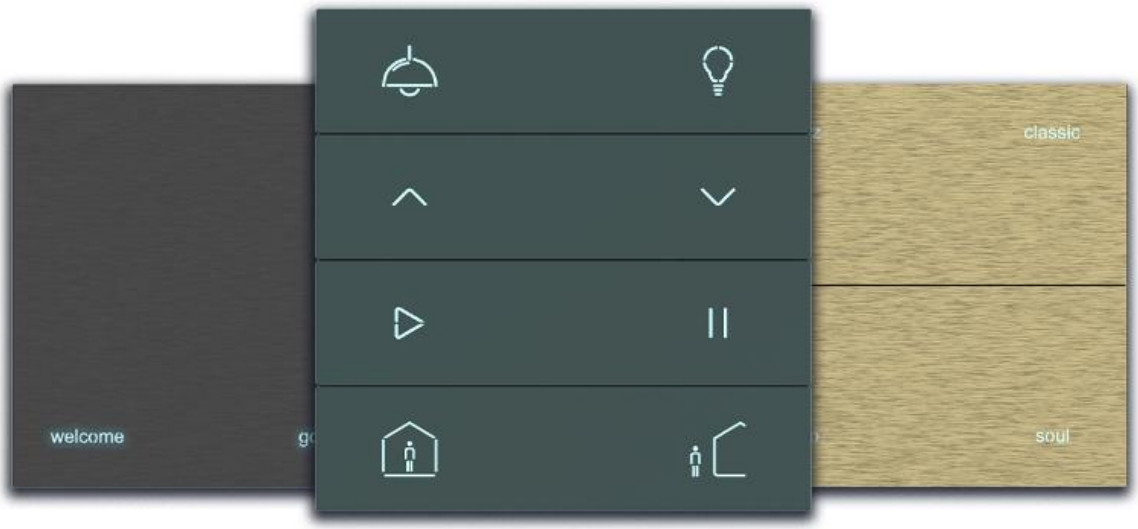
User Manual

Eclipse Push Button Switch



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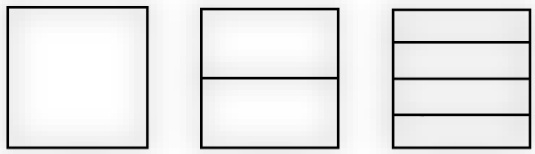
Product Code: CR-ECS-86-KNX-ThCO2

Table Of Contents

1. Presentation

Core Eclipse Switch is designed to control the ambient in a stylish way, thanks to premium materials and finishes. It is also equipped with multiple sensors to automate the ambient; thus becomes a switch, a sensor and a design material.

Fold Options



Material and Colour Options

Brushed Finish

Pure form of stainless steel, brass and aluminium are brushed with perfect craftsmanship to provide satin effect in each touch to the device.

Silky-Matte Finish

Aluminium is painted with unique colours and coated with special techniques to provide silky feeling in each touch to the product.

Ordering Tips

Eclipse Push-Button Switch Components

= Eclipse PB Switch Electronic Part + Eclipse PB Switch 1 Fold + Custom Icon Engraving

Use online planner to create a custom made Eclipse Switch and order.

https://planner.core.com.tr/

1.1. Main Features

More than just a Switch…

Eclipse Switch can activate many functions like other smart switches does such as switching and dimming. Besides these, it can do much more with its built-in logic functions and multiple sensors.

BUILT-IN THERMOSTAT

Eclipse Switch can control HVAC systems via built-in thermostat logic, temperature sensor and humidity sensor.

AIR QUALITY MEASUREMENT

Eclipse Switch measures CO2 inside the room with its built-in sensor and determine air-quality of the room. According to the air-quality level of the room, logic functions can be triggered via KNX systems.

CUSTOMIZABLE ICONS

Icon or text can be engraved to each buttons in folds. Thanks to dedicated online planner, customer can select icons from extensive icon library or write text accordingly.

RGB BACKLIGHTS

RGB Backlights of the icons indicate the status of connected load. Colour of the backlight can be configured via ETS programming tool.

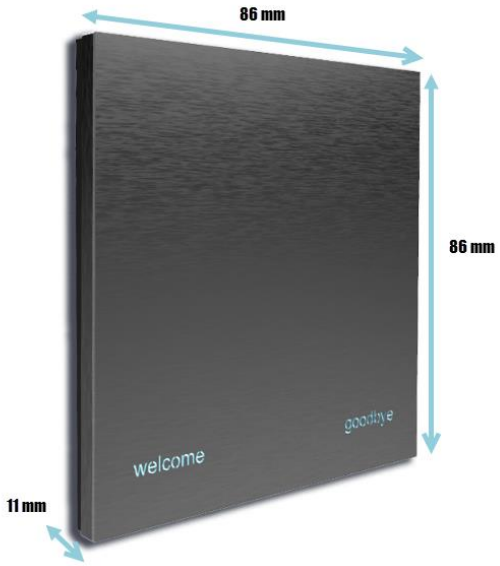
ADAPTIVE BACKLIGHTS

Light sensor measures ambient light and icon backlights are dimmed according to the light level in the room.

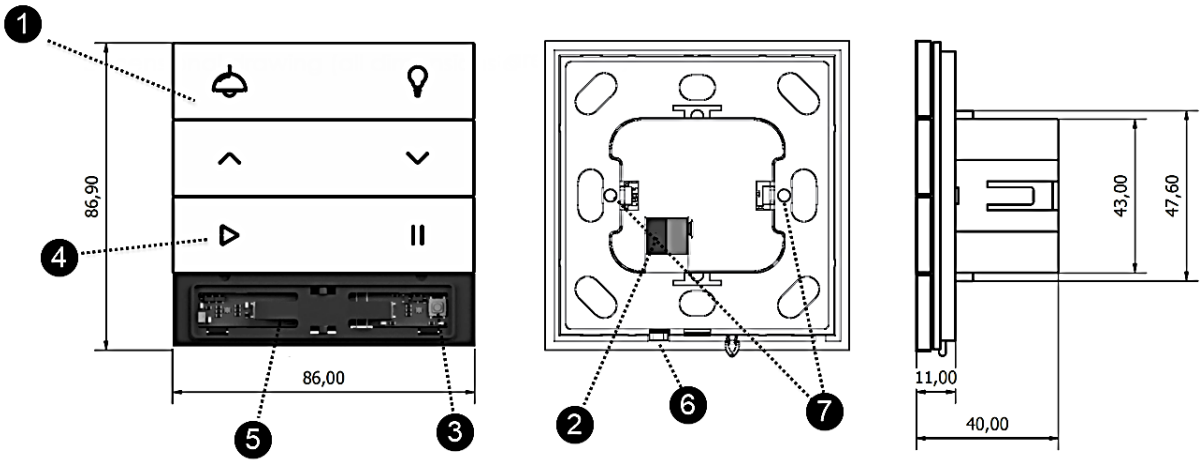
PROXIMITY SENSOR

Proximity sensor senses the approach and backlights of icons are dimmed up to welcome customer in the dark ambient.

1.2. Dimensions



Dimensional drawing (all dimensions are in mm)



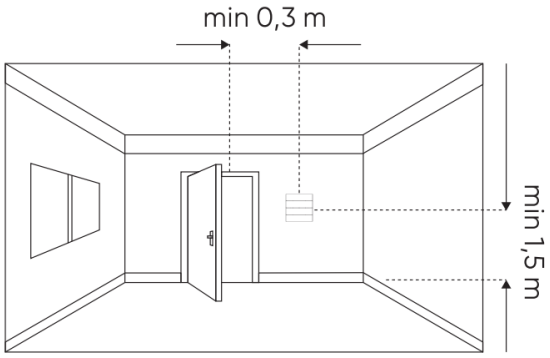
1. Folds (Sold Seperately)
2. KNX connector
3. KNX Programming button
4. Customisable icon
5. Position of temperature sensor
6. Position of light sensor
7. Screw holes

2. Technical Specification

Sensors:	Temperature – Accuracy Rate: +/- 0,2°C Humidity – Accuracy Rate: +/- 2% CO2 Proximity & Light
Dimensions:	86mm X 86mm X 11mm
Fold Material:	Aluminium, Brass and Stainless Steel depending on the finish selection
Power: Consumption:	29 VDC < 12 mA from KNX Bus-line
Installation:	German IEC/EN 60670 In wall Box 77

2.1. Installation

2.1.1 Installation Site

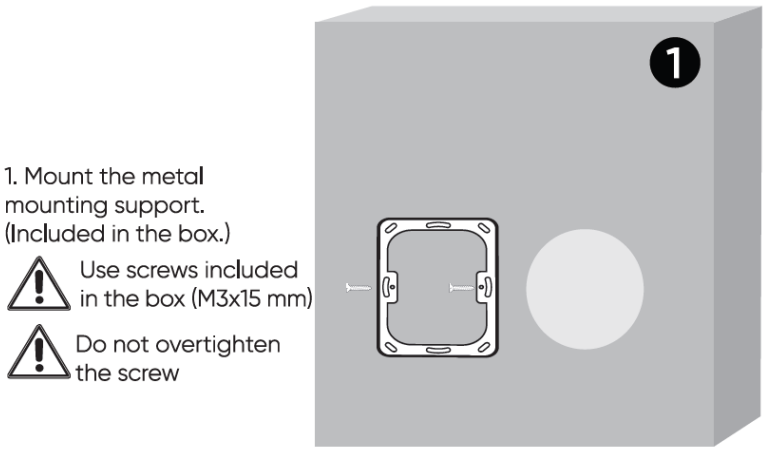


➢ The device should be positioned approximately 150 cm above the ground and 30 cm away from the door.

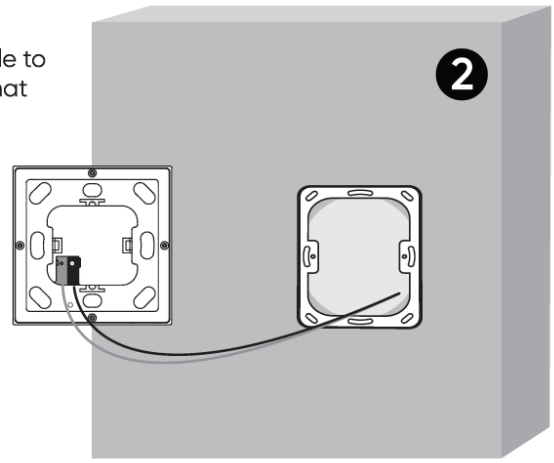
➢ The device should not be installed close to the heat source. The wall opposite the heat source will be appropriate for the installation.

➢ Contact with fluids to the device is to be avoided.

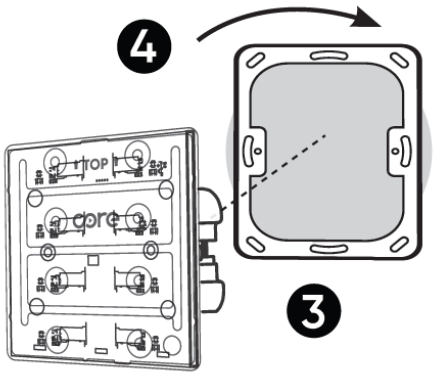
2.1.2. Mounting, Electrical Connection

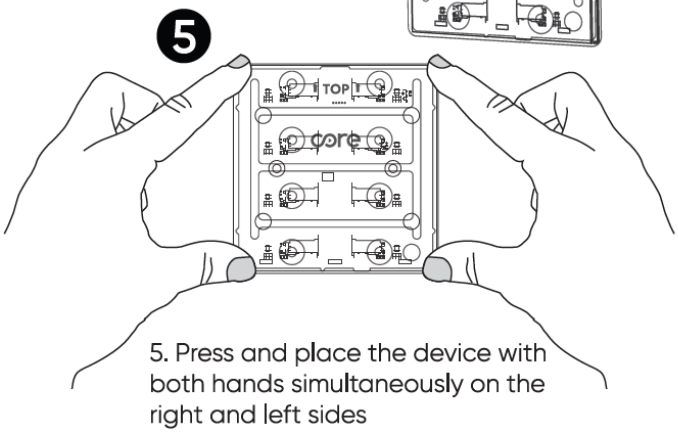


2. Connect KNX cable to the device. Check that polarity is correct.

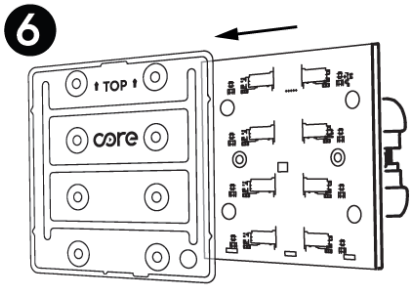


3. Place over the lower clips
4. Attach the top clips





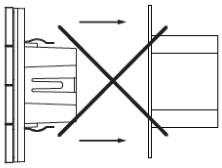
5. Press and place the device with both hands simultaneously on the right and left sides

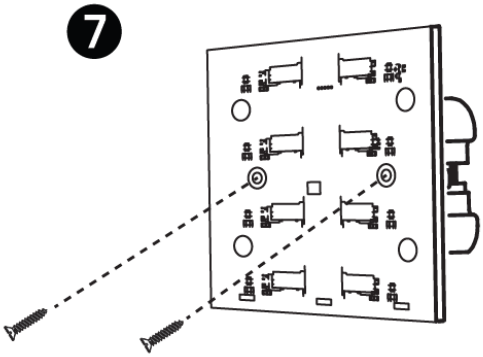


6. Remove the electronic part cover

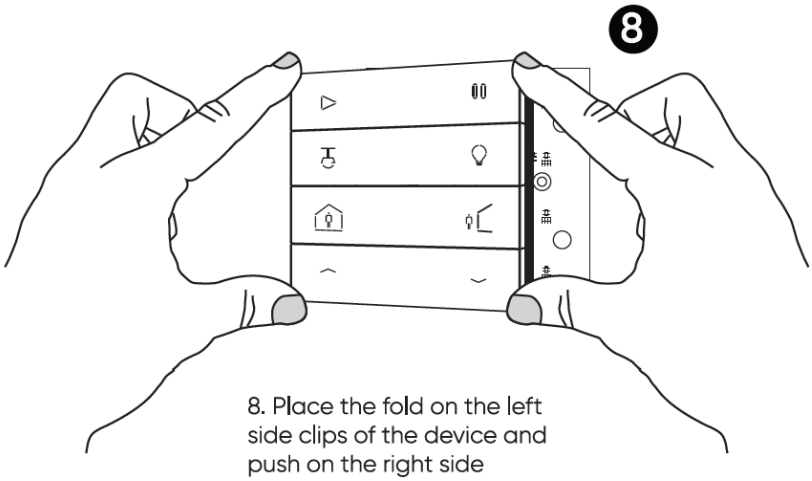
Do not throw away the screws

Pushing the device straight into the clips might damage





7. Mount the screws on the body



8. Place the fold on the left side clips of the device and push on the right side

Folds sold seperately

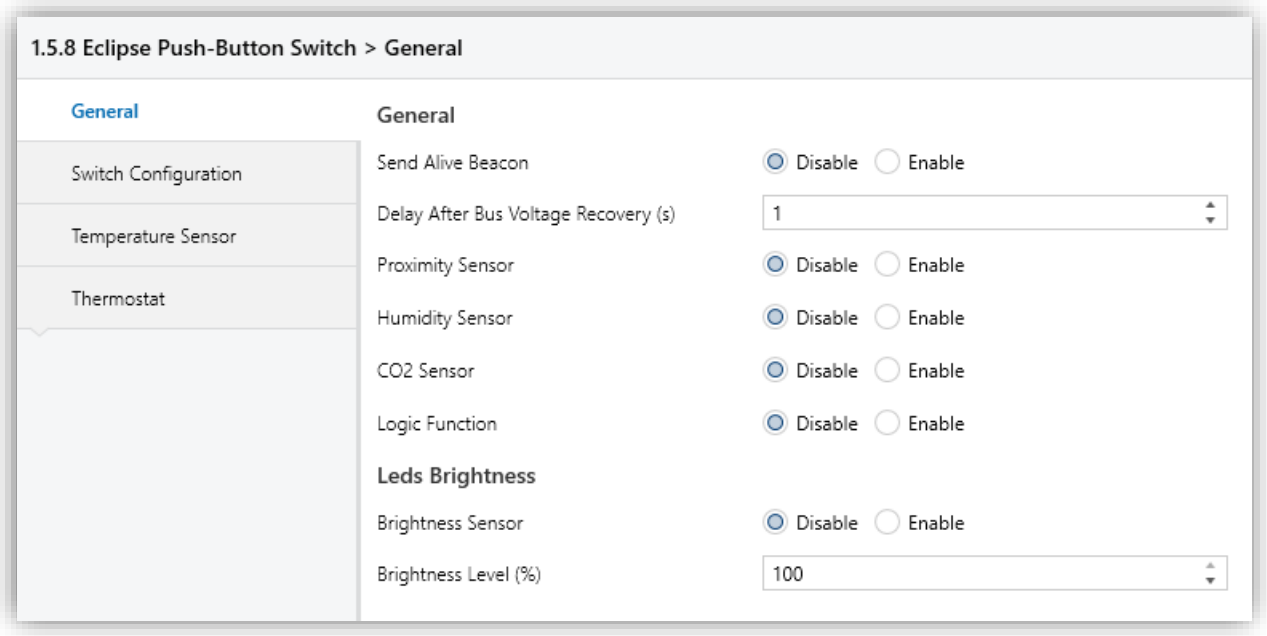
For installation video: https://www.youtube.com/watch?v=fQ1GhjV30yY&t=3s

3. ETS Parameters

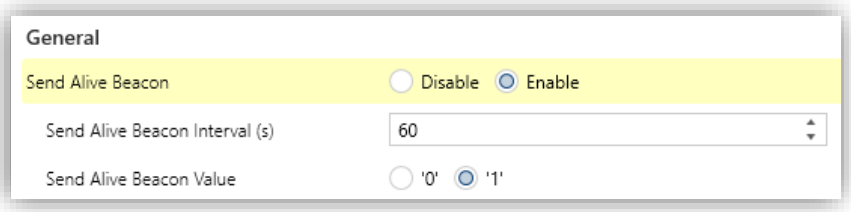
Core Eclipse Push Button Switch series are fully compatible KNX devices that must be configured and set up using the standard KNX configuration tool ETS. The ETS database for this device can be downloaded from ETS online catalogue.

For tutorial videos: https://www.youtube.com/playlist?list=PLtwbriT0bxi9VQ78KBSBaC1WMLtOtB9AN

3.1. General



SEND ALIVE BEACON



Parameter used to observe that the device and the application are running. It is disabled by default. When activated, Object Number 1 "General – Alive Beacon" will send selected value with defined time interval. [0-65535 s]

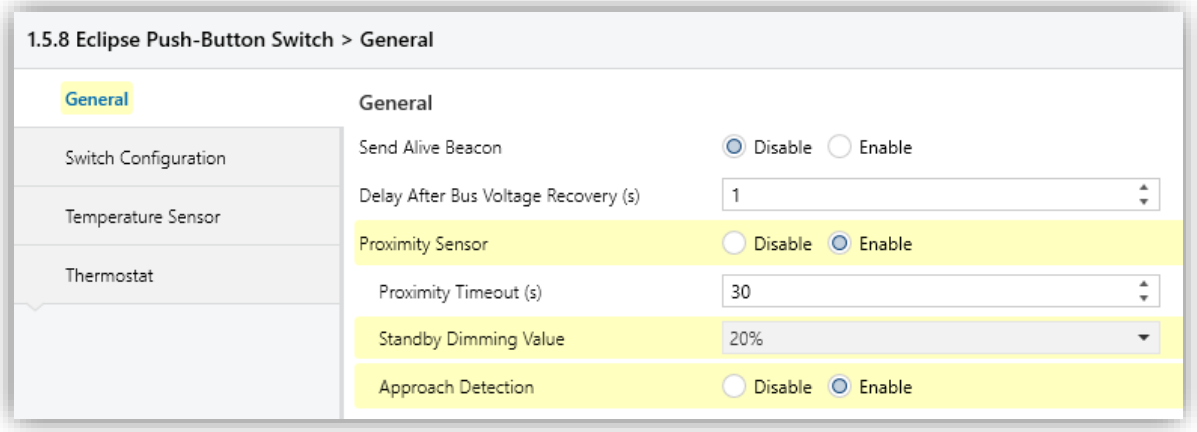
DELAY AFTER BUS VOLTAGE RECOVERY

The parameter defines the behaviour of the switch after bus power return. The delay time determines the period between bus voltage recovery and the point after which telegrams can be sent. [0-65535 s]

3.1.1 Proximity Sensor

Through the proximity sensor it is possible to keep the Eclipse Switch in a stand-by state, setting a level of brightness of the LEDs and reactivate the backlighting of the buttons only when the user approaches the switch.

When "Proximity Timeout" is over, [1-120 s] brightness of LEDs will be dimmed to "Standby Dimming Value" until next proximity approach is detected. Stand by dimming value [%0, %10, %20, %30, %40, %50]



Brightness calculation when Proximity sensor is activated.

Maximum brightness value= MBV [selected in "General" parameter tab "Leds Brightness" section.]

Standby dimming percentage= SDP [possible values: 0, 10, 20, 30, 40, 50]

Proximity sensor value= PSV [possible values: 0, 1] 0=not detected, 1=default value

Actual brightness formula:

$$\boldsymbol{Actual\ Brightness = MBV\ x\ \frac{SDP + (100 - SDP)\ x\ PSV}{100}}$$

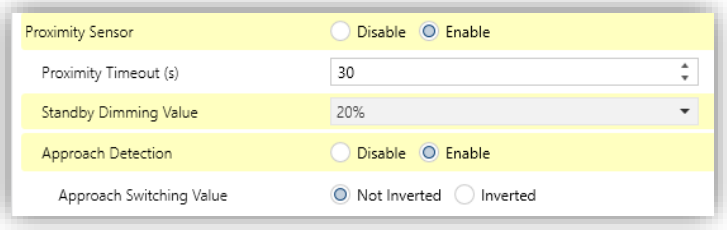
Example 1: MBV=100, SDP=20

$$\boldsymbol{Actual\ Brightness = 100\ x\ \frac{20 + (100 - 20)\ x\ 0}{100} = 20\ \%}$$

Example 2: MBV=60, SDP=20

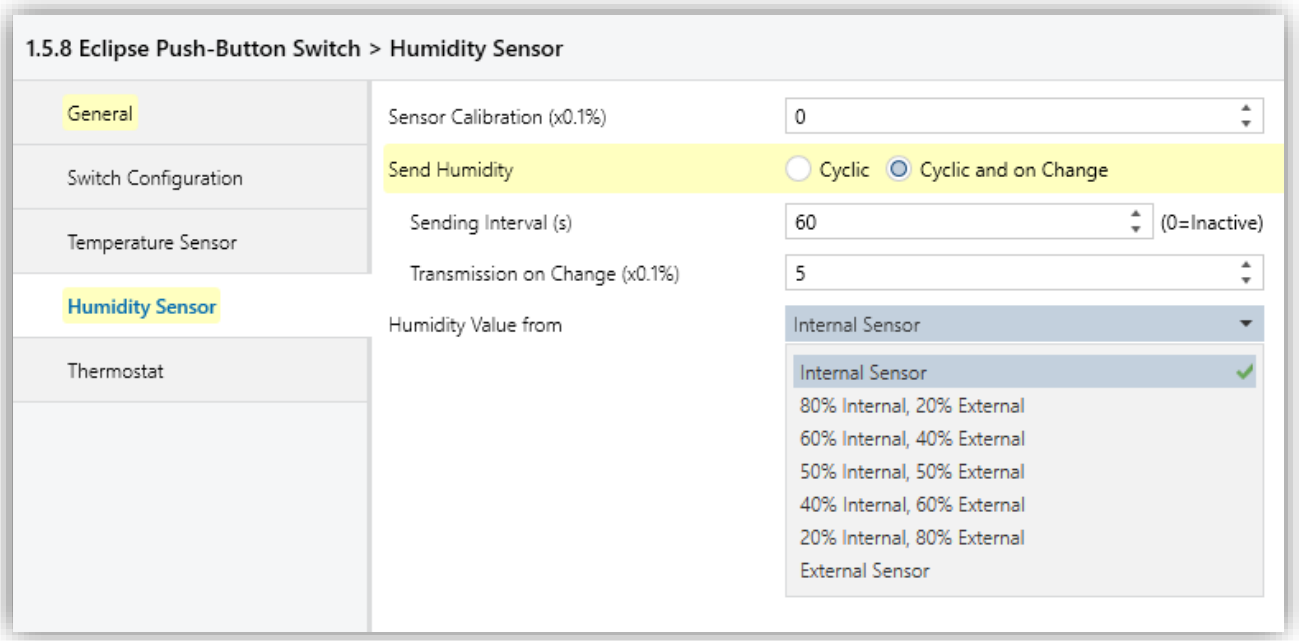
$$\boldsymbol{Actual\ Brightness = 60\ x\ \frac{20 + (100 - 20)\ x\ 0}{100} = 12\ \%}$$

Object Number 153 "Proximity – Approach Detection" can be activated by enabling "Approach Detection" parameter. Detected approach information will be sent via this object to KNX bus. Object value can be inverted. [True, false]



3.1.2. Humidity Sensor

Humidity sensor tab contains following parameters.



Sensor Calibration:

Measured humidity value can be shifted up or down by using sensor calibration value. [-32768…+32768]

Example: Assume that "10" is written to the sensor calibration box. Calculation: 10x 0.1 = 1 %, measured humidity percentage will be increased + 1%. If "-10" is written to the sensor calibration box. Calculation: -10x 0.1 =- 1 %, measured humidity percentage will be decreased - 1%.

Send Humidity:

Object Number 149 "Humidity – Internal Value" can be sent cyclically or by change of measured humidity.

Sending interval time [0-65535 s]

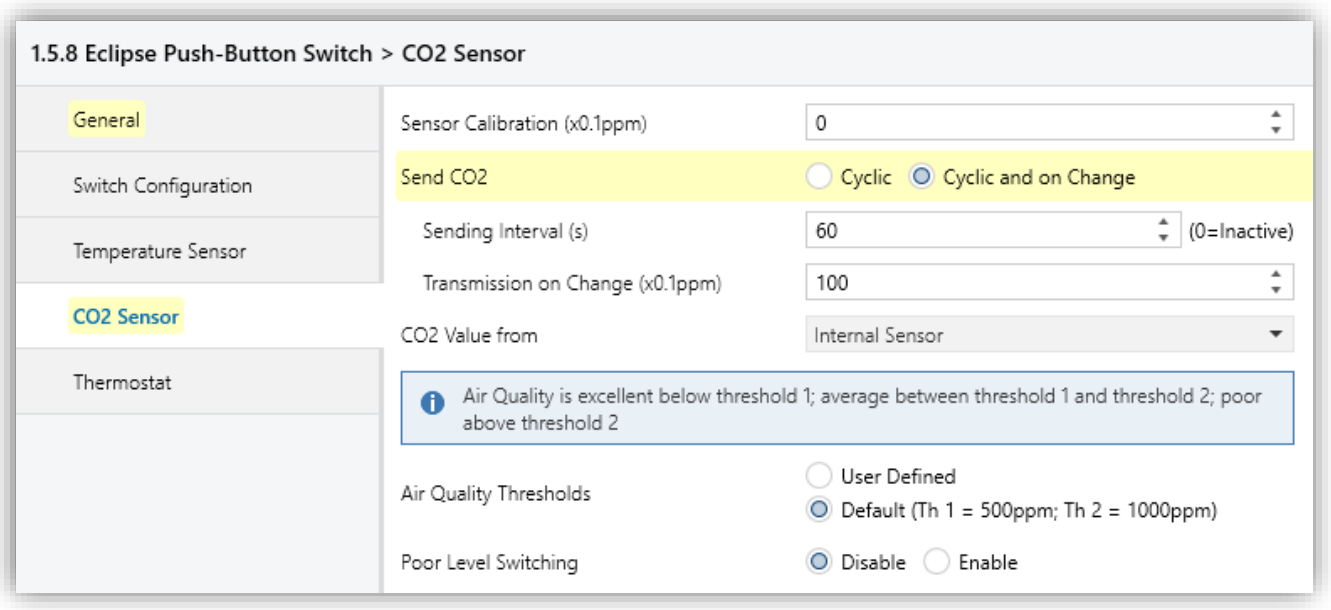
Transmission on change [0-255]

Humidity value from:

Humidity value can be received by an external humidity sensor directly or partially according to selected percentage.

3.1.3. Co2 Sensor

CO^2 sensor tab contains following parameters.



Sensor Calibration:

Measured CO^2 value can be shifted up or down by using sensor calibration value. [-32768…+32768]

Example: Assume that "10" is written to the sensor calibration box. Calculation: 10x 0.1 = 1 ppm, measured CO^2 ppm will be increased "+ 1%". If "-10" is written to the sensor calibration box. Calculation: -10x 0.1 =- 1 %, measured CO^2 ppm will be decreased "-1%".

Send CO^2:

Object Number 151 "CO^2– Internal Value" can be sent cyclically or by change of measured ppm.

Sending interval time [0…**60**…65535 s]

Transmission on change [0…**100**…255]

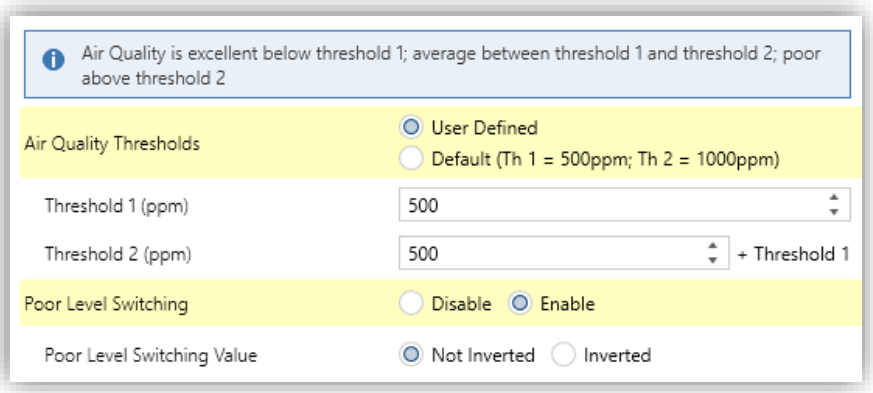
CO^2 value from:

CO^2 value can be received from an external CO^2 sensor directly or partially according to selected percentage.

Air Quality Thresholds:

Air quality is excellent below threshold 1, average between threshold 1 and threshold 2; poor above threshold 2. Threshold values can be defined by user.

Excellent ← **Threshold 1** → Average ← **Threshold 2** → Poor

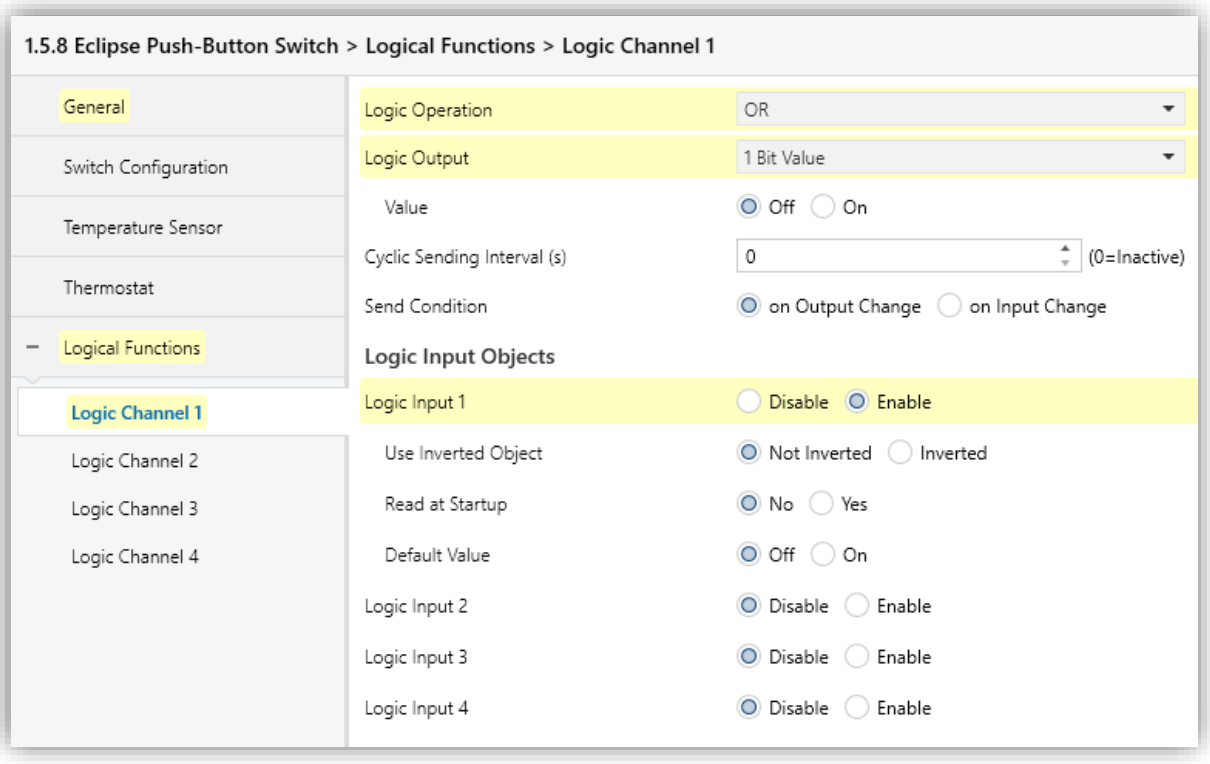


Poor Level Switching:

Object Number 152 "CO^2– Poor Level Switching" can be activated. Object will send "Air Quality is Poor - Alarm" when air quality level is higher than "Threshold 2". Object value can be inverted. [True, false]

3.1.4. Logic Function

Logic function tab contains "Logic channels (4)" which are available with three different logic gates. [OR, AND, XOR]



Logic operation: [OR, AND, XOR]

Logic Output: 1 bit
1 byte unsigned value
1 byte signed value
1 byte percentage
2 byte unsigned value
2 byte signed value
2 byte floating value

Send condition:

[On output change] Output object sends on output change.

[On input change] Output object sends on input change.

Logic Input Objects: [Logic input 1-4]

Each logic channel has a maximum of 4 logic input objects.

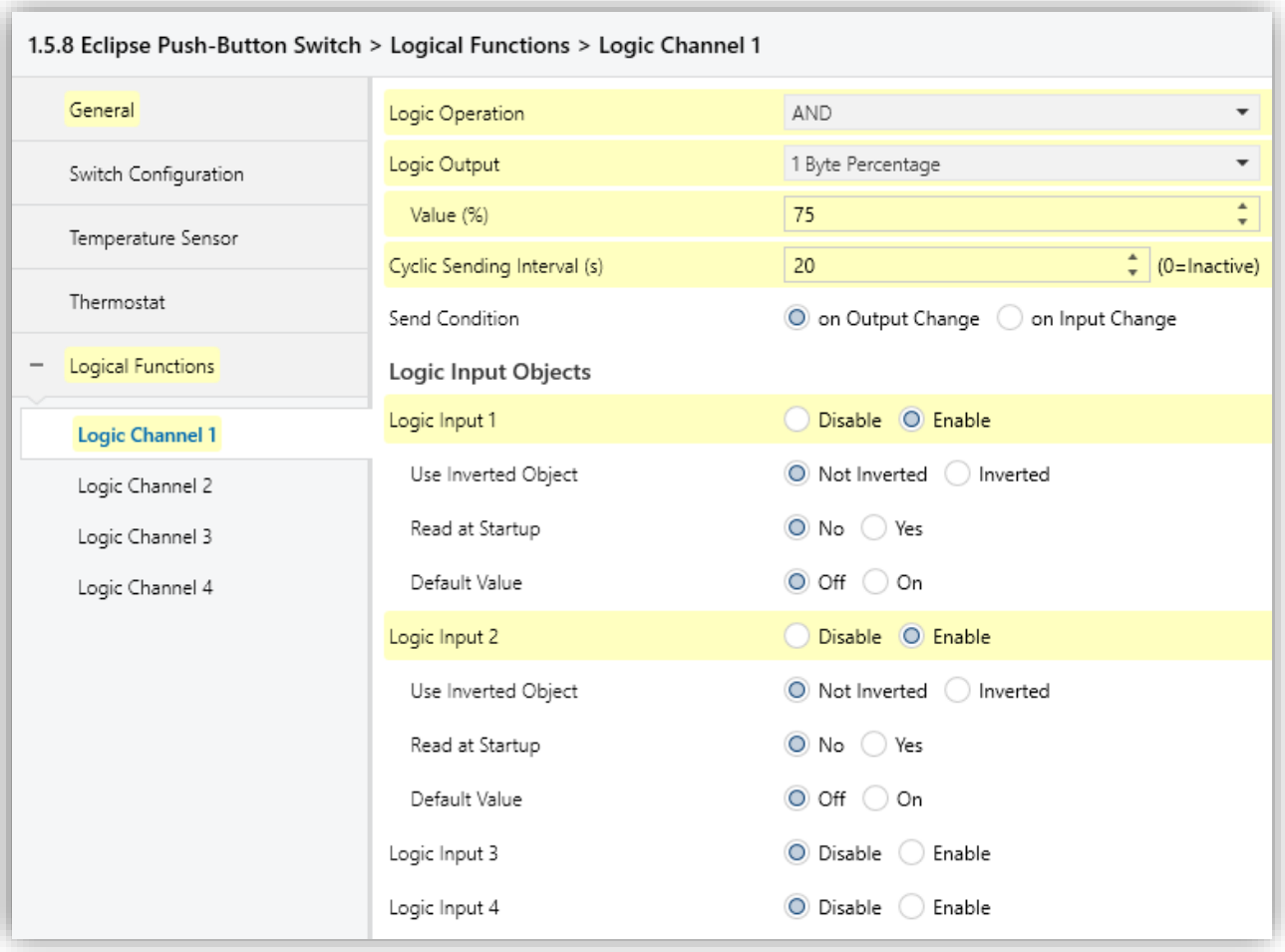
Logic input 1 [Use inverted Object]: Object value will be inverted before the processing in the logic gate.

Logic input 1 [Read at Start-up]: Object will be read out after switch is power return.

Logic input 1 [Default value]: Defines default value of the input object.

Example:

"Input 1" and "Input 2" objects are defined for "AND" logic operation. If both objects are "True" at the same time then output object will send "1 byte percentage" %75 value for every 20 seconds periodically.

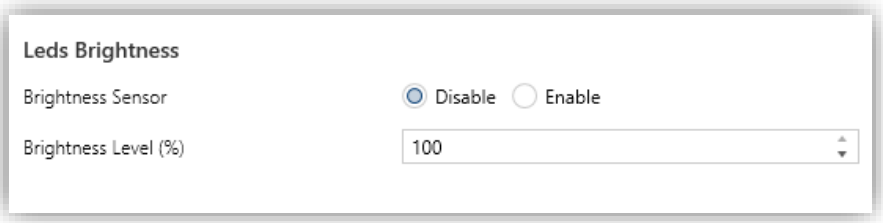


Address	Name	Description	Central	Pass	Data Type	Length	No.	Last Value
0/7/3	Input 1		No	No	boolean	1 bit	1	$01 | True
0/7/4	Input 2		No	No	boolean	1 bit	1	$01 | True
0/7/5	Output (1 Byte)		No	No	percentage (0..100%)	1 byte	1	$BF | 75%

3.1.5. Leds Brightness

Brightness Sensor [Disable]

Brightness level can be defined between %0 - %100 for LEDs when brightness sensor is disabled.



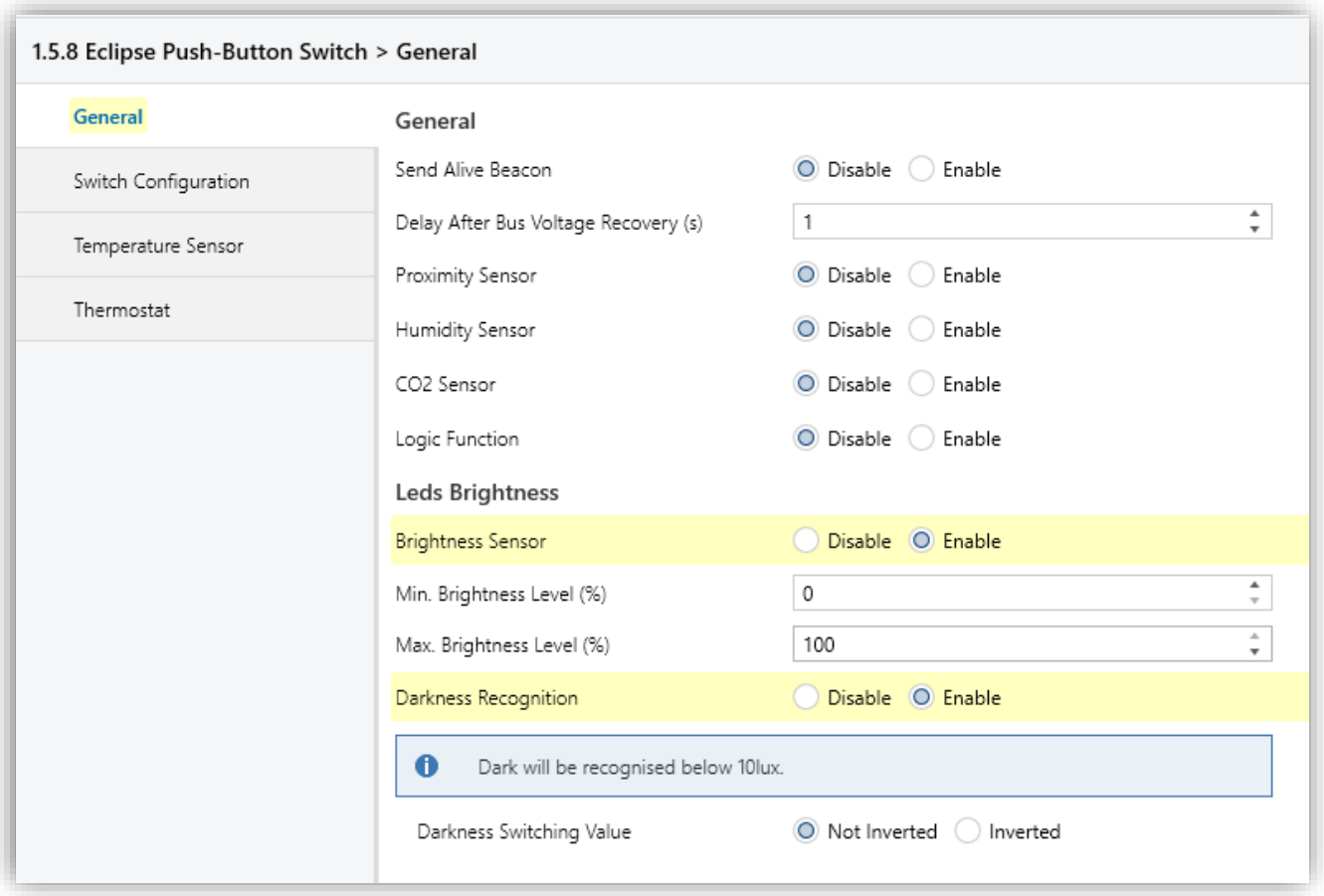
Brightness Sensor [Enable]

Eclipse Switch adjusts brightness of LEDs according to ambient light level which is measured by built-in light sensor.

"Brightness sensor" can be enabled under "General" parameter tab. Minimum and maximum brightness levels can be defined here. LEDs brightness will be adjusted between these two percentage levels.

Min Brightness Value can be defined between %0 - %50.

Max Brightness Value can be defined between %50 - %100.



Brightness calculation when Brightness sensor is enabled.

Maximum Brightness Value= **Max** possible values: [50-100]

Brightness value for darkness (min value) = **Min** possible values: [0-50] default=0

Ambient sensor value= **AS** [0-100 lux] 0=10 lux, 100=X lux

Actual brightness formula:

$$\boldsymbol{Actual\ Brightness = Min + \frac{(Max - Min)\ x\ AS}{100}}$$

Example 1: Max=80, Min=30, AS=30

$$\boldsymbol{Actual\ Brightness = 30 + \frac{(80 - 30)\ x\ 10}{100} = 45\ \%}$$

Example 2: Max=80, Min=30, AS=70

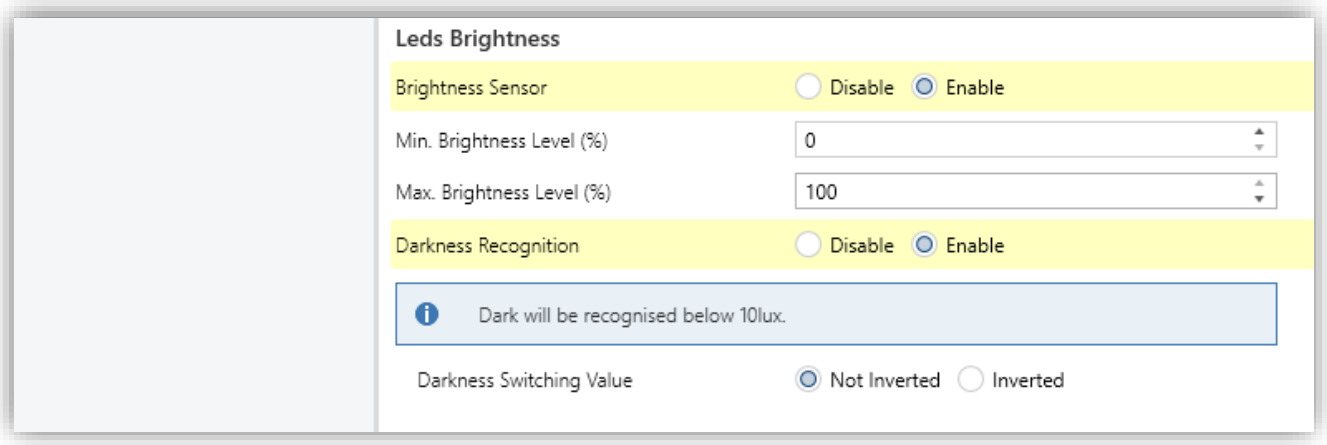
$$\boldsymbol{Actual\ Brightness = 30 + \frac{(80 - 30)\ x\ 70}{100} = 65\%}$$

MBV [50-100]	Y [0-50]	AS [0-100]	Actual Brightness
80	30	0	30%
80	30	10	35%
80	30	20	40%
80	30	30	45%
80	30	40	50%
80	30	50	55%
80	30	60	60%
80	30	70	65%
80	30	80	70%
80	30	90	75%
80	30	100	80%

Table 1 – Change of Actual Brightness according to ambient light level

Darkness Recognition

Object Number 154 "Ambient – Darkness Switching Value" can be activated by enabling "Darkness Recognition" parameter. If measured lux value is less than 10 lux, darkness will be recognised and transmitted via this object to KNX bus. Object value can be inverted. [True, false]

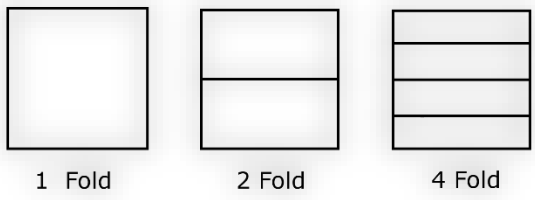


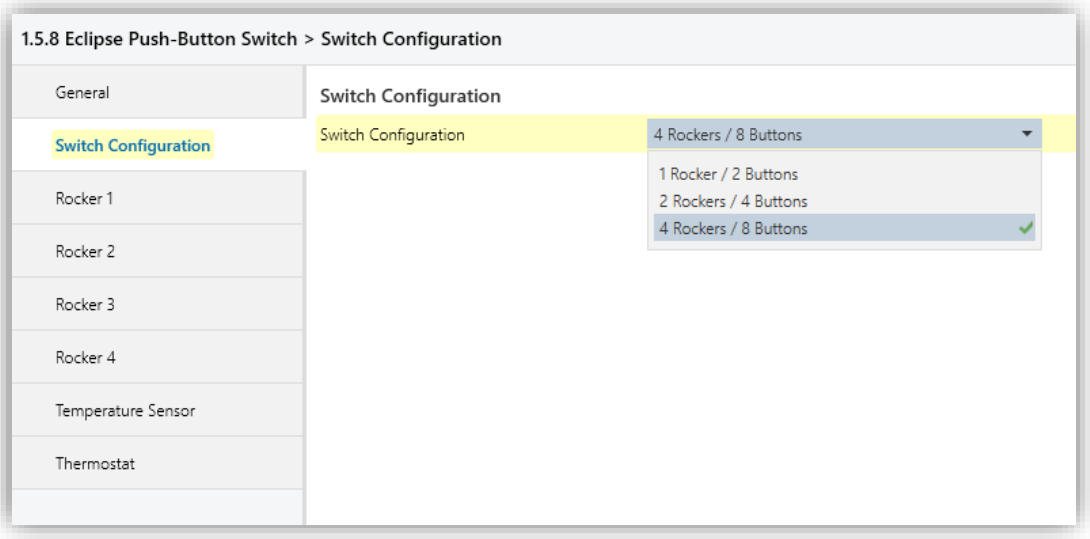
Note: If "Brightness Sensor" is enabled at the same time with "Proximity Sensor", brightness value of LEDs will change accordingly to the formula below.

$$\boldsymbol{Actual\ Brightness} = (\boldsymbol{Min} + \frac{(\boldsymbol{Max} - \boldsymbol{Min})\ \boldsymbol{x}\ \boldsymbol{AS}}{\boldsymbol{100}})\ \mathbf{x}\ \frac{\boldsymbol{SDP} + (\boldsymbol{100} - \boldsymbol{SDP})\ \boldsymbol{x}\ \boldsymbol{PSV}}{\boldsymbol{100}}$$

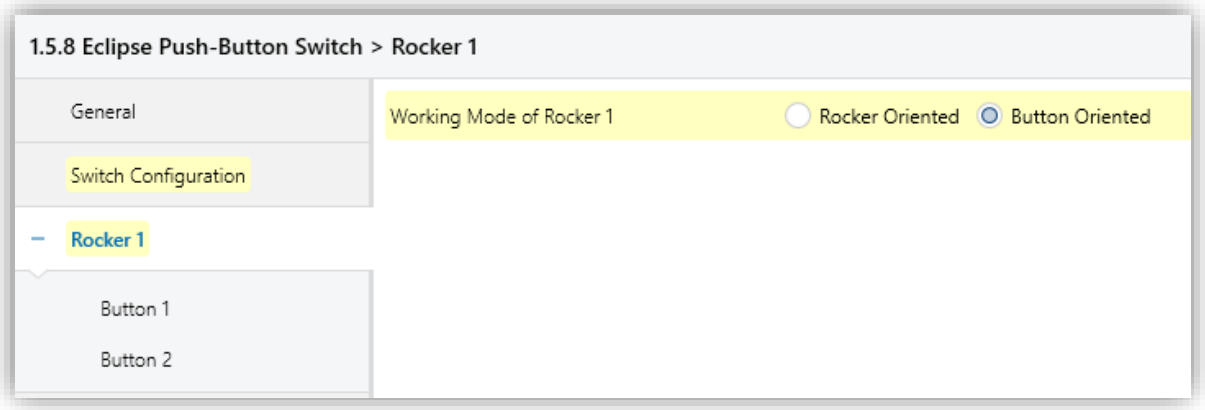
3.2. Switch Configuration

Select rocker/fold count for Eclipse switch. [1, 2, 4]

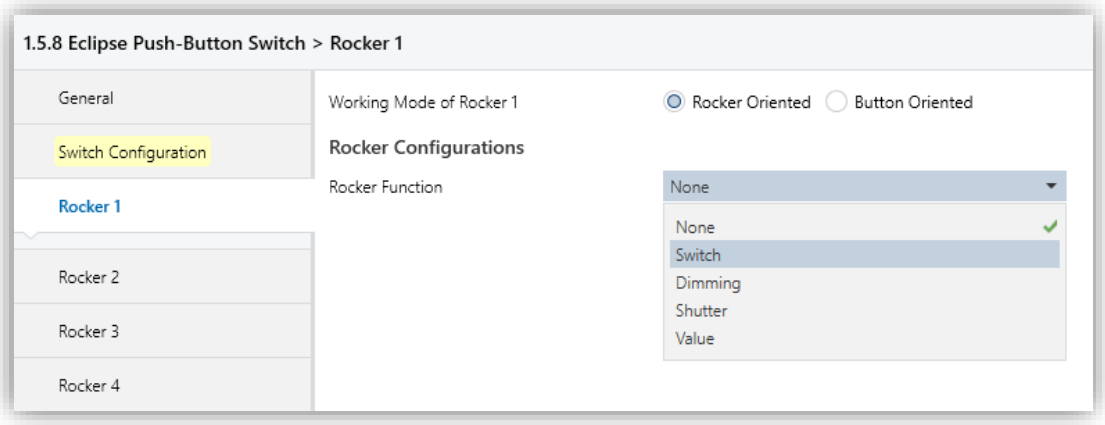




Two working modes are available for each rocker. [Rocker oriented, Button Oriented]

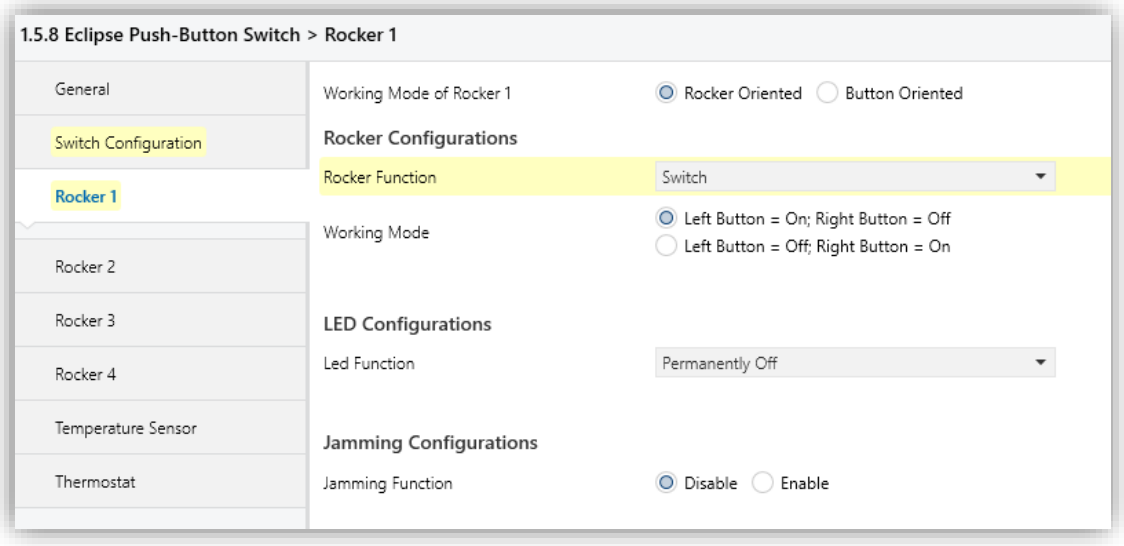


Rocker oriented functions: [Switch, Dimming, Shutter, Value]



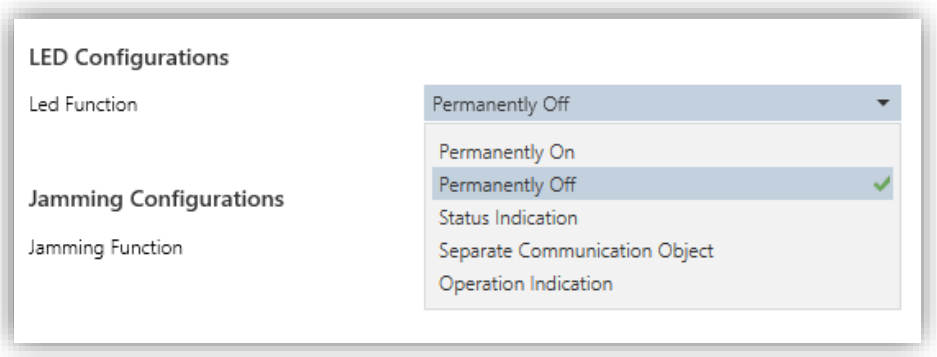
3.2.1. Rocker Oriented [Switch]

Working mode is selectable for left and right buttons. [Left Button = ON; Right Button=OFF]

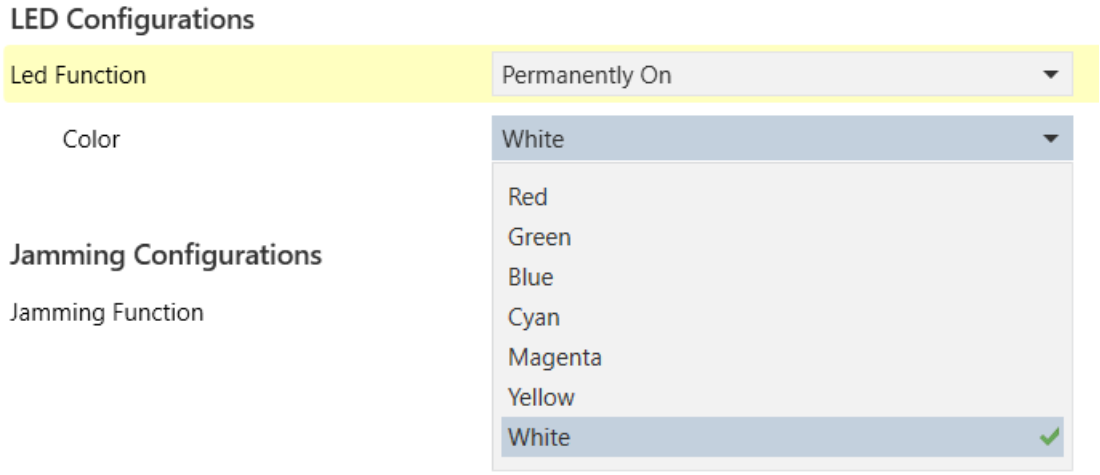


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

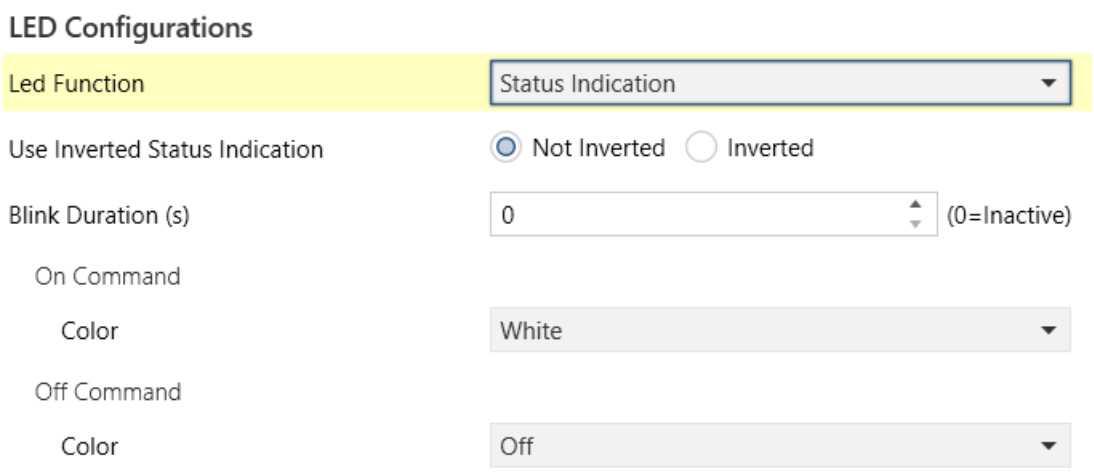


Led Function [Permanently OFF]: LED is always OFF.

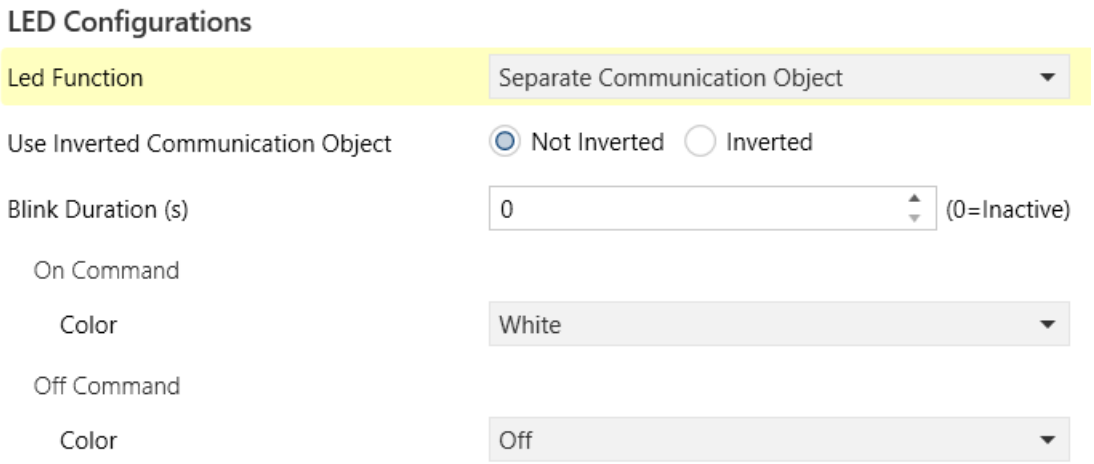
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

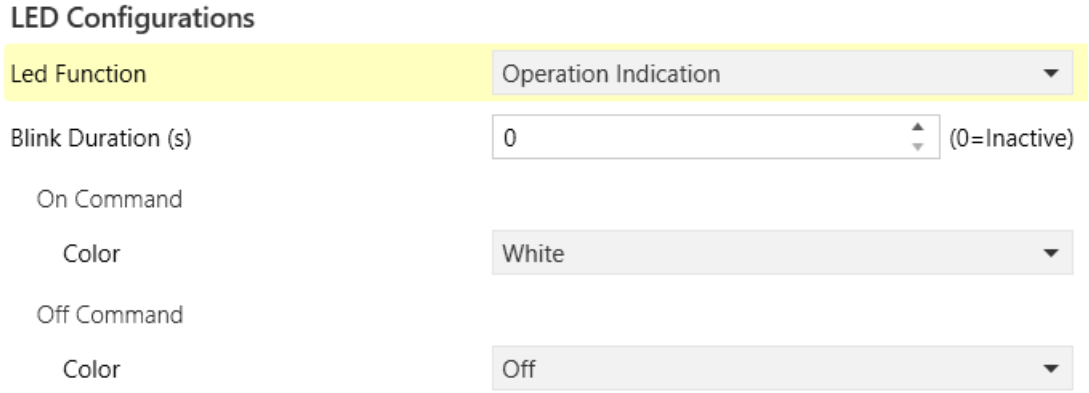


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



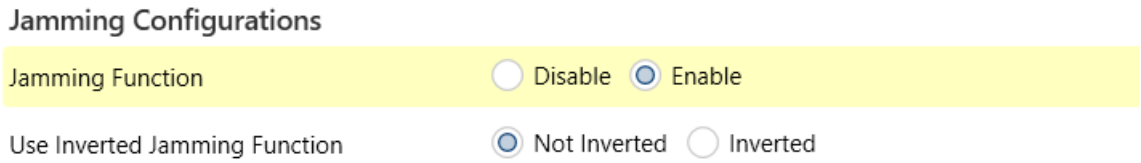
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.2. Rocker Oriented [Dimming]

Working mode is selectable for left and right buttons. [Left Button = ON/Brighter; Right Button=OFF/Darker]

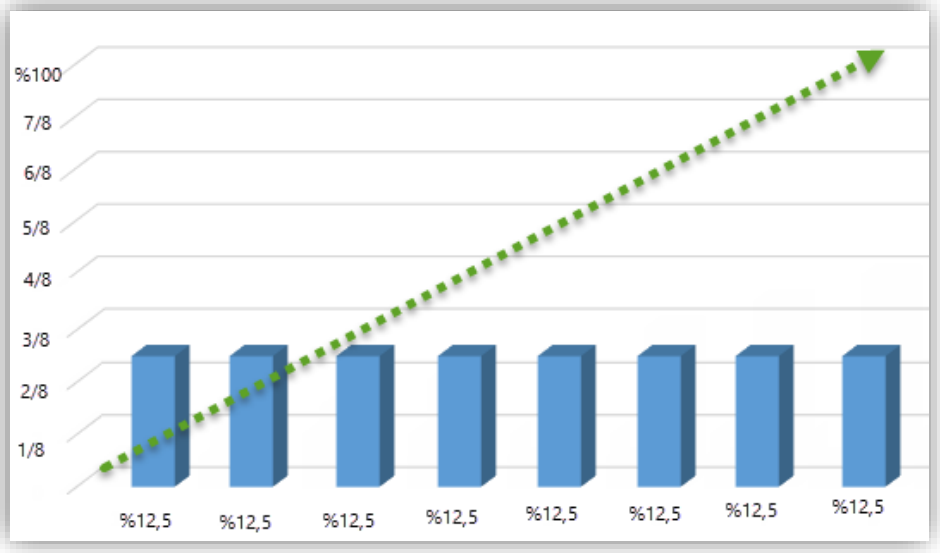
Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

As default; 100 ms x 10=1000 ms (1 second)

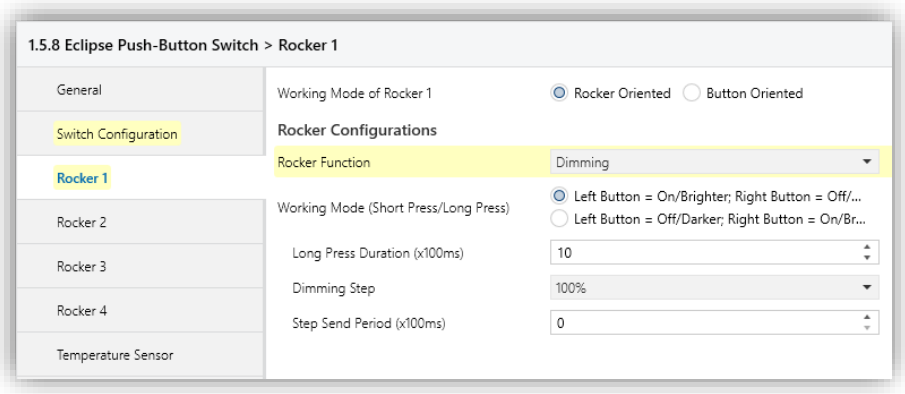
Switch will start to send dimming up/down commands after each press longer than "1 second".

Dimming Step: Dimming step percentage can be changed to specify the maximum dimming step width of a dimming telegram. With a dimming message, you can dim by a maximum of X %.

(%100 option represents "Start-stop" dimming function. Other percentage values correspond to "step dimming function".)

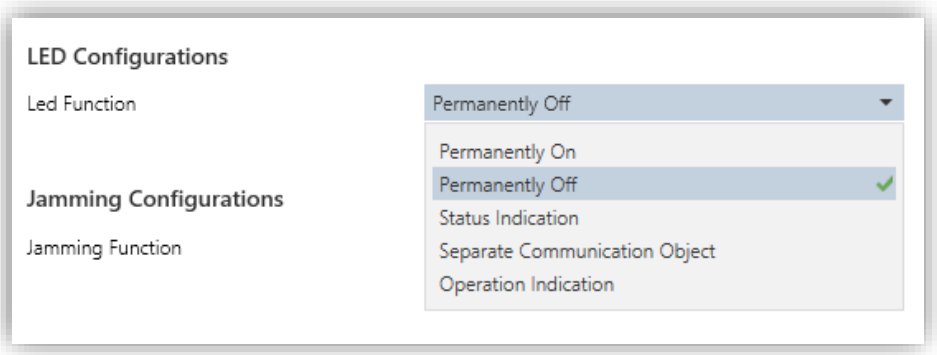


Step Send Period: Defines time interval between two dimming step commands.

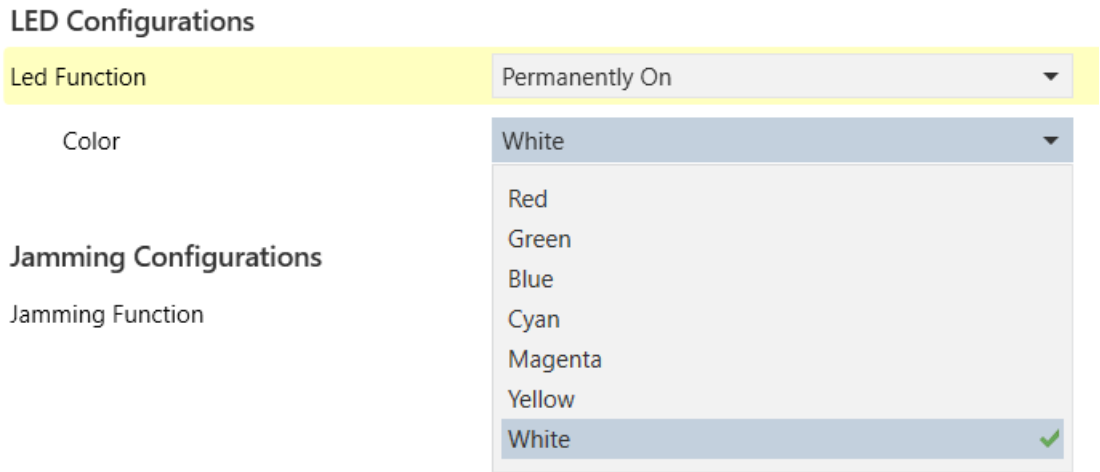


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

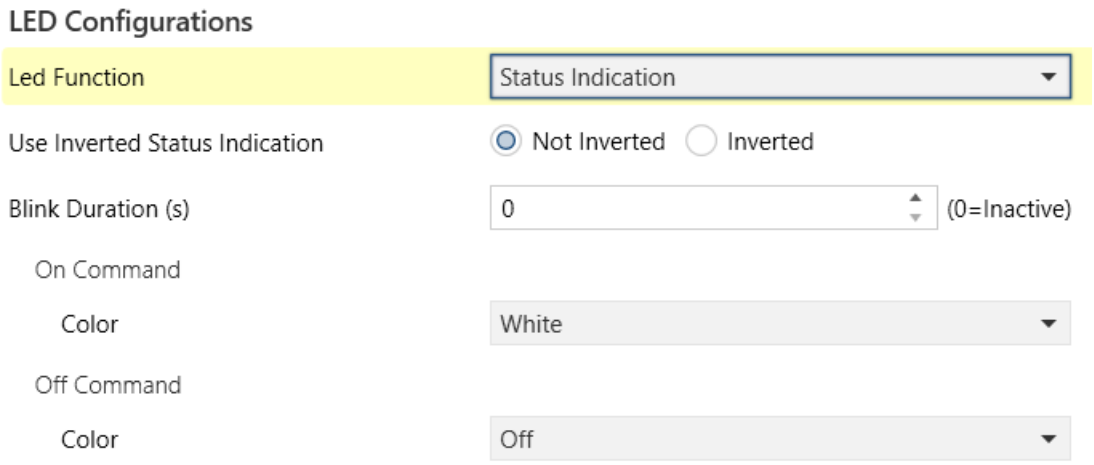


Led Function [Permanently OFF]: LED is always OFF.

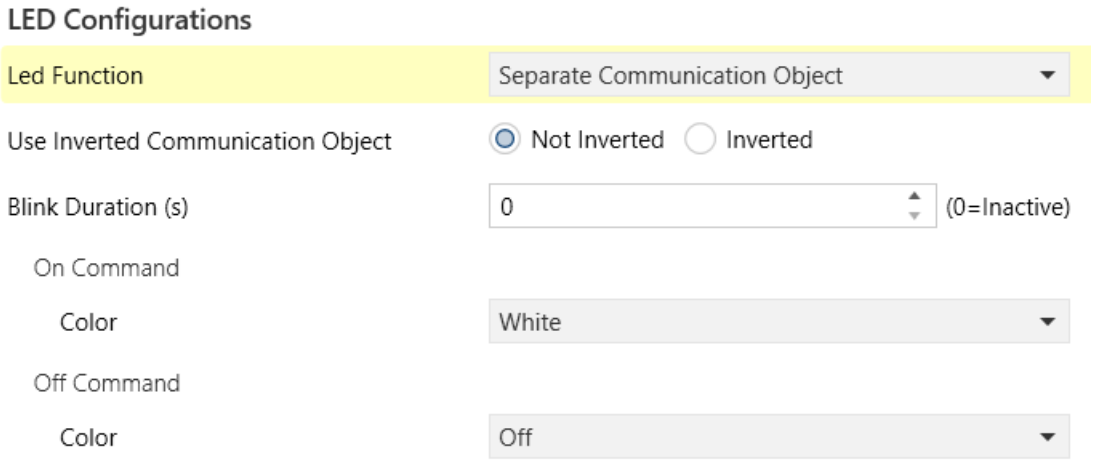
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

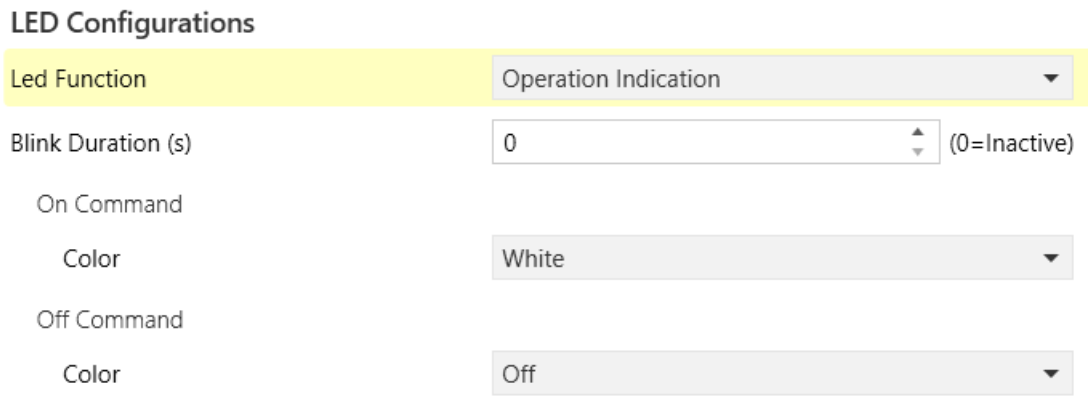


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



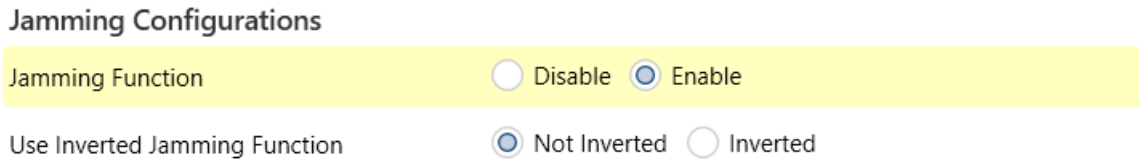
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



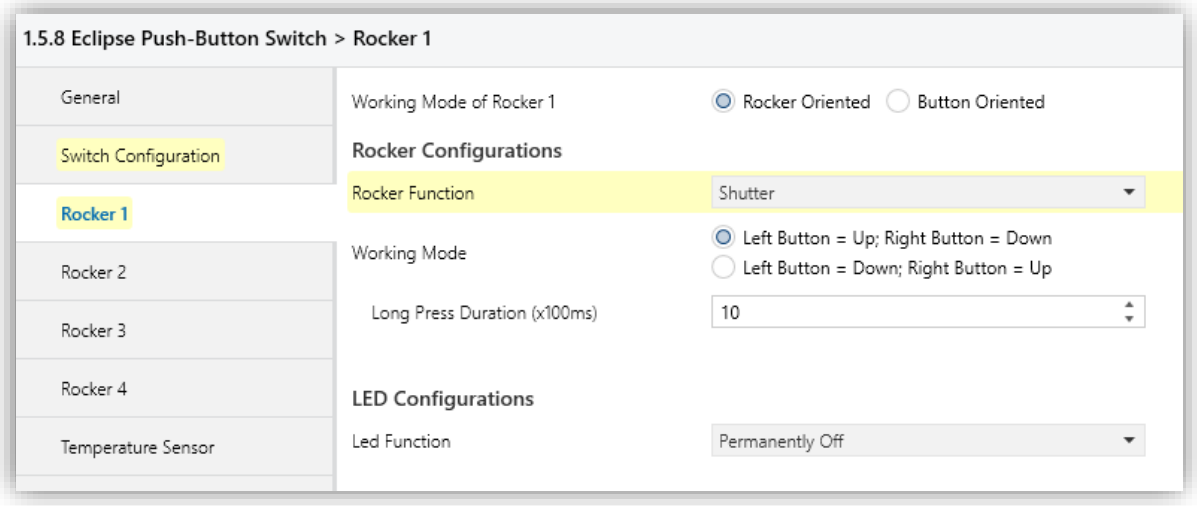
3.2.3. Rocker Oriented [Shutter]

Working mode is selectable for left and right buttons. [Left Button = UP; Right Button=DOWN]

Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

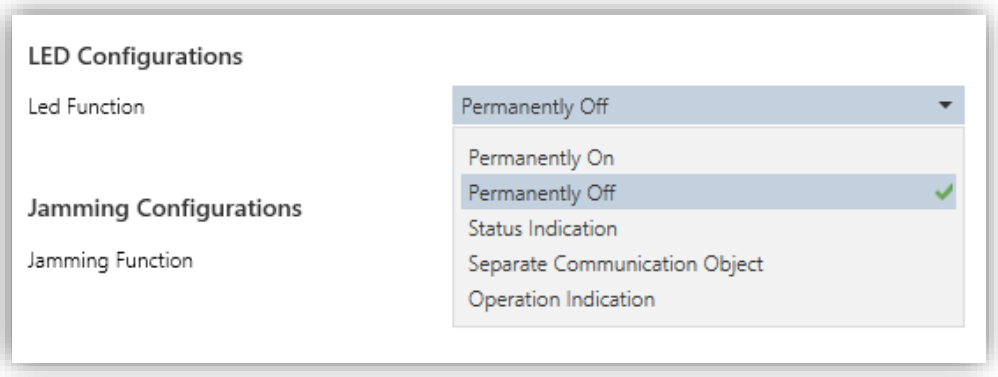
As default; 100 ms x 10=1000 ms (1 second)

Switch will start to send move up/down commands after each press longer than "1 second". Switch will send Step/Stop command on each short press,

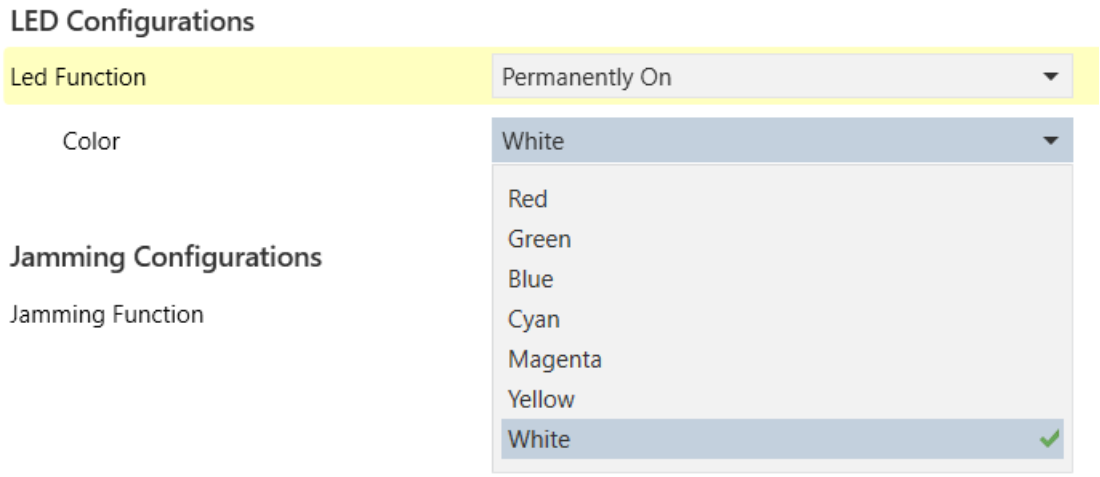


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

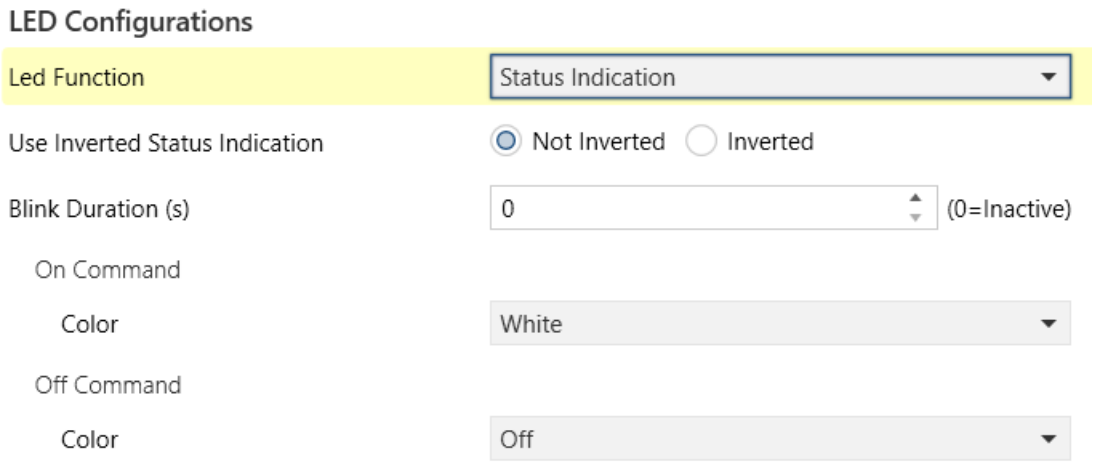


Led Function [Permanently OFF]: LED is always OFF.

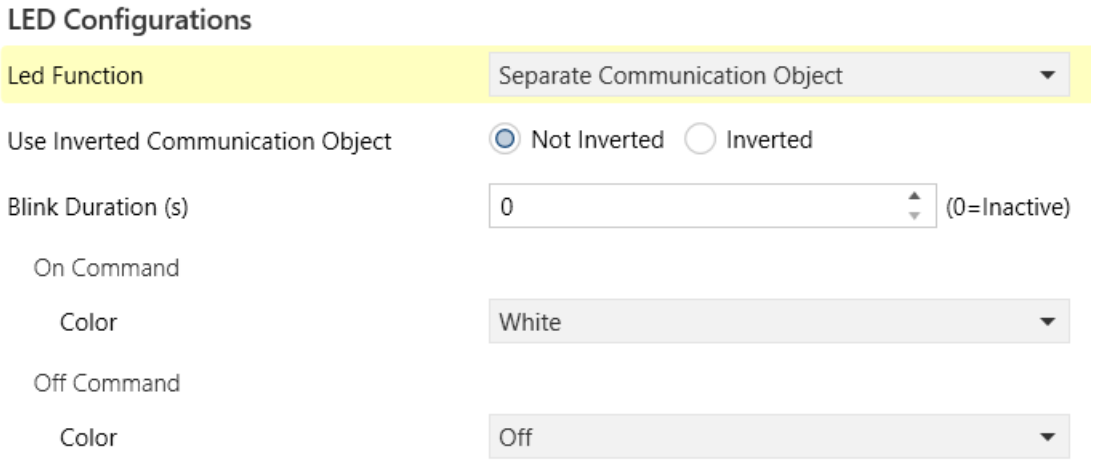
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

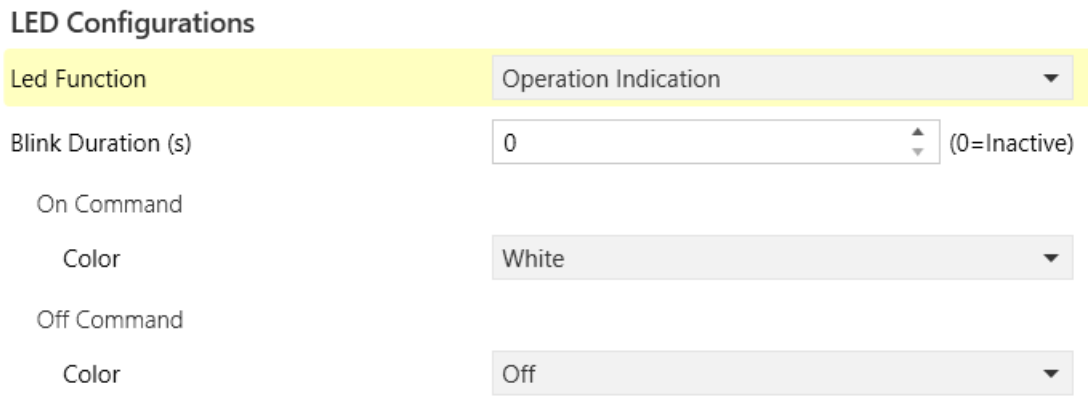


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



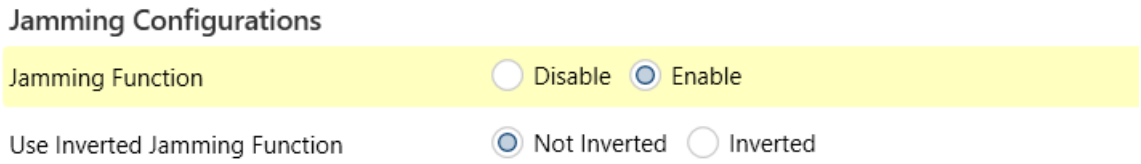
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

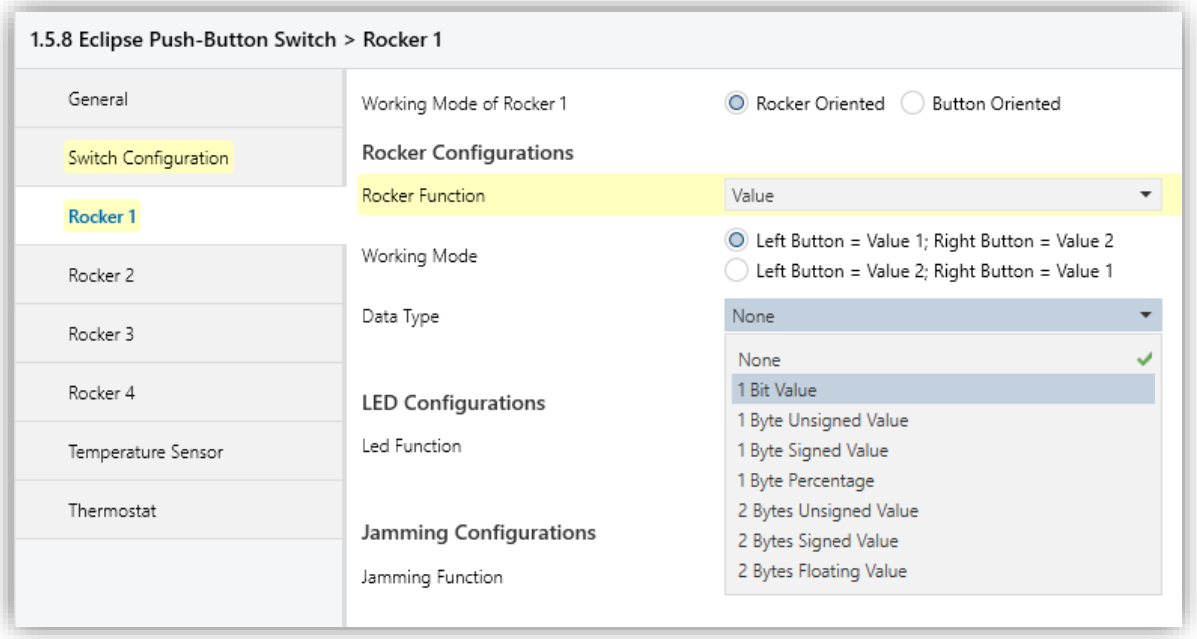
Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.4. Rocker Oriented [VALUE]

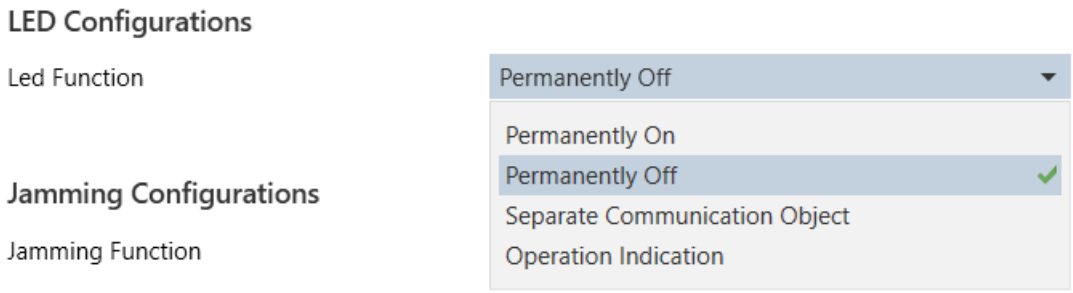
Working mode is selectable for left and right buttons. [Left Button = VALUE 1; Right Button= VALUE 2]

Selectable data types:
- 1 bit value
- 1 byte Unsigned Value
- 1 Byte Signed Value
- 1 Byte Percentage
- 2 Byte Unsigned Value
- 2 Byte Signed Value
- 2 Bytes Floating Value

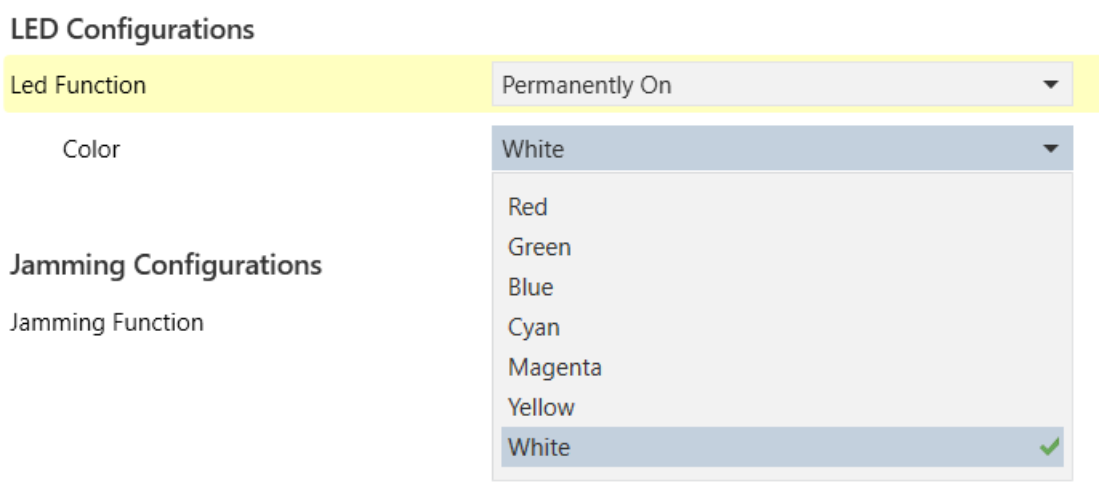


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.

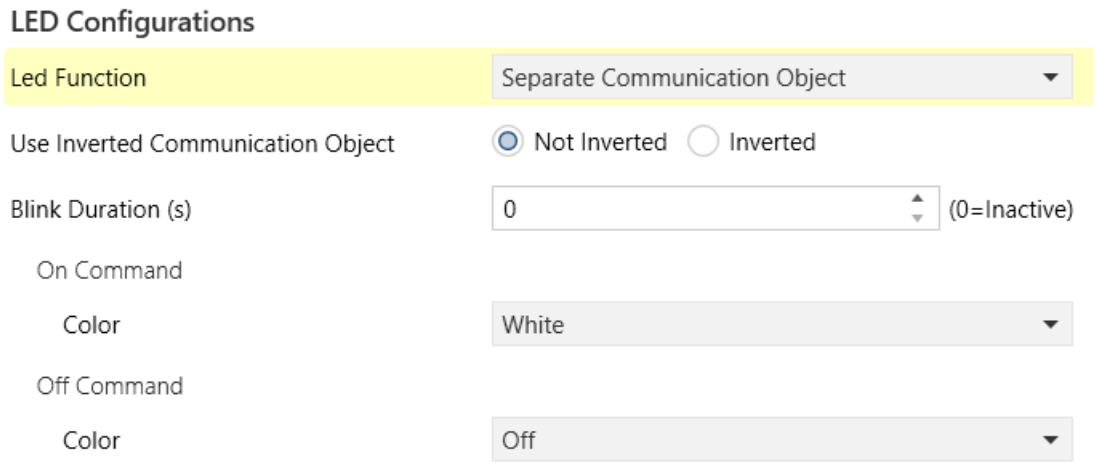


Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]



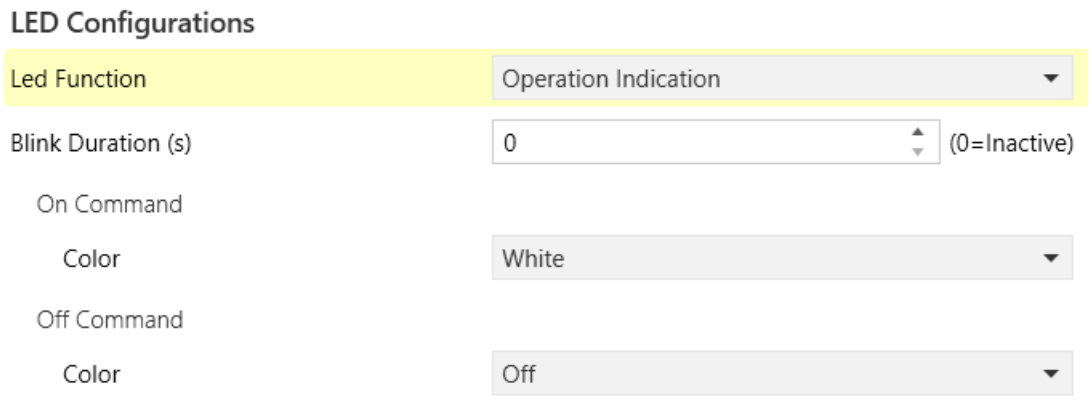
Led Function [Permanently OFF]: LED is always OFF.

Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



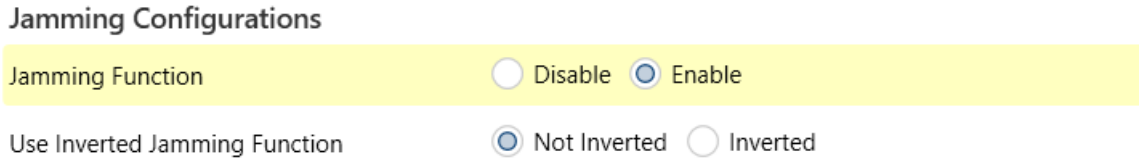
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

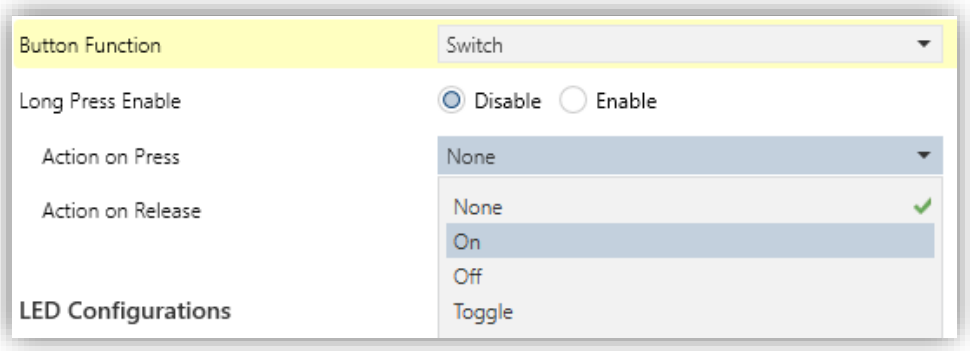
Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.5. Button Oriented [Switch]

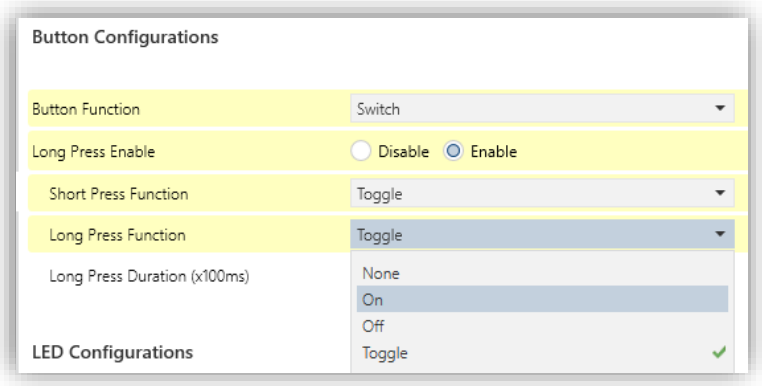
Action on press: [On, Off, Toggle] selected data will be sent to KNX bus for each press of button.

Action on release: [On, Off, Toggle] selected data will be sent to KNX bus for each release of button.



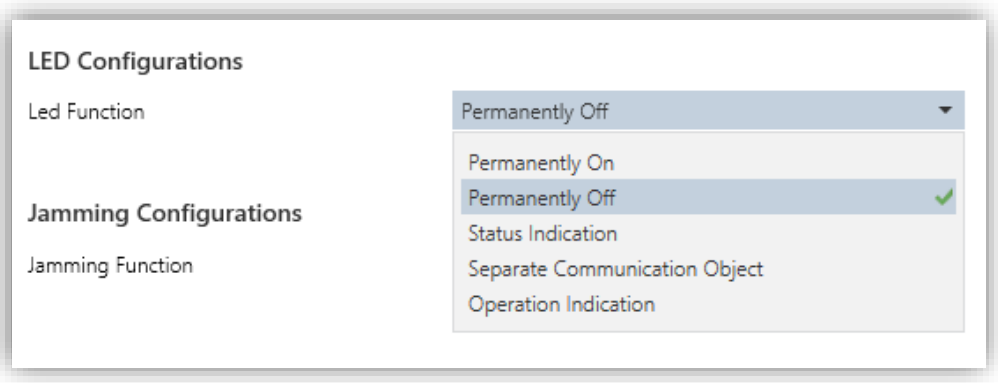
Long press function can be activated. Disabled as default.

ON, Off, Toggle commands can be sent separately using short and long press functions.

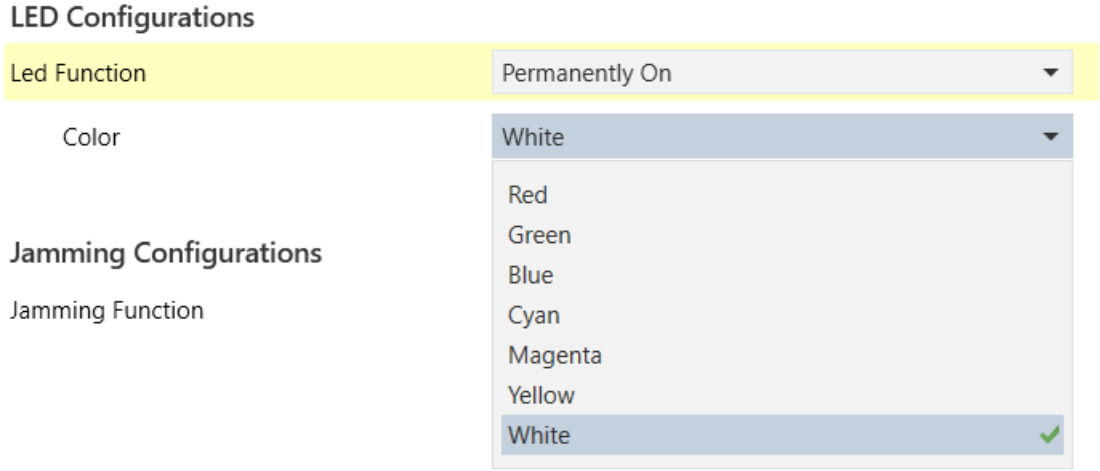


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

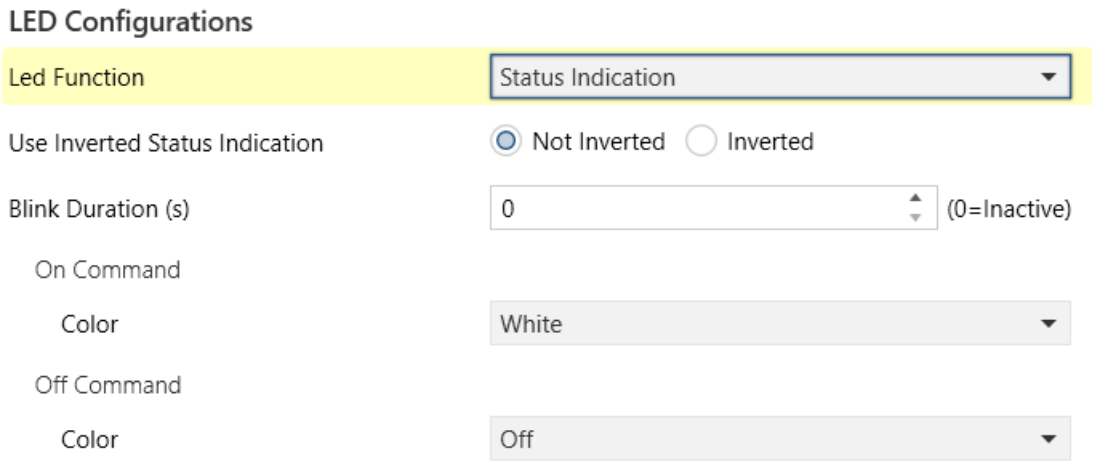


Led Function [Permanently OFF]: LED is always OFF.

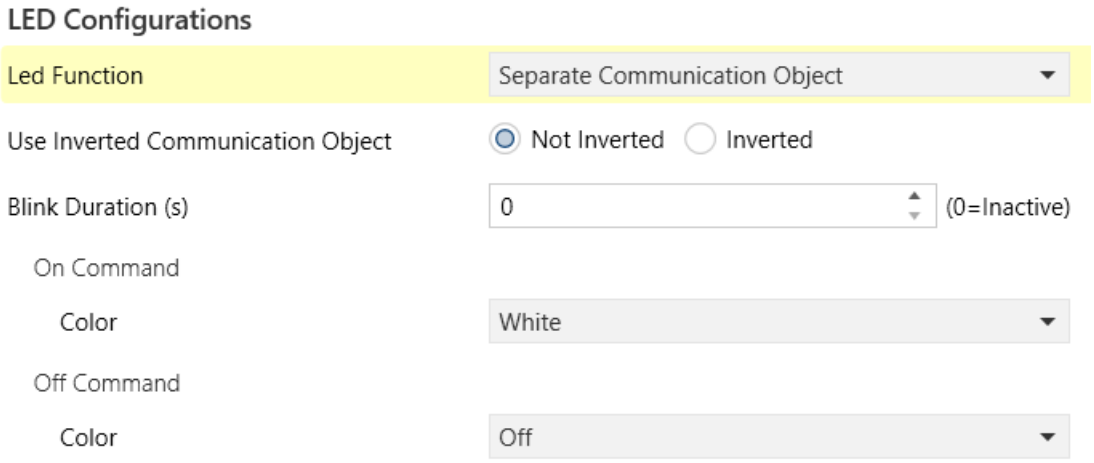
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

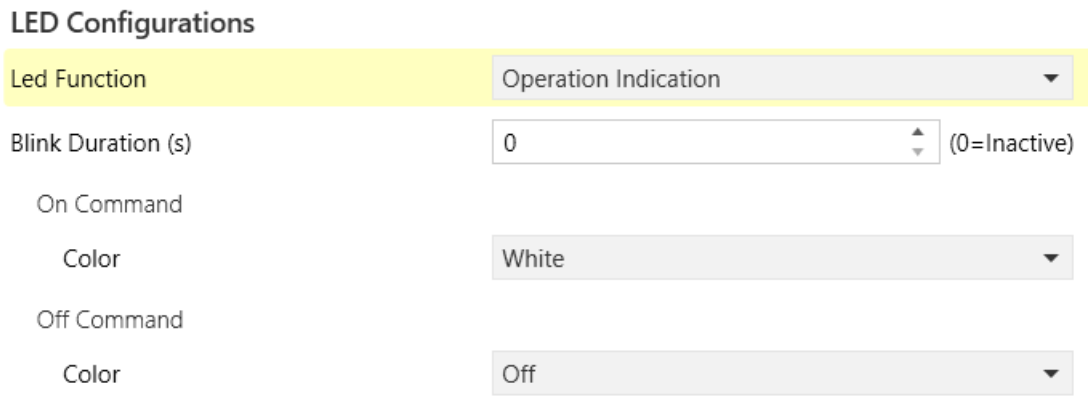


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



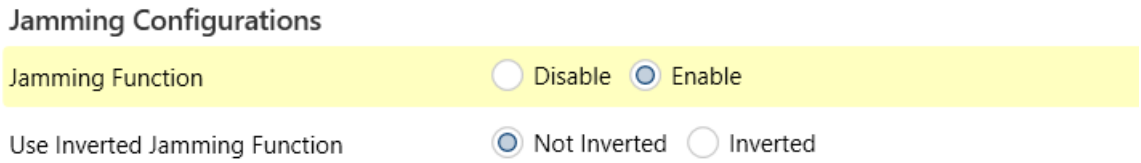
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



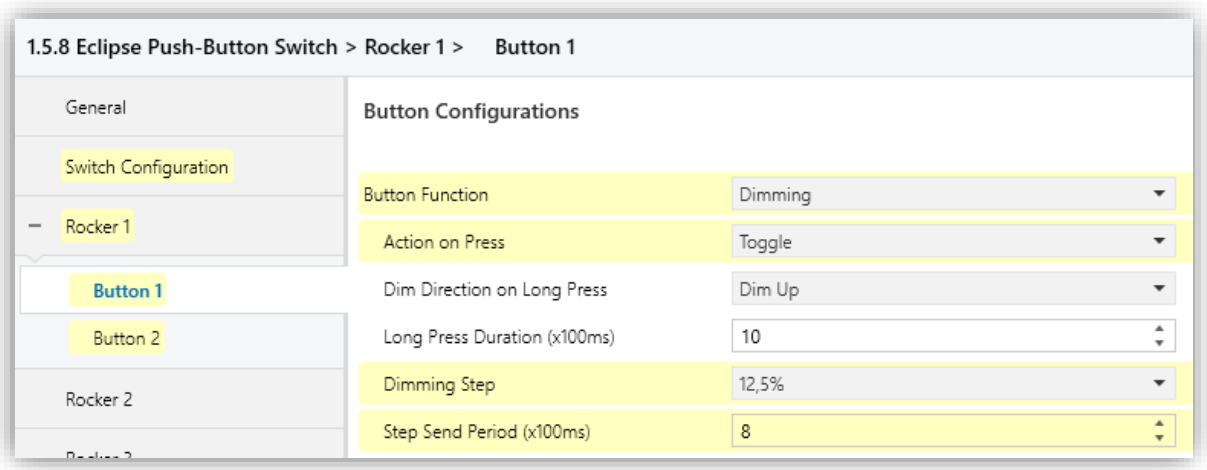
Jamming Configurations

Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.6. Button Oriented [Dimming]

"Action on press" can be selected for ON, OFF, TOGGLE commands. Using Long press function, Dim direction is changeable for UP, DOWN, UP/DOWN commands.



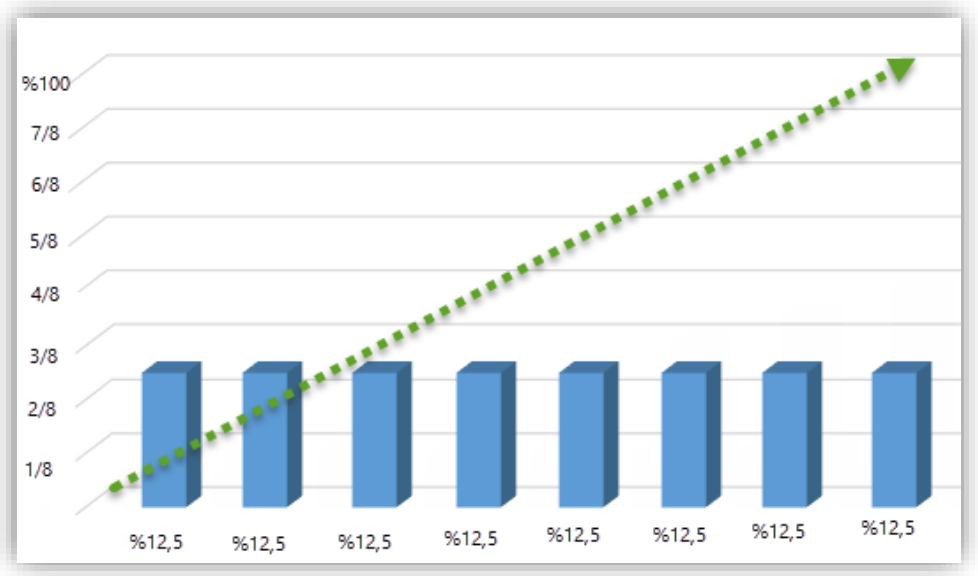
Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

As default; 100 ms x 10=1000 ms (1 second)

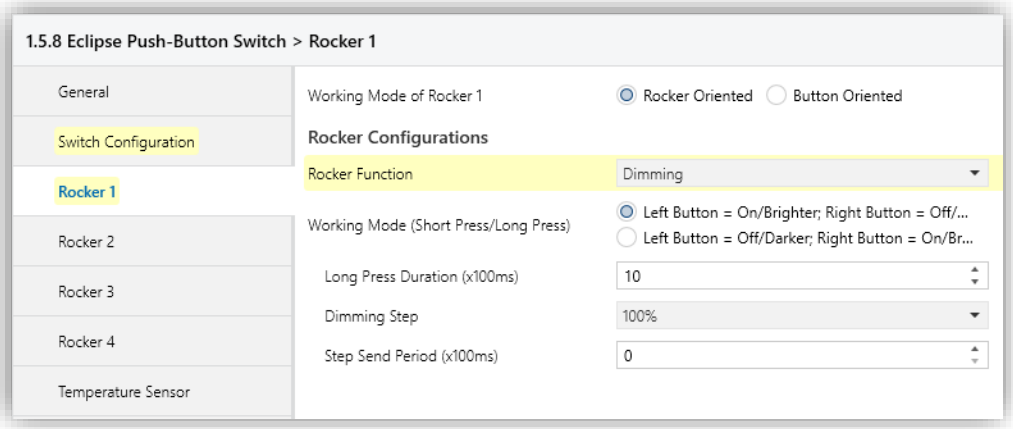
Switch will start to send dimming up/down commands after each press longer than "1 second".

Dimming Step: Dimming step percentage can be changed to specify the maximum dimming step width of a dimming telegram. With a dimming message, you can dim by a maximum of X %.

(%100 option represents "Start-stop" dimming function. Other percentage values correspond to "step dimming function".)

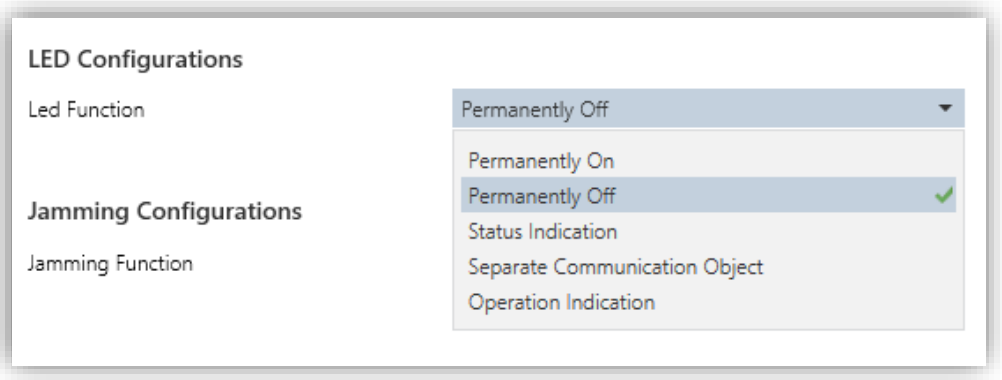


Step Send Period: Defines time interval between two dimming step commands. This interval is another parameter to change dimming speed of the lighting source.

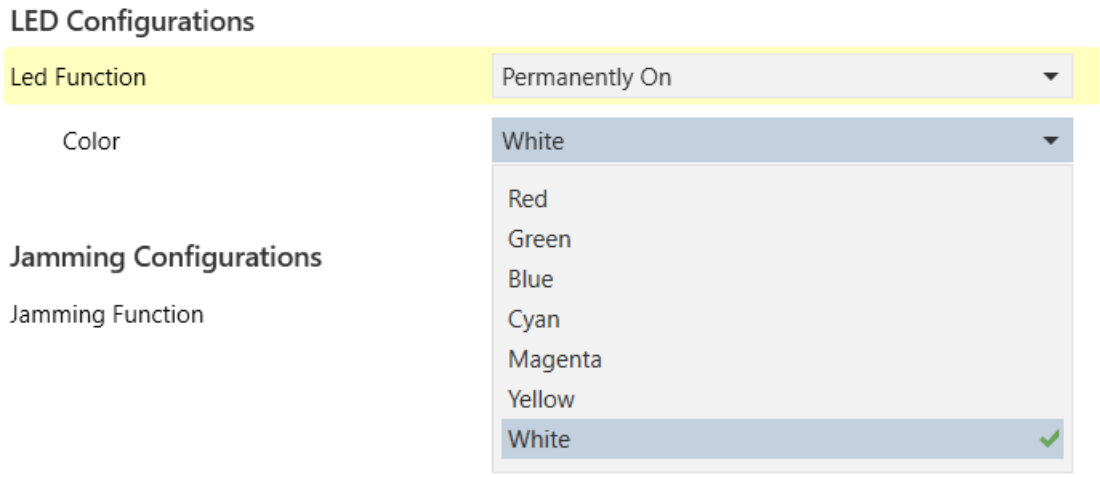


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

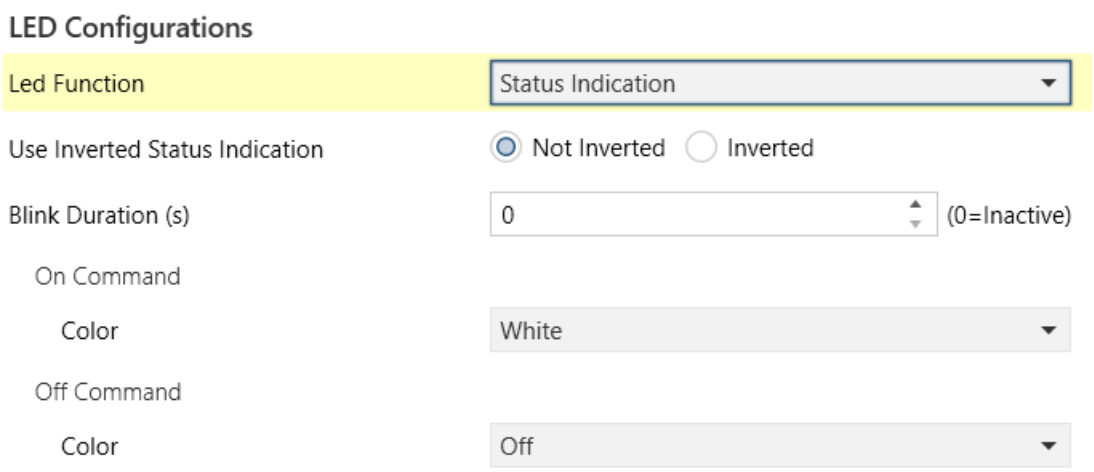


Led Function [Permanently OFF]: LED is always OFF.

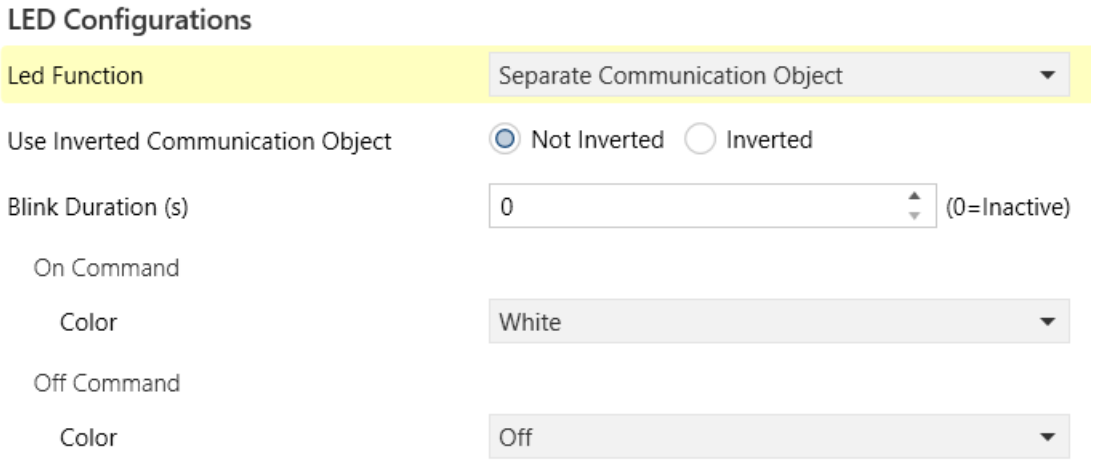
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

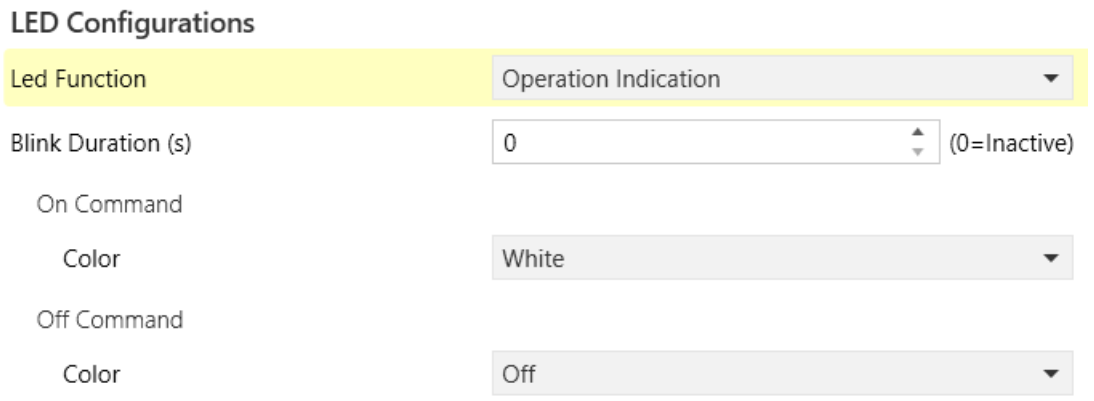


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



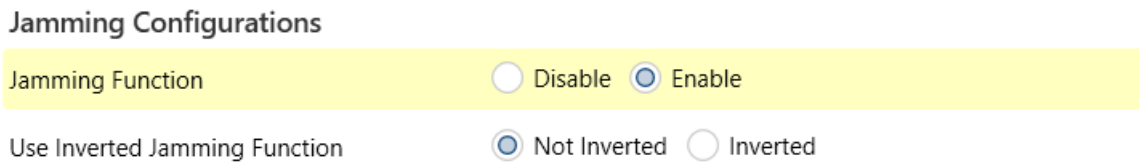
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



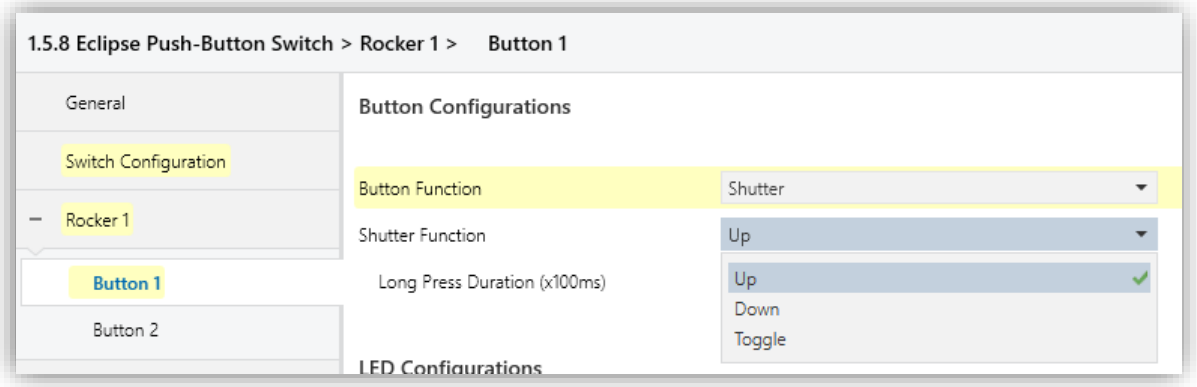
3.2.7. Button Oriented [Shutter]

Shutter command can be selected for each long press [UP, DOWN, TOGGLE].

Switch will start to send [UP, DOWN, TOGGLE] commands after each press longer than "1 second". Switch will send Step/Stop command on each short press,

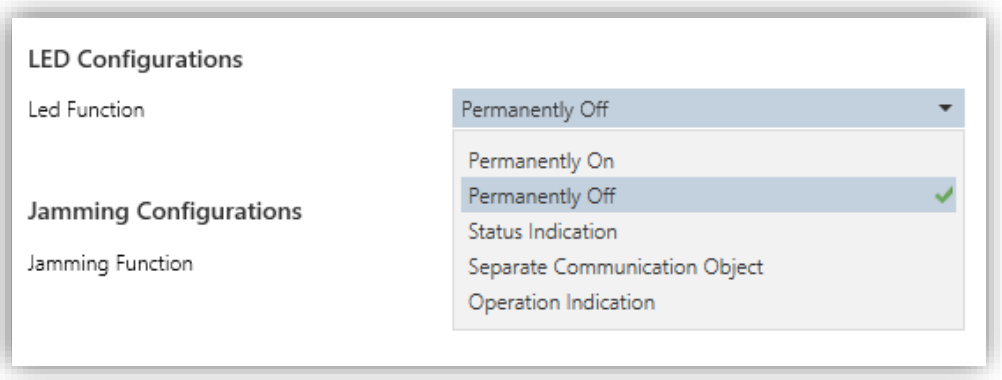
Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

As default; 100 ms x 10=1000 ms (1 second)

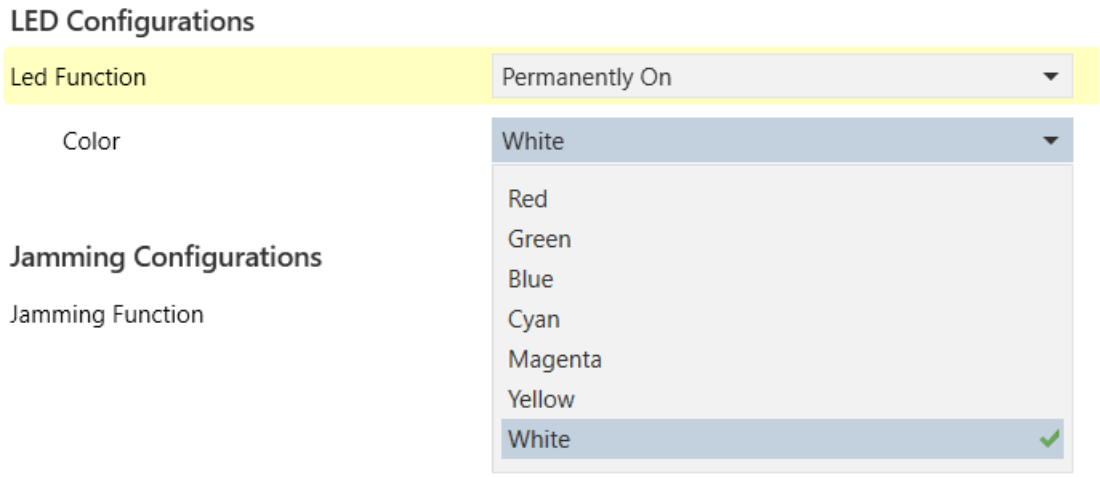


Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.



Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]

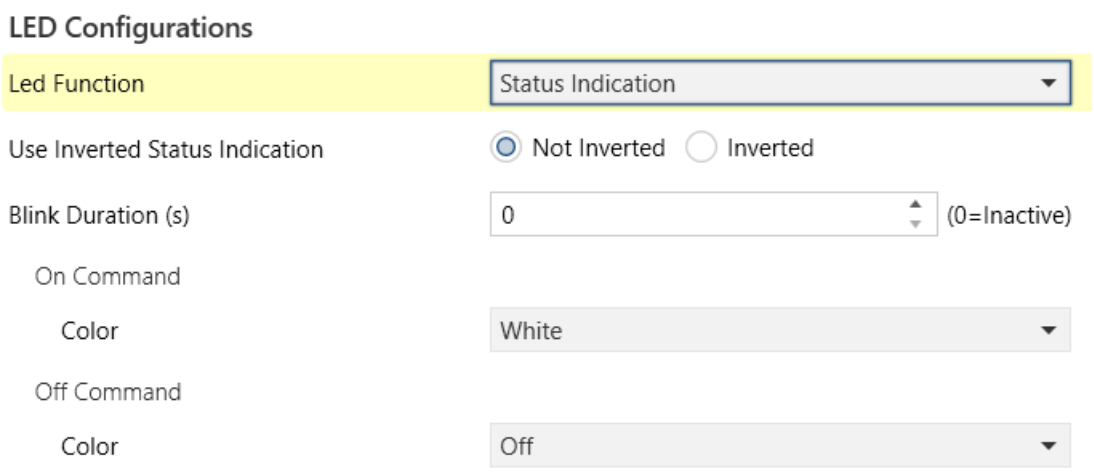


Led Function [Permanently OFF]: LED is always OFF.

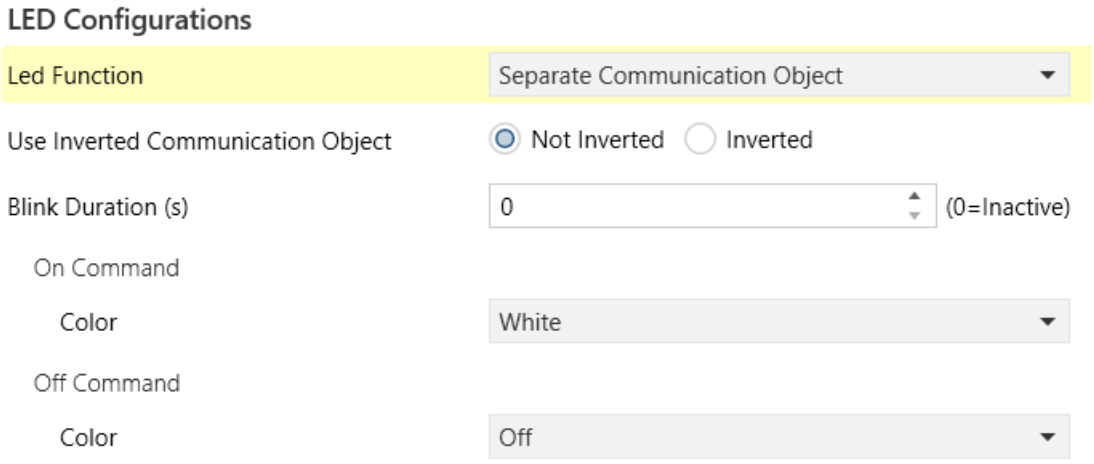
Led Function [Status indication]: LED color will change according to status information.

On command [white] – OFF Command [Off]

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)

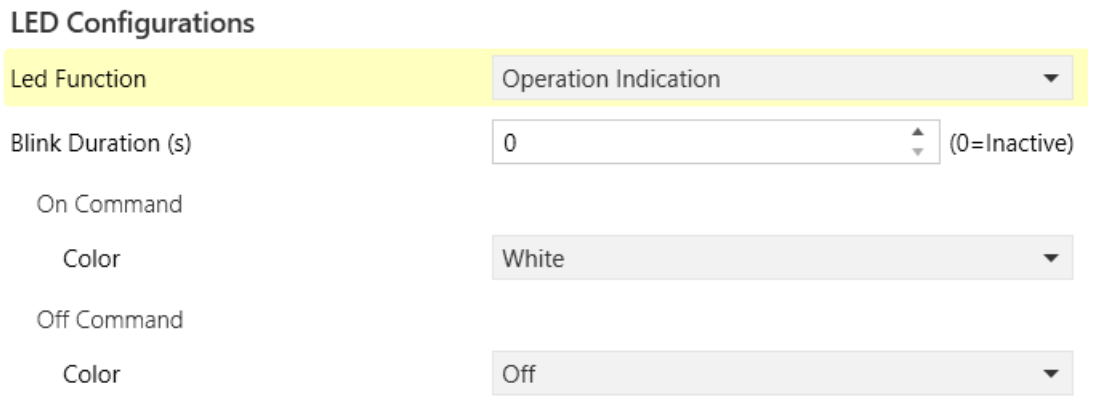


Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



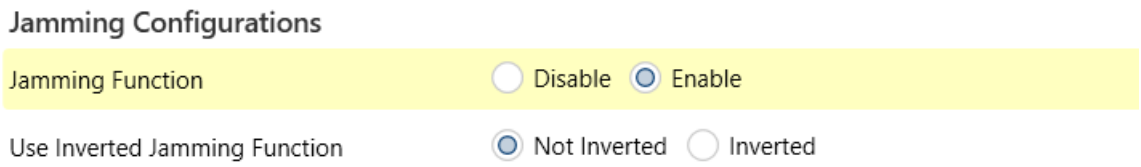
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

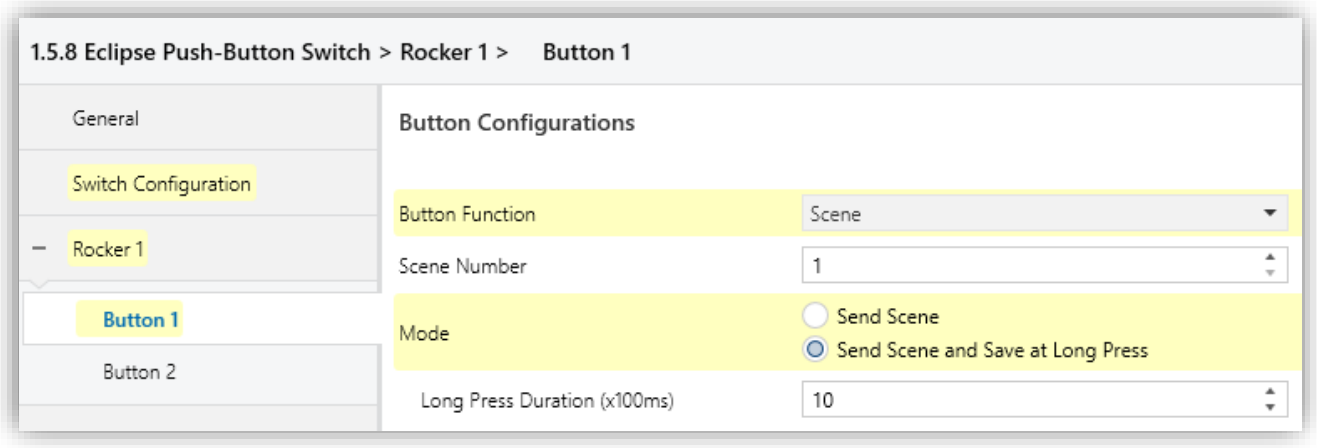
Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.8. Button Oriented [Scene]

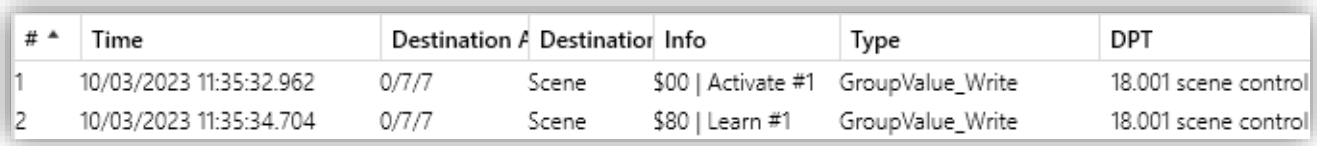
Scene number determines which scene (1…64) is to be recalled and stored. 64 different scenes can be managed by using single group address on different buttons.

Each short press will call the selected scene. Storing of the current scene can be triggered by long press action. Please check example group monitor record.



Example: Short press -> Button 1 is calling scene number 1.

Long press ->Button 1 is sending the "store scene command" for scene number 1.



#	Time	Destination A	Destinatior	Info	Type	DPT
1	10/03/2023 11:35:32.962	0/7/7	Scene	$00 | Activate #1	GroupValue_Write	18.001 scene control
2	10/03/2023 11:35:34.704	0/7/7	Scene	$80 | Learn #1	GroupValue_Write	18.001 scene control

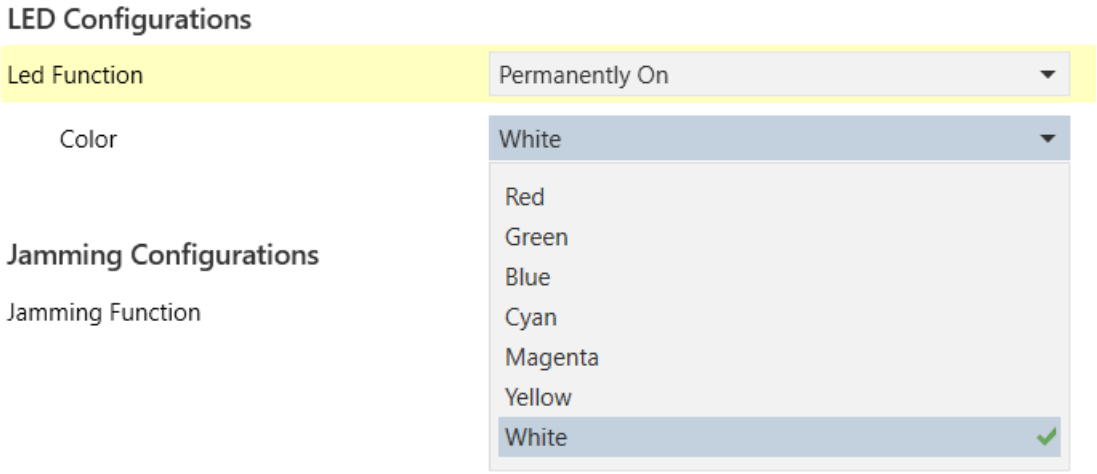
Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

As default; 100 ms x 10=1000 ms (1 second)

Led configurations:

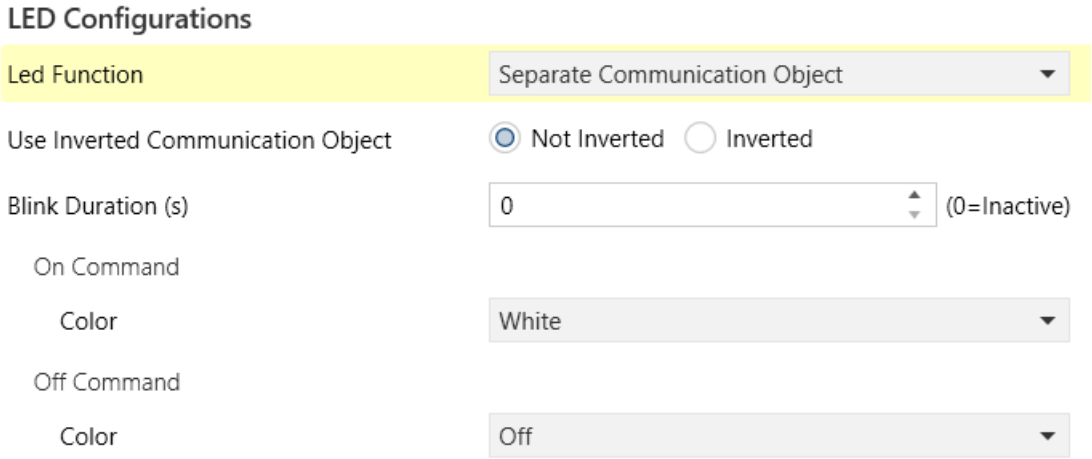
Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.

Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]



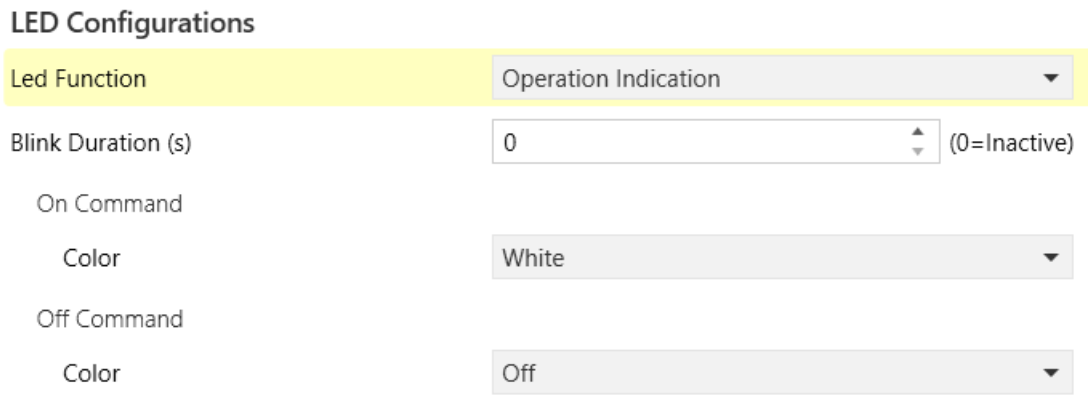
Led Function [Permanently OFF]: LED is always OFF.

Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



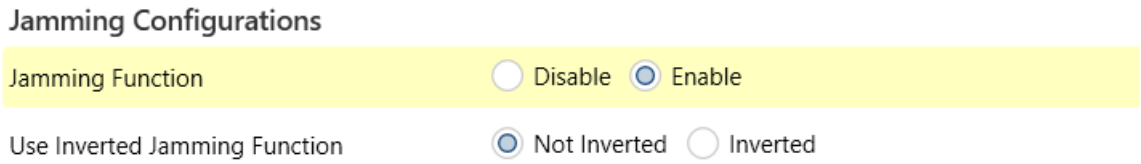
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

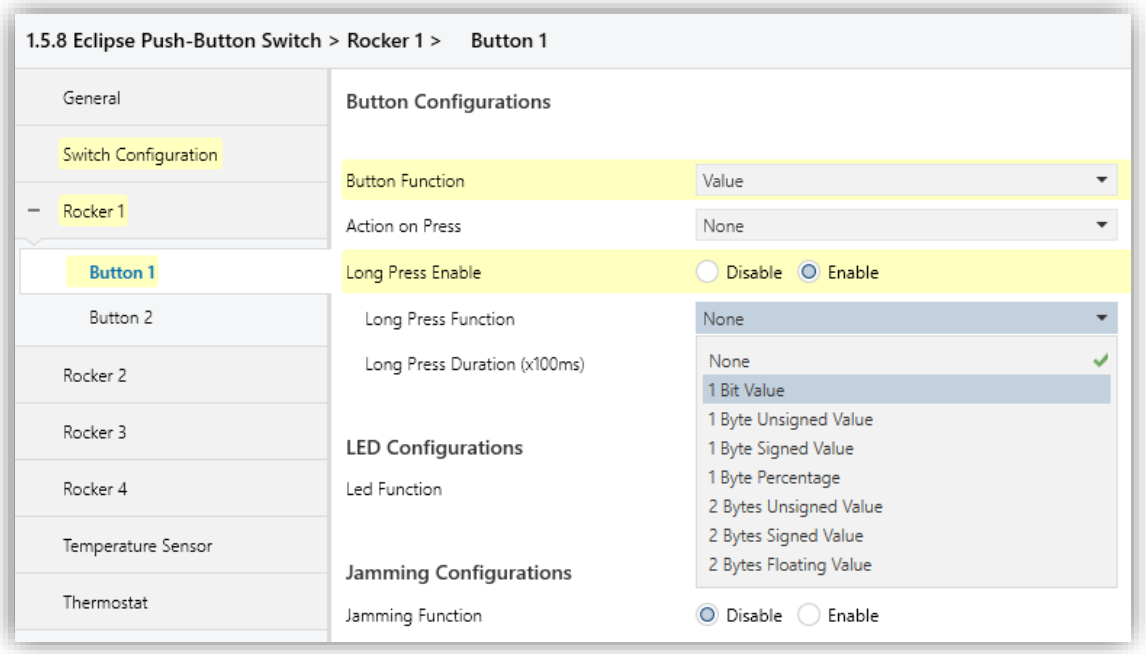
Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.2.9. Button Oriented [Value]

"Action on press" determines the data type for the short press. When button is pressed, this type of data will be sent KNX bus via respective communication object.

Long press function can be enable to send another data type by pressing longer to the same button.

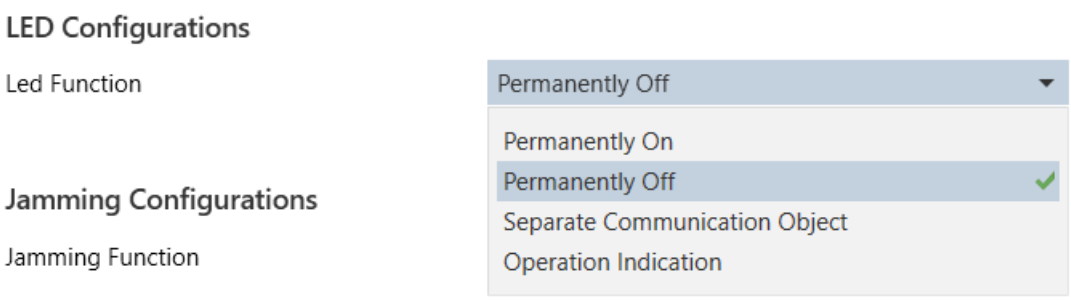


Long Press Duration(x100 ms): Long press duration can be changed. [0…**10**...65535]

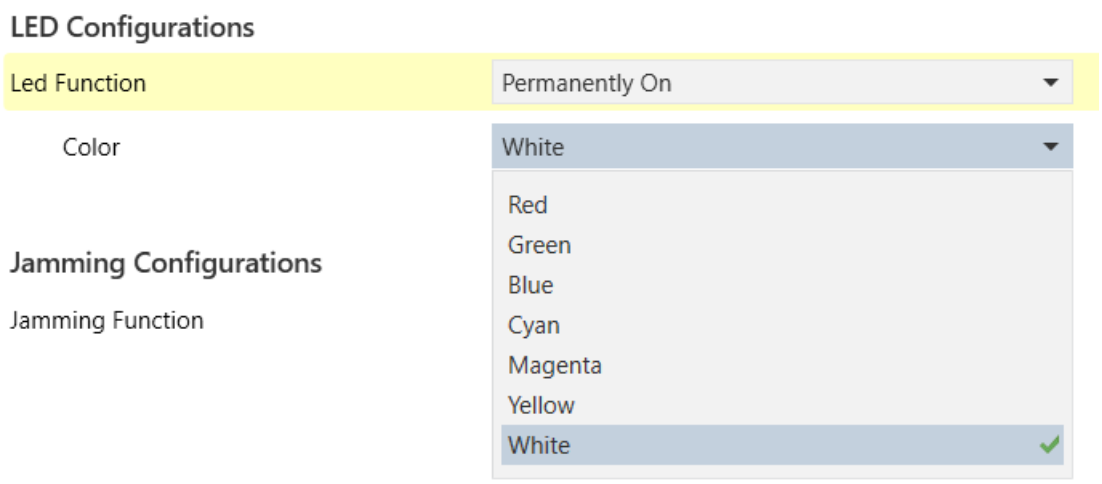
As default; 100 ms x 10=1000 ms (1 second)

Led configurations:

Available functions: Permanently OFF, Permanently ON, Status Indication, Separate Communication Object and Operation Indication.

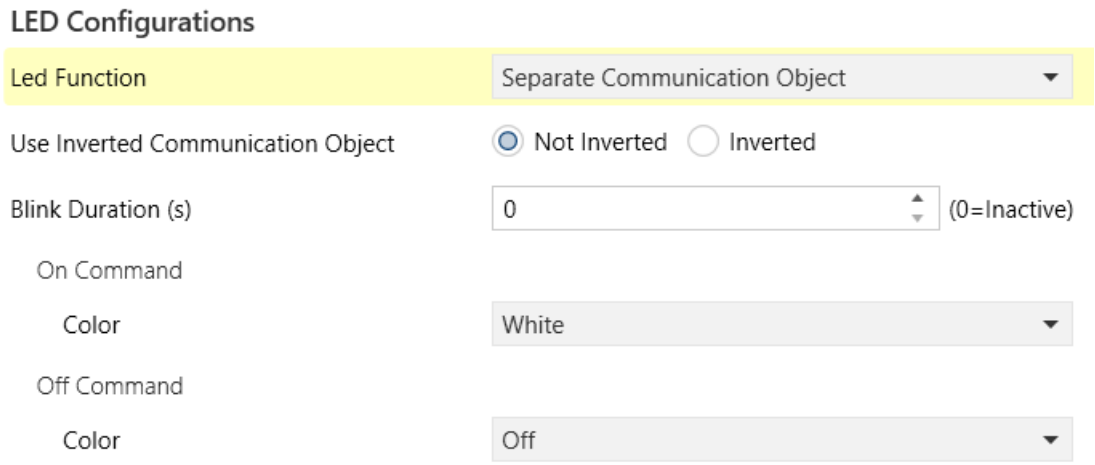


Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, Yellow, White]



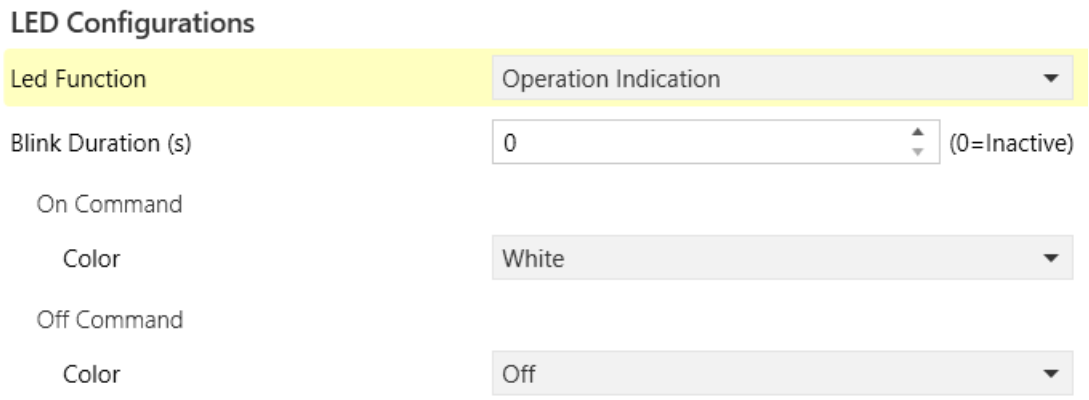
Led Function [Permanently OFF]: LED is always OFF.

Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



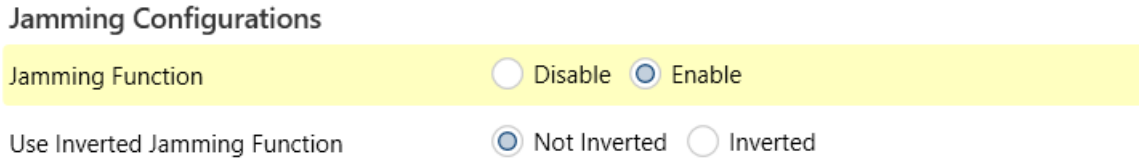
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for "OFF command" until it is pressed. The pressed button will stay on color selected for "ON command" until it is released.

Blink duration: Status LED of the pressed rocker button will blink for the time period selected at "Blink Duration(s)" parameter. (Blinking interval is fixed.)



Jamming Configurations

Jamming function is used to block to respective button or rocker via Object Number 9 – "Rocker X - Jamming" by writing "true or false" data from the bus. Button will not work until it is enabled via jamming object.



3.3. Temperature Sensor

Temperature unit can be selected as Celsius or Fahrenheit.

Sensor Calibration:

Measured temperature value can be shifted up or down by using sensor calibration value. [-32768…+32768]

Example: Assume that "10" is written to the sensor calibration box. Calculation: 10x 0.1 = 1 Celsius, measured temperature *will be increased "+ 1 °C". If "-10" is written to the sensor calibration box. Calculation: -10x 0.1 =- 1 Celsius, measured* temperature *will be decreased "-1 °C".*

Send Temperature:

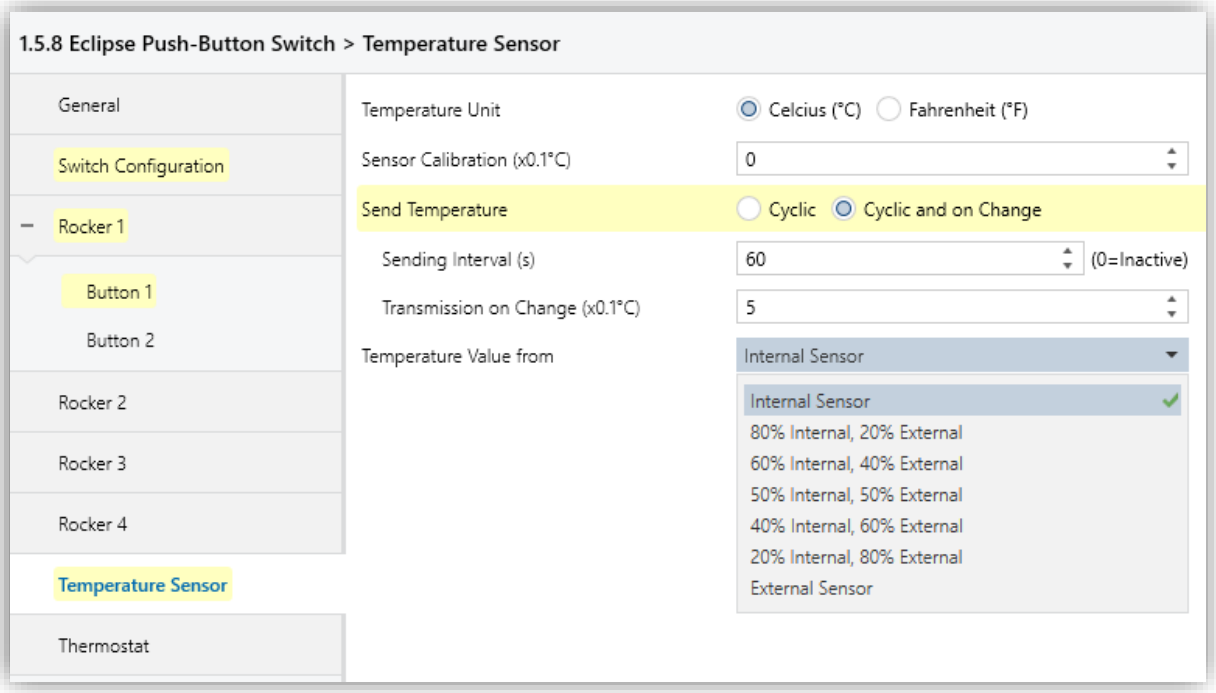
Object Number 147 "Temperature – Actual Temperature" can be sent cyclically or by change of measured temperature.

Sending interval time [0…**60**…65535 s]

Transmission on change [0…**5**…255]

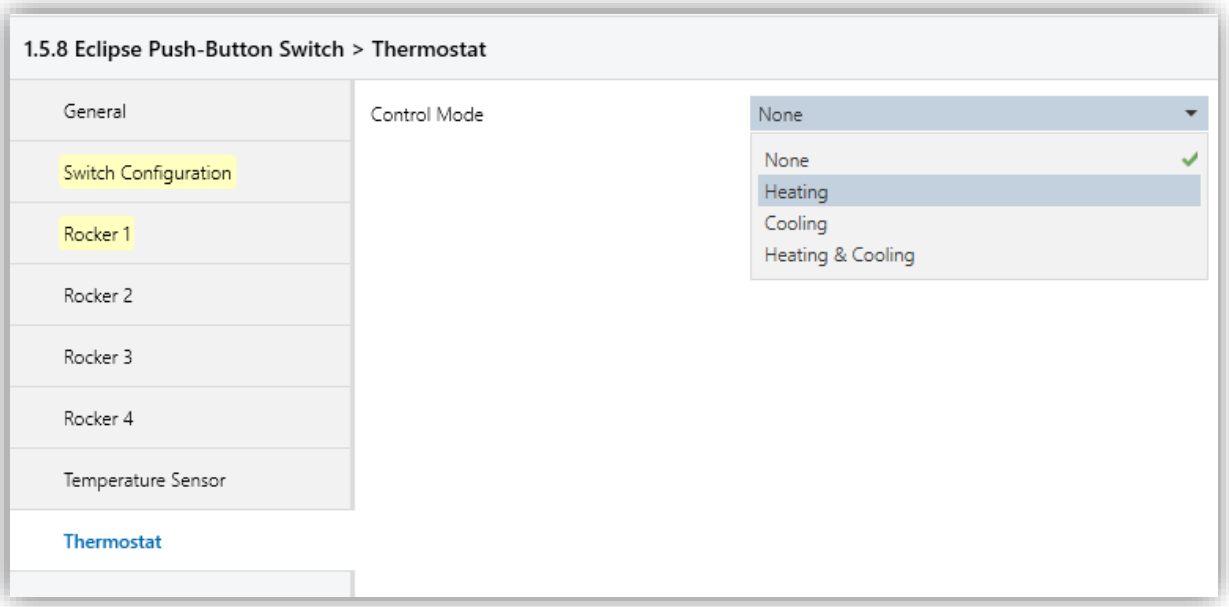
Temperature Value from:

Temperature value can be received from an external temperature sensor directly or partially according to selected percentage. Object Number 146 "Temperature – External Value".



3.4. Thermostat

Control mode of thermostat can be selected for Heating, Cooling, and Heating & Cooling together.



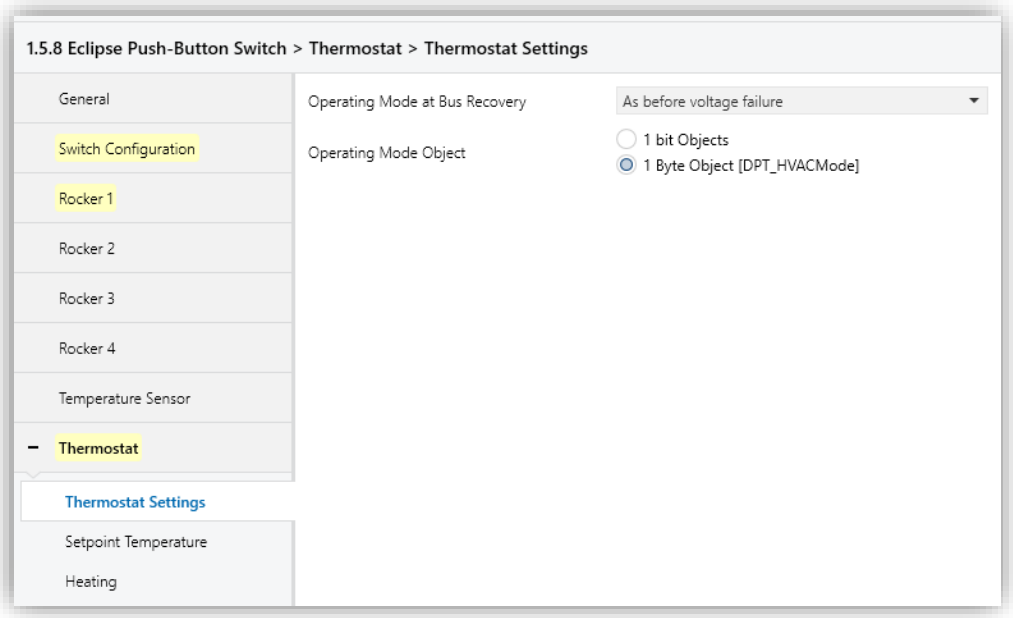
3.4.1. Thermostat Settings

Operating Mode at Bus Recovery:

The parameter defines the behavior of the thermostat after bus power return. Operating mode can be changed to following options after a power return:

As before voltage failure
Comfort
Standby
Night
Protection

Each operating mode has a different temperature setpoint. Please check #3.4.2. Setpoint Temperature



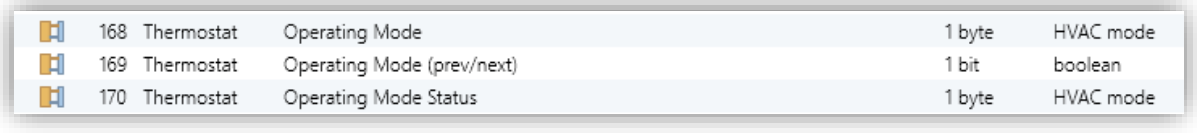
Operating Mode Object:

Parameter determines the data type of operating mode objects. Data type of operating mode objects can be used as "1 bit" with separate objects for each operating mode or "1 byte" for all modes.
As default,

1 Byte Object [DPT_HVACMode];

Object 168 "Thermostat – Operating Mode" can be used to change between different modes.

$01 – Comfort [20.102 DPT_HVAC]
$02 – Standby [20.102 DPT_HVAC]
$03 – Economy [20.102 DPT_HVAC]
$04 – Protection [20.102 DPT_HVAC]



Object 169 "Thermostat – Operating Mode (prev/next)" can be used to change operating modes one by one via writing "True/False".

True= Next

False= Previous

Object 170 "Thermostat – Operating Mode Status" will give status of operating mode after change.

1 bit Object [DPT_Enable];

171	Thermostat	Comfort Mode	1 bit	enable	C	R	W	T	U
172	Thermostat	Standby Mode	1 bit	enable	C	R	W	T	U
173	Thermostat	Night Mode	1 bit	enable	C	R	W	T	U
174	Thermostat	Protection Mode	1 bit	enable	C	R	W	T	U

3.4.2. Setpoint Temperature

Min. Setpoint Value: [4…**16**…40]

Defines the minimum temperature setpoint value for the thermostat function. Any temperature value lower than Min. Setpoint Value cannot be written or selected on following objects.

179	Thermostat	Setpoint	2 bytes	temperature (°C)	C	R	W	T	U
180	Thermostat	Setpoint (-/+)	1 bit	boolean	C	R	W	T	U

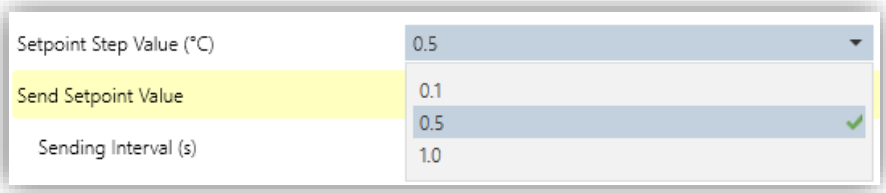
Max. Setpoint Value: [4…**32**…40]

Defines the maximum temperature setpoint value for the thermostat function. Any temperature value higher than Max. Setpoint Value cannot be written or selected on following objects.

179	Thermostat	Setpoint	2 bytes	temperature (°C)	C	R	W	T	U
180	Thermostat	Setpoint (-/+)	1 bit	boolean	C	R	W	T	U

Setpoint Step Value: [0.1…**0.5**…1]

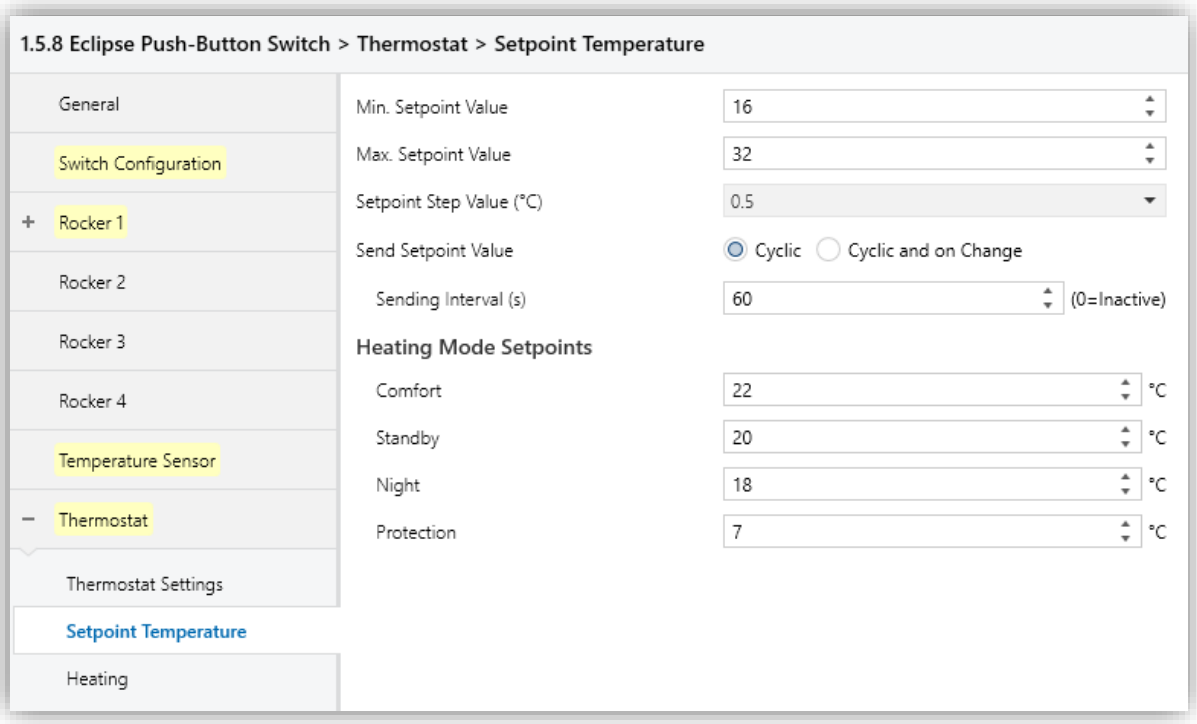
Increase/Decrease value of current setpoint by writing "True/False" to Object 180 "Thermostat – Setpoint (-/+)".



Send Setpoint Value (°C): [Cyclic…Cyclic on change]

Current setpoint can be sent cyclically or by change of measured temperature via Object Number 181 "Thermostat – Setpoint Indication".

Sending interval (s) [0…**60**…65535 s] 0=Inactive

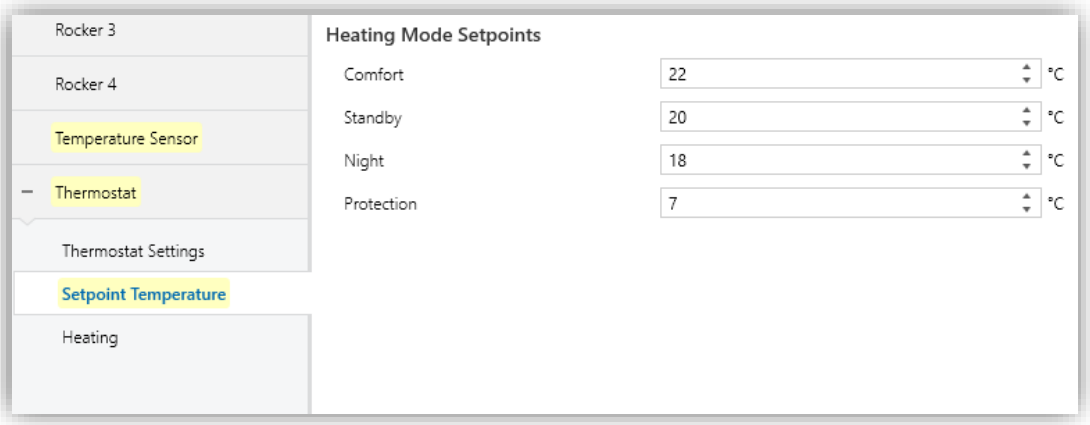


Heating Setpoints:

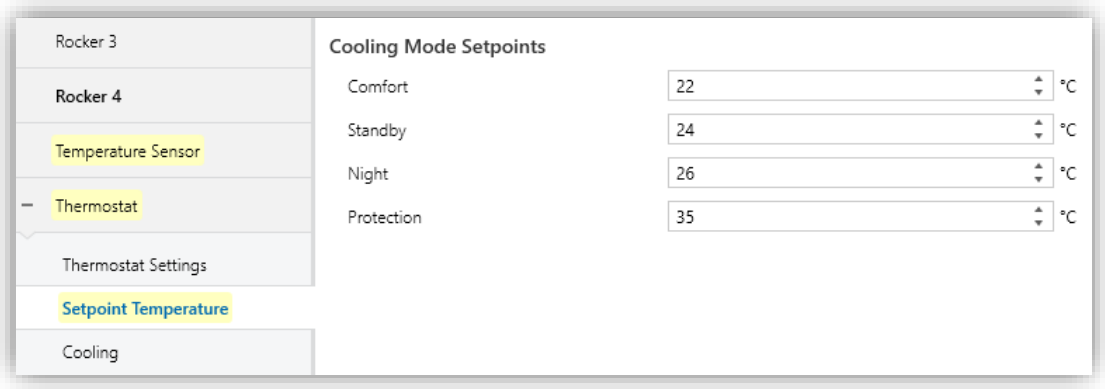
Thermostat has "4" operating modes; "Comfort Mode, Standby Mode, Night Mode and Protection Mode". Each operating mode has their own predefined setpoint temperature.

Changeover of operating modes can be achieved through "Operating Mode" communication objects which are explained in #3.4.1. Thermostat Settings.

Note: Eclipse Switch starts with "Comfort Mode" as default after download.

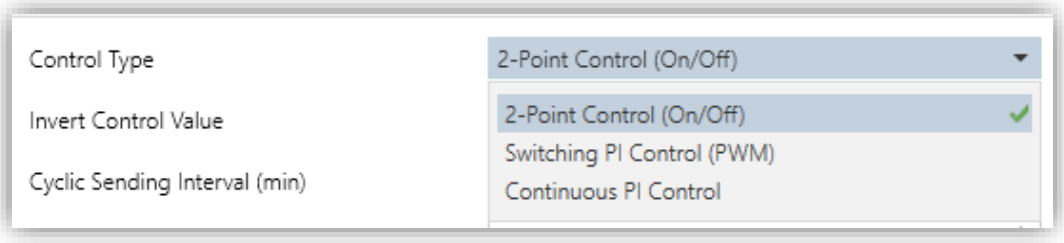


Cooling Setpoints:

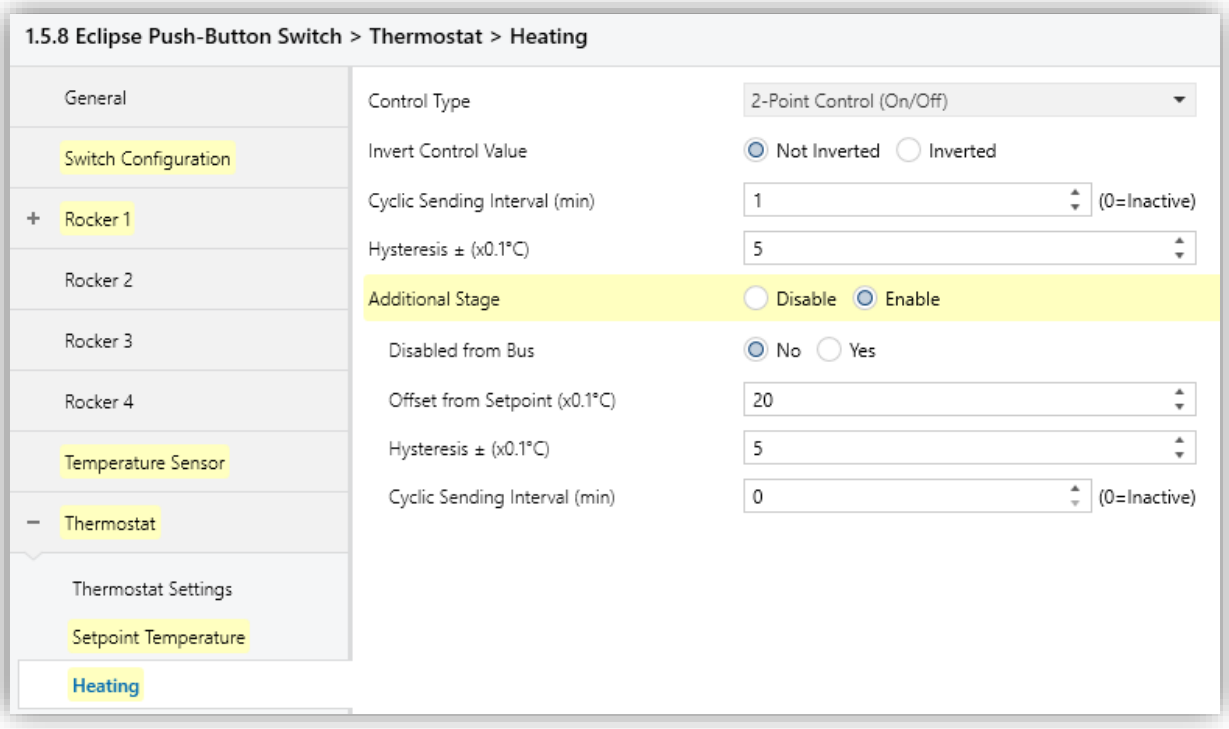


3.4.3. Heating

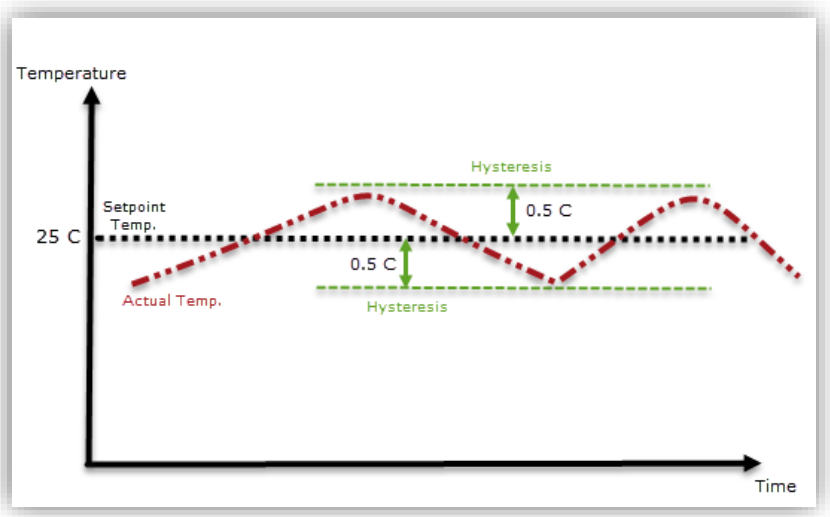
Control Type: [2-Point Control (On/Off), Switching PI Control (PWM), Continuous PI Control]



3.4.3.1. Heating - Control Type: [2-Point Control ON/OFF]



Operates as a simple switch around the setpoint temperature using hysteresis values. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool on and off. If system is more an active system, hysteresis values should be given larger and more inactive values.



Invert Control Value: Output value can be used inverse.

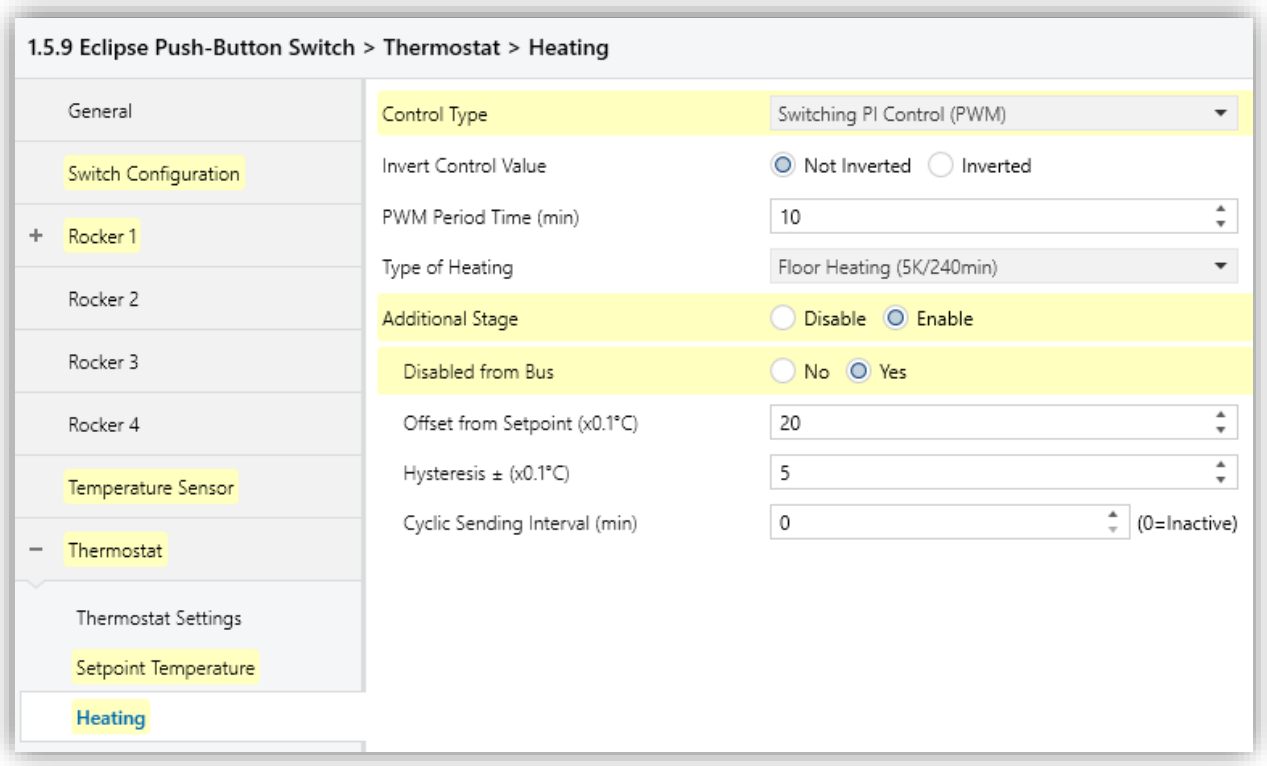
Cyclic Sending Interval (min): [0…**1**…255]

Determines cyclic sending period of Object Number 157 "Thermostat - Heating Control Value".

Hysteresis +/- (x 0.1 °C): [0…**5**…255]

Determines Hysteresis value to control Heating Control Value Output more accurate. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

3.4.3.2. Heating - Control Type: [Switching PI Control PWM]

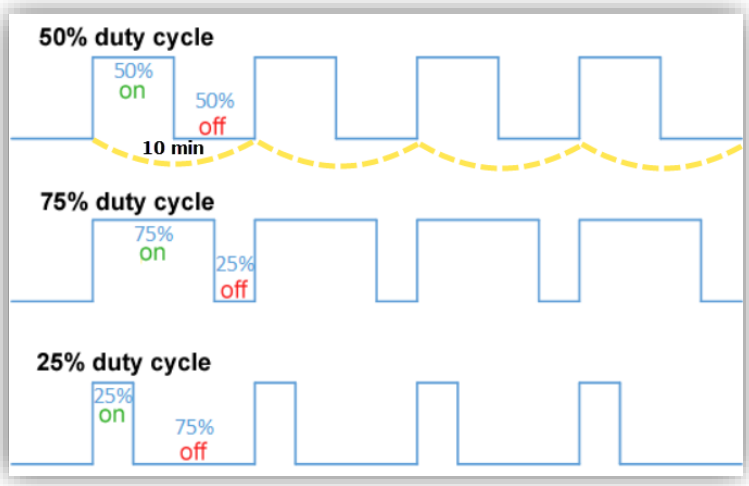


PI algorithm is used to calculate control signal. After calculation, control signal is converted into a pulse-interval signal. This means PWM cycle is divided into "1 bit ON/OFF" output commands based on control value. PWM period and type of heating should be selected according to the used room and type of heating.

Invert Control Value: Output value can be used inverse.

PWM Period Time (min): [1…**10**…255]

Defines PWM period time. If control value is calculated %50. Then control value will be ON for 5 minutes and OFF for second 5 minutes. Please check following graphic.



Type of Heating: Multiple heating types with preset parameters are available to the user.

Floor Heating (5K/240)
How Water Heating (5K/150)
Electrical Heating (4K/100)
Fan coil (4K/90)
User Defined

If the required heating type is not available, individual parameters can be specified in the "User Defined" configuration.

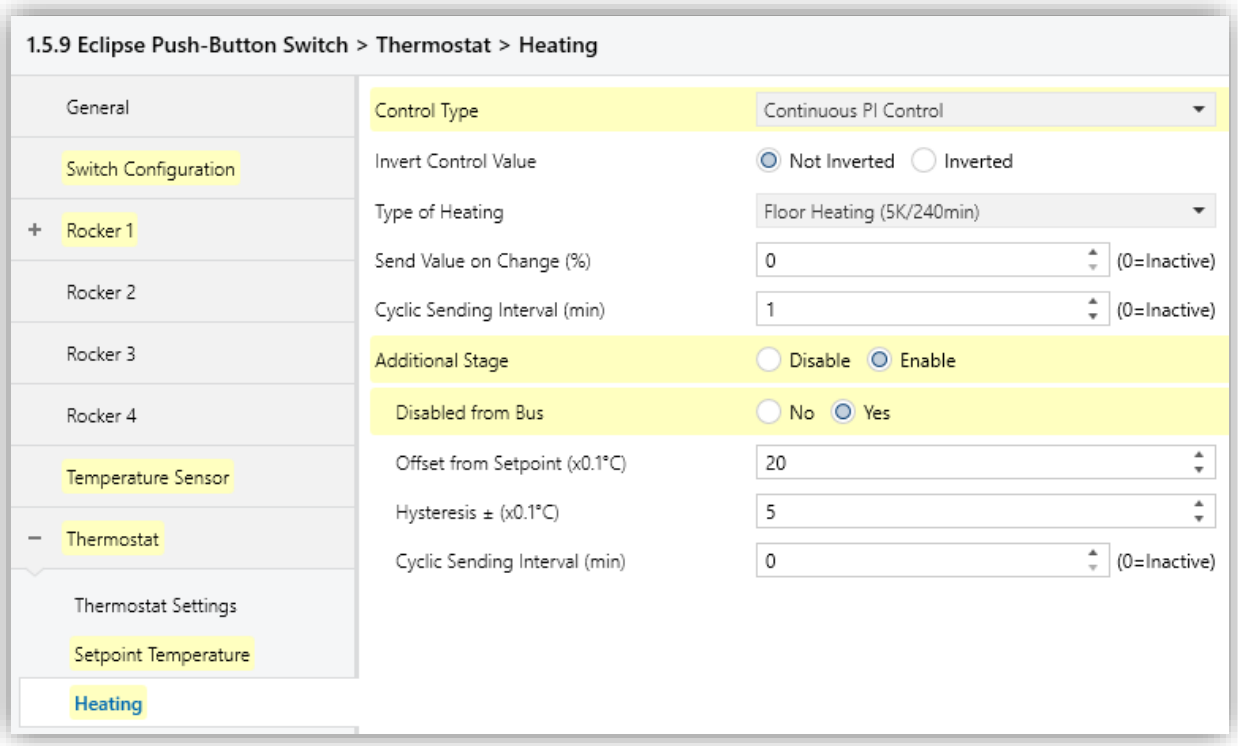
Proportional Range (x0.1 °C): [10…**50**…100]

Defines the proportional range of control. Parameter changes the control speed of the controller.

Integration Time (min): [0…**240**…255]

Defines the reset time of controller. Integration Time has the effect of moving the room temperature slowly toward, and ultimately reaching the setpoint value. Depending on the type of system used, parameter needs to have different values. In general, the more inactive the overall system, the greater time is needed.

3.4.3.3. Heating - Control Type: [Continuous PI Control PWM]



PI algorithm is used to calculate control signal and adjusts its output value between 0% and 100% to match the difference between the actual temperature and the setpoint temperature and enables an accurate regulation of the room temperature to the setpoint value. PI values should be selected compatible with the room and the type of heating system that needs to be controlled. Default PI values are defined for most common heating types. User defined values can be used for different rooms and different heating types for

better performance. Using default values as a reference point and adjusting these values according to system might increase controller performance.

Invert Control Value: Output value can be used inverse.

Type of Heating: Multiple heating types with preset parameters are available to the user.

Floor Heating (5K/240)
How Water Heating (5K/150)
Electrical Heating (4K/100)
Fan coil (4K/90)
User Defined

If the required heating type is not available, individual parameters can be specified in the "User Defined" configuration.

Send Value on Change (%): [**0**…100] 0=inactive

Heating control value will be sent on change of percentage via Object Number 157 "Temperature – Heating Control Value".

Cyclic Sending Interval (min): [0…**1**…255]

Determines cyclic sending period of Object Number 157 "Thermostat - Heating Control Value".

3.4.3.4. Heating - Additional Stage

Additional Stage: [**Disable**…Enable]

Additional Heating Control object can be enabled if an extra Heating/Cooling Control Value is needed on top of main Heat/Cool Control Value.

Object Number 164 "Thermostat – Additional Heating Control Value" is created when parameter is enabled.

Disable from Bus: Object Number 164 "Thermostat – Additional Heating Control Value" can be disable any time while writing True/False to Object Number 162 "Thermostat – Additional Heating Controller Disable".

Offset from Setpoint (x 0.1 °C): [1…**20**…255]

Defines a separate setpoint value based on main Setpoint temperature for Object Number 164 "Thermostat – Additional Heating Control Value". Thus, Additional Heating Source will be activated/deactivated depending on new temperature setpoint.

Example: Assume that a room has two type of different heating sources. (Main heating source, additional heating source)

Setpoint temperature is 24 degree for the "Heating Control Value" (main heating source.)

If "Offset from Setpoint" parameter is default value; 20 x 0.1 C° =2 °C.

In this scenario, the setpoint for heating is set to 24 °C. When the temperature falls below 22 °C, additional heating should be switched on so that the room heats up again rapidly.

Hysteresis +/- (x 0.1 °C): [0…**5**…255]

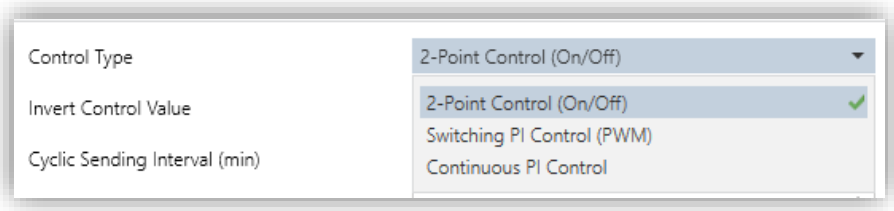
Determines Hysteresis value to control Additional Heating Control Value Output more accurate. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

Cyclic Sending Interval (min): [**0**…255]

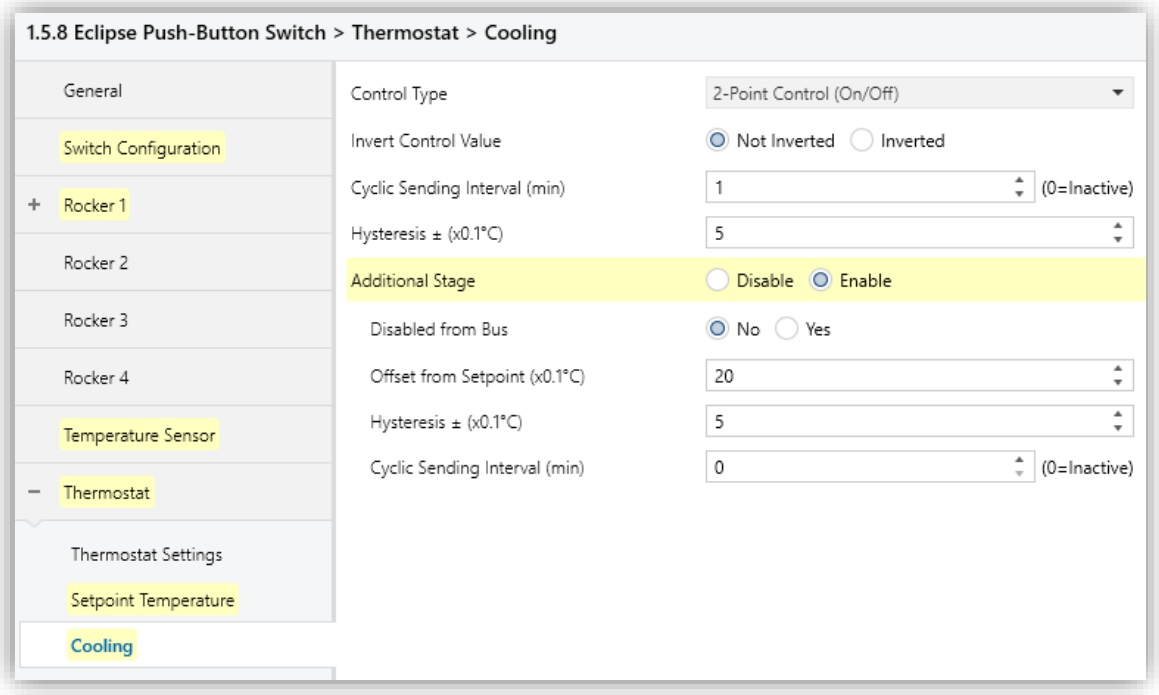
Determines cyclic sending period of Object Number 164 "Thermostat - Additional Heating Control Value".

3.4.4. Cooling

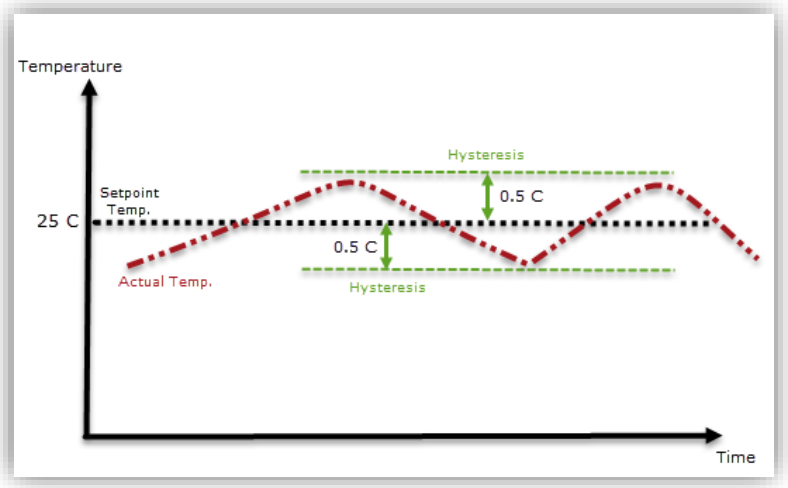
Control Type: [2-Point Control (On/Off), Switching PI Control (PWM), Continuous PI Control]



3.4.4.1. Cooling - Control Type: [2-Point Control ON/OFF]



Operates as a simple switch around the setpoint temperature using hysteresis values. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool on and off. If system is more an active system, hysteresis values should be given larger and more inactive values.



Invert Control Value: Output value can be used inverse.

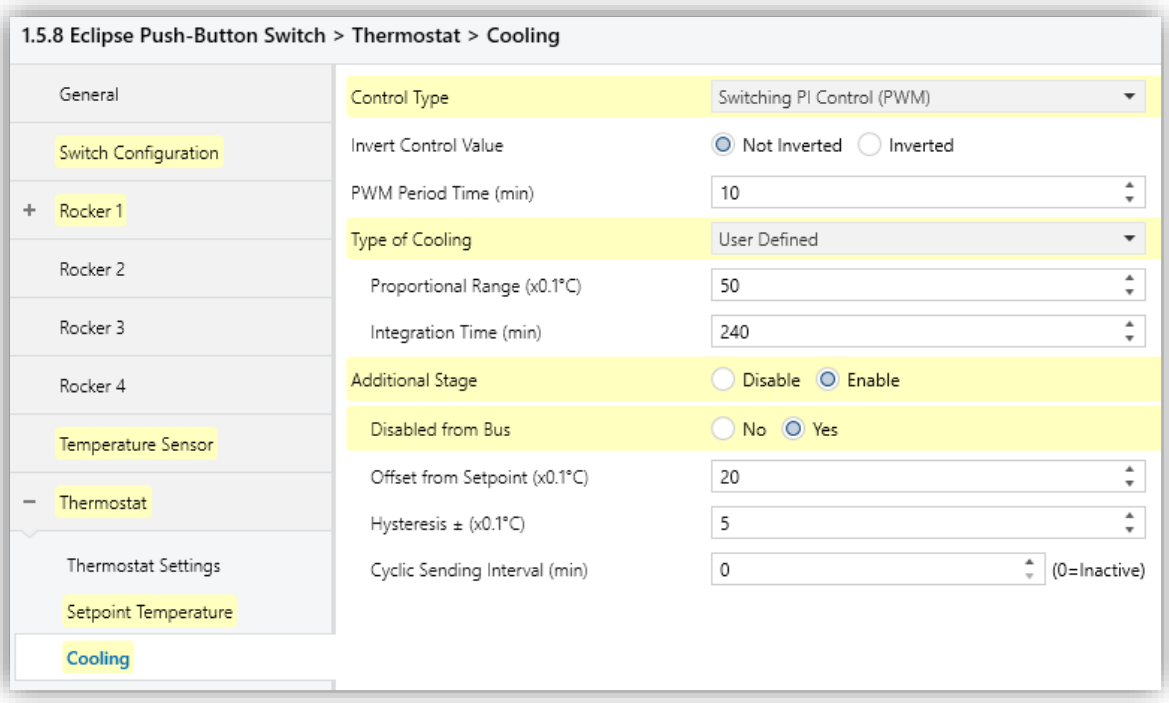
Cyclic Sending Interval (min): [0…**1**…255]

Determines cyclic sending period of Object Number 157 "Thermostat - Heating Control Value".

Hysteresis +/- (x 0.1 °C): [0…**5**…255]

Determines Hysteresis value to control Cooling Control Value Output more accurate. "Hysteresis" prevents the output value from oscillation and gives larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

3.4.4.2. Cooling - Control Type: [Switching PI Control PWM]

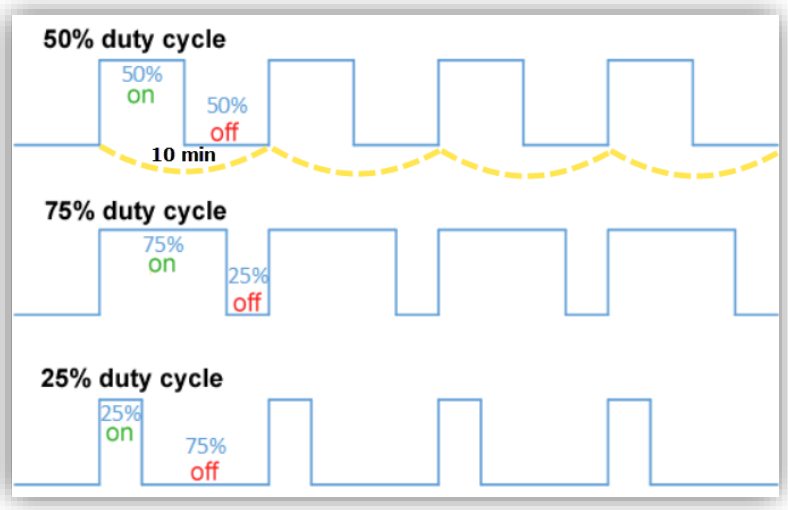


PI algorithm is used to calculate control signal. After calculation, control signal is converted into a pulse-interval signal. This means PWM cycle is divided into "1 bit ON/OFF" output commands based on control value. PWM period and type of cooling should be selected according to the used room and type of cooling source.

Invert Control Value: Output value can be used inverse.

PWM Period Time (min): [1…**10**…255]

Defines PWM period time. If control value is calculated %50. Then control value will be ON for 5 minutes and OFF for second 5 minutes. Please check following graphic.



Type of Cooling: Multiple cooling types with preset parameters are available to the user.

Cooling Ceiling (5K/240)

Fan coil (4K/90)

User Defined

If required cooling type is not available, individual parameters can be specified in the "User Defined" configuration.

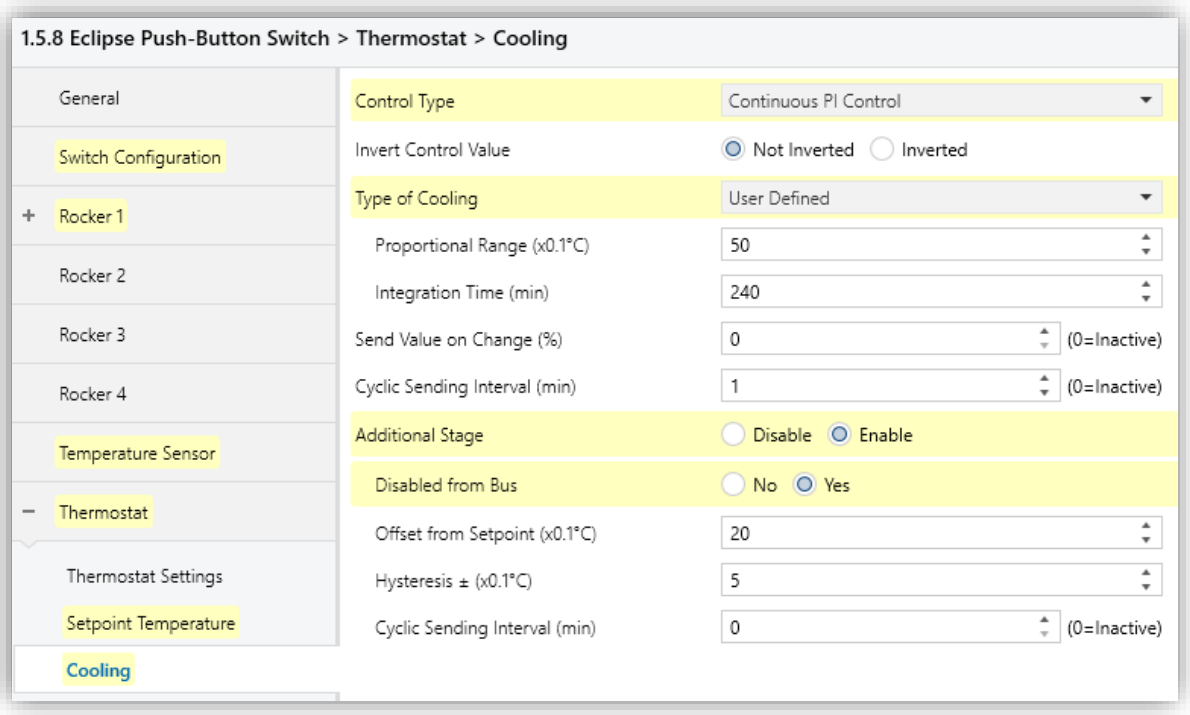
Proportional Range (x0.1 °C): [10…**50**…100]

Defines the proportional range of control. Parameter changes the control speed of the controller.

Integration Time (min): [0…**240**…255]

Defines the reset time of controller. Integration Time has the effect of moving the room temperature slowly toward, and ultimately reaching the setpoint value. Depending on the type of system used, parameter needs to have different values. In general, the more inactive the overall system, the greater time is needed.

3.4.4.3. Cooling - Control Type: [Continuous PI Control PWM]



PI algorithm is used to calculate control signal and adjusts its output value between 0% and 100% to match the difference between the actual temperature and the setpoint temperature and enables an accurate regulation of the room temperature to the setpoint value. PI values should be selected compatible with the room and the type of heating system that needs to be controlled. Default PI values are defined for most common cooling types. User defined values can be used for different rooms and different cooling types for better performance. Using default values as a reference point and adjusting these values according to system might increase controller performance.

Invert Control Value: Output value can be used inverse.

Type of Heating: Multiple heating types with preset parameters are available to the user.

Cooling Ceiling (5K/240)

Fan coil (4K/90)

User Defined

If the required cooling type is not available, individual parameters can be specified in the "User Defined" configuration.

Send Value on Change (%): [**0**…100] 0=inactive

Cooling control value will be sent on change of percentage via Object Number 158 "Temperature – Cooling Control Value".

Cyclic Sending Interval (min): [0…**1**…255]

Determines cyclic sending period of Object Number 158 "Thermostat – Cooling Control Value".

3.4.4.4. Cooling - Additional Stage

Additional Stage: [**Disable**…Enable]

Additional Cooling Control object can be enabled if an extra Cooling Control Value is needed on top of main Cooling Control Value.

Object Number 167 "Thermostat – Additional Cooling Control Value" is created when parameter is enabled.

Disable from Bus: Object Number 167 "Thermostat – Additional Cooling Control Value" can be disable any time while writing True/False to Object Number 165 "Thermostat – Additional Cooling Controller Disable".

Offset from Setpoint (x 0.1 °C): [1…**20**…255]

Defines a separate setpoint value based on main Setpoint temperature for Object Number 167 "Thermostat – Additional Cooling Control Value". Thus, Additional Cooling Source will be activated/deactivated depending on new temperature setpoint.

Example: Assume that a room has two type of different cooling sources. (Main cooling source, additional cooling source)

Setpoint temperature is 24 degree for the "Cooling Control Value" (main cooling source.)

If "Offset from Setpoint" parameter is default value; 20 x 0.1 C° =2 °C.

In this scenario, the setpoint for cooling is set to 24 °C. When the temperature rises above 26 °C, additional cooling should be switched on so that the room cools off again rapidly.

Hysteresis +/- (x 0.1 °C): [0…**5**…255]

Determines Hysteresis value to control Additional Cooling Control Value Output more accurate. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

Cyclic Sending Interval (min): [**0**…255]

Determines cyclic sending period of Object Number 167 "Thermostat - Additional Cooling Control Value".

3.4.5. Heating & Cooling

Control mode of thermostat can be selected for Heating, Cooling, and Heating & Cooling.

If Heating & Cooling control mode is selected parameter tabs of "Heating" and "Cooling" will be same. But parameter tabs of "Thermostat Settings" and "Setpoint Temperature" will have some additional parameters.

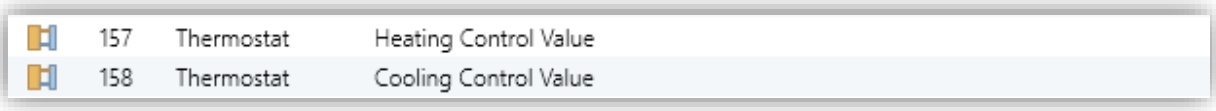
Please check below.

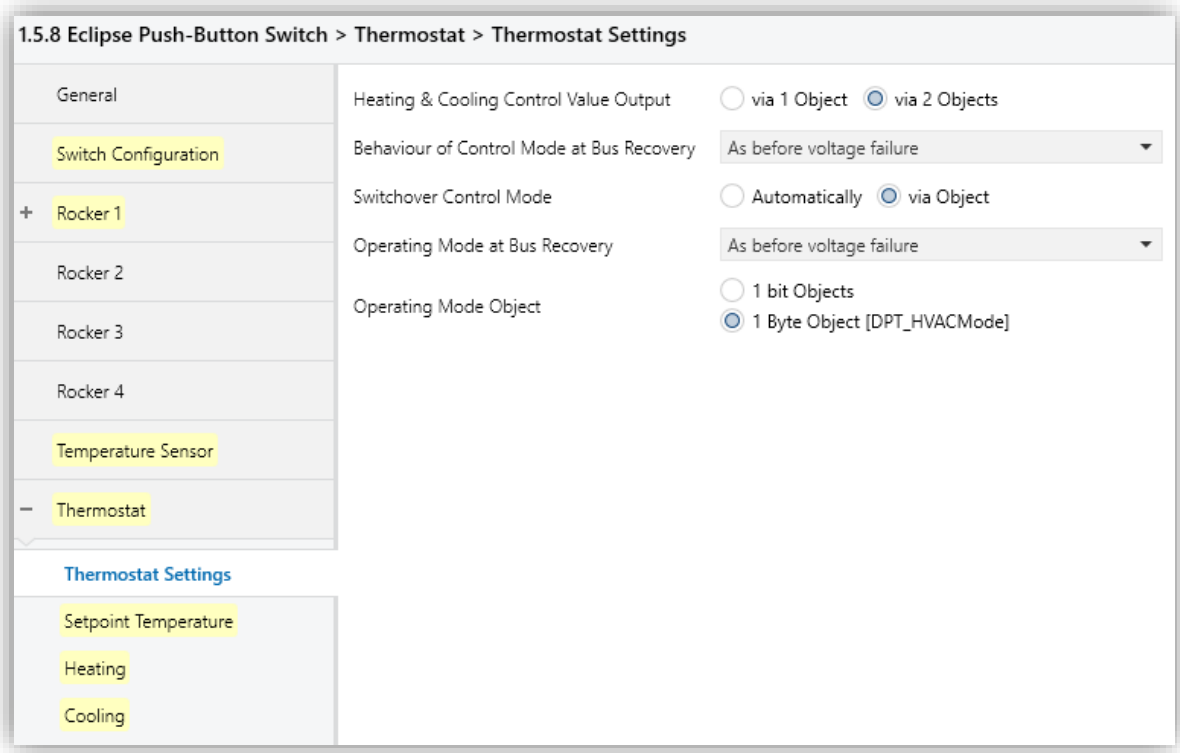
3.4.5.1. Thermostat Settings

Heating & Cooling Control Value Output: Output value for Heating and Cooling can be sent via same object or 2 separate objects.

If "via 1 Object" option is selected Object Number 159 "Thermostat – Heating/Cooling Control Value" will be activated.

If "via 2 Objects" option is selected Object Number 157 "Thermostat – Heating Control Value" and Object Number 158 "Thermostat – Cooling Control Value" will be activated.





Behavior of Control Mode at Bus Recovery:

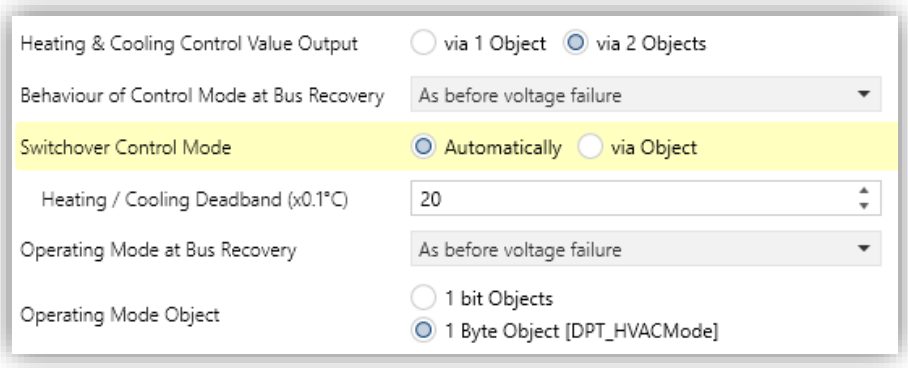
The parameter defines the behavior of the control mode after bus power return. Control mode can be changed to following options after a power return:

As before voltage failure
Heating
Cooling

Switchover of Control Mode: [Automatically, via Object]

Parameter makes possible to switch between the heating and cooling mode of the device.

Automatically: The device switches automatically between heating and cooling and to the associated setpoint according to defined "Deadband". Object Number 156 "Thermostat – Heat/Cool Status" will transmit the status after switchover.



Heating Cooling Deadband (x 0.1 °C): [0…**20**…255]

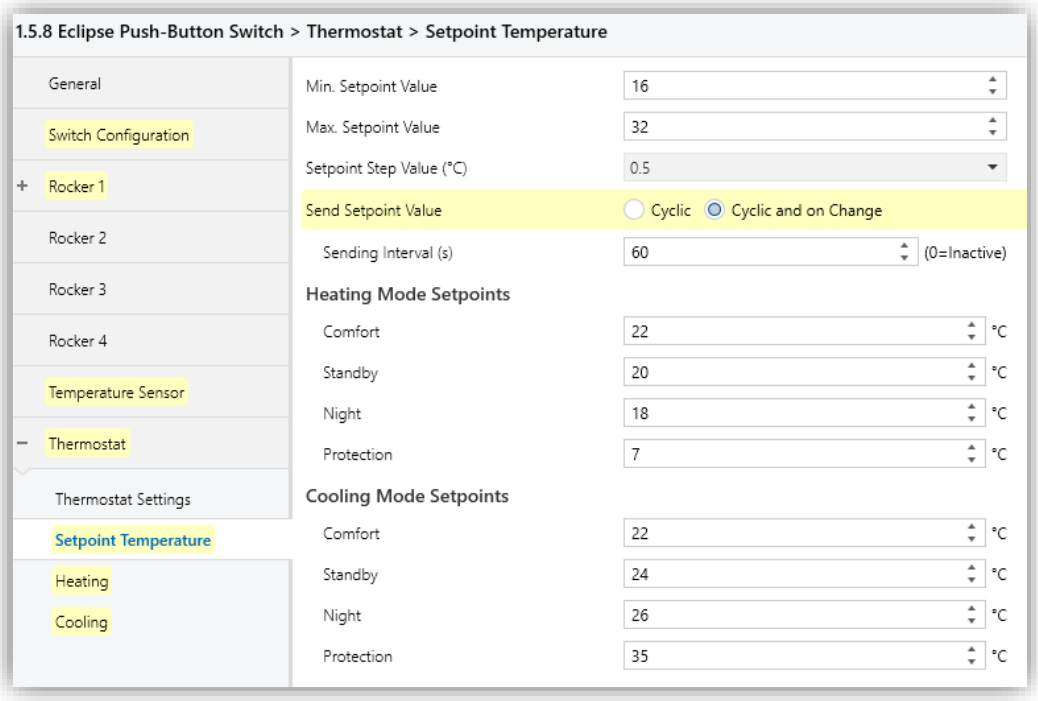
Deadband defines the range between setpoint temperature and measured temperature. If deadband is exceeded, switchover will be applied.

Via Object:

Switchover can be applied "via Object" manually using Object Number 155 "Thermostat – Heat/Cool Switchover".

$01= Heating [1.100 DPT_cooling/heating]

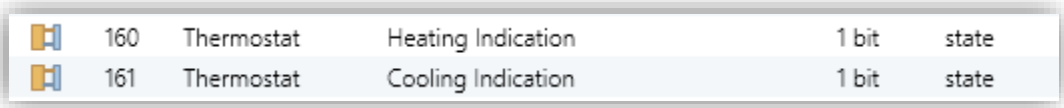
$00= Cooling [1.100 DPT_cooling/heating]



3.4.5.2. Heating/Cooling Object Description

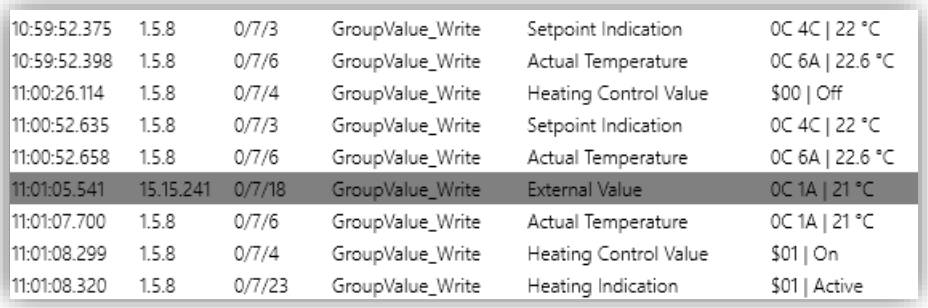
Heating / Cooling Indication

Object Number 160 "Thermostat – Heating Indication" defines a state for recent heating command. It indicates that heating source is recently having an active command to heat. In same way, Object Number 161 "Thermostat – Cooling Indication" defines a state for recent cooling command. It indicates that cooling source is recently having an active command to cool.



Example: Heating mode is active. Setpoint Temperature 22 °C, Actual Temperature 21 °C.

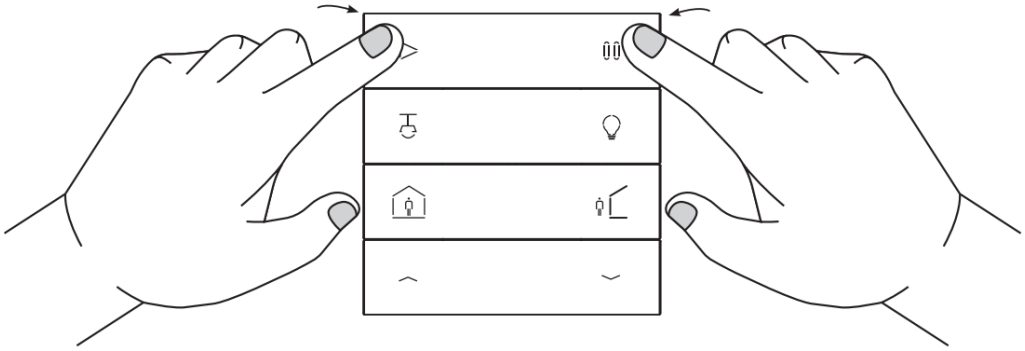
Heating control value is sending ON command to heating source and "heating indication" is instantly informing about heating command.



4. Commissioning

For commissioning the device, the following activities are required:

- Make electrical connections
- Turn on the bus power supply
- Switch the device operation to programming mode
    - Alternatively, instead of using programming button, it is possible to switch operation of the device to programming mode by pressing button 1 and button 2 simultaneously for 5 seconds



- Download into device the physical address and the configuration with ETS program
- At the end of the download operation of the device returns to normal mode
- Now the device is programmed and ready to use

Configuration and commissioning of the device require the use of ETS4 or later releases. These activities must be carried out according to the design of the building automation system done by a qualified planner.

5. Communication Objects

No	Name	Function	Object Size	Flags	Datapoint Type
1	General	Alive Beacon	1 Bit	R-CT--	[1.17] DPT_Trigger
2	Button 1	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
3	Button 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
3	Rocker 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
4	Button 1	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
5	Button 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
5	Rocker 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
6	Button 1	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
7	Button 1	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
8	Button 1	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
8	Rocker 1	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
9	Button 1	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
9	Rocker 1	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
10	Button 1	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
10	Rocker 1	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
11	Button 1	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
11	Rocker 1	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
12	Button 1	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
12	Rocker 1	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
13	Button 1	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
14	Button 1	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
14	Rocker 1	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
15	Button 1	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
15	Button 1	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
15	Button 1	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
15	Rocker 1	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
15	Rocker 1	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
15	Rocker 1	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
16	Button 1	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
16	Button 1	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
16	Button 1	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
16	Rocker 1	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
16	Rocker 1	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
16	Rocker 1	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
17	Button 1	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
18	Button 1	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
18	Button 1	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
18	Button 1	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
19	Button 1	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
19	Button 1	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count

19	Button 1	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
20	Button 2	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
21	Button 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
22	Button 2	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
23	Button 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
24	Button 2	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
25	Button 2	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
26	Button 2	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
27	Button 2	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
28	Button 2	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
29	Button 2	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
30	Button 2	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
31	Button 2	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
32	Button 2	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
33	Button 2	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
33	Button 2	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
33	Button 2	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
34	Button 2	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
34	Button 2	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
34	Button 2	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
35	Button 2	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
36	Button 2	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
36	Button 2	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
36	Button 2	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
37	Button 2	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
37	Button 2	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
37	Button 2	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
38	Button 3	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
39	Button 3	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
39	Rocker 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
40	Button 3	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
41	Button 3	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
41	Rocker 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
42	Button 3	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
43	Button 3	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
44	Button 3	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
44	Rocker 2	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
45	Button 3	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
45	Rocker 2	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
46	Button 3	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
46	Rocker 2	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
47	Button 3	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
47	Rocker 2	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
48	Button 3	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
48	Rocker 2	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming

49	Button 3	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
50	Button 3	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
50	Rocker 2	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
51	Button 3	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
51	Button 3	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
51	Button 3	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
51	Rocker 2	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
51	Rocker 2	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
51	Rocker 2	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
52	Button 3	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
52	Button 3	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
52	Button 3	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
52	Rocker 2	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
52	Rocker 2	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
52	Rocker 2	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
53	Button 3	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
54	Button 3	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
54	Button 3	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
54	Button 3	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
55	Button 3	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
55	Button 3	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
55	Button 3	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
56	Button 4	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
57	Button 4	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
58	Button 4	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
59	Button 4	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
60	Button 4	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
61	Button 4	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
62	Button 4	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
63	Button 4	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
64	Button 4	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
65	Button 4	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
66	Button 4	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
67	Button 4	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
68	Button 4	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
69	Button 4	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
69	Button 4	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
69	Button 4	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
70	Button 4	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
70	Button 4	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
70	Button 4	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
71	Button 4	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
72	Button 4	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
72	Button 4	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
72	Button 4	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling

73	Button 4	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
73	Button 4	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
73	Button 4	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
74	Button 5	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
75	Button 5	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
75	Rocker 3	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
76	Button 5	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
77	Button 5	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
77	Rocker 3	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
78	Button 5	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
79	Button 5	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
80	Button 5	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
80	Rocker 3	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
81	Button 5	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
81	Rocker 3	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
82	Button 5	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
82	Rocker 3	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
83	Button 5	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
83	Rocker 3	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
84	Button 5	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
84	Rocker 3	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
85	Button 5	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
86	Button 5	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
86	Rocker 3	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
87	Button 5	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
87	Button 5	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
87	Button 5	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
87	Rocker 3	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
87	Rocker 3	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
87	Rocker 3	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
88	Button 5	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
88	Button 5	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
88	Button 5	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
88	Rocker 3	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
88	Rocker 3	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
88	Rocker 3	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
89	Button 5	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
90	Button 5	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
90	Button 5	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
90	Button 5	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
91	Button 5	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
91	Button 5	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
91	Button 5	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
92	Button 6	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
93	Button 6	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch

94	Button 6	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
95	Button 6	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
96	Button 6	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
97	Button 6	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
98	Button 6	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
99	Button 6	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
100	Button 6	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
101	Button 6	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
102	Button 6	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
103	Button 6	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
104	Button 6	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
105	Button 6	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
105	Button 6	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
105	Button 6	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
106	Button 6	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
106	Button 6	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
106	Button 6	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
107	Button 6	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
108	Button 6	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
108	Button 6	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
108	Button 6	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
109	Button 6	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
109	Button 6	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
109	Button 6	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
110	Button 7	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
111	Button 7	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
111	Rocker 4	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
112	Button 7	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
113	Button 7	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
113	Rocker 4	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
114	Button 7	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
115	Button 7	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
116	Button 7	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
116	Rocker 4	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
117	Button 7	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
117	Rocker 4	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
118	Button 7	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
118	Rocker 4	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
119	Button 7	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
119	Rocker 4	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
120	Button 7	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
120	Rocker 4	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
121	Button 7	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
122	Button 7	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
122	Rocker 4	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch

123	Button 7	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
123	Button 7	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
123	Button 7	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
123	Rocker 4	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
123	Rocker 4	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
123	Rocker 4	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
124	Button 7	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
124	Button 7	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
124	Button 7	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
124	Rocker 4	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
124	Rocker 4	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
124	Rocker 4	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
125	Button 7	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
126	Button 7	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
126	Button 7	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
126	Button 7	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
127	Button 7	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
127	Button 7	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
127	Button 7	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
128	Button 8	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
129	Button 8	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
130	Button 8	Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
131	Button 8	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
132	Button 8	Long Switch Status	1 Bit	RWCTU-	[1.1] DPT_Switch
133	Button 8	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
134	Button 8	LED	1 Bit	RWCTU-	[1.1] DPT_Switch
135	Button 8	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
136	Button 8	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
137	Button 8	Step/Stop	1 Bit	R-CT--	[1.7] DPT_Step
138	Button 8	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
139	Button 8	Scene	1 Byte	R-CT--	[18.1] DPT_SceneControl
140	Button 8	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
141	Button 8	Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
141	Button 8	Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
141	Button 8	Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
142	Button 8	Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
142	Button 8	Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
142	Button 8	Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
143	Button 8	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
144	Button 8	Long Value (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
144	Button 8	Long Value (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
144	Button 8	Long Value (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
145	Button 8	Long Value (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
145	Button 8	Long Value (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
145	Button 8	Long Value (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx

146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
146	Temperature	External Value	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
147	Temperature	Actual Temperature	2 Bytes	R-CT--	[9.1] DPT_Value_Temp
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
149	Humidity	External Value	2 Bytes	RWCTU-	[9.7] DPT_Value_Humidity
150	Humidity	Internal Value	2 Bytes	R-CT--	[9.7] DPT_Value_Humidity
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
152	CO2	External Value	2 Bytes	RWCTU-	[9.8] DPT_Value_AirQuality
153	CO2	Internal Value	2 Bytes	R-CT--	[9.8] DPT_Value_AirQuality
154	CO2	Poor Level Switching	1 Bit	R-CT--	[1.5] DPT_Alarm
160	Ambient	Darkness Switching Value	1 Bit	R-CT--	[1.5] DPT_Alarm
161	Thermostat	Heat/Cool Switchover	1 Bit	RWCTU-	[1.100] DPT_Heat_Cool
162	Thermostat	Heat/Cool Status	1 Bit	R-CT--	[1.100] DPT_Heat_Cool
163	Thermostat	Heating Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
163	Thermostat	Heating Control Value	1 Byte	R-CT--	[5.1] DPT_Scaling
164	Thermostat	Cooling Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
164	Thermostat	Cooling Control Value	1 Byte	R-CT--	[5.1] DPT_Scaling
165	Thermostat	Heating/Cooling Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
165	Thermostat	Heating/Cooling Control Value	1 Byte	R-CT--	[5.1] DPT_Scaling
166	Thermostat	Heating Indication	1 Bit	R-CT--	[1.11] DPT_State
167	Thermostat	Cooling Indication	1 Bit	R-CT--	[1.11] DPT_State
168	Thermostat	Additional Heating Controller Disable	1 Bit	RWCTU-	[1.3] DPT_Enable
169	Thermostat	Additional Heating Controller Status	1 Bit	R-CT--	[1.3] DPT_Enable
170	Thermostat	Additional Heating Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
171	Thermostat	Additional Cooling Controller Disable	1 Bit	RWCTU-	[1.3] DPT_Enable
172	Thermostat	Additional Cooling Controller Status	1 Bit	R-CT--	[1.3] DPT_Enable
173	Thermostat	Additional Cooling Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
174	Thermostat	Operating Mode	1 Byte	RWCTU-	[20.102] DPT_HVACMode

175	Thermostat	Operating Mode (prev/next)	1 Bit	RWCTU-	[1.2] DPT_Bool
176	Thermostat	Operating Mode Status	1 Byte	R-CT--	[20.102] DPT_HVACMode
177	Thermostat	Comfort Mode	1 Bit	RWCTU-	[1.3] DPT_Enable
178	Thermostat	Standby Mode	1 Bit	RWCTU-	[1.3] DPT_Enable
179	Thermostat	Night Mode	1 Bit	RWCTU-	[1.3] DPT_Enable
180	Thermostat	Protection Mode	1 Bit	RWCTU-	[1.3] DPT_Enable
181	Thermostat	Comfort Mode Status	1 Bit	R-CT--	[1.3] DPT_Enable
182	Thermostat	Standby Mode Status	1 Bit	R-CT--	[1.3] DPT_Enable
183	Thermostat	Night Mode Status	1 Bit	R-CT--	[1.3] DPT_Enable
184	Thermostat	Protection Mode Status	1 Bit	R-CT--	[1.3] DPT_Enable
185	Thermostat	Setpoint	2 Bytes	RWCTU-	[9.1] DPT_Value_Temp
186	Thermostat	Setpoint (-/+)	1 Bit	RWCTU-	[1.2] DPT_Bool
187	Thermostat	Setpoint Indication	2 Bytes	R-CT--	[9.1] DPT_Value_Temp
188	Logic 1	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
189	Logic 1	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
189	Logic 1	Output (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
189	Logic 1	Output (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
190	Logic 1	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
190	Logic 1	Output (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
190	Logic 1	Output (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
191	Logic 1	Input 1	1 Bit	RWCTU-	[1.2] DPT_Bool
192	Logic 1	Input 2	1 Bit	RWCTU-	[1.2] DPT_Bool
193	Logic 1	Input 3	1 Bit	RWCTU-	[1.2] DPT_Bool
194	Logic 1	Input 4	1 Bit	RWCTU-	[1.2] DPT_Bool
195	Logic 2	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
196	Logic 2	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
196	Logic 2	Output (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
196	Logic 2	Output (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
197	Logic 2	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
197	Logic 2	Output (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
197	Logic 2	Output (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
198	Logic 2	Input 1	1 Bit	RWCTU-	[1.2] DPT_Bool
199	Logic 2	Input 2	1 Bit	RWCTU-	[1.2] DPT_Bool
200	Logic 2	Input 3	1 Bit	RWCTU-	[1.2] DPT_Bool
201	Logic 2	Input 4	1 Bit	RWCTU-	[1.2] DPT_Bool
202	Logic 3	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
203	Logic 3	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
203	Logic 3	Output (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
203	Logic 3	Output (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
204	Logic 3	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
204	Logic 3	Output (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
204	Logic 3	Output (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
205	Logic 3	Input 1	1 Bit	RWCTU-	[1.2] DPT_Bool
206	Logic 3	Input 2	1 Bit	RWCTU-	[1.2] DPT_Bool

207	Logic 3	Input 3	1 Bit	RWCTU-	[1.2] DPT_Bool
208	Logic 3	Input 4	1 Bit	RWCTU-	[1.2] DPT_Bool
209	Logic 4	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
210	Logic 4	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
210	Logic 4	Output (1 Byte)	1 Byte	R-CT--	[6.10] DPT_Value_1_Count
210	Logic 4	Output (1 Byte)	1 Byte	R-CT--	[5.1] DPT_Scaling
211	Logic 4	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
211	Logic 4	Output (2 Bytes)	2 Bytes	R-CT--	[8.1] DPT_Value_2_Count
211	Logic 4	Output (2 Bytes)	2 Bytes	R-CT--	[9] 9.xxx
212	Logic 4	Input 1	1 Bit	RWCTU-	[1.2] DPT_Bool
213	Logic 4	Input 2	1 Bit	RWCTU-	[1.2] DPT_Bool
214	Logic 4	Input 3	1 Bit	RWCTU-	[1.2] DPT_Bool
215	Logic 4	Input 4	1 Bit	RWCTU-	[1.2] DPT_Bool