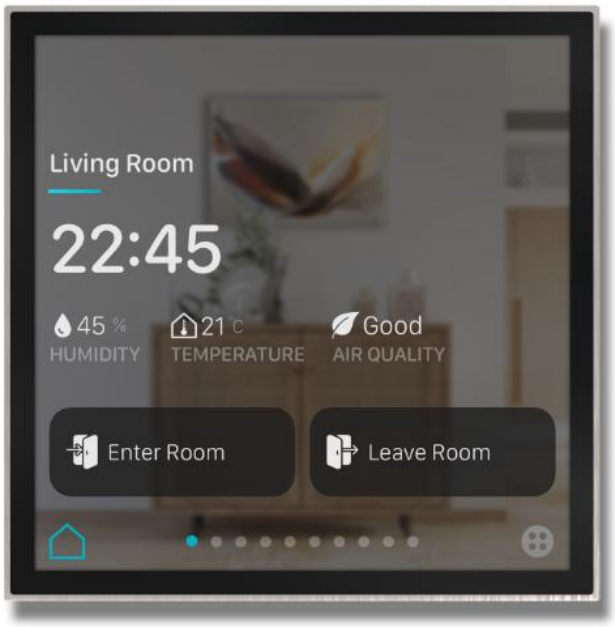
User Manual

Eclipse Room Controller

Eclipse Room Controller SE



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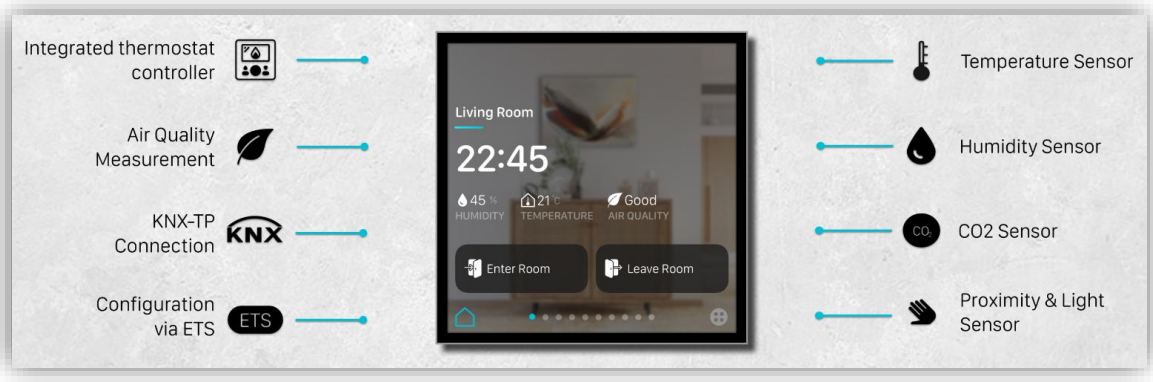
Product Code: CR-ECP-04-KNX-XXX & CR-ECP-04-KNX-SE

İÇİNDEKİLER TABLOSU

1. Presentation

Eclipse Room Controller is designed to be the most exclusive touch panel for rooms. Simply, one digital control panel equipped with multiple sensors to control all. The high-quality display and premium materials combined with a sleek and stylish design language that matches other Core products. At only 11mm in thickness, the Eclipse Room Controller is both discreet and elegant, blending seamlessly into any room decor.

Functionality



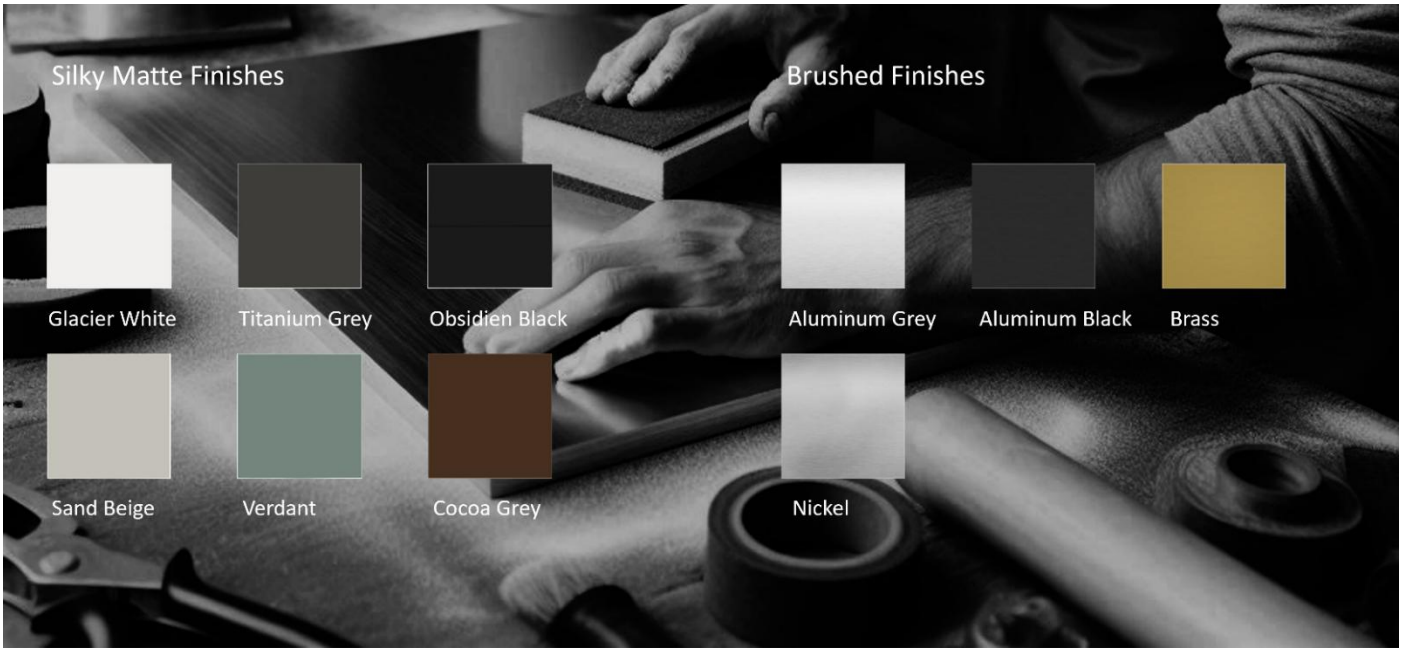
Material and Colour Options

Brushed Finish

Pure form of nickel, 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 Room Controller.

https://portal.core.com.tr/

1.1. Main Features

INTUITIVE USER INTERFACE

The intuitive user interface of the Eclipse Room Controller is designed to provide a seamless control experience, making it easy to manage all your smart home devices with just a few taps. The large, easy-to-read icons and buttons, coupled with the device's intuitive navigation system, make it simple for anyone to use.

HIGH QUALITY DISPLAY

The crystal-clear HD display of the Eclipse Room Controller ensures that all information and graphics are displayed with incredible clarity and sharpness. This means that users can easily view all information and control their devices with ease, even from a distance.

EXTENSIVE APPLICATION

Eclipse Room Controller activates many functions. Switching, Dimming, RGB Control, Tunable White, Thermostat Functionality, AC Control, Blinds, Jalousie, Scene, Energy Display, Audio, Air Quality.

BUILT-IN THERMOSTAT

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

AIR QUALITY MEASUREMENT

Eclipse Room Controller measures indoor air quality inside the room with its built-in sensor. Air-quality of the room can be checked on main page. Logic functions can be triggered according to the air-quality level via KNX. (not included for SE model)

PROXIMITY SENSOR

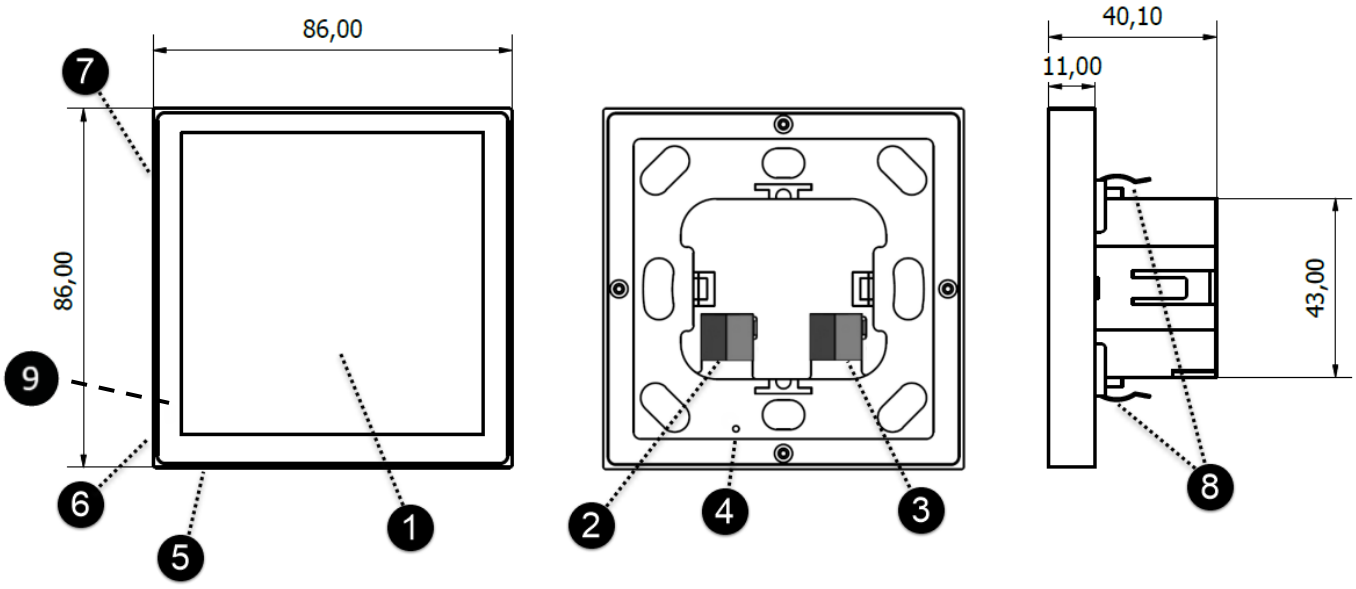
The Eclipse Room Controller is equipped with a sophisticated proximity sensor that detects when a user is approaching the device. In dark environments, the light of the display is automatically dimmed to provide a welcoming and comfortable user experience.

PAGE – ELEMENTS

Eclipse Room Controller has 12 pages with a maximum of 64 control elements (6 pages with a maximum of 32 control elements for SE model). This extensive range of control options provides users with unparalleled control over their smart home devices.

1.2. Dimensions

Dimensional drawing (all dimensions are in mm)



1. HD Display
2. Power Connector (12V-30V)
3. KNX Connector
4. KNX Programming Button
5. Position of Temperature and Humidity Sensor
6. Position of IAQ Sensor (not included for SE model)
7. SD Card Slot
8. Mouting Clips
9. Position of Proximity Sensor

2. Technical Specification

ECLIPSE ROOM CONTROLLER (CR-ECP-04-KNX-XXX)

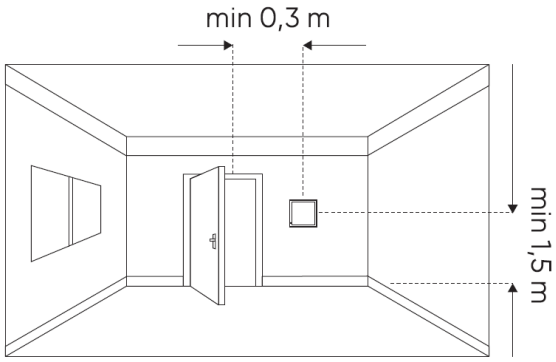
Processor:	Arm Cortex-A7 900MHz 512 MB DDR3 RAM Embedded Linux Operating System
Display:	IPS TFT 4'' – 720px X 720px 400 cd/m2 HD Display
Sensors:	Temperature – Accuracy Rate: +/- 0,2°C Humidity – Accuracy Rate: +/- 2% CO2 Proximity & Light
Dimensions:	86mm X 86mm X 11mm
Casing Material:	Aluminium, Brass and Nickel depending on the finish selection
Power:	12- 30 VDC - via KNX Auxiliary Power Supply or separate PS
Consumption:	< 70 mA from KNX Auxiliary Power Supply < 5 mA from KNX Bus-line
Connectivity:	KNX-TP
Programming Tool:	ETS
KNX Figures:	Max. Page: 12 Max. Control Element: 64
Installation:	German IEC/EN 60670 In wall Box

ECLIPSE ROOM CONTROLLER SE (CR-ECP-04-KNX-SE)

Processor:	Arm Cortex-A7 900MHz 512 MB DDR3 RAM Embedded Linux Operating System
Display:	IPS TFT 4'' – 480px X 480px 300 cd/m2
Sensors:	Temperature – Accuracy Rate: +/- 0,2°C Humidity – Accuracy Rate: +/- 2% Proximity & Light
Dimensions:	86mm X 86mm X 11mm
Casing Material:	Obsidian Black
Power:	12- 30 VDC - via KNX Auxiliary Power Supply or separate PS
Consumption:	< 70 mA from KNX Auxiliary Power Supply < 5 mA from KNX Bus-line
Connectivity:	KNX-TP
Programming Tool:	ETS
KNX Figures:	Max. Page: 6 Max. Control Element: 32
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.

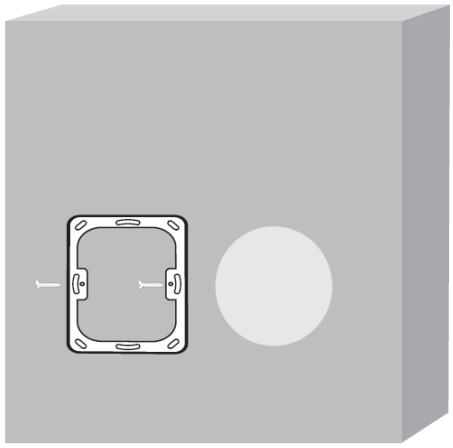
➢ Contact with fluids to the device is to be avoided.

2.1.2. Mounting, Electrical Connection

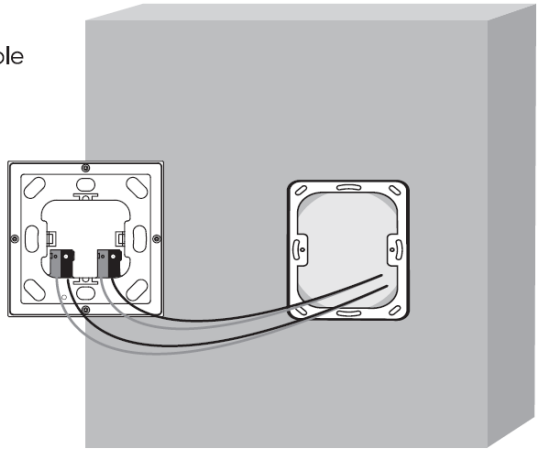
1. Mount the metal mounting support. (Included in the box.)

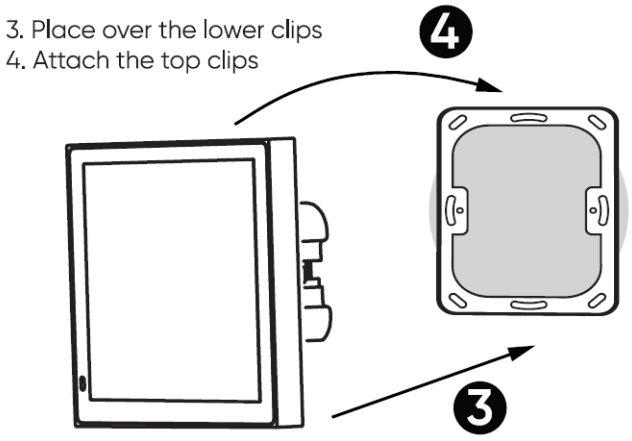
Use screws included in the box (M3x15 mm)

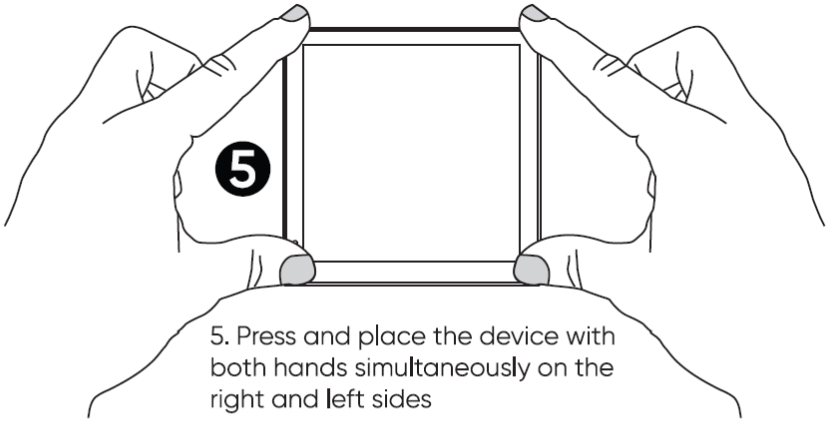
Do not overtighten the screw

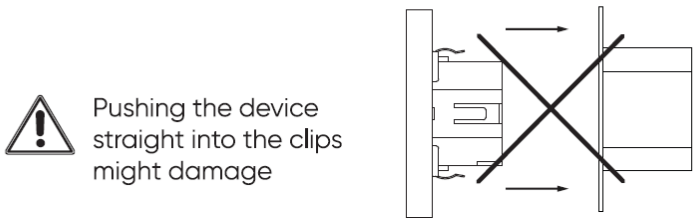


2. Connect power cable and KNX cable to the device. Check that polarity is correct.









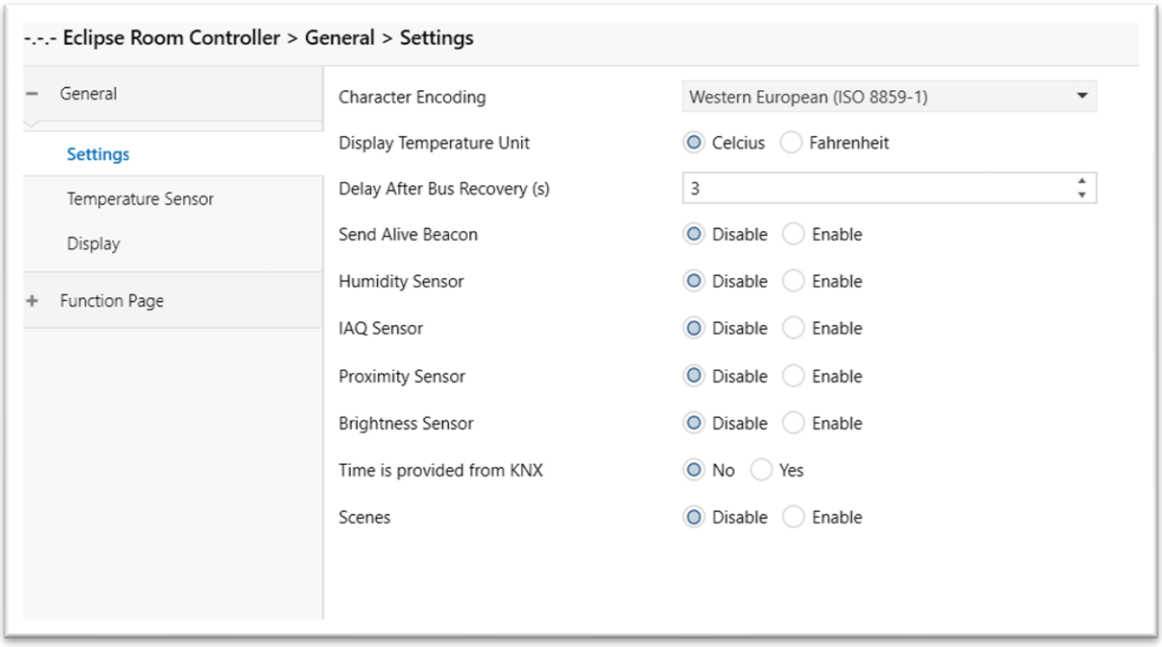
For installation video: https://www.youtube.com/watch?v=w7Oj0_RHpVY

3. ETS Parameters

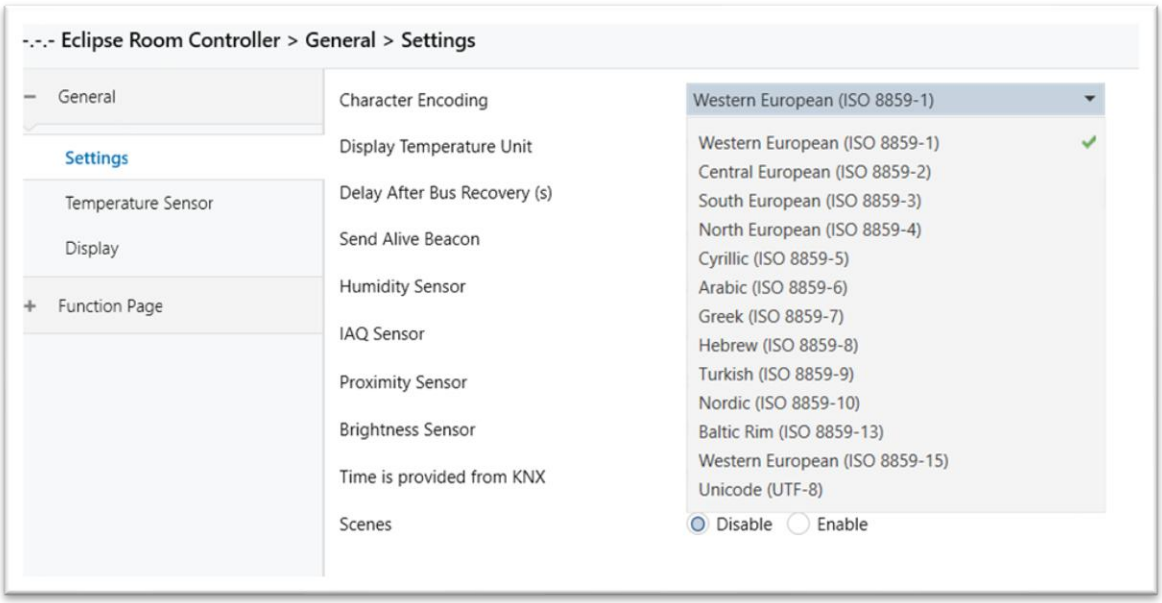
Eclipse Room Controller must be configured and set up using the standard KNX configuration tool ETS. The ETS database for this device can be downloaded from ETS online catalogue.

For tutorial videos: https://www.youtube.com/playlist?list=PLtwbriT0bxi_0rqh9KTyEgKsq8VYcDyxP

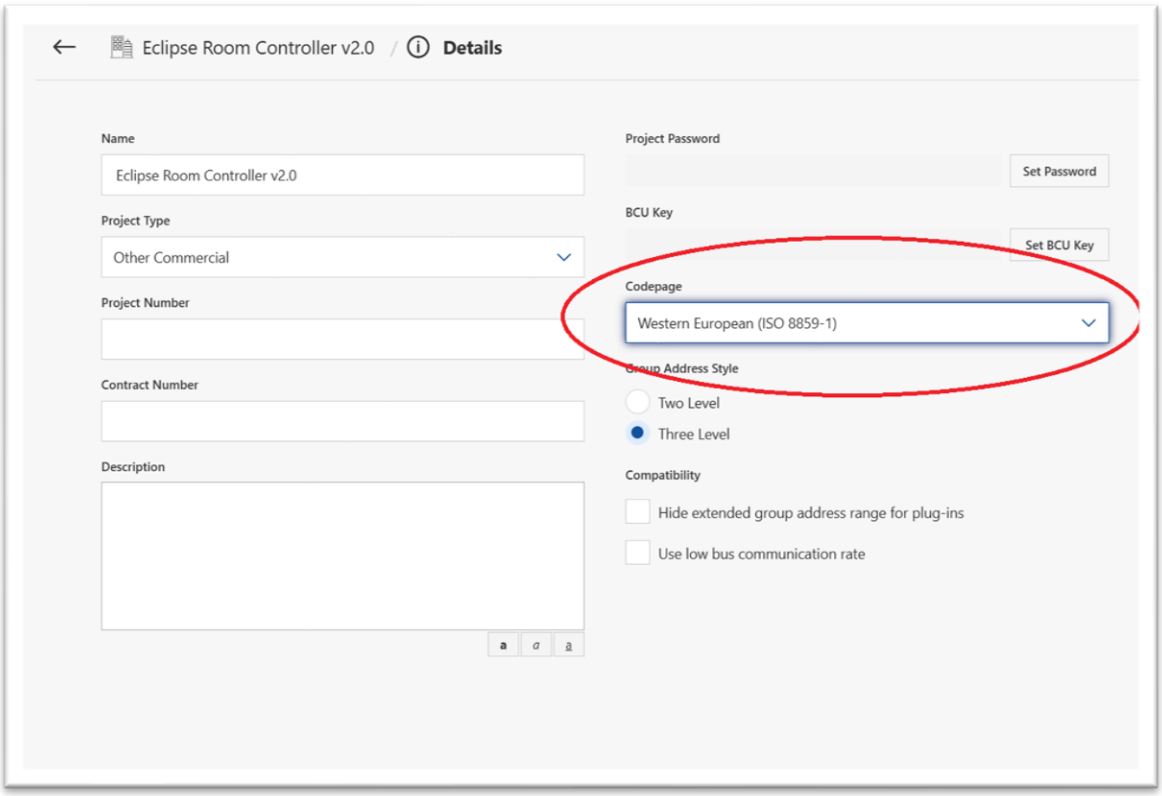
3.1. General



Character Encoding



Defines the language setting for the textual parameters and texts on display. This parameter must be same with Project > Details > Codepage settings.

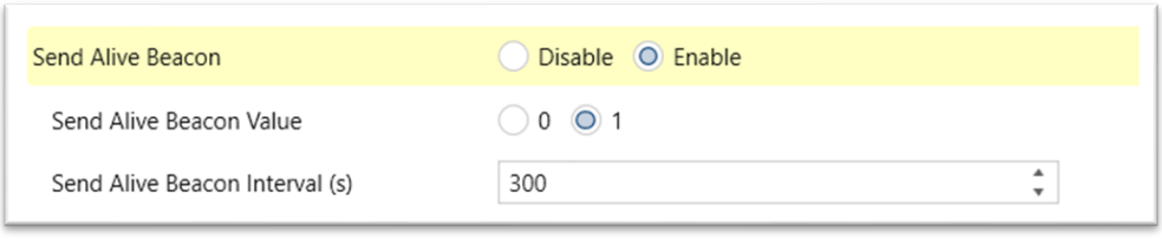


Arabic (ISO 8859-6) and Hebrew (ISO 8859-8) are not supported yet. It is planning to support in future.

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 the Room Controller.

Send Alive Beacon: [5…**300**…65535 s]



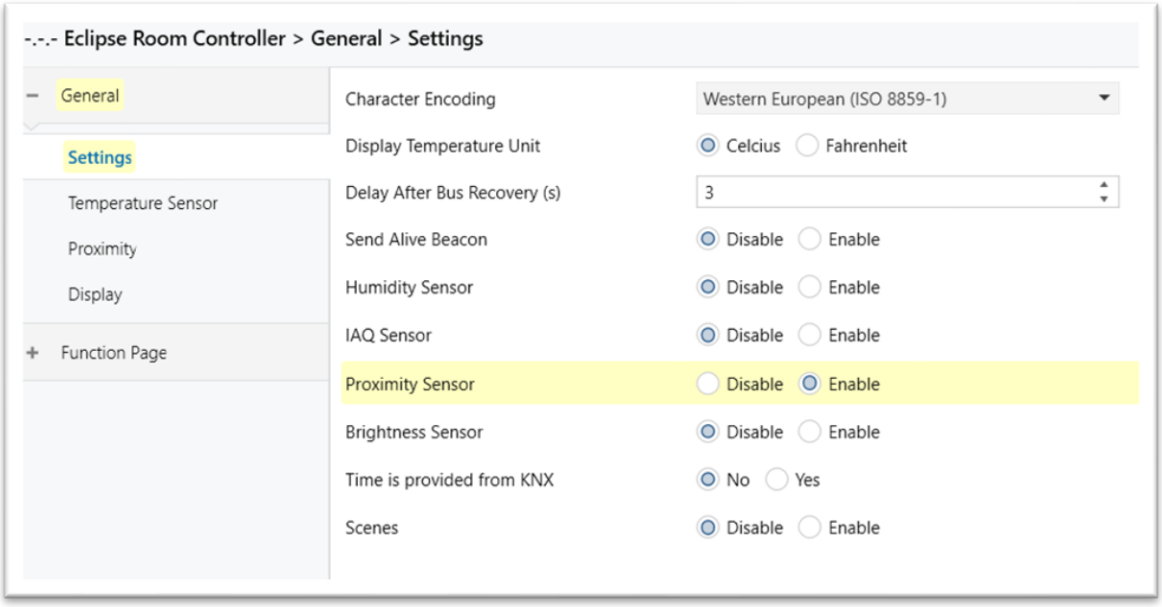
Parameter used to observe that the device and the application are running. It is disabled by default. When activated, Object Number 1 "Send Alive Beacon" will send selected value with defined time interval.

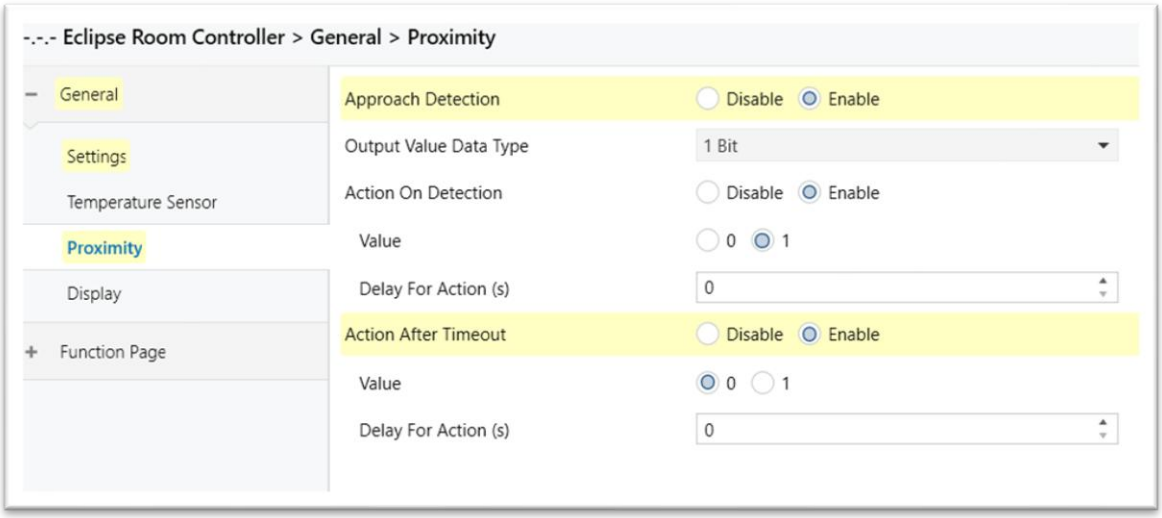
Delay After Bus Voltage Recovery: [5…**10**…65535 s]

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.

3.1.1. Proximity Sensor

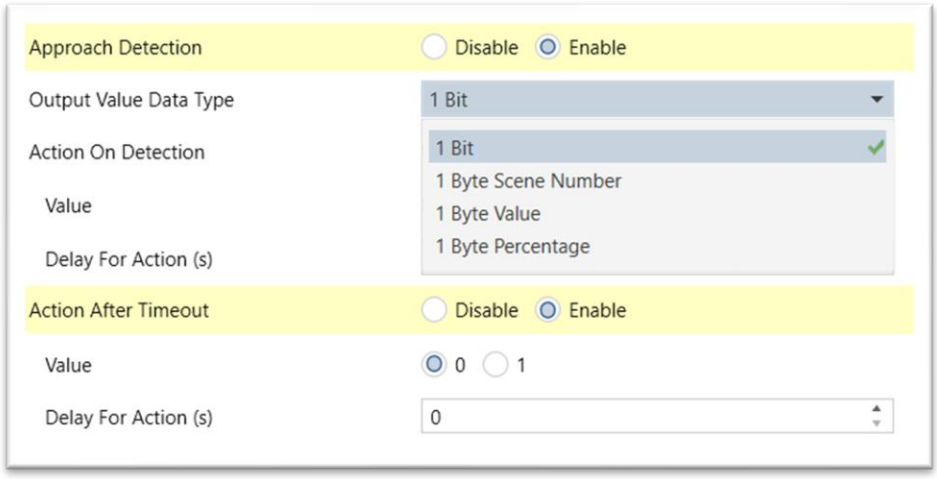
Through the proximity sensor it is possible to reactivate the display automatically only when the user approaches the device.





Approach Detection: [**Disable**, Enable]

Object "Detection Output" can be activated by enabling "Approach Detection" parameter.



Output data type can be selected 1 Bit or 1 Byte.

Action On Detection:

When enabled, "Detection Output" object will transmit selected value to KNX bus when the user approaches the device. A delay can be set to transmit the value with "Delay For Action" parameter.

Action After Timeout:

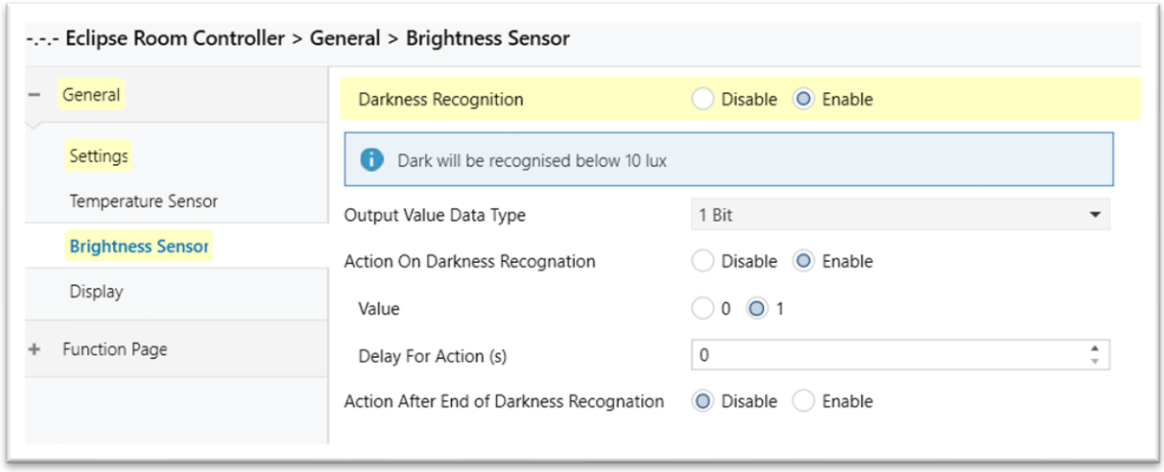
When enabled, "Detection Output" object will transmit selected value to KNX bus after screen saver time (3.1.8. Display) expired. A delay can be set to transmit the value with "Delay For Action" parameter.

5	Proximity	Detection Output (Switching)	1 bit	switch	C - - T -

3.1.2. Brightness Sensor

Brightness Sensor [**Disable**, Enable]

Brightness sensor can be enabled to activate darkness recognition feature according to ambient lux level which is measured by built-in light sensor.



Darkness Recognition: [**Disable**, Enable]

Object "Darkness Output" 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.

Output data type can be selected 1 Bit or 1 Byte.

Action On Darkness Recognition:

When enabled, "Darkness Output" object will transmit selected value to KNX bus when measured lux value is less than 10 lux. A delay can be set to transmit the value with "Delay For Action" parameter.

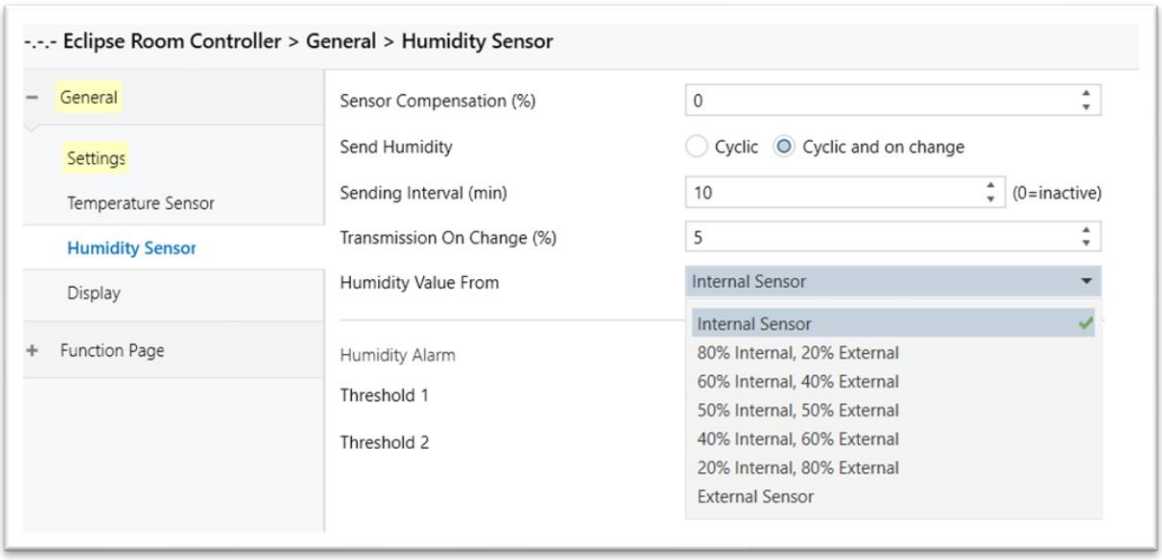
Action After End of Darkness Recognition:

When enabled, "Darkness Output" object will transmit selected value to KNX bus when measured lux value is greater than 10 lux. A delay can be set to transmit the value with "Delay For Action" parameter.

6	Darkness Recognation	Darkness Output (Switching)	1 bit	switch	C	-	-	T	-

3.1.3. 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 7 "Humidity Value – Internal Value (%)" can be sent cyclically or by change of measured humidity.

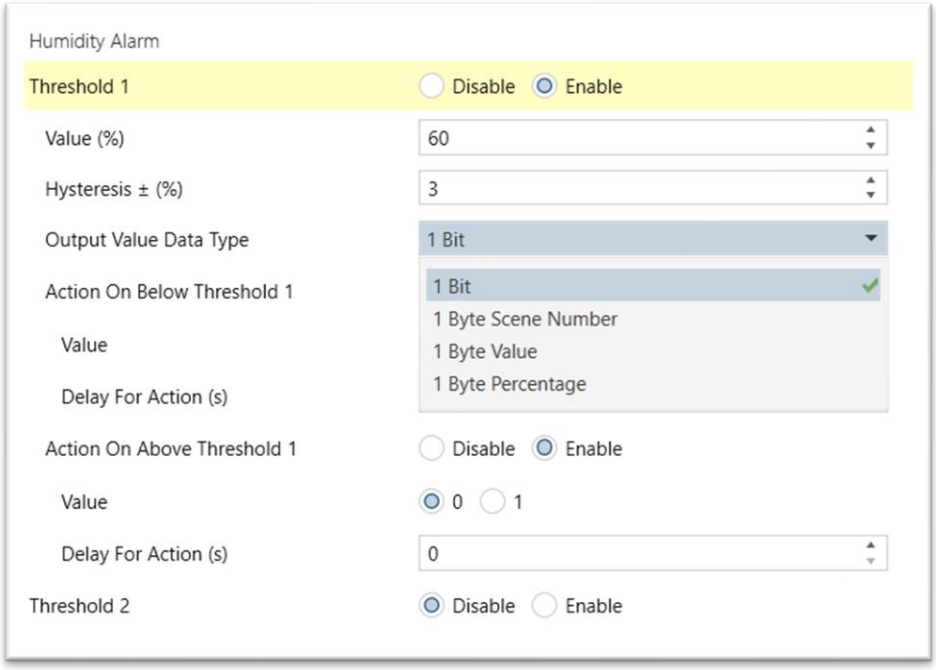
Sending Interval (min) [0…**10**…255]

Transmission On Change (%) [1…**5**…255]

Humidity Value From:

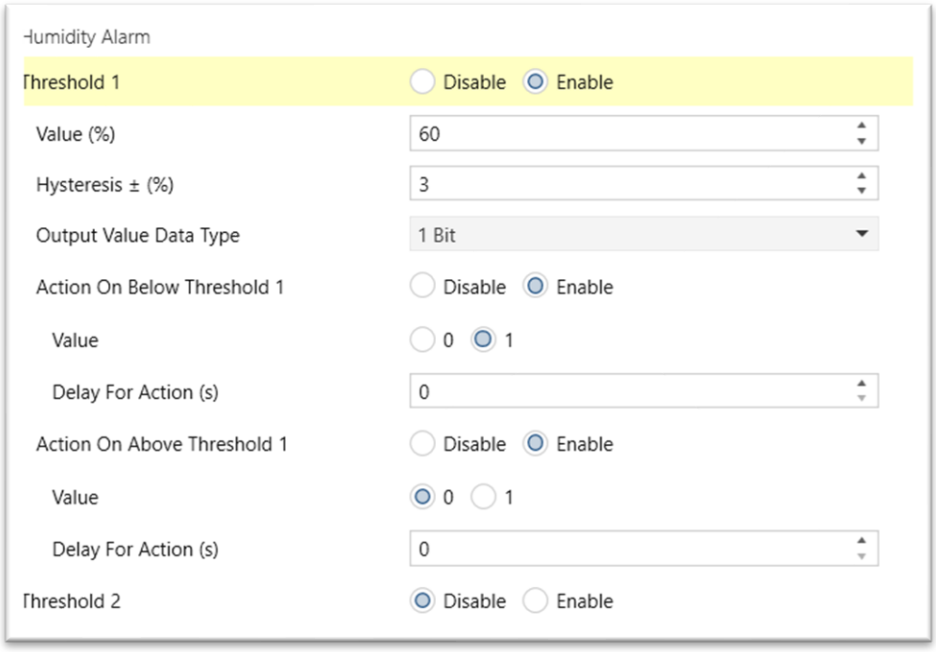
Humidity value can be received by an external humidity sensor directly or partially according to selected percentage.

Humidity Alarm:



2 Thresholds can be defined.

When a threshold is enabled, "Humidity - Threshold x Output" object will appear. Value and hysteresis can be defined. Output data type can be selected as 1 Bit or 1 Byte.



Action On Below Threshold:

When enabled, "Threshold x Output" object will transmit selected value to KNX bus when measured humidity value is less than entered "value(%) - hysteresis(%)" A delay can be set to transmit the value with "Delay For Action" parameter.

Example: Threshold value is %60 and Hysteresis is %3. When measured humidity value is less than %57, "Humidity - Threshold x Output" object will transmit selected value to KNX bus.

Action On Above Threshold:

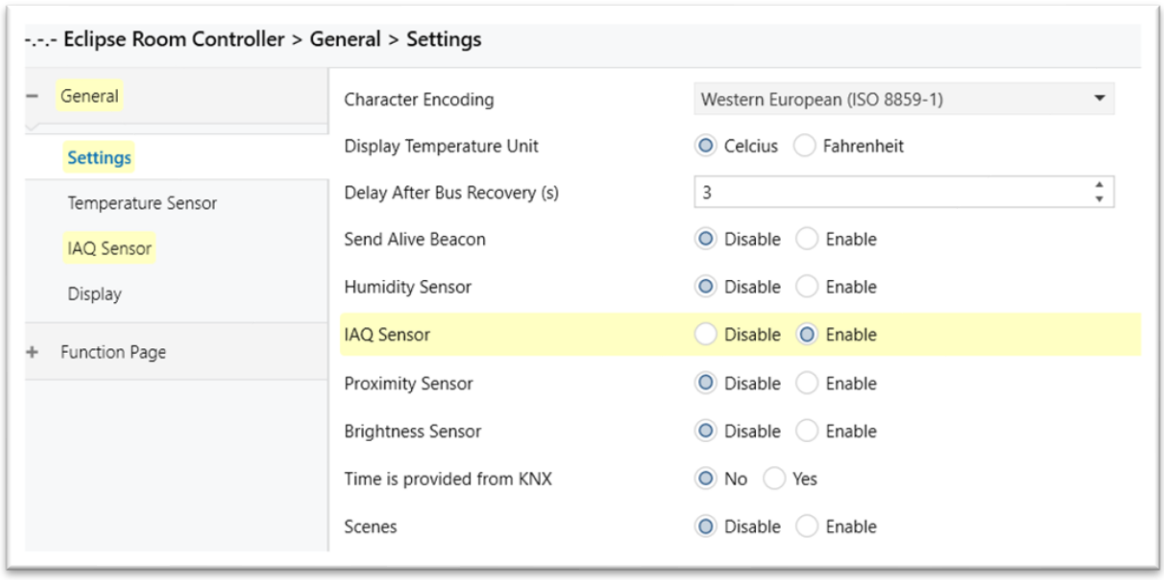
When enabled, "Threshold x Output" object will transmit selected value to KNX bus when measured humidity value is greater than entered "value(%) + hysteresis(%)" A delay can be set to transmit the value with "Delay For Action" parameter.

Example: Threshold value is %60 and Hysteresis is %3. When measured humidity value is greater than %63, "Humidity - Threshold x Output" object will transmit selected value to KNX bus.

9	Humidity	Threshold 1 Output (Switching)	1 bit	switch	C - - T -
10	Humidity	Threshold 2 Output (Scene No)	1 byte	scene number	C - - T -

3.1.4. IAQ (Indoor Air Quality) Sensor

Not included for SE model.



When enabled, "Indoor Air Quality – IAQ Level" object will appear.

11	Indoor Air Quality	IAQ Level (0-Off, 1-Very Good, 2-Good, 3-Medium, 4-Poor, 5-Bad)	1 byte	C R - T -

IAQ Levels:

Level 1 – Very Good (Telegram "1")

Level 2 – Good (Telegram "2")

Level 3 – Medium (Telegram "3")

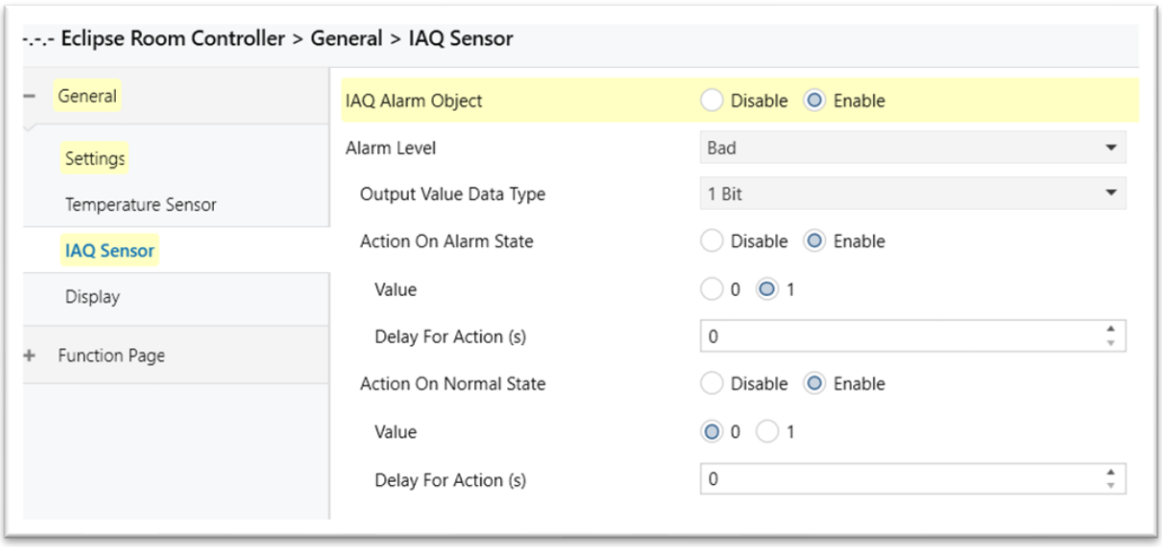
Level 4 – Poor (Telegram "4")

Level 5 – Bad (Telegram "5")

The object transmits "0" telegram only when IAQ sensor stops working

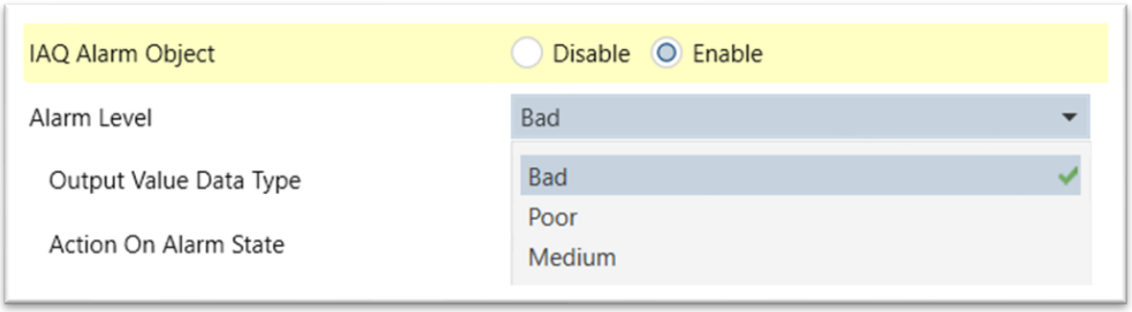
IAQ sensor tab contains following parameters.

IAQ Alarm Object:

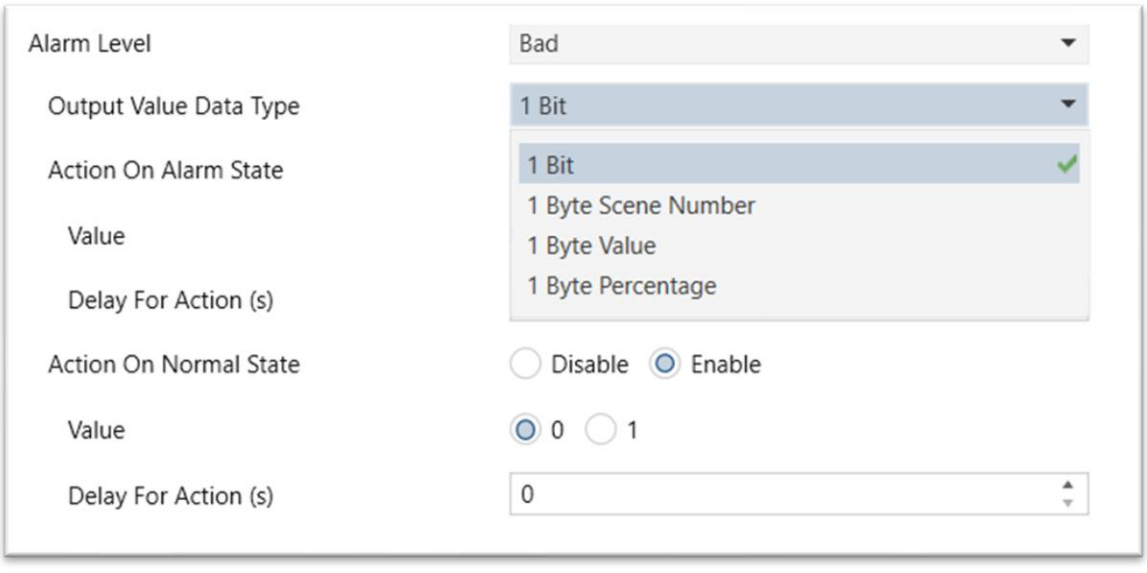


When enabled, "Indoor Air Quality – IAQ Alarm Output" object will appear.

Alarm Level:



Alarm level can be defined as Bad, Poor or Medium.



Output data type can be selected as 1 Bit or 1 Byte.

Action On Alarm State:

When enabled, "IAQ Alarm Output" object will transmit selected value to KNX bus when measured IAQ Level reaches selected alarm level. A delay can be set to transmit the value with "Delay For Action" parameter.

Action On Normal State:

When enabled, "IAQ Alarm Output" object will transmit selected value to KNX bus when measured IAQ Level is less than selected alarm level. A delay can be set to transmit the value with "Delay For Action" parameter.

12	Indoor Air Quality	IAQ Alarm Output (Switching)	1 bit	switch	C	-	-	T	-

3.1.5. Time

Time is provided from KNX:

If "yes" is selected, Object Number 2 "General - Time" will be activated to receive time information from KNX bus. Received time will be shown on the Main page of the device.

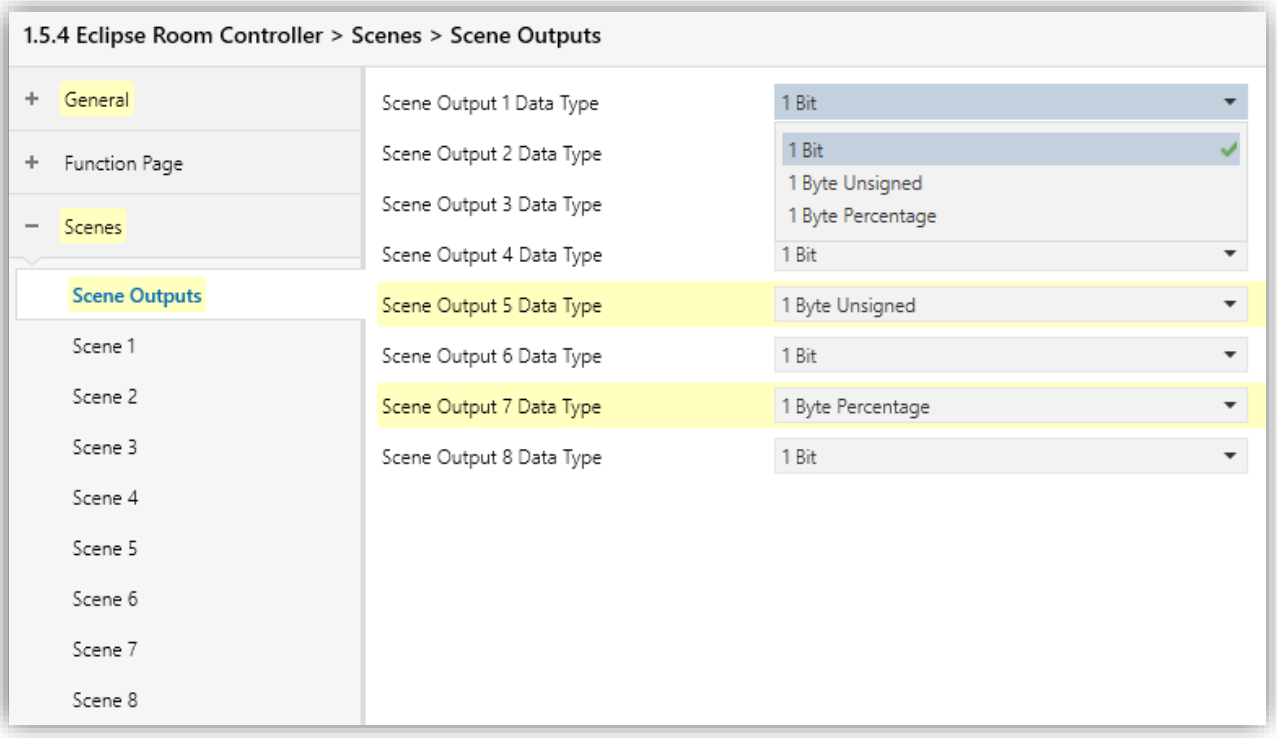
Otherwise, Room Controller uses built-in RTC (real time clock) for the clock on main page. Use KNX Group Monitor to adjust the time via writing "correct time" value to Object Number 2 "General - Time".

2	General	Time	3 bytes	time of day	C	-	W	T	U

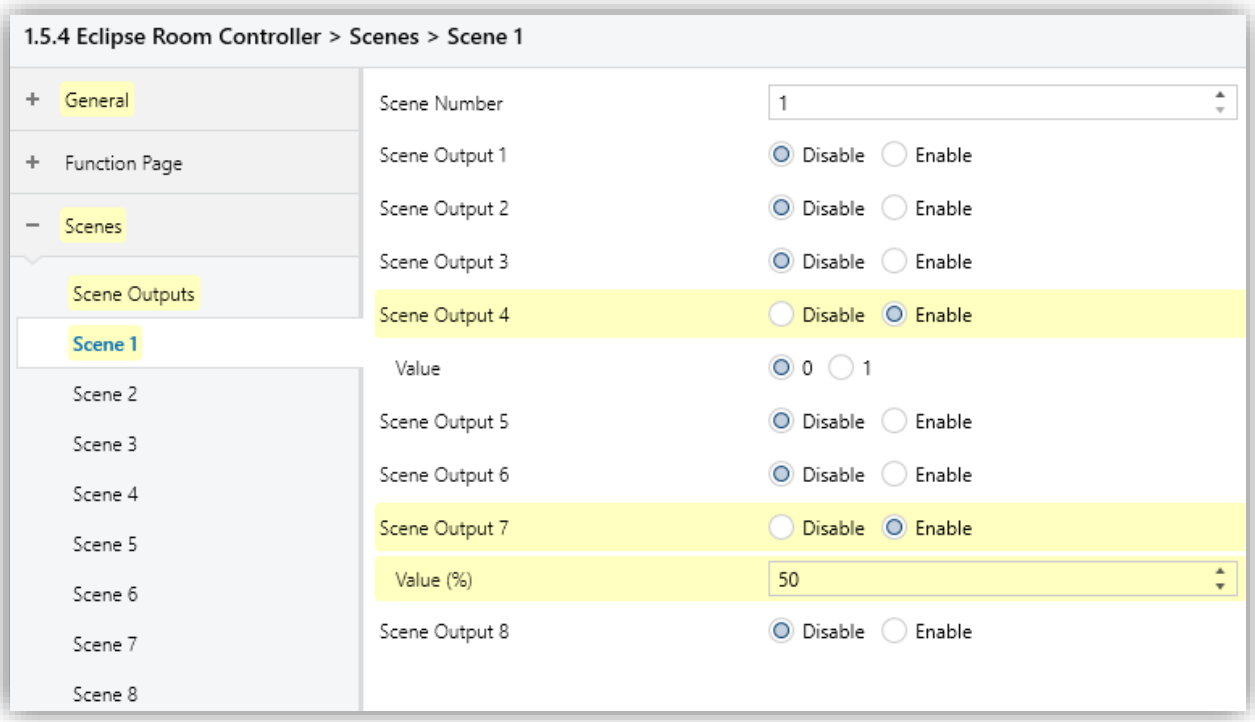
3.1.6. Scenes

Room Controller has 8 scene outputs (KNX objects) to send commands to KNX bus. Scene outputs are defined in 8 different scenes and can be used to send different values by recalling each scene separately.

Data type of each Scene Output can be selected as "1 Bit, 1 Byte Unsigned and 1 Byte Percentage".



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 613 "Scenes – Scene Recall".



Any scene which is recalled by Object Number 617 will send value of enabled "Scene output" via Object Numbers 618-625 to KNX bus.

617	Scenes	Scene Recall	1 byte	scene number	C	-	W	T	U
618	Scenes	Scene Output 1 (1 Bit)	1 bit	switch	C	-	-	T	-
619	Scenes	Scene Output 2 (1 Byte Unsigned)	1 byte	counter pulses (0..255)	C	-	-	T	-
620	Scenes	Scene Output 3 (1 Byte Percentage)	1 byte	percentage (0..100%)	C	-	-	T	-
621	Scenes	Scene Output 4 (1 Bit)	1 bit	switch	C	-	-	T	-
622	Scenes	Scene Output 5 (1 Byte Unsigned)	1 byte	counter pulses (0..255)	C	-	-	T	-
623	Scenes	Scene Output 6 (1 Byte Percentage)	1 byte	percentage (0..100%)	C	-	-	T	-
624	Scenes	Scene Output 7 (1 Bit)	1 bit	switch	C	-	-	T	-
625	Scenes	Scene Output 8 (1 Byte Unsigned)	1 byte	counter pulses (0..255)	C	-	-	T	-

3.1.7. Temperature Sensor

Temperature unit can be selected as Celsius or Fahrenheit.

Sensor Compensation (x0.1K):

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

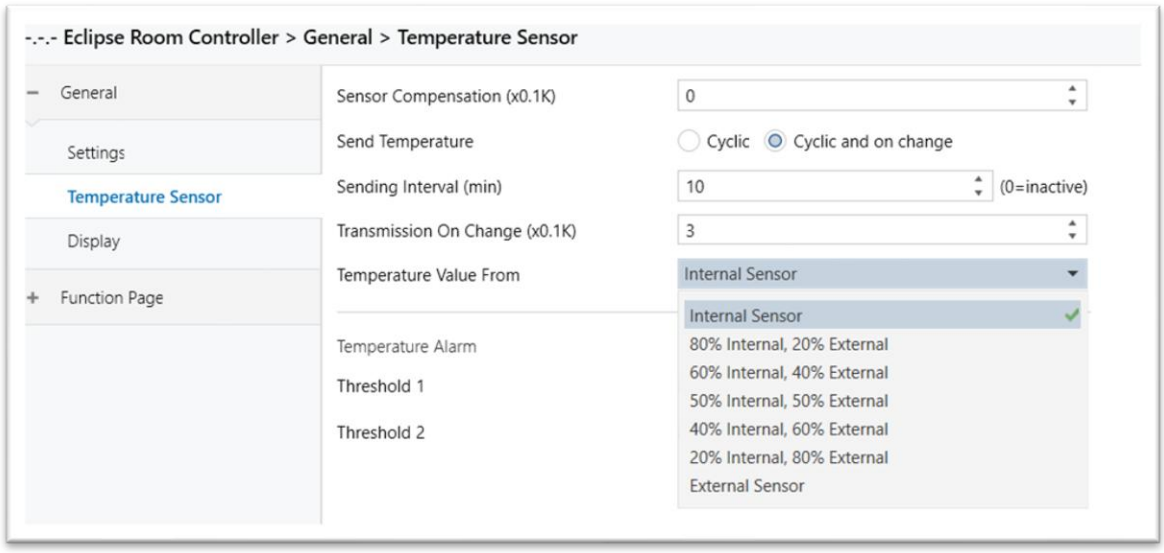
Send Temperature:

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

Sending Interval (min) [0…**10**…255]

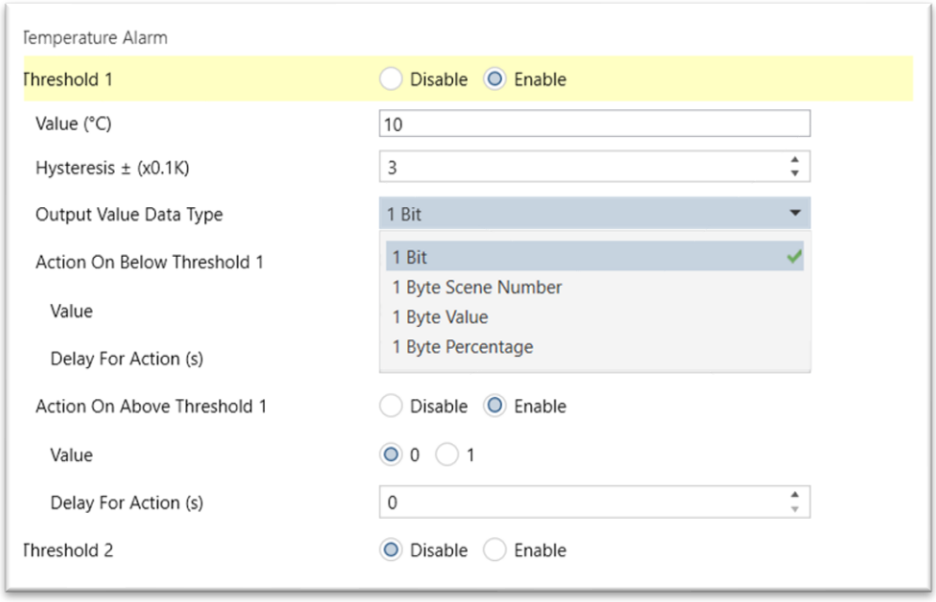
Transmission On Change (x0.1K) [1…3…100]

Temperature Value from:



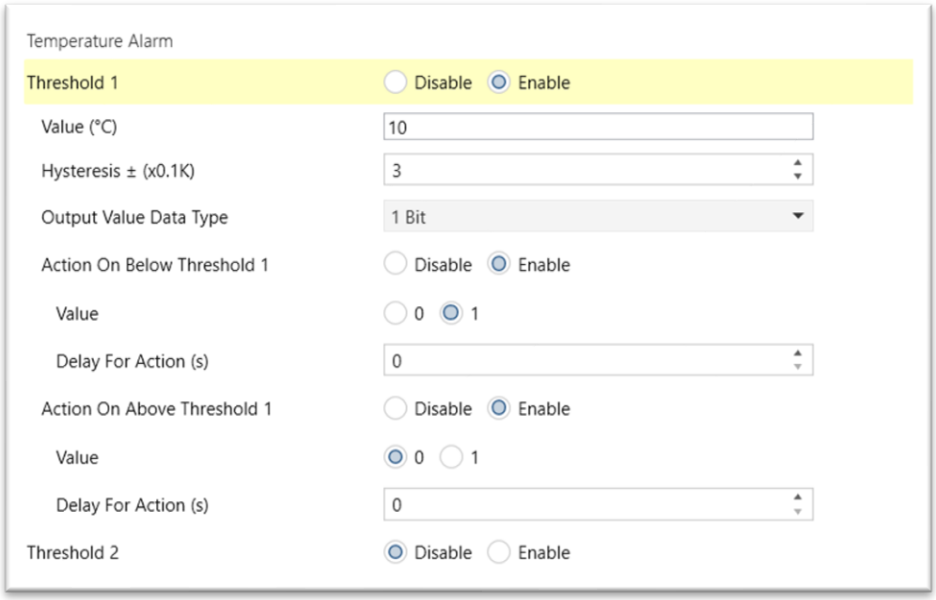
Temperature value can be received from an external temperature sensor directly or partially according to selected percentage. Object Number 14 "Temperature – External Value".

Temperature Alarm:



2 Thresholds can be defined.

When a threshold is enabled, "Temperature - Threshold x Output" object will appear. Value and hysteresis can be defined. Output data type can be selected as 1 Bit or 1 Byte.



Action On Below Threshold:

When enabled, "Threshold x Output" object will transmit selected value to KNX bus when measured temperature value is less than entered "value(°C) – hysteresis (0.1K)". A delay can be set to transmit the value with "Delay For Action" parameter.

Example: Threshold value is 10°C and Hysteresis is 0,3°C. When measured value is less than 9,7°C, "Temperature - Threshold x Output" object will transmit selected value to KNX bus.

Action On Above Threshold:

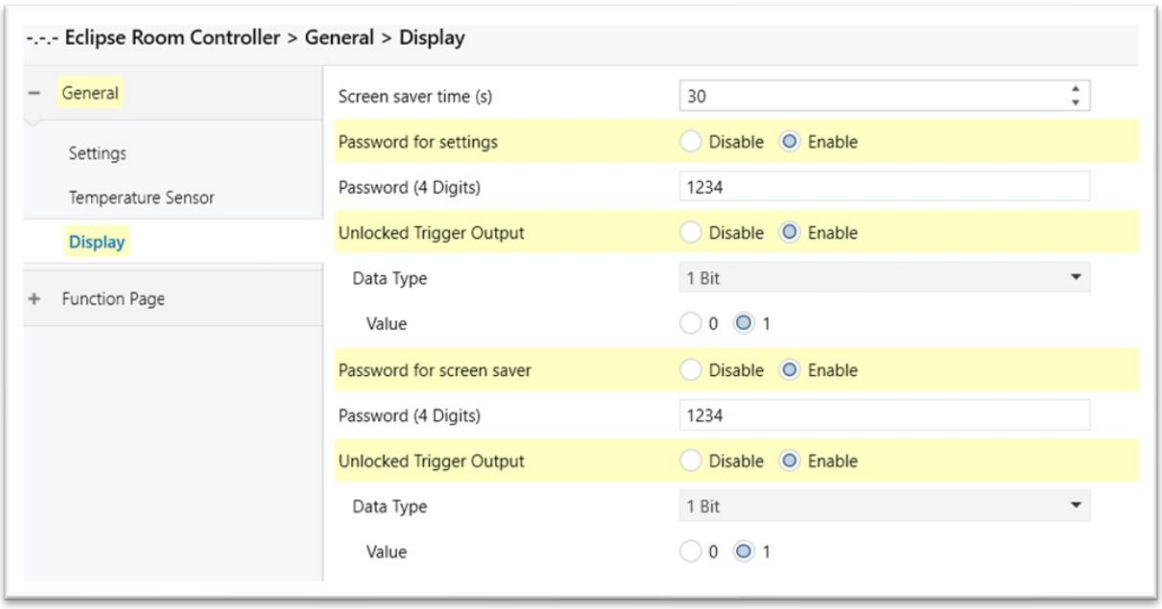
When enabled, "Threshold x Output" object will transmit selected value to KNX bus when measured temperature value is greater than entered "(°C) + hysteresis (0.1K)". A delay can be set to transmit the value with "Delay For Action" parameter.

Example: Threshold value is 10°C and Hysteresis is 0,3°C. When measured temperature value is greater than 10,3°C, "Temperature - Threshold x Output" object will transmit selected value to KNX bus.

15	Temperature	Threshold 1 Output (Switching)	1 bit	switch	C	-	-	T	-
16	Temperature	Threshold 2 Output (%)	1 byte	percentage (0..100%)	C	-	-	T	-

3.1.8. Display

Display parameter tab contains following parameters.



Screen saver time (s): [1…**30**…120]

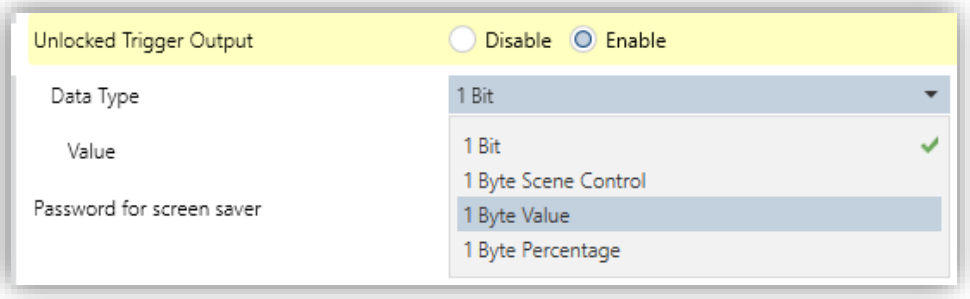
Display goes into stand-by position when screen saver time is over.

Password for settings: (4 digits)

A "4 digit" password can be created to protect device settings. Settings can be changed only if correct password is entered.

Unlocked Trigger Output:

If settings page is unlocked by entering password, then Object Number 3 "Settings Password - Trigger" will send selected data to KNX bus.

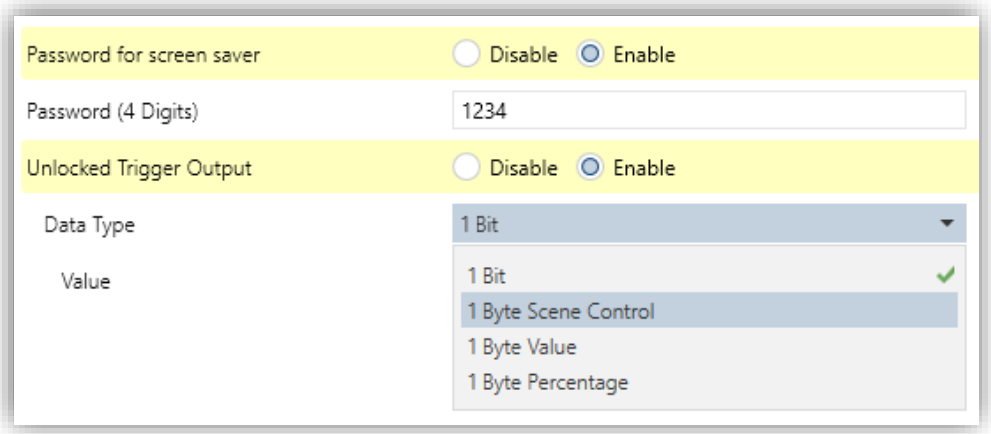


Password for screen saver: (4 digits)

A "4 digit" password can be created to protect the Room Controller. Screen can be activated only if correct password is entered.

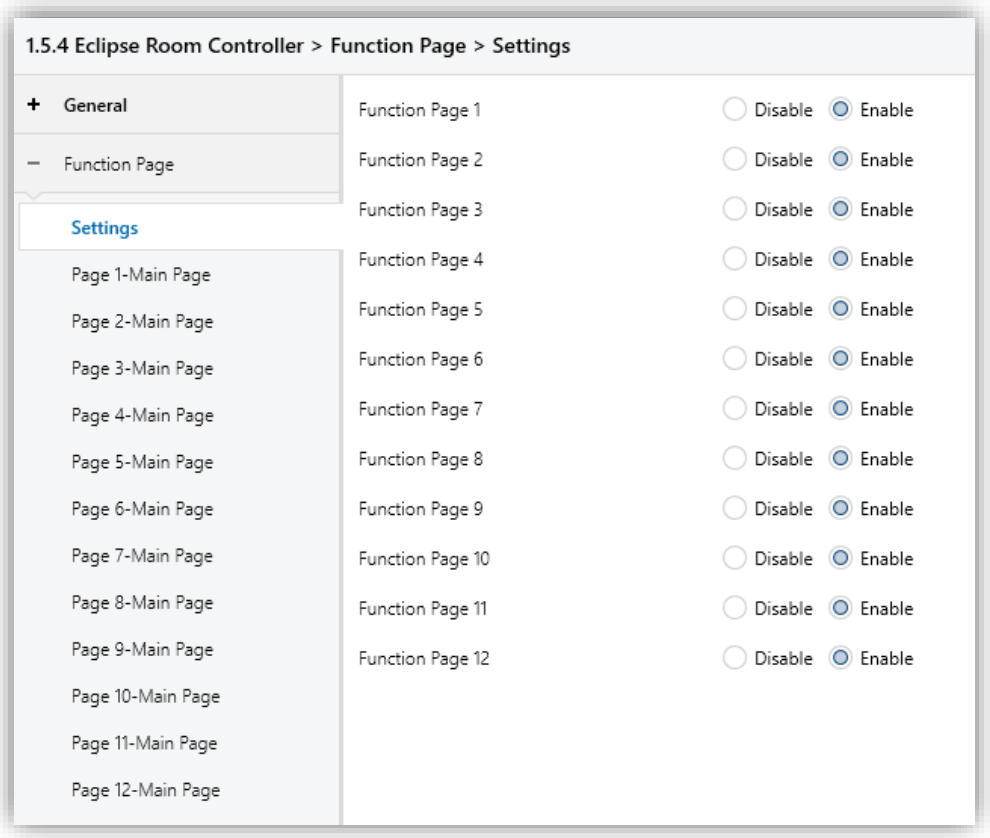
Unlocked Trigger Output:

If screen saver is unlocked by entering password on the device, then Object Number 4 "Screen Saver Password - Trigger" will send selected data to KNX bus.

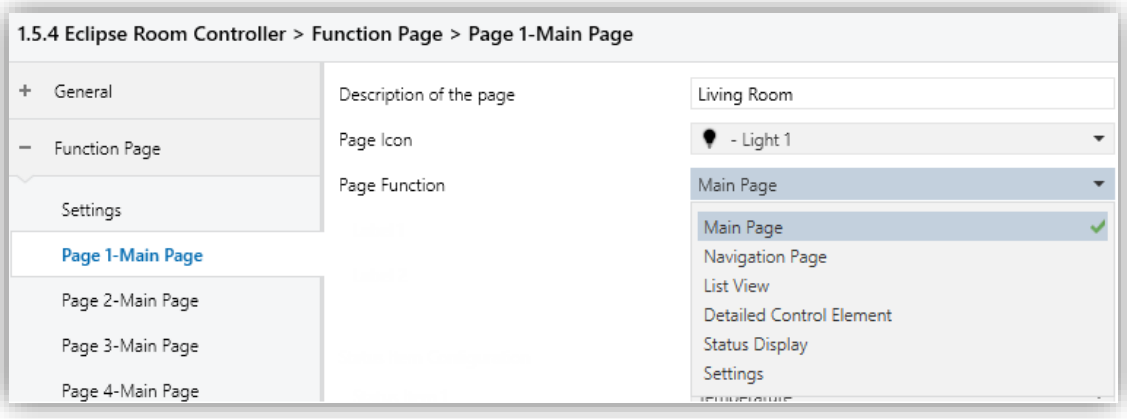


3.2. Function Page

Function pages can be enabled under "Function Page - Settings" parameter tab. Room Controller has a maximum of 12 identical function pages. (Maximum of 6 identical function pages for SE model)



Each of function pages has following parameters.



Description of the page: (14 characters allowed)

Description will be visible on left-top corner of the screen. Example: "Living Room".

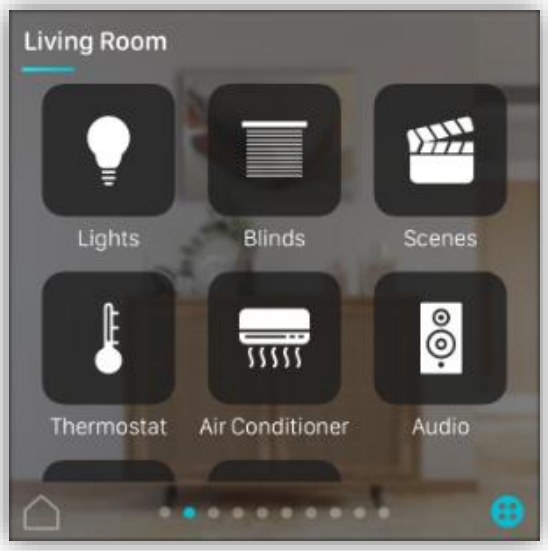
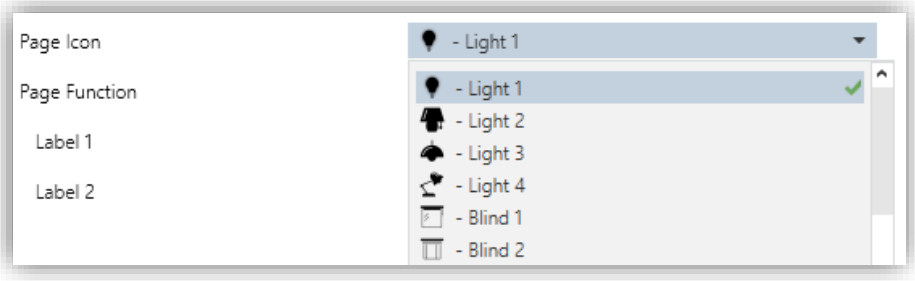


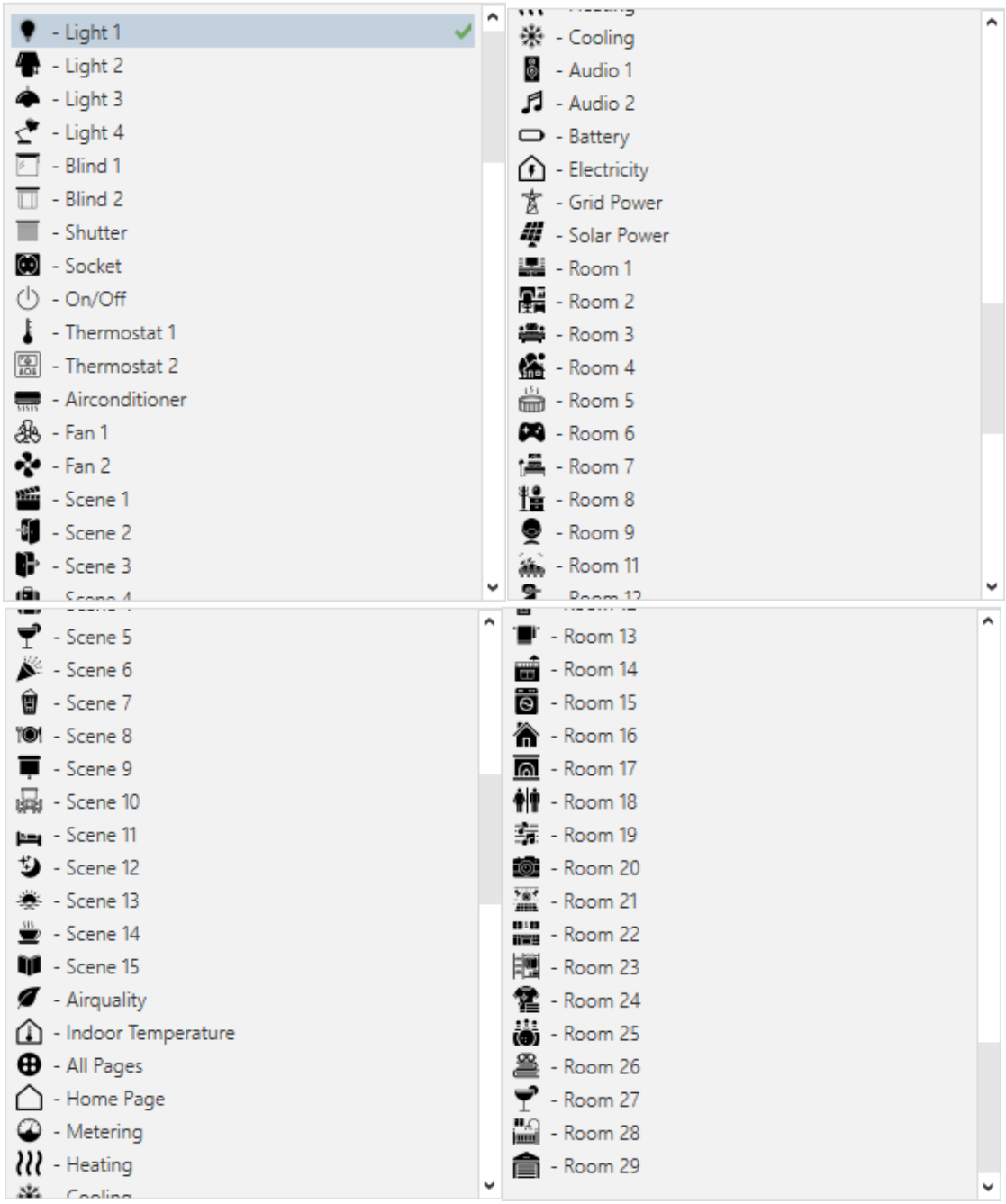
Figure 1 – Description of the page

Page Icon:

A specific icon can be selected for the page from ready to use icon list. Selected icon will be visible on "Navigation Page" if page is added to navigation page. Figure 1 (Lights, Blinds etc.)

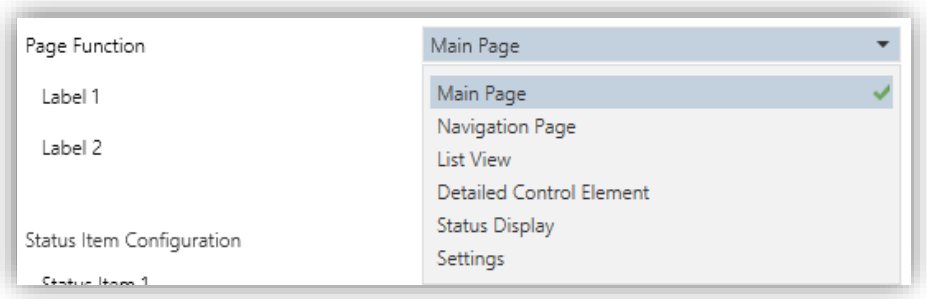


All available icons are listed below.



Page Function:

Following options are available for page function.



3.2.1. Page 1 – Main Page

Main Page contains "two of customized labels", "clock", "three of status items" and "two functional buttons". Figure 2

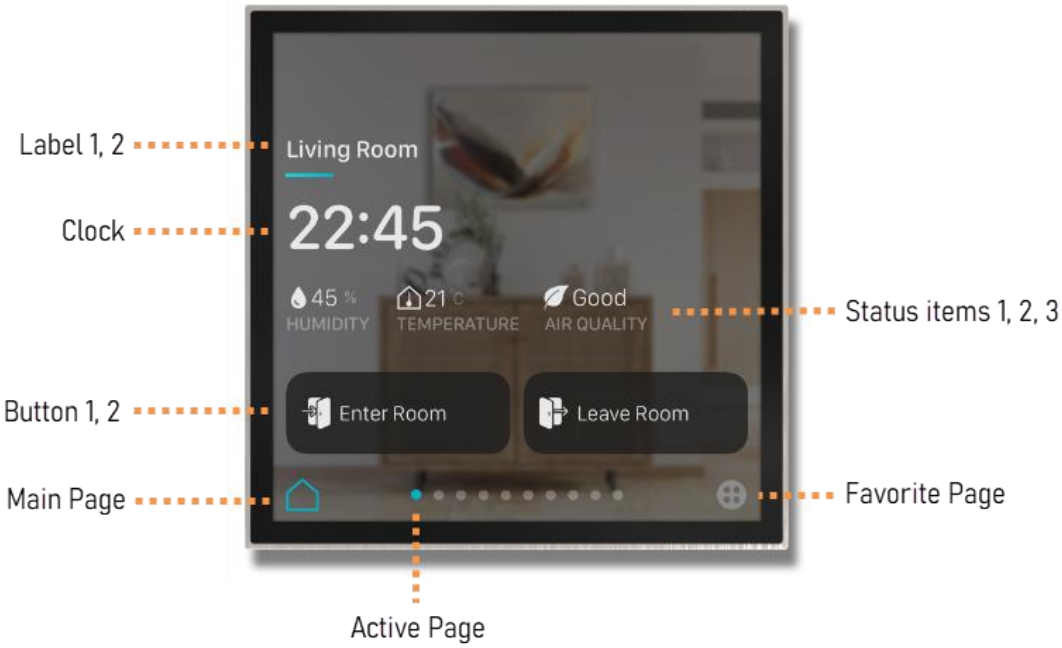
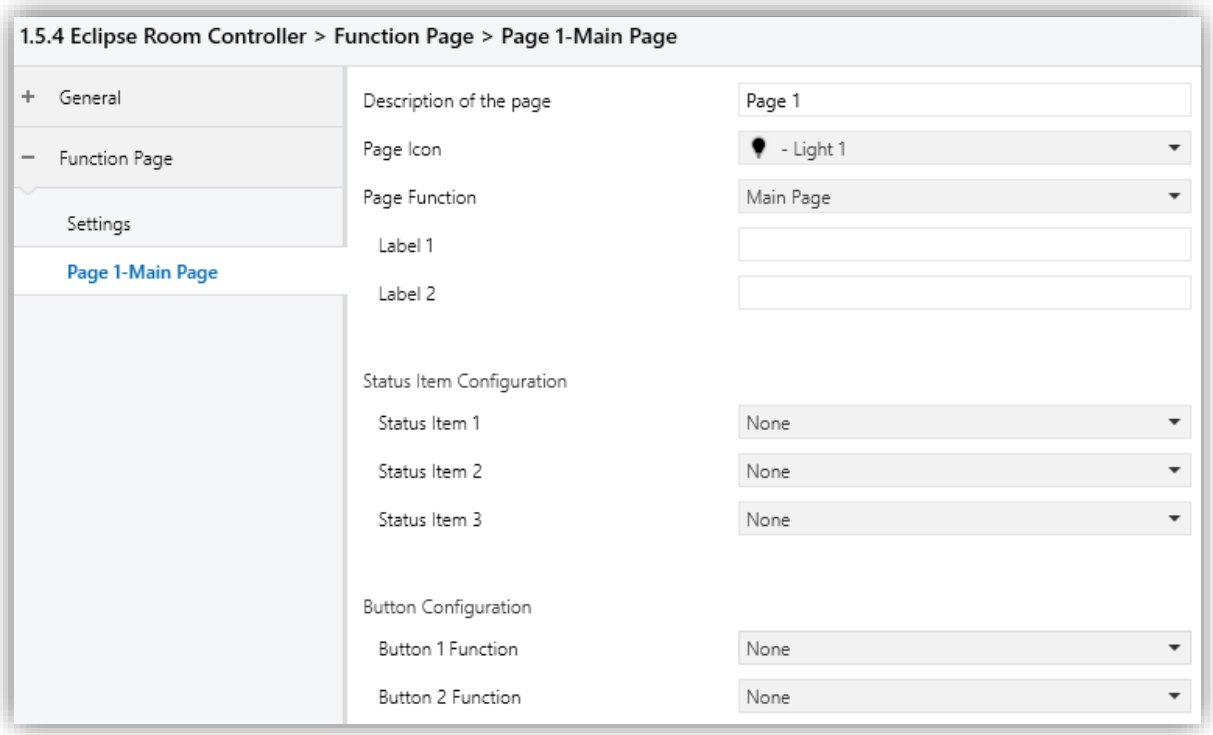


Figure 2 - Main Page view



Parameter	Possible Values	Description
Label 1	User defined (14 characters max.)	Displayed on top-left of main page view.
Label 2	User defined (14 characters max.)	Displayed on top-left of main page view.
Status Item Configuration:		
Status item 1 Status item 2 Status item 3	Following options are selectable for each item. Temperature Humidity Air Quality CO2 VOC PM2.5 PM10 Brightness Wind speed	Status items are displayed on main page view with customized text and received or measured value of selected unit.
Status item 1, 2, 3 (Text)	User defined (14 characters max.)	Text is visible under measured value of selected unit. Check above Main page view on Figure 2.
Status item 1, 2, 3 (Sensor)	Internal, External	Value can be received from an external sensor using related object. Example: "Page 1- Main Page Status item 1 – Temperature".
Button Configuration:		
Button 1 Function Button 2 Function	Following datatypes are selectable for each button. 1 bit 1 Byte Scene Control 1 Byte Value 1 Byte Percentage	Two buttons can be used as "Scene button" on Main page view. Check above Main page view on Figure 2. (Enter Room, Leave Room)
1 bit 1 Byte Scene 1 Byte Value 1 Byte Percentage	[0, 1] [1…64] scene number [0…255] value [%0…%100] percentage	Selected data will be sent with button press.
Button 1 Function (Icon)	icon options (81)	Selected icon will be visible on the button.
Button 1 Function (Text)	User defined (14 characters max.)	Text will be visible on the button.

3.2.2. Page 1 – Navigation Page

Basically, "Navigation Page" contains shortcuts of other pages. 12 pages can be added to a navigation page at the same time. Each of pages is added with its own icon to "Navigation Page". Figure 3

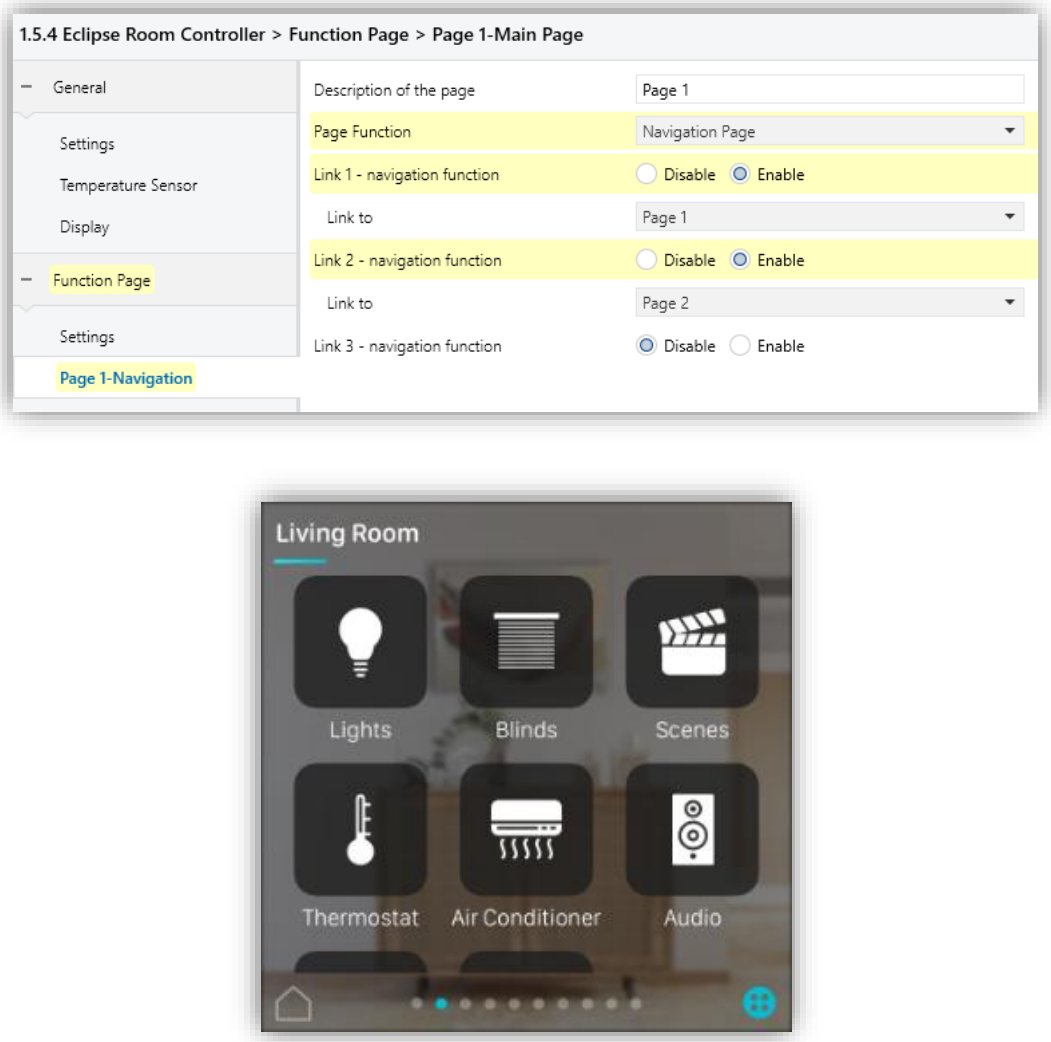


Figure 3 - Navigation Page

3.2.3. Page 1 – List View

Different type of control elements can be added to same page thanks to "List View". Following control elements can be used. Figure 4, 5, 6

"Switch, Dimming, Shutter/Blind, Scene, Value, Tunable White Control".

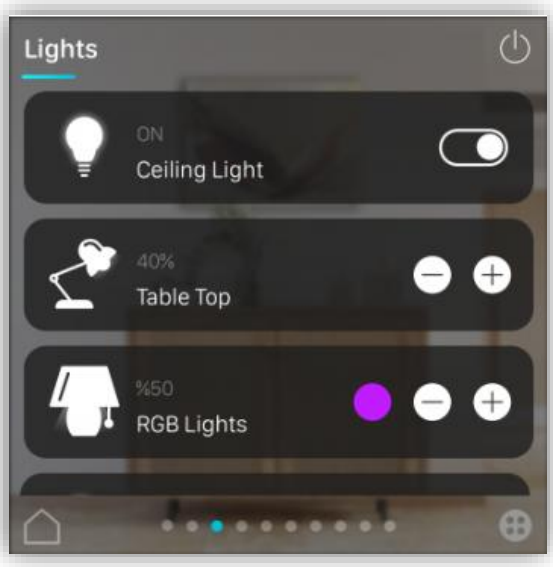


Figure 5 - List view (Lights)

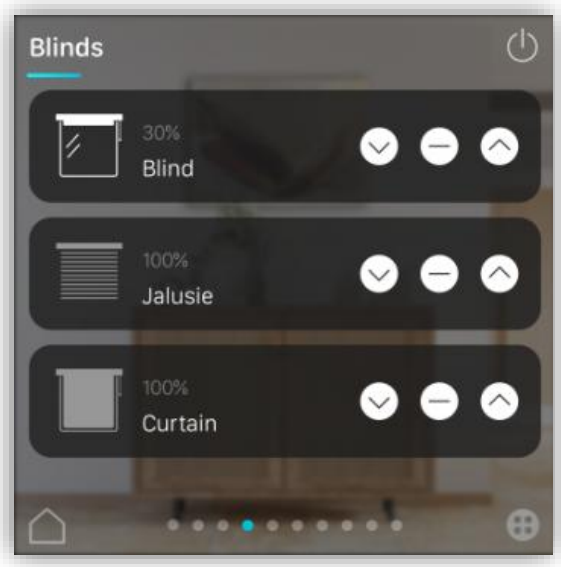


Figure 4 - List view (Blinds)

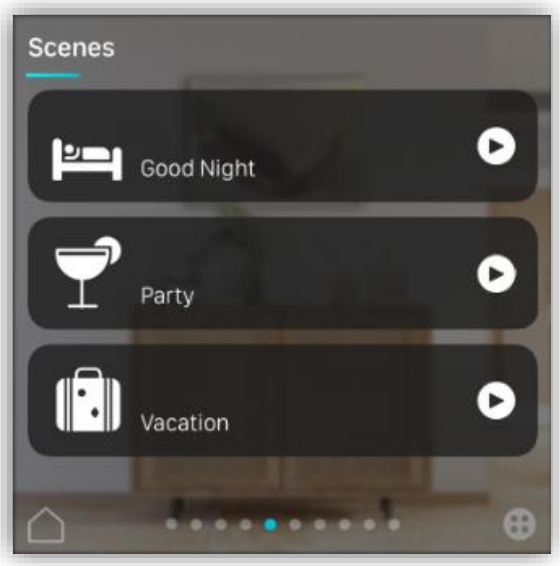
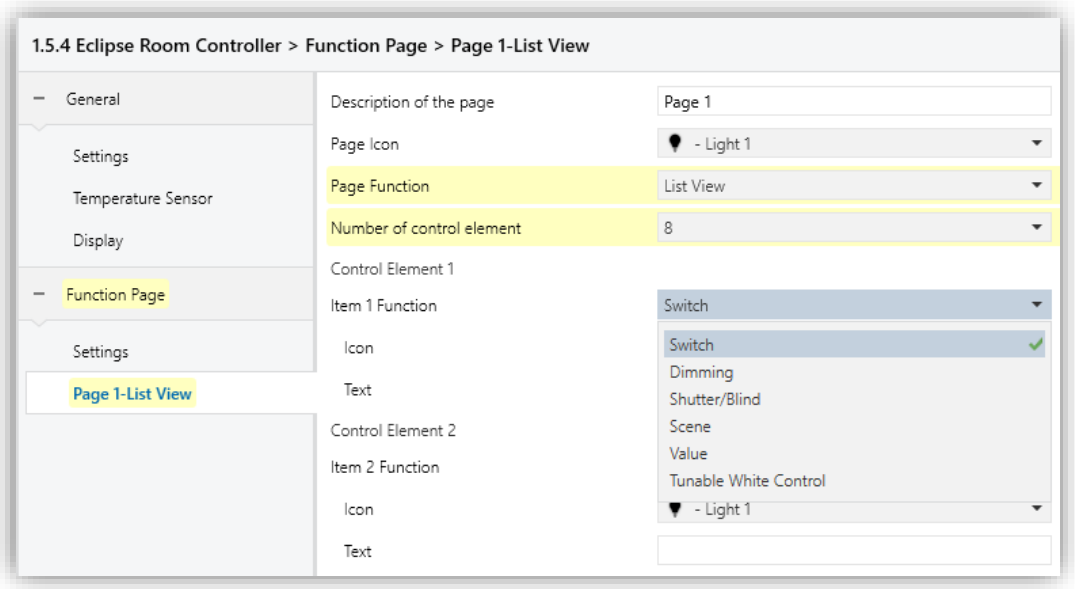


Figure 6 - List view (Scenes)



Parameter	Possible Values	Description
Control Element 1 (up to 8)		
Item 1 Function	Switch Dimming Shutter/Blind Scene Value Tunable White Control	Following functions are selectable for each control element.
Icon	icon options (81)	Selected icon will be visible on the control element. Figure 4, 5, 6
Text	User defined (14 characters max.)	Text will be visible on the control element. Figure 4, 5, 6
Item 1 Function (Shutter Blind) Blind position	Disable, Enable	Enables status object for blind position.
Item 1 Function (Shutter Blind) Slat position	Disable, Enable	Enables status object for Slat position.
Item 1 Function (Scene) Scene Number	1..64	Selected scene number is used to recall.
Item 1 Function (Scene) Mode	1. Send scene 2. Send scene and save at long press	If option 2 is selected, current position of lighting, blinds etc. can be saved on the actuator.
Item 1 Function (Tunable White Control) Color Temperature Min.	1000…10000	Defines the minimum color temperature that can be selected on control element.
Item 1 Function (Tunable White Control) Color Temperature Min.	1000…10000	Defines the maximum color temperature that can be selected on control element.

3.2.4. Page 1 – Detailed Control Element

"Detailed Control Element" can be used to focus only one control type in detail with all available functions. Figure 7, 8, 9, 10

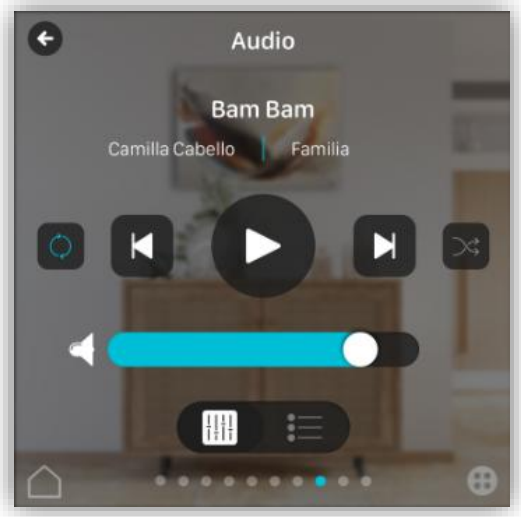


Figure 7 - Audio Control

Figure 8 - RGB Color wheel

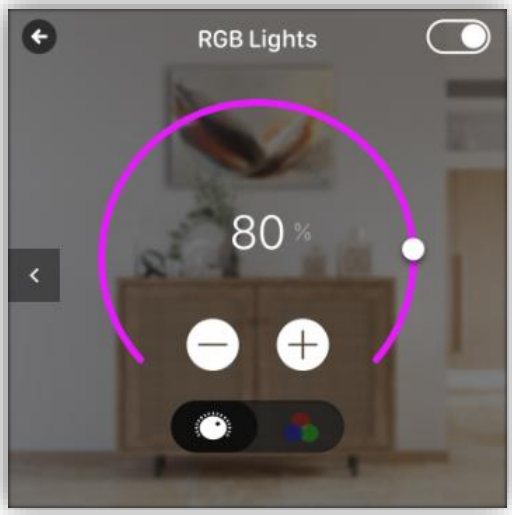


Figure 7 - RGB Brightness Level

Figure 10 - Thermostat

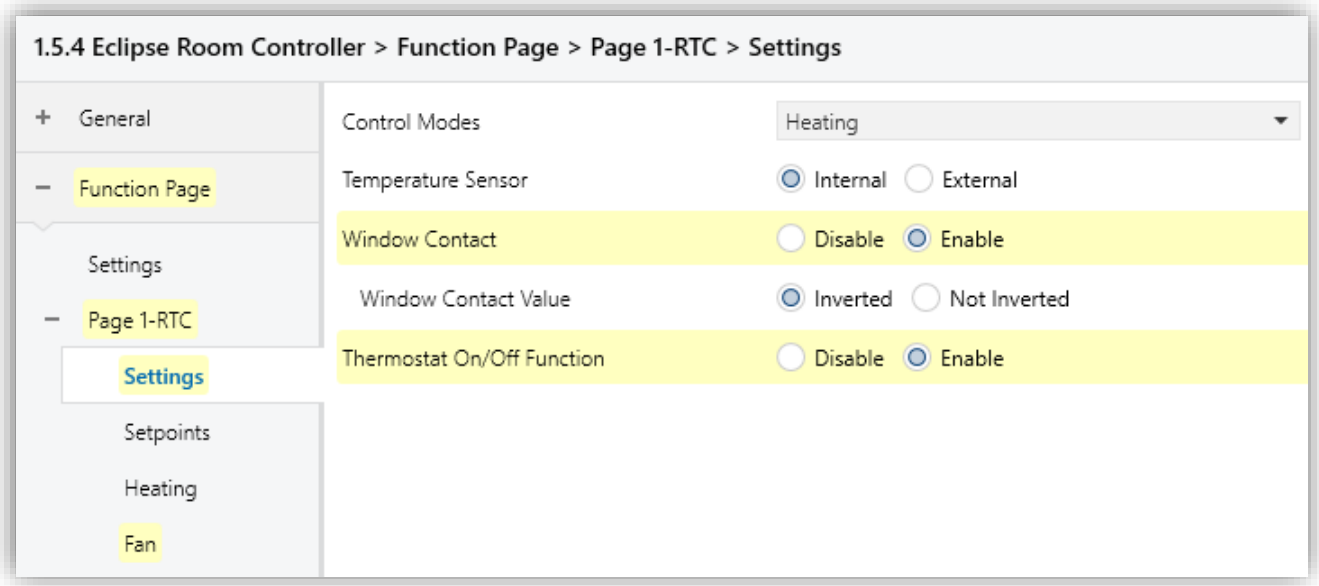
Parameter	Possible Values	Description
Detailed Control Element		
Page Function	Switch Dimming Shutter/Blind Scene Value Tunable White Control RGBW Control General Thermostat (RTC) Slave Thermostat Air Conditioner Control Audio Control	Following functions are selectable for each detailed control element.
Shutter Blind		
Blind position	Disable, Enable	Enables status object for blind position.
Slat position	Disable, Enable	Enables status object for Slat position.
Scene		
Scene Number	1..64	Sets scene number will be recalled via scene object.
Mode	1. Send scene 2. Send scene and save at long press	If option 2 is selected, current position of lighting, blinds etc. can be saved on the actuator.
Tunable White Control		
Color Temperature Min.	1000…**2000**…10000	Defines the minimum colour temperature that can be selected on control element.
Color Temperature Min.	1000…**6000**…10000	Defines the maximum colour temperature that can be selected on control element.
RGBW Control		
Control Type	RGB, RGBW	Sets the control type according to lighting source.
Data Type	1x3 Byte 3x1 Byte	Sets the data type to control RGB lighting.
General Thermostat (RTC)		Activates parameter tabs for RTC under Page 1.
Settings		
Control Mode	Heating Cooling Heating and Cooling	Control mode of thermostat can be selected for Heating, Cooling, and Heating and Cooling together.
Heating and Cooling Control Value Output	Via 1 object Via 2 objects	Output value for Heating and Cooling can be sent via same object or 2 separate objects. In this way, heating and cooling control value commands can be sent separately.

Behavior of Control Mode at Bus Recovery	As before voltage failure Heating Cooling	The parameter defines the behavior of the control mode after bus power return.
Switchover of Control Mode	Only via Object Local and via object Automatic	Parameter makes possible to switch between the heating and cooling mode of the device.

3.2.4.1 General Thermostat (RTC)

3.2.4.1.1. Settings

Control Modes: [Heating, Cooling, Heating and Cooling]



Temperature Sensor:

Temperature value can be received from an external temperature sensor directly or internal sensor can be used as default.

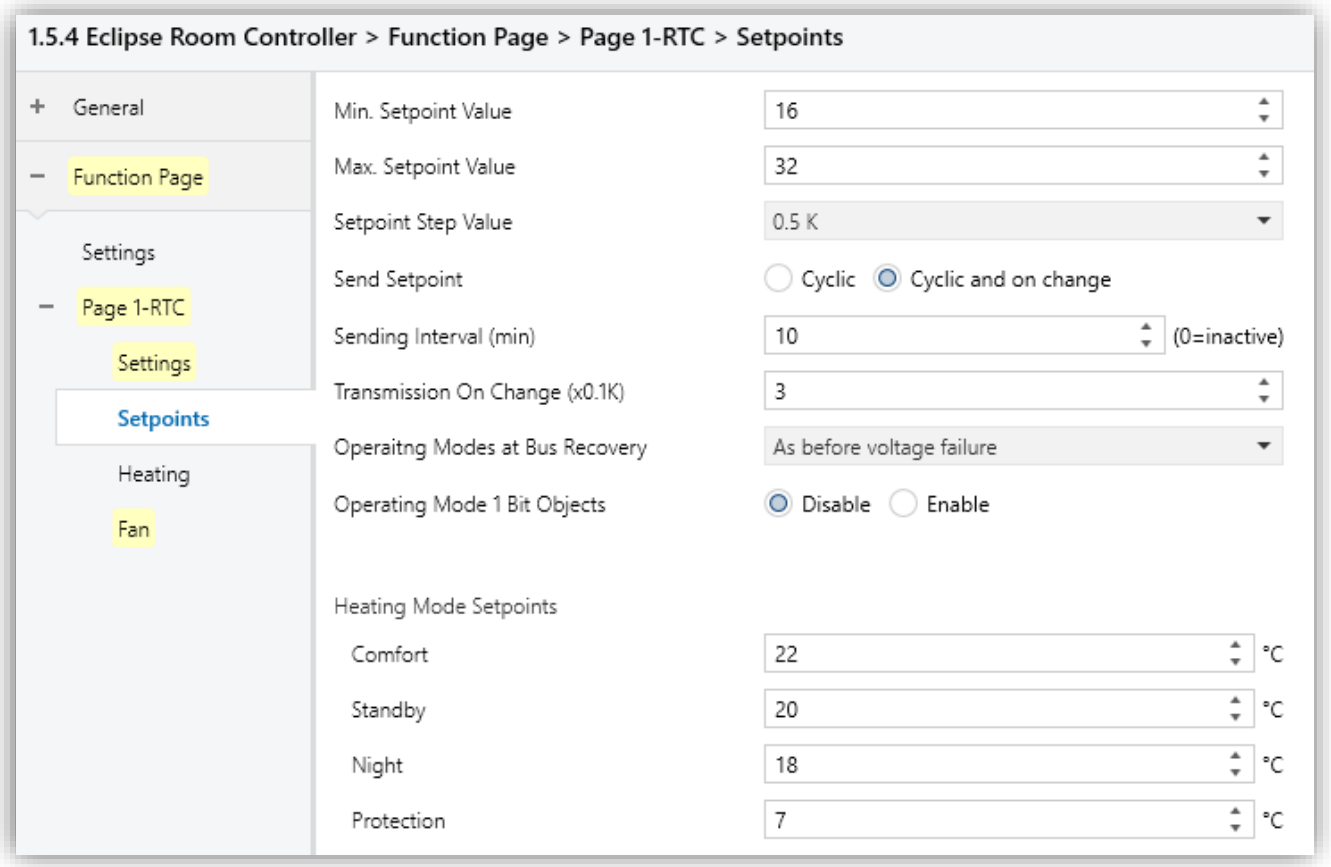
Window Contact:

Window Contact (1-Open) object can be used to take thermostat control in stand-by position according to window status. If window is open thermostat will stop working.

Thermostat ON/OFF Function:

Thermostat ON/OFF Function is used to turn the thermostat ON and OFF. Switch object and status object will be created after enabling this parameter.

3.2.4.1.2. 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 or selected on setpoint temperature objects.

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 or selected on temperature objects.

Setpoint Step Value: [0.1…**0.5**…1]

Increase/Decrease value of current setpoint by pressing -/+ button on the page of Detailed Control Element.

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.

32	Page 1-General Thermostat (RTC)	Comfort Mode	1 bit	state	C - W - U
33	Page 1-General Thermostat (RTC)	Status Comfort Mode	1 bit	state	C R - T -
34	Page 1-General Thermostat (RTC)	Standby Mode	1 bit	state	C - W - U
35	Page 1-General Thermostat (RTC)	Status Standby Mode	1 bit	state	C R - T -
36	Page 1-General Thermostat (RTC)	Economy/Night Mode	1 bit	state	C - W - U
37	Page 1-General Thermostat (RTC)	Status Economy/Night Mode	1 bit	state	C R - T -
38	Page 1-General Thermostat (RTC)	Building Protection Mode	1 bit	state	C - W - U
39	Page 1-General Thermostat (RTC)	Status Building Protection Mode	1 bit	state	C R - T -

As default,

1 Byte Object [DPT_HVACMode];

Object "Page 1 General Thermostat (RTC) – Operating Mode" can be used to change between different modes. Object "Status Operating Mode" will send current status of operating mode after change.

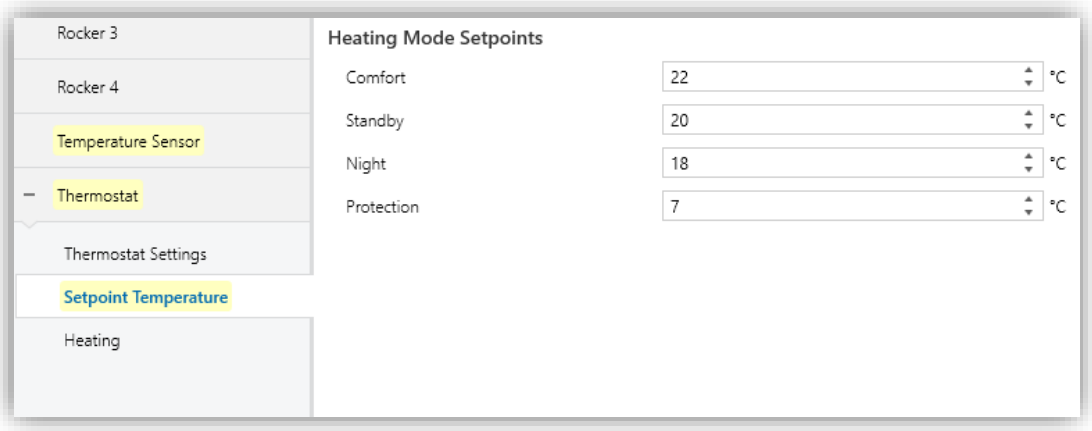
$01 – Comfort [20.102 DPT_HVAC]
$02 – Standby [20.102 DPT_HVAC]
$03 – Economy [20.102 DPT_HVAC]
$04 – Protection [20.102 DPT_HVAC]

30	Page 1-General Thermostat (RTC)	Operating Mode	1 byte	HVAC mode	C - W - U
31	Page 1-General Thermostat (RTC)	Status Operating Mode	1 byte	HVAC mode	C R - T -

Heating Mode Setpoints:

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

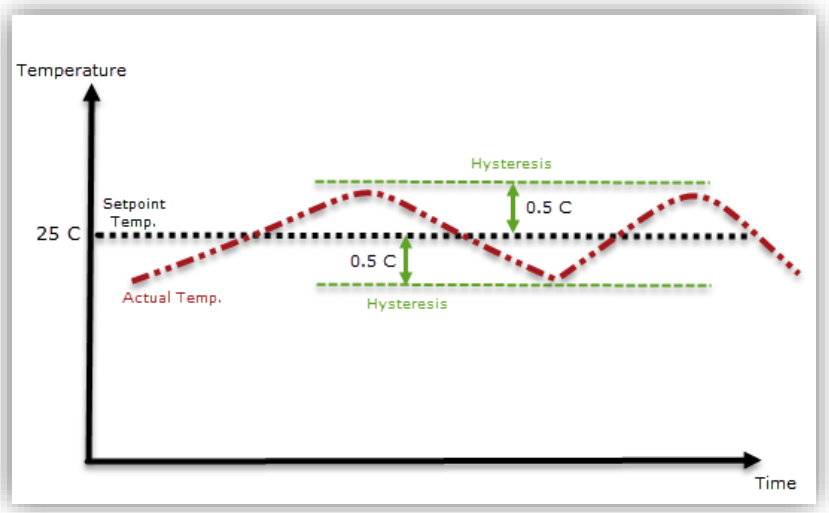
Changeover of operating modes can be achieved through "Operating Mode" communication objects.



3.2.4.1.3. 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.

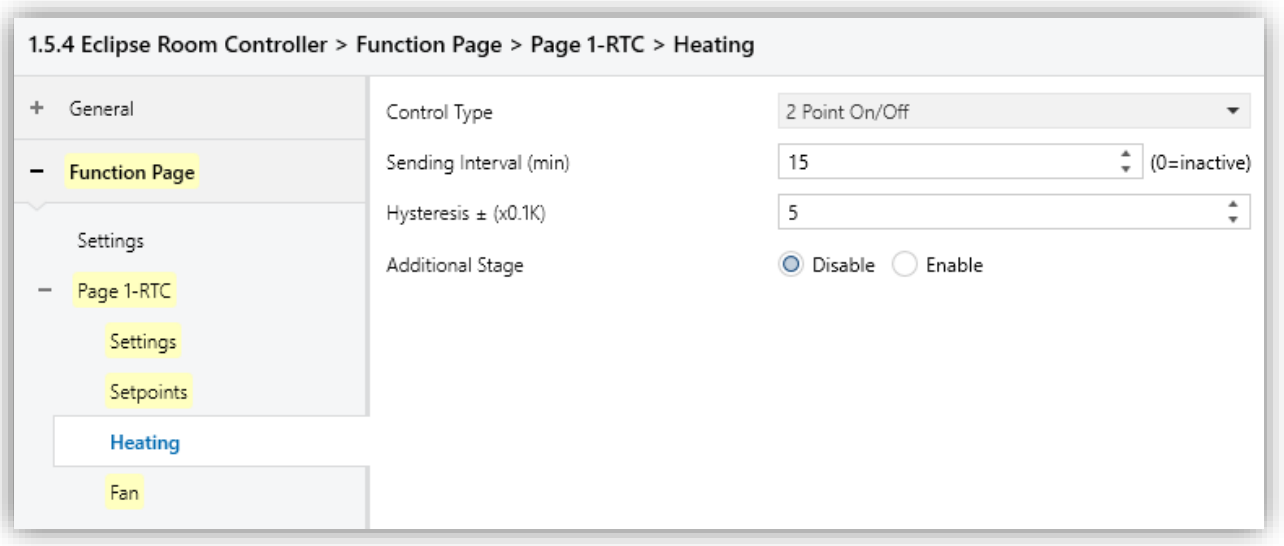


Sending Interval (min): [0…**15**…255] 0=inactive

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.



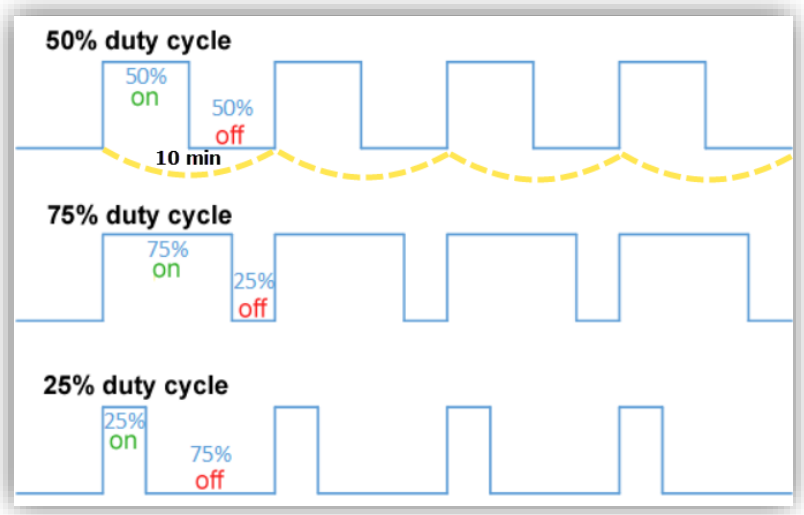
Additional Stage: Explained in #3.2.4.1.6. Heating - Additional Stage

3.2.4.1.4. 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

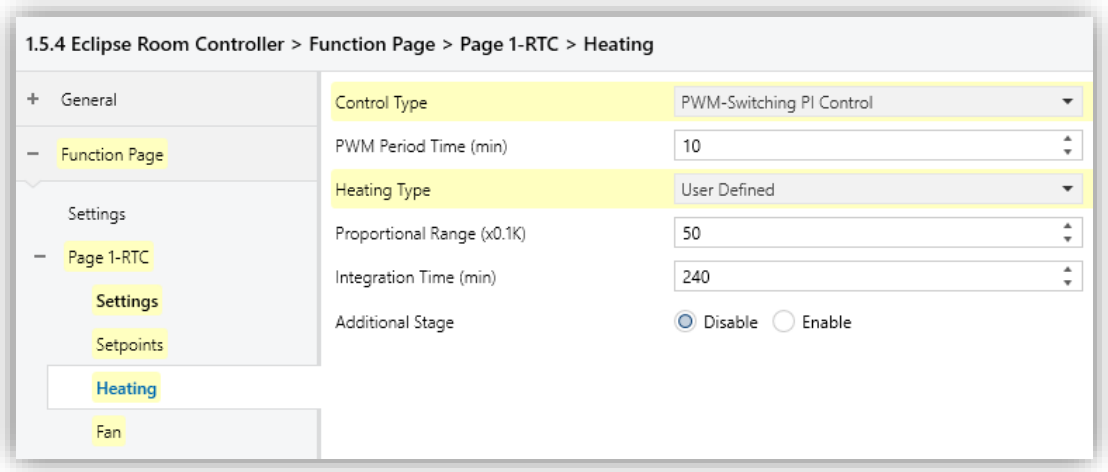
If the required heating type is not available, individual parameters can be specified in the "User Defined" configuration.

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]

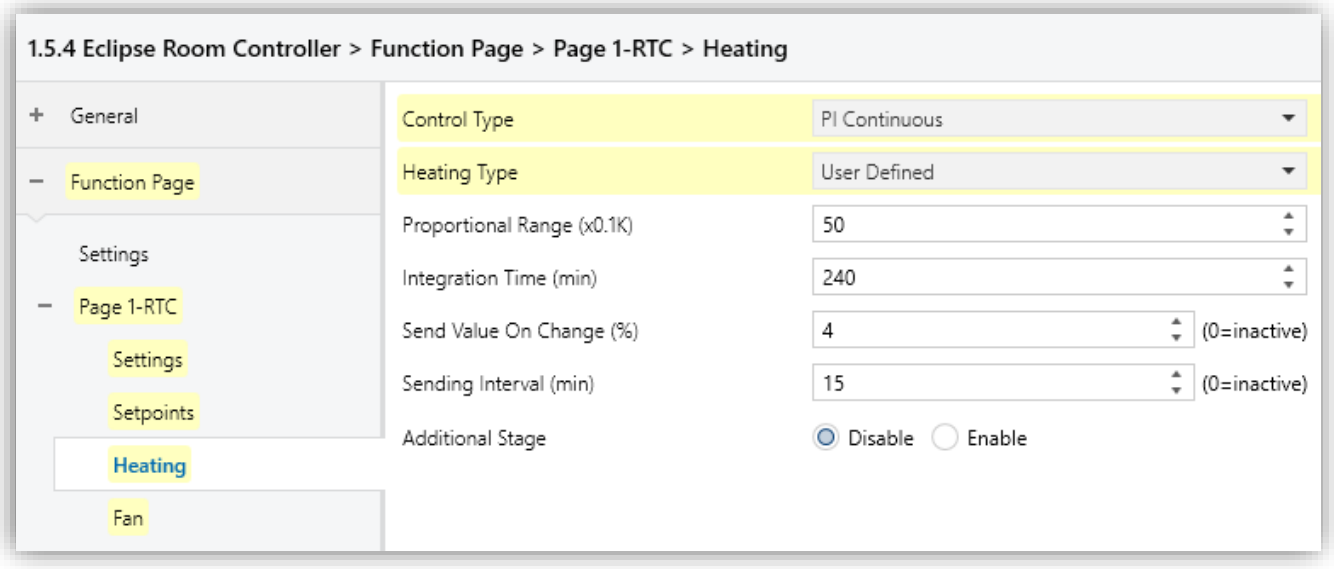
Defines the reset time of controller. Integration Time has the effect of moving the room temperature slowly toward, and ultimately reaching the setpoint value. Depending on the type of system used, parameter needs to have different values. In general, the more inactive the overall system, the greater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



Additional Stage: Explained in #3.2.4.1.6. Heating - Additional Stage

3.2.4.1.5. 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 #3.2.4.1.6. Heating - Additional Stage

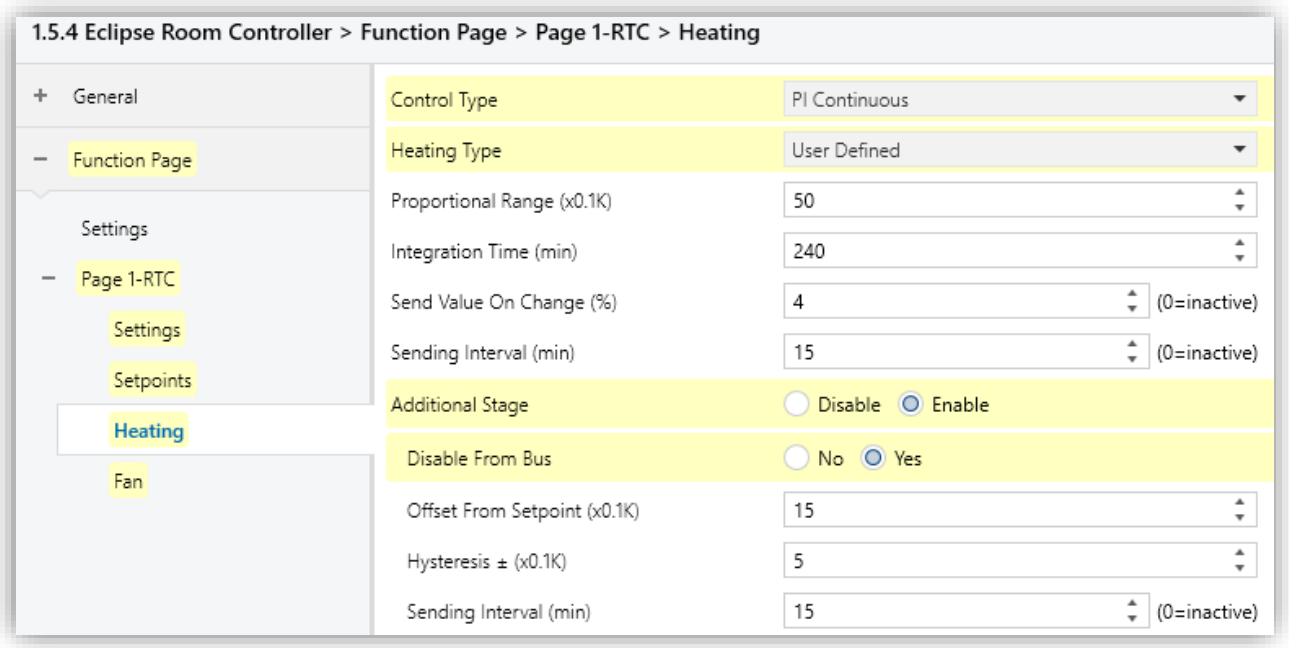
3.2.4.1.6. Heating - Additional Stage

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 "General Temperature (RTC) – Heating Additional Stage Value" is created when parameter is enabled.

Disable from Bus: Object "General Temperature (RTC) – Heating Additional Stage (0-Disable)" 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 "General Temperature (RTC) – 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 degree 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]

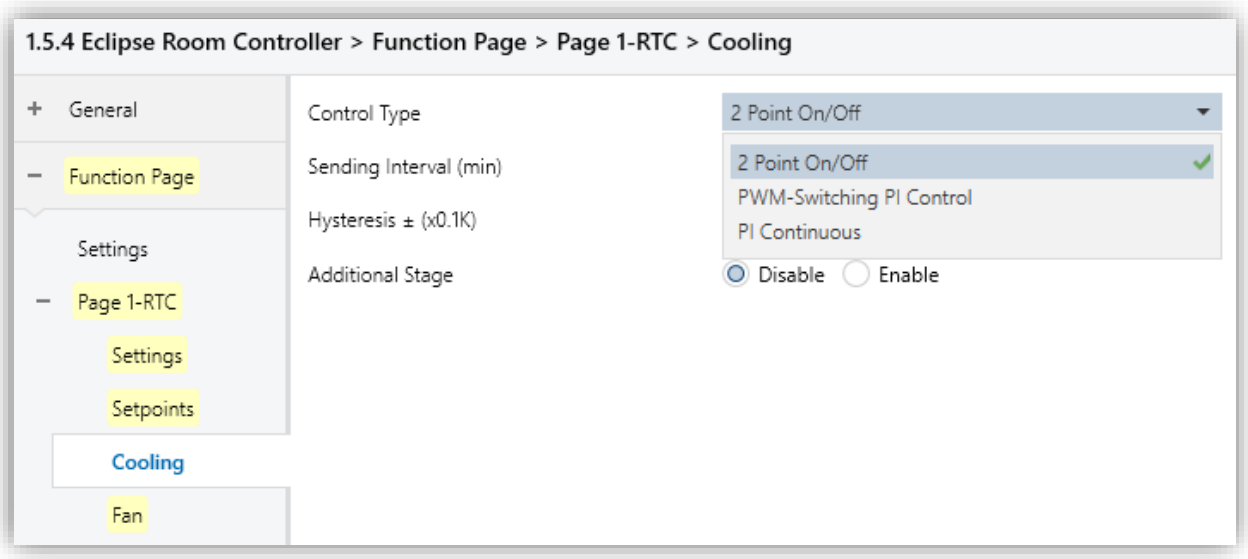
Determines Hysteresis value to control Heating Additional Stage Value more accurate. "Hysteresis" prevents the output value from oscillation and give larger margin to turning heat or cool ON and OFF. If system is more an active system, hysteresis values should be given larger and more inactive values.

Sending Interval (min): [0…**15**…255]

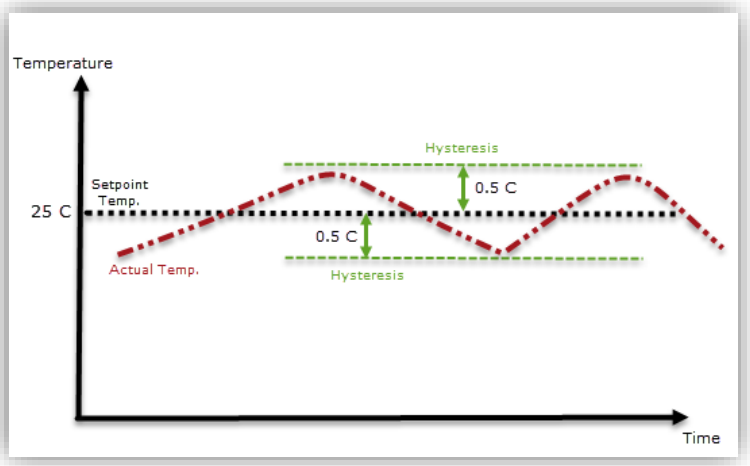
Determines cyclic sending period of Object "General Temperature (RTC) – Heating Additional Stage Value".

3.2.4.1.7. 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.

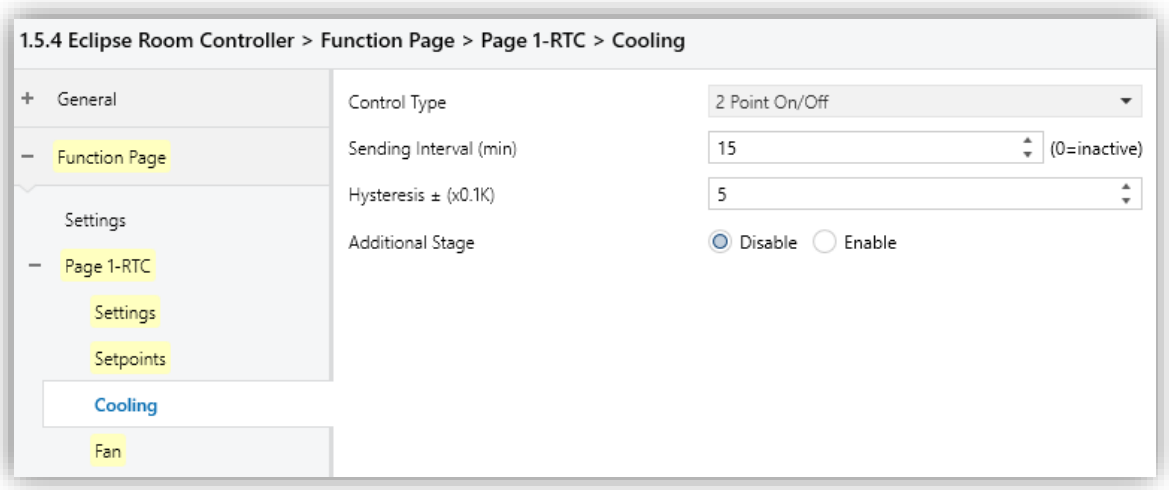


Sending Interval (min): [0…**15**…255] 0=inactive

Determines cyclic sending period of Object "General Thermostat - Cooling 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.



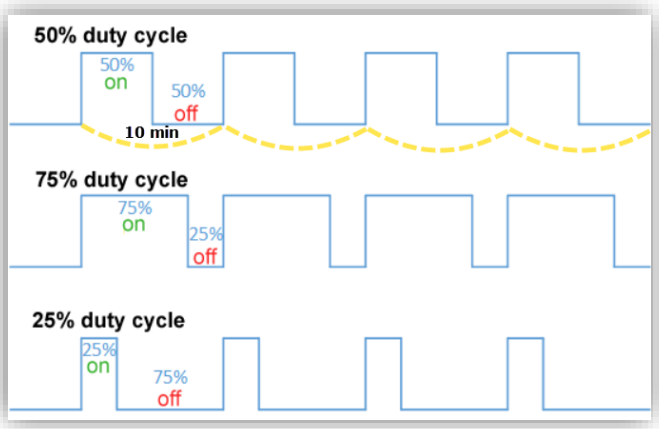
Additional Stage: Explained in #3.2.4.1.10. Cooling – Additional Stage

3.2.4.1.8. 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

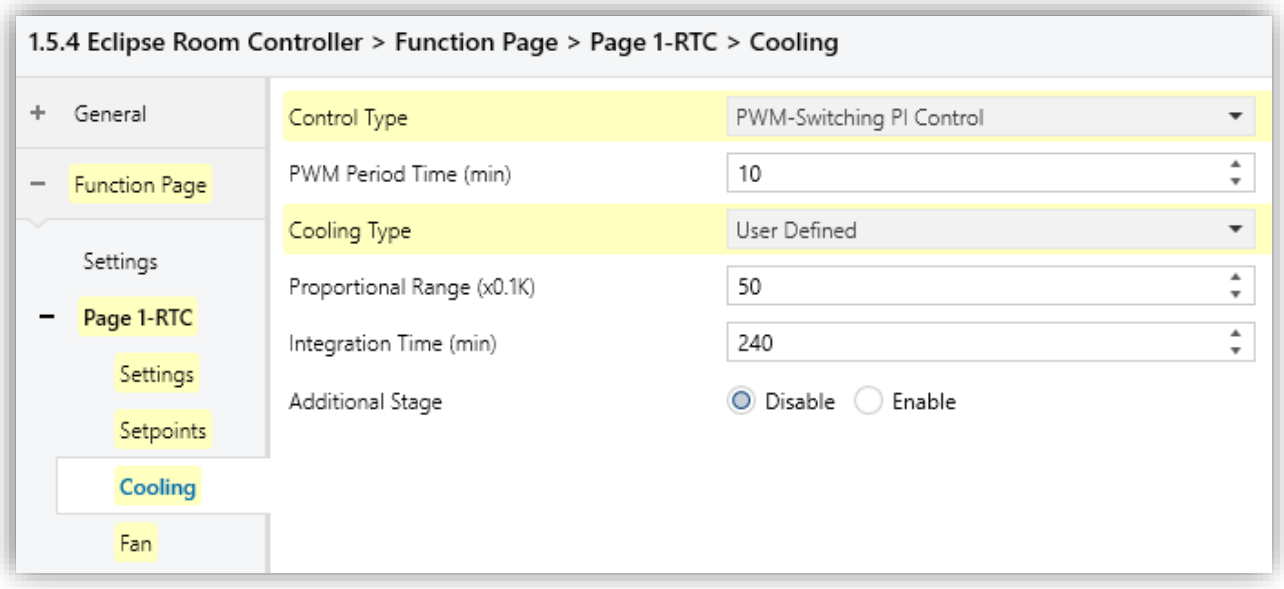
If required cooling type is not available, individual parameters can be specified in the "User Defined" configuration.

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

3.2.4.1.9. 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.

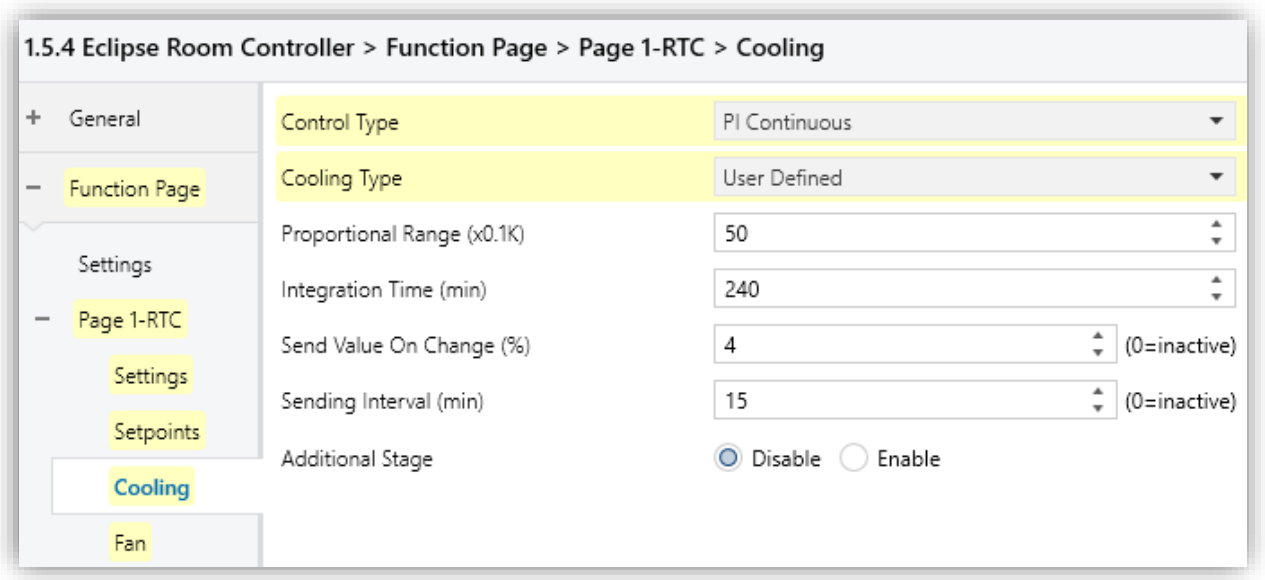
Send Value On Change (%): [0…**4**…100] 0=inactive

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

Sending Interval (min): [0…**15**…255]

Determines cyclic sending period of Object "General Temperature (RTC) – Cooling PI Control Value".

Additional Stage: Explained in #3.2.4.1.10. Cooling – Additional Stage



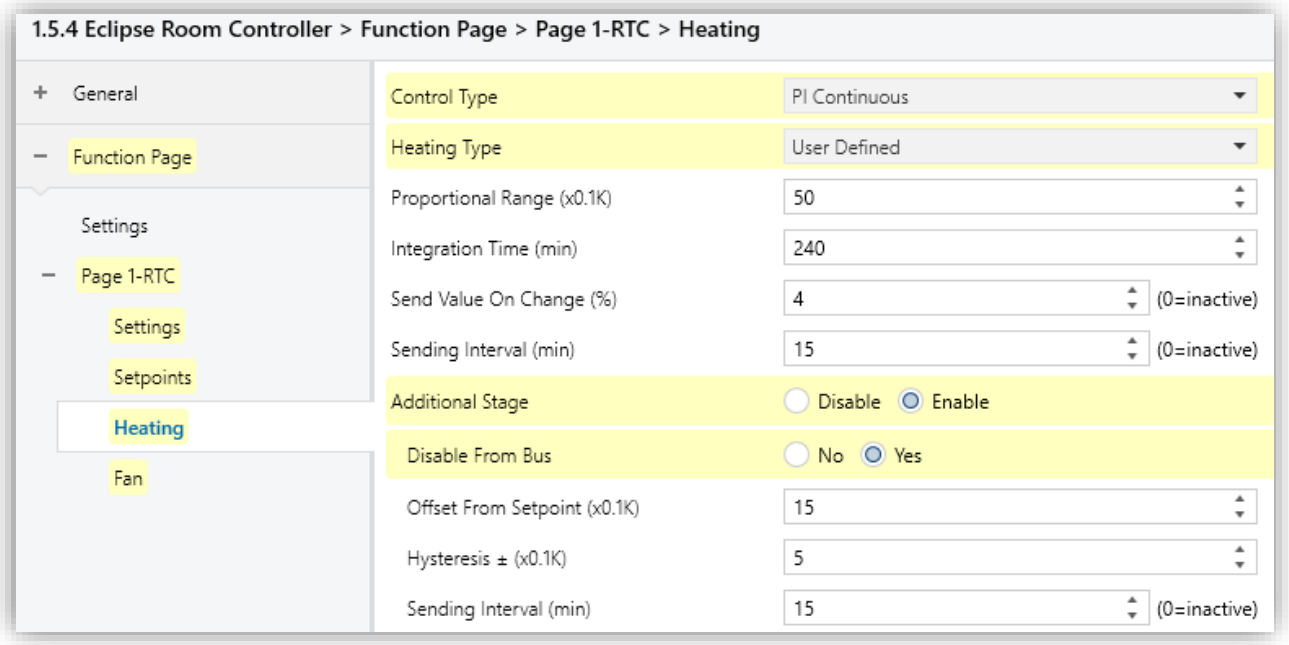
3.2.4.1.10. Cooling – Additional Stage

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 "General Temperature (RTC) – Cooling Additional Stage Value" is created when parameter is enabled.

Disable from Bus: Object "General Temperature (RTC) – Cooling Additional Stage (0-Disable)" 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 "General Temperature (RTC) – 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 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): [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 "General Temperature (RTC) – Cooling Additional Stage Value".

3.2.4.1.11. 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 place with same parameters. However, parameter tabs of "Thermostat Settings" and "Setpoint Temperature" will have some additional parameters.

Please check below.

-Thermostat Settings

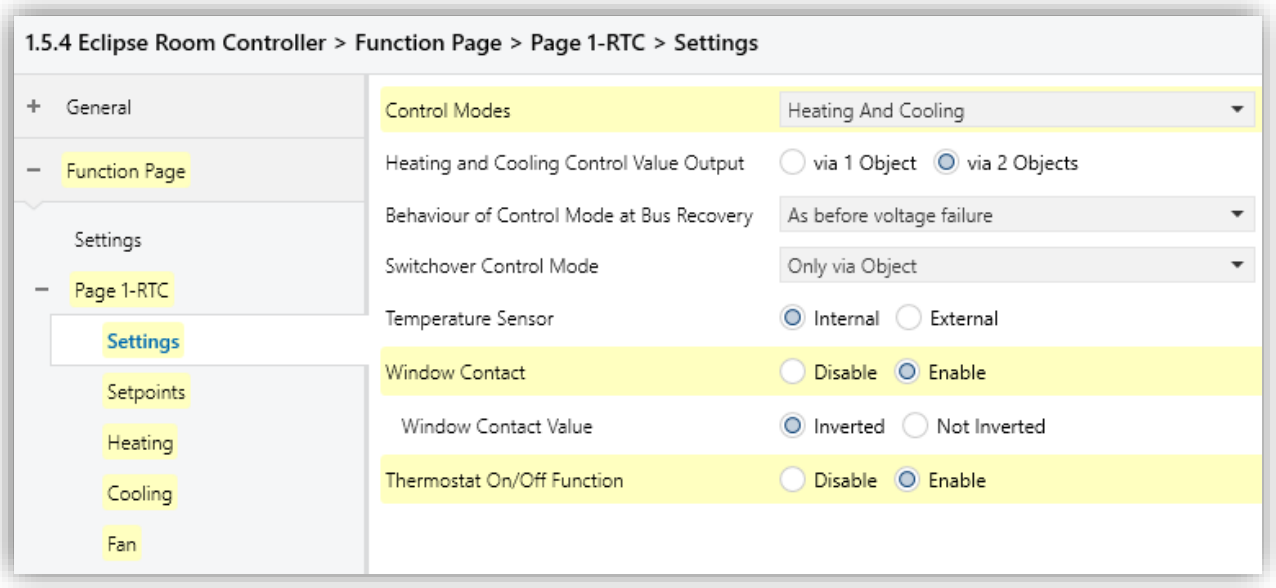
Heating & Cooling Control Value Output: Output value for Heating and Cooling can be sent via same object or 2 separate objects.

If "via 1 Object" option is selected Object "General Thermostat (RTC) – Heating/Cooling Control Value" will be activated.

26	Page 1-General Thermostat (RTC)	Heating/Cooling PI Control Value	1 byte	percentage (0..100%)	C	-	-	T	-

If "via 2 Objects" option is selected Object "General Thermostat (RTC) – Heating Control Value" and Object "General Thermostat (RTC) – Cooling Control Value" will be activated.

24	Page 1-General Thermostat (RTC)	Heating PI Control Value	1 byte	percentage (0..100%)	C	-	-	T	-
25	Page 1-General Thermostat (RTC)	Cooling PI Control Value	1 byte	percentage (0..100%)	C	-	-	T	-



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 general thermostat.

Only via Object:

Switchover can be applied only "via Object" manually using Object "General Thermostat (RTC)– Heat/Cool Switchover".

$01= Heating [1.100 DPT_cooling/heating]

$00= Cooling [1.100 DPT_cooling/heating]

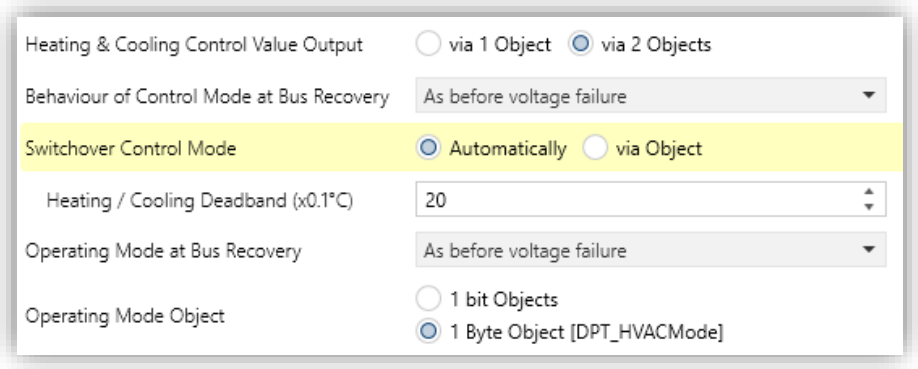
22	Page 1-General Thermostat (RTC)	Heat/Cool Switchover	1 bit	cooling/heating	C	-	W	-	U			
23	Page 1-General Thermostat (RTC)	Status Heat/Cool Switchover	1 bit	cooling/heating	C	R	-	T	-			

Local and via Object:

Switchover can be applied locally on Control Element Page and also "via Object" manually using Object "General Thermostat (RTC) – Heat/Cool Switchover".

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

"Automatic switchover" function performs only if current operation mode is "Comfort Mode". Otherwise thermostat is not going to switchover heating and cooling!



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.

-Heating/Cooling Object Description

Heating / Cooling Indication

Object "General Thermostat (RTC) – 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 "General Thermostat (RTC) – Cooling Indication" defines a state for recent cooling command. It indicates that cooling source is recently having an active command to cool.

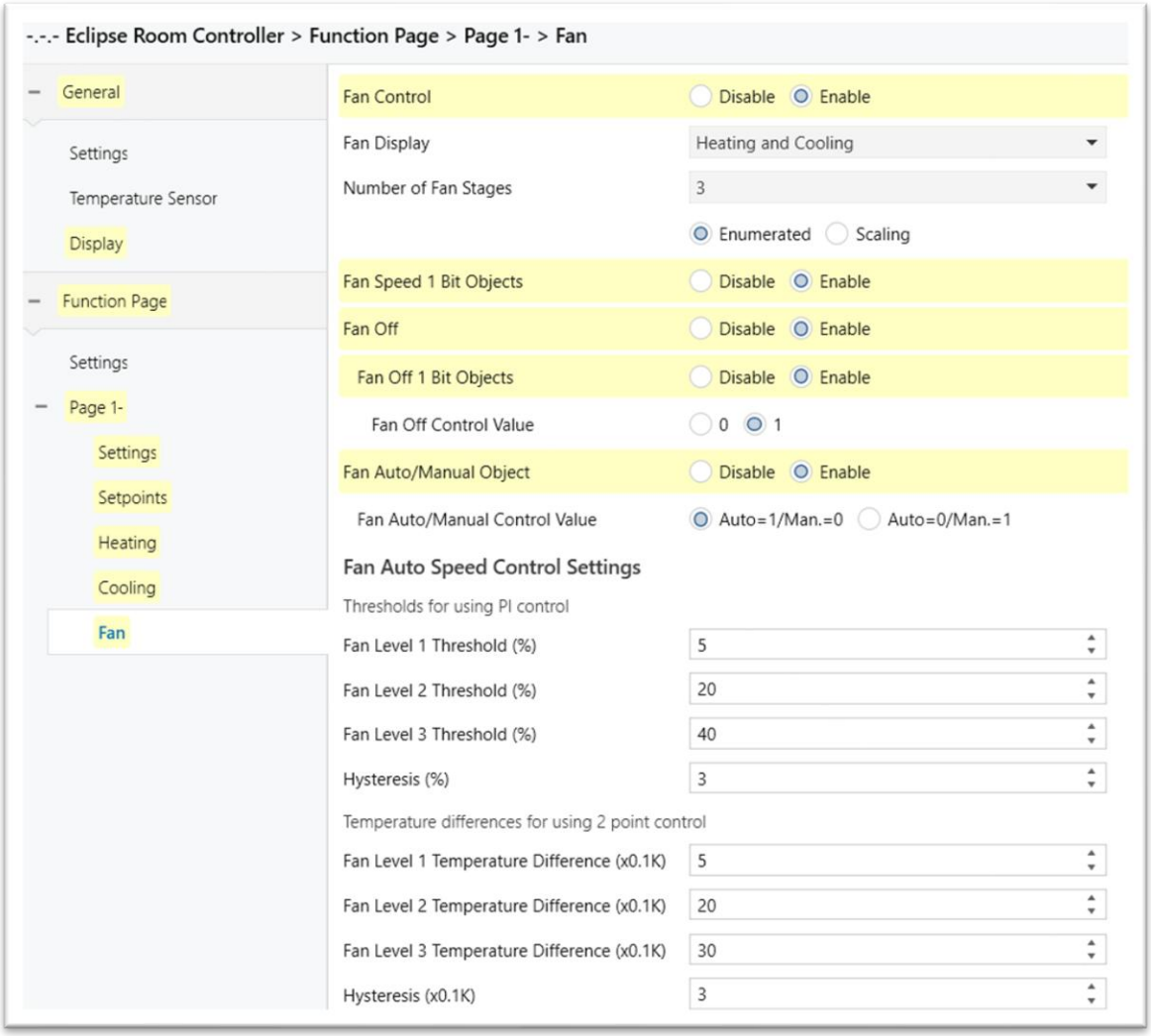
27	Page 1-General Thermostat (RTC)	Heating Indication	1 bit	switch	C	R	-	T	-
28	Page 1-General Thermostat (RTC)	Cooling Indication	1 bit	switch	C	R	-	T	-

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

3.2.4.1.12. Fan



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

Fan can be visible only for selected control modes.

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.

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) %

40	Page 1-General Thermostat (RTC)	Fan Speed Manual (1,2,3,4)	1 byte	fan stage (0..255)	C - W - U
41	Page 1-General Thermostat (RTC)	Fan Speed Manual Status (1,2,3,4)	1 byte	fan stage (0..255)	C R - T -
44	Page 1-General Thermostat (RTC)	Fan Speed Status (1,2,3,4)	1 byte	fan stage (0..255)	C R - T -
42	Page 1-General Thermostat (RTC)	Fan Speed Manual (25,50,75,100)%	1 byte	percentage (0..100%)	C - W - U
43	Page 1-General Thermostat (RTC)	Fan Speed Manual Status (25,50,75,100)%	1 byte	percentage (0..100%)	C R - T -
45	Page 1-General Thermostat (RTC)	Fan Speed Status (25,50,75,100)%	1 byte	percentage (0..100%)	C R - T -

Fan Speed Manual Object:

It is used to change the fan speed manually. When telegram is received, fan speed mode switches to manual mode.

Fan Speed Manual Status Object:

It transmits the actual fan speed in fan manual mode. This object does not transmit any telegram in fan automatic mode.

Fan Speed Status Object:

It transmits the actual fan speed in both manual mode and automatic mode.

1 bit objects:

46	Page 1-General Thermostat (RTC)	Fan 1	1 bit	state	C - W - U
47	Page 1-General Thermostat (RTC)	Fan 1 Status	1 bit	state	C R - T -
48	Page 1-General Thermostat (RTC)	Fan 2	1 bit	state	C - W - U
49	Page 1-General Thermostat (RTC)	Fan 2 Status	1 bit	state	C R - T -
50	Page 1-General Thermostat (RTC)	Fan 3	1 bit	state	C - W - U
51	Page 1-General Thermostat (RTC)	Fan 3 Status	1 bit	state	C R - T -
52	Page 1-General Thermostat (RTC)	Fan 4	1 bit	state	C - W - U
53	Page 1-General Thermostat (RTC)	Fan 4 Status	1 bit	state	C R - T -

Fan Off:

When enabled, fan stage 0 will be activated for 1 byte fan speed control objects. When fan speed is 0, the fan will be turned off.

40	Page 1-General Thermostat (RTC)	Fan Speed Manual (0,1,2,3,4)	1 byte	fan stage (0..255)	C - W - U
41	Page 1-General Thermostat (RTC)	Fan Speed Manual Status (0,1,2,3,4)	1 byte	fan stage (0..255)	C R - T -
44	Page 1-General Thermostat (RTC)	Fan Speed Status (0,1,2,3,4)	1 byte	fan stage (0..255)	C R - T -
42	Page 1-General Thermostat (RTC)	Fan Speed Manual (0,25,50,75,100)%	1 byte	percentage (0..100%)	C - W - U
43	Page 1-General Thermostat (RTC)	Fan Speed Manual Status (0,25,50,75,100)%	1 byte	percentage (0..100%)	C R - T -
45	Page 1-General Thermostat (RTC)	Fan Speed Status (0,25,50,75,100)%	1 byte	percentage (0..100%)	C R - T -

Fan Off 1 Bit Object:

When enabled, Fan Off and Fan Off Status objects will appear. Value can be selected for activating fan off.

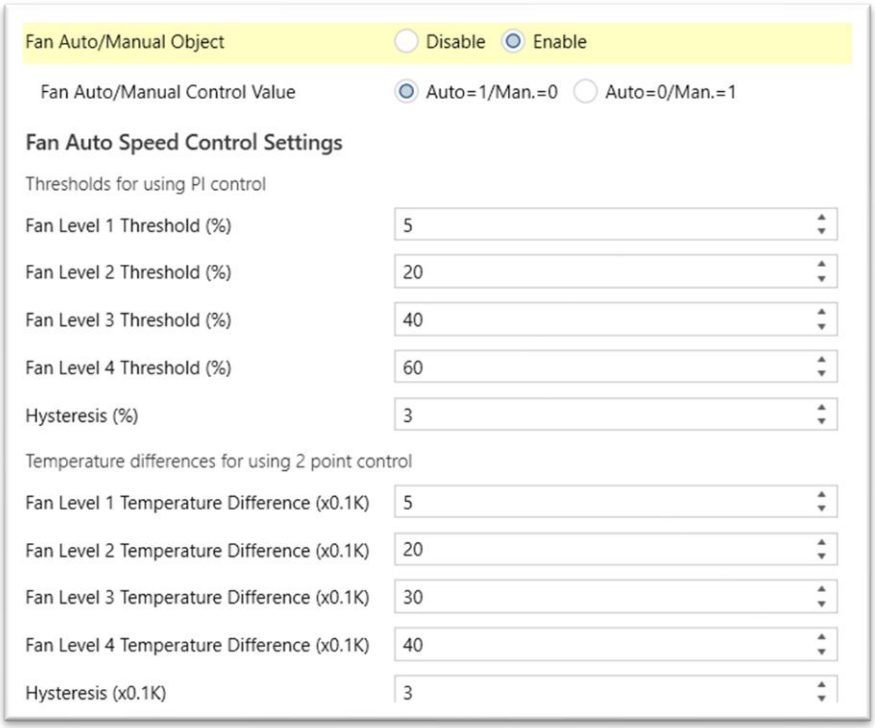
58	Page 1-General Thermostat (RTC)	Fan Off (1-Off)	1 bit	state	C - W - U
59	Page 1-General Thermostat (RTC)	Fan Off Status (1-Off)	1 bit	state	C R - T -

Fan Auto/Manual Object:

This parameter enables fan auto function. Value can be selected for activating fan auto mode.

56	Page 1-General Thermostat (RTC)	Fan Auto/Manual (1-Auto)	1 bit	enable	C - W - U
57	Page 1-General Thermostat (RTC)	Fan Auto/Manual Status (1-Auto)	1 bit	enable	C R - T -

When fan auto mode is activated, fan speed is evaluated according to heating/cooling control types. For PI Continuous and PWM-Switching PI Control types, the device changes the fan speed according to PI Control value and entered thresholds. For 2 point on/off control type, the device changes the fan speed according to entered temperature differences.



Fan Step (-/+) Object:

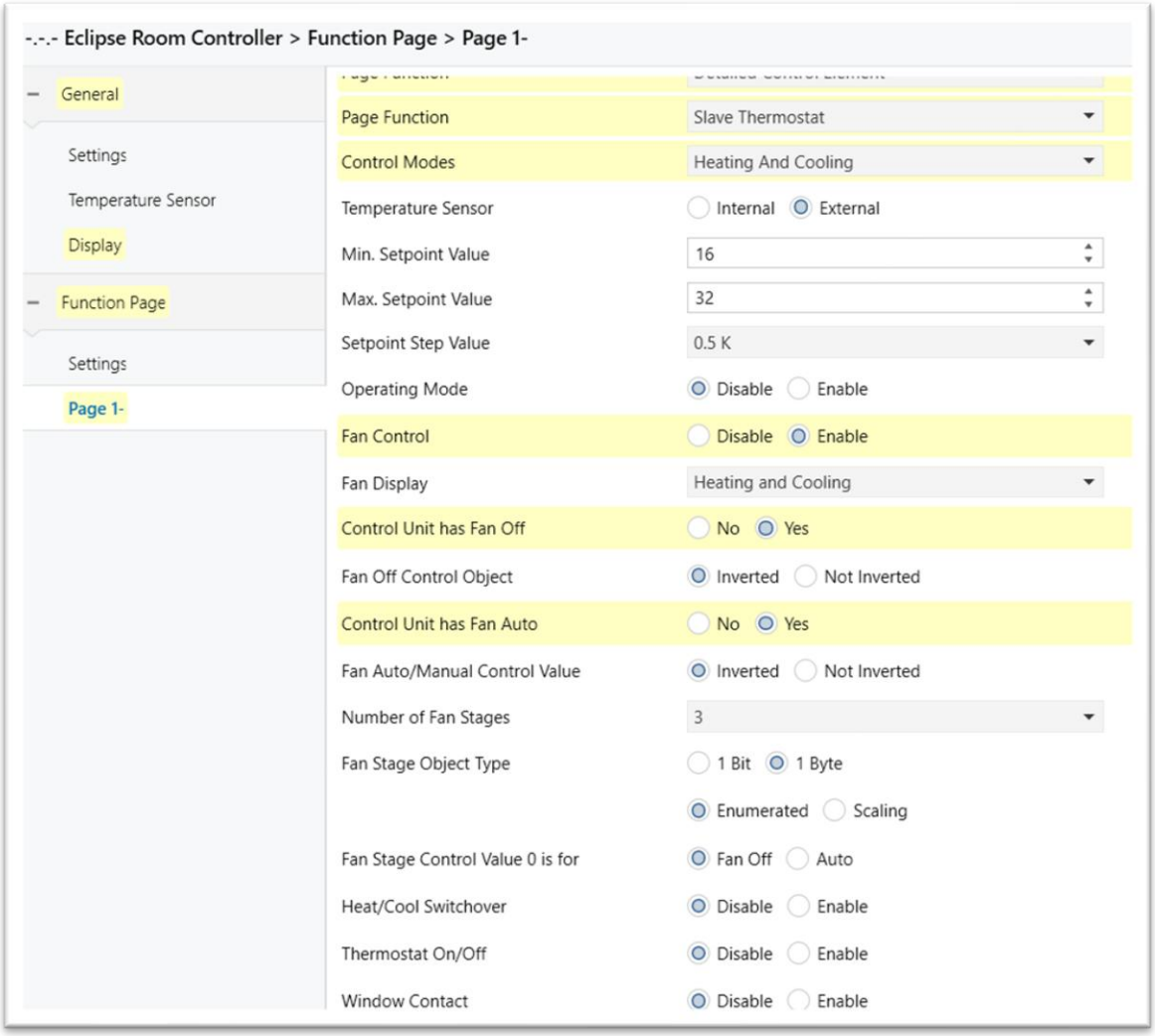
It is used to change the fan speed with 1 bit telegrams. Each "1" telegram received increases the fan speed and each "0" telegram received decreases the fan speed cyclically. The order is:

Fan Off > Fan 1 > Fan 2 > Fan 3 > Fan 4 > Fan 5 > Fan Auto > Fan Off > Fan 1 > .....

60	Page 1-General Thermostat (RTC)	Fan Step (-/+)	1 bit	step	C	-	W	-	-

3.2.4.2. Slave Thermostat

"Slave Thermostat" function does not actively control the Hvac actuator. Instead, it is used to display and send commands to another "Thermostat" which is actively controlling the Hvac actuator. Basically, "Slave thermostat" function is a copy of main "Thermostat".



Control Modes:

Parameter defines which modes of main thermostat will be controlled.

Temperature Sensor:

Temperature value can be received from an external temperature sensor directly or internal sensor can be used as default.

Operating Mode:

When enabled, slave thermostat can change the operating modes of main thermostat.

Fan Control:

When enabled, slave thermostat can control fan speed control function of main thermostat. Fan control parameters should be the same with main thermostat.

Fan Stage Control Value 0 is for:

Parameter defines 1 byte fan speed control object's "0" telegram will be used for fan off or fan auto mode. This parameter is only visible when both fan off and fan auto control are enabled.

Heat/Cool Switchover:

Parameter makes it possible to switch between the heating and cooling mode of the main thermostat.

Thermostat ON/OFF Function:

Thermostat ON/OFF Function is used to turn the thermostat on/off. Switch object and status object will be created after this parameter is enabled.

Window Contact:

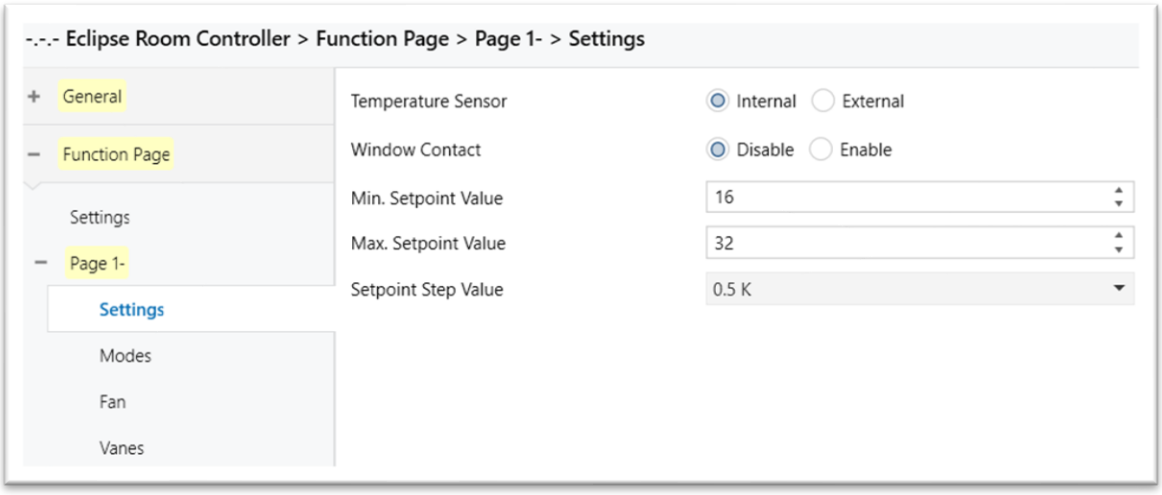
If window contact function is used for main thermostat, this parameter can be enabled to display window contact icon on slave thermostat display

3.2.4.3. Air Conditioner Control

Figure 11 - Air Conditioner Control

"Function" contains special communication objects to control an air conditioner via a KNX gateway.

3.2.4.3.1. Settings



Temperature Sensor:

Temperature value can be received from an external temperature sensor directly or internal sensor can be used as default.

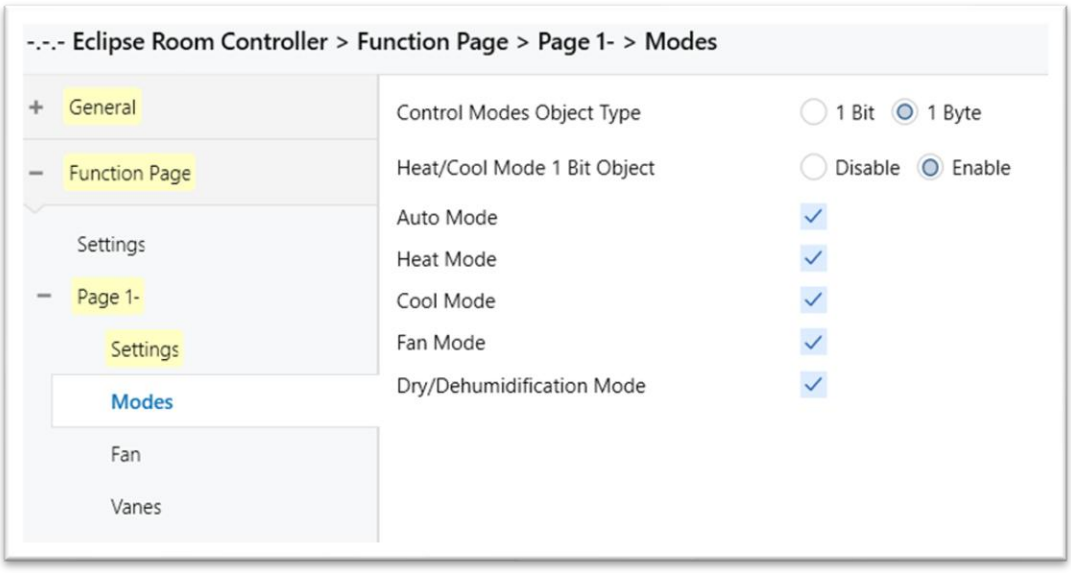
Window Contact:

When enabled, "Window Contact" object will appear. If the object receives "open" telegram, the device sends AC off command automatically and does not allow to send AC on command until "closed" telegram received. After receiving "closed" telegram, AC turns back to last states.

Setpoint Settings:

Min/max setpoint values and setpoint step should be set same with AC gateway.

3.2.4.3.2 Modes



Control Mode Object Type: [1 bit, **1 Byte**]

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

28	Page 1-Air Conditioner	Control Modes (0-Auto,1-Heat, 3-Cool, 9-Fan, 14-Dry)	1 byte	HVAC control mode	C - - T -
29	Page 1-Air Conditioner	Status Control Modes (0-Auto,1-Heat, 3-Cool, 9-Fan, 14-Dry)	1 byte	HVAC control mode	C - W T U

Or

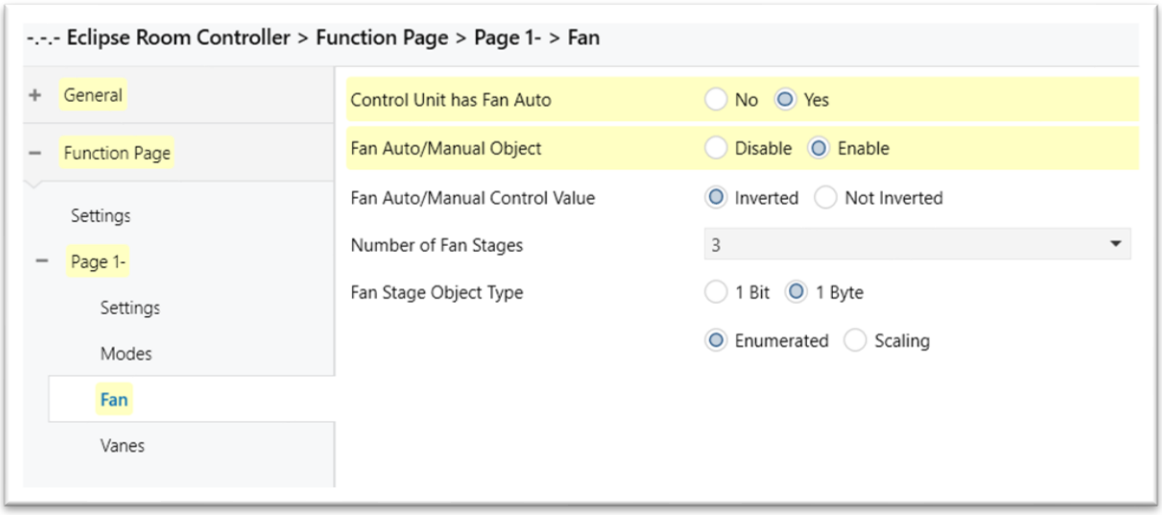
30	Page 1-Air Conditioner	Auto Mode	1 bit	state	C - - T -
31	Page 1-Air Conditioner	Status Auto Mode	1 bit	state	C - W T U
32	Page 1-Air Conditioner	Heat Mode	1 bit	state	C - - T -
33	Page 1-Air Conditioner	Status Heat Mode	1 bit	state	C - W T U
34	Page 1-Air Conditioner	Cool Mode	1 bit	state	C - - T -
35	Page 1-Air Conditioner	Status Cool Mode	1 bit	state	C - W T U
36	Page 1-Air Conditioner	Fan Mode	1 bit	state	C - - T -
37	Page 1-Air Conditioner	Status Fan Mode	1 bit	state	C - W T U
38	Page 1-Air Conditioner	Dry Mode	1 bit	state	C - - T -
39	Page 1-Air Conditioner	Status Dry Mode	1 bit	state	C - W T U

Modes to be shown on display can be selected.

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

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

3.2.4.3.3 Fan



Control Unit has Fan Auto:

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

Fan Auto/Manual Object:

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

52	Page 1-Air Conditioner	Fan Auto/Manual (1-Auto)	1 bit	state	C - - T -
53	Page 1-Air Conditioner	Status Fan Auto/Manual (1-Auto)	1 bit	state	C - W T U

Fan Auto/Manual Control Value:

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.

40	Page 1-Air Conditioner	Fan Speed Enumerated (0,1,2,3)	1 byte	fan stage (0..255)	C	- - T -
41	Page 1-Air Conditioner	Status Fan Speed Enumerated (0,1,2,3)	1 byte	fan stage (0..255)	C	- W T U

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".

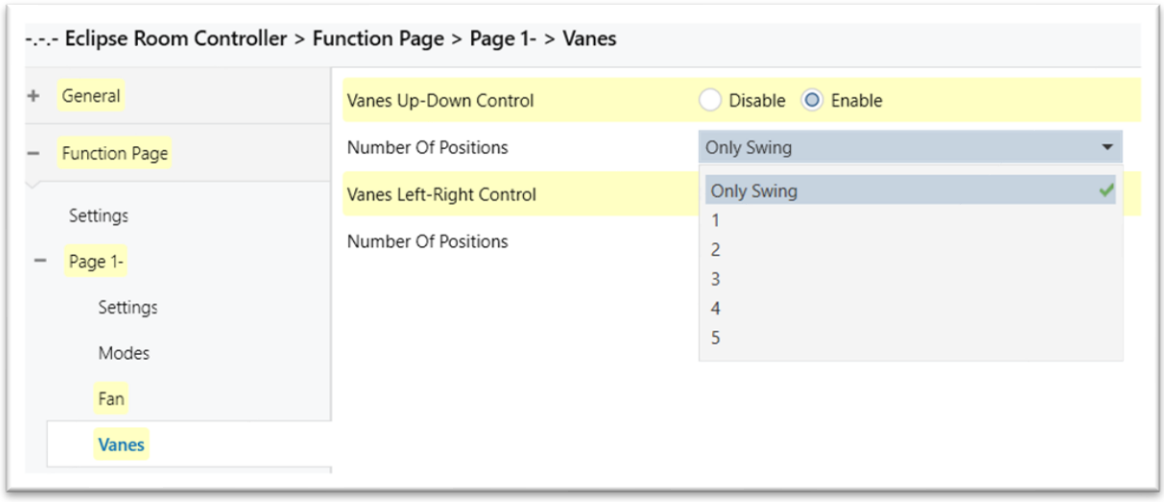
Fan Speed Enumerated (0, 1, 2, 3, 4)

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

1 bit objects;

42	Page 1-Air Conditioner	Fan 1	1 bit	state	C	- - T -
43	Page 1-Air Conditioner	Status Fan 1	1 bit	state	C	- W T U
44	Page 1-Air Conditioner	Fan 2	1 bit	state	C	- - T -
45	Page 1-Air Conditioner	Status Fan 2	1 bit	state	C	- W T U
46	Page 1-Air Conditioner	Fan 3	1 bit	state	C	- - T -
47	Page 1-Air Conditioner	Status Fan 3	1 bit	state	C	- W T U
48	Page 1-Air Conditioner	Fan 4	1 bit	state	C	- - T -
49	Page 1-Air Conditioner	Status Fan 4	1 bit	state	C	- W T U
50	Page 1-Air Conditioner	Fan 5	1 bit	state	C	- - T -
51	Page 1-Air Conditioner	Status Fan 5	1 bit	state	C	- W T U

3.2.4.3.4 Vanes



Vanes Up-Down Control:

Up-Down vane control can be activated using Object Vanes Up-Down (1-Swing, 0-Off)

Number of positions: [**Only swing**, 1…5]

Number of positions can be defined using parameter. Object type will change as 1 byte.

54	Page 1-Air Conditioner	Vanes Up-Down (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 byte		C - - T -
55	Page 1-Air Conditioner	Status Vanes Up-Down (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 byte		C - W T U
56	Page 1-Air Conditioner	Vanes Up-Down Swing (1-Swing, 0-Off)	1 bit	boolean	C - - T -
57	Page 1-Air Conditioner	Status Vanes Up-Down Swing (1-Swing, 0-Off)	1 bit	boolean	C - W T U

Vanes Left-Right Control:

Left-Right vane control can be activated using Object Vanes Left-Right (1-Swing, 0-Off)

Number of positions: [**Only swing**, 1…5]

Number of positions can be defined using parameter. Object type will change as 1 byte.

58	Page 1-Air Conditioner	Vanes Left-Right (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 byte		C - - T -
59	Page 1-Air Conditioner	Status Vanes Left-Right (0-Swing Off, 1-Pos1, 2-Pos2, 3-Pos3, 4-Pos4, 5-Pos5, 6-Swing On)	1 byte		C - W T U
60	Page 1-Air Conditioner	Vanes Left-Right Swing (1-Swing, 0-Off)	1 bit	boolean	C - - T -
61	Page 1-Air Conditioner	Status Vanes Left-Right Swing (1-Swing, 0-Off)	1 bit	boolean	C - W T U

3.2.4.4 Audio Control

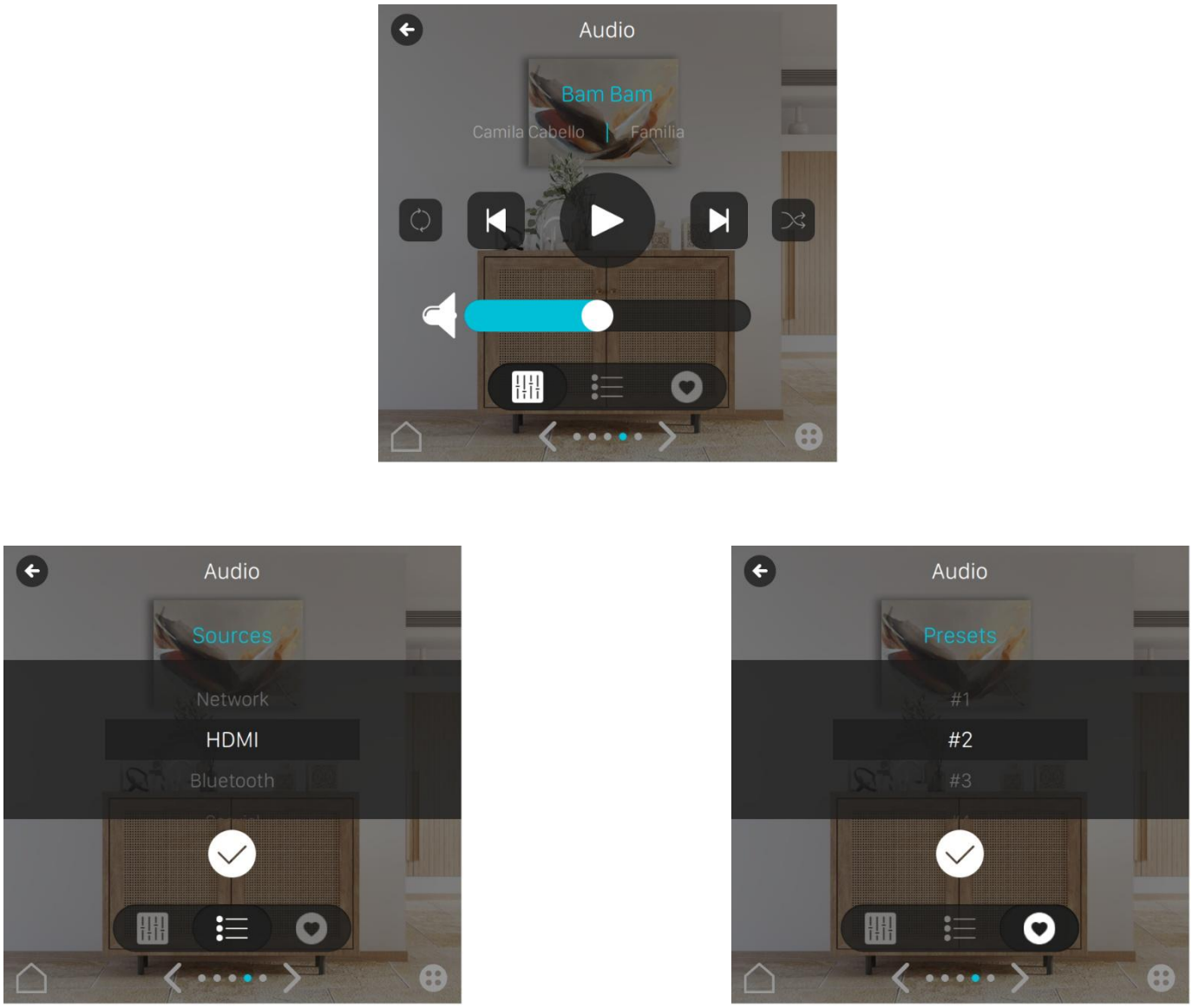
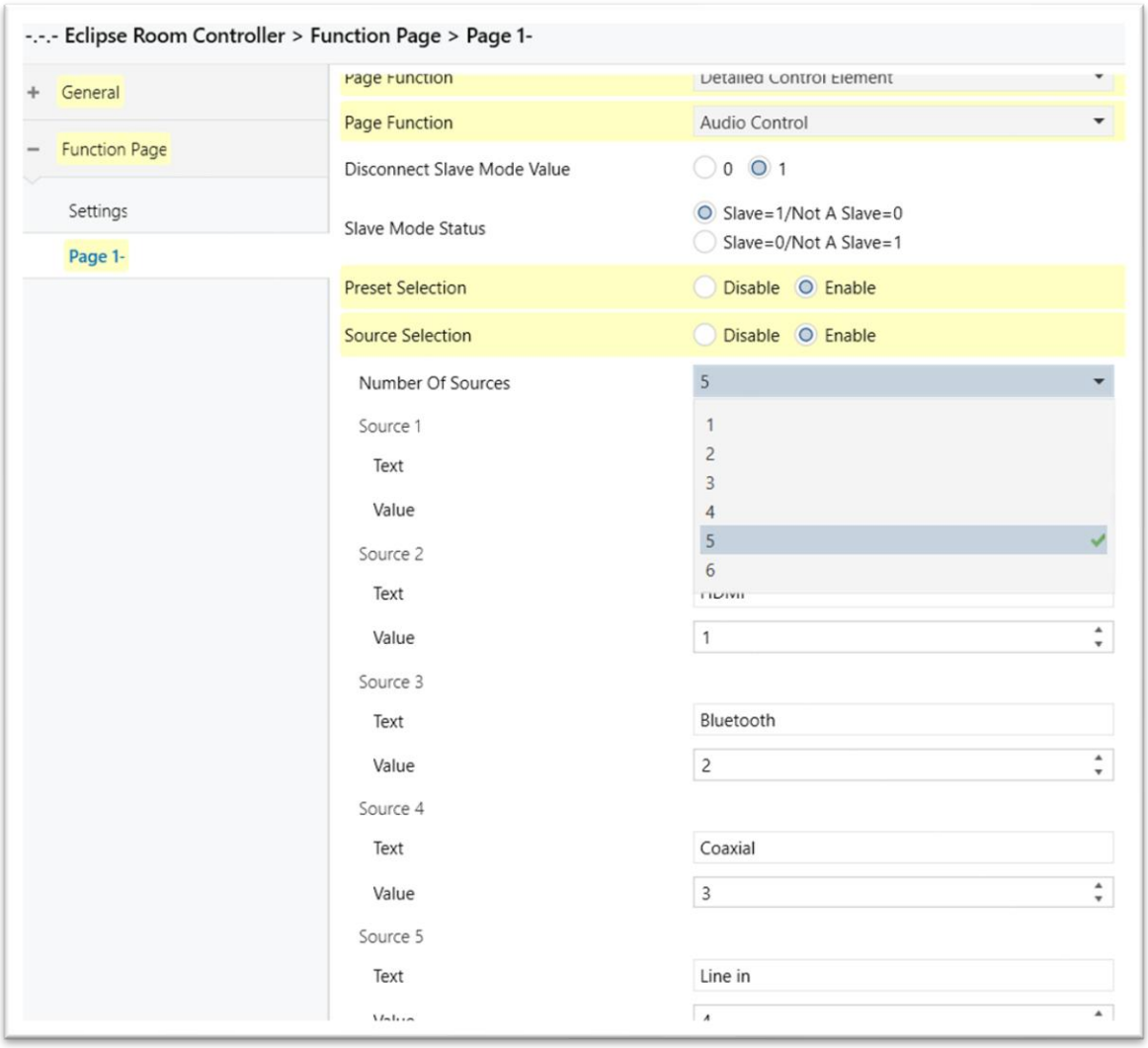


Figure 12 - Audio Control

Audio Control page allows to manage any KNX audio controller via following KNX objects.



17	Page 1-Audio	Play/Pause	1 bit	start/stop	C	-	-	T	-
18	Page 1-Audio	Status Play/Pause	1 bit	start/stop	C	-	W	T	U
19	Page 1-Audio	Volume	1 byte	percentage (0..100%)	C	-	-	T	-
20	Page 1-Audio	Status Volume	1 byte	percentage (0..100%)	C	-	W	T	U
21	Page 1-Audio	Mute/Unmute	1 bit	enable	C	-	-	T	-
22	Page 1-Audio	Status Mute/Unmute	1 bit	enable	C	-	W	T	U
23	Page 1-Audio	Next/Previous	1 bit	step	C	-	-	T	-
26	Page 1-Audio	Shuffle/No Shuffle	1 bit	enable	C	-	-	T	-
27	Page 1-Audio	Status Shuffle/No Shuffle	1 bit	enable	C	-	W	T	U
28	Page 1-Audio	Repeat/No Repeat	1 bit	enable	C	-	-	T	-
29	Page 1-Audio	Status Repeat/No Repeat	1 bit	enable	C	-	W	T	U
30	Page 1-Audio	Song Name	14 bytes	Character String (ISO 8...	C	-	W	T	U
31	Page 1-Audio	Artist Name	14 bytes	Character String (ISO 8...	C	-	W	T	U
32	Page 1-Audio	Album Name	14 bytes	Character String (ISO 8...	C	-	W	T	U
34	Page 1-Audio	Disconnect Slave Mode	1 bit	trigger	C	-	-	T	-
35	Page 1-Audio	Status Slave Mode	1 bit	boolean	C	-	W	T	U
36	Page 1-Audio	Source	1 byte	counter pulses (0..255)	C	-	-	T	-
37	Page 1-Audio	Status Source	1 byte	counter pulses (0..255)	C	-	W	T	U
38	Page 1-Audio	Preset Selection	1 byte	counter pulses (0..255)	C	-	-	T	-
39	Page 1-Audio	Status Preset Selection	1 byte	counter pulses (0..255)	C	-	W	T	U

Disconnect Slave Mode Value:

If KNX audio controller supports Multi-room audio, this parameter defines the value to disconnect the related knx audio controller from slave mode.

34	Page 1-Audio	Disconnect Slave Mode	1 bit	trigger	C	-	-	T	-

When disconnect slave mode button is clicked, defined value will be transmitted by the object.

Slave Mode Status:

When defined value is received by the object "Status Slave Mode", disconnect slave mode button will be appear on audio page display.

35	Page 1-Audio	Status Slave Mode	1 bit	boolean	C	-	W	T	U

Preset Selection:

When enabled, preset subpage will be activated on audio page display. 10 presets can be called.

38	Page 1-Audio	Preset Selection	1 byte	counter pulses (0..255)	C	-	-	T	-
39	Page 1-Audio	Status Preset Selection	1 byte	counter pulses (0..255)	C	-	W	T	U

Source Selection:

When enabled, sources subpage will be activated on audio page display. Up to 6 sources can be set. Source texts and related values can be defined.

36	Page 1-Audio	Source	1 byte	counter pulses (0..255)	C	-	-	T	-
37	Page 1-Audio	Status Source	1 byte	counter pulses (0..255)	C	-	W	T	U

3.2.5. Page 1 – Status Display

"Status Display" can be used to show customized status information using selectable icons and data point types.

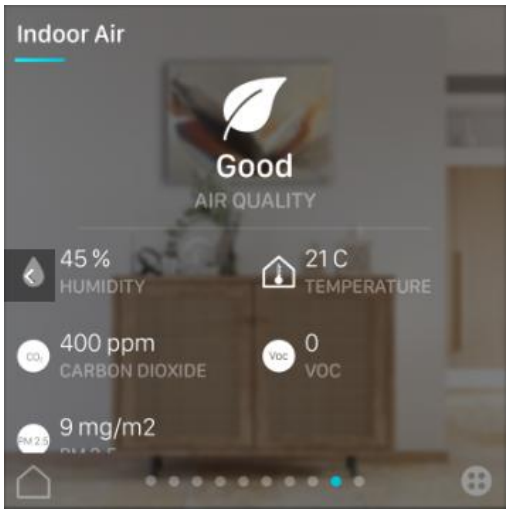


Figure 13 - Air Quality Display

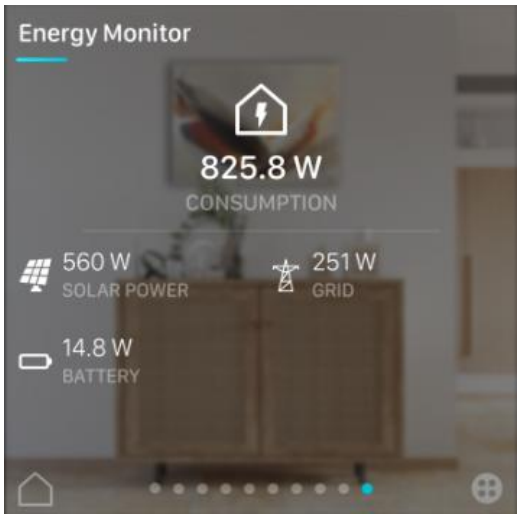


Figure 14 - Energy Monitor

Number of status element: [1…8]

A maximum of 8 status elements can be added to same page.

Icon:

Selected icon will be visible near status element. Figure 13, 14

Text: (14 characters allowed)

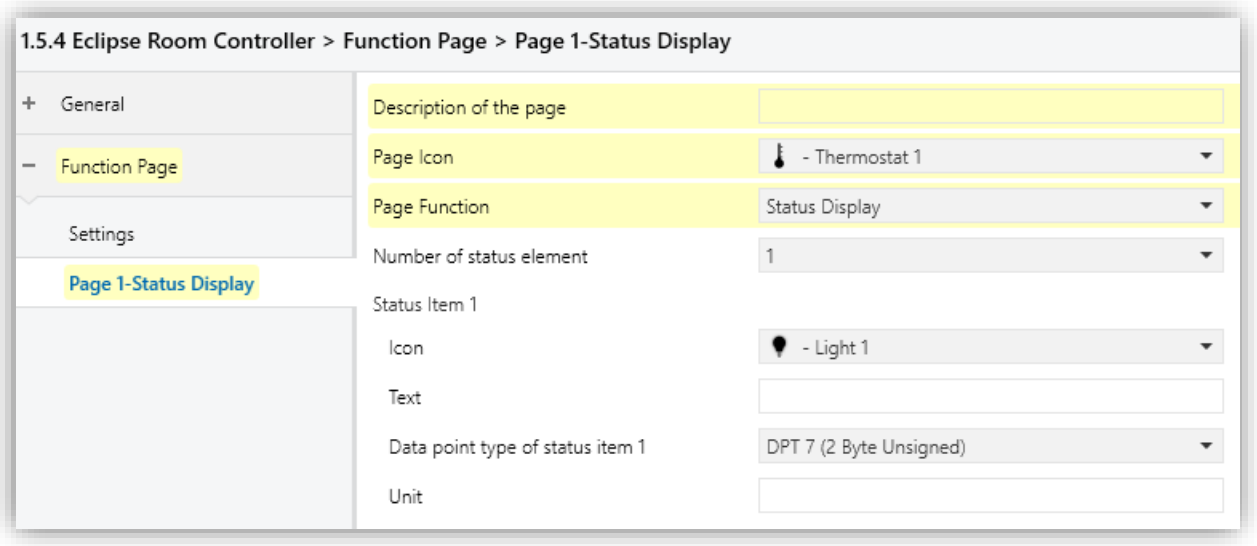
Description will be visible below the value and unit. Figure 13, 14

Data point type of status item 1: Following data types can be used;

DPT 7 (2 Byte Unsigned)
DPT 9 (2 Byte Float)
DPT 13 (4 Byte Signed)
DPT 14 (4 Byte Float)

Unit: (14 characters allowed)

"Unit" will be visible near the value.



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 on settings menu by activating knx programming
- 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.