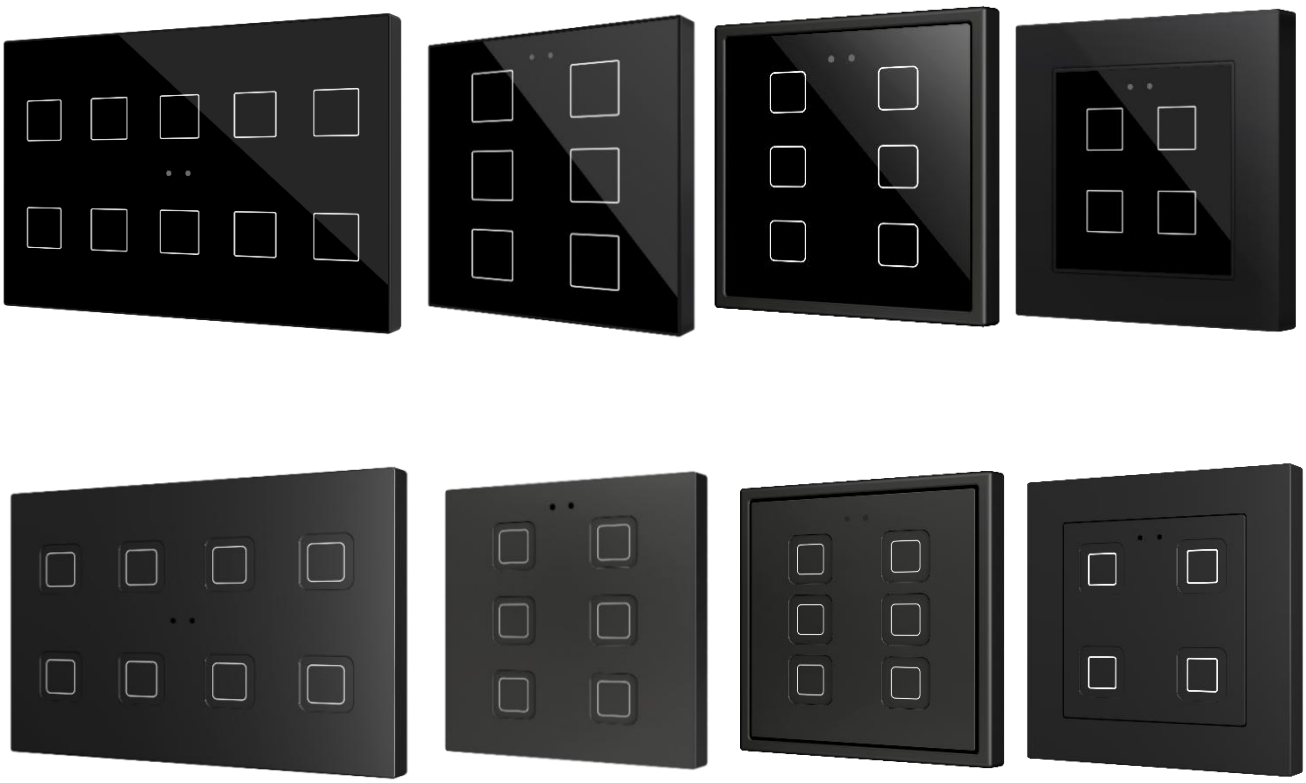


RGB Capacitive Touch Switches

Customisable push buttons with 1 to 10 buttons

ZVIFRxy

ZVITRxy

Application Program Version: [1.2]
User Manual Version: [1.2]_a

www.zennio.com

USER MANUAL

CONTENTS

DOCUMENT UPDATES

Version	Changes	Page(s)
[1.2]_a	**Application Program changes:** • The available unit range of the **Time to Consider Inactivity** parameter is modified when the internal temperature sensor is enabled. • Change to the default values of the colour parameters in the individual "*Room State*" controls (indoor and outdoor).	-
[1.1]_a	**Application Program changes:** • The default value of the **Scenes after Download** parameter has been changed.	9

1 INTRODUCTION

1.1 FLAT RGB / TECLA RGB

The **multifunction RGB capacitive touch switches** from Zennio are a fully customisable solution for the control of rooms where user control of air conditioning systems, lighting, blinds, scenes, etc. is required.

They are offered at **a reduced size** and **weight**, with **one, two, four, six, eight** or **ten** capacitive touch buttons (according to the user's needs) with **RGBW LED backlight** to confirm the press of the buttons or, indicate states thanks to the range of colours available in its configuration.

The versatility offered by the functionality of buttons is complemented by **two built-in analogue/digital inputs,** an **internal temperature sensor** and a **thermostat** function, as well as an elegant and **fully customisable design**, where the user can choose icons, buttons, text and colours, as well as the background with their own images and logos (in the case of Flat).

The most outstanding features of Flat / Tecla are:

- **Flat** allows the **front glass** design to be **fully customisable**.
- **Tecla** allows the **backlit icons** to be **fully customisable.**
- **Different sizes** to cover all user needs (**55**, **70**, **X** and **XL**) unified in **a single application programme**.
- **1 / 2 / 4 / 6 / 8 / 10 touch buttons**, which can operate as individual or pair controls.
- **Horizontally** or **vertically oriented** configuration (only available for the two-button, six-button and eight-button models in sizes 55, 70 and X, and available for all in XL).
- **RGBW light indicator (LED)** for every button.
- **Buzzer** for an audible acknowledgement of user actions (with the possibility of disabling it either by parameter or by object).

- Possibility of **locking / unlocking the touch panel** through binary orders or scenes, and of setting a timed locking of the entire device (**cleaning function**).
  - **Independent** binary locking / unlocking object per control, as well as the possibility to configure an individualised **timed locking** for each control.
- **Welcome Back object** (binary or scene) which is sent to the KNX bus when a pulsation is detected after a certain period (configurable) of inactivity.
- **Scene** control.
- Built-in **temperature sensor.**
- **Proximity sensor** for quick start.
- **Two analogue/digital inputs** (for motion detectors, temperature probes, additional switches, etc.).
- **Thermostat** function.
- **Heartbeat** or periodical "still-alive" notification.
- **KNX Security**. For detailed information about the functionality and configuration of KNX security, consult the specific user manual "KNX Security", available in the product section of the Zennio web portal (www.zennio.com).

Important: *see ANNEX II. Differences by model for detailed information on the technical differences between the models.*

1.2 START-UP AND POWER LOSS

After download or device reset it is necessary to **wait for about 2 minutes without performing any action** in order to make it possible a proper calibration of:

- **Proximity sensor.**
- **Button sensibility.**

For a correct calibration of the proximity sensor it is recommended not to remain too close or place anything less than 50cm approximately during this time.

2 CONFIGURATION

Please note that the screenshots and object names shown next may be slightly different depending on the device and on the application program.

2.1 GENERAL

In order to allow the device to perform the desired functions, a number of options must be parameterized, either related to its **general behaviour** (horizontal/vertical orientation, sounds, LED brightness levels…) or to **advanced features** (lock procedure of the touch panel, cleaning function, welcome back object, etc.).

2.1.1 CONFIGURATION

In the "Configuration" tab, the general settings are displayed. Most are checkboxes that enable/disable other functionalities. With regard to the configuration of the capacitive push buttons, the following parameters are available (the presence of some will depend on the device):

- **Device Size** [*55 / 70 / X / XL*][1]: the application program can be downloaded in all sizes available for each device. If the correct option is not selected, programming will occur correctly based on the number of buttons available.

- **Number of buttons** [*1 / 2 / 4 / 6 / 8 / 10*]: the application program can be downloaded in all possible versions of each device. The values of this parameter depend on the family. If the correct option is not selected, the push buttons will not work.

  Note: *ETS will show a figure with the final distribution of the push buttons.*

[1] The default values of each parameter will be highlighted in blue in this document, as follows: [*default* / rest of options].

ETS PARAMETERISATION

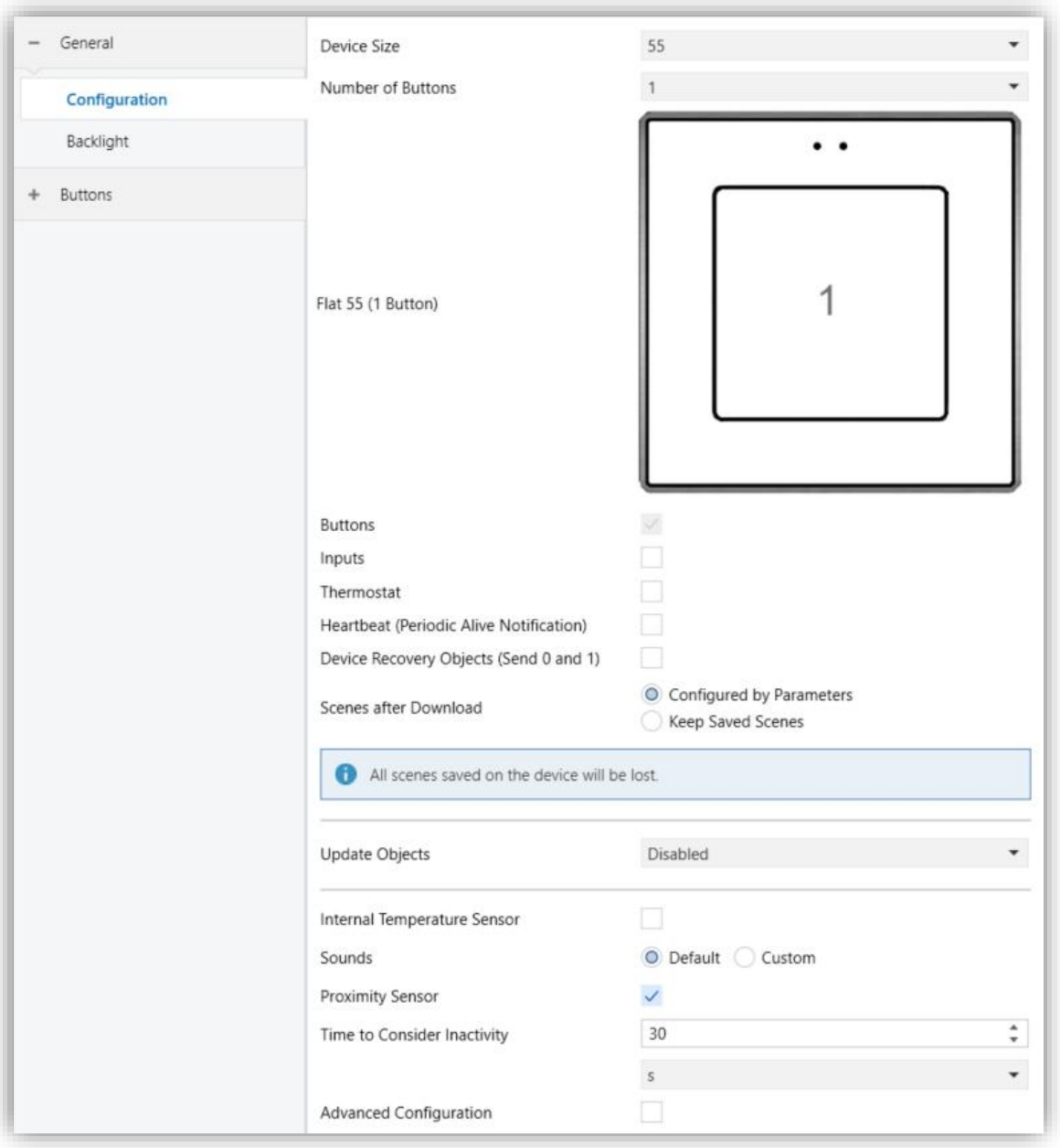


Figure 1. Main Configuration

- **Device Orientation** [*Horizontal (Rotated) / Vertical (Normal)*]: enables **horizontal** or **vertical** orientation to be assigned to the device, for easy identification of the buttons during configuration process.

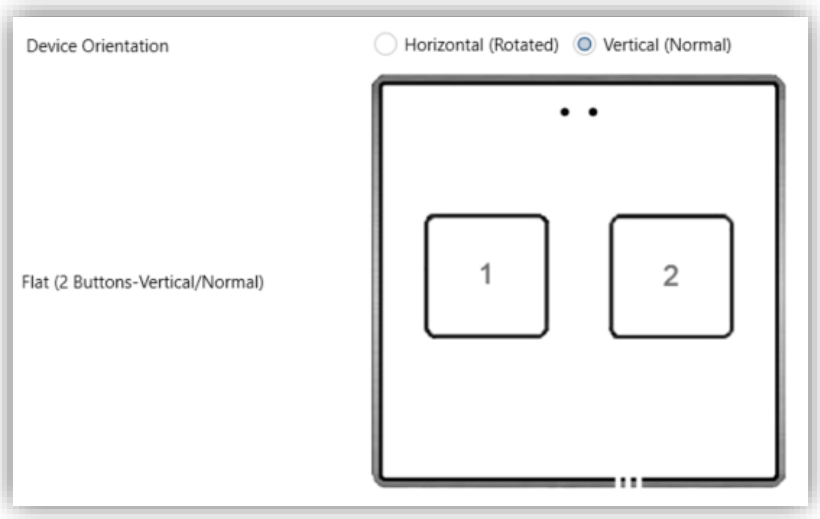
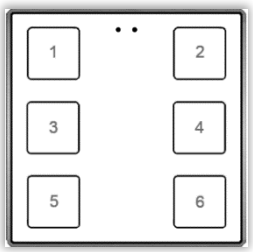


Figure 2. Orientation

To prevent inconsistency in the configuration, please note the following criterium:

Vertical (Normal):

The sensors are centred and at the top of the device.



Horizontal (Rotated):

The sensors are centred and located on the left side of the device.

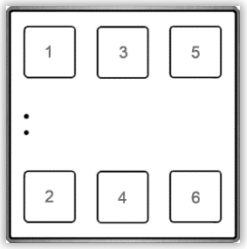


Figure 3. Orientation

Note: *for XL models, the default orientation will be horizontal, so ETS will display [Vertical (Rotated) / Horizontal (Normal)], and the sensors are located in the centre of the device.*

- **Buttons** [*enabled*]: read-only parameter to make it evident that the "Buttons" tab is always enabled in the tab tree on the left. See section 2.2 for details.

- **Inputs** [*disabled / enabled*]: enables or disables the "Inputs" tab in the tree on the left, depending on whether the device will or will not be connected any external accessories. See section 2.3 for details.

- **Thermostat** [*disabled / enabled*]: enables or disables the "Thermostat" tab in the tree on the left. See section 2.4 for details.

- **Heartbeat (Periodic Alive Notification)** [*disabled / enabled*]: incorporates a one-bit object to the project ("**[Heartbeat] Object to Send '1'**") that will be sent periodically with value "1" to notify that the device is still working (*still alive*).

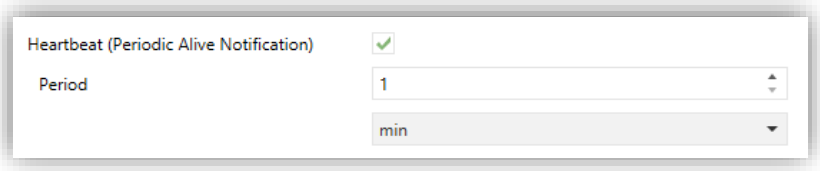


Figure 4. Heartbeat

Note: *the first sending after download or bus failure takes place with a delay of up to 255 seconds, to prevent bus overload. The following sendings follow the parameterised period.*

- **Device Recovery Objects (Send 0 and 1)** [*disabled / enabled*]: this parameter lets the integrator activate two new communication objects ("**[Heartbeat] Device Recovery**"), which will be sent to the KNX bus with values "0" and "1" whenever the device begins operation (for example, after a bus power failure). It is possible to parameterise a certain **Delay** [*0…255*] [*s*] to this sending.

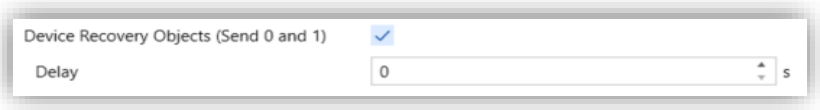


Figure 5. Device Recovery Objects

Note: *after download or bus failure, the sending takes place with a delay of up to 6,35 seconds plus the parameterised delay, to prevent bus overload.*

- **Scenes after Download** [*Configured by Parameters / Keep Saved Scenes*]*:* allows to assign the option to update scenes only on the first download of the device version or to delete the saved scenes after the download of the device version.

  Note: *if "Keep Saved Scenes" option has been configured, but it is the first download of the device or a different version from the current one, the values configured by parameter will be adopted. If new scenes are added in successive downloads, it will be necessary to perform a download by checking the option "Configured by Parameters" to ensure the correct operation of these scenes.*

- **Update Objects** [*Disabled / After Programming / After Reset / After Programming and Reset*]: enables the sending of read requests to update status objects and indicators. If enabled, the following parameter will appear:

  - **Delay** [*0…10…65535*] [*s / min / h*]: set a delay time until the start of sending read requests.

- **Internal Temperature Sensor** [*disabled / enabled*]: enables or disables the "Temperature Sensor" tab in the tree on the left. See section 2.1.2 for details.

  Note: *to ensure correct temperature sensor measurement, when it is enabled, the* ***Time to Consider Inactivity*** *parameter will be limited.*

- **Sounds** [*Default / Custom*]: sets whether the sound functions (button beeps, alarm and doorbell) should work according to the pre-defined configuration or to a user-defined configuration. See section 2.1.4 for details.

- **Proximity Sensor** [*disabled / enabled*]: enables the proximity sensor. This functionality permits "waking up" the device when detecting presence, see section 2.1.5.

- **Time to Consider Inactivity** [*1…30…255*] [*s / min / h*]: allows setting a time after which, if no pulsation or proximity detection has occurred, the LEDs turn off (or acquire the brightness level configured, see section 2.1.3).

  Note: *if the internal temperature sensor is enabled, the units will be restricted to seconds.*

- **Advanced Configuration** [*disabled / enabled*]: enables or disables the "Advanced" tab in the tree on the left. See section 2.1.6 for details.

2.1.2 TEMPERATURE SENSOR

The **internal temperature probe** can monitor the ambient temperature of the room, thus making the device capable of reporting it to the KNX bus and of triggering certain actions when the temperature reaches specific values.

Please refer to the specific manual "**Temperature Probe**" (available in the product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.3 BACKLIGHT

RGB capacitive touch switches incorporate a functional module for controlling the illumination of the button LEDs according to the operating mode.

It is possible to configure custom illumination levels for the device LEDs. Two operating modes are available for this purpose: **normal mode** and **night mode**. The latter is

optional and intended for temporary situations in environments where excessive light may be disturbing to the user. Switching between both modes can be performed via a 1-bit object and/or a scene object.

Within each mode, each LED can switch between three states: **OFF** (which does not necessarily mean “no light”), **ON** (which does not necessarily mean “light on”) or **inactivity**, which defines the illumination level of the LEDs after a period of inactivity. When in inactivity mode, the LEDs automatically revert to the configured active illumination level upon user interaction with the device (detection via the proximity sensor or an enabled button press).

ETS PARAMETERISATION

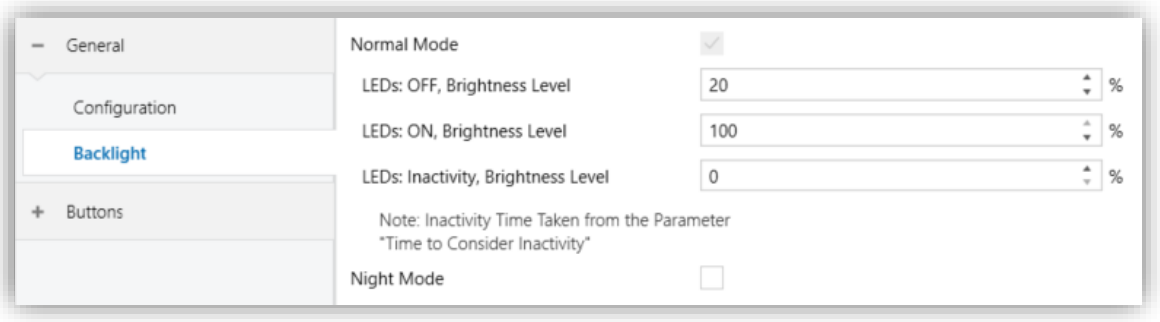


Figure 6. Backlight

- **Normal Mode** [*enabled*]:
  - **LEDs: OFF, Brightness Level** [*0…20…100*] [*%*].
  - **LEDs: ON, Brightness Level** [*0…100*] [*%*].
  - **LEDs: Inactivity, Brightness Level** [*0…100*] [*%*].
- **Night Mode** [*disabled / enabled*]. When this option is enabled, parameters for setting the night mode brightness level and for managing both operating modes are displayed.
  - **LEDs: OFF, Brightness Level** [*0…1…100*] [*%*].
  - **LEDs: ON, Brightness Level** [*0…10*] [*%*].
  - **LEDs: Inactivity, Brightness Level** [*0…100*] [*%*].
  - **Control Object: 1-Bit** [*disabled / enabled*]. Provides the option to switch the operating mode via a binary object (**“[General] Backlight mode”**).

- **Control Object: Scene** [*disabled / enabled*]. It is also possible to modify the backlight mode using a scene value received by the **"[General] Scene: Receive"** object. When enabled, the following parameters are available:

  - **Normal Mode: Scene Number (0 = Disabled)** [*0…1…64*]. Defines the scene value that activates the normal mode.
  - **Night Mode: Scene Number (0 = Disabled)** [*0…1…64*]. Defines the scene value that activates the night mode.

- **Backlight Mode after ETS Download** [*Normal Mode / Night Mode*]: sets the operating mode that the device will start with after programming.

2.1.4 SOUNDS

Capacitive touch switches can emit a brief beep as acoustic feedback **when a button is pressed**.

Enabling the button sounds can be done either by parameters or through an object, being also possible to define in parameters if the button sounds should be initially enabled or not.

Moreover, these can also emit the following sounds on request (through the corresponding communication objects) if enabled:

- **Doorbell sounds**: a single beep.
- **Alarm sounds**: a sequence of brief beeps with a higher pitch. The sequence will only stop when the alarm object gets deactivated or when the user touches any of the buttons (this, in addition to deactivating the alarm, will trigger the button action).

The range of sounds emitted will be different depending on the sound type selected.

ETS PARAMETERISATION

In case the default button beep sound matches the requirements of the installation and the doorbell and alarm functions are not necessary, the **Sounds** parameter in the general "Configuration" tab (see section 2.1.1) can be set to "*Default*".

This will also imply that the button beeps will be unconditional, as it will not be possible to disable this function through an object.

On the other hand, if set to "*Custom*", a specific tab named "Sounds" will show up in the tab tree on the left.

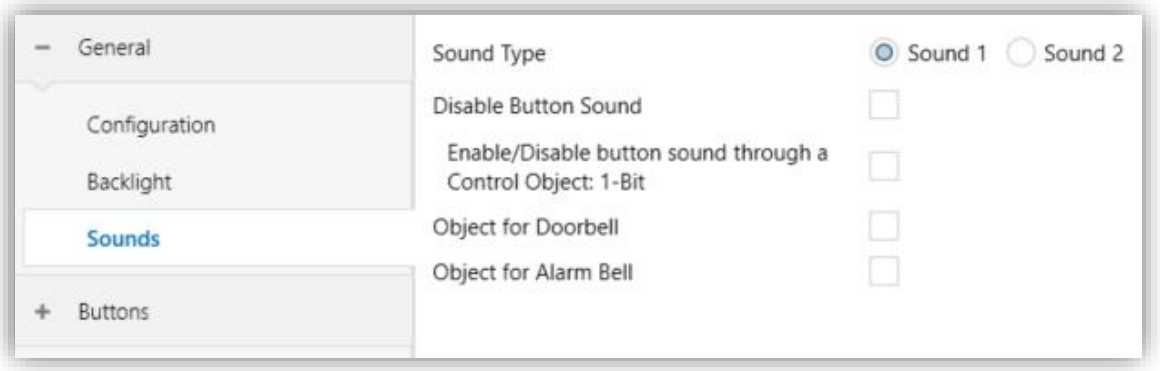


Figure 7. Sounds

The default configuration of this tab is equivalent to the one mentioned above. However, the following parameters can be customized:

- **Sound Type** [*Sound 1 / Sound 2*]: sets which sounds range uses the device.
- **Disable button sound** [*disabled / enabled*]: enables the buttons beeping. If enabled, the following parameters will also be available:
  - **Enable / Disable button sounds through a 1-bit object** [*disabled / enabled*]: makes it possible to disable / resume the button beeping function in runtime by writing to a specific object ("**[General] Sounds - Disabling Button Sound**"). If enabled, it will be shown:
    - **Value** [*0 = Disable; 1 = Enable / 0 = Enable; 1 = Disable*]: configures the values that will disable/enable the acoustic signals after pressing.
  - **Status After ETS Download** [*Disabled / Enabled*]: sets whether the button beeping function should start up enabled or disabled after an ETS download.
- **Object for Doorbell** [*disabled / enabled*]: enables or disables the doorbell function. If enabled, a specific object ("**[General] Sounds - Doorbell**") will be included into the project topology, and the following parameter will appear:
  - **Value** [*0 = No Action; 1 = Doorbell / 0 = Doorbell; 1 = No Action*]: determines the value that will activate the ring function.
- **Object for Alarm Bell** [*disabled / enabled*]: enables or disables the alarm function. If enabled, a specific object ("**[General] Sounds - Alarm**") will be included into the project topology, and the following parameter will appear:

- **Value** [*0 = Stop Alarm; 1 = Start Alarm / 0 = Start Alarm; 1 = Stop Alarm*]: determines the value that will activate the alarm function.

2.1.5 PROXIMITY SENSOR

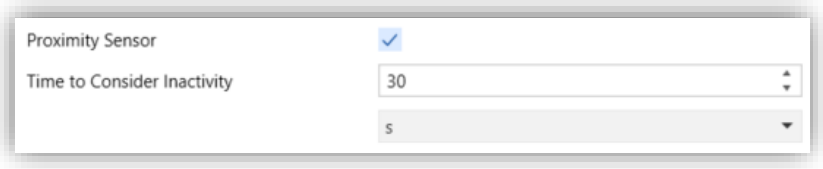


Figure 8. Proximity Sensor

- **Proximity Sensor** [*disabled / enabled*]: enables the proximity sensor functionality. This allows the device to "wake" upon detecting presence via the proximity sensor. Whenever the device is in the idle state, a "1" will be sent via the **"[General] Proximity detection"** object when proximity is detected. This object is always available, even if the proximity sensor is not enabled.

  It is also possible to enable or disable the sensor at runtime using the object "**[General] Proximity Sensor**".

  On the other hand, the object **"[General] External Proximity Detection"** is always available and allows simulating a proximity detection equivalent to detecting proximity by the internal sensor. In this way it would be possible to delegate proximity detection to another device.

- **Time to Consider Inactivity** [*0…30…255*] [s / min / h]: sets the period after which, if no proximity has been detected, the device transitions to the idle state

2.1.6 ADVANCED CONFIGURATION

Independent tab for the parameterisation of some advanced functions. These functions are explained next.

ETS PARAMETERISATION

After enabling the **Advanced configuration** from "Configuration" screen (see section 2.1.1), a new tab will be incorporated into the tree on the left.

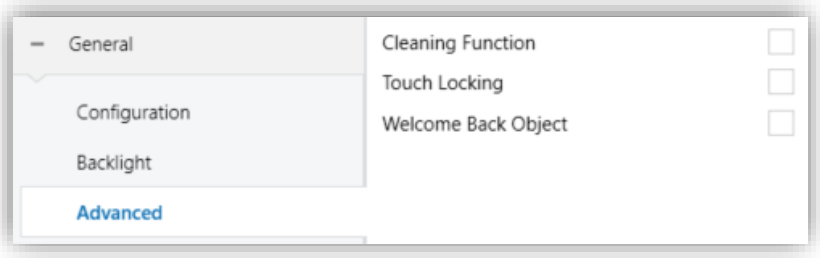


Figure 9. Advanced

- **Cleaning Function** [*disabled / enabled*]: enables or disables the "Cleaning Function" tab in the tree on the left. See section 2.1.6.1 for details.
- **Touch locking** [*disabled / enabled*]: enables or disables the "Touch locking" tab in the tree on the left. See section 2.1.6.2 for details.
- **Welcome back object** [*disabled / enabled*]: enables or disables the "Welcome back" tab in the tree on the left. See section 2.1.6.3 for details.

2.1.6.1 CLEANING FUNCTION

This function allows all buttons to be temporarily locked, blocking and discarding any type of button press while the function is active. It is designed to allow the user to clean the touch area without the risk of performing any unwanted actions.

An option is available to enable a pre-expiry completion alert, which consists of an intermittent beep.

ETS PARAMETERISATION

After enabling **Cleaning Function** in "Advanced" tab, a new tab will be incorporated into the three on the left.

Figure 10. Cleaning Function

- **Time to Exit Cleaning Status** [*5…15…65535*] [*s*] / [*1…65535*] [*min / h*]: time to deactivate the cleaning function once launched via the **"[General] Cleaning Function"** object.

- **Notify Expiration** [*No / Play Sound*]: specifies whether a notification is issued that the cleaning function timer is about to expire. If the alert is enabled, the following a parameter is shown:

  - **Length of the Warning** [*1…5…65535*] [*s / min / h*]: sets the lead time before the cleaning function expires at which the alert will begin.

2.1.6.2 TOUCH LOCKING

The touch panel of capacitive touch switches can be optionally locked and unlocked anytime by writing a configurable one-bit value to a specific object provided for this purpose. It can also be done through scene values.

While locked, pressing on the buttons will be ignored: no actions will be performed (and no LEDs will change their states) when the user touches on any of the controls.

ETS PARAMETERISATION

After enabling **Touch Locking** in "Advanced" tab, a new tab will be incorporated into the tree on the left.

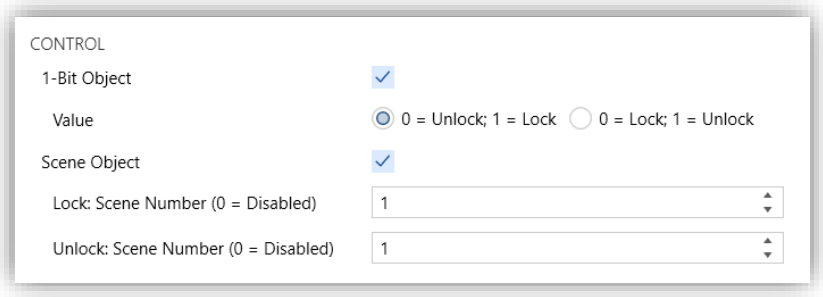


Figure 11. Touch Locking

- **1 Bit Object** [*disabled / enabled*]: when marked, the options will show up to select which value should trigger which action.

  - **Value** [*0 = Unlock; 1 = Lock / 0 = Lock; 1 = Unlock*]: these values are received through the object "**[General] Touch Locking**".

- **Scene Object** [*disabled / enabled*]: when marked, two specific textboxes will show up to enter the **scene numbers** [*0…1…64*] that should trigger each action. These values are to be received through the general "**[General] Scene: Receive**" object.

2.1.6.3 WELCOME BACK OBJECT

Capacitive touch switches can send a specific object (the *welcome back object*) to the KNX bus when the user presses a touch button after a significant amount of time since the last or presence detection. Sending it or not can also depend on an **additional configurable condition** consisting in the evaluation of up to five binary objects.

Any actions that in normal operation may be executed will not be if the welcome back object is sent to the bus. Thus, if the user presses a button and this causes that the welcome back object is sent, the normal action of that button will not be triggered. On the other hand, if the additional condition is not evaluated to true, the device will react normally. Hence, the action corresponding to the button touch will be executed.

The welcome back object can consist in a **one-bit** value or a **scene** value (or both), depending on the parameterisation.

ETS PARAMETERISATION

After enabling **Welcome Back Object**, a new tab will be incorporated into the tree on the left.

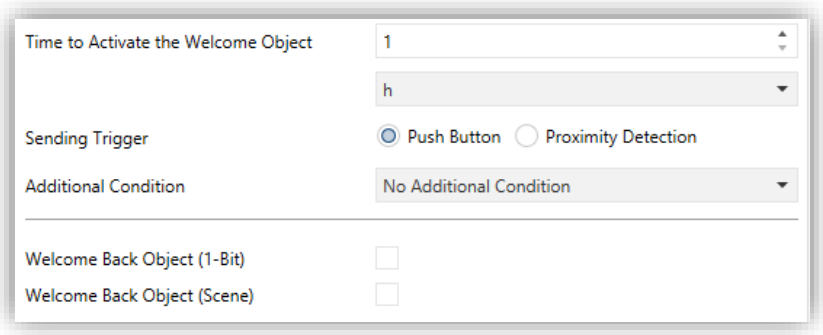


Figure 12. Welcome Back Object

This screen contains the following parameters:

- **Timeout to Activate the Welcome Object** [*1…255*] [*s / min / h*]: sets the minimum time that should elapse after the last button touch (or presence detection, when the proximity sensor is enabled) before the next one triggers the execution of the welcome back function.

- **Sending Trigger** [*Push Button / Proximity Detection*]: sets whether the welcome back object is sending after a touch in the screen or when the proximity sensor detects presence.

- **Additional Condition**: sets if sending the welcome back object should also depend on an external condition. The option by default is [*No Additional Condition*]. The following are available too:

  - [*Do not send unless all additional conditions are 0*]: the welcome back object will only be sent if all the condition objects are found to have the value "0".
  - [*Do not send unless all additional conditions are 1*]: the welcome back object will only be sent if all the condition objects are found to have the value "1".
  - [*Do not send unless at least one of the additional conditions is 0*]: the welcome back object will only be sent if at least one of the condition objects is found to have the value "0".
  - [*Do not send unless at least one of the additional conditions is 1*]: the welcome back object will only be sent if at least one of the condition objects is found to have the value "1".

- **Welcome Back Object (1-Bit)** [*disabled / enabled*]: checkbox to enable the sending of a 1-bit value (through "**[General] Welcome back**") when the welcome back function is triggered and the condition (if any) evaluates to true. The desired value should set in **Value** [*Send 0 / Send 1*].

- **Welcome Back Object (Scene)** [*disabled / enabled*]: checkbox to enable the sending of a scene run request (through "**[General] Scene: Send**") when the welcome back function is triggered, and the condition (if any) evaluates to true. The desired value should be set in **Scene Number** [*1…64*].

2.2 BUTTONS

Capacitive touch switches have **one, two, four, six, eight or ten buttons** at the user's disposal for the execution of actions.

The distribution of the buttons will depend on the device chosen and the orientation selected in "Configuration" (see section 2.1.1), being possible to configure them as single button controls or in pairs by **combining any two of them**.

- **RGB Capacitive Touch Switches with only one button**: only one individual control is possible (two-button controls are not available). Moreover, it can only be configured under the normal (vertical) orientation.

- **RGB Capacitive Touch Switches with two buttons**: up to two individual controls or a pair.
- **RGB Capacitive Touch Switches with four buttons:** up to four one-button controls can be configured, or up to two two-button controls.
- **RGB Capacitive Touch Switches with six buttons**: up to six one-button controls, or three two-button controls can be configured.
- **RGB Capacitive Touch Switches with eight buttons**: up to eight one-button controls, or four two-button controls can be configured.
- **RGB Capacitive Touch Switches with ten buttons**: up to ten one-button controls, or five two-button controls can be configured.

2.2.1 CONFIGURATION

The following is a list of the functions that can be assigned to each button.

- **Disabled**. The button will not react to user presses, and its LED will not light up.
- **Pair A**, **B, C, D or E.** The number of available pairs depends on the selected model), being the function of such pair one of the following:
  - Switch.
  - Two objects (Short press/Long press).
  - Dimmer
  - Shutter.
  - Room State (Outdoor).
- **Individual** One-button control:
  - Switch.
  - Hold & release.
  - Two Objects (Short press/Long press).
  - Scene.
  - Scaling Constant.
  - Counter Constant.
  - Float Constant.
  - Dimmer.
  - Shutter.
  - LED indicator.
  - Room State (Indoor).
  - Room State (Outdoor).
  - Enumerated Indicator (Colour).

Apart from the button function itself, the desired behaviour of the button LEDs can be set. The different illumination modes have been detailed in ANNEX I. LED Illumination Modes.

The next sections explain the configuration involved for each of the above functions.

ETS PARAMETERISATION

An independent tab for the parameterisation of the buttons is shown in ETS by default, initially containing only a sub-tab named “Configuration”.

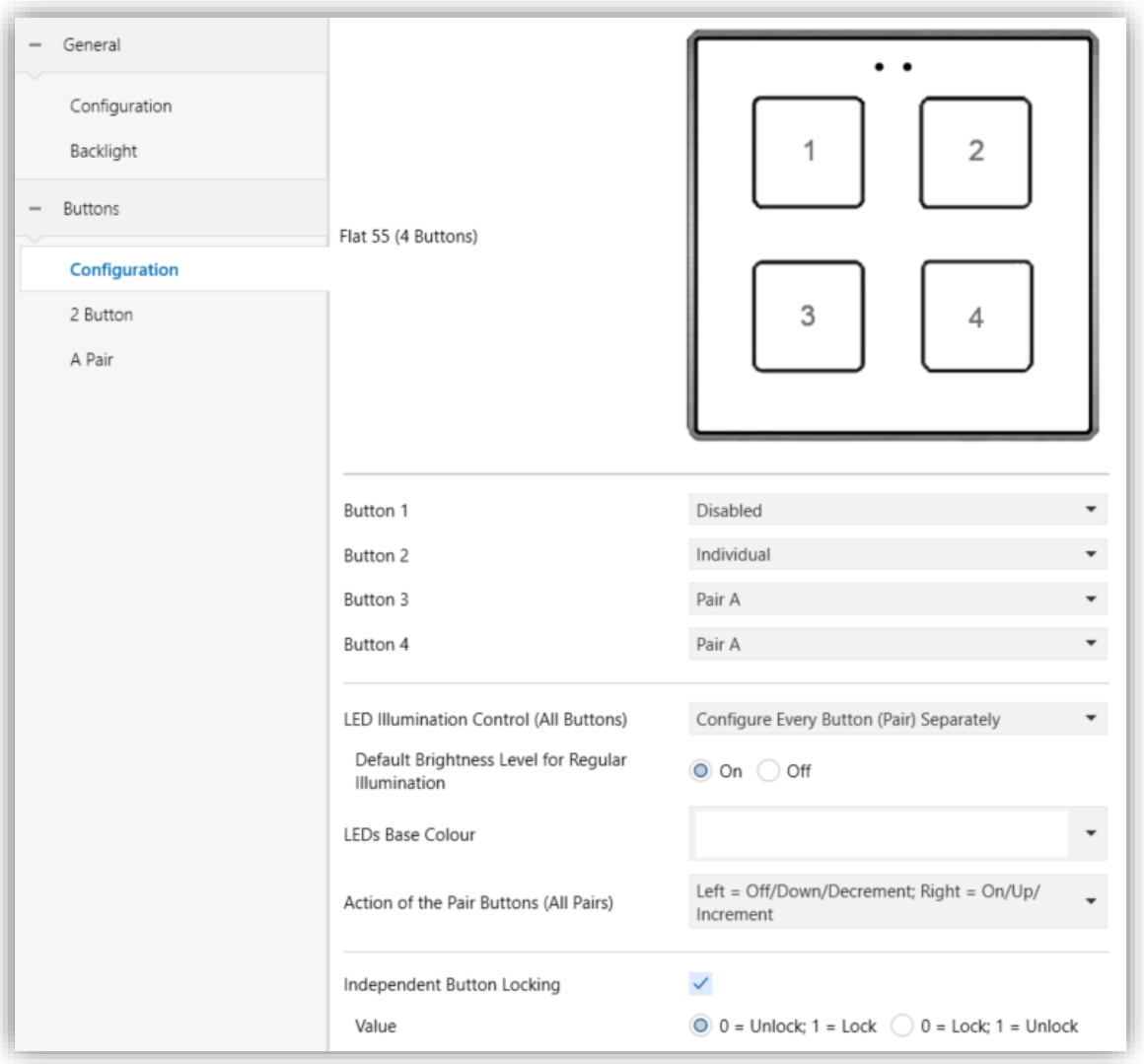


Figure 13. Buttons - Configuration

One drop-down list with the following options is shown per **button**:

- [*Disabled*]. See section 2.2.1 for details.

- [*Individual*]. Selecting this option brings a new tab ("x Button", where "x" depends on the button), which will make it possible to configure the functionality of that particular touch button. See section 2.2.2 for details.

- [*Pair X*]. Sets that this touch button will belong to a two-button control (where X is A, B, C, D or E, depending on the model). Once one pair has been assigned to two buttons (and not before), a new tab ("X Pair") will show up in the tab tree, in order to configure the desired functionality. See section 2.2.3 for details.

This tab also provides several parameters to jointly define the behaviour of the illumination and colour of all LEDs on the device.

- **LED Illumination Control (All Buttons)** [*Regular / State-Dependent (Where Available) / State-Dependent (Both LEDs) (Where Available) / Dedicated Object / Configure Every Button (Pair) Separately*]: determines the illumination mode for all LEDs. If the default value is selected, a specific parameter will be shown on each button's tab to select the desired behaviour of that LED.

  - **Default Brightness Level for Regular Illumination** [*On / Off*]: sets the brightness level that the LED(s) will use while the device is not idle and no presses are being made on the button.

    Note: *this parameter will be shown only if "Regular" or "Configure Every Button (Pair) Separately" was selected in the previous parameter.*

  If the "*Dedicated Object*" option is selected, the following parameters can be configured:

  - **Value** [*0 = Off; 1 = On / 0 = On; 1 = Off*]: sets the polarity of the individual communication objects dedicated to LED illumination for each enabled button.

  - **Colour: On** [*Colour selector (Neutral white)*]: defines the hue used to illumination the LED when its corresponding dedicated object sets the "*On*" state.

  - **Colour: Off** [*Colour selector (Neutral white)*]: defines the hue used to illumination the LED when its corresponding dedicated object sets the "*Off*" state.

- **LEDs Base Colour** [*Colour selector (Neutral white)*]. Allows a base colour to be configured for all LEDs. This colour can also be modified at runtime via the **"[General] LEDs Base Colour"** object.

  Note: *via the communication object it is not possible to select the "No Colour" option. The colour order corresponds to the descending order shown in Figure 40.*

If at least one two-button control is being configured (either Pair X), an additional parameter (**Action of the pair buttons (All Pairs)**) will be available to determine an operation criterion. The options are:

- [*Left = Off/Down/Decrement; Right = On/Up/Increment*]
- [*Left = On/Up/Increment; Right = Off/Down/Decrement*]
- [*Every button pair is configured separately*]. If this option is selected, a parameter will appear on the configuration tab of each enabled pair to define the operating criterion.

Lastly, it is possible to lock presses on each button individually.

- **Independent Button Locking** [*disabled / enabled*]: if the default value is kept, a parameter of the same name will appear on the tab of each individual button or pair.

  - **Value** [*0 = Unlock; 1 = Lock / 0 = Lock; 1 = Unlock*]: sets the polarity of the corresponding object.

2.2.2 INDIVIDUAL

Buttons configured to work as individual (separate) controls can be assigned any of the following control functions:

- **LED Indicator**: user presses will not trigger any function although the LED will set the brightness level and the colour (On or Off) depending on the values received from the bus.

- **Switch**: whenever the user touches the button, a binary value will be sent to the KNX bus. This value is configurable and may be "0", "1" or alternate with every touch according to the sequence 1 → 0 → 1 → …

Under a "*State-Dependent*" LED illumination, the LED will remain at the On/Off brightness level (with the corresponding colour for each state) according to the current state (On/Off) of the object.

- **Hold & Release**: as soon as the user touches the button, a binary value ("0" or "1", configurable) will be sent to the KNX bus. Moreover, as long as the user releases the button, another value ("0" or "1", also configurable) will be sent through the same object.

  The "*State-Dependent*" LED mode sets the LED brightness and colour On when the communication object has the same result.

- **Two Objects (Short Press/Long Press):** specific binary values will be sent both after a short or a long press (a different object will be used in each case).

  Under a "*State-Dependent*" LED illumination, the LED will remain lit and coloured according to the current state (On/Off) of either one object or the other, which can be configured in parameters. However, if **LED Illumination Control** (**All Buttons)** has been set to "*State-Dependent (Where Available)*", only the short press object will apply.

- **Scene**: after the user touches the button, an order to run a specific scene (configurable) will be sent to the bus. If enabled in parameters, orders to save the scene can also be sent to the bus after a three-second press on the button.

  The "*State-Dependent*" LED mode is not available for this function.

- **Scaling Constant**: sends a percentage value (configurable) to the bus when the user touches the button.

  Under a "*State-Dependent*" LED illumination, the LED will remain at the brightness level and colour of On/Off depending on whether the current value of the object matches the one parameterised. This object can also be written from the bus, which will update the LED according to the new value.

- **Counter Constant**: sends an integer value (configurable) to the bus when the user touches the button. This value can be one-byte or two-byte sized, as well as signed or unsigned.

The "*State-Dependent*" LED illumination mode is analogous as for the "*Scaling Constant*" function.

- **Float Constant**: sends a two-byte floating point value (configurable) to the bus when the user touches the button.

  The "*State-Dependent*" LED illumination mode is analogous as for the "*Scaling Constant*" and "*Counter Constant*" functions.

- **Dimmer**: implements a one-button light control that sends orders to the KNX bus, which can then be executed by light dimmers. These orders can be configured for short press or long press:

  - **Action on Short Press**:

    - "*Send On*": a value of On is sent.
    - "*Send Off*": a value of Off is sent.
    - "*Switch Between On and Off*": toggles between sending On and Off. Commutation is initiated according to the lighting percentage status. If a value of 0% is present, an On will be sent. Otherwise, the value sent will be an Off.
    - "*Scene*": the configured scene value is sent.
    - "*Absolute Dimming*": a percentage set in the range [*0…100*][*%*] is sent.

  - **Action on Long Press**:

    - "*Dimming Down*": the parameterised control step is adjusted downwards.
    - "*Dimming Up*": the parameterised control pitch is adjusted upwards.
    - "*Switch Between Dimming Up and Down*": toggles between dimming up and down based on the last percentage status value. In case of 0%, it will send the object to increment, and vice versa for the value of 100%. If this value is between 1-99%, it will send the inverse regulation step to the last one sent.

Note that the device considers that the **current light level** is the value of a specific one-byte object provided to be written from the KNX bus (i.e., to receive

feedback from the dimmer). This object is internally updated after a short or long press but linking it to the real dimmer status is highly recommended.

Under a "*State-Dependent*" LED illumination, the LED will set either the On brightness level and colour, or the Off level and colour, according to the value of the aforementioned status object (i.e., Off level/colour when the value is 0% and On level/colour in any other case).

Note: *after a bus recovery, the light dimmer should send back the status object so the control and the LED update their own state, instead of simply recovering the previous one.*

- **Shutter**: implements a one-button shutter control that sends orders to the KNX bus, which can then be executed by an actuator. Two control types can be configured:

  - "*Standard*": the device will react to both long and short presses, being possible to send the bus the following commands:

    - Move (raise/lower) orders (on **long presses**).
    - Stop/Step orders (on **short presses**).

    Being a one-button control, the direction of the motion will alternate (upwards/downwards) for both the move and the step orders after every long press. However, there are some exceptions to this alternation:

    - On a short press: a step-up order will be sent if the last long press made the shutter move up, or if the current position is found to be 100%. On the other hand, a step-down order will be sent if the last long press made the shutter move down or if the current position is found to be 0%.
    - On a long press: a move-up order will be sent if the last short press caused a step-down order or if the current position is found to be 100%. On the other hand, a move-down order will be sent if the last short press caused a step-up order or if the current position is found to be 0%.

  As usual in the KNX standard, **stop/step** orders are interpreted by the actuators as a request to move the slats one step up or down (in case the shutter is still) or as a request to interrupt the motion of the shutter (in case it is already moving up or down).

Capacitive touch switches are aware of the **current position of the shutter** through a specific object which should be linked to the analogous object of the shutter actuator in order to receive feedback. This object is initialised with value "*50%*" after a download or a bus failure; therefore, the actuator is required to update it with the real value after the bus recovery.

- "*Hold & Release*": the device will send an order to move the shutter when the button is touched, and the order to stop it as soon as it is released. Hence, short or long touches have the same effect: the shutter will remain in motion as long as the user keeps holding the button.

  The direction of this motion (upwards or downwards) will **alternate** with every touch, according to the following sequence: downwards → upwards → downwards → …

  However, there are some exceptions to this alternation:

  - If the position of the shutter is found to be 0%, the next order will lower the shutter.
  - If the position of the shutter is found to be 100%, the next order will raise the shutter.

The "*State-Dependent*" LED illumination mode is not available for this function.

- **Room State (Indoor):** allows controlling the room states ("*Normal*", "*Make Up Request*", *"Do Not Disturb"*). Pressing the button will activate the "*Do Not Disturb*" or "*Make Up Request*" status (as configured) or deactivate it to return to "*Normal*" status.

  Depending on the parameterisation and the current value of object, after a short press the following values will be transmitted.

Parameterisation	Current Object Value	Transmitted Value
Make Up Request	Do Not Disturb / Normal	Make Up Request
	Make Up Request	Normal
Do Not Disturb	Normal / Make Up Request	Do Not Disturb
	Do Not Disturb	Normal

Table 1. Room States

If the LED illumination es "*State-Dependent*", LED will set brightness level and colour based on the object's current value and the parameterisation.

***Example*: State**: *"Make Up Request"*

- *If the room status control object has the value "Normal" and press is made → the LED illuminates at the brightness level and with the colour configured for "Make Up Request".*
- *If the room status control object has the value "Make Up Request" and a press is made → the LED illuminates at the Off-brightness level and with the colour configured for "Normal".*
- *If the opposite of the parameterised state ("Do Not Disturb") is written to the room status control object → the LED illuminates at the Off-brightness level and with the colour configured for "Do Not Disturb"*

- **Room State (Outdoor)**: LED illumination of the button indicates whether the room requires cleaning or is in "*Do Not Disturb*" status. In addition, with a long press, it is possible to query the status of the room ("*Occupied / Not Occupied*") or to change the status of the room to "*Make Up in Progress*".

  The following options can be configured:

  - "*Disabled*": the push button does not react to presses.
  - "*Check Occupancy*": allows notification of the occupancy status of the room by flashing the indicator LED. Once the press has exceeded the time threshold configured for its detection, a beep will be emitted and the parameterised indicator for the current occupancy status will flash for 5 seconds. After this time, the usual "*DND / MUR*" indication returns.

    If a bus failure occurs while an occupancy query is in progress, the device will start with the corresponding room status. It would be necessary to press again to obtain this information.

Example: *Blink: Occupied*

- *If the occupancy status object is set to "Occupied" and a long press is made → LED flashes for 5 seconds with the colour configured for that state.*
- *If the occupancy status object is set to "Not occupied" and a keystroke is made → Nothing happens.*

- "*Make Up in Progress*": allows notification of the start and end of room cleaning. Once the press has exceeded the time threshold configured for its detection, a beep will be emitted, and different sendings will be made to the bus according to the selected options (not mutually exclusive):

  - **1-Bit Object**: a specific object is displayed for the " *Make Up in Progress*" status, which will take a On/Off value.
  - **Link with Room State Object**: the action of the button is linked with the room status object so that each press will send a message to the bus, switching the status between "*Make Up in Progress / Normal*".
  - **Notification for "Make Up in Progress" Status***:* allows notification of the "*Make Up in Progress*" status by flashing the corresponding LED indicator.

Example 1: • *1-Bit Object: ✓*

After pressing:

- *Sending **"Make Up in Progress"** object = "1" (On)*
- ***"Room State"** object → No sending or updating of the status*
- *Notification → No notification of status "Make Up in Progress"*

With a new press:

- *Sending **"Make Up in Progress"** object = "0" (Off).*

Example 2: • *1-Bit Object: ✓* • *Link with Room State Object: ✓*

After pressing:

- *Sending "**Make Up in Progress**" object = "1" (On)*
- *Sending **"Room State"** object = "3" (Make Up in Progress)*
- *Notification → No notification of status "Make Up in Progress"*

With new press:

- *Sending **"Make Up in Progress"** object = "0" (Off)*
- *Sending "**Room State**" object = "0" (Normal)*

Example 3: • *1-Bit Object: ✓* • *Link with Room State Object: ✓*

- *Notification for "Make Up in Progress" Status: ✓*

After pressing:

- *Sending "**Make Up in Progress**" object = "1" (On)*
- *Sending "**Room State"** object = "3" (Make Up in Progress)*
- *Notification → Flashing of the corresponding indicators*

With new press:

- *Sending **"Make-up in progress"** object = "0" (Off)*
- *Sending **"Room State"** object = "0" (Normal)*
- *Notification → Flashing of indicators stops.*

- **Enumerated Indicator (Colour):** user presses will not execute any function, although the LED will set its brightness level and colour according to the values received from the bus. If a non-configured value is received via the object, the LED will turn off.

ETS PARAMETERISATION

When an individual button has been enabled, a specific tab ("n Button") becomes available under "Buttons" in the tree on the left.

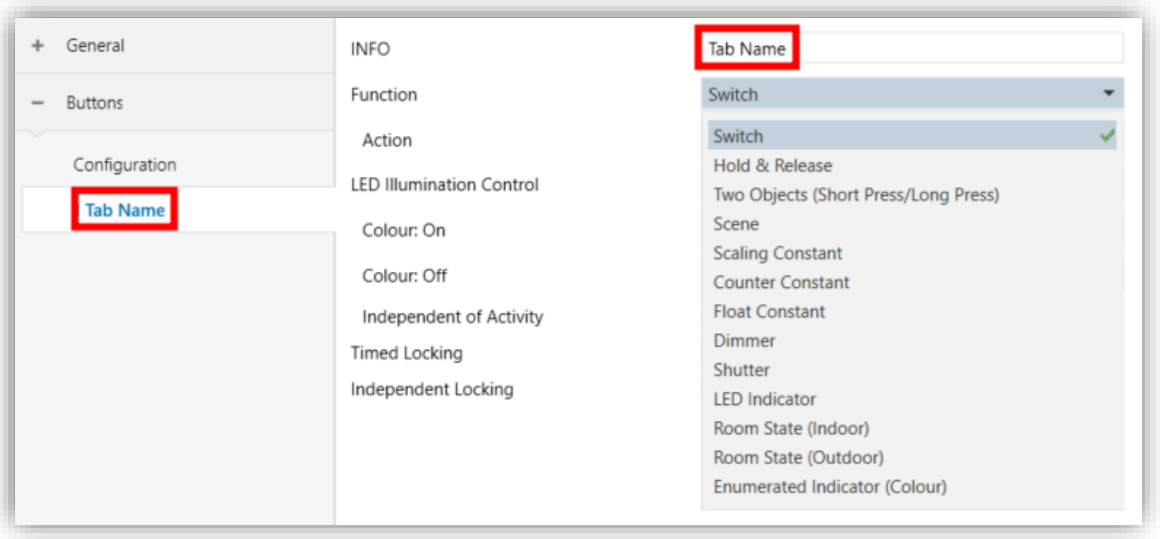


Figure 14. Individual Button

Textbox **INFO** allows changing the default name of the tab in the left menu, as shows the following figure, identifying each of the enabled controls and their communication objects with the prefix **"[lx][*INFO*]".**

The main parameter that needs to be configured is:

- **Function** [*Switch / Hold & Release / Two Objects (Short press/Long press) / Scene / Scaling constant / Counter constant / Float constant / Dimmer / Shutter / LED indicator / Room State (Indoor) / Room State (Outdoor) / Enumerated Indicator (Colour)*]: sets the desired function for the button.

If the option "*Configure Every Button (Pair) Separately*" is selected in the **LED Illumination Control (All Buttons)** parameter on the "Configuration" tab (see section 2.2.1), additional parameters will be shown (except for the "*Room State (Outdoor)*" function, whose illumination control differs):

- **LED Illumination Control** [*Regular / State-Dependent / Dedicated Object*]. For the "*Switch*" and "*Dimmer*" functions, the default value of the parameter will be "*State-Dependent*".

  If "*Regular*" mode is configured, the following parameter will be displayed in ETS:

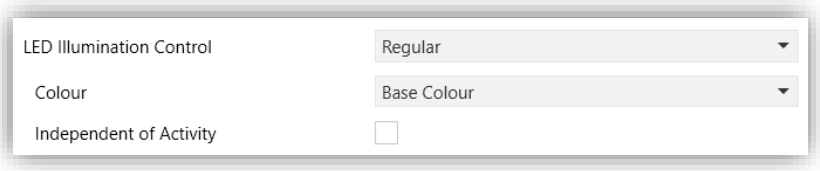


Figure 15. Individual Button - LED Illumination - Regular

- **Colour** [*Colour selector (Base Colour)*]: sets the colour that the button LED will adopt.

If "*State-Dependent*" is selected:

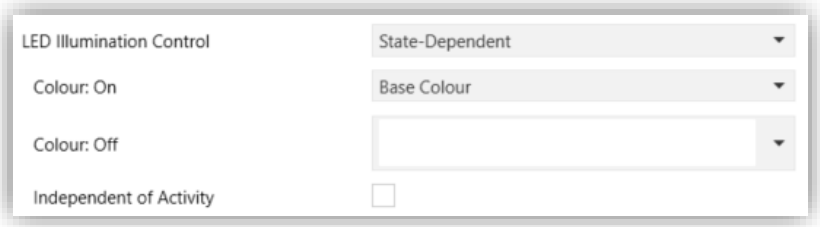


Figure 16. Individual Button - LED Illumination - State-Dependent

- **Colour: On** [*Colour selector (Base Colour)*]: the LED will light up with the configured colour depending on the control status. Depending on the configured control, the condition that determines when the LED colour is set may vary (object value equal to "1", greater than "0%", or a specific value).

- **Colour: Off** [*Colour selector (Base Colour)*]: defines the colour that will be set on the LED when the condition of the previous parameter is not met (object value equal to "0" or "0%", or a value different from the configured one).

  Note: *this condition also depends on the polarity of the object, meaning the behaviour may reversed in controls where the default option of the binary object is* ***not*** *configured.*

If the last mode is selected, the "**[Ix][] LED - Switch Control**" object will be included in the project topology, and several new parameters will appear to configure the LED's On/Off brightness levels and colours.

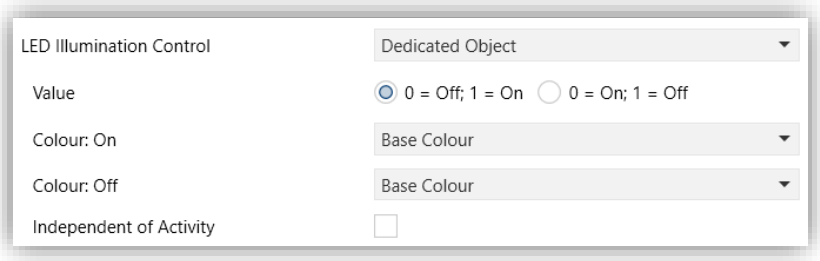


Figure 17. Individual Button - LED Illumination - Dedicated Object

- **Value** [*0 = Off; 1 = On / 0 = On; 1 = Off*]: determines the polarity of the communication object.

- **Colour: On** [*Colour selector (Base Colour)*]: sets the colour with which the LED will illuminate when the dedicated object's state is "*On*".

- **Colour: Off** [*Colour selector (Base Colour)*]: sets the colour with which the LED will illuminate when the dedicated object's state is "*Off*".

Note: *for further information, please refer to section 2.2.1 and ANNEX I. LED Illumination Modes.*

Regardless of the configured illumination mode, the following parameter will always be available:

- **Independent of Activity** [*disabled / enabled*]: sets the corresponding LED to illuminate as if it were always in the active state, ignoring the inactivity state. The rest of the controls that have not enabled this functionality will continue to illuminate according to the activity status.

Important: *if the internal temperature sensor is enabled, particular care is recommended when using this functionality, as heat generated by the LED illumination may affect the temperature measurement.*

However, there is another parameter that appears for all previously selected functions except "*Shutter*", "*LED Indicator*" and "*Enumerated Indicator (Colour)*", as its use in these cases is not useful.

- **Timed Locking** [*disabled / enabled*]: allows an individual button to be locked for a configured time after being pressed. When marked, a specific parameter appears **Lock Time** [*0...5...60*] [*s*]. It starts counting as soon as the button is released.

After bus failure, the button starts without timed locking. It will start again when it is pressed again. This locking is independent of the general button locking, it has no influence on the locking object.

Lastly, as discussed in section 2.2.1, if the **Independent Button Locking** parameter is enabled, an additional parameter will appear on each button's tab.

- **Independent Locking** [*disabled / enabled*]: enables the communication object of the same name (**"[IX][] Independent Locking"**), through which this functionality can be activated or deactivated.

Depending on the function, some more parameters are involved (as described next). Please note that in the next pages "**[Ix][]**" is used as a general notation for the communication objects, where "x" depends on the particular button pair.

2.2.2.1 LED INDICATOR

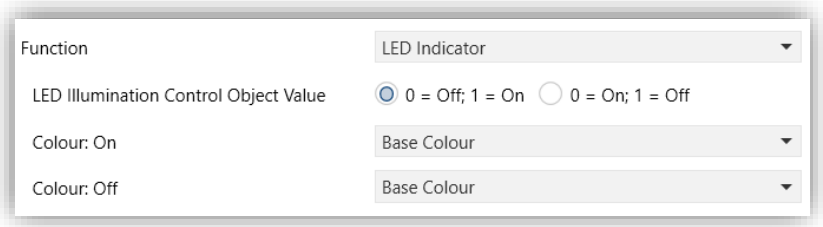


Figure 18. Individual Button - LED indicator

- **LED illumination Control Object Value** [*0 = Off; 1 = On / 0 = On; 1 = Off*]: sets the behaviour of the LED of the button.

- **Colour: On** [*Colour selector (Base Colour)*]: sets the colour with which the LED will illuminate when the dedicated object's state is "*On*".

- **Colour: Off** [*Colour selector (Base Colour)*]: sets the colour with which the LED will illuminate when the dedicated object's state is "*Off*".

  Note: *this function does not depend on the option selected for **LED Illumination Control (All Buttons)** (see section 2.2.1).*

The options are like those of the dedicated-object LED illumination available for other control types. After assigning this function to the button, object "**[Ix][] LED - Switch Control**" is included in the project topology, so that the values that determine the state of the LED at a given time can be received from the bus.

2.2.2.2 SWITCH

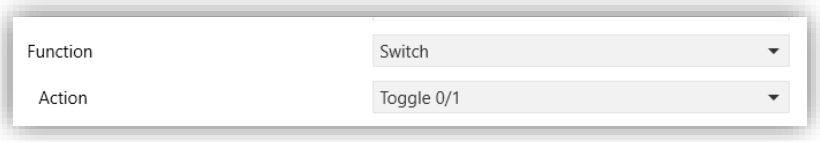


Figure 19. Individual Button - Switch

- **Action** [*Send 0 / Send 1 / Toggle 0/1*]: sets the value to be sent to the bus (through object "**[Ix][] Switch - Control: "X"",** where X is the parameterised action) when the user touches the button.

2.2.2.3 HOLD & RELEASE

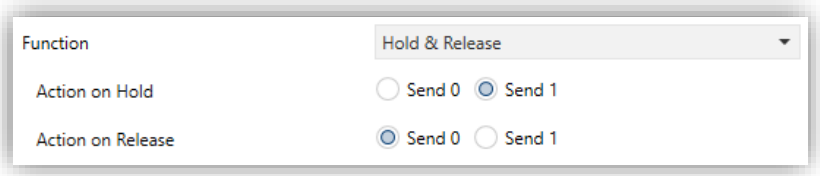


Figure 20. Individual Button - Hold & Release

- **Action on Hold** [*Send 0 / Send 1*]: sets the value to be sent to the bus (through "**[Ix][] Hold & Release - Switch Control**") when the user touches the button.

- **Action on Release** [*Send 0 / Send 1*]: sets the value to be sent to the bus (again, through "**[Ix][] Hold & Release - Switch Control**") when the user stops touching the button.

2.2.2.4 TWO OBJECTS (SHORT PRESS / LONG PRESS)

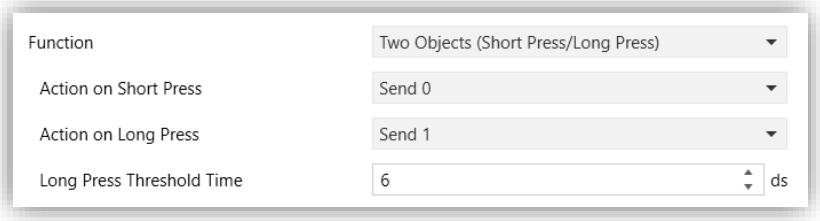


Figure 21. Individual Button - Two Objects (Short Press/Long Press)

- **Action on Short press** [*Send 0 / Send 1 / Toggle 0/1 / Send 1-Byte Value*]: sets the value to be sent to the bus (through "**[Ix][] Two objects - Short Press Control: "X",** where X is the parametrised action) when the user short-presses the button.

In case of selecting the latter, an additional parameter (**Value** [*0...255*]) will be displayed to enter the desired one-byte value.

- **Action on Long press** [*Send 0 / Send 1 / Toggle 0/1 / Send 1-byte value*]: sets the value to be sent to the bus (through "**[Ix][] Two objects - Long Press Control: "X"**, where X is the parametrised action) when the user long-presses the button.

- **Long Press Threshold Time** [*0…6…50*] [*ds*]: sets the minimum time the user should hold the button in order to consider it a long press.

2.2.2.5 SCENE

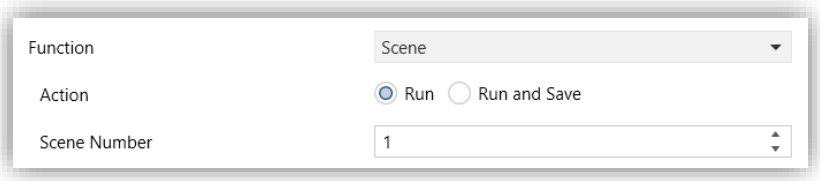


Figure 22. Individual Button - Scene

- **Action** [*Run / Run and Save*]: sets whether the value to be sent to the KNX bus (through "**[General] Scene: Send**") when the user touches the button will always be a scene run request or –depending on the length of button press– a scene run or save request.

- **Scene number** [*0…1…64*]: number of the scene to be sent to the bus, both in the case of the run requests and the save requests.

2.2.2.6 SCALING CONSTANT / COUNTER CONSTANT / FLOAT CONSTANT

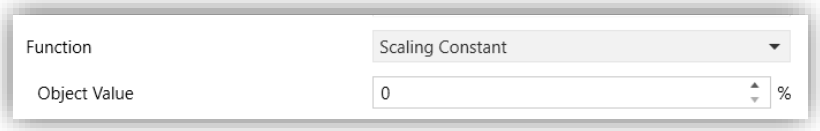


Figure 23. Individual Button - Scaling Constant

- **Object Value** [*0…100*] [*%*]: sets the value to be sent to the KNX bus when the user touches the button. The available range and the object through which the value is sent depend for each case, as the table below shows.

  In case of selecting "*Counter Constant*", two specific parameters (**Size** and **Signed**) will be displayed to respectively define the size of the constant ("*1 byte*"

or "*2 bytes*") and whether it is a signed or unsigned value. Depending on that, the range and the name of the object will vary.

	Available Values	Name of the Object
Scaling Constant	[*0…100*] [%]	**"[Ix][] Percentage - Control"**
Counter Constant	[*0…255*] [*-128…0…127*] [*0…65535*] [*-32768…0…32767*]	**"[Ix][] Integer - 1-Byte Unsigned Control"** **"[Ix][] Integer - 1-Byte Signed Control"** **"[Ix][] Integer - 2-Byte Unsigned Control"** **"[Ix][] Integer - 2-Byte Signed Control"**
Float Constant	[*-671088,64…0…670433,28*]	**"[Ix][] Float - 2-Byte Float"**

Table 2. Constant type numerical control

2.2.2.7 DIMMER

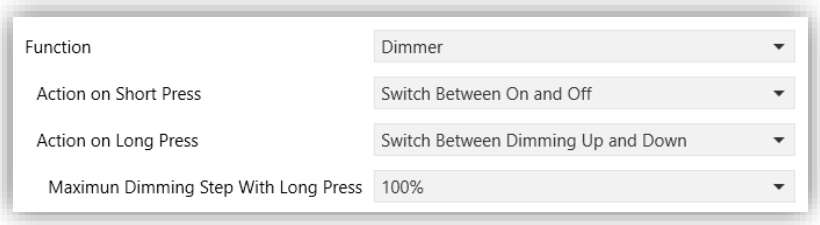


Figure 24. Individual Button - Dimmer

Depending on which action is configured for short press, a different object is used. In the case of switching On / Off commands, they are sent via the one-bit object **"[Ix][] Light - Switch Control"**. If the sending of an absolute dimming is chosen, it is used the object **"[Ix][] Light - Absolute Dimming"**. However, to launch a scene, the object involved will be **"[General] Scene: Send"**.

As for the increment / decrement / stop on long press commands, they will be sent via the four-bit object **"[Ix][] Light - Dimming Control"**.

On the other hand, the "**[Ix][] Light - Percentage Status**" one-byte object may be linked to the light level status object of the dimmer (in fact, this object is only intended to receive values from the bus, not to send them). As explained at the beginning of this section, the state-dependent LED lighting will be determined by the value of this object (brightness level and Off-state colour at 0%, and On in any other case).

The parameters for this function are:

- **Action on Short Press** [*Send Off / Send On / Switch Between On and Off / Absolute Dimming / Scene*]: sets the value to be sent to the bus (via the corresponding object) when the user makes a short press on the button.

  If the fourth option is selected, an additional parameter appears (**Value** [*0...50...100*] [*%*]) to enter the desired percentage value. With the last option, another parameter called **Scene Number** appears with possible values between [*1...64*].

- **Action on Long Press** [*Dimming Down / Dimming Up / Switch Between Dimming Up and Down*]: sets the action to send to the bus when the user performs a long press on the button.

  - **Maximum Dimming Step With Long Press** [*100% / 50% / 25% / 12,5% / 6,25% / 3,1% / 1,5%*]: defines the dimming step to be sent (through "**[Ix][] Light - Dimming Control**") to the light dimmer with every long press.

    Note: *since dimmers typically do not apply the new light level immediately (i.e., the step is performed progressively) and since capacitive touch switches send an order to interrupt the step dimming once the user releases the button, it is advisable to configure a step of 100%.*

    This way, the user can perform any dimming step by simply leaving the button pressed and then releasing it, without needing to make successive button presses.

2.2.2.8 SHUTTER

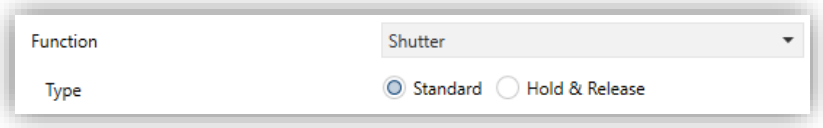


Figure 25. Individual Button - Shutter

The (alternating) move up/down orders for "*Standard*" type will be sent through the "**[Ix][] Shutter - Move Control**" one-bit object, while the (alternating) step up/down orders will be through the "**[Ix][] Shutter - Stop/Step Control**" one-bit object. In case of "*Hold & Release*", the movement commands will be sent by the same object as standard but as there are no steps, the sending to stop the shutter will be done by the object "**[Ix][] Shutter - Stop Control**".

Additionally, a one-byte object ("**[Ix][] Shutter - Percentage Status**") is provided to link it to the position status object of the shutter actuator (in fact, this object is only intended to receive values from the bus, not to send them).

The parameters for this function are:

- **Type** [*Standard / Hold & Release*]: sets the desired control type.

2.2.2.9 ROOM STATE (INDOOR)

When this function is assigned to the button, the object for the control "**[Ix][] Room State - Control**" is enabled. This object will also be a status indicator, as well as two other one-bit objects to indicate the status of the room individually ("**[Ix][] Room State - Make Up Room (Status)**" and "**[Ix][] Room Status - Do Not Disturb (Status)**").

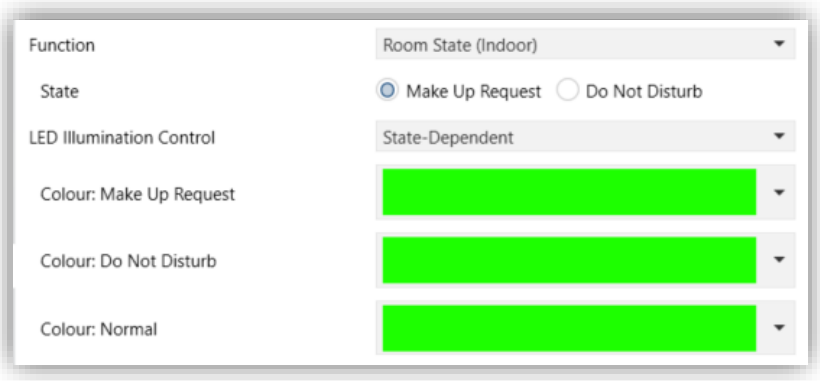


Figure 26. Individual Button - Room State (Indoor)

- **State** [*Make Up Request / Do Not Disturb*]: sets the state that is activated with this button. Commutes between "*Normal*" ("0") and the selected state: "*Make Up Room*" ("1") and "*Do Not Disturb*" ("2").

If the illumination mode is set to "*State-Dependent*", the following parameters will appear:

- **Colour: Make Up Request** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Make Up Room*".
- **Colour: Do Not Disturb** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Do Not Disturb*".
- **Colour: Normal** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Normal*".

Note: *the default value of the colour parameters depends on the option configured in the* ***State*** *parameter.*

2.2.2.10 ROOM STATE (OUTDOOR)

When this function is assigned to the button, the object for the control "**[Ix][] Room State**" is enabled. This object will also be a status indicator, as well as two other one-bit objects to indicate the status of the room individually ("**[Ix][] Room State - Make Up Room (Status)**" and "**[Ix][] Room Status - Do Not Disturb (Status)**").

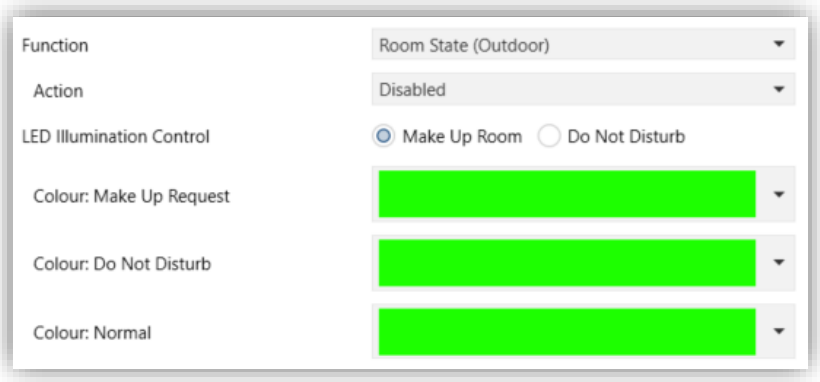


Figure 27. Individual Button - Room Outdoor (Outdoor): Disabled

- **Action** [*Disabled / Check Occupancy / Make Up in Progress*]: determines the action to be executed when the button is clicked. Depending on the selected action, different objects and parameters are available.

- **LED Illumination Control** [*Make-Up Room / Do Not Disturb*]: defines the state of the room for which the LED illumination is activated.

  - **Colour: Make Up Request** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Make Up Room*".

  - **Colour: Do Not Disturb** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Do Not Disturb*".

  - **Colour: Normal** [*Colour Selector (Green / Red)*]: the colour used to illuminate the LED when the control object's value is "*Normal*".

Note: *the default value of the colour parameters depends on the option configured in the* ***State*** *parameter.*

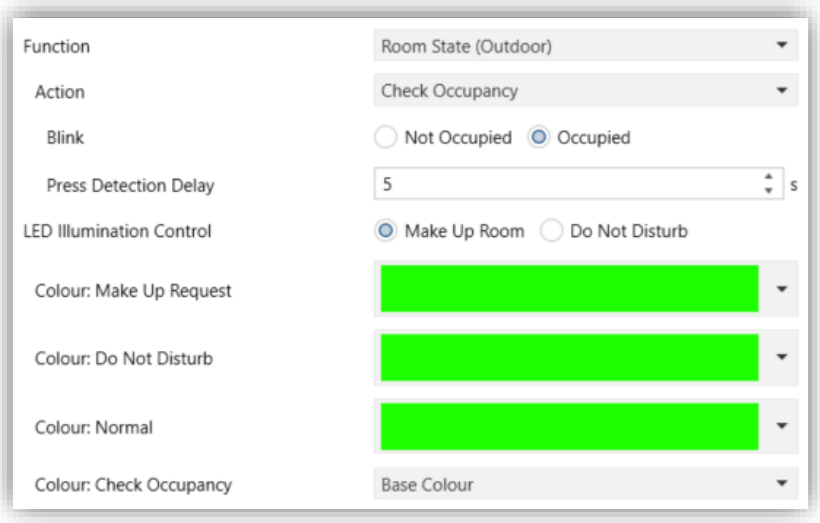


Figure 28. Individual Button - Room State (Outdoor): Check Occupancy

For "*Check Occupancy*", the object "**[Ix][] Presence - Occupancy State**" is used to determine whether the room is occupied or not.

- **Blink** [*Not Occupied / Occupied*]: sets the occupancy status for which the LED blinks when a press is made.
- **Press Detection Delay** [*0…5…15*] [*s*]: defines the time the user must hold down the button to be able to consider a press.

An additional colour parameter will appear:

➢ **Colour: Check Occupancy** [*Colour Selector (Base Colour)*]: the colour with which the LED will flash intermittently when the "Check Occupancy" is activated.

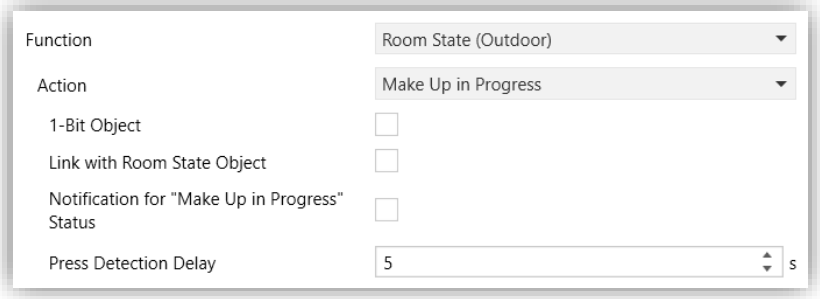


Figure 29. Individual Button - Room State (Outdoor): Make Up in Progress

For "*Make Up in Progress*":

- **1-Bit Object** [*disabled / enabled*]: enables the binary object "**[Ix][] Make-Up In Progress**" which will permit the activation of "*Make Up in Progress*" status of the room.
- **Link with Room State Object** [*disabled / enabled*]: if the current status of the room is different from "*Make Up in Progress*" and a press is made, the object **"[Ix][] Room State"** will be sent to the bus updating it to that status. A further press will change the status to "*Normal*".
- **Notification for "Make Up in Progress" Status** [*disabled / enabled*]: offers the possibility to notify via flashing that the room is being cleaned. The flashing will stop with a new press, notifying the end of cleaning.
- **Press Detection Delay** [*0…5…15*] [*s*]: defines the time the user must hold down the button to be able to consider a press.

If **Notification for "Make Up in Progress"** is enabled, an additional colour parameter will be displayed:

- **Colour: Make Up in Progress** [*Colour Selector (Base Colour)*]: the colour with which the LED will flash intermittently when the "*Make Up in Progress*" status is activated.

2.2.2.11 ENUMERATED INDICATOR (COLOUR)

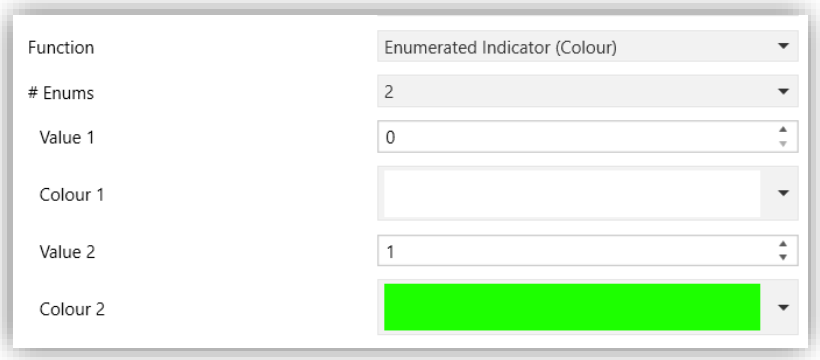


Figure 30. Individual Button - Enumerated Indicator (Colour)

- **# Enums** [*1…2…6*]: sets the number of elements that make up the enumeration.
- **Value 1 - 6** [*0…255*]: if the **"[Ix][] Enumerated Indicator (Colour)"** object receives a configured value, the LED will illuminate with the corresponding configured colour.

For each parameter there is another linked to the value received by the object (**Colour 1 - 6** [*Colour Selector (Neutral White)*]), which determines the LED colour.

Note: *if two elements are parameterised with the same value, the first element in the enumeration takes precedence.*

2.2.3 PAIR

Buttons configured to work as a joint control can be assigned the following functions:

- **Switch**: pressing one of the two buttons will make capacitive touch switches send a binary value to the bus, while pressing on the other will make it send the inverse binary value. It is possible to configure which one does what.

  If the LED lighting is set to "*State-Dependent*" (see ANNEX I. LED Illumination Modes), the value of the communication object will determine the behaviour: the LED of the corresponding member of the pair will use the On-state brightness level and colour, while the other member's LED will use the Off-state brightness level and colour. When the value is toggled, the LEDs swap their lighting states.

  Conversely, if the lighting is set to "*State-Dependent (both LEDs)*", both LEDs will use the On-state colour and brightness level while the switch is "*On*", and the Off-state colour and brightness level while it is "*Off*".

- **Two Objects (Short Press/Long Press)**: permits sending specific binary values both after a short or a long press on any of the two buttons (i.e., they will work as a joint control; for independent buttons, please configure them as individual). Different objects will be used for the short and long presses.

  Moreover, it is possible (in parameters) to make the "*State-Dependent*" and "*State-Dependent (both LEDs)*" LED illumination modes (see ANNEX I. LED Illumination Modes) depend on either one object or the other.

  However, if **LED Illumination Control (All Buttons)** has been set to "*State-Dependent (Where Available)*" only the short press object will be considered.

- **Dimmer**: short-pressing one of the two buttons will make capacitive touch switches send a switch-on order to the bus, while doing so on the other button will make it send a switch-off order.

Long presses will make it send a step dimming order (the value of which is configurable) to make a dimmer increase or decrease the light level (and a stop order as soon as the user releases the push button). It is possible to configure which button does what.

Under a "*State-Dependent*" LED illumination (see ANNEX I. LED Illumination Modes), the corresponding button's LED will change its brightness level and colour depending on whether the current value of the lighting status object (which should be updated by the actual dimmer) is greater than 0% or not.

On the other hand, under a "*State-Dependent (both LEDs)*" LED illumination, both LEDs will change their colour and brightness level simultaneously based on that same value.

- **Shutter**: this option permits making use of the two buttons to control a shutter actuator connected to the bus. Two alternative control methods are possible:

  - "*Standard*": a long press will make the device send to the KNX bus an order to start moving the shutter (upwards or downwards, depending on the button), while a short press will make it send a stop order (which will be interpreted as an order to step up or to step down –depending on the button– if the shutter was not in motion and such function is available).

  - "*Hold & Release*": as soon as the button is held, the device will send the KNX bus an order to start moving the shutter (upwards or downwards, depending on the button). Once the button is released, it will send an order to stop.

    The "*State-Dependent*" and "*State-Dependent (both LEDs)*" LED illumination modes are not available for this function (only the "*Regular*" and "*Dedicated Object*" LED illumination are available). See ANNEX I. LED Illumination Modes for details.

- **Room State (Outdoor)**: whether the room requires cleaning or is in "*Do Not Disturb*" status by illumination of the LEDs. In addition, the status of the room ("*Occupied / Not Occupied*") can be queried with a long press and the status of the room can be changed to "*Make Up in Progress*".

Each button of the pair can be configured independently, but their function will influence each other depending on the parameterisation applied. The functions of each button can be as follows:

- "*Disabled*": as long as it remains disabled, the pushbutton will have no functionality: pressing it will not execute any action, nor will any change in the lighting of the indicators be produced.

- "*Check Occupancy*": by enabling a button with this functionality, the **occupancy status of the room can be known** by means of the flashing of the indicators.

  Once the button has exceeded the **time threshold** configured for **its detection**, a beep will be emitted, and the indicators parameterised for the current occupancy status will flash for 5 seconds.

- "*Make Up in Progress*": by enabling a button with this functionality, **the start and end of room cleaning can be notified**.

  Once the button has exceeded the **time threshold** configured for **its detection**, a beep will be emitted and different sendings will be made to the bus according to the selected options:

  - **1-Bit Object** for activation/deactivation of the "Cleaning in progress" function.

  - **Link with Room State Object**: the action of the button is linked to the room status object so that each press of the button sends a message to the bus, switching the status between "*Make Up in Progress*" / "*Normal*".

  - **Notification for "Make Up in Progress" Status**: by flashing of the indicators. A further press is required to notify the end of cleaning.

The options mentioned above are not exclusive, so that those that have been enabled can be executed simultaneously.

In this way, situations of overlapping LED illumination can occur. If "*Make Up in Progress*" and "*Check Occupancy*" notifications are active at the same time, the first one will stop and the LEDs set for the latter will light up. At the end of the "*Check Occupancy*", the "*Make Up in Progress*" flashes again.

It can also result in poor parameterisation, such as configuring two buttons with the same function, because the pair only reports the status of a single room.

***Example 1*: 2 buttons** *"Check Occupancy"*

Left Button: • ***Occupied***: *"Blink Left Indicator"* • ***Not Occupied***: *"Blink Left Indicator"*

Right Button: • ***Occupied***: *"Blink Both Indicators"* • ***Not Occupied***: *"Blink Both Indicators"*

With the occupancy status as "Not Occupied", the following is expected.

- *Long press on the right button → Both indicators flash for 5 seconds.*
- *Long press on the right button → Only the right indicator flashes for 5 seconds.*
- *Switch to the "Occupied" state and perform a long press on the right button → Both indicators flash for 5 seconds.*

***Example 2*: 2 buttons** *"Make Up in Progress"*

Left Button: • *1-Bit Object: ✓* • *Link with Room State Object: ✓* • *Notification for "Make Up in Progress" status: ✓*

Right Button: • *1-Bit Object: ✗* • *Link with Room State Object: ✗* • *Notification for "Make Up in Progress" status: ✗*

Since the 1-bit object is common, even if the right button has not enabled it, it will be visible, because the left button has enabled it.

After pressing the left button:

- *Sending of **"Make Up in Progress"** object = "1" (On)*
- *Sending of **Room State** object = "3" ("Make Up in Progress")*
- *Notification → Blink the corresponding indicators*

After pressing the right button:

- *There is no object sending (**"Make Up in Progress"** object value becomes "0", but Room State object remains "3")*
- *Notification → Blink the corresponding indicators*

After pressing the left button:

- *Sending of **"Make Up in Progress"** object = "1" ("On")*
- *Sending of **"Room State"** object = "3" ("Make Up in Progress")*
- *Notification → Blink the corresponding indicators*

ETS PARAMETERISATION

Once two buttons have been assigned to a particular pair, a specific tab ("X Pair") becomes available under "Buttons" in the tab tree.

Figure 31. Button Pair

Textbox **INFO** allows changing the default name of the tab in the left menu, as shows the following figure, identifying each of the enabled pairs and their communication objects with the prefix **"[PX][*INFO*]".**

The main parameter that needs to be configured is:

- **Function** [*Switch / Two objects (Short press/Long press) / Dimmer / Shutter / Room State (Outdoor)*]: sets the desired function for the button pair.

In case the option "*Configure every button (pair) separately*" has been selected in the **LED Illumination Control Parameter (All Buttons)** in the "Configuration" tab (see section 2.2.1), the additional parameters will be displayed:

- **LED Illumination Control** [*Regular / State-Dependent / State-Dependent (Both LEDs) / Dedicated Object*]. These values are different for "*Room State (Outdoor)*" control, whose LED illumination control is particular.

  If the "*Regular*" mode is configured, the following parameter will be displayed in ETS:

Figure 32. Pair Buttons - LED Illumination - Regular

  - **Colour** [*Colour selector (Base Colour)*]: sets the colour that the LEDs will adopt.

If "*State-Dependent*" or "*State-Dependent (Both LEDs)*" is selected:

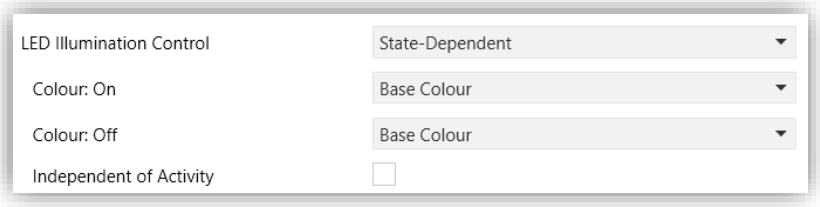


Figure 33. Pair Buttons - LED Illumination - State-Dependent

- **Colour: On** [*Colour selector (Base Colour)*]: sets the colour with which the LED of the member whose action matches the current value of the (group) object will light up.

- **Colour: Off** [*Colour selector (Base Colour)*]**:** defines the colour to be set on the LED of the member of the pair whose action does not match the current value of the (group) object.

  Note: *illumination depends on the action configuration of each member of the pair, so the behaviour may be inverted in pairs where the default action option is not configured.*

In case of selecting the latter, the object "**[PX][] LED - Switch Control**" will be included in the project topology and several new parameters will appear for configuring the LEDs' illumination.

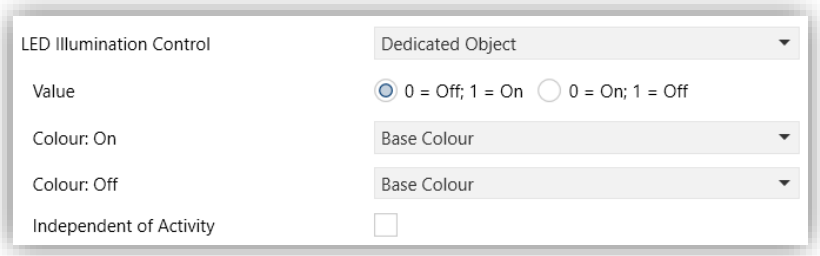


Figure 34. Pair Buttons - LED Illumination - Dedicated Object

- **Value** [*0 = Off; 1 = On / 0 = On; 1 = Off*]: determines the polarity of the communication object.

- **Colour: On** [*Colour selector (Base Colour)*]: sets the colour with which the LED of the member whose action matches the current value of the binary object will illuminate.

- **Colour: Off** [*Colour selector (Base Colour)*]: defines the colour to be set on the LED of the member of the pair whose action does not match the current value of the binary object.

Note: *for further information, please refer to section 2.2.1 and ANNEX I. LED Illumination Modes.*

Regardless of the configured illumination mode, the following parameter will always be available:

- **Independent of Activity** [*disabled / enabled*]: sets the corresponding LEDs to illuminate as if it were always in the active state, ignoring the inactivity state. The rest of the controls that have not enabled this functionality will continue to illuminate according to the activity status.

Important: *if the internal temperature sensor is enabled, particular care is recommended when using this functionality, as heat generated by the LED illumination may affect the temperature measurement.*

However, there is another parameter that appears for all previously selected functions except "*Shutter*", as its use in these cases is not useful.

- **Timed Locking** [*disabled / enabled*]: allows a pair of buttons to be locked for a configured time after being pressed. When marked, a specific parameter appears **Lock Time** [*0...5...60*] [*s*]. It starts counting as soon as the button is released.

  After bus failure, the pair starts without timed locking. It will start again when it is pressed again. This locking is independent of the general button locking, it has no influence on the locking object.

Lastly, as noted in section 2.2.1, if the **Independent Button Locking** parameter is enabled, an additional parameter will be shown on each pair's tab.

- **Independent Locking** [*disabled / enabled*]: enables the identically named object (**"[PX][] Independent Locking"**), through which this functionality can be switched on or off.

Depending on the function, some more parameters are shown, as described next. Please note that in the next pages the general notation "**[PX][]**" is used for the name of the communication objects, as "X" depends on the button pair (A, B, C, D or E).

2.2.3.1 SWITCH

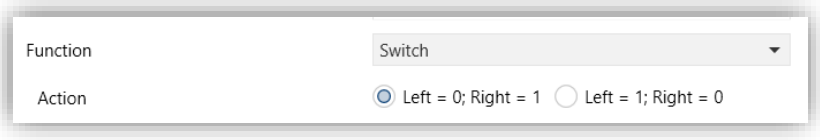


Figure 35. Pair Buttons - Switch

- **Action** [*Left=0; Right=1 / Left=1; Right=0*]: assigns each of the two buttons the value to be sent through "**[PX][] Switch - Control**" (which has the Write flag enabled, so the state of the switch can be updated from external devices).

  Note: *this parameter will remain hidden unless having selected "Every button pair is configured separately" in* ***Action of the Pair Buttons (All Pairs)****.*

2.2.3.2 TWO OBJECTS (SHORT PRESS/LONG PRESS)

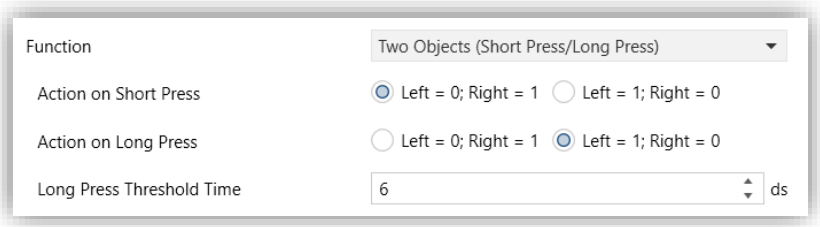


Figure 36. Pair Buttons - Two Objects (Short Press/Long Press)

- **Action on Short Press** [*Left = 0; Right = 1 / Left = 1; Right = 0*]: sets the value that will be sent through "**[PX][] Two objects - Short Press Control**" after the user short-presses one of the two buttons.

- **Action on Long Press** [*Left = 0; Right = 1 / Left = 1; Right = 0*]: sets the value that will be sent through "**[PX][] Two objects - Long Press Control**" after the user long-presses one of the two buttons.

  Note: *both parameters will remain hidden unless having selected "Every button pair is configured separately" in* ***Action of the Pair Buttons (All Pairs)****.*

- **Long Press Threshold Time** [*5…6…50*] [*ds*]: sets the minimum time the user should hold the button in order to consider it a long press.

2.2.3.3 DIMMER

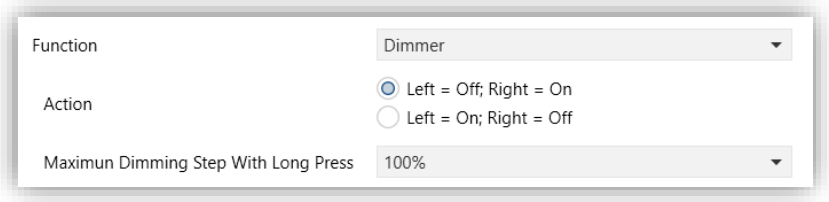


Figure 37. Pair Buttons - Dimmer

The switch orders will be sent through the "**[PX][] Light - Switch Control**" one-bit object, while the increase/decrease orders will be through the "**[PX][] Light - 4-bits Dimming Control**" four-bit object.

On the other hand, the "**[PX][] Light - Percentage Status**" one-byte object may be linked to the light level status object of the dimmer (in fact, this object is only intended to receive values from the bus, not to send them). The parameters for this function are:

- **Action** [*Left = Off; Right = On / Left = On; Right = Off*]: assigns each of the two buttons the order to be sent.

  Note: *this parameter will remain hidden unless having selected "Every button pair is configured separately" in* ***Action of the Pair Buttons (All Pairs)****.*

- **Maximum Dimming Step With Long Press** [*100% / 50% / 25% / 12,5% / 6,25% / 3,1% / 1,5%*]: defines the dimming step to be sent to the light dimmer with every increase / decrease order.

  Note: *since dimmers typically do not apply the new light level immediately (i.e., the step regulation is performed progressively) and since capacitive touch switches send an order to interrupt the step dimming once the user releases the button, it is advisable to configure a step of 100%. This way, the user can perform any dimming step by simply leaving the button pressed and then releasing it without needing to make successive button presses.*

2.2.3.4 SHUTTER

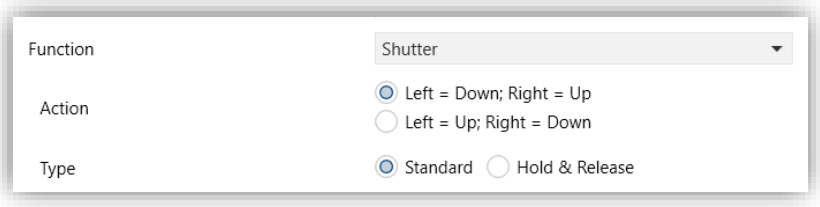


Figure 38. Pair Buttons - Shutter

The move orders will be sent through "**[PX][] Shutter - Move Control**", while the stop orders will be sent through "**[PX][] Shutter - Stop/Step Control**" (for "*Standard*" type) or "**[PX][] Shutter - Stop Control**" (for "*Hold & Release*" type). The parameters for this function are:

- **Action** [*Left = Down; Right = Up / Left = Up; Right = Down*]: assigns each of the two buttons the order to be sent.

  Note: *this parameter will remain hidden unless having selected "Every button pair is configured separately" in* ***Action of the pair buttons (All Pairs)***.

- **Type** [*Standard / Hold & Release*]: sets the desired behaviour of the buttons.

2.2.3.5 ROOM STATE (OUTDOOR)

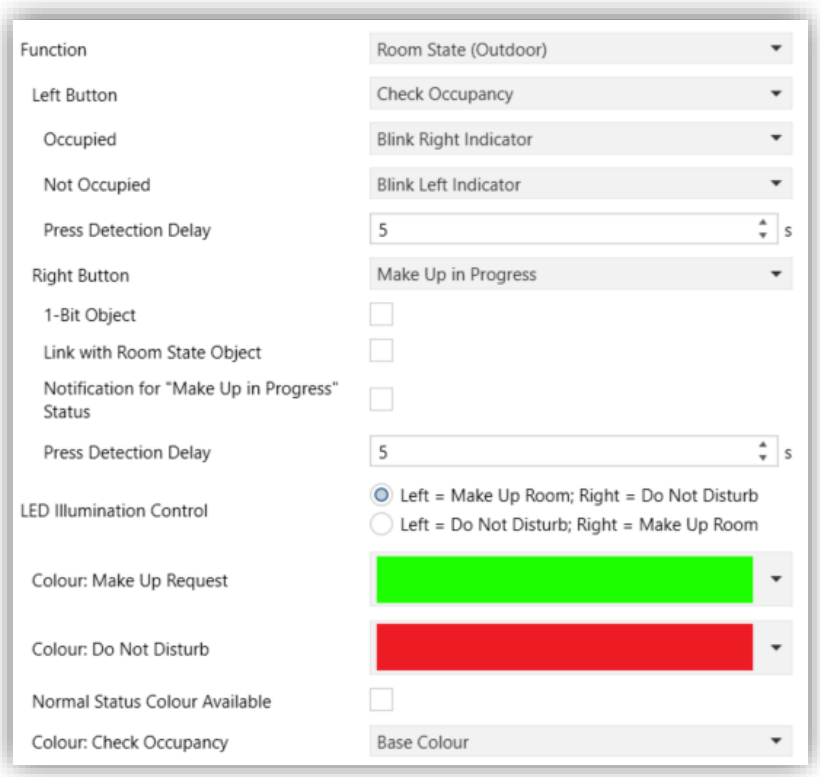


Figure 39. Pair Buttons - Room State: Check Occupancy + Make Up in Progress

- **Left Button** [*Disabled / Check Occupancy / Make Up in Progress*].

  If "*Check Occupancy*" is selected, it is possible to configure which indicators should blink according to the value acquired by the object "**[PX][] Presence - Occupancy State**":

  - **Occupied** [*Blink Left Indicator / Blink Right Indicator / Blink Both Indicators / Nothing*]: sets the action on the indicators after consultation when the room state is "*Occupied*".

  - **Not Occupied** [*Blink Left Indicator / Blink Right Indicator / Blink Both Indicators / Nothing*]: sets the action on the indicators after consultation when the room status is "*Not Occupied*".

  - **Press Detection Delay** [*1…5…15*] [*s*]: defines the time the user must hold down the button to be able to consider a press.

And an additional colour parameter will appear:

- **Colour: Check Occupancy** [*Colour Selector (Base Colour)*]: the colour with which the LED (or LEDs) will flash intermittently when the "*Check Occupancy*" is activated.

  If "*Make Up in Progress*" is configured, the following options (not mutually exclusive) are offered for activation and/or notification of the "*Make Up in Progress*" status:

  - **1-Bit Object** [*disabled / enabled*]: enables the binary object "**[PX][] Make Up in Progress**" which will permit the activation of "*Make Up in Progress*" status of the room.

  - **Link with Room State Object** [*disabled / enabled*]: if the current status of the room is different from "*Make Up in Progress*" and a press is made, the object **"[PX][] Room State"** will be sent to the bus updating it to that status. A further press will change the status to "*Normal*".

  - **Notification for "Make Up in Progress" Status** [*disabled / enabled*]: offers the possibility to notify via flashing that the room is being cleaned. The flashing will stop with a new press, notifying the end of cleaning.

- **Type** [*Blink Left Indicator / Blink Right Indicator / Blink Both Indicators*]: sets the action on the indicators when the room status is "*Make Up in Progress*".

➢ **Press Detection Delay** [*1…5…15*] [*s*]: determines how long the press must be held for it to be considered.

If the **Notification for "Make Up in Progress" Status** parameter is enabled, an additional colour parameter will be shown:

- **Colour: Make Up in Progress** [*Colour Selector (Base Colour)*]: the colour with which the LED (or LEDs) will flash intermittently when the "*Make Up in Progress*" state is active.

- **Right Button** [*Disabled / Check Occupancy / Make-Up In Progress*]: When "*Check Occupancy*" or "*Make Up in Progress*" is enabled, the same parameters are available as in the previous button.

- **LED illumination Control** [*Left = Make Up Room; Right = Do Not Disturb / Left = Do Not Disturb; Right = Make Up Room*]: sets the LED illumination when the room status (depending on the value of the object "[PX][] Room State") is "*Make Up Room*" and which for the "*Do Not Disturb*" status.

  ➢ **Colour: Make Up Request** [*Colour Selector (Green)*]: colour used to illuminate the paired unit's LED when in the "*Make Up Room*" state.

  ➢ **Colour: Do Not Disturb** [*Colour Selector (Red)*]: colour used to illuminate the paired unit's LED when in the "*Do Not Disturb*" state.

  ➢ **Normal Status Colour Available** [*disabled / enabled*]: enables LEDs to illuminate in a specified colour when the control object value is "*Normal*". If not enabled, the LEDs set their brightness level to "*Off*" while retaining the "*Make Up Request*" and "*Do Not Disturb*" colours.

    - **Colour: Normal** [*Colour Selector (Base Colour)*]: colour used to illuminate the LEDs when the control object value is "*Normal*".

2.3 INPUTS

The majority of RGB Capacitive Touch Switches from Zennio incorporates **two analog/digital inputs**. Each one has three possible configurations, which are explained below.

2.3.1 BINARY INPUT

Configuration for the connection of a pushbutton or a switch/sensor. Please refer to the "**Binary Inputs**" user manual, available under the product section at www.zennio.com.

2.3.2 TEMPERATURE PROBE

Configuration for the connection of a temperature sensor from Zennio. Please refer to the "**Temperature Probe**" user manual, available under the product section at www.zennio.com.

2.3.3 MOTION DETECTOR

Configuration for the connection of a motion detector. It is possible to connect motion detectors from Zennio. Please refer to the "**Motion Detector**" user manual, available under the product section at www.zennio.com, for detailed information about the functionality and the configuration of the related parameters.

2.4 THERMOSTAT

RGB Capacitive Touch Switches implement **one Zennio thermostat** which can be enabled and fully customised.

Please refer to the specific manual "**Zennio Thermostat**" (available in the product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

ANNEX I. LED ILLUMINATION MODES

Each button is equipped with RGBW LED backlighting which, by default (in most functions), momentarily changes its brightness level when the button is pressed. This behaviour is referred to as the "**Regular Illumination**".

However, in most cases it is possible to assign different behaviours to the LEDs. Which options are available will depend on the function parameterised for the button, but will always include some of the following:

- **Regular Illumination**: the LED sets a single, configurable colour with a default brightness state ("*On*" or "*Off*"), and briefly switches its brightness to the opposite state when the button is pressed.

- **State-Dependent Illumination:** the LED will remain either in the "*On*" brightness/colour state or the "*Off*" state, depending on the value of the object associated with the function assigned to the button. The exact mapping between object values and LED states may vary slightly from one control type to another (detailed per function). For paired controls, the object value sets the "*On*" brightness and colour on the LED of the pair member whose action corresponds to that value, while the other member's LED is shown with the "*Off*" brightness and colour.

- **State-Dependent Illumination (both LEDs**): applicable only to buttons configured as a pair. Both LEDs in the pair will remain either in the "*On*" brightness/colour state or not, depending on the value of the object linked to that pair's function and on the specific function type. The only difference compared to the previous case is that, under "both LEDs", the two LEDs will always turn off or on simultaneously, as if it were a unique indicator consisting of two LEDs.

- **Dedicated Object**: the LED will set the "*On*" brightness and colour, or not, depending on the value ("0" or "1", configurable) of an independent binary object. For paired controls, value "0" will light one LED with the "*On*" brightness and colour while the other remains in the "*Off*" brightness and colour; value "1" will swap their states.

Table 3 illustrates which of the above are configurable for each function.

		Disabled	Regular	State-dep.	State-dep. (both LEDs)	Dedicated object
PAIR	Switch		✓	✓	✓	✓
	Two Objects		✓	✓	✓	✓
	Dimmer		✓	✓	✓	✓
	Shutter		✓			✓
INDIVIDUAL	Switch		✓	✓		✓
	Hold & Release		✓			✓
	Two Objects		✓	✓		✓
	Scene		✓			✓
	Constants		✓	✓		✓
	Dimmer		✓	✓		✓
	Shutter		✓			✓
	LED Indicator					✓
	Room State (Indoor)		✓	✓		✓

Table 3. Functions vs. LED Illumination Options.

Notes: *regarding the LEDs, it is interesting to distinguish the following cases*:

- *Disabled button: the LED will remain off, and the button will have no function.*
- *Button configured as "Individual" with "LED Indicator" function: the button will still have no function. The LED can adjust its illumination (brightness and colour) via a binary object (behaviour similar to illumination via a dedicated object).*
- *Button configured as "Individual" with "Enumerated Indicator (Colour)" function: the LED can change its colour based on the value of the 1-byte object.*
- *Button configured as "Individual"/"Pair" with "Room State (Outdoor)" function: this is a specific case; the illumination control is carried out by the functionality of the control itself.*
- *Button configured as any other control type: the behaviour of the LED will be configurable according to the following table (being also possible to leave it turned off).*

Although the behaviour of the LEDs can be configured independently for each control, it is also possible to define a **general behaviour for all of them** thus not being then necessary to configure the same option multiple times.

In case of opting for a general configuration, the options are:

- **Regular.**
- **State-Dependent (Where Available)**. Functions where “state-dependent” is not available will use the regular illumination.
- **State-Dependent (Where Available) (Both LEDs)**. Functions where “state-dependent” is not available will use the regular illumination.
- **Dedicated Object**.

ETS PARAMETERISATION

For details on the parameterisation of the LED illumination modes please refer to the pages that cover the specific function being assigned to the button (see section 2.2). In case of desiring a **similar behaviour for all of the LEDs**, please find the parameter **LED Illumination Control (All buttons)** in the options of the “General” configuration.

For LED colour configuration, a palette is provided with **9 colours** plus **3 white tones** (warm, neutral and cool), and a “*No colour*” option that turns the LED off regardless of the brightness level.

Figure 40. Available Colour Palette

ANNEX II. DIFFERENCES BY MODEL

Flat RGB		XL	X	70	55
Dimensions (mm)	**Width**	120,1	81,9	70,4	55,8
	Height	81,7	81,9	70,4	55,8
	Thickness	36,3	36,5	36,2	36,2
Number of buttons		4/6/8/10	1/2/4/6/8	1/2/4/6	1/2/4/6
Vertical and horizontal orientation		✓	✓ (2/6/8)	✓ (2/6)	✓ (2/6)
Installation with frame		-	-	✓	✓

Table 4. Differences between Flat RGB models

Tecla RGB		XL	X	70	55
Dimensions (mm)	**Width**	119,1	82,5	70,6	55,5
	Height	79,6	82,5	70,6	55,5
	Thickness	37,2	37,1	37,4	37,3
Number of buttons		4/6/8/10	1/2/4/6/8	1/2/4/6	1/2/4/6
Vertical and horizontal orientation		✓	✓ (2/6/8)	✓ (2/6)	✓ (2/6)
Installation with frame		-	-	✓	✓

Table 5. Differences between Tecla RGB models

ANNEX III. COMMUNICATION OBJECTS

- **"Functional range"** shows the values that, with independence of any other values permitted by the bus according to the object size, may be of any use or have a particular meaning because of the specifications or restrictions from both the KNX standard or the application program itself.

- The objects shown in this table are from a model of 10 buttons. Please note that certain objects will not be available in models with less push buttons.

Number	Size	I/O	Flags	Data type (DPT)	Functional Range	Name	Function
1	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Object to Send '1'	Sending of '1' Periodically
2	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 0
3	1 Bit	O	C R - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 1
4	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[General] Scene: Receive	0 - 63 (Run Scene 1-64)
5	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[General] Scene: Send	0 - 63/128 - 191 (Run/Save Scene 1-64)
6	1 Bit	I	C - W T U	DPT_Enable	0/1	[General] Touch Locking	0 = Unlock; 1 = Lock
	1 Bit	I	C - W T U	DPT_Enable	0/1	[General] Touch Locking	0 = Lock; 1 = Unlock
7	1 Bit	O	C - - T -	DPT_Switch	0/1	[General] Welcome Back Object	Switch Object Sent on Wake Up
8	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Cleaning Function	0 = Nothing; 1 = Clean Now
9	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Disable Sound; 1 = Enable Sound
	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Enable Sound; 1 = Disable Sound
10	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	0 = Nothing; 1 = Play a Doorbell Sound
	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	0 = Play a Doorbell Sound; 1 = Nothing
11	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	0 = Stop Alarm Sounds; 1 = Play Alarm Intermittent Sounds
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	0 = Play Alarm Intermittent Sounds; 1 = Stop Alarm Sounds
12, 13, 14, 15, 16	1 Bit	I	C - W - -	DPT_Switch	0/1	[General] Welcome Back Object - Additional Condition	Additional Condition Object x
17	1 Byte	I	C - W - -	DPT_SceneControl	0-63; 128-191	[General] LEDs Base Colour	1-12
18	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Proximity Sensor	0 = Disable; 1 = Enable
19	1 Bit	I	C - W - -	DPT_Start	0/1	[General] External Proximity Detection	1 = Detection
20	1 Bit	O	C - - T -	DPT_Start	0/1	[General] Proximity Detection	Send 1 When Proximity Is Detected
24	1 Bit	I	C - W - -	DPT_DayNight	0/1	[General] Backlight Mode	0 = Night Mode; 1 = Normal Mode

	1 Bit	I	C - W - -	DPT_DayNight	0/1	[General] Backlight Mode	0 = Normal Mode; 1 = Night Mode
27, 35, 43, 51, 59, 67, 75, 83, 91, 99	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Switch - Control: "0"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Hold & Release - Switch Control	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Short Press Control: "0"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Light - Switch Control	(Short Press) Switch Between On and Off
	1 Bit	O	C - - T -	DPT_Trigger	0/1	[Ix][x] Shutter - Stop Control	(End Pressing) Stop Shutter
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix][x] Shutter - Stop/Step Control	(Short Press) 0 = Stop Shutter/Step Up; 1 = Stop Shutter/Step Down
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix][x] Make Up in Progress	0 = Off; 1 = On
	1 Bit	I	C - W T U	DPT_Occupancy	0/1	[Ix][x] Presence - Occupancy State	0 = Not Occupied; 1 = Occupied
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Switch - Control: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Switch - Control: "0/1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Short Press Control: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Short Press Control: "0/1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Light - On Control	(Short Press) Send On
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Light - Off Control	(Short Press) Send Off
28, 36, 44, 52, 60, 68, 76, 84, 92, 100	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix][x] Light - Dimming Control	(Long Press) Switch Between Dimming Up and Down
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix][x] Light - Dimming Control	(Long Press) Dimming Up
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix][x] Light - Dimming Control	(Long Press) Dimming Down
29, 37, 45, 53, 61, 69, 77, 85, 93, 101	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix][x] Shutter - Move Control	(Start Pressing) Switch Between Up and Down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Long Press Control: "0"	1-Bit Generic Control
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix][x] Shutter - Move Control	(Long Press) 0 = Up; 1 = Down
	1 Bit	O	C R - T -	DPT_Bool	0/1	[Ix][x] Room State - Do Not Disturb (Status)	0 = No Active; 1 = Active
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Long Press Control: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix][x] Two Objects - Long Press Control: "0/1"	1-Bit Generic Control
30, 38, 46, 54, 62, 70, 78, 86, 94, 102	1 Bit	I	C - W T U	DPT_Switch	0/1	[Ix][x] LED - Switch Control	0 = Off; 1 = On
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Ix][x] LED - Switch Control	0 = On; 1 = Off

31, 39, 47, 55, 63, 71, 79, 87, 95, 103	1 Bit	O	C R - T -	DPT_Bool	0/1	[Ix][x] Room State - Make Up Room (Status)	0 = No Active; 1 = Active
32, 40, 48, 56, 64, 72, 80, 88, 96, 104	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Ix][x] Percentage - Control	0% … 100%
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Ix][x] Integer - 1-Byte Unsigned Control	0 … 255
	1 Byte	I	C - W T -	DPT_Value_1_Count	-128 - 127	[Ix][x] Integer - 1-Byte Signed Control	-128 … 127
	2 Bytes	I	C - W T -	DPT_Value_2_Ucount	0 - 65535	[Ix][x] Integer - 2-Byte Unsigned Control	0 … 65535
	2 Bytes	I	C - W T -	DPT_Value_2_Count	-32768 - 32767	[Ix][x] Integer - 2-Byte Signed Control	-32768 … 32767
	2 Bytes	I	C - W T -	9.xxx	-671088.64 - 670433.28	[Ix][x] Float - 2-Byte Float	-671088.64 ... 670433.28
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Ix][x] Two Objects - Short Press Control: 1-Byte	Send Selected 1-Byte Value on Short Press
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Ix][x] Shutter - Percentage Status	0% = Top; 100% = Bottom
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Ix][x] Light - Percentage Status	0% - 100%
	1 Byte	I	C - W T U	DPT_Room_State	0 - 2	[Ix][x] Room State - Control	0 = Normal; 1 = Make Up Room; 2 = Do Not Disturb
	1 Byte	I/O	C R W T U	DPT_Room_State	0 - 2	[Ix][x] Room State	0 = Normal; 1 = Make Up Room; 2 = Do Not Disturb; 3 = Make Up in Progress
33, 41, 49, 57, 65, 73, 81, 89, 97, 105	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Ix][x] Two Objects - Long Press Control: 1-Byte	Send Selected 1-Byte Value on Long Press
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Ix][x] Light - Absolute Dimming	(Short Press) Send Selected 1-Byte Value
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Ix][x] Enumerated Indicator	0 ... 255
34, 42, 50, 58, 66, 74, 82, 90, 98, 106	1 Bit	I	C - W T U	DPT_Enable	0/1	[Ix][x] Independent Locking	0 = Unlock; 1 = Lock
	1 Bit	I	C - W T U	DPT_Enable	0/1	[Ix][x] Independent Locking	0 = Lock; 1 = Unlock
107, 115, 123, 131, 139	1 Bit	I	C - W T -	DPT_Switch	0/1	[Px][x] Switch - Control	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Px][x] Two Objects - Short Press Control	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Px][x] Light - Switch Control	0 = Off; 1 = On
	1 Bit	O	C - - T -	DPT_Step	0/1	[Px][x] Shutter - Stop/Step Control	0 = Stop/Step Up; 1 = Stop/Step Down
	1 Bit	O	C - - T -	DPT_Trigger	0/1	[Px][x] Shutter - Stop Control	0/1 = Stop
	1 Bit	I	C - W T U	DPT_Occupancy	0/1	[Px][x] Presence - Occupancy State	0 = Not Occupied; 1 = Occupied
108, 116, 124, 132, 140	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Px][x] Light - 4-bits Dimming Control	4-Bit Dimming Control
109, 117, 125, 133, 141	1 Bit	I	C - W T -	DPT_Switch	0/1	[Px][x] Two Objects - Long Press Control	1-Bit Generic Control
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Px][x] Shutter - Move Control	0 = Up; 1 = Down
	1 Bit	O	C R - T -	DPT_Bool	0/1	[Px][x] Room State - Do Not Disturb (Status)	0 = No Active; 1 = Active

110, 118, 126, 134, 142	1 Bit	I	C - W T U	DPT_Switch	0/1	[Px][x] LED - Switch Control	0 = On; 1 = Off
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Px][x] LED - Switch Control	0 = Off; 1 = On
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Px][x] Make Up In Progress	0 = Off; 1 = On
111, 119, 127, 135, 143	1 Bit	O	C R - T -	DPT_Bool	0/1	[Px][x] Room State - Make Up Room (Status)	0 = No Active; 1 = Active
112, 120, 128, 136, 144	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Px][x] Light - Percentage Status	0% - 100%
	1 Byte	I/O	C R W T U	DPT_Room_State	0 - 2	[Px][x] Room State	0 = Normal; 1 = Make Up Room; 2 = Do Not Disturb; 3 = Make Up in Progress
114, 122, 130, 138, 146	1 Bit	I	C - W T U	DPT_Enable	0/1	[Px][x] Independent Locking	0 = Unlock; 1 = Lock
	1 Bit	I	C - W T U	DPT_Enable	0/1	[Px][x] Independent Locking	0 = Lock; 1 = Unlock
147	1 Byte	I	C - W - -	DPT_SceneControl	0-63; 128-191	[Thermostat] Scenes	0 – 63 (Execute 1 – 64); 128 – 191 (Save 1 – 64)
148	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 1	External Sensor Temperature
149	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 2	External Sensor Temperature
150	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Effective Temperature	Effective Control Temperature
151	1 Byte	I	C - W - -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode	1-Byte HVAC Mode
152	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Comfort	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Comfort	0 = Off; 1 = On
153	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Standby	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Standby	0 = Off; 1 = On
154	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Economy	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Economy	0 = Off; 1 = On
155	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Protection	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Protection	0 = Off; 1 = On
156	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Tx] Window Status (Input)	0 = Closed; 1 = Open
157	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Tx] Comfort Prolongation	0 = Nothing; 1 = Timed Comfort
158	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode Status	1-Byte HVAC Mode
159	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint	Thermostat Setpoint Input
	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint	Reference Setpoint
160	1 Bit	I	C - W - -	DPT_Step	0/1	[Tx] Setpoint Step	0 = Decrease Setpoint; 1 = Increase Setpoint
161	2 Bytes	I	C - W - -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset	Float Offset Value
162	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint Status	Current Setpoint
163	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint Status	Current Basic Setpoint

164	2 Bytes	O	C R - T -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset Status	Current Setpoint Offset
165	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Setpoint Reset	Reset Setpoint to Default
	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Offset Reset	Reset Offset
166	1 Bit	I	C - W - -	DPT_Heat_Cool	0/1	[Tx] Mode	0 = Cool; 1 = Heat
167	1 Bit	O	C R - T -	DPT_Heat_Cool	0/1	[Tx] Mode Status	0 = Cool; 1 = Heat
168	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] On/Off	0 = Off; 1 = On
169	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] On/Off Status	0 = Off; 1 = On
170	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Cool)	0 = System 1; 1 = System 2
171	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Heat)	0 = System 1; 1 = System 2
172	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Cool)	0 = Disable; 1 = Enable
173	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Heat)	0 = Disable; 1 = Enable
174, 180	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Cool)	PI Control (Continuous)
175, 181	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Heat)	PI Control (Continuous)
	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable	PI Control (Continuous)
176, 182	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	PI Control (PWM)
177, 183	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	PI Control (PWM)
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	PI Control (PWM)
178, 184	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Cool)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
179, 185	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Heat)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
186, 190	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Ix] Current Temperature	Temperature Sensor Value
187, 191	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overcooling	0 = No Alarm; 1 = Alarm
188, 192	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overheating	0 = No Alarm; 1 = Alarm
189, 193	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Probe Error	0 = No Alarm; 1 = Alarm
194	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Internal Probe] Current Temperature	Temperature Sensor Value
195	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Internal Probe] Overcooling	0 = No Alarm; 1 = Alarm
196	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Internal Probe] Overheating	0 = No Alarm; 1 = Alarm
197	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[Motion Detector] Scene Input	Scene Value
198	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Motion Detector] Scene Output	Scene Value
199, 236	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Luminosity	0-100%
200, 237	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Open Circuit Error	0 = No Error; 1 = Open Circuit Error
201, 238	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Short Circuit Error	0 = No Error; 1 = Short Circuit Error
202, 239	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Presence State (Scaling)	0-100%

203, 240	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix] Presence State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
204, 241	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix] Presence State (Binary)	Binary Value
	1 Bit	O	C R - T -	DPT_Start	0/1	[Ix] Presence: Slave Output	1 = Motion Detected
205, 242	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Ix] Presence Trigger	Binary Value to Trigger the Presence Detection
206, 243	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] Presence: Slave Input	0 = Nothing; 1 = Detection from slave device
207, 244	2 Bytes	I/O	C R W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Waiting Time	0-65535 s.
208, 245	2 Bytes	I/O	C R W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Listening Time	1-65535 s.
209, 246	2 Bytes	I/O	C R W - -	DPT_TimePeriodMin	0 - 65535	[Ix] Presence: Safety Time	0-1440 min.
210, 247	1 Byte	I/O	C R W - -	DPT_Value_1_Ucount	0 - 255	[Ix] Presence: Number of Detections of the Filter	2-5
211, 248	1 Byte	I/O	C R W - -	DPT_Value_1_Ucount	0 - 255	[Ix] Presence: Filter Detection Window	15-60 s.
212, 249	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Presence: Enable	0 = Disable; 1 = Enable
	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Presence: Enable	0 = Enable; 1 = Disable
213, 250	1 Bit	I/O	C R W - -	DPT_DayNight	0/1	[Ix] Presence: Day/Night	0 = Day; 1 = Night
	1 Bit	I/O	C R W - -	DPT_DayNight	0/1	[Ix] Presence: Day/Night	0 = Night; 1 = Day
214, 251	1 Bit	O	C R - T -	DPT_Occupancy	0/1	[Ix] Presence: Occupancy State (Master Output)	0 = Not Occupied; 1 = Occupied
	1 Bit	I	C - W - -	DPT_Occupancy	0/1	[Ix] Presence: Occupancy State (Master Input)	0 = Not Occupied; 1 = Occupied
215, 252	1 Bit	I	C - W - -	DPT_Switch	0/1	[Ix] Presence: Access Guest/Employee	0 = Guest; 1 = Employee
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Ix] Presence: Access Guest/Employee	0 = Employee; 1 = Guest
216, 253	1 Bit	I	C - W - -	DPT_Bool	0/1	[Ix] Presence: Sold/Unsold Room	0 = Unsold; 1 = Sold
	1 Bit	I	C - W - -	DPT_Bool	0/1	[Ix] Presence: Sold/Unsold Room	0 = Sold; 1 = Unsold
217, 254	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] External Motion Detection	0 = Nothing; 1 = Motion detected by an external sensor
218, 224, 230, 255, 261, 267	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix][Cx] Detection State (Scaling)	0-100%
219, 225, 231, 256, 262, 268	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix][Cx] Detection State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
220, 226, 232, 257, 263, 269	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix][Cx] Detection State (Binary)	Binary Value
221, 227, 233, 258, 264, 270	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix][Cx] Enable Channel	According to parameters

222, 228, 234, 259, 265, 271	1 Bit	I	C - W - -	DPT_Switch	0/1	[Ix][Cx] Force State	0 = No Detection; 1 = Detection
223, 229, 235, 260, 266, 272	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix][Cx] Luminosity Threshold	1-100%
273, 282	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Input Lock	0 = Unlock; 1 = Lock
274, 283	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 0	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Short Press] 0/1 Switching	Switching 0/1
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Short Press] Brighter	Increase Brightness
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Short Press] Darker	Decrease Brightness
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Short Press] Brighter/Darker	Switch Bright/Dark
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light On/Off	0/1
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light Off	Sending of 0 (Off)
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Run Scene	Sending of 0 - 63
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Save Scene	Sending of 128 - 191
	1 Byte	O	C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Short Press] Constant Value (Integer)	0 - 255
	1 Byte	O	C - - T -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Constant Value (Percentage)	0% - 100%
	2 Bytes	O	C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Short Press] Constant Value (Integer)	0 - 65535
	2 Bytes	O	C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Short Press] Constant Value (Float)	Float Value
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 0	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 1	Sending of 1

	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 0/1 Switching	Switching 0/1
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Rising Edge] Move Up Shutter	Sending of 0 (Up)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Rising Edge] Move Down Shutter	Sending of 1 (Down)
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Rising Edge] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Rising Edge] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Rising Edge] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Rising Edge] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] Light Off	Sending of 0 (Off)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] Light On/Off	0/1
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Rising Edge] Brighter	Increase Brightness
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Rising Edge] Darker	Decrease Brightness
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Rising Edge] Brighter/Darker	Switch Bright/Dark
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Switch/Sensor] [Rising Edge] Run Scene	Sending of 0 - 63
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Switch/Sensor] [Rising Edge] Save Scene	Sending of 128 - 191
	1 Byte	O	C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Switch/Sensor] [Rising Edge] Constant Value (Integer)	0 - 255
	1 Byte	O	C - - T -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Rising Edge] Constant Value (Percentage)	0% - 100%
	2 Bytes	O	C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Switch/Sensor] [Rising Edge] Constant Value (Integer)	0 - 65535
	2 Bytes	O	C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Switch/Sensor] [Rising Edge] Constant Value (Float)	Float Value
	1 Bit	O	C - - T -	DPT_Ack	0/1	[Ix] [Pulse Counter] Counter	Send 1
	1 Byte	O	C R - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Pulse Counter] Counter	Number of Pulses
	2 Bytes	O	C R - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Pulse Counter] Counter	Number of Pulses

	2 Bytes	O	C R - T -	DPT_Power	-671088.64 - 670433.28 kW	[Ix] [Pulse Counter] Counter	Power (kW)
	2 Bytes	O	C R - T -	DPT_Value_Volume_Flow		[Ix] [Pulse Counter] Counter	Flow (l/h)
	4 Bytes	O	C R - T -	DPT_Value_4_Ucount	0 - 4294967295	[Ix] [Pulse Counter] Counter	Number of Pulses
	4 Bytes	O	C R - T -	1.xxx	0/1	[Ix] [Pulse Counter] Counter	Flow Rate (m3/h)
	4 Bytes	O	C R - T -	DPT_ActiveEnergy	0 - 2147483647	[Ix] [Pulse Counter] Counter	Energy (Wh)
	4 Bytes	O	C R - T -	DPT_ActiveEnergy_kWh	0 - 2147483647	[Ix] [Pulse Counter] Counter	Energy (kWh)
	4 Bytes	O	C R - T -	DPT_Value_Power	-3.4E+38 W - 3.4E+38 W	[Ix] [Pulse Counter] Counter	Power (W)
	4 Bytes	O	C R - T -	DPT_Value_Volume		[Ix] [Pulse Counter] Counter	Volume (m3)
275, 284	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Rising Edge] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Rising Edge] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 0/1 Switching (Immediate Object)	Switching 0/1
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 0 (Immediate Object)	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Rising Edge] 1 (Immediate Object)	Sending of 1
276, 285	1 Bit	I	C - W - -	DPT_Reset	0/1	[Ix] [Pulse Counter] Reset	0 = No Action; 1 = Reset
	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] [Switch/Sensor] Alarm: Breakdown or Sabotage	1 = Alarm; 0 = No Alarm
277, 286	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Double Press] 0	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Double Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Double Press] 0/1 Switching	Switching 0/1
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Double Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Double Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Double Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Double Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Double Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Double Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Double Press] Brighter	Increase Brightness

	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Double Press] Darker	Decrease Brightness
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Double Press] Brighter/Darker	Switch Bright/Dark
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Double Press] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Double Press] Light Off	Sending of 0 (Off)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Double Press] Light On/Off	0/1
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Double Press] Run Scene	Sending of 0 - 63
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Double Press] Save Scene	Sending of 128 - 191
	1 Byte	O	C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Double Press] Constant Value (Integer)	0 - 255
	1 Byte	O	C - - T -	DPT_Scaling	0% - 100%	[Ix] [Double Press] Constant Value (Percentage)	0% - 100%
	2 Bytes	O	C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Double Press] Constant Value (Integer)	0 - 65535
	2 Bytes	O	C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Double Press] Constant Value (Float)	Float Value
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 0	Sending of 0
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 0/1 Switching	Switching 0/1
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 1	Sending of 1
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Falling Edge] Brighter	Increase Brightness
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Falling Edge] Brighter/Darker	Switch Bright/Dark
	2 Bytes	O	C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Switch/Sensor] [Falling Edge] Constant Value (Float)	Float Value
	2 Bytes	O	C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Switch/Sensor] [Falling Edge] Constant Value (Integer)	0 - 65535
	1 Byte	O	C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Switch/Sensor] [Falling Edge] Constant Value (Integer)	0 - 255
	1 Byte	O	C - - T -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Falling Edge] Constant Value (Percentage)	0% - 100%
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Switch/Sensor] [Falling Edge] Darker	Decrease Brightness
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] Light Off	Sending of 0 (Off)

	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] Light On/Off	0/1
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Falling Edge] Move Down Shutter	Sending of 1 (Down)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Falling Edge] Move Up Shutter	Sending of 0 (Up)
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Switch/Sensor] [Falling Edge] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Switch/Sensor] [Falling Edge] Run Scene	Sending of 0 - 63
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Switch/Sensor] [Falling Edge] Save Scene	Sending of 128 - 191
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Falling Edge] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Falling Edge] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Switch/Sensor] [Falling Edge] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
278, 287	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Double Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Double Press] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Falling Edge] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Switch/Sensor] [Falling Edge] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 0 (Immediate Object)	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 1 (Immediate Object)	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] [Falling Edge] 0/1 Switching (Immediate Object)	Switching 0/1
279, 288	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 0	Sending of 0
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Long Press] 0/1 Switching	Switching 0/1
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)

	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Long Press] Brighter	Long Pr. -> Brighter; Release -> Stop
	4 Bit	O	C - - T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Long Press] Darker	Long Pr. -> Darker; Release -> Stop
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Long Press] Brighter/Darker	Long Pr. -> Brighter/Darker; Release -> Stop
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light Off	Sending of 0 (Off)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light On/Off	0/1
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Run Scene	Sending of 0 - 63
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Save Scene	Sending of 128 - 191
	1 Byte	O	C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Long Press] Constant Value (Integer)	0 - 255
	1 Byte	O	C - - T -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Constant Value (Percentage)	0% - 100%
	2 Bytes	O	C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Long Press] Constant Value (Integer)	0 - 65535
	2 Bytes	O	C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Long Press] Constant Value (Float)	Float Value
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Triple Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit	I	C - W T -	DPT_Step	0/1	[Ix] [Triple Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	1 Bit	O	C - - T -	DPT_Step	0/1	[Ix] [Triple Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Triple Press] Save Scene	Sending of 128 - 191
	1 Byte	O	C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Triple Press] Run Scene	Sending of 0 - 63
	1 Bit	I	C - W T -	DPT_UpDown	0/1	[Ix] [Triple Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Triple Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit	O	C - - T -	DPT_UpDown	0/1	[Ix] [Triple Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Triple Press] Light On/Off	0/1
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Triple Press] Light On	Sending of 1 (On)
	1 Bit	O	C - - T -	DPT_Switch	0/1	[Ix] [Triple Press] Light Off	Sending of 0 (Off)

	4 Bit	O	**C - - T -**	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Triple Press] Darker	Decrease Brightness
	1 Byte	O	**C - - T -**	DPT_Scaling	0% - 100%	[Ix] [Triple Press] Constant Value (Percentage)	0% - 100%
	2 Bytes	O	**C - - T -**	DPT_Value_2_Ucount	0 - 65535	[Ix] [Triple Press] Constant Value (Integer)	0 - 65535
	1 Byte	O	**C - - T -**	DPT_Value_1_Ucount	0 - 255	[Ix] [Triple Press] Constant Value (Integer)	0 - 255
	2 Bytes	O	**C - - T -**	9.xxx	-671088.64 - 670433.28	[Ix] [Triple Press] Constant Value (Float)	Float Value
	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Triple Press] Brighter/Darker	Switch Bright/Dark
	4 Bit	O	**C - - T -**	DPT_Control_Dimming	0x0/0x8 (Stop) 0x1...0x7 (Dec.) 0x9...0xF (Inc.)	[Ix] [Triple Press] Brighter	Increase Brightness
	1 Bit	O	**C - - T -**	DPT_Switch	0/1	[Ix] [Triple Press] 1	Sending of 1
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Ix] [Triple Press] 0/1 Switching	Switching 0/1
	1 Bit	O	**C - - T -**	DPT_Switch	0/1	[Ix] [Triple Press] 0	Sending of 0
280, 289	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[Ix] [Long Press] Dimming Status (Input)	0% - 100%
	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[Ix] [Long Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[Ix] [Triple Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[Ix] [Triple Press] Dimming Status (Input)	0% - 100%
281, 290	1 Bit	O	**C - - T -**	DPT_Trigger	0/1	[Ix] [Long Press/Release] Stop Shutter	Release -> Stop Shutter

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