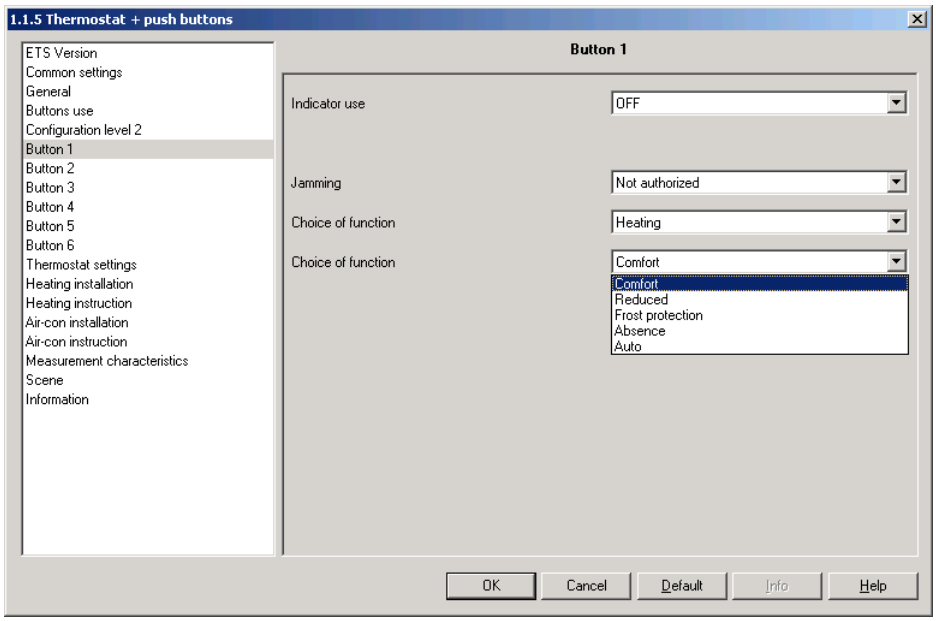
* Pressing the linked push buttons (left or right) sends movement commands to the bus via the **Up / Down** object. When the linked push button is released, a Stop command is sent via the **Stop / Angle** object.
**The left key and the right key have the same functions in this operation mode. In both cases, the Up / Stop / Down / Stop function is independent of the type of key-press (short key-press or long key-press).

3.5.3.7 Heating setpoint selection function

This function is used to select the setpoint for heating / air-conditioning.
The **1-byte heating setpoint** object sends the following values:

Value	Designation	Icon
0	Auto	
1	Comfort	
2	Standby	
3	Reduced (night)	
4	Frost protection	

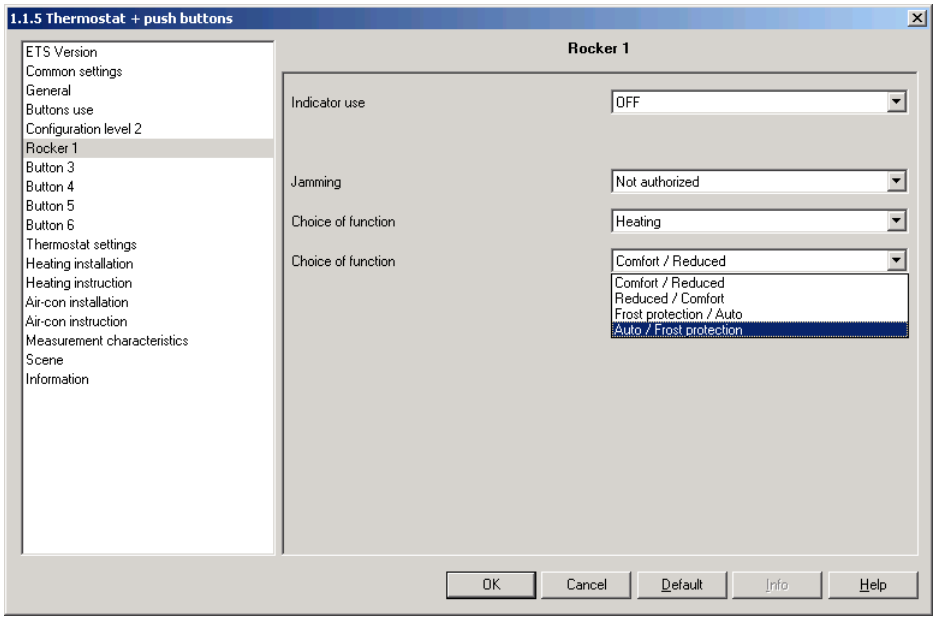
3.5.3.7.1 Heating setpoint function parameters for independent push buttons



Screen 12

Parameter	Description	Value
Choice of function	This parameter selects the desired set-point.	Comfort, Reduced (night), Frost protection, Standby. Default value: Comfort.

3.5.3.7.2 Heating setpoint function parameters for linked push buttons



Screen 13

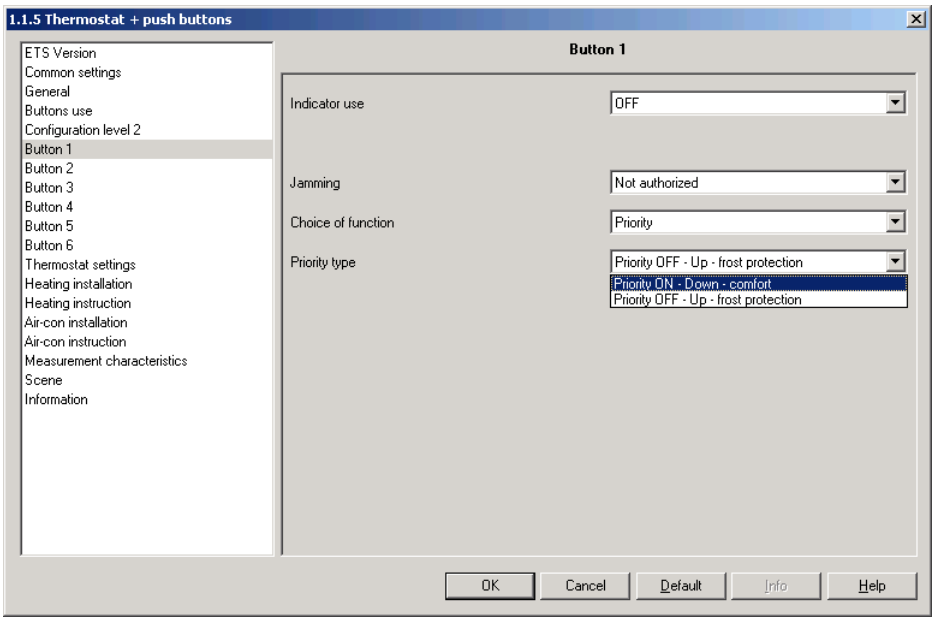
Parameter	Description	Value
Function left button / right button.	This parameter selects the desired set-point.	Comfort / Reduced (night), Reduced (night) / Comfort, Frost protection / Auto, Auto / Frost protection. Default value: Comfort / Reduced (night).

3.5.3.8 Priority function

The Priority function sends priority-start or priority-stop commands. The **Priority** object is sent when the push button is pressed. The forcing action depends on the type of application controlled: Lighting, Shutters / blinds, Heating, etc.
The 2 bit **Priority** object sends the following values.

Value		Output behaviour
Bit 1	Bit 0	
0	0/1	Priority end
1	0	Priority OFF
1	1	Priority ON

3.5.3.8.1 Priority function parameters for independent push buttons

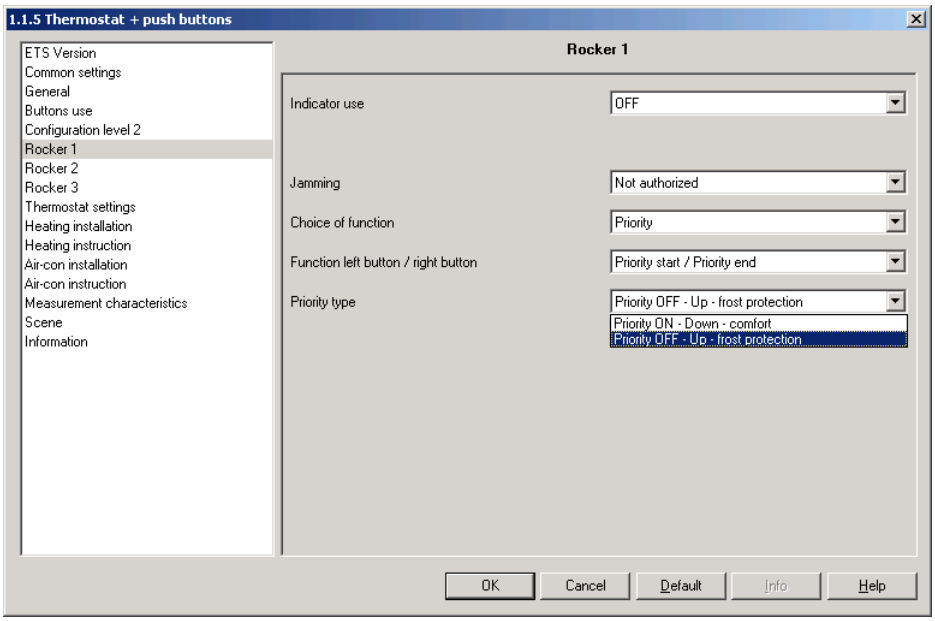


Screen 14

Parameter	Description	Value
Priority type	This parameter selects a priority type.	Priority ON * Priority OFF * Default value: Priority ON

* Pressing the push button sends alternatively a priority-start request and a priority-end request.

3.5.3.8.2 Priority function parameters for linked push buttons



Screen 15

Parameter	Description	Value
Function left button / right button.	This parameter selects the desired set-point.	Priority start / Priority end Priority end / Priority start Default value: Priority start / Priority end
Priority type	This parameter selects a priority type.	Priority ON Priority OFF Default value: Priority ON.

3.5.3.9 Scene function

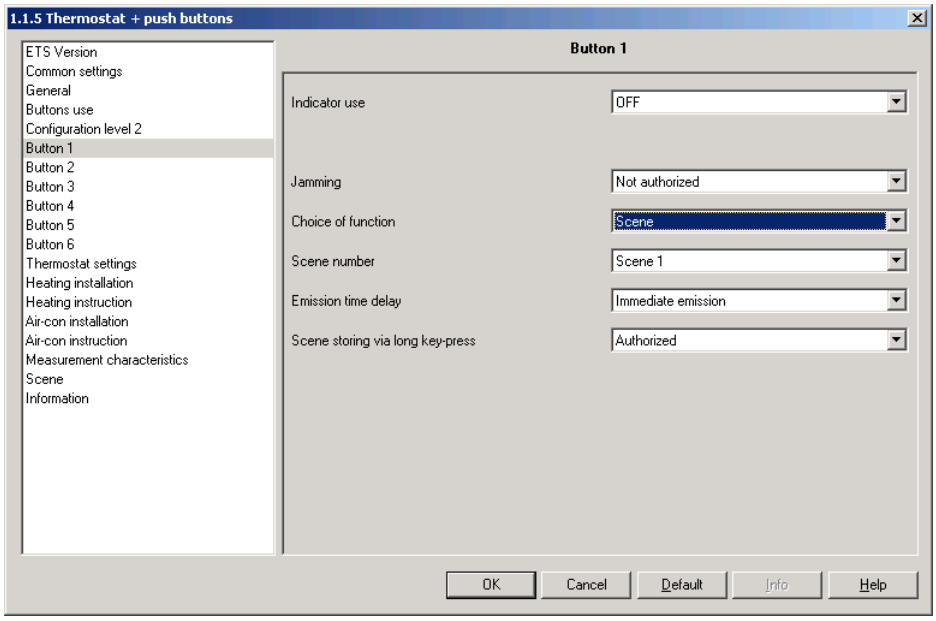
The Scene function sends group controls to different kinds of outputs to create ambiences or scenarios. Pressing the push-button sensor activates or stores a scene from 1 to 32. With a short key-press, the push-button sensor sends a **Scene** object with a value of between 0 and 31 (Value 0 = Scene 1, Value 31 = Scene 32) to the bus. This function is only available in independent push button operation. The command is sent when the push button is released. If the **Scene storing via extra long key-press** parameter has the permitted value, pressing the push-button for longer than **5 s** sends a value of between 128 and 159 [(Scene no.1) + 128] to the bus.

Construction of the **1 octet scene** object:

Bit no.							
7	6	5	4	3	2	1	0
Store	X	Scene Number (0 means Scene 1)					

X = Not significant

3.5.3.9.1 Scene function parameter for independent push buttons



Screen 16

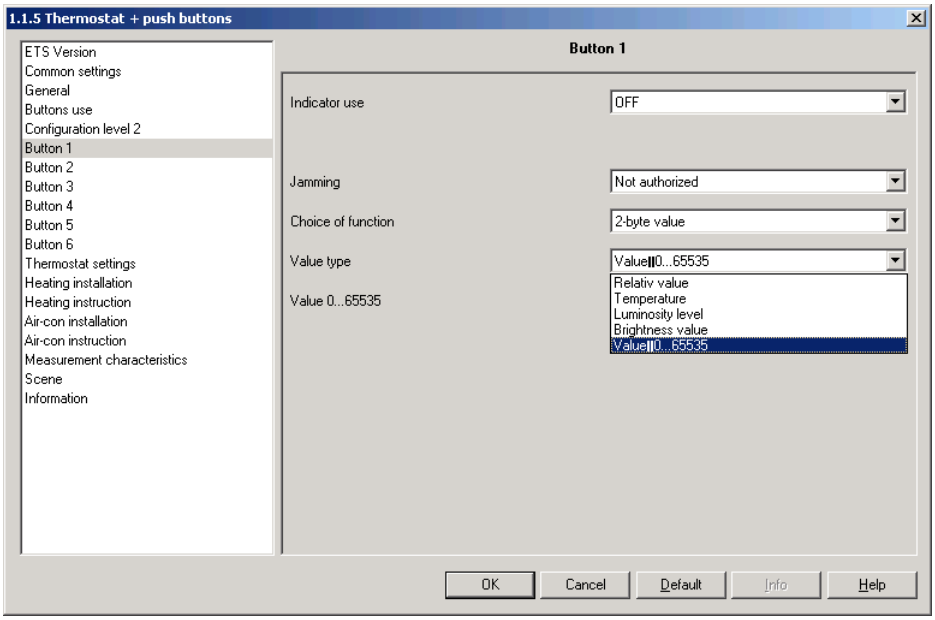
Parameter	Description	Value
Scene number	This parameter allows selecting the number of scenes to be activated.	Scene 1 - Scene 32. Default value: Scene 1.
Emission time delay	This parameter defines if scene activation must be immediate or time-delayed.*	Not used, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 30 s, 40 s, 50 s, 1 min, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 3 min 30 s, 4 min, 4 min 30 s, 5 min. Default value: Not used.
Scene storing via long key-press (>5 s)**	This parameter authorizes or not storage of a scene via a long push button press.	Used, Not used Default value: Used.

*The scene storing command is not concerned by this parameter.
**Scene storing is confirmed by the push-button indicator flashing (1 second).

3.5.3.10 Value function

The Value function allows to send percentage values, temperature values, brightness levels, illumination values or a 2-byte values.
The Value function is only available for an independent push button. Pressing the push button sends the **Value** object to the bus; the object is in 1-byte or 2-byte format, depending on the value type to be sent.

3.5.3.10.1 Value function parameters for independent push buttons



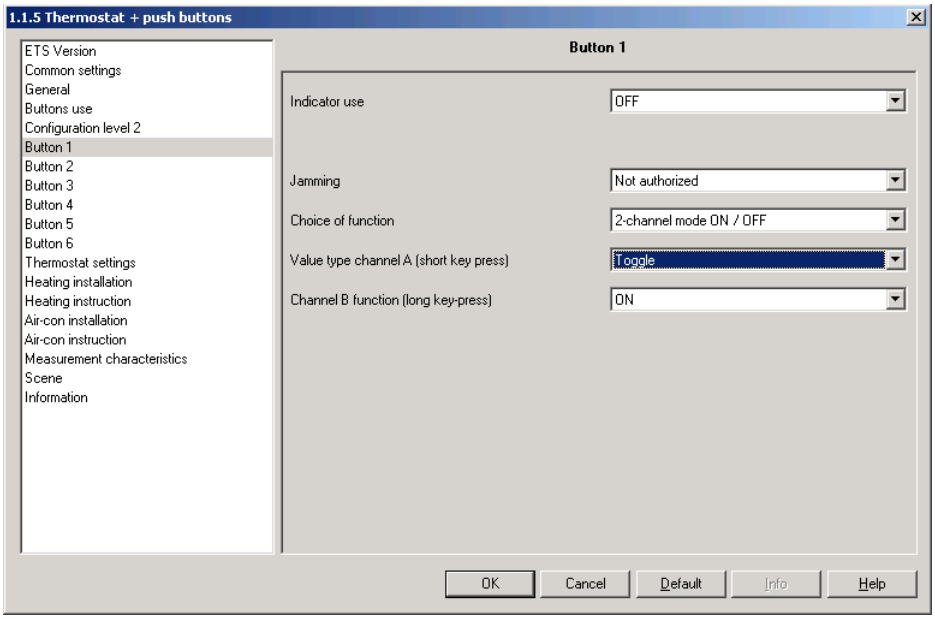
Screen 17

Parameter	Description	Value
Value type	This parameter defines the type of value sent.	Percentage "0...100%", Temperature, Luminosity level, Brightness value "0...100%", 2-byte value. Default value: Percentage "0...100%".
Value	This parameter defines the value to be sent to the bus.	Percentage "0...100%", 0% - 100% in 1% steps. Default value: 0%. Temperature 0°C - 40°C in 0.5°C steps. Default value: 20°C. Luminosity level 0 lux - 1000 lux in 50 lux steps. Default value: 300 lux. Brightness value "0...100%" 0% - 100% in 1% steps. Default value: 0%. 2-byte value 0 - 65535 in 1 steps. Default value: 0.

3.5.3.10.2 2-channel ON / OFF function

The 2-channel ON / OFF mode is used to perform two different functions using the same push button. The distinction between the two functions is made by a short key-press or a long key-press (the length of the long key-press can be set on the General Parameters screen, via the Length of long key-press for channel B mode parameter). The 2-channel mode is only available for the ON, OFF and Toggle Switch functions. With a short key-press, the push-button sensor sends an ON or OFF command to the bus via the **Channel A ON / OFF** object. With a long key-press, the push-button sensor sends an ON or OFF command to the bus via the **Channel B ON / OFF** object.

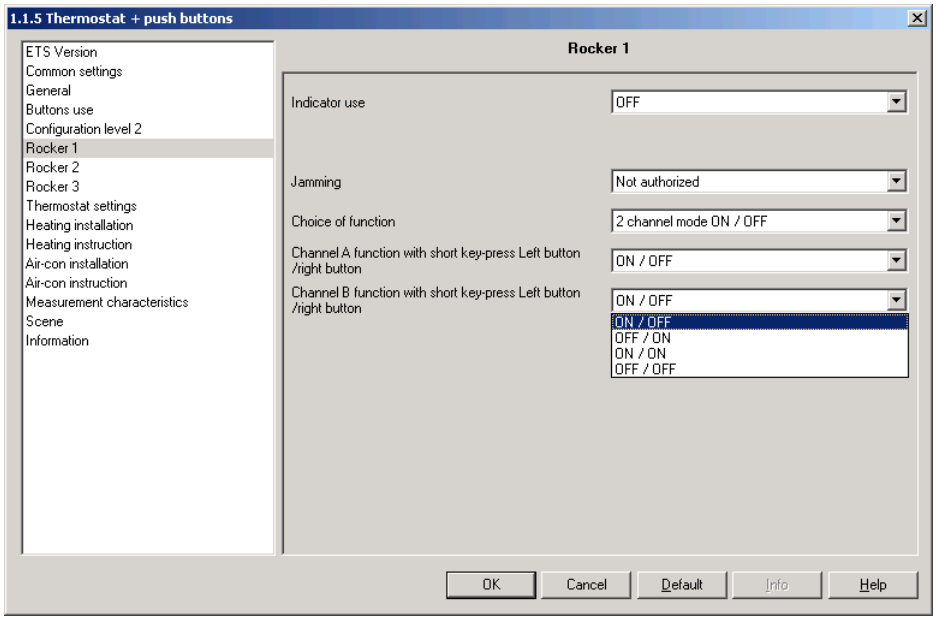
3.5.3.10.3 2-channel ON / OFF mode function parameters for independent push buttons



Screen 18

Parameter	Description	Value
Choice of function (Channel A = short key-press)	This parameter defines the command sent by a short key-pres.	ON, OFF, Button. Default value: Button.
Choice of function (Channel B = long key-press)	This parameter defines the command sent by a long key-press.	ON, OFF, Button. Default value: ON.

3.5.3.10.4 2-channel ON / OFF mode function parameters for linked push buttons



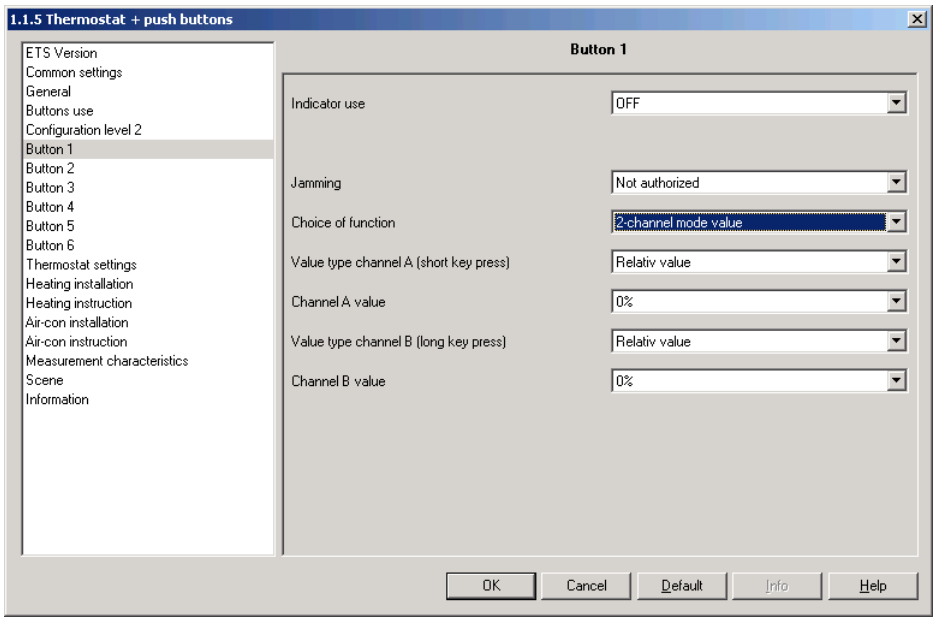
Screen 19

Parameter	Description	Value
Function left button / right button (Channel A = short key-press)	This parameter defines the command sent by a short key-press on the left button and on the right button.	ON / OFF, OFF / ON, ON / ON, OFF / OFF. Default value: ON / OFF.
Function left button / right button (Channel B = long key-press)	This parameter defines the command sent by a long key-press on the left button and on the right button.	ON / OFF, OFF / ON, ON / ON, OFF / OFF. Default value: ON / OFF.

3.5.3.11 2-channel value function

The 2-channel value mode sends two different value commands using the same push button. The Value function is only available for an independent push button. The distinction between the two functions is made by a short key-press or a long key-press (the length of the long key-press is adjustable). With a short key-press, the push-button sensor sends a value command to the bus via the Channel A **Value** object. With a long key-press, the push-button sensor sends a value to the bus via the Channel B **Value** object.

3.5.3.11.1 2-channel value mode function parameters for independent push buttons



Screen 20

Parameter	Description	Value
Value type (Channel A = short key-press)	This parameter defines the nature of the value sent on Channel A.	Percentage "0...100%", Temperature, Luminosity level, Brightness value "0...100%", 2-byte value. Default value: Brightness value "0...100%".
Channel A value	This parameter defines the value to be sent to the bus.	Possible values: Percentage "0...100%", 0% - 100% in 1% steps. Default value: 0%. Temperature, 0°C - 40°C in 0.5°C steps. Default value: 20°C. Luminosity level 0 lux - 1000 lux in 50 lux steps. Default value: 300 lux. Brightness value "0...100%" 0% - 100% in 1% steps. Default value: 0%. 2-byte value 0 - 65535 in 1 steps. Default value: 0.
Value type (Channel B = long key-press)	This parameter defines the nature of the value sent on Channel B.	Percentage "0...100%", Temperature, Luminosity level, Brightness value "0...100%", 2-byte value. Default value: Brightness value "0...100%".
Channel B value	This parameter defines the value to be sent to the bus.	Possible values: Percentage "0...100%", 0% - 100% in 1% steps. Default value: 0%. Temperature, 0°C - 40°C in 0.5°C steps. Default value: 20°C. Luminosity level 0 lux - 1000 lux in 50 lux steps. Default value: 300 lux. Brightness value "0...100%" 0% - 100% in 1% steps. Default value: 0%. 2-byte value 0 - 65535 in 1 steps. Default value: 0.

4. Configuration and parameterising of the room controller and regulator

4.1 List of objects Room controller and regulator

Use of the communication objects (Inputs or Outputs) for the heating and / or air-conditioning systems.

Objects (Type, Name and Function)			Heating	Air-con	Heating and air-con	Heating and air-con (1 system)
Input	Heating / Air-conditioning	Changeover Heating / Air-conditioning			(X)[1]	X
	Heating	Stop	X		X	X
	Air-con	Stop		X	X	X
Output	Heating	Valve position %	X		X	X
	Heating	Valve position ON / OFF	X		X	X
	Supplementary heating	Valve position %	(X)[2]		(X)[2]	(X)[2]
	Supplementary heating	Valve position ON / OFF	(X)[2]		(X)[2]	(X)[2]
	Air-con	Valve position %		X	X	
	Air-con	Valve position ON / OFF		X	X	
	Status indication	Heating temperature set point indication	X		X	X
	Status indication	Cooling temperature set point indication		X	X	X
	Status indication	Heating / Air-conditioning	X	X	X	X
	Status indication	Current mode	X	X	X	X

(X)[1]: Only active if the heating / air-conditioning switching is carried out manually.
(X)[2]: Only active if the supplementary heating is authorized.

	Objects			Value
	Nr.	Name	Function	
→	54	Heating / Air-conditioning	Changeover Heating / Air-conditioning	0: Air-con 1: Heating
→	56	Heating	Stop	0: Stop 1: ON
→	57	Air-con	Stop	0: Stop 1: ON
←	11	Heating	Valve position %	0 - 100 %
←	12	Heating	ON / OFF	0: OFF 1: ON
←	58	Supplementary heating	Valve position %	0 - 100 %
←	61	Supplementary heating	ON / OFF	0: OFF 1: ON
←	59	Air-con	Valve position %	0 - 100 %
←	62	Air-con	ON / OFF	0: OFF 1: ON
←	70	Status indication	Heating temperature set point indication	Temperature
←	71	Status indication	Cooling temperature set point indication	Temperature
←	14	Status indication	Heating / Air-conditioning	0: Air-con 1: Heating
←	13	Status indication	Current mode	1: Comfort 2: Standby 3: Night set-point 4: Frost / heating protection

Use of the objects (Inputs or Outputs) to control the thermostat for heating or air-conditioning via the bus

Objects (Type, Name and Function)			Room equipment type (Heating)	Room equipment type (Air-con)
Input	Thermostat	Set point selection	All*	All
	Thermostat	Frost / heating protection	All*	All
	Thermostat	Windows contact	All*	All
	Thermostat	Priority	All*	All
	Thermostat	Time limited comfort	All*	All
	Thermostat	Scene	All*	All
	Thermostat	Comfort temperature set point	All*	All
	Temperature	Outdoor temperature	All*	All
	Temperature	Floor temperature	Only for the following transmitters: (Electrical or hot water) floor heating and Customized regulation parameter.	Only for the following transmitters: Customized setting.
	Thermostat	Jamming	Always available	
	Temperature	Ambient temperature	All*	All
Output	Status indication	Ambient temperature	All*	All
	Status indication	Current mode	All*	All
	Status indication	Heating / Air-conditioning	All*	All
	Fan	Speed 1	Only for the following transmitters: Fan convector and Customized regulation parameters.	Only for the following transmitters: Fan convector and Customized regulation parameters.

*: All excepted the supplementary heating.

	Objects			Value
	Nr.	Name	Function	
→	0	Thermostat	Set point selection	1: Comfort 2: Standby 3: Night set-point 4: Frost / heating protection
→	1	Thermostat	Frost / heating protection	0: Activation of Frost protection / Equipment protection 1: Deactivation ➜ Back to the previous mode
→	2	Thermostat	Windows contact	0: Deactivation of Frost protection / Equipment protection (window closed) ➜ Back to the previous mode 1: Activation of Frost protection / Equipment protection (Window open)
→	3	Thermostat	Priority	11: Start of Comfort mode priority 01: End of Comfort mode priority 10: Start of Protection mode priority 00: End of Protection mode priority
→	4	Thermostat	Time limited comfort	1: Comfort mode (timer start) 0: Back to the previous mode
→	5	Thermostat	Scene	0 - 31 Call of Scene 1 to 32 128 - 159 Storing Scene 1 to 32 (if authorized) Remaining values, no reaction
→	6	Thermostat	Comfort temperature set point	2-byte value: Temperature for Comfort setpoint (limited by the Setpoint lower limit and Setpoint upper limit parameters, see Background heating instructions)
→	8	Temperature	Outdoor temperature	2-byte value: Temperature for the external temperature limit and for display
→	7	Temperature	Floor temperature	2-byte value: Temperature for the floor temperature limit
→	60	General	Thermostat jamming	0/1 disables / enables the thermostat control buttons (− ⌂ + M) according to the setting of the parameters (see Key jamming)
→	9	Temperature	Ambient temperature	2-byte value: If a temperature value is received cyclically on this object, the regulator uses it instead of the value measured internally to calculate the output value (percentage)
←	10	Status indication	Ambient temperature	2-byte value: Current temperature measured by the room controller and regulator
←	13	Status indication	Current mode	1: Comfort 2: Standby 3: Night set-point 4: Frost / heating protection
←	14	Status indication	Heating / Air-conditioning	0: Air-con 1: Heating
←	65	Fan	Speed 1	0: Switch speed OFF 1: Switch speed ON
←	66	Fan	Speed 2	0: Switch speed OFF 1: Switch speed ON
←	67	Fan	Speed 3	0: Switch speed OFF 1: Switch speed ON

4.2 Thermostat settings parameter window

The following parameters can be set in this area of the application WDL620A:

- Regulation type (heating / air-conditioning) selection,
- Use of the control push buttons of the regulator (−, ⌂, +, M),
- Cyclic emission of the current setpoint and of the regulation type Heating or Air-conditionning,
- Jamming of the control push buttons of the regulator,
- Valve protection.

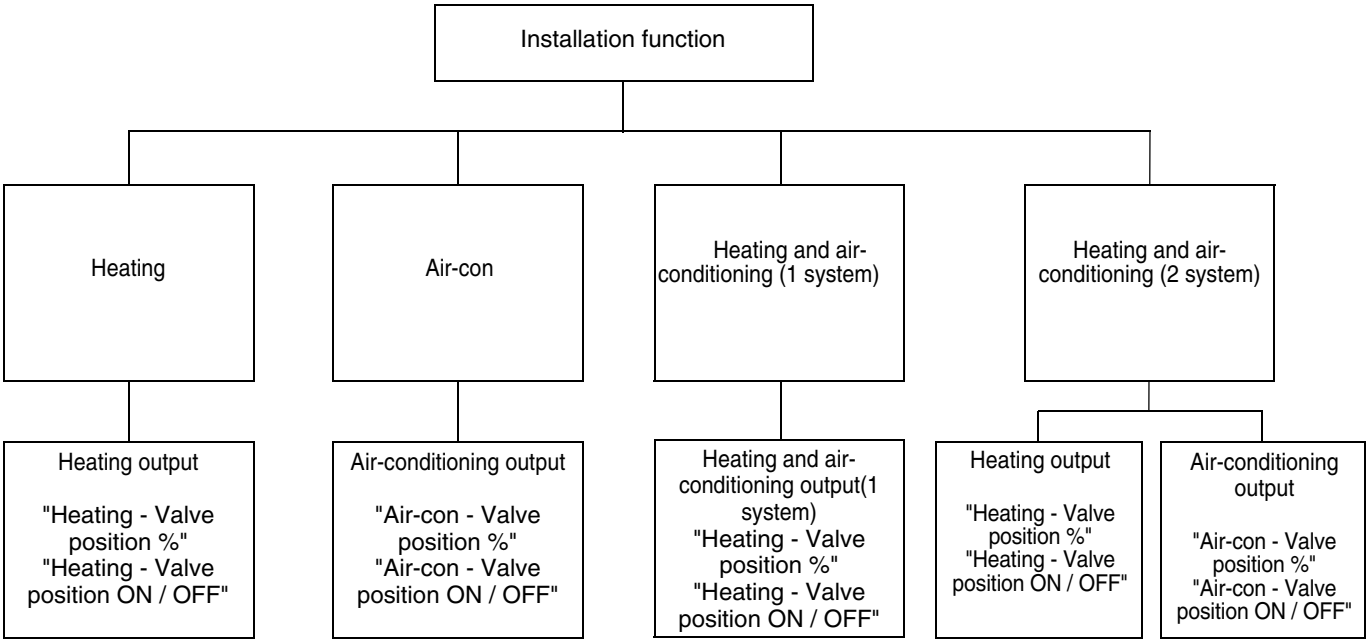
4.2.1 Installation type setting

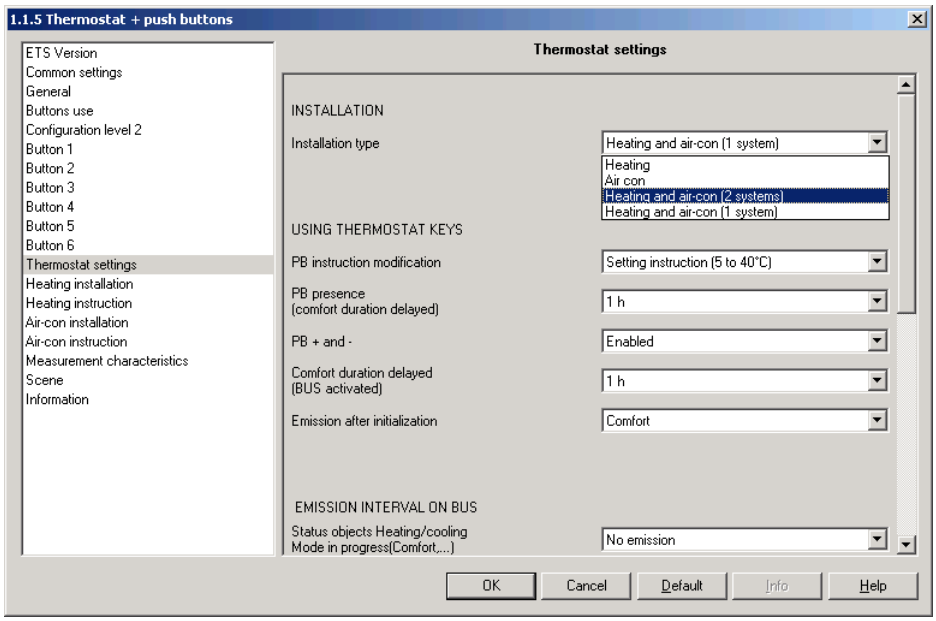
This parameter allows selecting the installation to be controlled by the room controller and regulator. One of the following installations can be selected:

- Heating installation,
- Air-conditioning installation,
- Heating and air-conditioning installation (2 systems),
- Heating and air-conditioning installation (1 system).

In the case of a heating and air-conditioning installation (2 systems), the outputs are controlled by means of separate objects. Switching between heating and air-conditioning modes may be automatic or manual (via the **Heating / Air-conditioning** - **Heating / Air-conditioning Switching** object). In case of automatic switching, the ambient temperature has a neutral zone in which there will be neither heating nor air-conditioning.

In the case of a heating and air-conditioning installation (1 system), the outputs are controlled together. Switching between heating and air-conditioning will be manual (by means of the **Heating / Air-conditioning-Heating** / **Air-conditioning Switching** object).





Screen 21

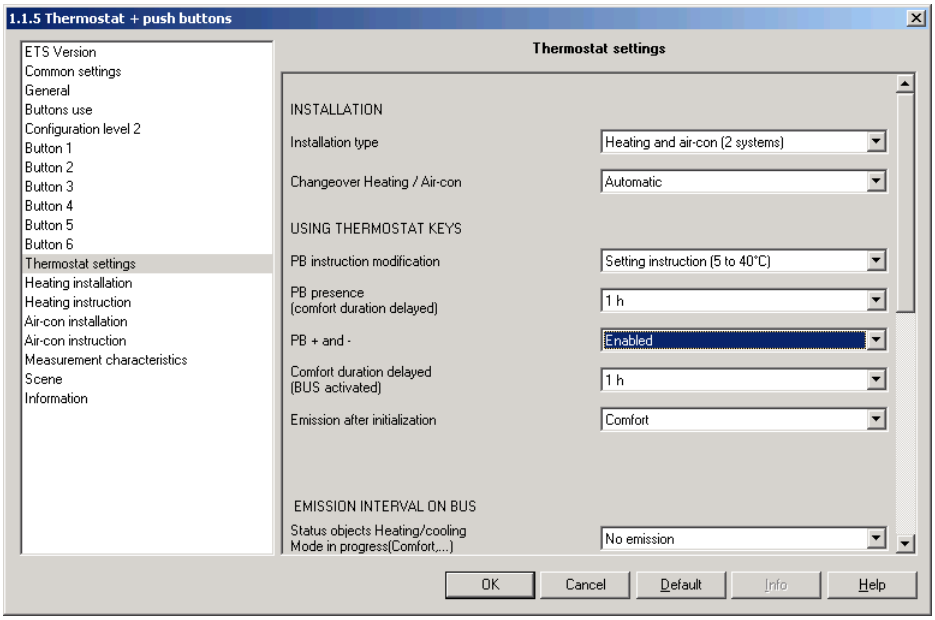
Installation:

Parameter	Description	Value
Regulation functions used	This parameter allows selecting the installation to be controlled by the room controller and regulator. The output objects for heating / air-conditioning will be generated depending on this parameter (see the presentation on the previous page).	Heating, Air-con, Heating and air-conditioning (2 system), Heating and air-conditioning (1 system). Default value: Heating and air-conditioning (1 system).
Changeover Heating / Air-conditioning*	This parameter defines whether switching between heating and air-conditioning will be automatic (depending on the ambient temperature measured) or manual by receiving a group address on the **Heating / Air-conditioning** - **Heating / Air-conditioning Switching** object (1 = heating; 0 = air-conditioning).	Manual, Automatic. Default value: Automatic.

* This parameter is only visible if the Cooling type parameter is set on Heating and Air-conditioning (2 system).

4.2.2 Use of the control push buttons of the regulator (−⛅+M)

The parameters Regulator control push buttons allow acting upon the operation of the four control push buttons (−⛅+M) of the regulator.



Screen 22

Parameter	Description	Value
Buttons + and -	Buttons + and − of the regulator allow modifying the setpoints defined with the ETS. This parameter defines whether this modification is allowed or not and, if it is allowed, the range of the modification.	Not used Setting set point (5 to 40°C), Deviation (+/-1°C), Deviation (+/-2°C), Deviation (+/-3°C). Default value: Setting set point (5 to 40°C).
Presence Button (Duration for comfort)	The ⛅ button of the regulator allows switching to the Standby mode. This parameter allows defining if switching is unlimited, time-limited or not used.	Not used, Unlimited, 15 min, 20 min, 30 min, 1 h, 1 h 30 min, 2 h, 2 h 30 min, 3 h, 3 h 30 min, 4 h, 5 h, 6 h, 12 h, 24 h. Default value: 1 h.
PB mode modification	The M button of the regulator allows switching the regulator between the modes: Reduced, Comfort, Standby, and Comfort priority and Frost protection priority. This parameter allow defining whether mode switching using the button is Authorized or Not used.	Not used, Used. Default value: Used.

4.2.3 Time-limited Comfort mode - controlled via the bus

The room controller and regulator may be switched via the bus to Comfort mode with a time limitation. When the set time has elapsed, the regulator switches back automatically to the mode that was active before switching. Changeover via the bus occurs with an ON command on object no. 4 (Time-limited comfort - Thermostat).

➜ Parameter Setting screen: See "Screen 22".

Parameter	Description	Value
Comfort duration delayed (Activated by object 4)	This parameter allows setting the duration for the time-limited Comfort mode (enabling via the bus) or disabling the function.	Not active, 15 min, 20 min, 30 min, 1 h, 1 h 30 min, 2 h, 2 h 30 min, 3 h, 3 h 30 min, 4 h, 5 h, 6 h, 12 h, 24 h. Default value: 1 h.

4.2.4 Mode when power ON

This parameter allows defining the operating mode of the regulator after a bus voltage failure.

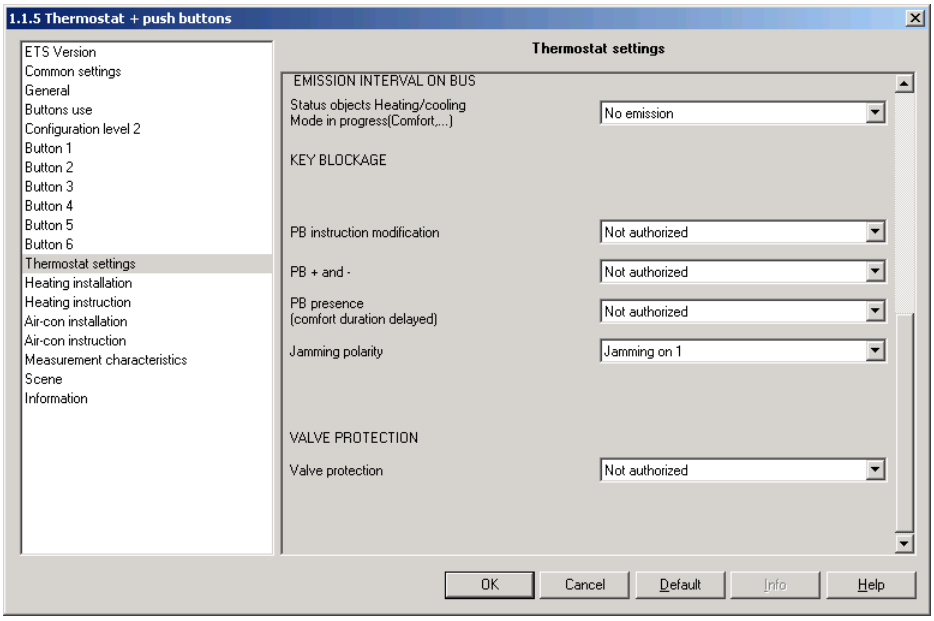
Designation	Icon WYT61x
Comfort	
Standby	
Reduced (night)	
Frost protection	

➜ Parameter Setting screen: See "Screen 22".

Parameter	Description	Value
Mode when power ON	This parameter allows defining the operating mode after a bus voltage failure.	Comfort, Reduced (night), Standby, Frost protection, Last mode stored. Default value: Comfort.

4.2.5 Cyclic emission of the current mode and Heating / Air-conditioning status indications

The room tempeature regulator can send cyclically to the bus the current operating mode (e.g. Comfort, Economy, Standby or Frost protection) and information as to whether the regulator is performing the Heating or Air-conditioning function. The parameter object **Status indication Heating / Air-conditioning** and Current mode allows defining whether the regulator sends this information and, if yes, with which emission frequency.



Screen 23

Parameter	Description	Value
Status objects Heating / air-con Mode in progress(Comfort,...)	This parameter allows defining whether the regulator sends this information and, if yes, with which frequency.	No emission, 2 min, 3 min, 5 min, 10 min, 20 min, 30 min, 45 min, 60 min. Default value: No emission

4.2.6 Jamming the buttons

The object **General - Thermostat jamming** allows jamming the control push buttons of the Regulator (−⛅+M). The Key blockage parameters allow defining which push buttons are to be jammed. The value with which the jamming/authorization of the push buttons occurs can also be defined.

➜ Parameter Setting screen: See "Screen 23".

Parameter	Description	Value
Buttons + and -	The function of the + and − push buttons can be jammed via the bus. This parameter allows defining whether jamming is used or not.	Not used, Used. Default value: Not used.
PB mode modification	The function of the M push button can be jammed via the bus. This parameter allows defining whether jamming is used or not.	Not used, Used. Default value: Not used.
Presence Button (Duration for comfort)	The function of the ⛅ push button can be jammed via the bus. This parameter allows defining whether jamming is used or not.	Not used, Used. Default value: Not used.
Rocker jamming	This parameter allows defining the value with which the jamming of the buttons is activated.	On 0, On 1. Default value: On 1.

4.2.7 Valve protection

The regulator can actuate the valves connected to the controlled outputs periodically, if they are not in use, to prevent them from jamming.

➜ Parameter Setting screen: See "Screen 23".

Parameter	Description	Value
Valve protection	This parameter allows defining whether the Valve protection function is Authorized or Not used.	Not used, Used. Default value: Not used.

4.3 Heating installation parameters

These parameters only are visible if the Installation - Air conditioning type parameter is set to one of the values:

- Heating
- Heating and air-conditioning (2 system)
- Heating and air-conditioning (1 system)

in the area Thermostat settings.

4.3.1 Installation characteristics

The room controller and regulator allows controlling a background heating and a supplementary heating. The regulator may be adjusted according to the characteristics of the heating installation either by means of a selection among various heating types or by means of the setting of the regulation parameters.

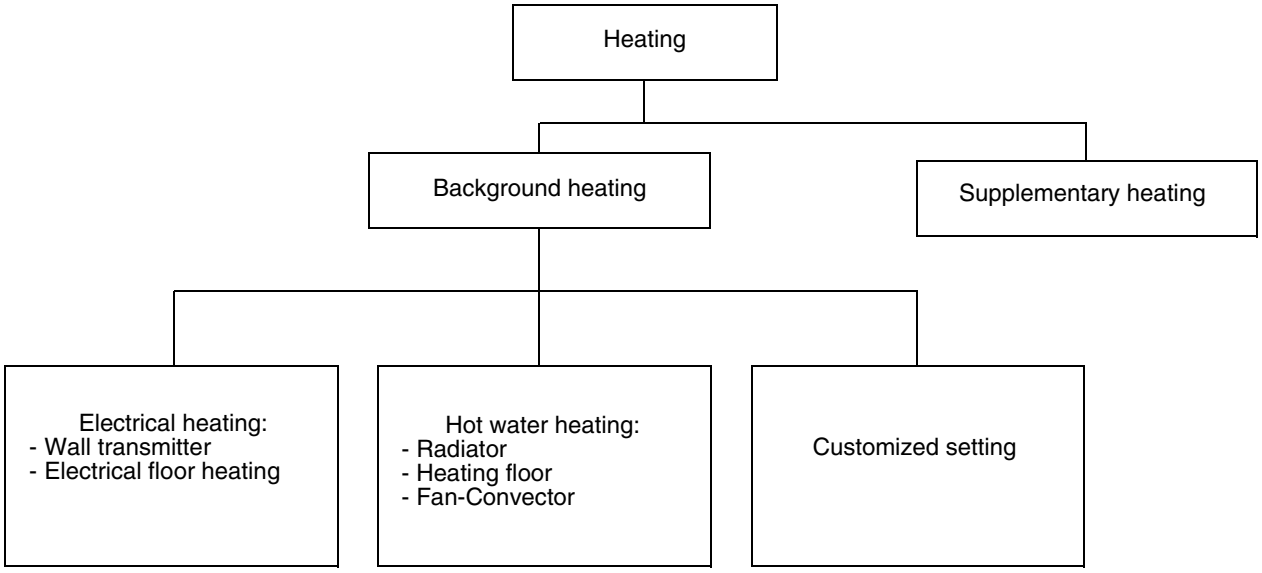
The following heating types are available for selection for the backgroung heating:

Electrical heating
- Electrical wall transmitter
- Electrical underfloor heating

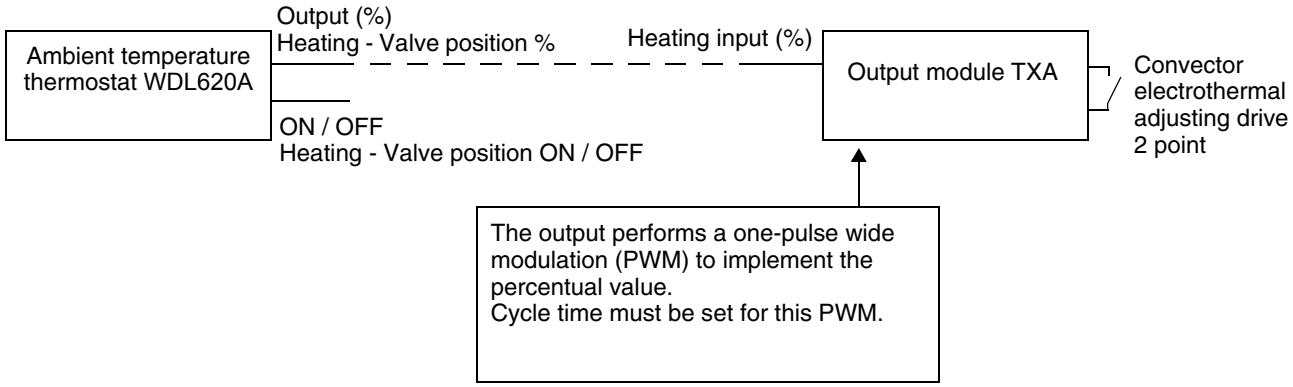
Hot water heating
- Radiator
- Floor
- Fan-Convector

Customized installation
In case of a customized installation, the following parameters must be set:
- Proportional band
- Integral period
- Shift period
- Chrono-proportional

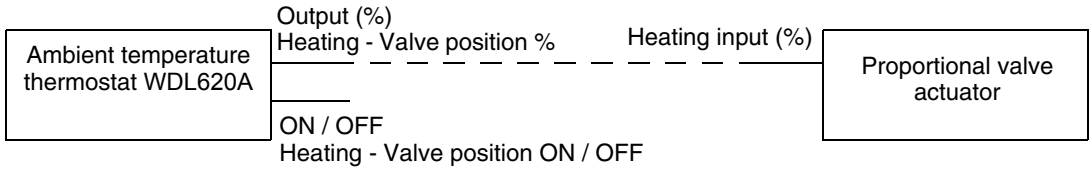
If a supplementary heating is integrated in the installation, the following parameters must also be set:
- Comfort temperature reduction for the regulation of the supplementary heating
- Setting type (2 point or constant cycle time)



Use of the room temperature regulator with an TXA output module.



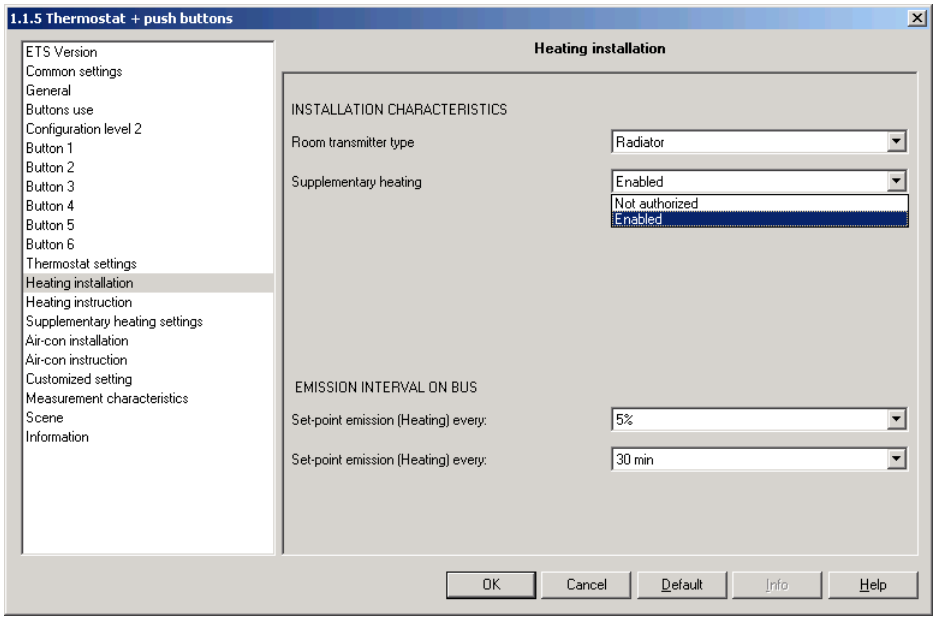
Use of the room controller and regulator with a proportional valve actuator.



The ON / OFF output (object: **Heating - Valve position ON / OFF**) is only required in connection with a single output module (without the Heating function).

4.3.1.1 Selection of the Room transmitter type and activation of the supplementary heating

The room transmitter type parameter allows selecting the installed type of background heating. Independently of this, a supplementary heating can also be activated.



Screen 24

Parameter	Description	Value
Room equipment type	This parameter allows selecting the type of the installed heating and / or air-conditioning installation.	Radiator, Hot water underfloor heating, Electrical wall transmitter, Electrical underfloor heating, Fan-Convector, Customized setting. Default value: Radiator.
Supplementary heating	This parameter enables (Authorized) or disables (Not used) the control of the supplementary heating by the regulator. Refer to Supplementary heating settings for the setting of the parameters of the supplementary heating.	Not used, Used. Default value: Used.

4.3.1.2 External temperature and floor temperature limit

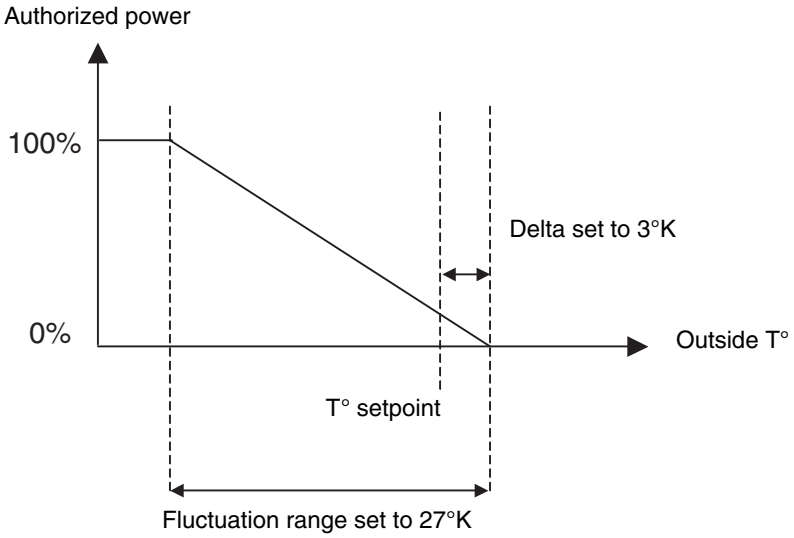
A Power limitation function can be activated depending on the heating type used. Two power limitation functions are available:

1. Limitation according to the outside temperature: available in case of an electrical heating and for customized regulation. The function limits the heating power called for by the regulator according to the outside temperature. The Power limitation function is controlled by the **Outdoor temperature** object.

2. The temperatures required for limitation can be monitored. If no new value is received within the monitoring time, the power limitation is stopped. (See 4.10 "Parameter value Measurement characteristics" See 59.

4.3.1.2.1 Outdoor temperature limit

The Outside temperature limit function is available in case of an electrical heating and for customized regulation. The function limits the heating power called for according to the outside temperature. It is controlled by the **Outside temperature** object. The limitation curve of the heating power called for according to the outside temperature for a fixed setpoint is shown on the following diagram:



T° setpoint	Outside T°	Authorized power	Comment
20°C	25°C	0%	Maximum limitation
20°C	10°C	48%	/
20°C	-7°C	100%	Zero limitation

Calculation method:
Te: Outdoor temperature
Tc: Temperature setpoint
D: Delta of 3°K
P: Variation range of 27 K

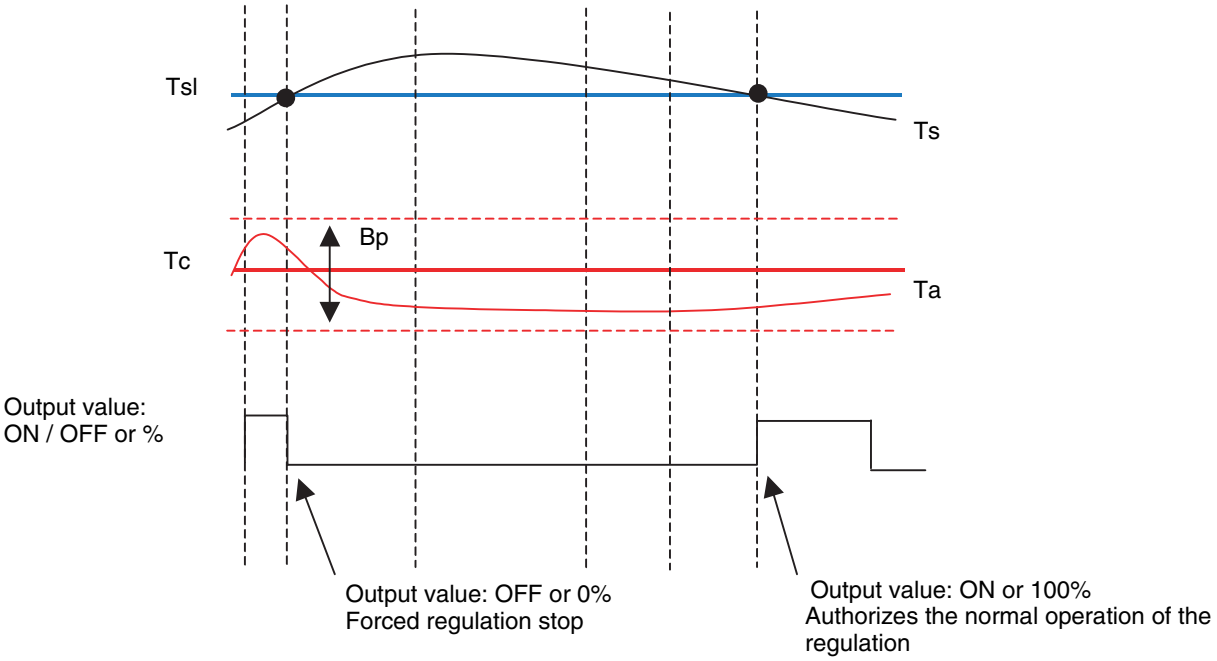
If Te >= Tc+D, the limitation is at its maximum (the heating output is set to the value 0%) or, if Te < (Tc+D)-P, the limitation equals zero.

ELSE limitation is calculated according to the formula: $\frac{(Tc + D) + Te}{P}$

Remark: The Outside temperature limit function does not limit the power supplied by the supplementary heating.

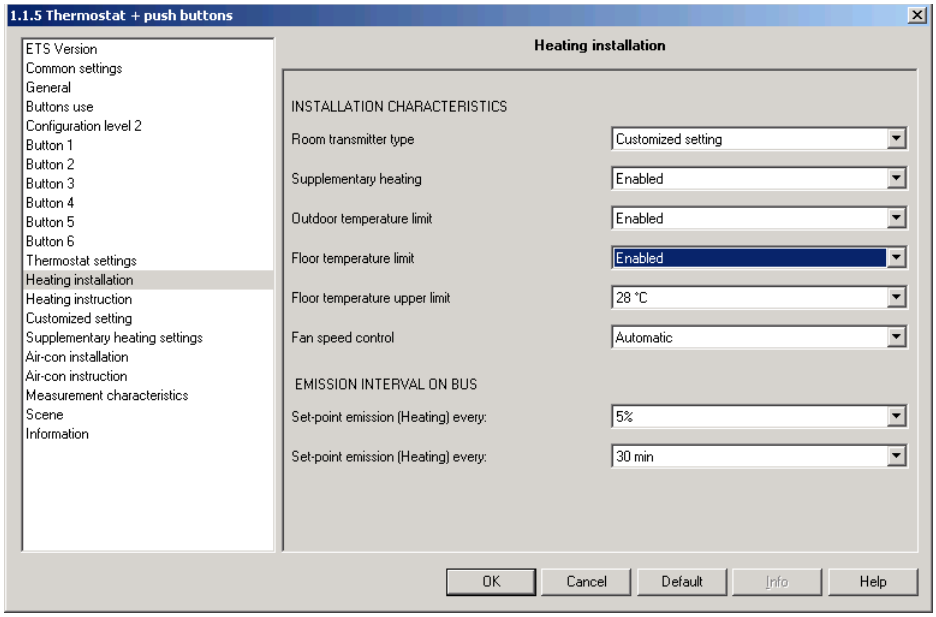
4.3.1.2.2 Floor temperature limit

The Floor temperature limit function is available in case of heating floors (electrical or water) and for customized regulation. The function limits the heating power called for by the regulator according to the outside temperature. It is controlled by the **Floor temperature** object.
The limitation curve of the heating power according to the floor temperature for a fixed setpoint is shown on the following diagram:



Ts = Floor temperature
Tsl = Upper floor temperature limit
Tc = Temperature setpoint
Ta = Ambient temperature
Bp = Proportional band

Notes:
The Floor temperature limit function affects the ambient temperature.
The Floor temperature limit function does not apply to the supplementary heating.



Screen 25

Parameter	Description	Value
Outdoor temperature limit*	This parameter enables (Authorized) or disables (Not used) the power limitation according to the outside temperature.	Not used, Used. Default value: Not used.
Floor temperature limit**	This parameter enables (Authorized) or disables (Not used) the power limitation according to the floor temperature.	Not used, Used. Default value: Not used.
Upper floor temperature limit***	This parameter allows regulating the upper limit of the floor temperature.	24 °C - 46 °C in 1 °C steps Default value: 28 °C

* This parameter only appears if the Room transmitter parameter has one of the following values: Electrical wall transmitter, Electrical underfloor heating or customized setting.
** This parameter only appears if the Room transmitter parameter has one of the following values: Hot water underfloor heating, Electrical underfloor heating or Customized setting.
*** This parameter is only visible if the Floor temperature limit parameter has the value Authorized.

4.3.2 Emission conditions

The object **Heating - Valve position %** tells the installation (heating output, proportional valves, etc.) which setting is to be carried out. The parameter Emission of object "background heating valve position in %" if fluctuation of: is used to define for which change in % of the calculated output value the latter is to be sent on the bus.
The parameter Emission of object **background** heating valve position in % every: is used to define the time after which the object **Heating - Valve position %** is sent again on the bus at the latest.

➜ Parameter Setting screen: See "Screen 25".

Parameter	Description	Value
Emission of object **Background heating valve position in %** if fluctuation of:*	This parameter allows defining for which change in % of the calculated output value the latter is to be sent on the bus.	1 %, 2 %, 3 %, 5 %, 7 %, 10 %, 15 %. Default value: 5 %
Emission of object **Background heating valve position in %** every:**	This parameter allows defining the time after which the object **Heating - Valve position %**is sent again on the bus at the latest.	No emission, 2 min, 3 min, 5 min, 10 min, 15 min, 20 min, 30 min, 45 min, 60 min. Default value: 30 min.

* This parameter also acts upon the object **Supplementary heating Setpoint %**.
** This parameter also acts implicitly upon the objects:
- Supplementary heating Valve position ON / OFF, Supplementary heating Valve position %.
- Fan speed 1, Fan speed 2, Fan speed 3.
- Background heating Setpoint ON / OFF.

4.3.3 Fan speed control

When the room transmitter is a fan converter, the fan speed can be controlled automatically or manually by the aid of the buttons 3 and 6 of the thermostat.

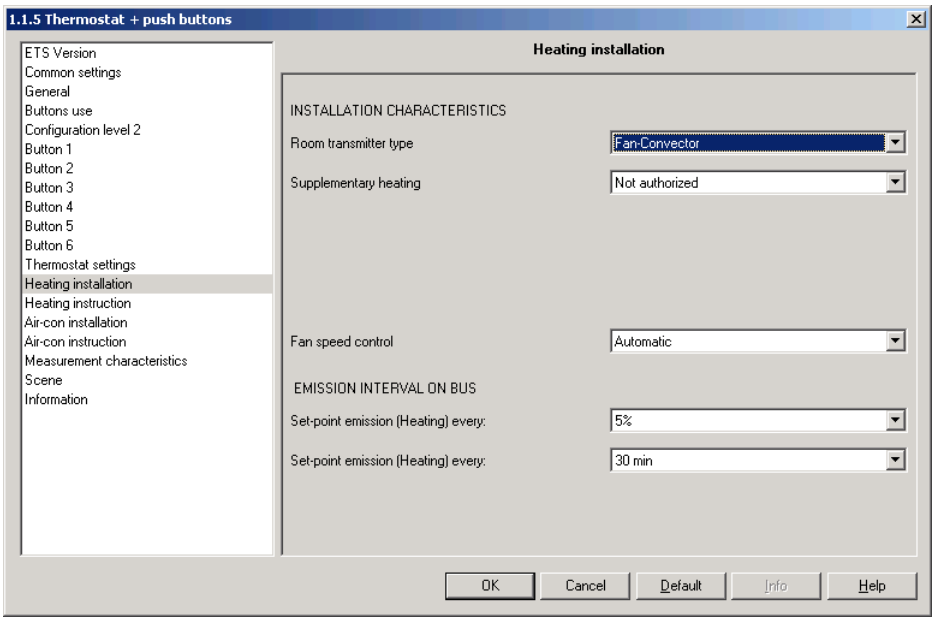
The button 6 allows activating or deactivating the fan. Is the fan is unused the LED 6 is OFF. The LED 6 is green for cooling and red for heating.

The button 5 is used to change the fan speed. Three speeds are possible: Speed 1, Speed 2 and Speed 3 (**Speed 1 to Speed 3** object). Depressing button 5 cycles trough the 3 available speeds.
(Speed 1, Speed 2, Speed 3...).

The selected speed is temporarily displayed on the LCD wiht SP1 (2,3) and by the aid of the LED 5, 3 and 1.

In case of automatic control, the buttons 5 and 6 are inhibited. The key blinks 3 seconds when they are used.

Speed	LEDs	LED color
1	5 ON	Green when cooling and red when heating
2	5 and 3 ON	Green when cooling and red when heating
3	5, 3 and 1 are ON	Green when cooling and red when heating



Screen 26

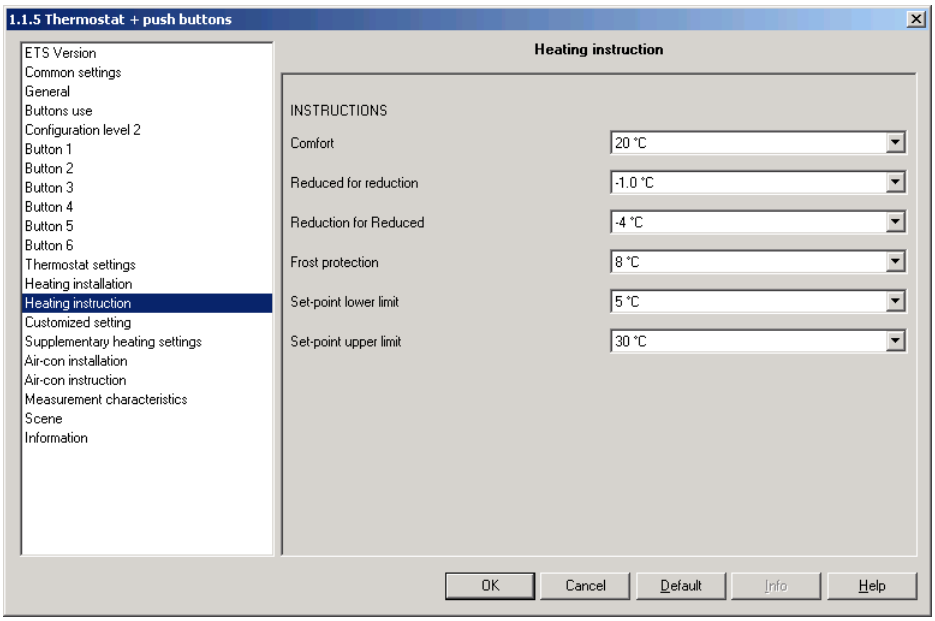
Parameter	Description	Value
Fan speed control	This parameter defines the way the fan speed control is used.	Automatic Stop Speed 1 Speed 2 Speed 3

4.4 Background heating instructions parameter

The room controller and regulator defines the temperature according to the set mode (Comfort, Standby, Reduced, Equipment protection). The modes are activated by means of various objects (see also 4.1 "List of objects Room controller and regulator" Page 34).

Objects (Type, Name and Function)			Comfort	Night set-point	Standby	Frost / heating protection
Input	Thermostat	Set point selection	X	X	X	X
	Thermostat	Priority	X			X
	Thermostat	Frost / heating protection				X
	Thermostat	Time limited comfort	X			
	Thermostat	Scene	X	X	X	X
	Thermostat	Windows contact				X

The Temperature setpoints for the modes can be set under this parameter item with the ETS.
The temperature setpoints for the Standby and Reduced modes are relative with respect to the Comfort temperature setpoint. Thus, in case of a change of the Comfort temperature setpoint, the temperature setpoints of the Standby and Reduced modes are changed automatically. The temperature setpoint for the Comfort mode can also be set via the bus (Thermostats - Comfort temperature setpoint).
The temperature setpoints for all modes can be limited using the Set-point lower limit and Set-point upper limit parameters.



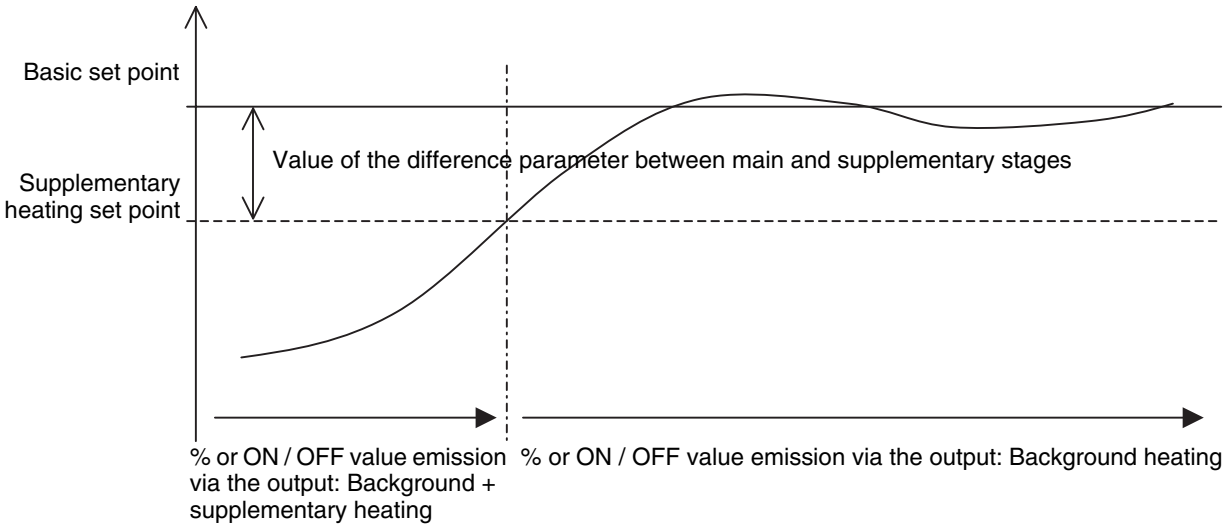
Screen 27

Parameter	Description	Value
Comfort	This parameter allows setting the Comfort temperature setpoint.	10°C - 30°C in 1°C steps. Default value: 20°C.
Eco reduction	This parameter allows setting the temperature difference with respect to the Comfort temperature setpoint.	-0.5°C, -1.0°C, -1.5°C, -2.0°C, -2.5°C, -3.0°C, -3.5°C, -4.0°C. Default value: -1.0°C.
Reduction for Reduced	This parameter allows setting the temperature difference with respect to the Comfort temperature setpoint.	-2°C, -3°C, -4°C, -5°C, -6°C, -7°C, -8°C. Default value: -4°C.
Frost protection	This parameter allows setting the temperature setpoint for Frost protection.	5°C, 6°C, 7°C, 8°C, 9°C, 10°C, 11°C, 12°C. Default value: 8°C.
Set-point lower limit	This parameter allows setting a lower limit for the Comfort, Standby and Reduced setpoints.	5°C, 6°C, 7°C, 8°C, 9°C, 10°C, 11°C, 12°C, 13°C, 14°C, 15°C. Default value: 5°C.
Set-point upper limit	This parameter allows setting a lower limit for the Comfort, Standby and Reduced setpoints.	15°C, 16°C, 17°C, 18°C, 19°C, 20°C, 21°C, 22°C, 23°C, 24°C, 25°C, 26°C, 27°C, 28°C, 29°C, 30°C. Default value: 30°C.

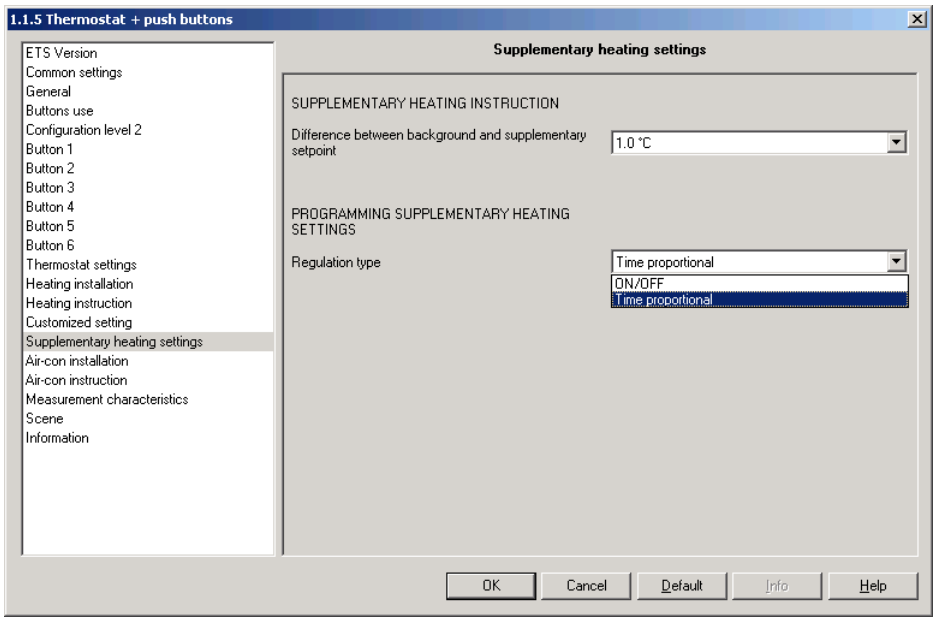
4.5 Parameterising of the Supplementary heating

These parameters are only visible if, in Heating installation, the Supplementary heating parameter is set to the value Authorized.
The room controller and regulator can control a supplementary heating. The setpoint for the supplementary heating is relative with respect to the setpoint of the active mode. The difference between the background heating setpoint and the supplementary heating setpoint is defined with the parameter Reduction for supplementary heating.
The output values for the supplementary stage are sent on the bus via the objects Supplementary heating - Valve position in % and Supplementary heating - Valve position ON / OFF.

Diagram showing the operation of the regulation of the supplementary heating.



The Setting type of the supplementary stage can be set either to 2 point or to Constant cycle time.
In case of 2 point setting, the regulator only sends the valve positions 0% and 100%, or ON or OFF.
In case of Constant cycle time setting, the regulator calculates cyclically a new output value in the range between 0 and 100%.



Screen 28

Supplementary heating set point

Parameter	Description	Value
Difference between background and supplementary set point	Supplementary heating setpoint = Current Background heating setpoint - Reduction for supplementary heating.	1.0°C, 1.5°C, 2.0°C, 2.5°C, 3.0°C, 3.5°C, 4.0°C. Default value: 1.0°C.

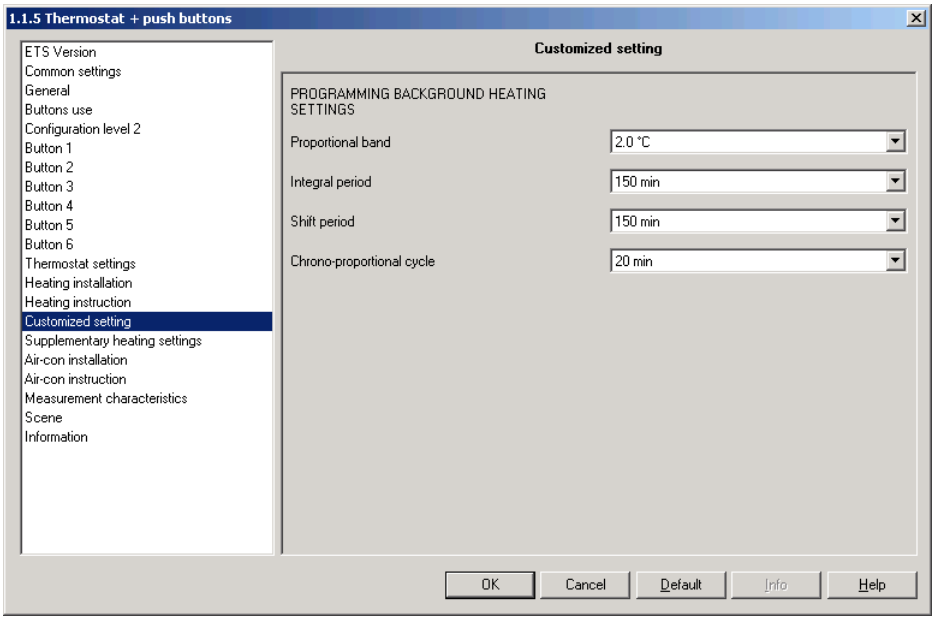
Regulator setting for supplementary heating

Parameter	Description	Value
Regulation type	This parameter allows defining the setting type of the supplementary heating.	2 point, Chrono-proportional. Default value: 2 point.

4.6 Customized Heating setting parameters

These parameters are only visible if, in Heating installation, the Room transmitter type parameter is set to the value Customized setting.

These parameters allow a customized setting of the regulation algorithm. This setting possibility may be used if the Room transmitter type parameter does not include the actual installation.



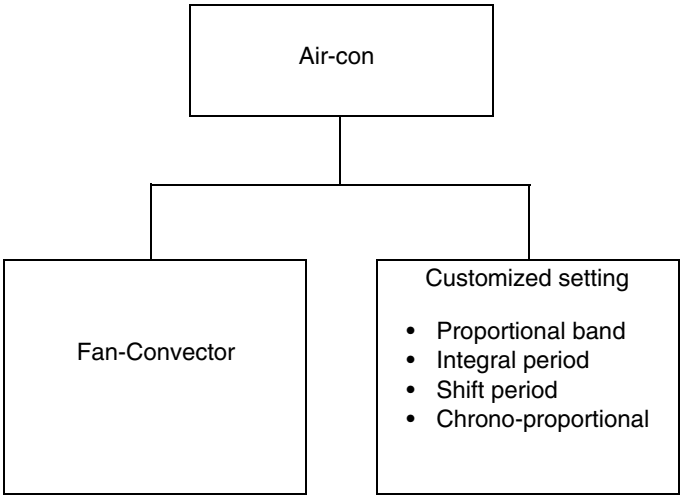
Screen 29

Parameter	Description	Value
Proportional band	This parameter allows setting the Proportional band of the regulation loop (gain of the loop).	1.0°C - 8.5°C in 0.5°C steps. Default value: 2.0°C.
Integral period	This parameter allows setting the integral correction period.	No correction, 15 min - 225 min in 15 min steps. Default value: 150 min.
Shift period	This parameter allows setting the shift correction period.	No correction, 15 min - 225 min in 15 min steps. Default value: 150 min.
Chrono-proportional	This parameter allows setting the duration of the chrono-proportional command cycle.	5 min, 10 min, 15 min, 20 min, 25 min, 30 min, 35 min, 40 min, 45 min, 60 min, 75 min, 90 min. Default value: 20 min.

4.7 Air-conditioning installation parameters

These parameters only are visible if the Installation - Air conditioning type parameter is set to one of the values:
- Air-con
- Heating and air-conditioning (2 system)
- Heating and air-conditioning (1 system)

in the area Thermostat settings.
To control the air- conditioning, the room controller and regulator can use either the algorithm for a Fan Convector stored in the regulator or values to be input by the user.

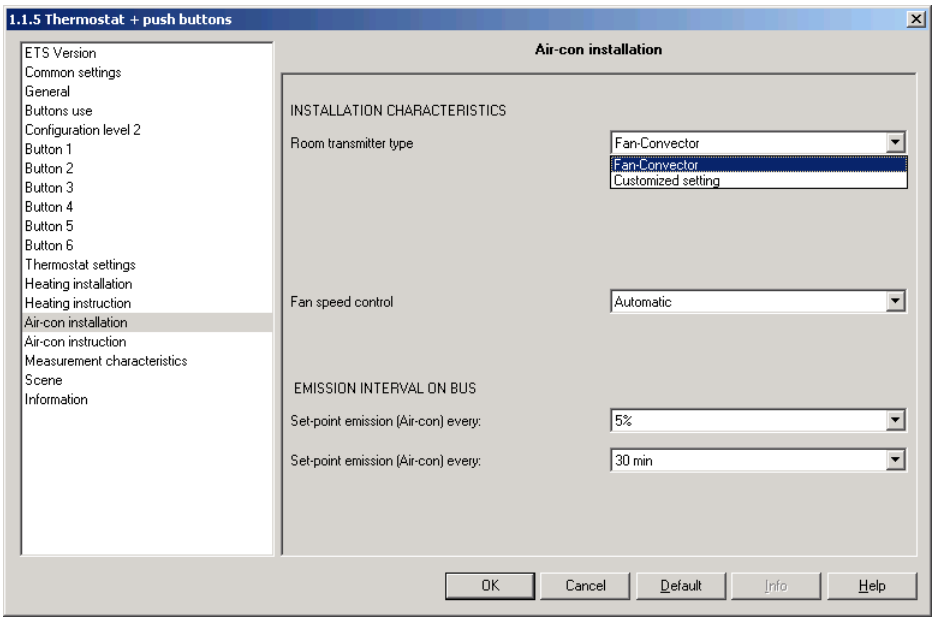


4.7.1 Installation characteristics

The Air-conditioning outputs are controlled by the **Air-conditionning control variable in %** and **Air-conditionning control variable: ON / OFF** objects. There is a power limitation function.

- Limitation according to the floor temperature: available in case of a customized regulation.

The function limits the cooling power called for by the regulator according to the floor temperature. The Power limitation function is controlled by the **Floor temperature** object.



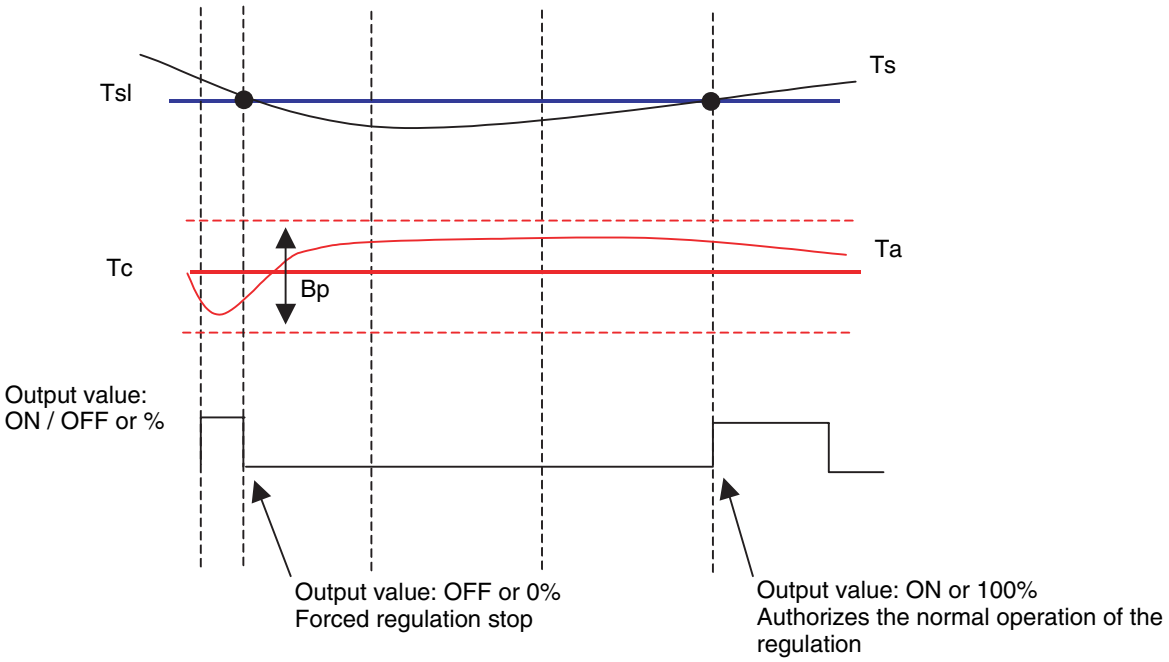
Screen 30

Installation characteristics:

Parameter	Description	Value
Room equipment type	This parameter allows selecting the type of the installed heating and / or air-conditioning installation.	Fan-Convector, Customized setting. Default value: Fan-Convector.

4.7.1.1 Floor temperature limit function

The Floor temperature limit function is available in case of a customized regulation.
The function limits the cooling power called for by the room controller and regulator according to the floor temperature. It is controlled by the **Floor temperature** object.
The cooling power limitation curve according to the floor temperature for a fixed setpoint is shown on the following diagram:



Ts = Floor temperature
Tsl = Upper floor temperature limit
Tc = Temperature setpoint
Ta = Ambient temperature
Bp = Proportional band

Notes:
The activation of the Floor temperature limit function affects the ambient temperature.

➜ Parameter Setting screen: See "Screen 30".

Parameter	Description	Value
Floor temperature limit*	This parameter allows enabling or disabling the floor temperature lower limit.	Authorized, Forbidden. Default value: Forbidden.
Lower floor temperature limit**	As soon as the floor temperature sinks below the value set here, the cooling output is set to the value 0 (OFF).	15 °C - 30 °C in 1 °C steps. Default value: 24 °C.

* This parameter is only visible if the Cooling type parameter has the value Customized setting.
** This parameter only appears if the Floor temperature limitation parameter has the value Authorized.

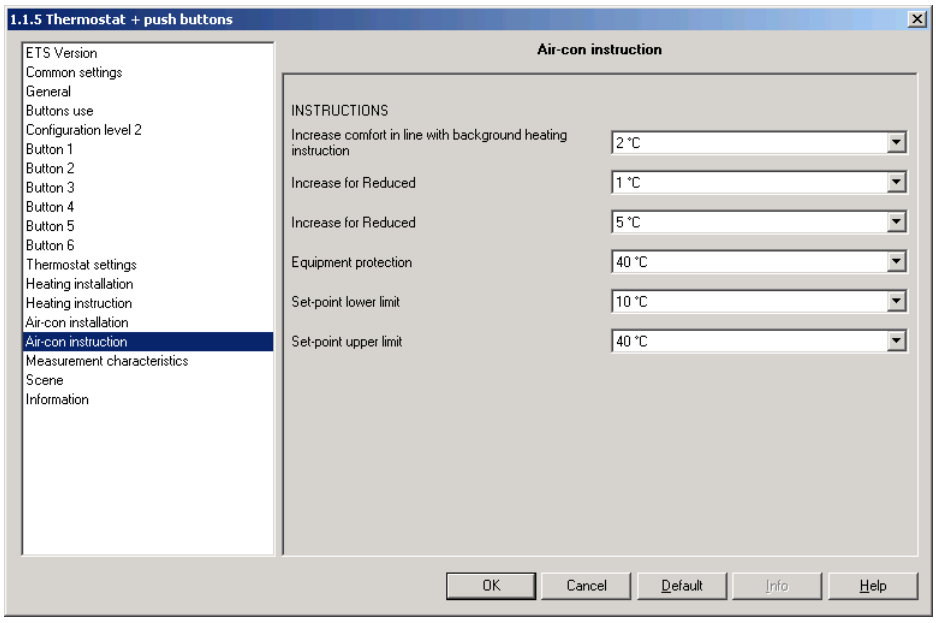
4.8 Air-conditioning instructions parameters

The room controller and regulator defines the temperature according to the set mode (Comfort, Standby, Reduced, Equipment protection). The modes are activated by means of various objects (see also 4.1 "List of objects Room controller and regulator" Page 34).

Objects (Type, Name and Function)			Comfort	Night set-point	Standby	Frost / heating protection
Input	Thermostat	Set point selection	X	X	X	X
	Thermostat	Priority	X			X
	Thermostat	Frost / heating protection (warm, cold)				X
	Thermostat	Time limited comfort	X			
	Thermostat	Scene	X	X	X	X
	Thermostat	Windows contact				X

The Temperature setpoints for the modes can be set under this parameter item with the ETS.
The temperature setpoints for the Standby and Reduced modes are relative with respect to the Comfort temperature setpoint. Thus, in case of a change of the Comfort temperature setpoint, the temperature setpoints of the Standby and Reduced modes are changed automatically. The temperature setpoint for the Comfort mode can also be set via the bus (Thermostats - Comfort temperature setpoint). The temperature setpoints for all modes can be limited using the Set-point lower limit and Set-point upper limit parameters.

Parameters setting for the Air-conditioning type Air-conditioning



Screen 31

Set points

Parameter	Description	Value
Comfort	This parameter allows setting the Comfort temperature setpoint.	10°C - 30°C in 1°C steps. Default value: 20°C.
Increase Reduced	This parameter allows setting the temperature difference between the Reduced and Comfort setpoints.	0.5°C - 4.0°C in 0.5°C steps. Default value: 1.0°C.
Increase Eco	This parameter allows setting the temperature difference between the Standby and Comfort setpoints.	3°C - 8°C in 1°C steps. Default value: 5°C.
Heat protection	This parameter allows setting the Equipment protection setpoint.	30°C - 40°C in 1°C steps. Default value: 40°C.

Parameter	Description	Value
Set-point lower limit	This parameter allows setting a lower limit for the Comfort, Standby and Reduced setpoints.	10°C - 18°C in 1°C steps. Default value: 10°C.
Set-point upper limit	This parameter allows setting an upper limit for the Comfort, Standby and Reduced modes setpoints.	18°C - 40°C in 1°C steps. Default value: 40°C.

4.8.1 Parameters setting for the Air-conditioning type Heating and Air-conditioning

➜ Parameter Setting screen: See "Screen 31".

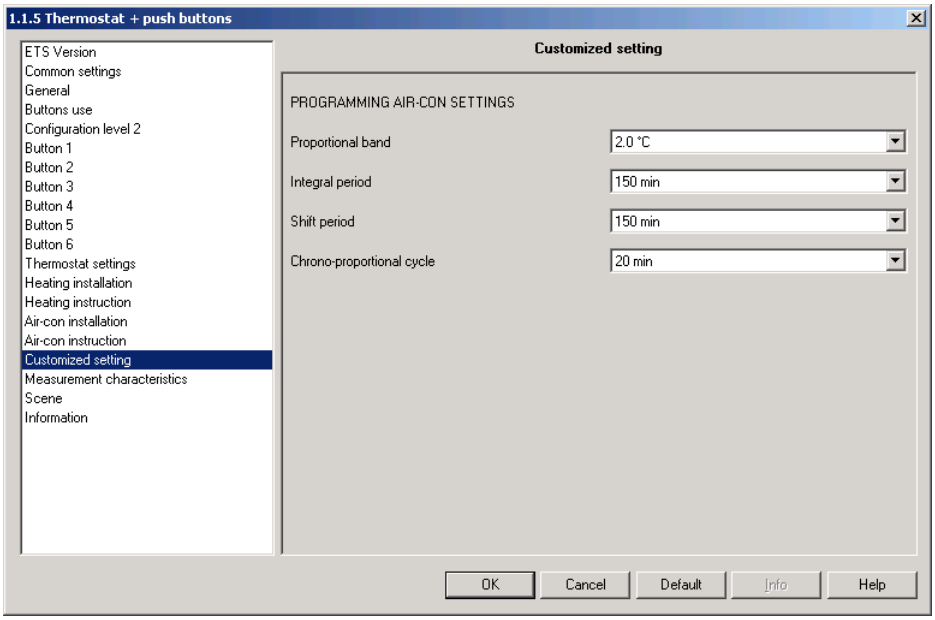
Set points

Parameter	Description	Value
Increase comfort in line with background heating set point (Neutral zone)	This parameter allows defining the minimum number of degrees the temperature must exceed the set Comfort temperature in order to activate the air-conditioning. (Example: Comfort temperature: 20°C Increase for Comfort mode: 2°C In Comfort mode, the regulator will start cooling at 22 °C °C).	1°C, 2°C, 3°C, 4°C, 5°C, 6°C Default value: 2°C.
Increase Eco	This parameter allows setting the temperature difference with respect to the setpoint for the Standby mode. The setpoint of the Standby mode is higher, for the Air-conditioning function, than that of the Heating function, by the value set here.	0.5°C - 0.4°C in 0.5°C steps. Default value: 1.0°C.
Increase Reduced	This parameter allows setting the temperature difference with respect to the setpoint for the Reduced mode. The setpoint of the Standby mode is higher, for the Air-conditioning function, than that of the Heating function, by the value set here.	3°C - 8°C in 1°C steps. Default value: 5°C.
Heat protection	This parameter allows setting the temperature setpoint for Frost protection.	30°C - 40°C in 1°C steps. Default value: 40°C.
Set-point lower limit	This parameter allows setting a lower limit for the Comfort, Standby and Reduced setpoints.	10°C - 18°C in 1°C steps. Default value: 10°C.
Set-point upper limit	This parameter allows setting a lower limit for the Comfort, Standby and Reduced setpoints.	18°C - 40°C in 1°C steps. Default value: 40°C.

4.9 Customized Air-conditioning setting parameters

These parameters are only visible if, in Air-conditioning installation, the Room transmitter type parameter is set to the value Customized setting.

These parameters allow a customized setting of the regulation algorithm. This setting possibility may be used if the Room transmitter type parameter does not include the actual installation.



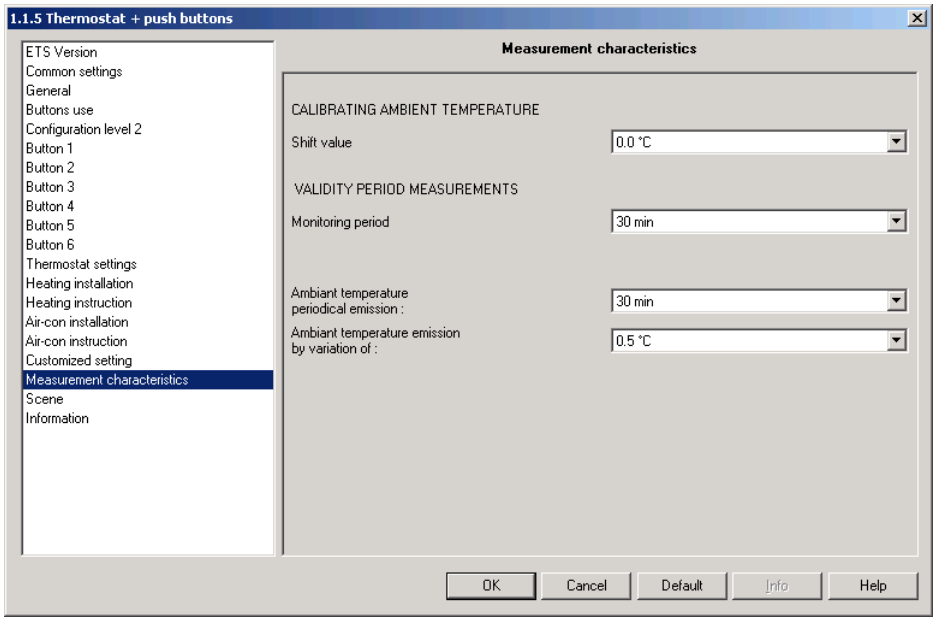
Screen 32

Parameter	Description	Value
Proportional band	This parameter allows setting the Proportional band of the regulation loop (gain of the loop).	1.0°C - 8.5°C in 0.5°C steps. Default value: 2.0°C.
Integral period	This parameter allows setting the integral correction period.	No correction, 15 min - 225 min in 15 min steps. Default value: 150 min.
Shift period	This parameter allows setting the shift correction period.	No correction, 15 min - 225 min in 15 min steps. Default value: 150 min.
Chrono-proportional	This parameter allows setting the duration of the chrono-proportional command cycle.	5 min, 10 min, 15 min, 20 min, 25 min, 30 min, 35 min, 40 min, 45 min, 60 min, 75 min, 90 min. Default value: 20 min.

4.10 Parameter value Measurement characteristics

The following settings are possible in this parameter area.

- The temperature measured by the room controller and regulator may be adjusted (calibrated) by ± 2°C.
- A monitoring time may be set. If the regulator receives no floor temperature value within this time, the corresponding power limitation is stopped. If it receives no outside temperature value within this time, the corresponding power limitation is stopped, and the outside temperature is no longer displayed on the regulator (also see 4.3.1.2 "External temperature and floor temperature limit" page 47).
- The conditions for the emission of the ambient temperature can be defined (cycle time and difference with respect to the last transmitted value).



Screen 33

Parameter	Description	Value
Sensor calibration	This parameter allows calibrating the ambient temperature measured by the room controller and regulator.	-2.0°C - 2.0°C in 0.1°C steps. Default value: 0.0°C.
Monitoring period	This parameter allows defining a specific time period. During this time the regulator expects at least one external temperature value and one floor temperature value.	Unlimited, 2 min, 3 min, 5 min, 10 min, 15 min, 20 min, 30 min, 45 min, 60 min. Default value: 30 min.
Ambiant temperature periodical emission:	This parameter allows setting the cycle time for the emission of the **Status indication** - **Ambient temperature** object.	No emission, 2 min, 3 min, 5 min, 10 min, 15 min, 20 min, 30 min, 45 min, 60 min. Default value: 30 min.
Ambiant temperature emission by variation of:	This parameter allows defining as from which ambient temperature change the temperature value is to be sent on the bus.	0.1°C, 0.2°C, 0.3°C,0.5°C, 0.7°C, 1.0°C, 1.5°C, 2.0°C. Default value: 0.5°C.

4.11 Scene parameters

The Scene function allows integrating scenarios (e.g. close the shutters of the house, switch lighting OFF, switch Heating to reduced) into the room controller and regulator. The room controller may be integrated in 32 different scenes. For each scene, one of the modes:

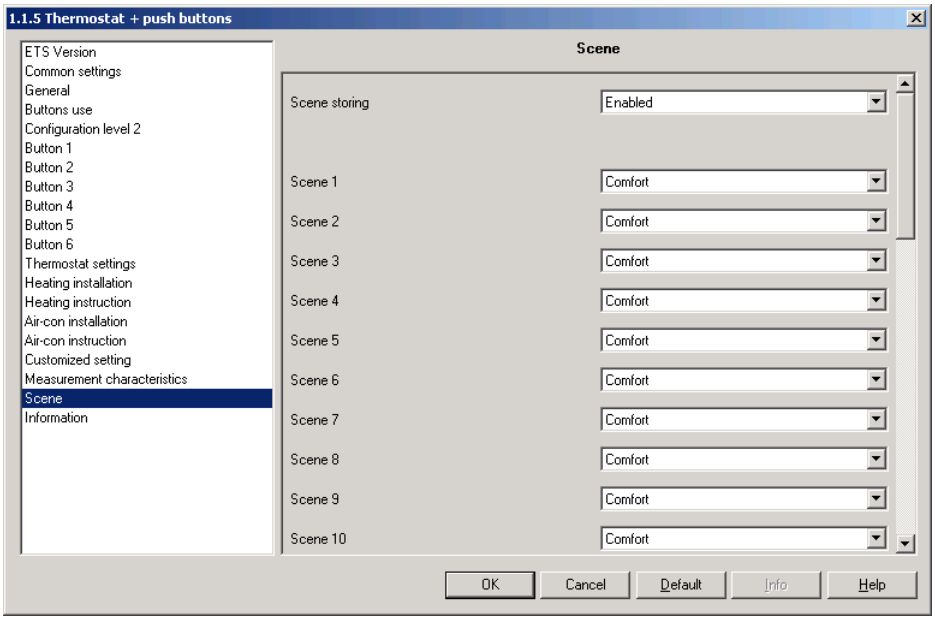
- Comfort
- Standby
- Night set-point
- Frost protection / Equipment protection

may be set in the parameters.

If the room controller and regulator is in the Stop or Priority status, Scene activation is not possible.
A scene is activated upon receiving a value between 0 and 31 on the **Thermostat** - **Scene** object (Scene number = value + 1). If storage is authorized, the currently set mode can be assigned to a scene number with a value between 128 and 159 (128 + scene number - 1).

Structure of the scene command:

7	6	5	4	3	2	1	0
0 = Activation of a scene 1 = Storing of a scene	Not used	Scene number					



Screen 34

Parameter	Description	Value
Scene storing	This parameter enables (Authorized) or disables (Not used) the storage of the scene number - mode assignment via the bus.	Not used, Used. Default value: Used.
Scene X	This parameter allows assigning a mode to a scene number.	Comfort, Reduced (night), Frost / heating protection. Default value: Comfort.

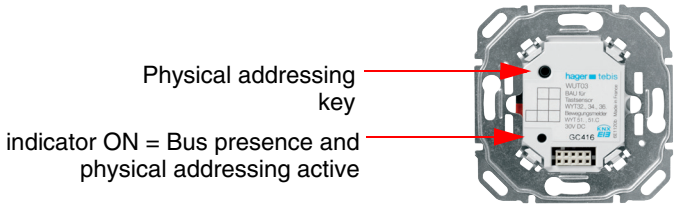
5. Characteristics

Max. number of group addresses	252
Max. number of links	254
Objects	62

6. Physical addressing and presence of the bus

To perform physical addressing or to check for the presence of the bus, press the push button located on the mechanism:

WUT06 V2



- Caution: press again on the key. This is indispensable to be able to select the function of the device.