

User Manual

Eclipse Thermostat



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Product Code: CR-ECT-86-XX-XXX

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1. Presentation

Many multi-functional thermostats offer a complicated user experience that can be frustrating for users to navigate. However, the Eclipse thermostat is designed with simplicity in mind while still offering powerful control over heating and cooling systems.



Verdant

LARGE
SCREEN

CONTROL
WITH KNOB

AIR QUALITY
MEASUREMENT

ECLIPSE
DESIGN LINE

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:

Use online planner to create an Eclipse Thermostat. <https://planner.core.com.tr/>

1.1. Main Features

SUPER KNOB

All functions including temperature change is controlled via single Knob. Just rotate Knob to change room temperature or press and rotate to select which function to change.

CONFIGURABLE FUNCTIONS

Eclipse Thermostat has several functions like temperature change, operation mode, operating mode, fan control and also AC vane control. Functions are configured via ETS and only functions that configured are displayed in the screen.

CUSTOMIZABLE BUTTONS

There are two backlight icon buttons which can be configured to control any function in the room such as switching or dimming; or can be configured to control thermostat functions.

BUILT-IN VRV CONTROLLER

Eclipse Thermostat controls VRV Systems indoor units via its built-in modules (Optional). This provides flexibility in the infrastructure and also saving cost Complete Air Conditioner Thermostat. Eclipse Thermostat provides display and control of Up/Down Vane, Right/Left Vane and additional operation modes of VRV Systems such as Dry, Fan and Auto.

LARGE DISPLAY

Eclipse Thermostat provides a spacious display that makes it easy for users to read and interpret the temperature and settings.

AIR QUALITY MEASUREMENT

Eclipse Thermostat measures CO2 inside the room with its built-in sensor. Air-quality of the room can be checked on main page or air-quality page in detail. Logic functions can be triggered according to the air-quality level via KNX.

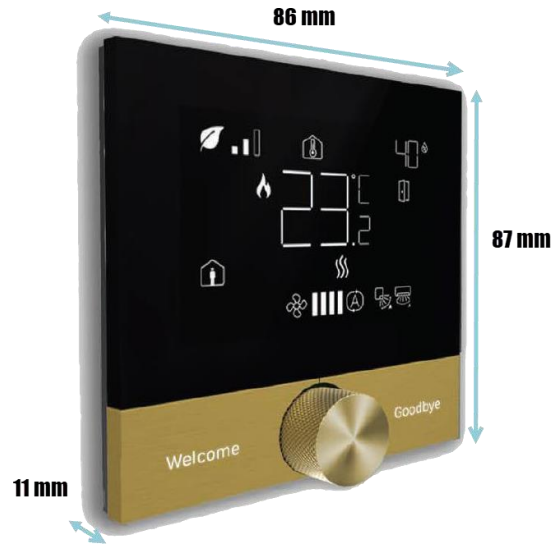
ADAPTIVE BACKLIGHTS

Light sensor measures the ambient light in the room, allowing for automatic adjustment of the backlight brightness. With this advanced feature, the device can be customized to provide the perfect level of brightness for any environment.

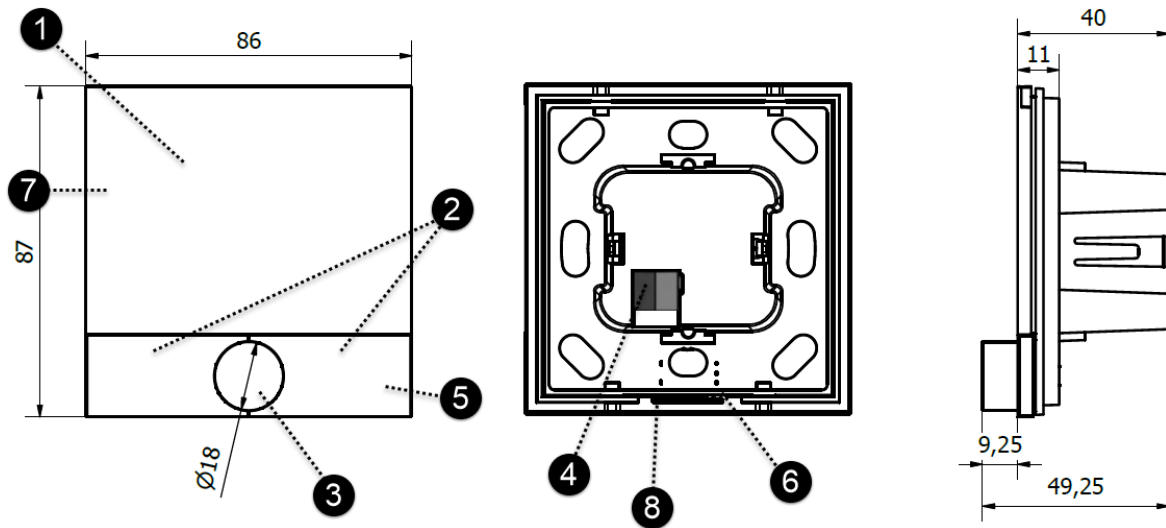
PROXIMITY SENSOR

The Eclipse Room Controller is equipped with a sophisticated proximity sensor that detects when a user is approaching the device. In dark environments, the light of the display is automatically dimmed to provide a welcoming and comfortable user experience.

1.2. Dimensions

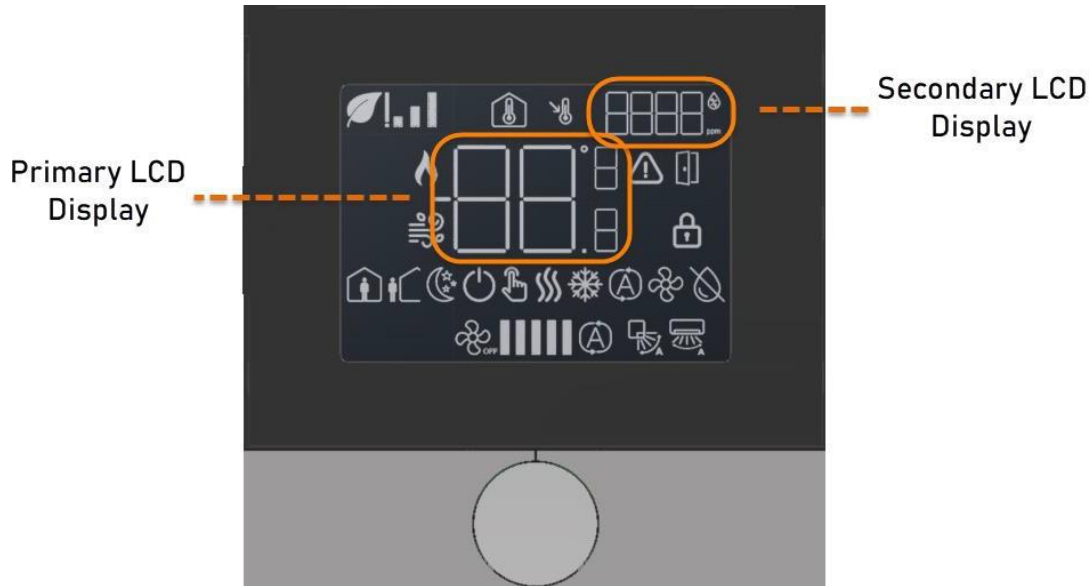


Dimensional drawing (all dimensions are in mm)



- | | |
|---------------------------------|---|
| 1. Display | 5. KNX Programming Button (under the key) |
| 2. Folds (Sold separately) | 6. CO2 Sensor |
| 3. Super Knob (Sold separately) | 7. Proximity Sensor |
| 4. KNX Connector | 8. Temperature and Humidity Sensor |

1.3. Display Overview

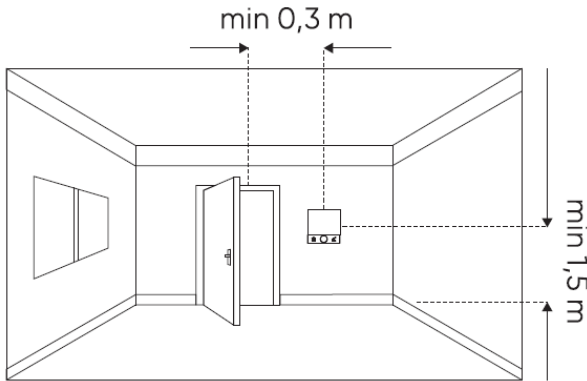


2. Technical Specification

Sensors:	Temperature – Accuracy Rate +/- 0.2°C Humidity – Accuracy Rate +/- 2% CO2 Proximity & Light
Dimensions:	86mm X 86mm X 11mm
Fold Thickness:	4mm
Display:	3.5" VA Display
Casing Material:	Aluminium, Brass and Stainless Steel depending on the finish selection
Knob Material:	Brass, Stainless Steel depending on the finish selection
Power:	29 VDC
Consumption:	< 15 mA from KNX Bus-line
Connectivity:	KNX-TP
Programming Tool:	ETS
Optional Modules:	VRV Modules Mitsubishi Electric, Daikin, Samsung Nasa, LG, Gree, Mitsubishi Heavy
Installation:	German IEC/EN 60670 In wall Box

2.1. Installation

2.1.1 Installation Site

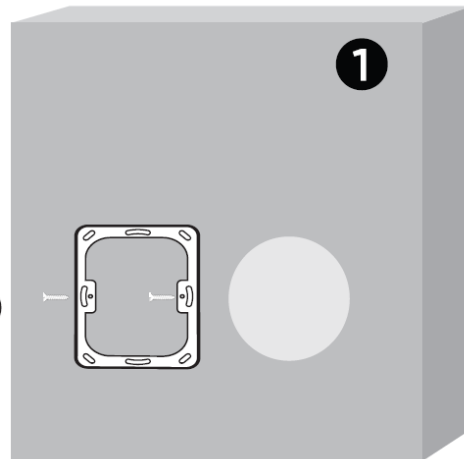


- The device should be positioned approximately 150 cm above the ground and 30 cm away from the door.
- The device should not be installed close to the heat source. The wall opposite the heat source will be appropriate for the installation.
- Contact with fluids to the device is to be avoided.

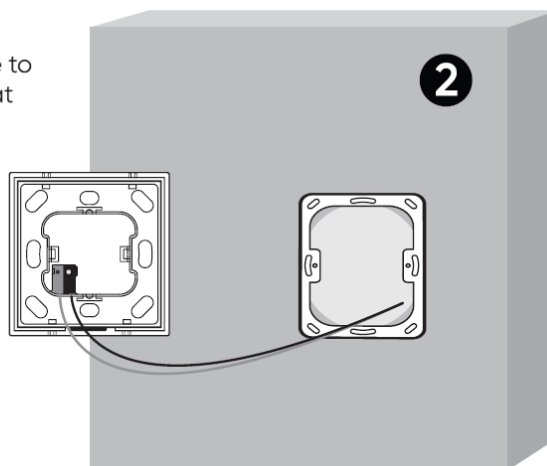
2.1.2. Mounting, Electrical Connection

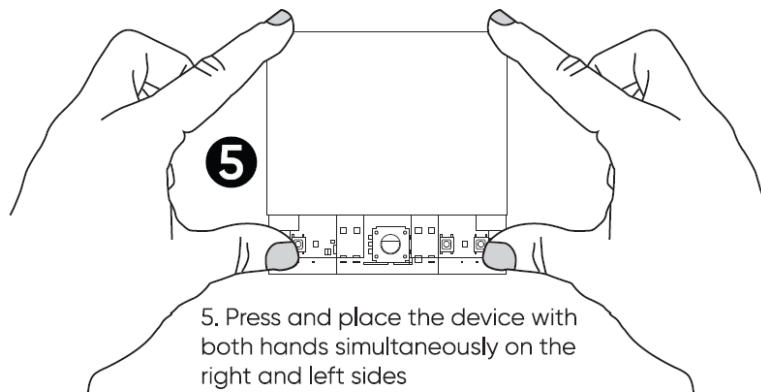
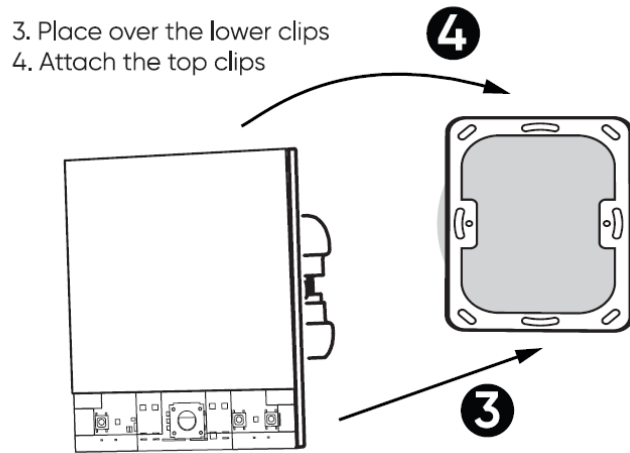
1. Mount the metal mounting support.
(Included in the box.)

- ⚠ Use screws included in the box (M3x15 mm)
- ⚠ Do not overtighten the screw

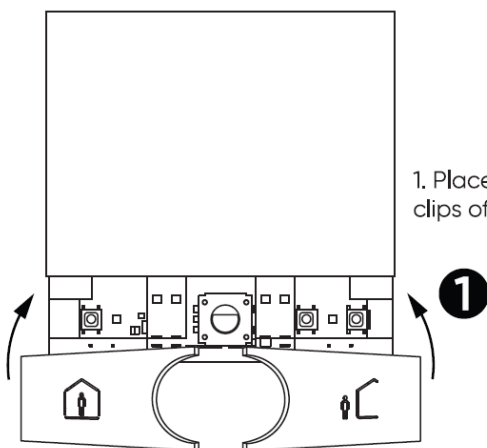
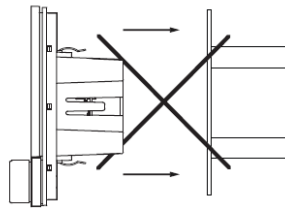


2. Connect KNX cable to the device. Check that polarity is correct.

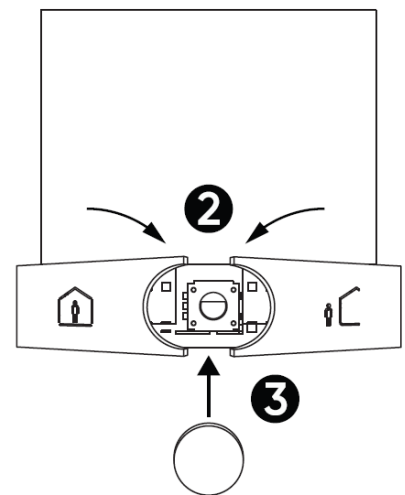




Pushing the device straight into the clips might damage



2. Attach middle clips
3. Attach the knob



For installation video: <https://youtu.be/31ijnYzS6LY>

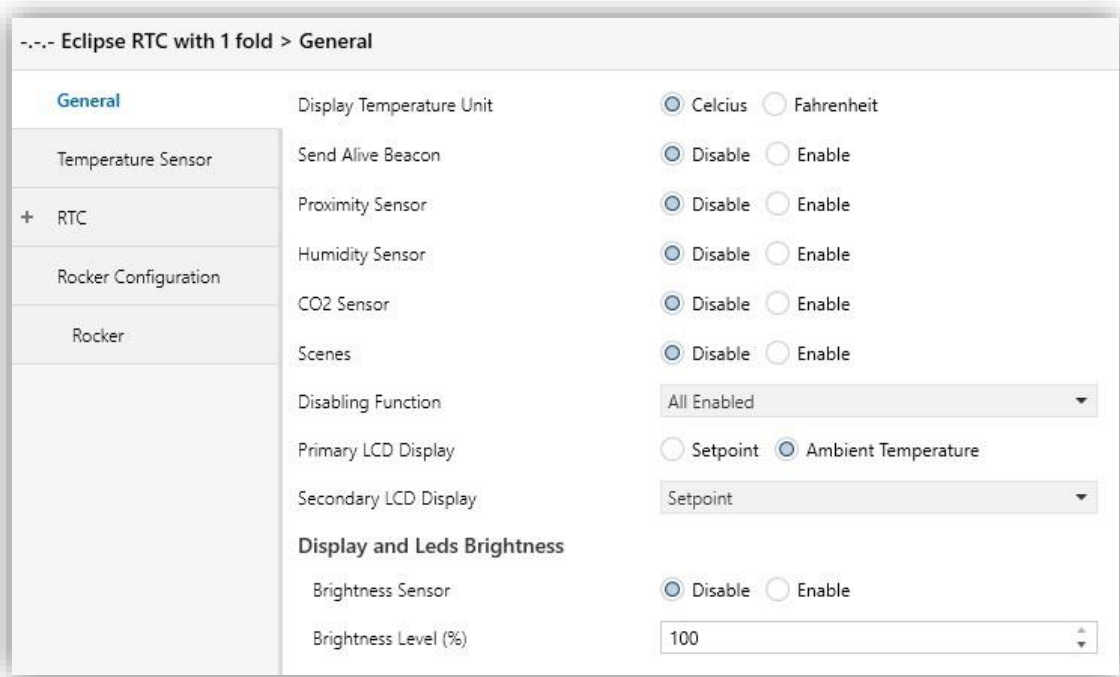
3. ETS Parameters

Eclipse Thermostat 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=PLtwbriT0bxi_AiuOhgyqbsvCJeNRLjLoD

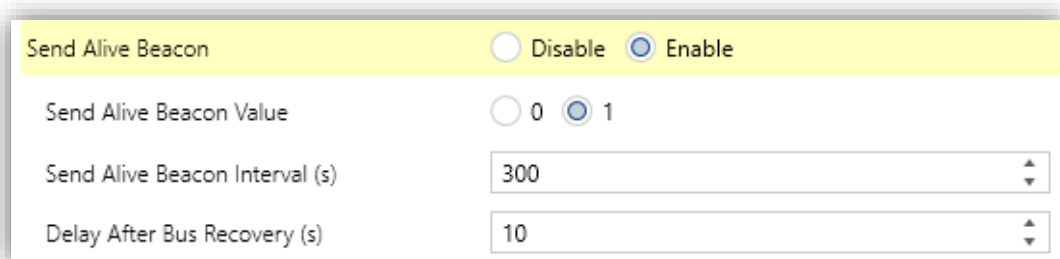
3.1 General



Display Temperature Unit: [Celsius, Fahrenheit]

Temperature unit can be selected for the device. Once selected, the device will use your preferred temperature unit for all temperature values displayed on Eclipse Thermostat.

Send Alive Beacon: [5...300...65535 s]



Parameter used to observe that the device and the application are running. It is disabled by default. When activated, Object Number 1 “Send Alive Beacon” will send selected value with defined time interval cyclically.

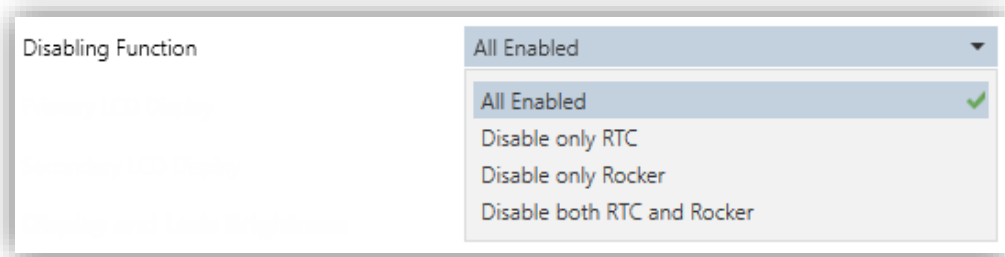
Delay After Bus Voltage Recovery: [1...10...255 s]

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.

Disabling Function:

RTC and Rocker can be disabled by checking "Disabling Function" parameter. Following parameters available.

- All Enabled : Super knob and rocker both are enabled.
- Disable only RTC : Super knob is disabled. Rocker is enabled.
- Disable only Rocker : Super knob is enabled. Rocker is disabled.
- Disable both RTC and Rocker : Super knob and Rocker both are disabled.



Primary LCD Display: [Setpoint, Ambient Temperature]

Primary LCD display can be set to show "Setpoint temperature" value instead of "Ambient temperature". Figure 1

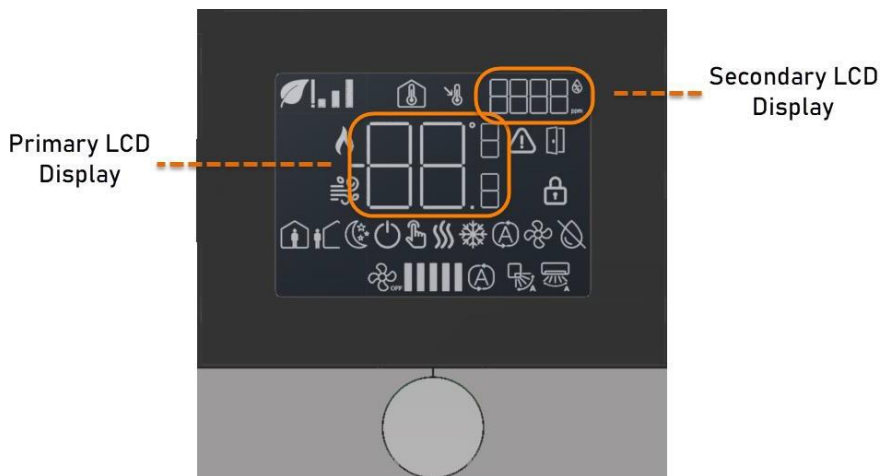
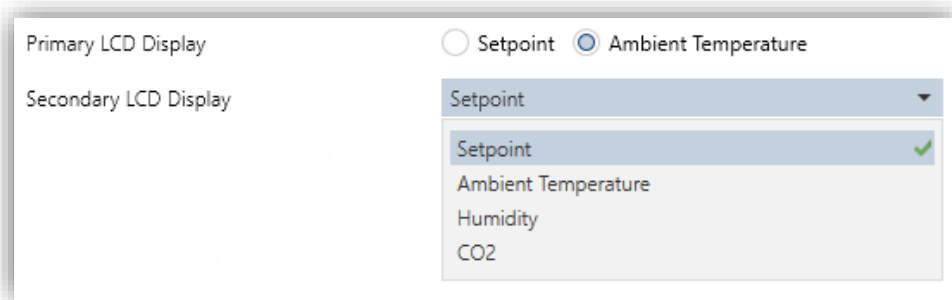


Figure 1 - LCD Display

Secondary LCD Display: [Setpoint, Ambient Temperature, Humidity, CO2]

Primary LCD display can be set to show following values.

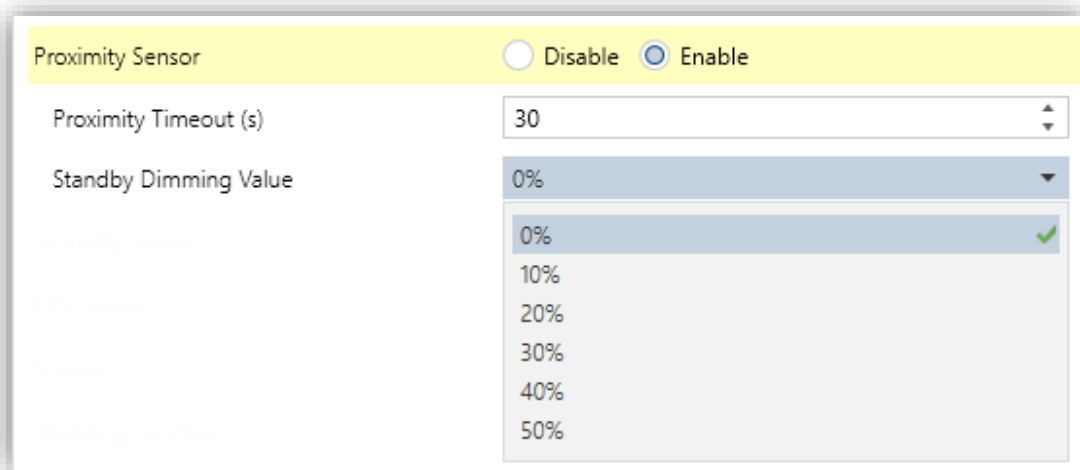


Check Figure 1 for the position of second LCD display.

3.1.1. Proximity Sensor

Through the proximity sensor it is possible to keep the Eclipse Thermostat in a stand-by state, setting a level of brightness of the LEDs and the display and reactivate them only when the user approaches to the thermostat.

When “Proximity Timeout” is over, [1...**30**...120 s] brightness of LEDs and display will be dimmed to “Standby Dimming Value” until next proximity approach is detected. Stand by dimming value can be selected as follows. [%0, %10, %20, %30, %40 and %50]



Brightness calculation when Proximity sensor is activated.

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

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

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

Actual brightness formula:

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

Example 1: MBV=100, SDP=20

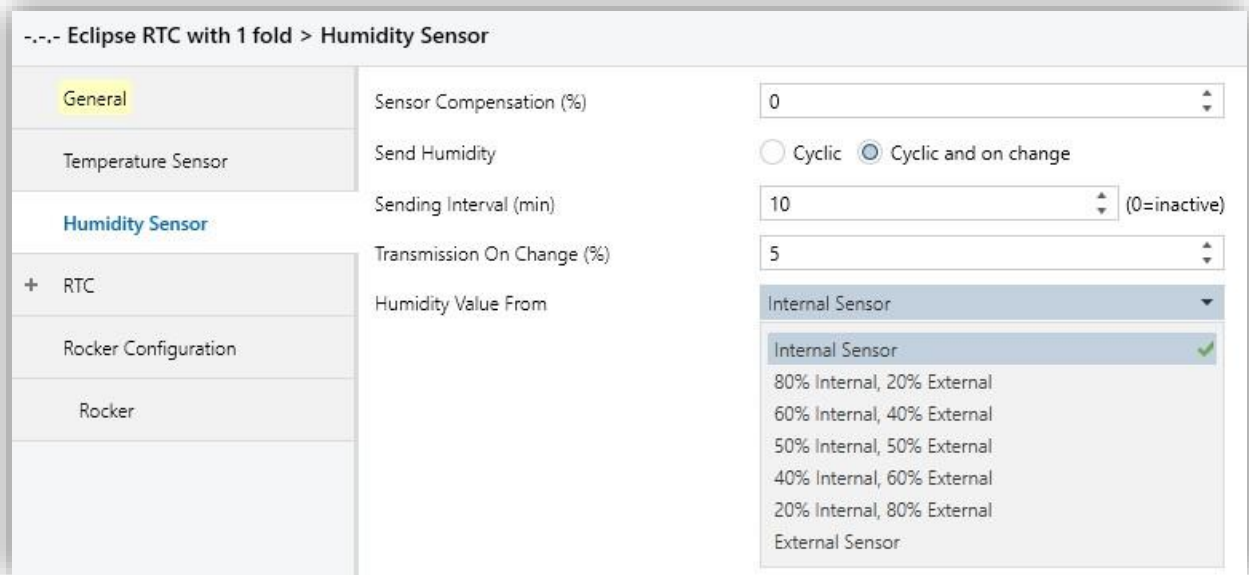
$$\text{Actual Brightness} = 100 \times \frac{20 + (100 - 20) \times 0}{100} = 20 \%$$

Example 2: MBV=60, SDP=20

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

3.1.2. Humidity Sensor

Humidity sensor tab contains following parameters.



Sensor Compensation (%):

Measured humidity value can be shifted up or down by using sensor compensation value. [-5...0...+5]

Example: Assume that “3” is written to the sensor compensation box. Measured humidity percentage will be increased + 3%. If “-3” is written to the sensor compensation box. Measured humidity percentage will be decreased - 3%.

Send Humidity:

Object Number 3 “Humidity Value – Internal Value (%)” can be sent cyclically or by change of measured humidity.

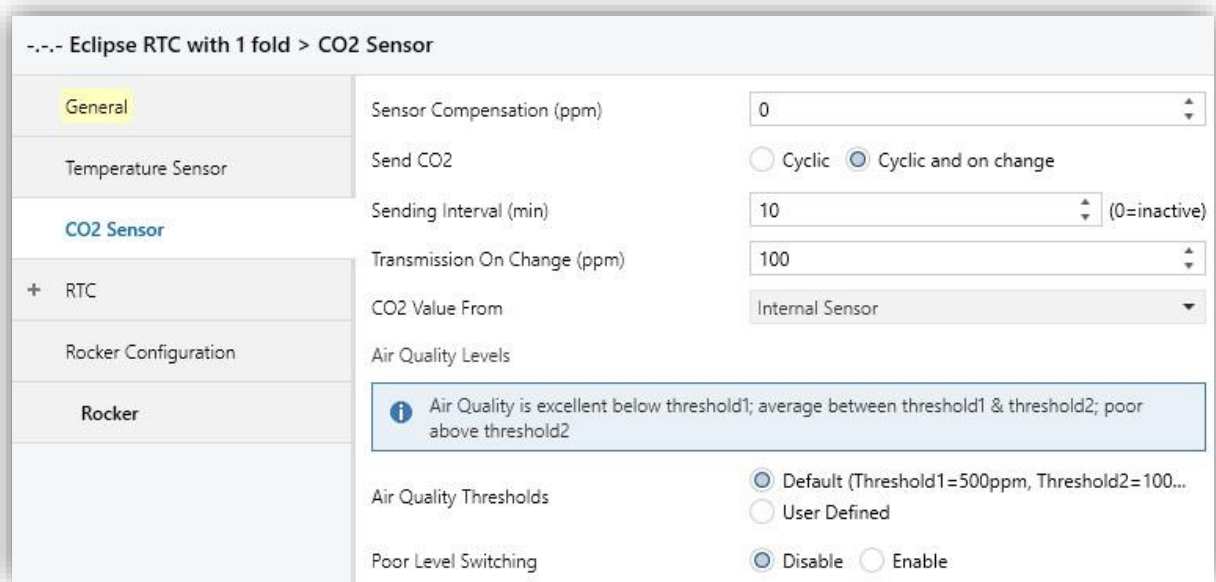
Sending Interval (min) [0...10...255] Transmission

on Change (%) [1...5...100] **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

CO₂ sensor tab contains following parameters.



Sensor Compensation (ppm):

Measured CO₂ value can be shifted up or down by using sensor compensation value. [-500...**0**...+500]

Example: Assume that "100" is written to the sensor compensation box. Measured CO₂ppm will be increased "100 ppm". If "-100" is written, measured CO₂ppm will be decreased "100 ppm".

Send CO₂:-

Object Number 5 "CO₂ Value - Internal Value (ppm)" can be sent cyclically or by change of measured ppm.

Sending interval time [0...**10**...255]

Transmission on change [10...**100**...500] **CO₂**

value from:

CO₂ value can be received from an external CO₂ 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 7 “Poor Level Switching Value” 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. Scenes

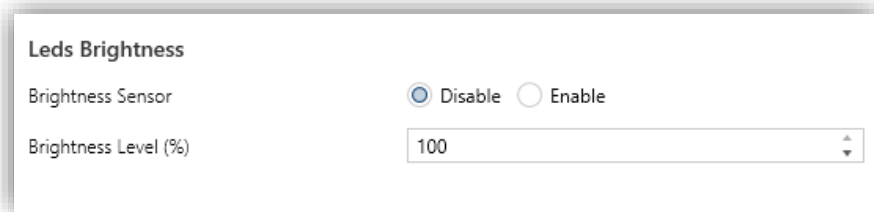
Eclipse Thermostat has 4 scenes available to change RTC Operating Mode via recalling a scene.

Scene number can be individually selected between 1 and 64 for each scene. Thus, scenes can be recalled by using “Scene number” via Object Number 103 “Scene – Scene Call”.

3.1.5. Display and Leds Brightness

Brightness Sensor [Disable]

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



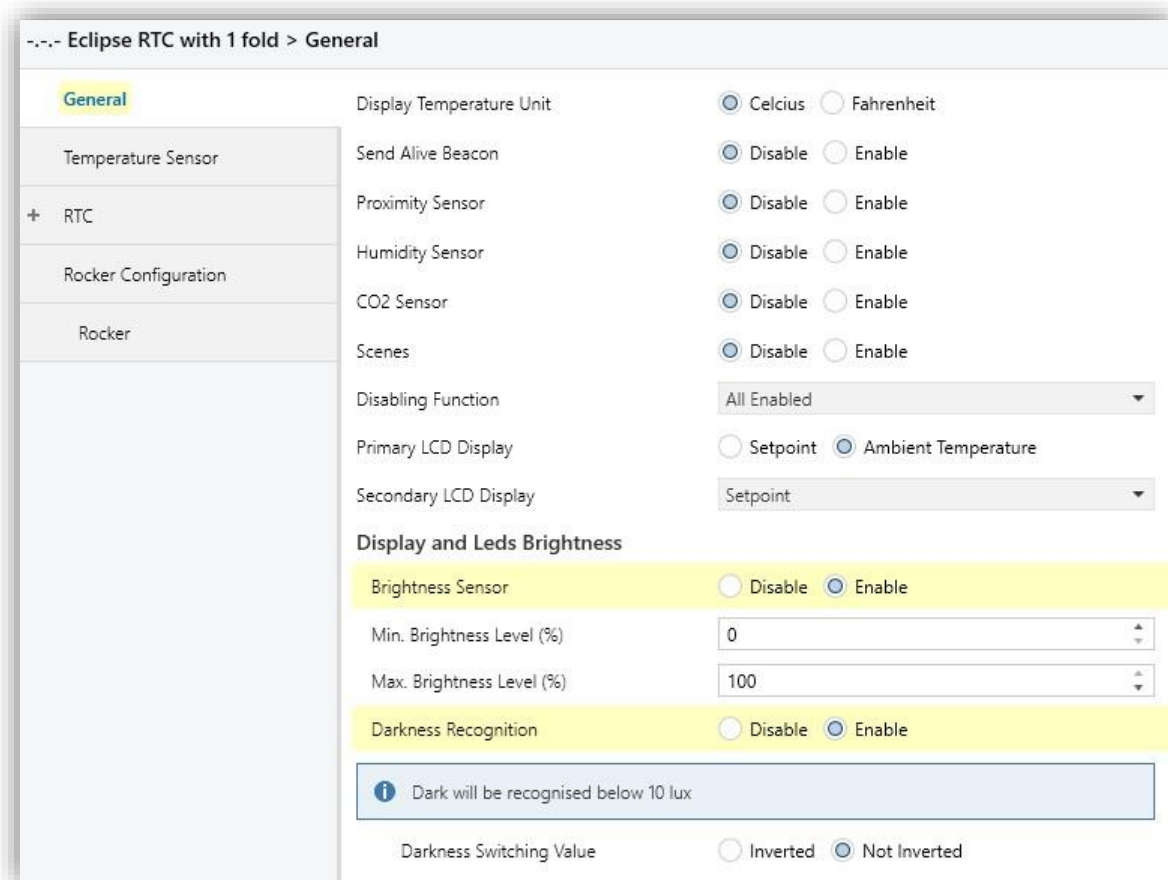
Brightness Sensor [Enable]

Eclipse Thermostat adjusts brightness of LEDs and display 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:

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

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

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

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

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

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%

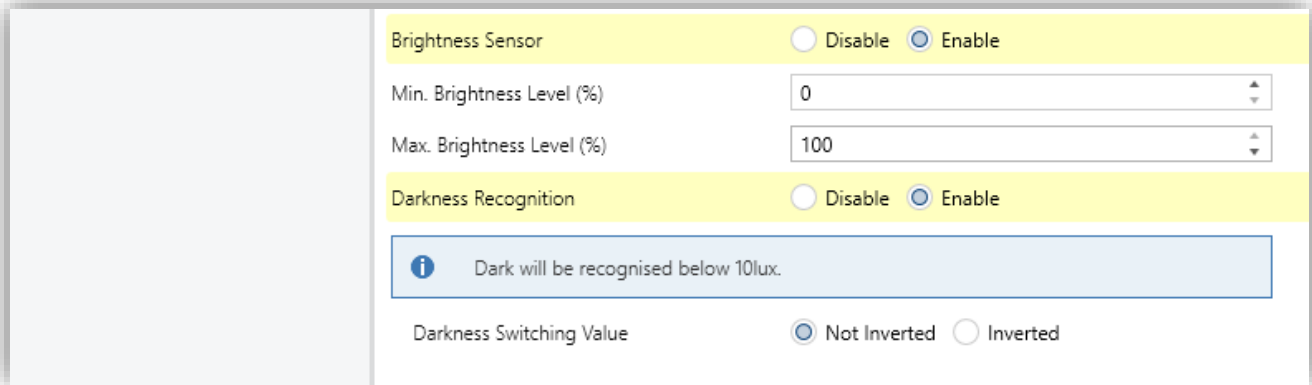
Table 1 – Change of Actual Brightness according to ambient light level

Note: If “Brightness Sensor” is enabled at the same time with “Proximity Sensor”, brightness value of LEDs and display will change accordingly based on the formula below.

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

Darkness Recognition

Object Number 2 "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]



3.2. Temperature Sensor

Sensor Compensation (x0.1K):

Measured temperature value can be shifted up or down by using sensor calibration value. [-100...0...+100]

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

Send Temperature:

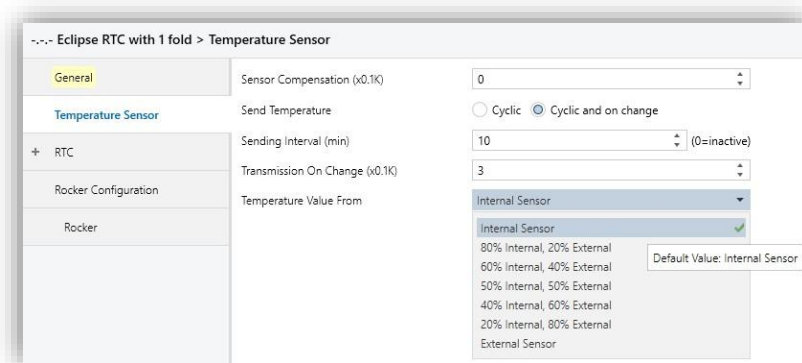
Object Number 8 "Actual Temperature – Internal Value" can be sent cyclically or by change of measured temperature.

Sending Interval (min) [0...10...255]

Transmission on Change (x0.1K) [1...3...100]

Temperature Value from:

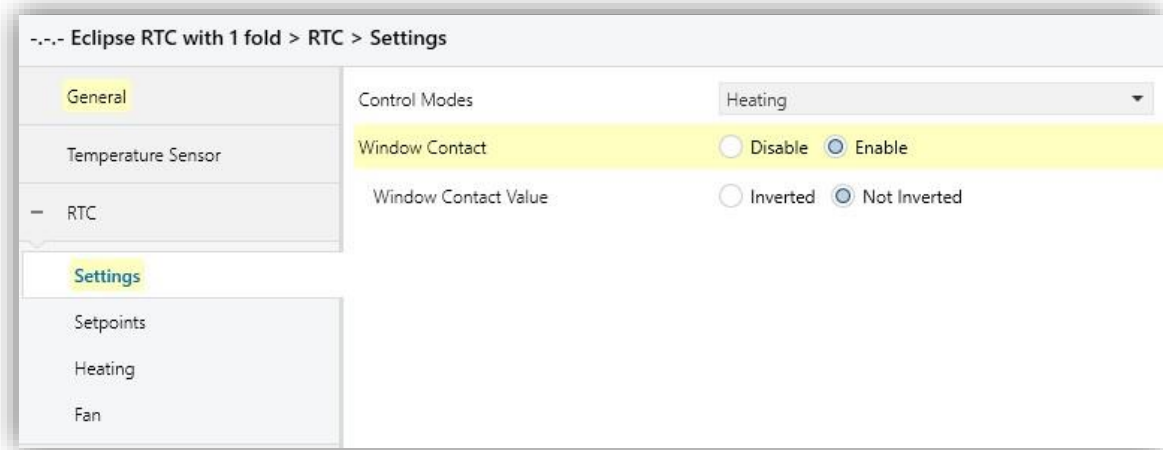
Temperature value can be received from an external temperature sensor directly or partially according to selected percentage. Object Number 9 "External Temperature – External Value".



3.3. RTC

3.3.1. Settings

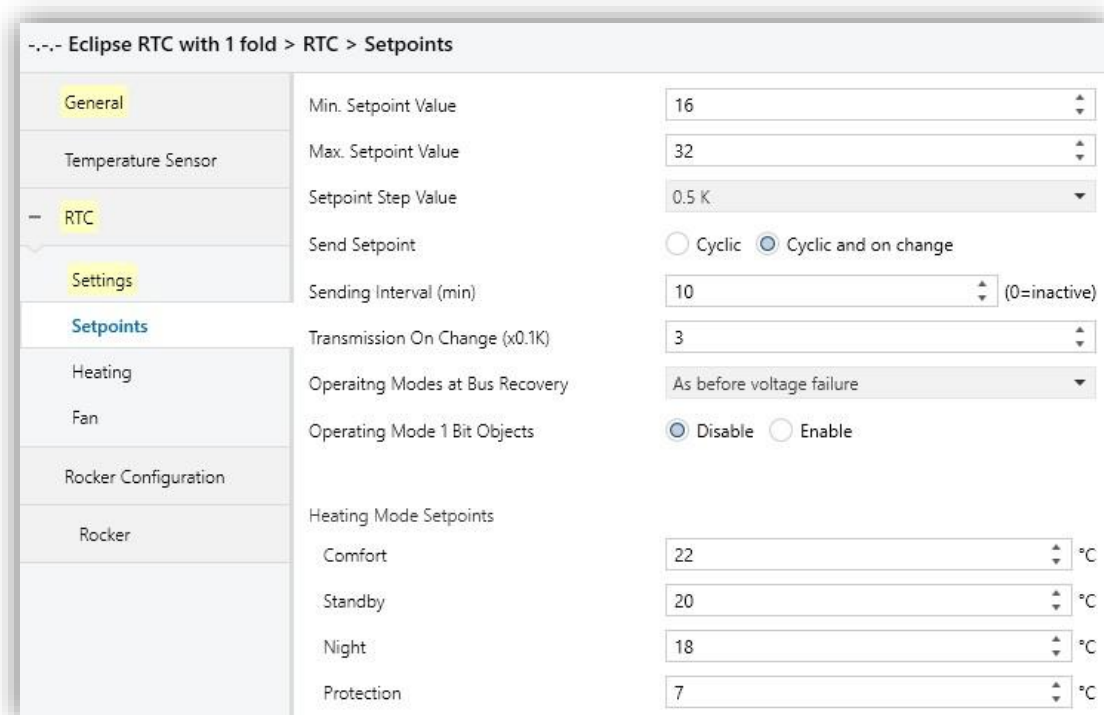
Control Modes: Heating, Cooling, Heating and Cooling, Air Conditioner]



Window Contact: [Disable, Enable]

Object Number 10 “Window Contact (1-Open, 0--Close) can be used to take thermostat control in stand-by position according to the window status. If window is open thermostat will stop working.

3.3.2. Setpoints



Min. Setpoint Value: [5...16...40]

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

Max. Setpoint Value: [5...32...40]

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

Setpoint Step Value: [0.1...0.5...1]

Step value can be defined with the parameter. Selected step value will be used to Increase/Decrease value of current setpoint by rotating the super knob.

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

Current setpoint can be sent cyclically or by change of measured temperature via status Setpoint object.

Sending interval (min): [0...10...255] 0=Inactive

Defines the time period of sending setpoint value via "Status Setpoint" object.

Transmission on change (x0.1 K): [1...3...100]

Defines the minimum temperature change to send setpoint value via "Status Setpoint" object.

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.

Operating Mode 1 Bit Objects:

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 if this parameter is enabled. Status Objects will send current status of operating mode after change.

22	Comfort Mode	1-Active	1 bit	state
23	Comfort Mode Status	0-Inactive,1-Active	1 bit	state
24	Standby Mode	1-Active	1 bit	state
25	Standby Mode Status	0-Inactive,1-Active	1 bit	state
26	Night Mode	1-Active	1 bit	state
27	Night Mode Status	0-Inactive,1-Active	1 bit	state
28	Protection Mode	1-Active	1 bit	state
29	Protection Mode Status	0-Inactive,1-Active	1 bit	state

As default,

1 Byte Object [DPT_HVACMode];

Object Number 20 "Operating Mode" can be used to change between different modes. Object "Operating Mode Status" will send current status of operating mode after change.

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

20	Operating Mode	1-Comfort, 2-Standby, 3-Night, 4-Protection	1 byte	HVAC mode
21	Operating Mode Status	1-Comfort, 2-Standby, 3-Night, 4-Protection	1 byte	HVAC mode

Heating Mode Setpoints:

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

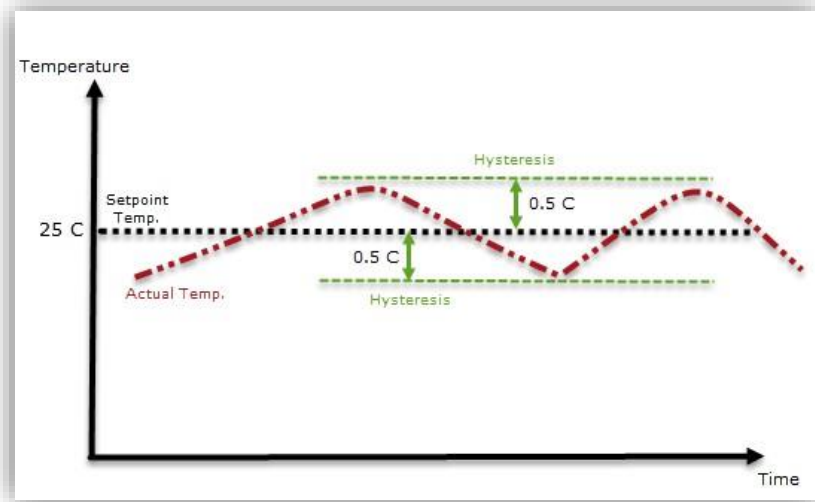
Changeover of operating modes can be achieved through "Operating Mode" communication objects.

Rocker Configuration	
Rocker	Heating Mode Setpoints
	Comfort <input type="text" value="22"/> °C
	Standby <input type="text" value="20"/> °C
	Night <input type="text" value="18"/> °C
	Protection <input type="text" value="7"/> °C

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

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

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.



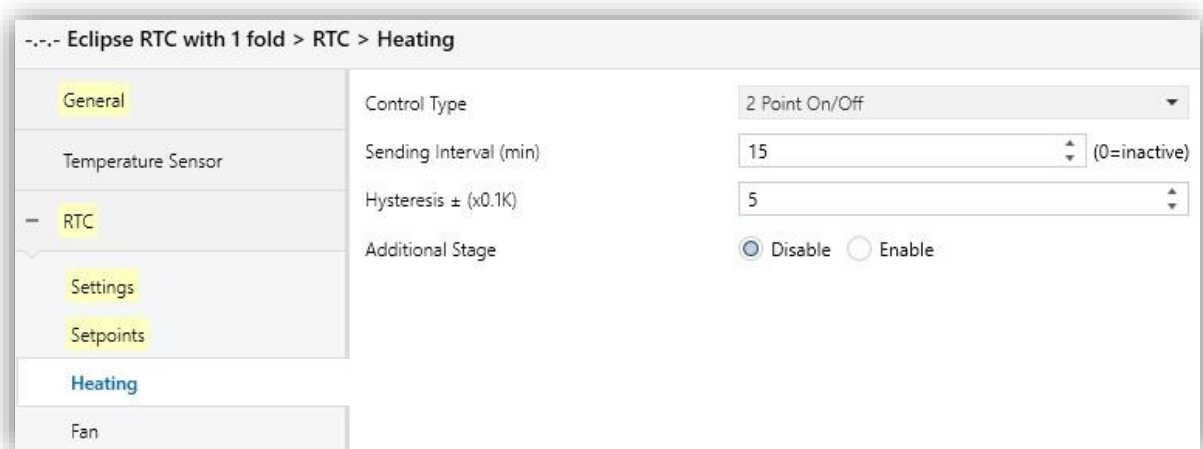
Sending Interval (min): [0...15...255] 0=inactive

Determines cyclic sending period of Object "General Thermostat - Heating 2 Point Control Value".

Hysteresis +/- (x 0.1 °C): [1...5...255]

Determines Hysteresis value to control "Heating 2 Point 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.

Additional Stage: Explained in [#3.3.6. Heating - Additional Stage](#)

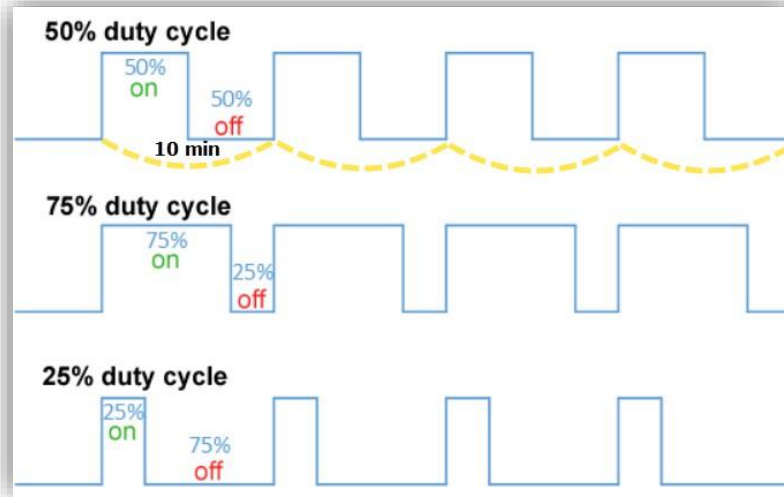


3.3.4. Heating - Control Type: [Switching PI Control PWM]

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.

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.



Heating Type: 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

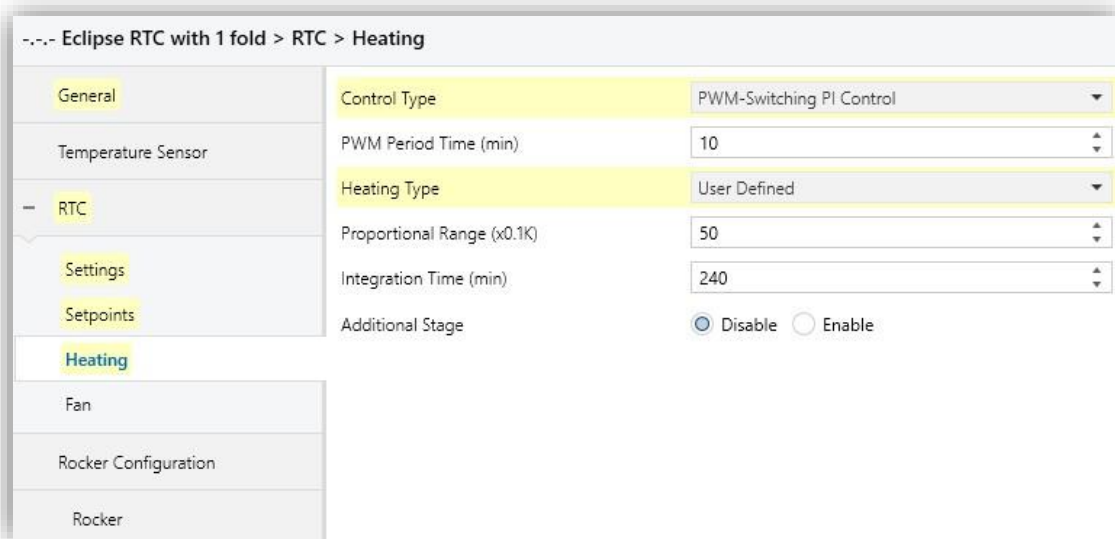
If the required heating type is not available, individual parameters can be specified in the "User Defined" configuration.

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): [1...240...255]

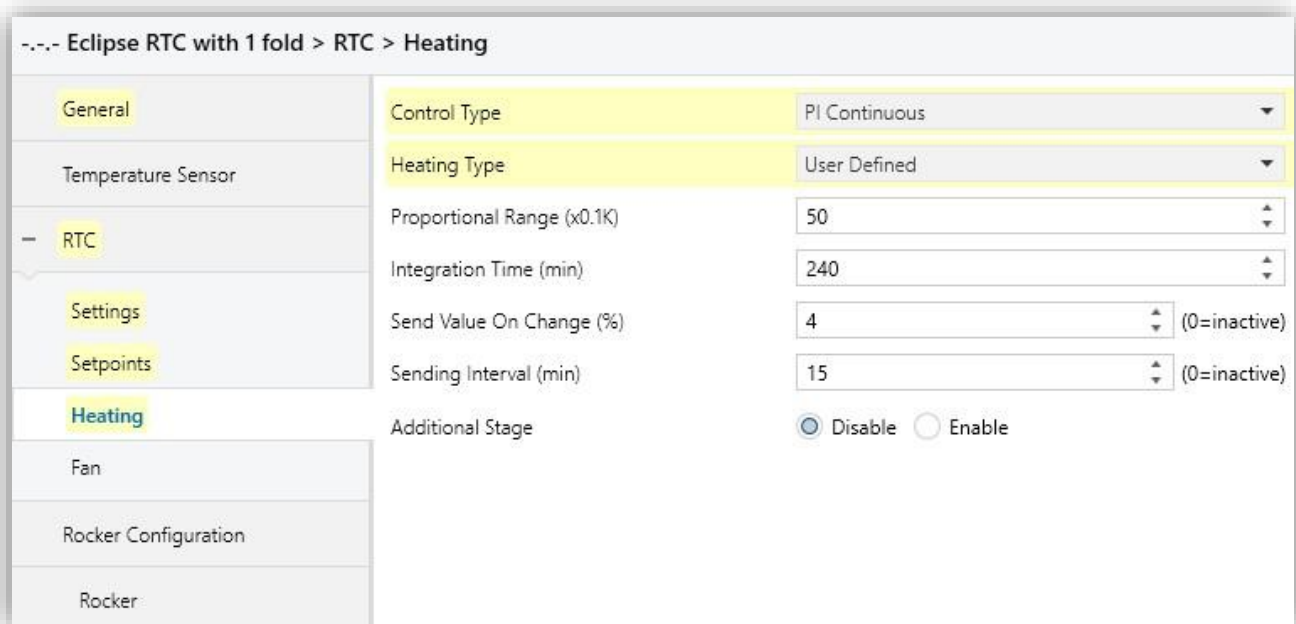
Defines the reset time of controller. Integration Time has the effect of moving the room temperature slowly toward, and ultimately reaching the setpoint value. Depending on the type of system used, parameter needs to have different values. In general, the more inactive the overall system, the greater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



Additional Stage: Explained in [#3.3.6. Heating - Additional Stage](#)

3.3.5. 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.



Heating Type: 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): [1...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.

Send Value on Change (%): [0...4...100] 0=inactive

Heating control value will be sent on change of percentage via Object “General Temperature (RTC)– Heating PI Control Value”.

Sending Interval (min): [0...15...255]

Determines cyclic sending period of Object “General Temperature (RTC) – Heating PI Control Value”.

Additional Stage: Explained in [#3.3.6. Heating - Additional Stage](#)

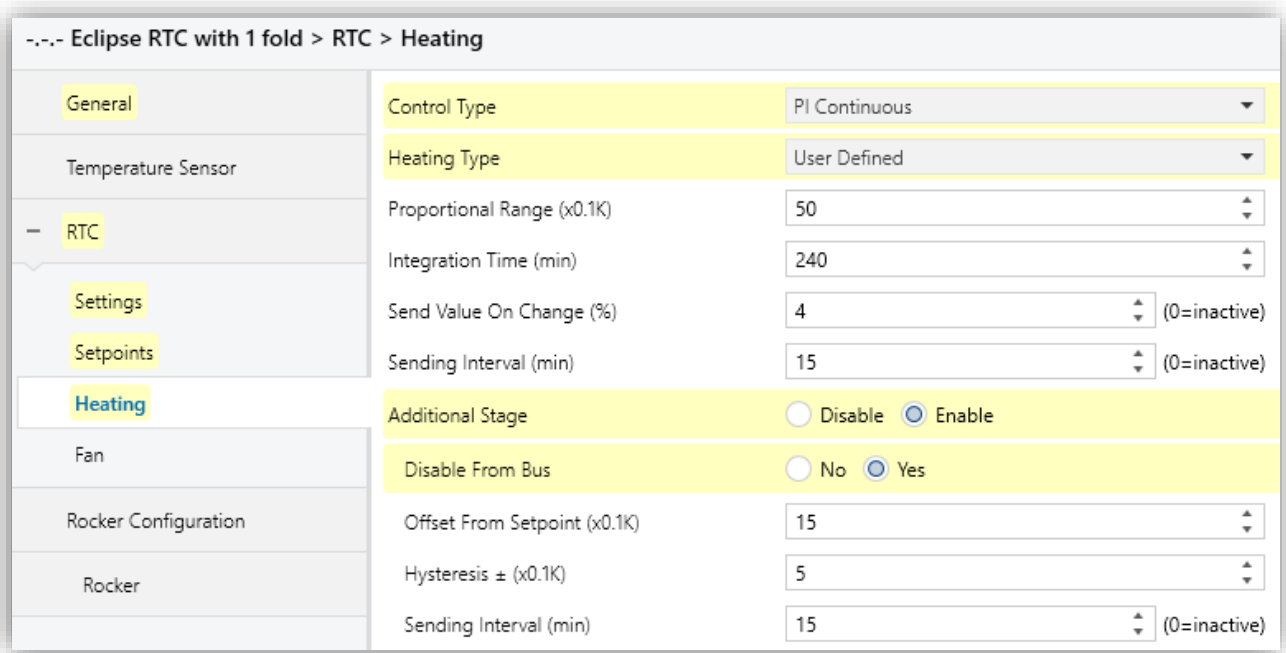
3.3.6. Heating - Additional Stage

Additional Stage: [Disable...Enable]

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

Object “Heating Additional Stage Value” is created when parameter is enabled.

Disable from Bus: Object “Heating Additional Stage Disable (1-Disable 0-Enable)” can be used to disable additional heating control any time by writing True/False.



Offset from Setpoint (x 0.1 °C): [1...15...255]

Defines a separate setpoint value based on main Setpoint temperature for Object "Heating Additional Stage Value". In this way, 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 degrees for the "Heating Control Value" (main heating source.) If

"Offset from Setpoint" parameter is 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): [1...5...255]

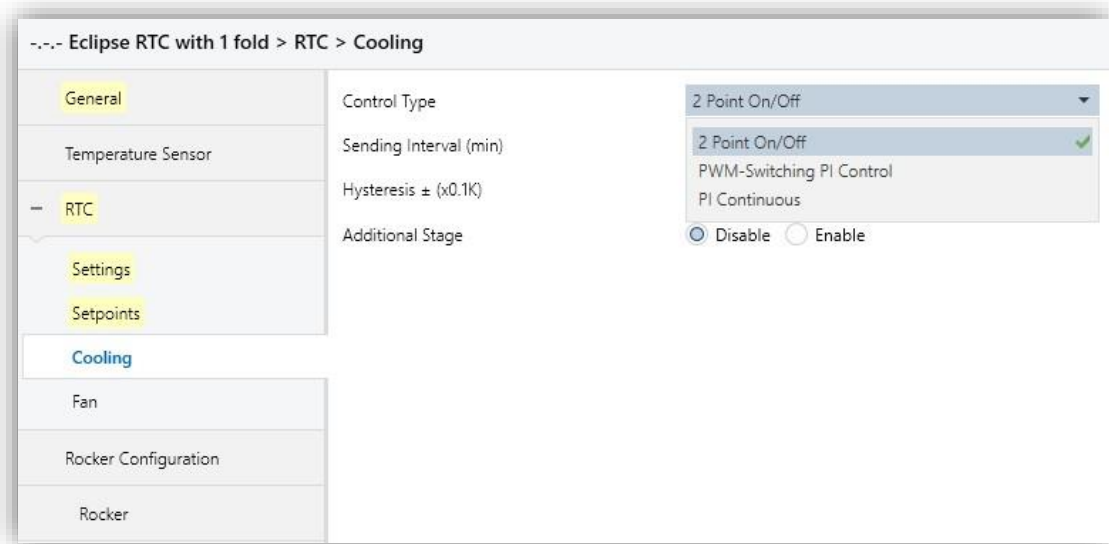
Determines Hysteresis value to control Heating Additional Stage Value more accurate. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

Sending Interval (min): [0...15...255]

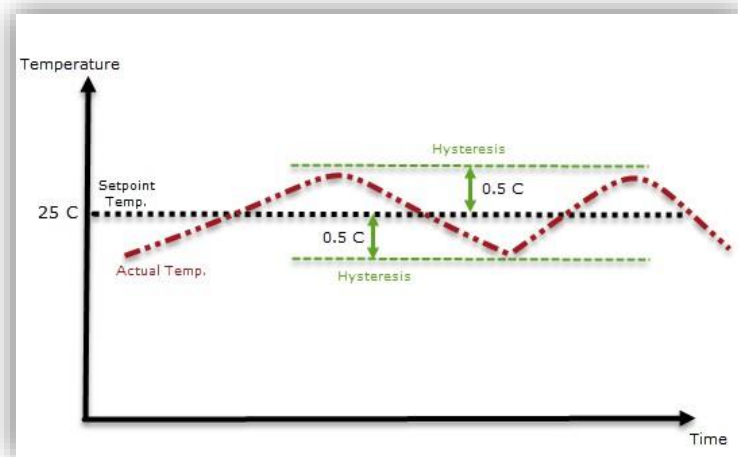
Determines cyclic sending period of Object "Heating Additional Stage Value".

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

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



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.

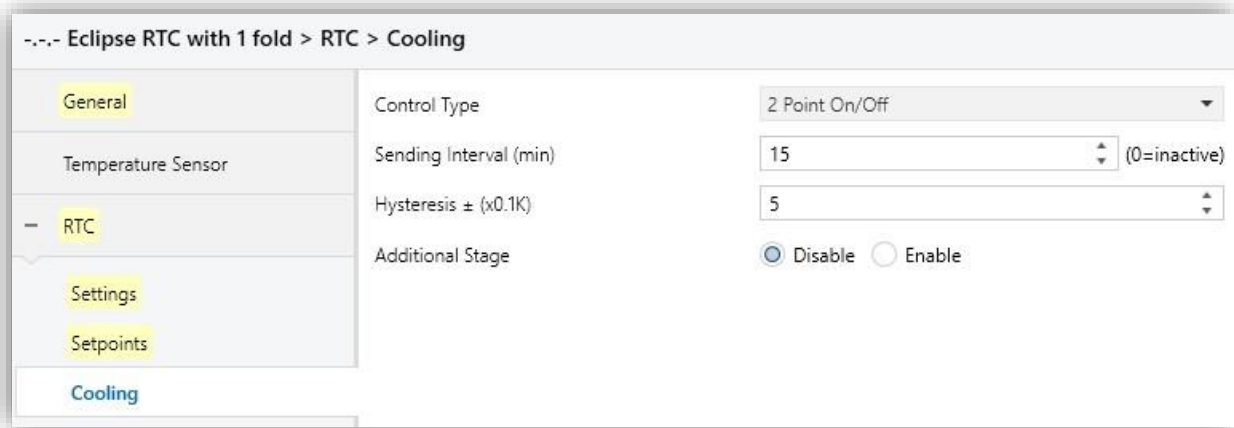


Sending Interval (min): [0...15...255] 0=inactive

Determines cyclic sending period of Object "Cooling 2 Point Control Value".

Hysteresis +/- (x 0.1 °C): [1...5...255]

Determines Hysteresis value to control “Cooling 2 Point 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.



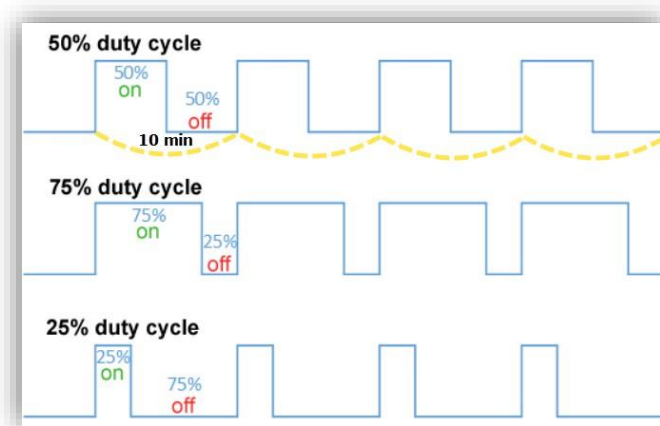
Additional Stage: Explained in [#3.2.4.1.10. Cooling – Additional Stage](#)

3.3.8. 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.

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

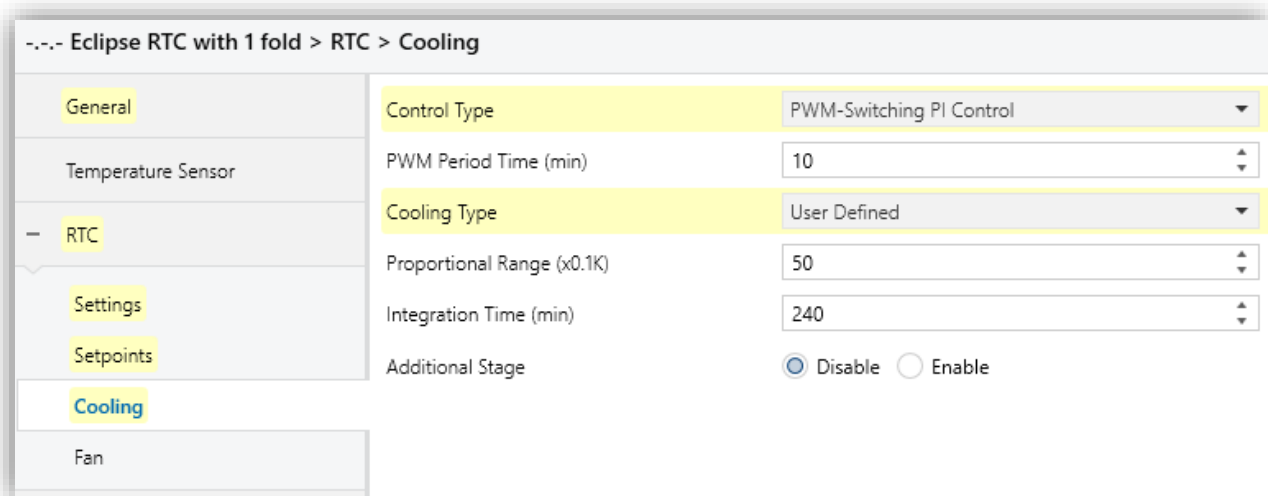
If required cooling type is not available, individual parameters can be specified in the "User Defined" configuration.

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): [1...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.



Additional Stage: Explained in [#3.2.4.1.10. Cooling – Additional Stage](#)

3.3.9. 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.

Cooling Type: Multiple cooling 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.

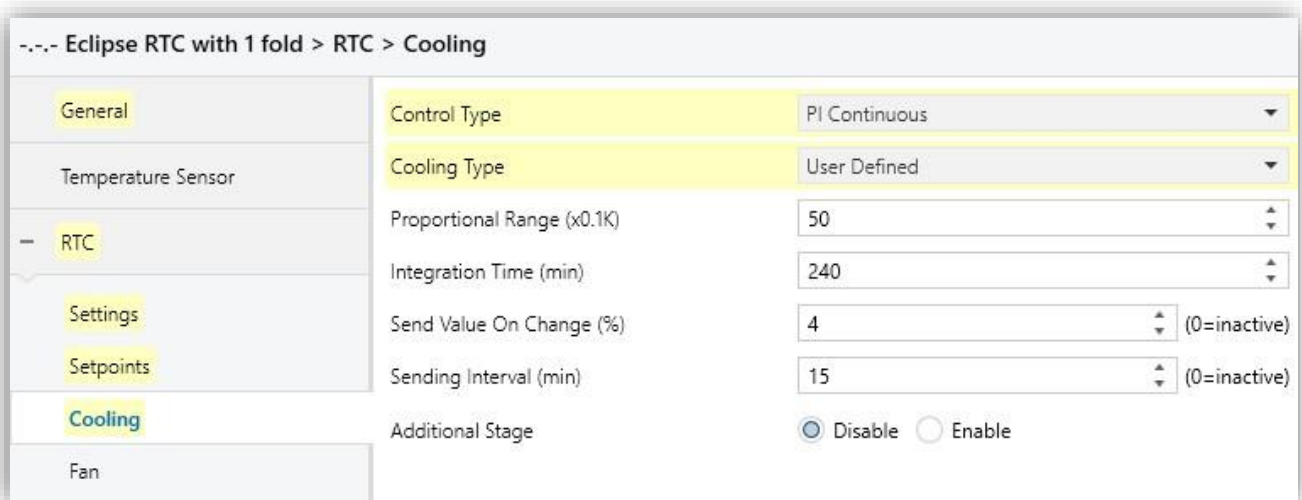
Send Value On Change (%): [0...4...100] 0=inactive

Cooling control value will be sent on change of percentage via Object “Cooling PI Control Value”.

Sending Interval (min): [0...15...255]

Determines cyclic sending period of Object “Cooling PI Control Value”.

Additional Stage: Explained in [#3.2.4.1.10. Cooling – Additional Stage](#)



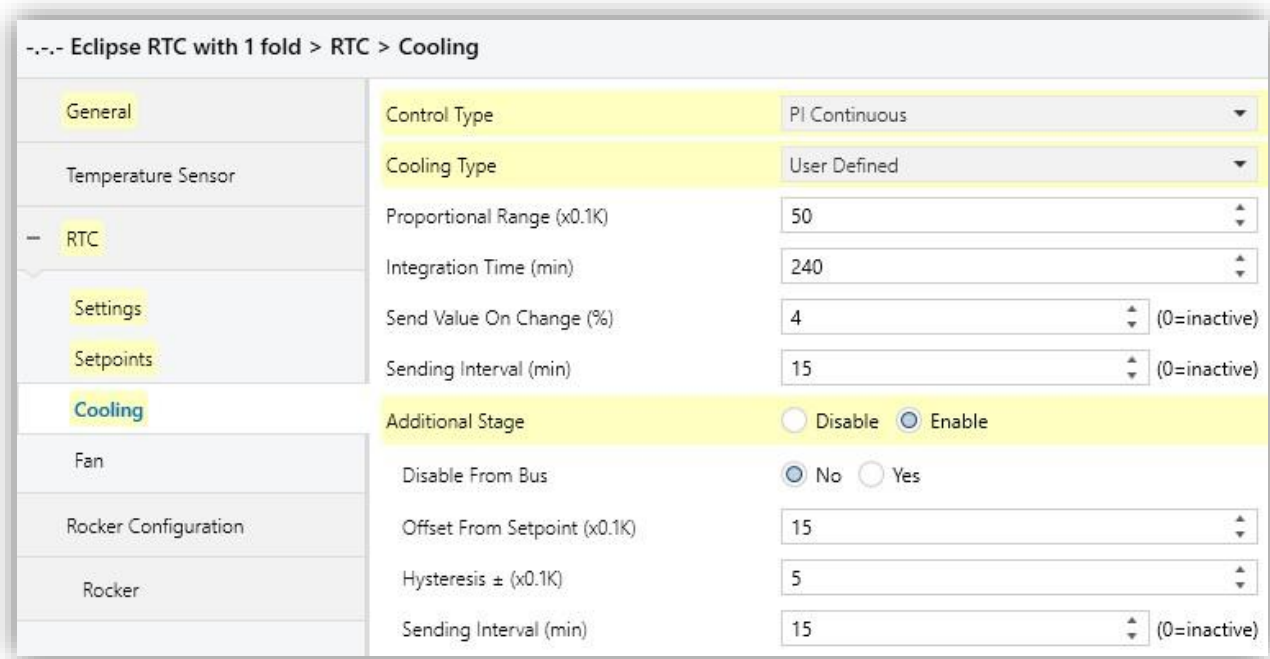
3.3.10. Cooling – Additional Stage

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 “Cooling Additional Stage Control Value” is created when parameter is enabled.

Disable from Bus: Object “Cooling Additional Stage Disable (1-Disable, 0-Enable)” can be used to disable additional cooling control any time by writing True/False.



Offset from Setpoint (x 0.1 °C): [1...15...255]

Defines a separate setpoint value based on main Setpoint temperature for Object "Cooling Additional Stage Value". In this way, Additional Cooling Source will be activated/deactivated depending on new temperature setpoint.

Example: Assume that a room has two type of different heating 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; $20 \times 0.1 \text{ C}^\circ = 2 \text{ C}^\circ$.

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): [1...5...255]

Determines Hysteresis value to control Cooling Additional Stage Value 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.

Sending Interval (min): [0...15...255]

Determines cyclic sending period of Object "Cooling Additional Stage Value".

3.3.11. Heating & Cooling

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

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

Please check below.

-Thermostat Settings

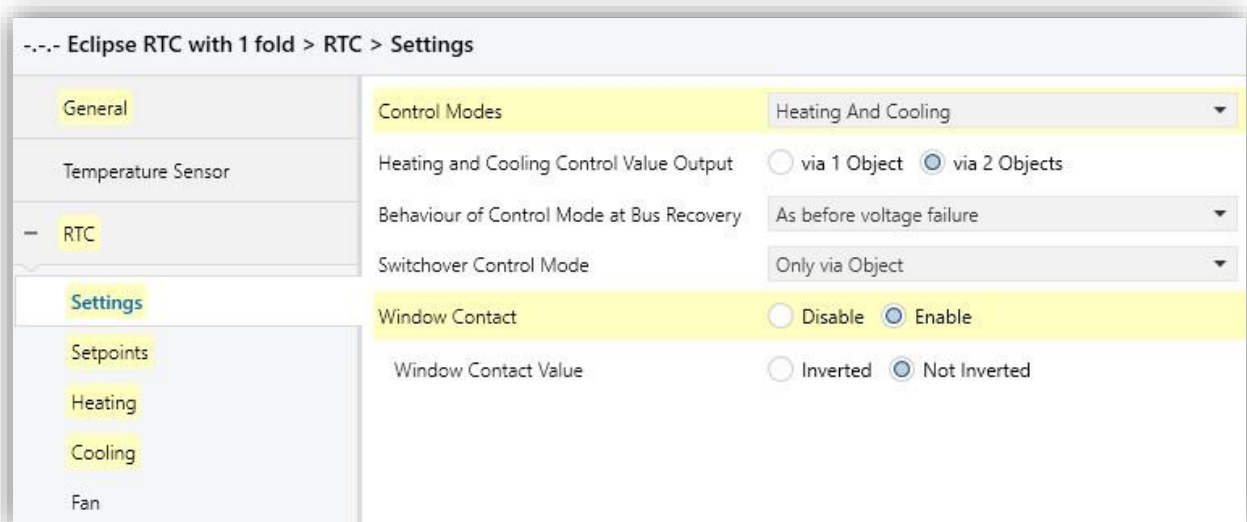
Heating & Cooling Control Value Output: Output value for Heating and Cooling can be sent via same object or 2 separate objects.

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

15	Heating/Cooling PI Control Value	[0,1,Percentage %]	1 byte	percentage (0..100%)
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If "via 2 Objects" option is selected Object "Heating Control Value" and Object "Cooling Control Value" will be activated.

13	Heating PI Control Value	Percentage %	1 byte	percentage (0..100%)
14	Cooling PI Control Value	Percentage %	1 byte	percentage (0..100%)



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

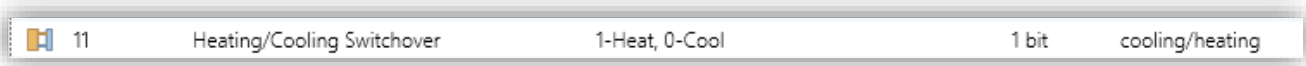
Switchover Control Mode: [Only via Object, Local and via Object, Automatic]

Parameter makes possible to switch between the heating and cooling mode of the thermostat. Only via Object:

Switchover can be applied only "via Object" manually using Object "Heating/Cooling Switchover".

\$01= Heating [1.100 DPT_cooling/heating]

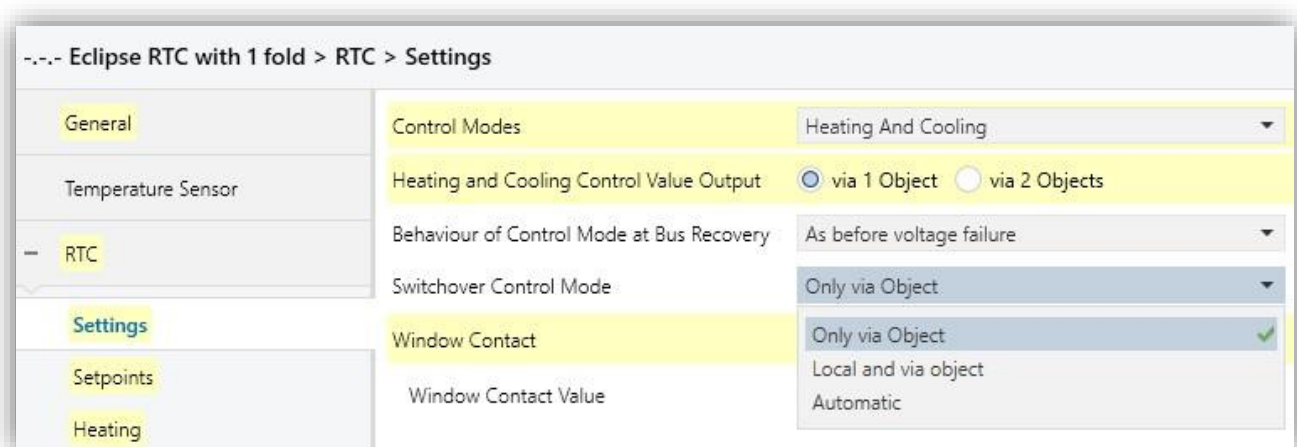
\$00= Cooling [1.100 DPT_cooling/heating]



Local and via Object:

Switchover can be applied locally on thermostat by using super knob and also "via Object" manually using Object "Heating/Cooling Switchover".

Automatic: Eclipse thermostat switches automatically between heating and cooling and to the associated setpoint according to defined "Deadband". Object "– Heating/Cooling Status" will transmit the status after switchover.



Heating Cooling Deadband (x0.1 °C): [0...**20**...255]

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

- Heating/Cooling Object Description

Heating / Cooling Indication

Object "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 "Cooling Indication" defines a state for recent cooling command. It indicates that cooling source is recently having an active command to cool.

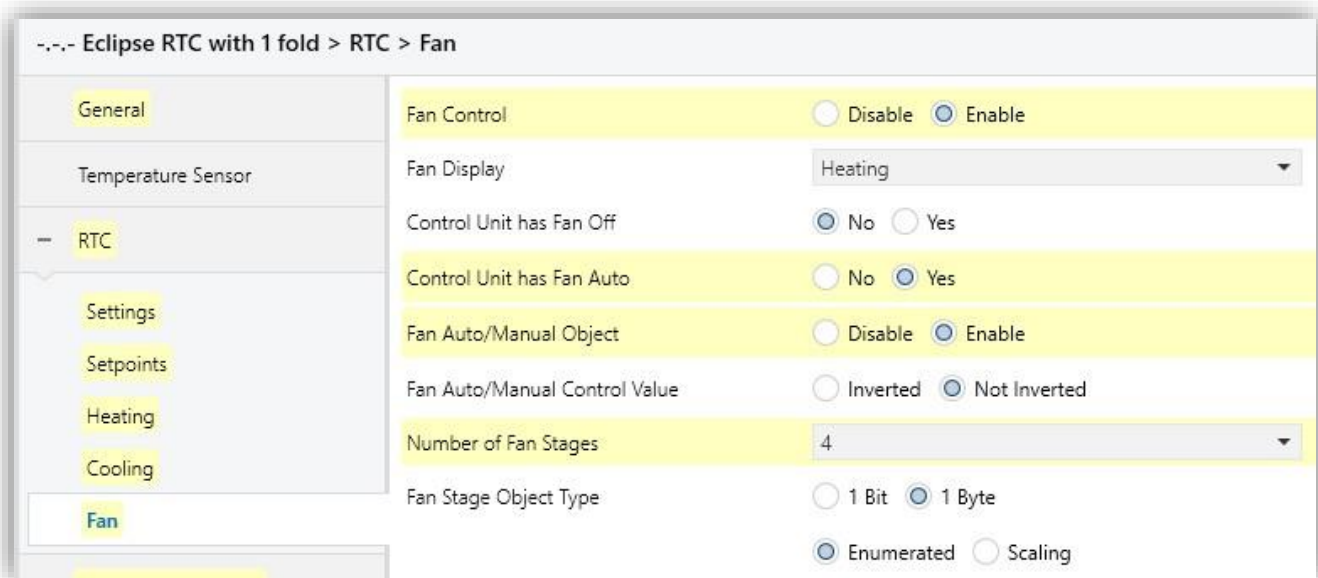
16	Heating Indication	1-Active	1 bit	state
17	Cooling Indication	1-Active	1 bit	state

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.

10:59:52.375	1.5.8	0/7/3	GroupValue_Write	Setpoint Indication	0C 4C 22 °C
10:59:52.398	1.5.8	0/7/6	GroupValue_Write	Actual Temperature	0C 6A 22.6 °C
11:00:26.114	1.5.8	0/7/4	GroupValue_Write	Heating Control Value	\$00 Off
11:00:52.635	1.5.8	0/7/3	GroupValue_Write	Setpoint Indication	0C 4C 22 °C
11:00:52.658	1.5.8	0/7/6	GroupValue_Write	Actual Temperature	0C 6A 22.6 °C
11:01:05.541	15.15.241	0/7/18	GroupValue_Write	External Value	0C 1A 21 °C
11:01:07.700	1.5.8	0/7/6	GroupValue_Write	Actual Temperature	0C 1A 21 °C
11:01:08.299	1.5.8	0/7/4	GroupValue_Write	Heating Control Value	\$01 On
11:01:08.320	1.5.8	0/7/23	GroupValue_Write	Heating Indication	\$01 Active

3.3.12. Fan



Fan Display: [Heating, Cooling, Heating and Cooling]

Fan control function can be visible and available only for selected control modes.

Control Unit has Fan Off: [No, Yes]

Parameter can be activated if actuator has a “Fan OFF” object. “Fan OFF” command can be sent to the actuator via Object “Fan Off (1-Off)” will be visible.

	36	Fan Off	1-Off	1 bit	boolean
	37	Fan Off Status	1-Off	1 bit	boolean

Control Unit has Fan Auto: [No, Yes]

Parameter can be activated if actuator has a “Fan auto” function.

Fan Auto/Manual Object: [Disable, Enable]

“Fan auto” command can be sent to the actuator via Object “General Thermostat (RTC) –Fan Auto/Manual (1-Auto)” will be visible.

	34	Fan Auto/Manual	1-Auto, 0-Manual	1 bit	enable
	35	Fan Auto/Manual Status	1-Auto, 0-Manual	1 bit	enable

Fan Auto/Manual Control Value: [Inverted, **Not Inverted**] Fan

auto command can be used inverse. [True or False]

Number of Fan Stages: [1...**3**...5]

Number of Fan levels can be changed according to control unit. Object will be available according to selection.

	38	Fan Speed 1 Byte Enumerated Control	Speed Values: 0,1,2,3,4	1 byte	fan stage (0..255)
	39	Fan Speed 1 Byte Enumerated Status	Speed Values: 0,1,2,3,4	1 byte	fan stage (0..255)









Fan Stage Object Type: [1 bit, **1 Byte**]

Type of Fan stage object can be changed as 1 bit or 1 Byte. 1 Byte object can be used as “Enumerated” or “Scaling”.

Fan Speed Enumerated (0, 1, 2, 3, 4)

Fan Speed Scaling (0, 25, 50, 75, 100) %

1 bit objects;

	42	Fan Speed 1	1-Active	1 bit	state
	43	Fan Speed 1 Status	0-Inactive,1-Active	1 bit	state
	44	Fan Speed 2	1-Active	1 bit	state
	45	Fan Speed 2 Status	0-Inactive,1-Active	1 bit	state
	46	Fan Speed 3	1-Active	1 bit	state
	47	Fan Speed 3 Status	0-Inactive,1-Active	1 bit	state
	48	Fan Speed 4	1-Active	1 bit	state
	49	Fan Speed 4 Status	0-Inactive,1-Active	1 bit	state

3.3.13. Air Conditioner

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

If Air Conditioner control mode is selected, parameters and objects will change especially for Air Conditioners. Please check below.

Control Type via External Gateway via Build-in Gateway

Control Modes Object Type 1 Bit 1 Byte

Heat/Cool Mode 1 Bit Object Disable Enable

Control Unit has Fan Auto No Yes

Number of Fan Stages

Fan Stage Object Type 1 Bit 1 Byte

Enumerated Scaling

Vanes Up-Down Display Disable Enable

Vanes Left-Right Display Disable Enable

Control Type: [via External Gateway, via Build-in Gateway]

An External VRV KNX gateway must be used in combination with Eclipse Thermostat.

Control Type: [via Build-in Gateway]

Eclipse Thermostat is used with built-in VRV gateway for the particular brand of air conditioner. (optional, built-in VRV module must be ordered with Eclipse Thermostat)

Is Gateway in Master Mode: [No, Yes]

Parameter defines the working mode of the gateway. Master or slave. Check more details in Ac Gateway User Manuals. <https://core.com.tr/ac-knx-gateways/>

Control Modes Object Type: [1 Bit, 1 Byte]

Control mode can be selected using 1 Byte Object "AC Control Modes (0-Auto, 1-Heat, 3-Cool, 9-Fan, 14- Dry)".

52	AC Control Modes	0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry	1 byte	HVAC control mode
53	AC Control Modes Status	0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry	1 byte	HVAC control mode

Or 1 bit Objects;

54	AC Auto Mode	1-Active	1 bit	state
55	AC Auto Mode Status	0-Inactive,1-Active	1 bit	state
56	AC Heat Mode	1-Active	1 bit	state
57	AC Heat Mode Status	0-Inactive,1-Active	1 bit	state
58	AC Cool Mode	1-Active	1 bit	state
59	AC Cool Mode Status	0-Inactive,1-Active	1 bit	state
60	AC Fan Mode	1-Active	1 bit	state
61	AC Fan Mode Status	0-Inactive,1-Active	1 bit	state
62	AC Dry Mode	1-Active	1 bit	state
63	AC Dry Mode Status	0-Inactive,1-Active	1 bit	state

Heat/Cool Mode 1 Bit Object: [Disable, Enable]

Parameter disables the switchover object to change between heating and cooling mode.

Control Unit has Fan Auto: [No, Yes]

If control unit has fan auto feature, Object Number 34 "Fan Auto/Manual 1-Auto, 0-Manual" can be activated.

Fan Auto/Manual Object: [Disable, Enable]

"Fan auto" command can be sent to the actuator via Object Number 34 "Fan Auto/Manual 1-Auto, 0-Manual".

Fan Auto/Manual Control Value: [Inverted, Not inverted] Fan

auto command can be used inverse. [True or False]

Number of Fan Stages: [1...3...5]

Number of Fan levels can be changed according to control unit. Object will be available according to selection.

38	Fan Speed 1 Byte Enumerated Control	Speed Values: 0,1,2,3	1 byte	fan stage (0..255)
39	Fan Speed 1 Byte Enumerated Status	Speed Values: 0,1,2,3	1 byte	fan stage (0..255)

Fan Stage Object Type: [1 bit, 1 Byte]

Type of Fan stage object can be changed as 1 bit or 1 Byte. 1 Byte object can be used as “Enumerated” or “Scaling”.

Fan Speed Enumerated (0, 1, 2, 3, 4)

Fan Speed Scaling (0, 25, 50, 75, 100) %

1 bit objects;

42	Fan Speed 1	1-Active	1 bit	state
43	Fan Speed 1 Status	0-Inactive,1-Active	1 bit	state
44	Fan Speed 2	1-Active	1 bit	state
45	Fan Speed 2 Status	0-Inactive,1-Active	1 bit	state
46	Fan Speed 3	1-Active	1 bit	state
47	Fan Speed 3 Status	0-Inactive,1-Active	1 bit	state

Fan Step +/- Object: [Disable, Enable]

Object Number 64 “AC Fan Step 1-Increase, 0-Decrease” will be available to change fan speed step by step.

64	AC Fan Step	1-Increase, 0-Decrease	1 bit	step
----	-------------	------------------------	-------	------

Fan Step Object: [Inverted, Not inverted]

Fan step object value can be used inverse. [0-Increase, 1-Decrease]

Vanes Up-Down: [Disable, Enable]

Up-Down vane control can be activated using Object “AC Vanes Up-Down”.

65	AC Vanes Up-Down	Enumerated (0-255)	1 byte	counter pulses (0..255)
66	AC Vanes Up-Down Status	Enumerated (0-255)	1 byte	counter pulses (0..255)

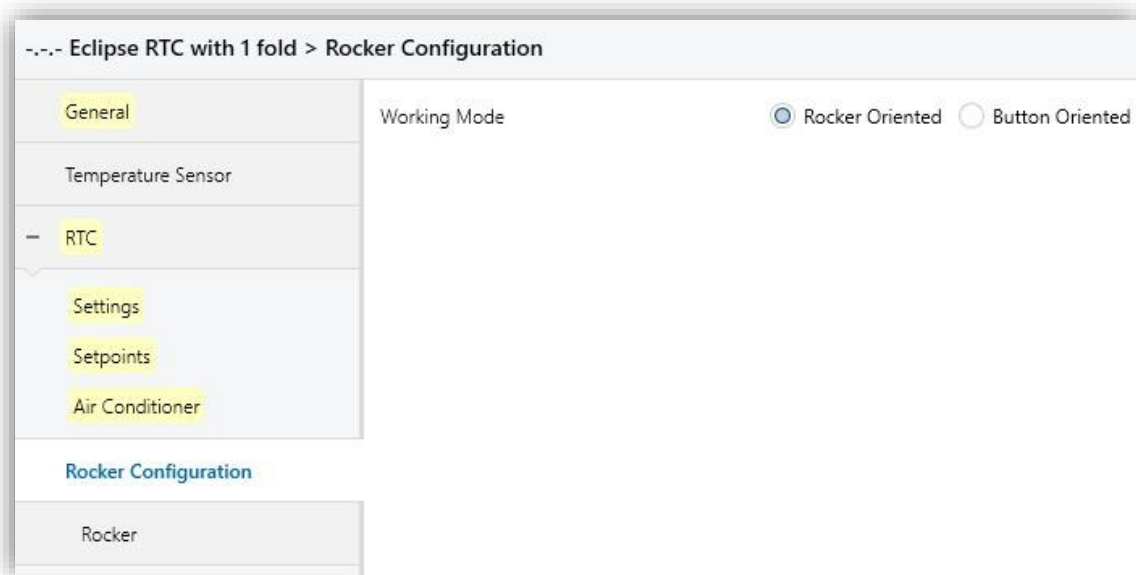
Vanes Left-Right: [Disable, Enable]

Left-Right vane control can be activated using Object “AC Vanes Left-Right”.

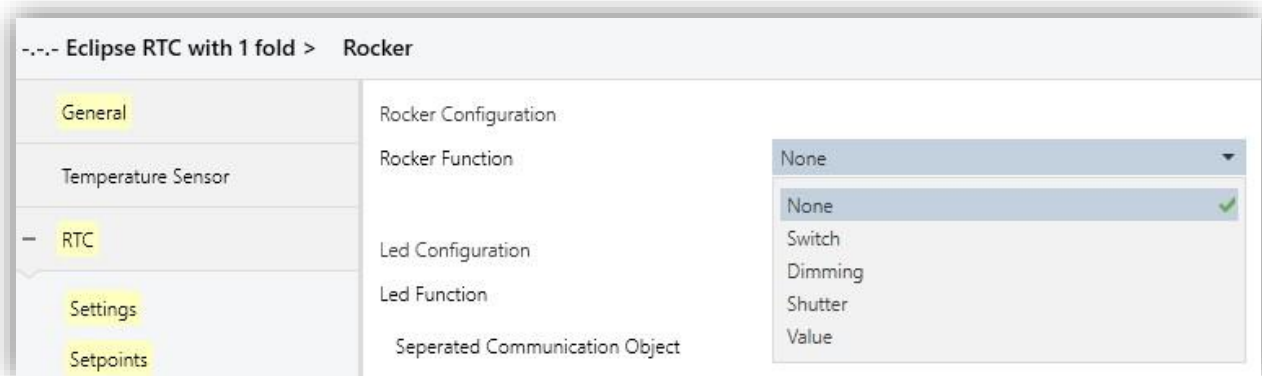
67	AC Vanes Left-Right	Enumerated (0-255)	1 byte	counter pulses (0..255)
68	AC Vanes Left-Right Status	Enumerated (0-255)	1 byte	counter pulses (0..255)

3.4. Rocker Configuration

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

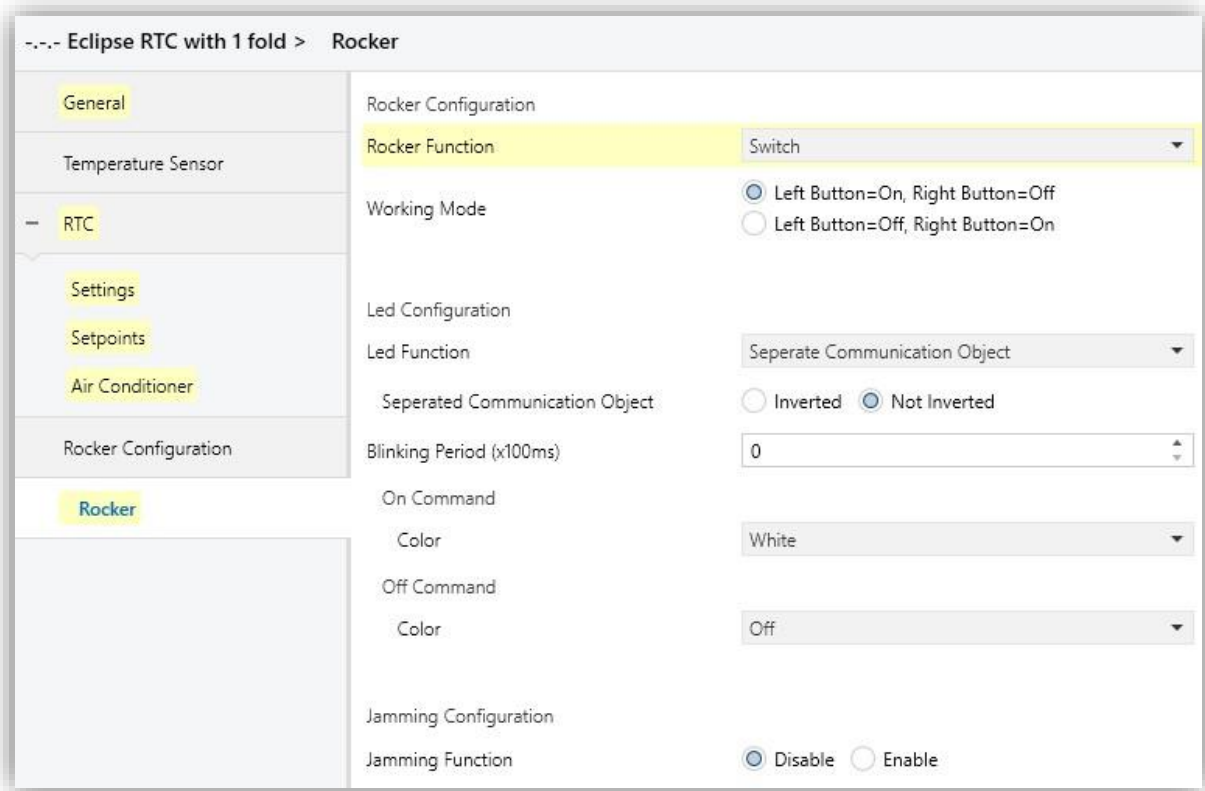


Rocker oriented functions: [Switch, Dimming, Shutter and Value]



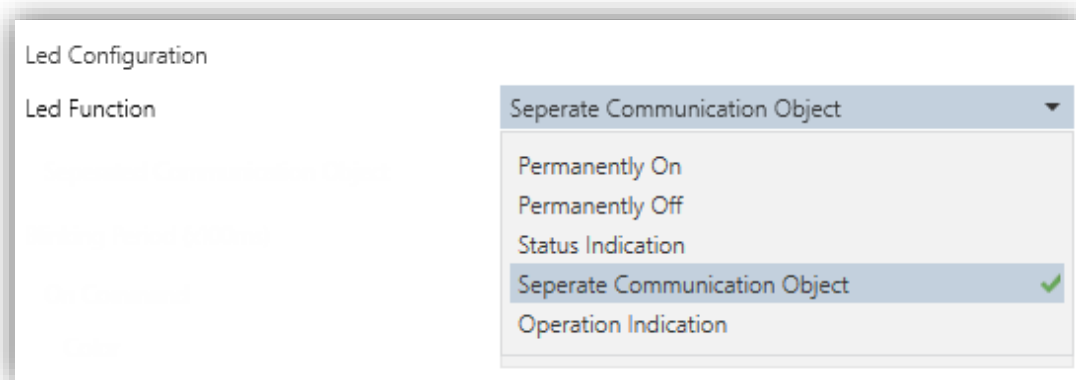
3.4.1. Rocker Oriented [Switch]

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

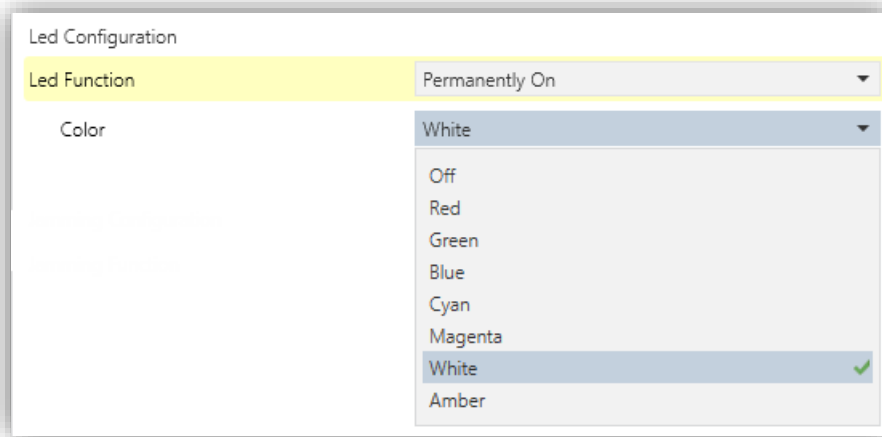


Led configurations:

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, White, Amber]

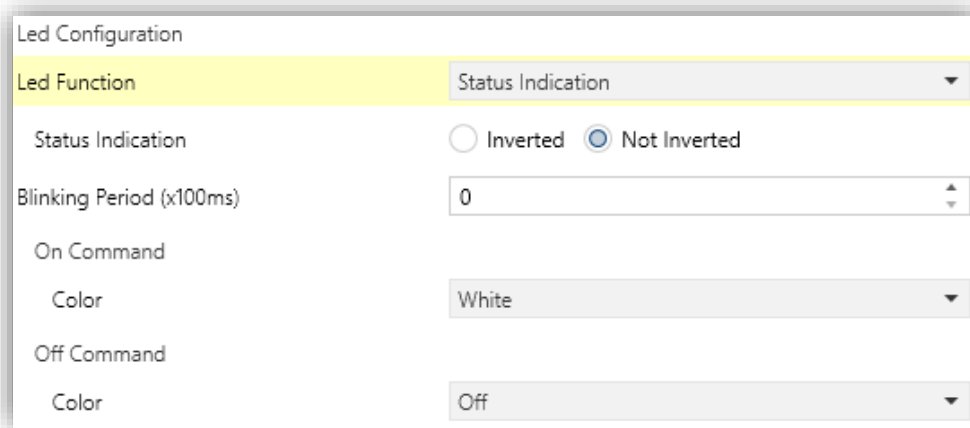


Led Function [Permanently OFF]: LED is always OFF.

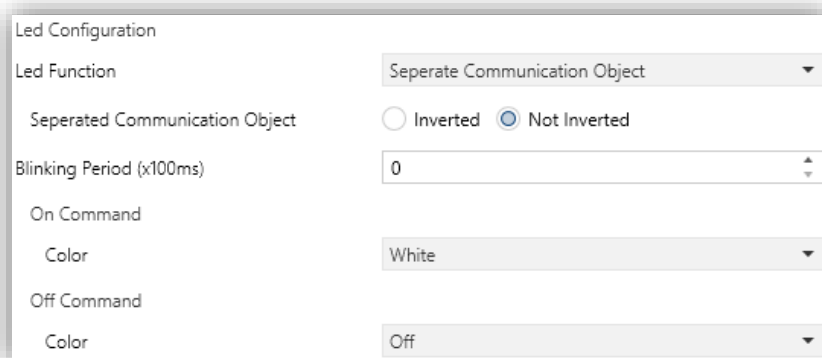
Led Function [Status indication]: LED color will change according to status information. On command [white] – OFF Command [Off]

Blink Period (x100 ms): [0...100]

Status LED will blink for the time period selected at "Blinking Period" parameter. (Blinking interval is fixed.)



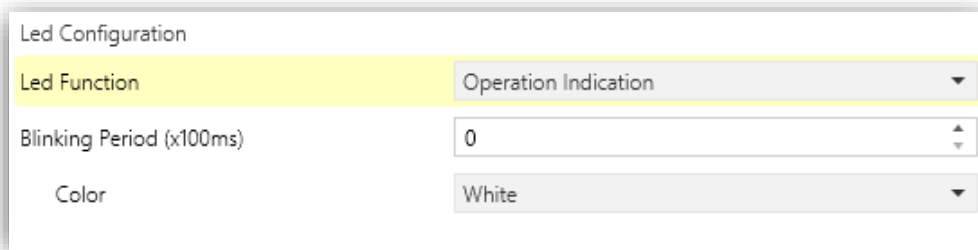
Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.



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

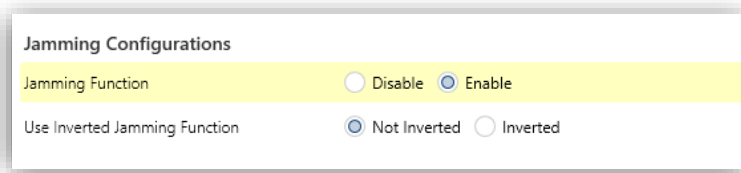
Blink Period (x100 ms): [0...100]

Status LED will blink for the time period selected at “Blinking Period” parameter. (Blinking interval is fixed.)



Jamming Configurations:

Jamming function is used to block to respective button or rocker via Object Number 78 – “Rocker - Jamming” by writing “true or false” data from the bus. Button will not work until it is enabled via jamming object.



3.4.2. Rocker Oriented [Dimming]

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

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”.)

Long Press Duration (x100 ms): Long press duration can be changed. [0...10...100] 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”.

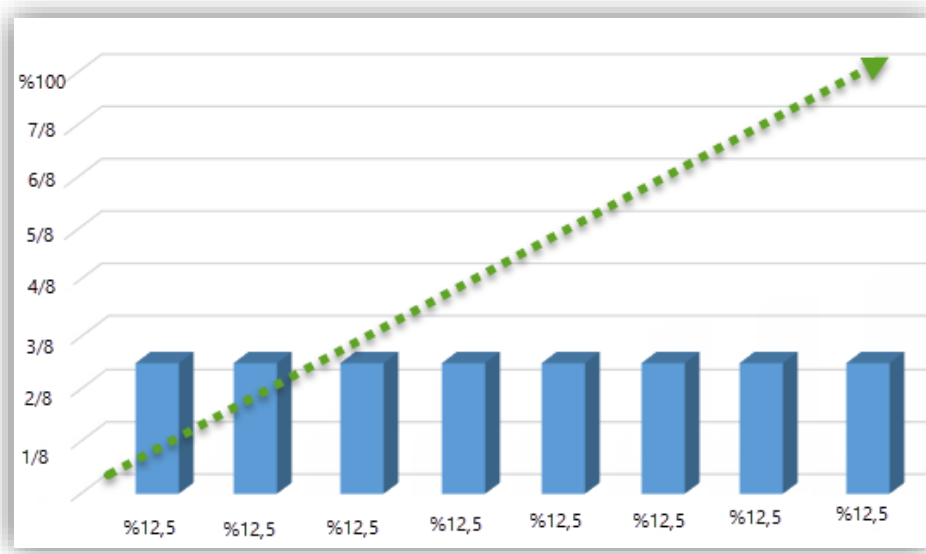


Figure 2 - Dimming Step Command

Step Send Period (x100): 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 Configurations

Led Function Permanently Off ▼

Jamming Configurations

Jamming Function

- Permanently On
- Permanently Off ✓
- Status Indication
- Separate Communication Object
- Operation Indication

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

Led Configuration

Led Function: Permanently On

Color: 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]

Led Configuration

Led Function: Status Indication

Status Indication: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command: Color: White

Off Command: Color: 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 Configuration

Led Function: Seperate Communication Object

Seperated Communication Object: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command: Color: White

Off Command: Color: Off

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.)

Led Configuration	
Led Function	Operation Indication
Blinking Period (x100ms)	0
Color	White

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.

Jamming Configuration	
Jamming Function	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
	<input type="radio"/> Inverted <input checked="" type="radio"/> Not Inverted

3.4.3. 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. [5...65535] As

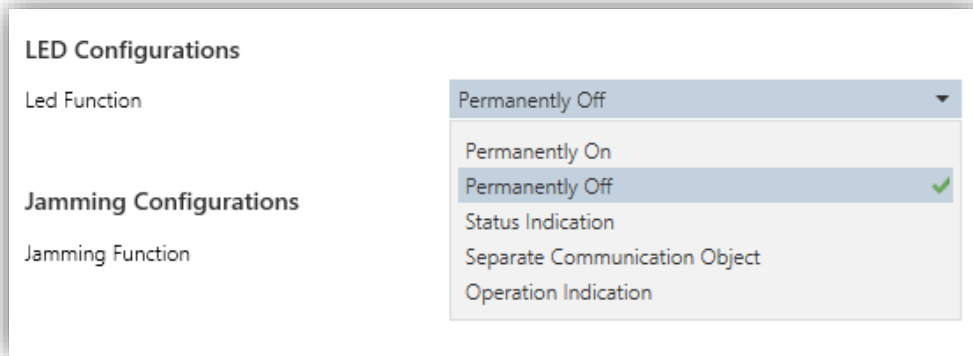
default; 100 ms x 10=1000 ms (1 second)

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,

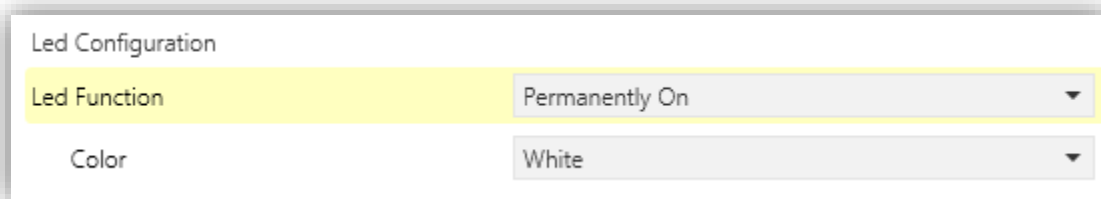
Rocker Configuration	
Rocker Function	Shutter
Working Mode	<input checked="" type="radio"/> Left Button=Up, Right Button=Down <input type="radio"/> Left Button=Down, Right Button=Up
Long Press Duration (x100ms)	5
Led Configuration	
Led Function	Seperate Communication Object

Led configurations:

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

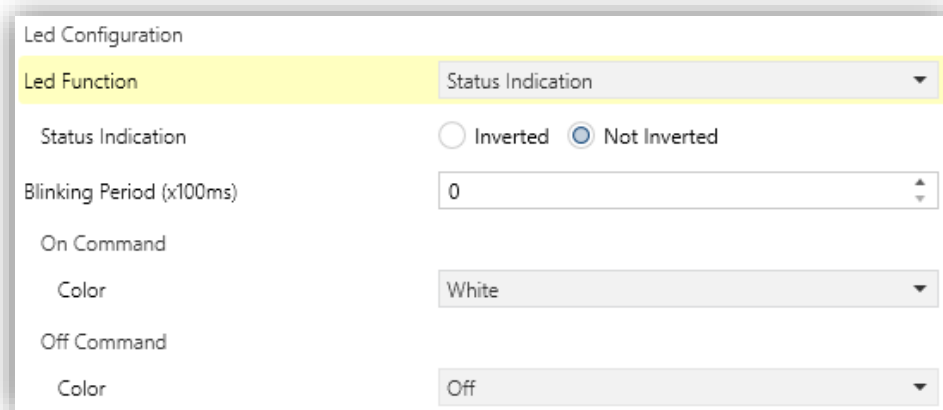


Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, White, Amber]



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 Configuration

Led Function:

Seperated Communication Object: Inverted Not Inverted

Blinking Period (x100ms):

On Command

Color:

Off Command

Color:

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.

Led Configuration

Led Function:

Blinking Period (x100ms):

Color:

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.

Jamming Configuration

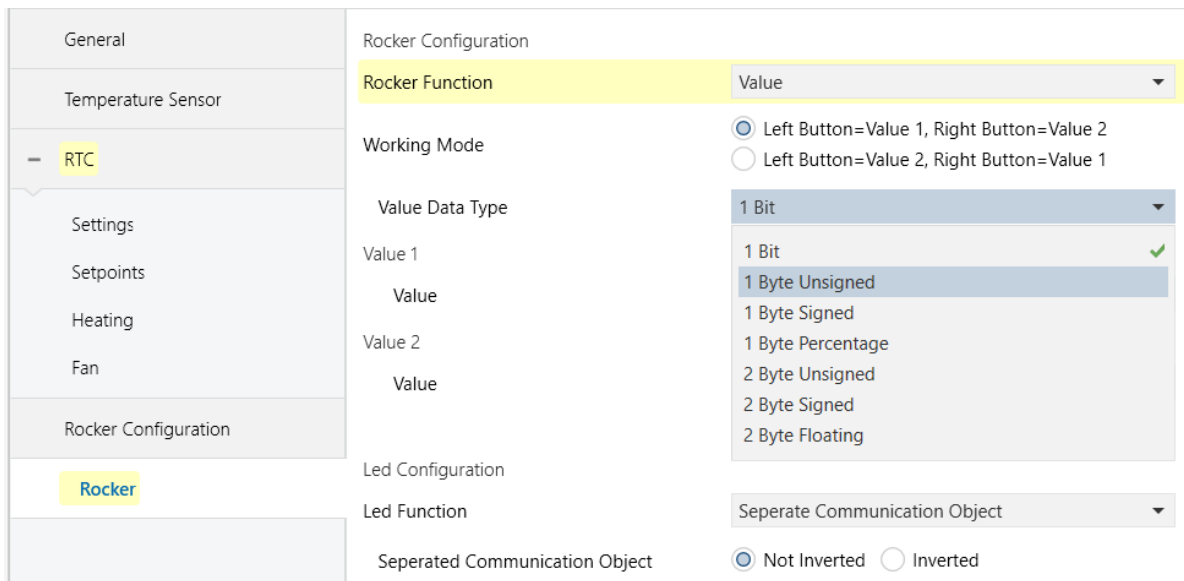
Jamming Function: Disable Enable

Inverted Not Inverted

3.4.4. 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

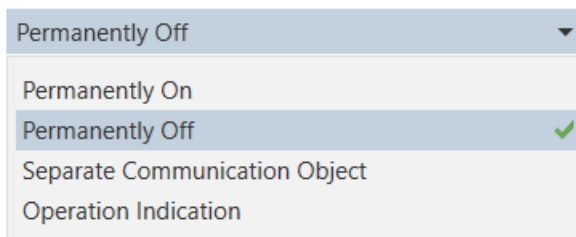


Led configurations:

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

LED Configurations

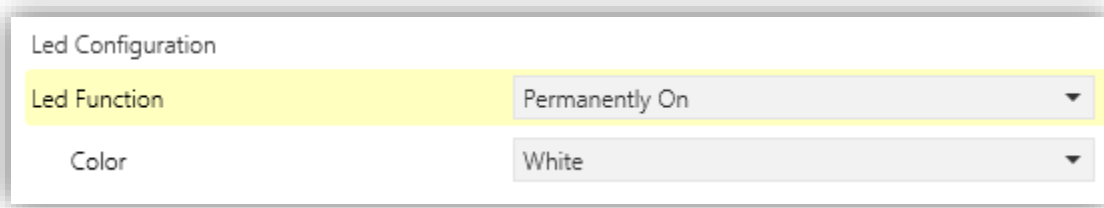
Led Function



Jamming Configurations

Jamming Function

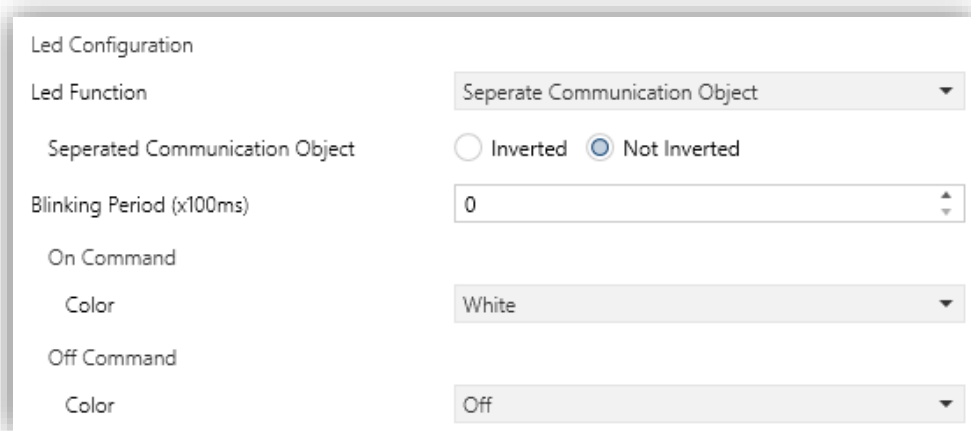
Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, White, Amber]



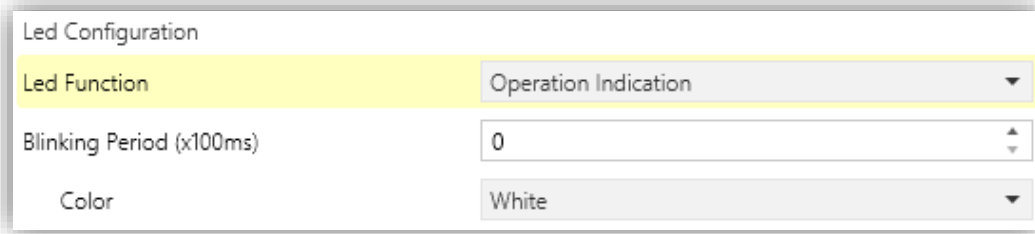
Led Function [Permanently OFF]: LED is always OFF.

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.



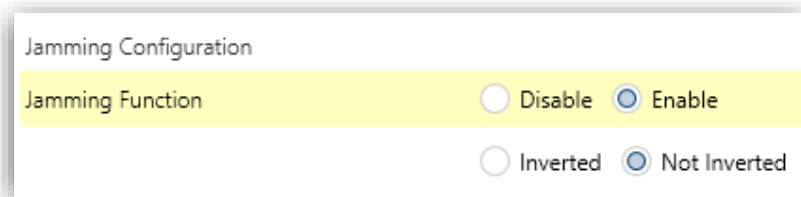
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for “OFF command” until it is pressed. The pressed button will stay on color selected for “ON command” until it is released.



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.)

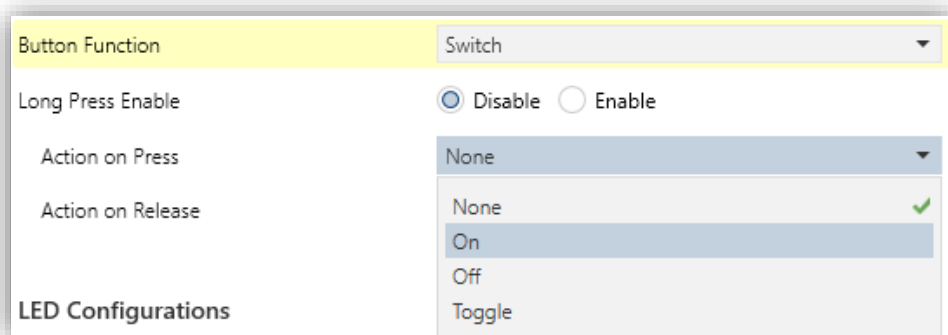
Jamming Configurations:

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.



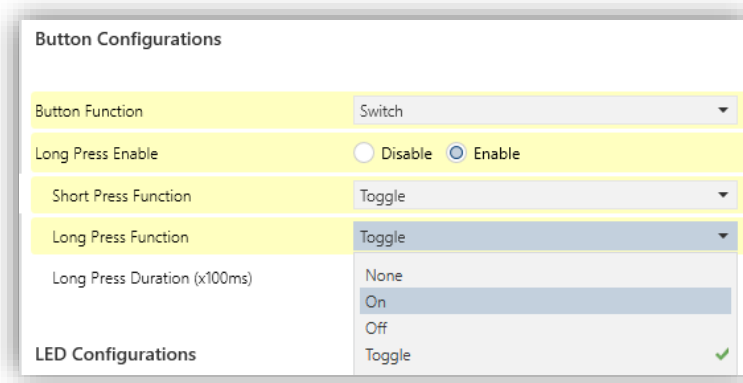
3.4.5. Button Oriented [Switch]

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.

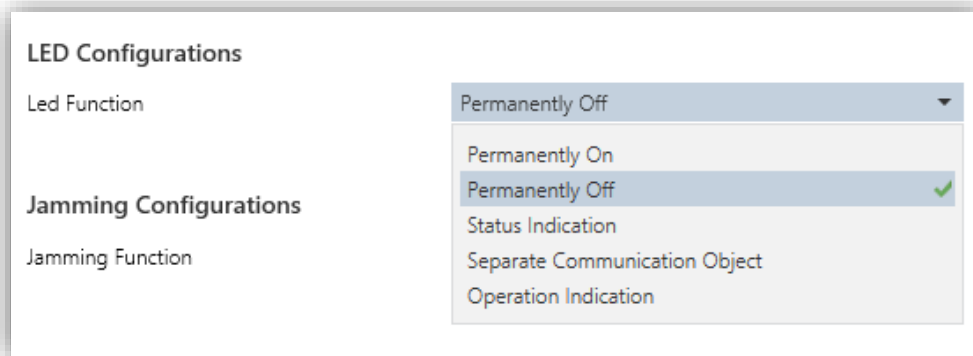


Long Press Duration(x100 ms): Long press duration can be changed. [0...10...100] As default; 100 ms x 10=1000 ms (1 second)

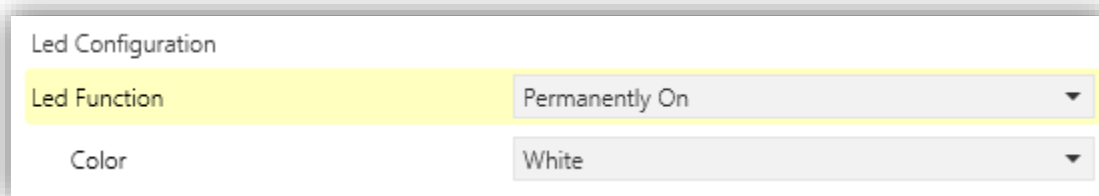
Switch will send "Long press" command after each press longer than "1 second".

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, White, Amber]



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.)

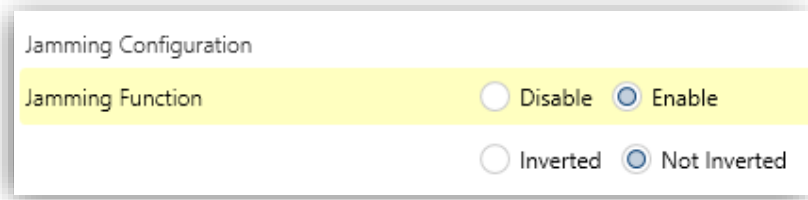
Led Function [Separate Communication Object]: LED color will change according to value received by LED status object.

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.)

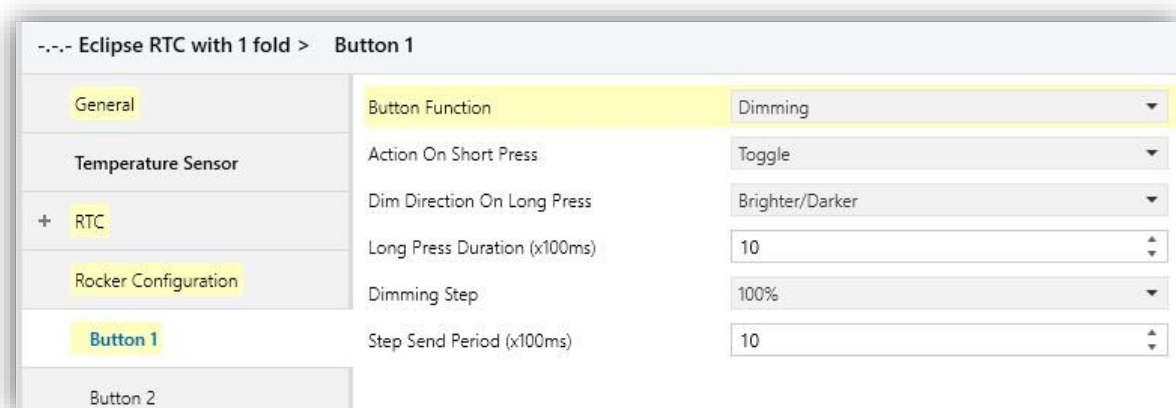
Jamming Configurations:

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.



3.4.6. Button Oriented [Dimming]

“Action on Short press” can be selected for “ON, OFF, TOGGLE” commands. Using Long press function, Dim direction is changeable for “BRIGHTER, DARKER, BRIGHTER/DARKER” commands.



Long Press Duration (x100 ms): [0...10...100]

Long press duration can be changed. 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 (x100): [5...10...65535]

Defines time interval between two dimming step commands.

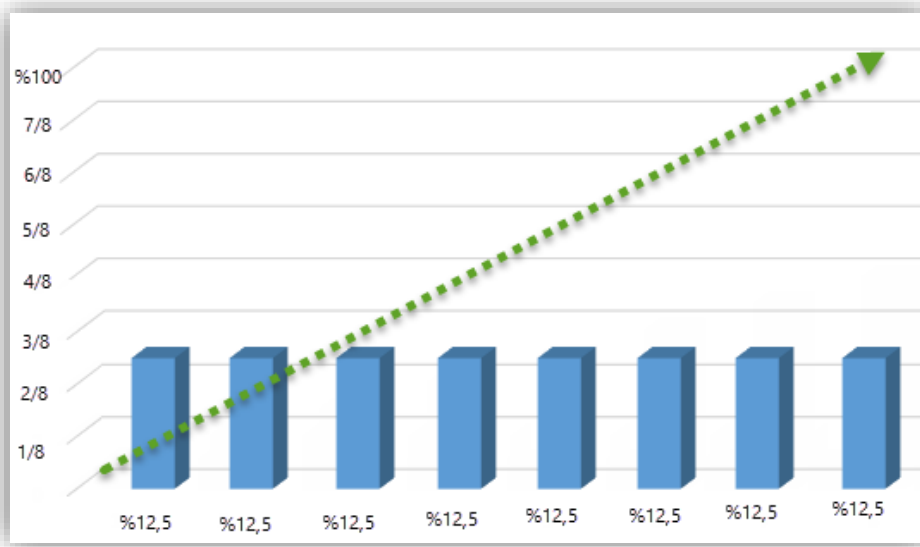


Figure 3 - Dimming Step Command

Led configurations:

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

LED Configurations

Led Function Permanently Off ▼

Jamming Configurations

Jamming Function

Permanently On

Permanently Off ✓

Status Indication

Separate Communication Object

Operation Indication

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

Led Configuration

Led Function Permanently On ▼

Color 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]

Led Configuration

Led Function: Status Indication

Status Indication: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command Color: White

Off Command Color: 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 Configuration

Led Function: Separate Communication Object

Separated Communication Object: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command Color: White

Off Command Color: Off

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.)

Led Configuration

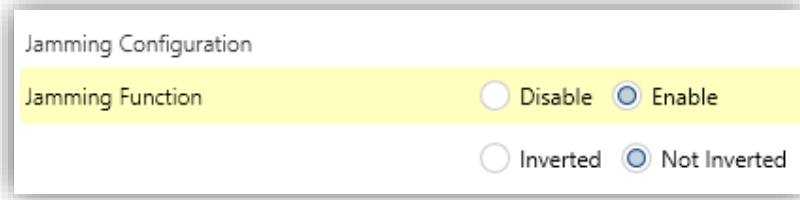
Led Function: Operation Indication

Blinking Period (x100ms): 0

Color: White

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.



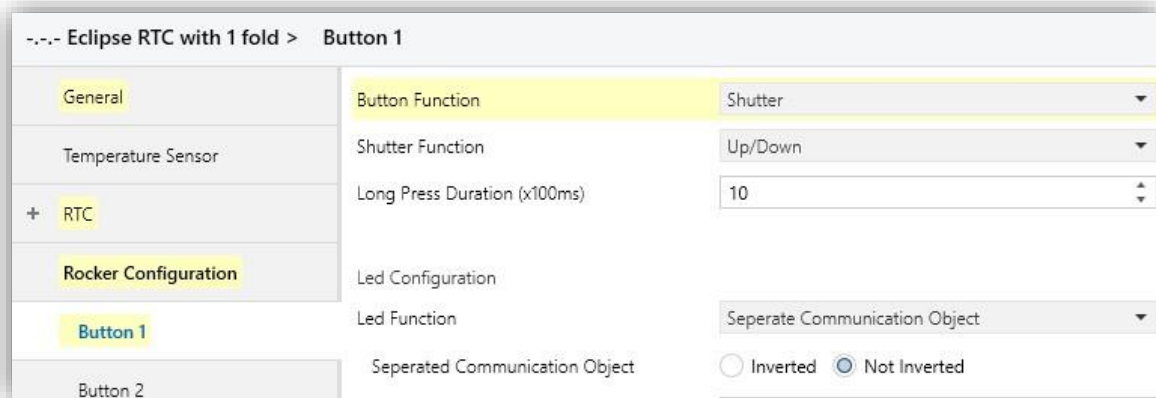
3.4.7. Button Oriented [Shutter]

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

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

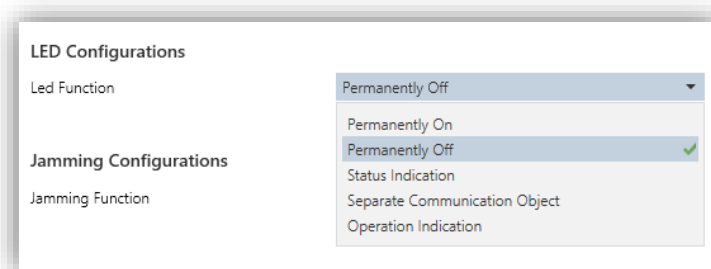
Long Press Duration(x100 ms): [0...10...100]

Long press duration can be changed. 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, White, Amber]

Led Configuration

Led Function: Permanently On

Color: 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]

Led Configuration

Led Function: Status Indication

Status Indication: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command: Color: White

Off Command: Color: 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 [Seperate Communication Object]: LED color will change according to value received by LED status object.

Led Configuration

Led Function: Seperate Communication Object

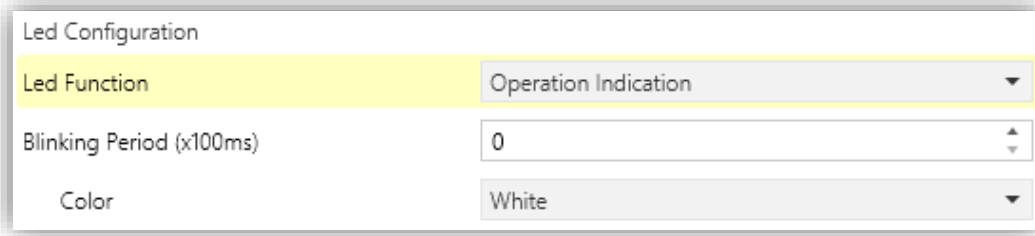
Seperated Communication Object: Inverted Not Inverted

Blinking Period (x100ms): 0

On Command: Color: White

Off Command: Color: Off

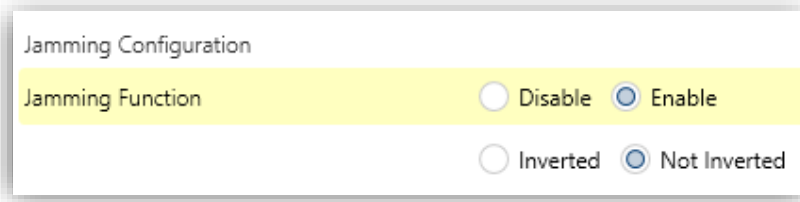
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for “OFF command” until it is pressed. The pressed button will stay on color selected for “ON command” until it is released.



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:

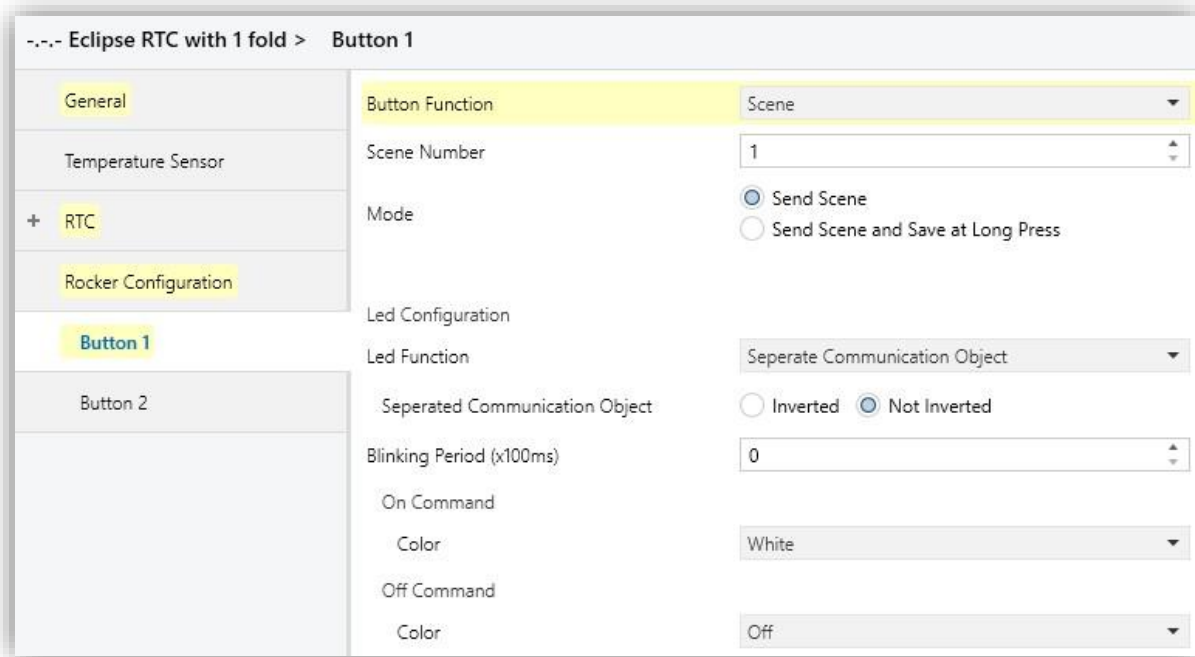
Jamming function is used to block to respective button or rocker via Object Number 9 – “Rocker X - Jamming” by writing “true or false” data from the bus. Button will not work until it is enabled via jamming object.



3.4.8. 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	Destination	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): [0...10...100]

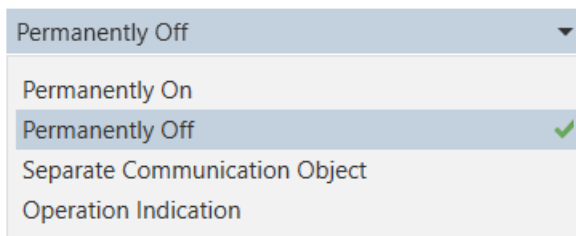
Long press duration can be changed. As default; 100 ms x 10=1000 ms (1 second)

Led configurations:

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

LED Configurations

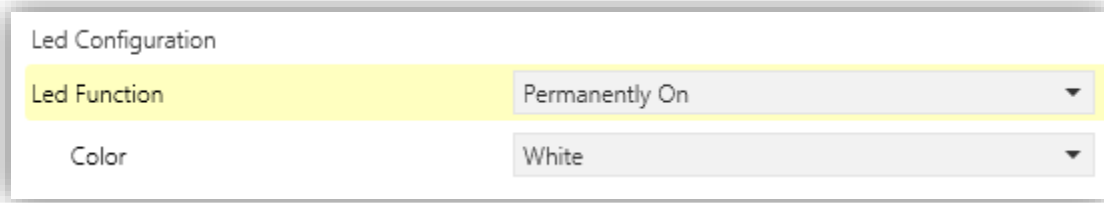
Led Function



Jamming Configurations

Jamming Function

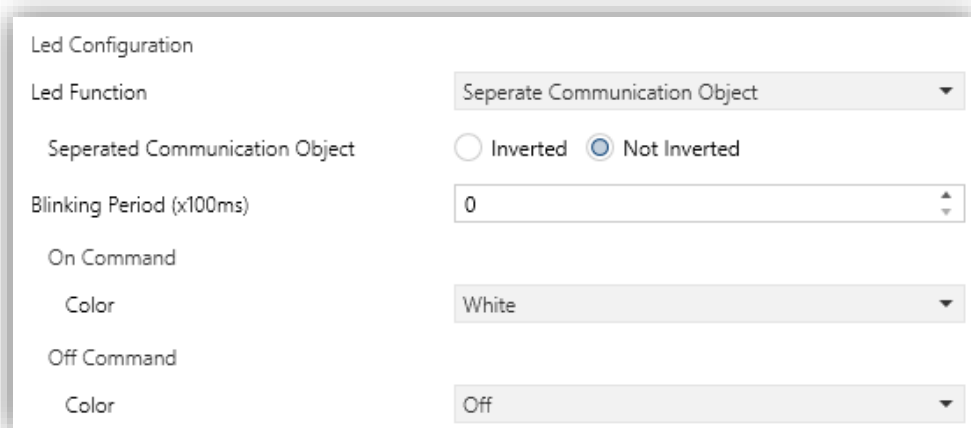
Led Function [Permanently ON]: LED is always ON for selected color. [Red, Green, Blue, Cyan, Magenta, White, Amber]



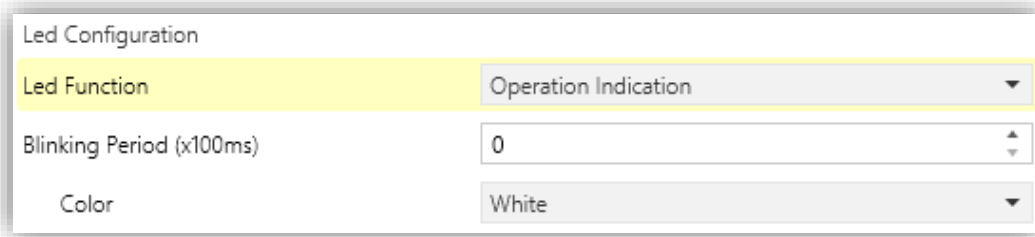
Led Function [Permanently OFF]: LED is always OFF.

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.



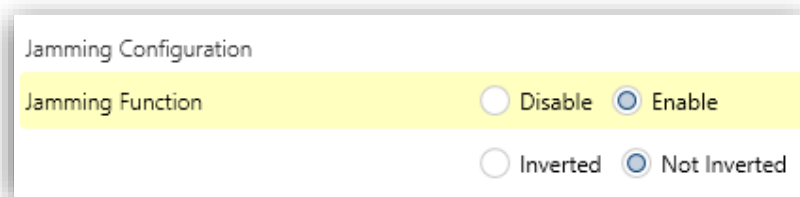
Led Function [Operation indication]: Status LED of rocker button will stay on color selected for “OFF command” until it is pressed. The pressed button will stay on color selected for “ON command” until it is released.



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.



3.4.9. Button Oriented [Value]

“Short Press Function” determines the data type for the short press. When button is pressed, selected 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.

Following data types are Selectable for short and long press:

- 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

General	Button Function	Value
Temperature Sensor	Short Press Function	1 Bit
+ RTC	Value	Off
Rocker Configuration	Long Press	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Button 1	Long Press Function	1 Bit
Button 2	Value	Off
	Long Press Duration (x100ms)	10

Long Press Duration (x100 ms): [0...10...100]

Long press duration can be changed. As default; 100 ms x 10=1000 ms (1 second)

Led configurations:

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

LED Configurations

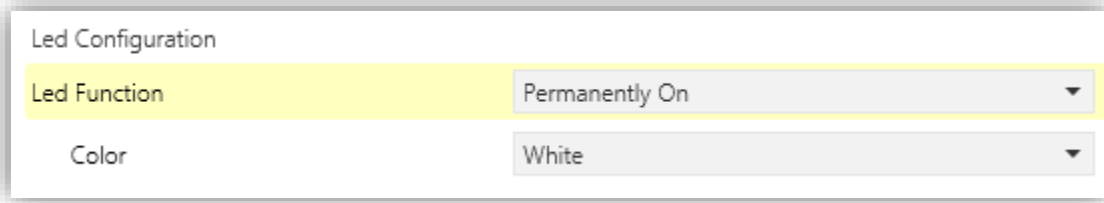
Led Function

Permanently Off	▼
Permanently On	
Permanently Off	✓
Separate Communication Object	
Operation Indication	

Jamming Configurations

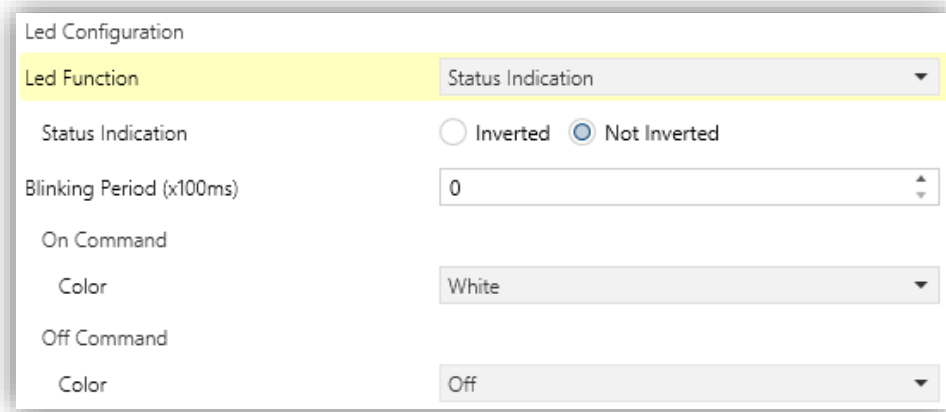
Jamming Function

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



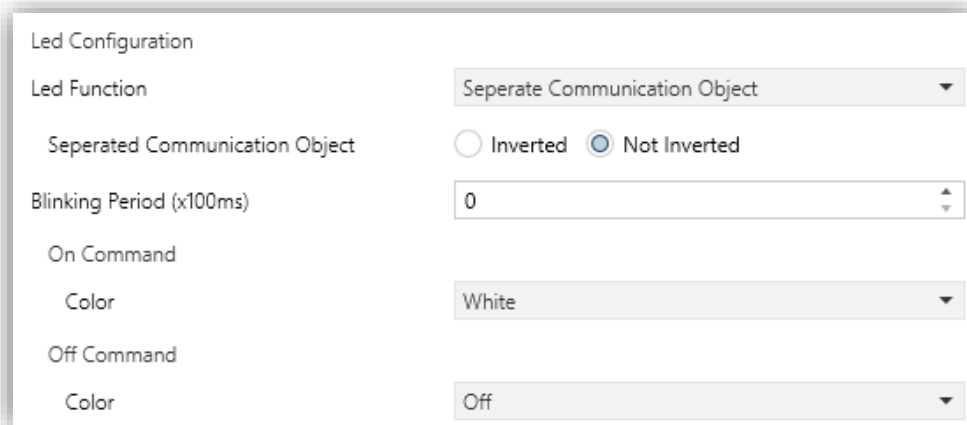
Led Function [Permanently OFF]: LED is always OFF.

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.

Led Configuration	
Led Function	Operation Indication
Blinking Period (x100ms)	0
Color	White

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:

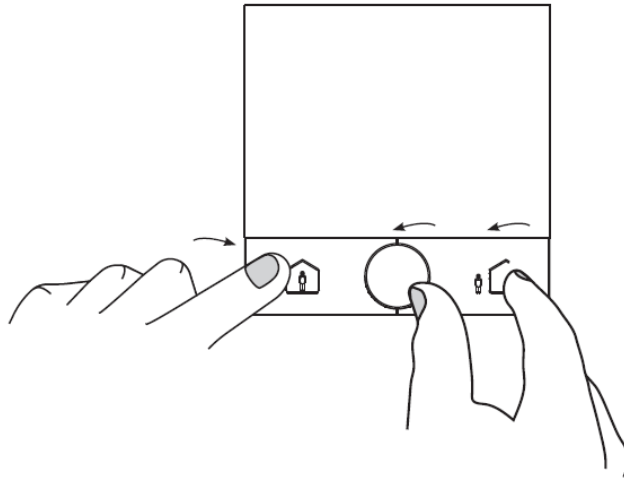
Jamming function is used to block to respective button or rocker via Object Number 9 – “Rocker X - Jamming” by writing “true or false” data from the bus. Button will not work until it is enabled via jamming object.

Jamming Configuration	
Jamming Function	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
	<input type="radio"/> Inverted <input checked="" type="radio"/> Not Inverted


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, button 2 and super knob simultaneously**



- 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	Thermostat	Disabling Function (1-Disable, 0-Enable)	1 Bit	-WCTU-	[1.2] DPT_Bool
3	Proximity	Approach Switching Value	1 Bit	R-CT--	[1.5] DPT_Alarm
4	Ambient	Darkness Switching Value	1 Bit	--CT--	[1.1] DPT_Switch
5	Humidity	Internal Value (%)	2 Bytes	R-CT--	[9.7] DPT_Value_Humidity
6	Humidity	External Value (%)	2 Bytes	-WCTU-	[9.7] DPT_Value_Humidity
7	CO2	Internal Value (ppm)	2 Bytes	R-CT--	[9.8] DPT_Value_AirQuality
8	CO2	External Value (ppm)	2 Bytes	-WCTU-	[9.8] DPT_Value_AirQuality
9	CO2	Air Quality Index (0-Off, 1-Poor, 2-Satisfactory, 3-Good)	1 Byte	R-CT--	
10	CO2	Poor Level Switching Value	1 Bit	--CT--	[1.5] DPT_Alarm
11	Temperature	Actual Temperature (°C)	2 Bytes	R-CT--	[9.1] DPT_Value_Temp
12	Temperature	External Temperature (°C)	2 Bytes	-WCTU-	[9.1] DPT_Value_Temp
13	Thermostat	Heating/Cooling Switchover	1 Bit	-WCTU-	[1.100] DPT_Heat_Cool
14	Thermostat	Heating/Cooling Switchover Status	1 Bit	R-CT--	[1.100] DPT_Heat_Cool
15	Thermostat	Heating Control Value [0,1,Percentage %]	1 Byte	R-CT--	[5.1] DPT_Scaling
16	Thermostat	Cooling Control Value [0,1,Percentage %]	1 Byte	R-CT--	[5.1] DPT_Scaling
17	Thermostat	Heating/Cooling Control Value [0,1,Percentage %]	1 Byte	R-CT--	[5.1] DPT_Scaling
18	Thermostat	Heating Indication (0-Inactive,1-Active)	1 Bit	R-CT--	[1.11] DPT_State
19	Thermostat	Cooling Indication (0-Inactive,1-Active)	1 Bit	R-CT--	[1.11] DPT_State
20	Thermostat	Additional Heating Controller Disable	1 Bit	-WCTU-	[1.3] DPT_Enable
21	Thermostat	Additional Heating Controller Status	1 Bit	R-CT--	[1.3] DPT_Enable
22	Thermostat	Additional Heating Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
23	Thermostat	Additional Cooling Controller Disable	1 Bit	-WCTU-	[1.3] DPT_Enable
24	Thermostat	Additional Cooling Controller Status	1 Bit	R-CT--	[1.3] DPT_Enable
25	Thermostat	Additional Cooling Control Value	1 Bit	R-CT--	[1.1] DPT_Switch
26	Thermostat	Operating Mode	1 Byte	-WCTU-	[20.102] DPT_HVACMode
27	Thermostat	Operating Mode Status	1 Byte	R-CT--	[20.102] DPT_HVACMode
28	Thermostat	Operating Mode (prev/next)	1 Bit	-WCTU-	[1.2] DPT_Bool
29	Thermostat	Comfort Mode	1 Bit	-WCTU-	[1.11] DPT_State
30	Thermostat	Comfort Mode Status	1 Bit	R-CT--	[1.11] DPT_State
31	Thermostat	Standby Mode	1 Bit	-WCTU-	[1.11] DPT_State
32	Thermostat	Standby Mode Status	1 Bit	R-CT--	[1.11] DPT_State
33	Thermostat	Night Mode	1 Bit	-WCTU-	[1.11] DPT_State
34	Thermostat	Night Mode Status	1 Bit	R-CT--	[1.11] DPT_State
35	Thermostat	Protection Mode	1 Bit	-WCTU-	[1.11] DPT_State
36	Thermostat	Protection Mode Status	1 Bit	R-CT--	[1.11] DPT_State
37	Thermostat	Setpoint Control	2 Bytes	-WCTU-	[9.1] DPT_Value_Temp
38	Thermostat	Setpoint Status	2 Bytes	R-CT--	[9.1] DPT_Value_Temp
39	Thermostat	Setpoint (-/+)	1 Bit	-WCTU-	[1.7] DPT_Step
40	Thermostat	Fan Speed Enumerated	1 Byte	R-CT--	[5.100] DPT_FanStage
41	Thermostat	Fan Speed Enumerated Status	1 Byte	-WCTU-	[5.100] DPT_FanStage
42	Thermostat	Fan Speed Scaling	1 Byte	R-CT--	[5.1] DPT_Scaling

43	Thermostat	Fan Speed Scaling Status	1 Byte	-WCTU-	[5.1] DPT_Scaling
44	Thermostat	Fan 1	1 Bit	R-CT--	[1.11] DPT_State
45	Thermostat	Fan 1 Status	1 Bit	-WCTU-	[1.11] DPT_State
46	Thermostat	Fan 2	1 Bit	R-CT--	[1.11] DPT_State
47	Thermostat	Fan 2 Status	1 Bit	-WCTU-	[1.11] DPT_State
48	Thermostat	Fan 3	1 Bit	R-CT--	[1.11] DPT_State
49	Thermostat	Fan 3 Status	1 Bit	-WCTU-	[1.11] DPT_State
50	Thermostat	Fan 4	1 Bit	R-CT--	[1.11] DPT_State
51	Thermostat	Fan 4 Status	1 Bit	-WCTU-	[1.11] DPT_State
52	Thermostat	Fan 5	1 Bit	R-CT--	[1.11] DPT_State
53	Thermostat	Fan 5 Status	1 Bit	-WCTU-	[1.11] DPT_State
54	Thermostat	Fan Auto/Manual (1-Auto)	1 Bit	R-CT--	[1.3] DPT_Enable
55	Thermostat	Fan Auto/Manual Status (1-Auto)	1 Bit	-WCTU-	[1.3] DPT_Enable
56	Thermostat	Fan Off (1-Off)	1 Bit	R-CT--	[1.11] DPT_State
57	Thermostat	Fan Off Status (1-Off)	1 Bit	-WCTU-	[1.11] DPT_State
58	Thermostat	Thermostat On/Off	1 Bit	-WCTU-	[1.1] DPT_Switch
59	Thermostat	Thermostat On/Off Status	1 Bit	R-CT--	[1.1] DPT_Switch
60	Thermostat	Window Contact	1 Bit	-WCTU-	[1.19] DPT_Window_Door
61	Air Conditioner	Control On/Off	1 Bit	--CT--	[1.1] DPT_Switch
62	Air Conditioner	Control On/Off Status	1 Bit	-WCTU-	[1.1] DPT_Switch
63	Air Conditioner	Setpoint Control	2 Bytes	--CT--	[9.1] DPT_Value_Temp
64	Air Conditioner	Setpoint Status	2 Bytes	-WCTU-	[9.1] DPT_Value_Temp
65	Air Conditioner	Setpoint (-/+)	1 Bit	-WCTU-	[1.7] DPT_Step
66	Air Conditioner	Control Mode Heat/Cool (1-Heat, 0-Cool)	1 Bit	--CT--	[1.100] DPT_Heat_Cool
67	Air Conditioner	Control Mode Heat/Cool Status (1-Heat, 0-Cool)	1 Bit	-WCTU-	[1.100] DPT_Heat_Cool
68	Air Conditioner	Control Modes (0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry)	1 Byte	--CT--	[20.105] DPT_HVACContrMode
69	Air Conditioner	Control Modes Status (0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry)	1 Byte	-WCTU-	[20.105] DPT_HVACContrMode
70	Air Conditioner	Auto Mode	1 Bit	--CT--	[1.11] DPT_State
71	Air Conditioner	Auto Mode Status	1 Bit	-WCTU-	[1.11] DPT_State
72	Air Conditioner	Heat Mode	1 Bit	--CT--	[1.11] DPT_State
73	Air Conditioner	Heat Mode Status	1 Bit	-WCTU-	[1.11] DPT_State
74	Air Conditioner	Cool Mode	1 Bit	--CT--	[1.11] DPT_State
75	Air Conditioner	Cool Mode Status	1 Bit	-WCTU-	[1.11] DPT_State
76	Air Conditioner	Fan Mode	1 Bit	--CT--	[1.11] DPT_State
77	Air Conditioner	Fan Mode Status	1 Bit	-WCTU-	[1.11] DPT_State
78	Air Conditioner	Dry Mode	1 Bit	--CT--	[1.11] DPT_State
79	Air Conditioner	Dry Mode Status	1 Bit	-WCTU-	[1.11] DPT_State
80	Air Conditioner	Fan Speed Enumerated	1 Byte	--CT--	[5.100] DPT_FanStage

81	Air Conditioner	Fan Speed Enumerated Status	1 Byte	-WCTU-	[5.100] DPT_FanStage
82	Air Conditioner	Fan Speed Scaling	1 Byte	--CT--	[5.1] DPT_Scaling
83	Air Conditioner	Fan Speed Scaling Status	1 Byte	-WCTU-	[5.1] DPT_Scaling
84	Air Conditioner	Fan 1	1 Bit	--CT--	[1.11] DPT_State
85	Air Conditioner	Fan 1 Status	1 Bit	-WCTU-	[1.11] DPT_State
86	Air Conditioner	Fan 2	1 Bit	--CT--	[1.11] DPT_State
87	Air Conditioner	Fan 2 Status	1 Bit	-WCTU-	[1.11] DPT_State
88	Air Conditioner	Fan 3	1 Bit	--CT--	[1.11] DPT_State
89	Air Conditioner	Fan 3 Status	1 Bit	-WCTU-	[1.11] DPT_State
90	Air Conditioner	Fan 4	1 Bit	--CT--	[1.11] DPT_State
91	Air Conditioner	Fan 4 Status	1 Bit	-WCTU-	[1.11] DPT_State
92	Air Conditioner	Fan 5	1 Bit	--CT--	[1.11] DPT_State
93	Air Conditioner	Fan 5 Status	1 Bit	-WCTU-	[1.11] DPT_State
94	Air Conditioner	Fan Auto/Manual (1-Auto)	1 Bit	--CT--	[1.3] DPT_Enable
95	Air Conditioner	Fan Auto/Manual Status (1-Auto)	1 Bit	-WCTU-	[1.3] DPT_Enable
96	Air Conditioner	Vanes Up-Down (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 Byte	--CT--	
97	Air Conditioner	Vanes Up-Down Status (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 Byte	-WCTU-	
98	Air Conditioner	Swing Up/Down	1 Bit	--CT--	[1.11] DPT_State
99	Air Conditioner	Swing Up/Down Status	1 Bit	-WCTU-	[1.11] DPT_State
100	Air Conditioner	Vanes Left-Right (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 Byte	--CT--	
101	Air Conditioner	Vanes Left-Right Status (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 Byte	-WCTU-	
102	Air Conditioner	Swing Left/Right	1 Bit	--CT--	[1.11] DPT_State
103	Air Conditioner	Swing Left/Right Status	1 Bit	-WCTU-	[1.11] DPT_State
104	Air Conditioner	Error 1 Bit (1-Error, 0-No Error)	1 Bit	-WCTU-	[1.5] DPT_Alarm
105	Button 1	Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
106	Button 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
107	Button 1	Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
108	Button 1	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
109	Button 1	Long Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
110	Button 1	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
111	Button 1	LED	1 Bit	-WCTU-	[1.1] DPT_Switch
112	Button 1	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable

113	Button 1	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
114	Button 1	Step/Stop	1 Bit	R-CT--	[1.2] DPT_Bool
115	Button 1	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
116	Button 1	Execute/Store	1 Byte	R-CT--	[18.1] DPT_SceneControl
117	Button 1	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
118	Button 1	Value (1 byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
119	Button 1	Value (2 byte)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
120	Button 1	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
121	Button 1	Long Value (1 byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
122	Button 1	Long Value (2 byte)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
123	Button 2	Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
124	Button 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
125	Button 2	Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
126	Button 2	Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
127	Button 2	Long Switch Status	1 Bit	-WCTU-	[1.1] DPT_Switch
128	Button 2	Long Switch On/Off	1 Bit	R-CT--	[1.1] DPT_Switch
129	Button 2	LED	1 Bit	-WCTU-	[1.1] DPT_Switch
130	Button 2	Jamming	1 Bit	RWCTU-	[1.3] DPT_Enable
131	Button 2	Up/Down	1 Bit	R-CT--	[1.8] DPT_UpDown
132	Button 2	Step/Stop	1 Bit	R-CT--	[1.2] DPT_Bool
133	Button 2	Dimming	4 Bit	R-CT--	[3.7] DPT_Control_Dimming
134	Button 2	Execute/Store	1 Byte	R-CT--	[18.1] DPT_SceneControl
135	Button 2	Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
136	Button 2	Value (1 byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
137	Button 2	Value (2 byte)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
138	Button 2	Long Value (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
139	Button 2	Long Value (1 byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
140	Button 2	Long Value (2 byte)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
141	Scene	Call	1 Byte	-WC---	[18.1] DPT_SceneControl
142	Logic 1	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
143	Logic 1	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
144	Logic 1	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
145	Logic 1	Input 1	1 Bit	-WCTU-	[1.2] DPT_Bool
146	Logic 1	Input 2	1 Bit	-WCTU-	[1.2] DPT_Bool
147	Logic 1	Input 3	1 Bit	-WCTU-	[1.2] DPT_Bool
148	Logic 1	Input 4	1 Bit	-WCTU-	[1.2] DPT_Bool
149	Logic 2	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
150	Logic 2	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
151	Logic 2	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
152	Logic 2	Input 1	1 Bit	-WCTU-	[1.2] DPT_Bool
153	Logic 2	Input 2	1 Bit	-WCTU-	[1.2] DPT_Bool
154	Logic 2	Input 3	1 Bit	-WCTU-	[1.2] DPT_Bool
155	Logic 2	Input 4	1 Bit	-WCTU-	[1.2] DPT_Bool
156	Logic 3	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
157	Logic 3	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount
158	Logic 3	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
159	Logic 3	Input 1	1 Bit	-WCTU-	[1.2] DPT_Bool
160	Logic 3	Input 2	1 Bit	-WCTU-	[1.2] DPT_Bool
161	Logic 3	Input 3	1 Bit	-WCTU-	[1.2] DPT_Bool
162	Logic 3	Input 4	1 Bit	-WCTU-	[1.2] DPT_Bool
163	Logic 4	Output (1 bit)	1 Bit	R-CT--	[1.1] DPT_Switch
164	Logic 4	Output (1 Byte)	1 Byte	R-CT--	[5.10] DPT_Value_1_Ucount

165	Logic 4	Output (2 Bytes)	2 Bytes	R-CT--	[7.1] DPT_Value_2_Ucount
166	Logic 4	Input 1	1 Bit	-WCTU-	[1.2] DPT_Bool
167	Logic 4	Input 2	1 Bit	-WCTU-	[1.2] DPT_Bool
168	Logic 4	Input 3	1 Bit	-WCTU-	[1.2] DPT_Bool
169	Logic 4	Input 4	1 Bit	-WCTU-	[1.2] DPT_Bool