Flat Display v2

Capacitive switch with display and humidity sensor

ZVIFDV2

USER MANUAL

Application Programme Version: [2.5]
User Manual Version: [2.5]_a

www.zennio.com

CONTENTS

1 INTRODUCTION

1.1 FLAT DISPLAY V2

Flat Display v2 is a KNX **multifunction capacitive touch switch with an analogue display** from Zennio with proximity sensor, humidity, luminosity sensor and backlighted buttons and display.

It is offered at **a reduced size** and **weight**, with **five capacitive touch buttons** on the bottom, with **LED backlight** to confirm the press of the buttons or showing states, and **a display** on the top.

Flat Display v2 is a fully customisable solution for the room control where the user needs to control climate systems, lighting, blinds, scenes, etc.

The versatility offered by the functionality of buttons is complemented by the built-in **analogue/digital inputs**, the **internal temperature sensor,** the **humidity sensor** and the **thermostat** function, as well as an elegant and **fully customisable design of the front glass** – customers can choose their button icons, texts and colours and even personalise the background with their pictures, logos, etc.

Moreover, the **display** offers the possibility of showing useful information to the user about the control states and object values.

The most outstanding features of Flat Display v2 are:

- **2.4-inch** (2.4'') back-lit OLED display with a resolution of **128 x 64** pixels.
- **Fully customisable** design of the front glass.
- **5 touch buttons** which can operate as individual or pair controls.
- **Light indicator (LED)** for every button.
- **Buzzer** for an audible acknowledgement of user actions (with the possibility of disabling it either by parameter or by object).

- Possibility of **locking / unlocking the touch panel** through binary orders or scenes, and of setting a timed/automatic locking of the device (**cleaning function**).
- **Welcome greeting on the display** and **Welcome Back object** (binary or scene).
- **Screensaver** function.
- Up to **5 switchable languages** for the displayed texts.
- **Two analogue/digital inputs** (for motion detectors, temperature probes, additional switches, etc.).
- **Thermostat** function.
- Built-in **temperature sensor**.
- **Humidity** sensor.
- **Celsius and Fahrenheit** temperature scales for the on-screen indicators, being possible to select them in parameters or through communication object.
- **Ambient luminosity sensor** for brightness automatic adjustment.
- **Proximity sensor** for quick start.
- **Heartbeat** or periodical “still-alive” notification.

1.2 INSTALLATION

Figure 1 shows the connection outilne of the device:

1. Temperature and Humidity Sensor.
2. KNX connector
3. Prog./Test LED.
4. Prog./Test Button.
5. Attachment Clips.
6. Inputs Connector.
7. Display.
8. Touch Area.
9. Luminosity and Proximity Sensor.

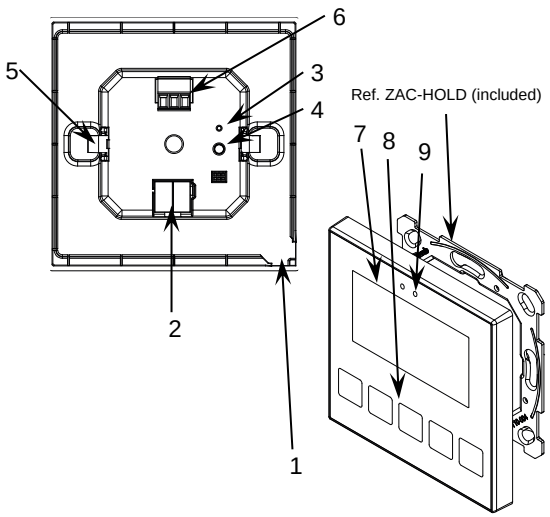

Figure 1. Schematic diagram.

Flat Display v2 is connected to the KNX bus through the built-in terminal (2). An external DC power supply is not needed.

A short press on the **Prog./Test button** (4) will make the device enter the programming mode. The **Prog./Test LED** (3) will light in red. On the contrary, if this button is held while plugging the device into the KNX bus, the device will enter the **Safe Mode**. In such case, the programming LED will then blink in red.

For detailed information about the technical features of Flat Display v2, as well as on security and installation procedures, please refer to the **Datasheet**, bundled within the device packaging of also available at www.zennio.com.

1.3 START-UP AND POWER LOSS

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

- Proximity sensor.
- Luminosity sensor.
- Button presses.

For a correct calibration of the proximity and brightness sensors it is recommended not to approach less than 50 cm from the device during this time and to avoid that the light strikes directly.

2 CONFIGURATION

After importing the corresponding database in ETS and adding the device into the topology of the project, the configuration process begins by entering the Parameters tab of the device.

2.1 GENERAL

To allow the device to perform the desired functions, several options must be parameterized, either related to its **general behaviour** (screensaver, sounds, lock procedure of the touch panel…) or to **advanced features** (cleaning function, welcome back object, welcome greeting…).

2.1.1 CONFIGURATION

In the “Configuration" tab, the general settings are displayed.

ETS PARAMETERISATION

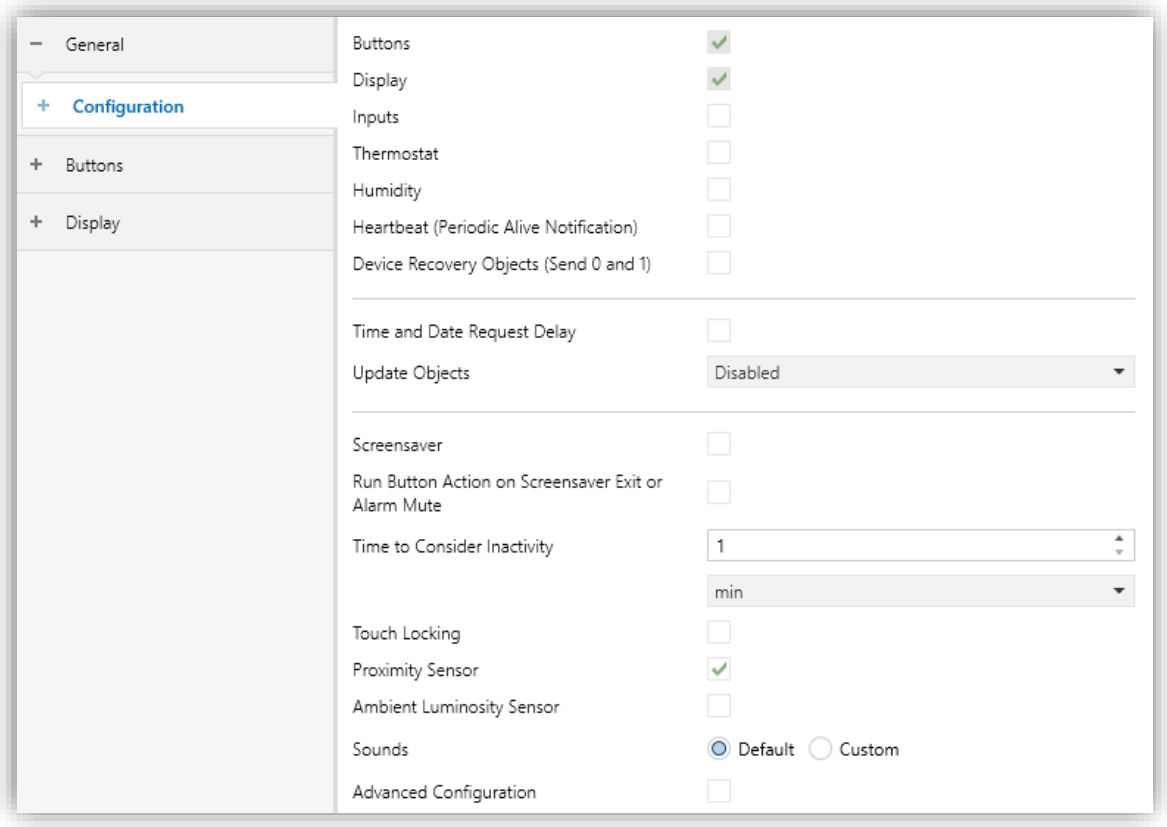

Figure 2. Configuration

This tab shows the following parameters:

- **Buttons** [*enabled*][1]: read-only parameter to make it evident that the "Buttons" tab is always enabled in the tab tree on the left. See section 2.2 for details.
- **Display** [*enabled*]: read-only parameter to make it evident that the "Display" tab is always enabled in the tab tree on the left. See section 2.3 for details.
- **Inputs** [*disabled/enabled*]: enables or disables the "Inputs" tab in the tree on the left, depending on whether the device will or will not be connected any external accessories. See section 2.4 for details
- **Thermostat** [*disabled/enabled*]: enables or disables the "Thermostat" tab in the tree on the left. See section 2.5 for details.

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

- **Humidity** [*disabled/enabled*]: enables or disables the "Humidity" tab in the tree on the left. For more information, see section 2.6

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

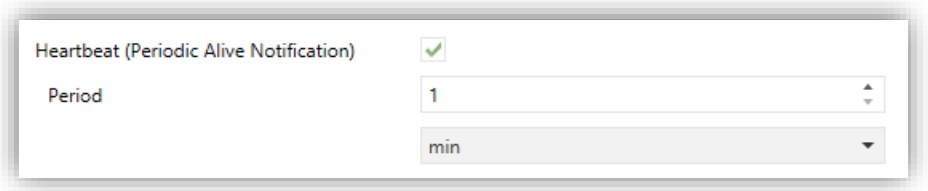

Figure 3. Heartbeat

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

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

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

- **Time and Date Request Delay** [*disabled/enabled*]: sets a sending **delay** [*1…65535*] [*s/min/h*] for the date and time request when the device starts up.

- **Update Objects**: enables the sending of read requests to update status objects and indicators. There are four options available, some of them with a configurable delay:

  - [*Disabled*]: no read request, therefore objects are not updated.

  - [*After Programming*]: read requests are sent after a complete or partial download after the parameterised **delay** [*1…10…65535*] [*s/min/h*].

- [*After Reset*]: read request are sent when a reset occurs (bus failure, the Reset Device ETS option), after the parameterised **delay** [*1…10…65535*] [*s/min/h*].

- [*After Programming and Reset*]: combination of the two above options.

- **Screensaver** [*disabled/enabled*]: enables or disables the "Screensaver" tab in the tree on the left. See section 2.1.1.4 for details.

- **Run Button Action on Screensaver Exit or Alarm Mute** [*disabled/enabled*]: sets whether, touching a button while the screensaver or an alarm is active should cause the execution of the button action, apart from hiding the screensaver or muting the alarm.

- **Time to Consider Inactivity** [*1…30…255*] [*s/min/h*]: time that must elapse since the last press and/or proximity detection to consider inactivity state. Then the display and the button LEDs backlight will dim.

- **Touch Locking** [*disabled/enabled*]: enables or disables the "Touch locking" tab in the tree on the left. See section 2.1.1.5 for details.

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

  Please refer to the specific manual "**Proximity and Luminosity Sensor**" (available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

- **Ambient Luminosity Sensor** [*disabled/enabled*]: enables or disables the ambient luminosity sensor. When enabled, a new tab is added in the tree on the left. See section 2.1.1.6 for details.

- **Sounds** [*Default / Custom*]: sets whether the sound functions (button beeps, alarm and doorbell) should work according to the pre-defined configuration or to a user-defined configuration (see section 2.1.1.7).

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

The project topology shows the following objects by default:

- **[General] Time of Day**: 3-byte object for setting the internal time of the device, for example, by linking it to a KNX clock. This object also allows read requests, so the current time of the device can be checked. It is also automatically sent after time changes made by the user from the screen itself.

  Important: *the time of day must be set through the bus by means of an external reference. In the absence of power, the clock will become outdated*.

- **[General] Date**: 3-byte object for setting the internal date of the device, for example, by linking it to a KNX clock. This object also allows read requests, so the current date of the device can be checked. It is also automatically sent after date changes made by the user from the screen itself.

- **[General] Scene: Receive** and **[General] Scene: Send**: objects for respectively receiving and sending scene values from/to the KNX bus whenever it is necessary (e.g., when the user touches a button that has been configured to send scene commands)

- **[General] Activity:** 1-bit object to force activity or inactivity state in the device. See "**Proximity and luminosity Sensor**" and "**Brightness**" user manuals (available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com) for more information.

- **[General] Display - Brightness**: 1-byte percentage object for changing the display brightness level.

- **[General] Proximity Sensor**, **[General] External Proximity Detection** and **[General] Proximity Detection:** 1-bit object whose functionality is tied to the proximity sensor. For further information, please refer to the user manual "**Proximity and Luminosity Sensor**" (available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com).

- **[General] Translations - Select Language**: 1-byte and 2-byte objects for changing the language showed in the screen when receiving a value through the bus (see section 2.1.1.1).

- **[General] Translations - Main Language**: 1-bit object that, after the reception of the value "1" from the bus, will load the main language (see section 2.1.1.1).

- **[Internal Temp. Probe] Current Temperature**: 2-byte object through which the value of the current measurement of the built-in sensor will be sent to the bus, according to the parameterisation (see section 2.1.1.3).

2.1.1.1 TRANSLATIONS

Texts shown on the screen can be translated into up to **five different languages**.

Texts of the box titles are entered by parameter in the corresponding configuration tab. For each language enabled, an additional textbox is displayed to enter the translation.

Note: *depending on the space occupied by the character on the screen, the full text entered may not be displayed.*

Switching from language to another can be done through two types of communication objects:

- **Up to five 1-bit objects**, one for each language. If this is enabled, when a "1" is received through any of this, the corresponding language is activated in the device.

- **A 1-byte scene object**. The expected values in this object are fixed, from 0 to 4, to select the language. If the value is received does not correspond to any language, the texts will be displayed in the main language.

- **A 2-byte ASCII object**. The expected values for this object are two characters of the ASCII code, corresponding to ISO 639-1. If the received character pair is valid but does not correspond to any enabled language he texts will be represented in the main language. If an out-of-range value is received, it does not change the active language.

  Notes:

  - *Not case sensitive.*
  - *Please refer to http://en.wikipedia.org/wiki/List_of_ISO_639-1_codes for a table with the language codes.*

On the other hand, Flat Display v2 allows the use of Latin, Greek and Cyrillic characters for the texts displayed on the screen.

ETS PARAMETERISATION

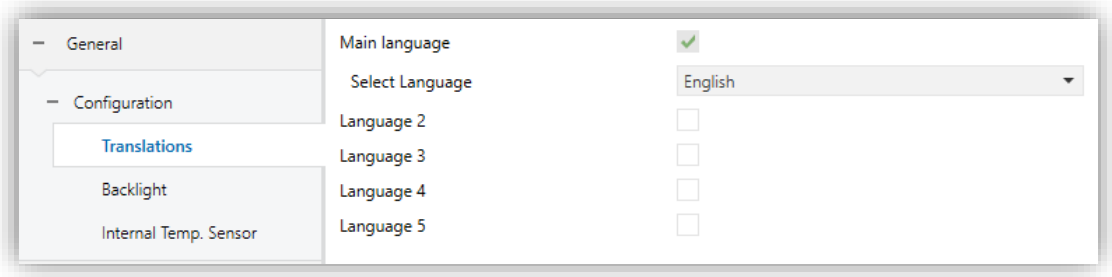

Figure 4. Configuration - Translations

- **Main language** [*enabled*]**:** read-only parameter to make it evident that the main language is always enabled.
  - **Select language:** list of the available languages.
- **Language X** [*enabled/disabled*]**:** enables the additional language X.
  - **Select language**: list of available languages to select the language X.

Only the Main language is enabled by default.

While Translations stays enabled, the following objects are visible:

- "**[General] Translations – Select language**" (1-byte).
- "**[General] Translations – Main language**" (1-bit).
- "**[General] Translations – Select language**" (2-byte).

Up to four specific objects for the additional languages will be also shown, if required:

- "**[General] Translations – Language X**" (1-bit).

These objects work accordingly to the behaviour mentioned above.

2.1.1.2 BACKLIGHT

Flat Display v2 allows managing the brightness of the display and the LED according to two operating modes: normal mode and night mode.

Note: *Contrast is not a configurable feature in this device*.

Please refer to the specific manual "**Brightness**" (available in the Flat Display v2 product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.1.3 TEMPERATURE SENSOR

Flat Display v2 is equipped with **one internal temperature probe** which can monitor the ambient temperature of the room, thus making the device capable of reporting it to the KNX bus and of triggering certain actions when the temperature reaches specific values.

Please refer to the specific manual "**Temperature Probe**" (available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.1.4 SCREENSAVER

The screensaver is a special page that will only be shown after a **period of inactivity**, configurable by parameter.

Setting the screensaver to only show the current **Time and Date**, the current **Temperature** (selecting the desired measurement source: the internal temperature sensor or an external value) or **both** (alternating every 5 seconds) is possible.

To exit the screen saver, press on the screen or approach the screen if the proximity sensor is activated. It can be set by parameter if, while the screen saver is active, pressing the touch panel will only cause the screen saver to exit, or if the action corresponding to the button pressed must also be executed (see section 2.1.1).

Notes:

- *When showing the welcome greeting (see section 2.1.2.2), screensaver will not become active.*
- *When screensaver is active and a pop-up shows up (see touch locking 2.1.1.5, cleaning function 2.1.2.1 or welcome greeting 2.1.2.2) this pop-up will overlay the screensaver*.

PARAMETRIZACIÓN ETS

After enabling **Screensavers** from the "Configuration" tab (section 2.1.1), a new tab is added to the left tree:

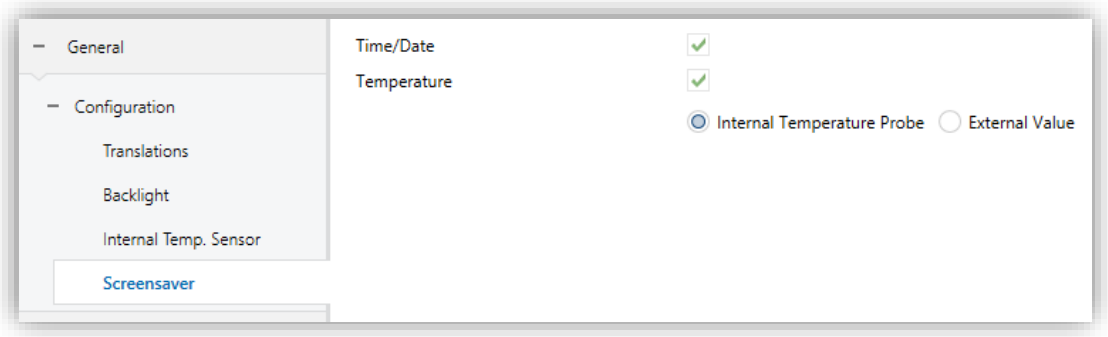

Figure 5. Configuration – Screensaver

- **Time/Date** [*enabled*/*disabled*]: determines whether to display the current time and date or not.

- **Temperature** [*enabled*/*disabled*]: determines whether to display the current temperature or not. The source of the temperature value can be selected [*Internal Temperature Probe*/*External Value*]. Selecting "External value" will enable a new communication object "**[General] External temperature**", whereby the device can receive the values from the bus.

2.1.1.5 TOUCH LOCKING

The touch panel of Flat Display v2 can be optionally locked and unlocked anytime by writing a configurable one-bit value to a specific object provided for this purpose. It can also be done through scene values.

While locked, user presses on the touch buttons will be ignored: no actions will be performed when the user presses on any of the controls. However, if configured, a message will be shown on the display for three seconds if the user touches a button during the lock state.

Note: *this functionality is independent of the buttons lock performed when the alarm is triggered on thermostat page. (see section 2.3.1).*

ETS PARAMETERISATION

After enabling **Touch Locking** from the "Configuration" tab (section 2.1.1), a new tab is added to the left tree:

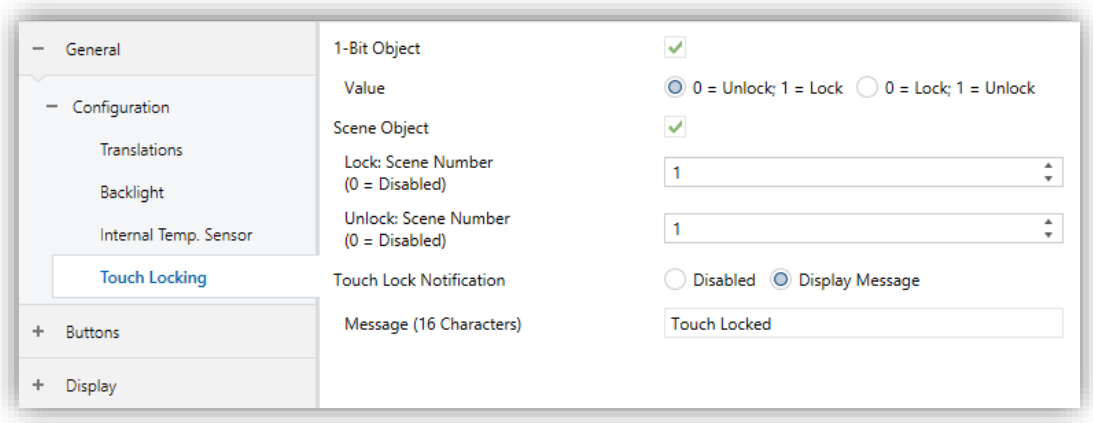

Figure 6. Configuration - Touch Locking

In this tab the blocking of the presses on the display can be configured.

- **1-Bit Object** [*disabled/enabled*]: enables the 1-bit object "**[General] Touch Locking**" to trigger the touch lock.
  - **Value** [*0 = Unlock, 1 = Lock / 0 = Lock, 1 = Unlock*]: parameter to select which value should trigger which action when received through the indicated object.
- **Scene Object** [*disabled/enabled*]: enables the touch locking and unlocking when receiving the configured scene value through the object ("**[General] Scene: receive**").
  - **Lock: Scene Number (0 = Disabled)** [*0/1…64*]: scene number that locks the touch.
  - **Unlock: Scene Number (0 = Disabled)** [*0/1…64*]: scene number that unlocks the touch.
- **Touch Lock Notification** [*Disabled / Display Message*]: sets whether to display a message on the screen or not when the device is locked and the user attempts to touch a button. When the first one is selected, one textbox (**Message**) appears to enter the desired message.

2.1.1.6 AMBIENT LUMINOSITY SENSOR

Flat Display v2 incorporates **a luminosity sensor** to receive and monitor ambient brightness measurement.

Please refer to the specific manual "**Luminosity and Proximity Sensor**" (available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.1.7 SOUNDS

Flat Display v2 emits **3 types of sounds**, depending on the action performed:

- **Press Confirmation:** short beep indicating that the user has pressed a button. This only applies to step controls, i.e., controls that walk through a certain range of values and that do not send a value after every touch, but only the final value after the last press. For this action, the user can choose between two different sounds.

- **Sending Confirmation**: a slightly longer and sharper beep than the previous one. It indicates the sending of an object to the bus as a result of a press.

- **Alarm:** sharp and longer beep than the previous one, high intensity, which is typically used as alarm or bell.

The range of sounds emitted when performing these actions will be different depending on the sound type selected.

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

Note: *Under no circumstances the alarm or the ring tone will be muted*.

ETS PARAMETERISATION

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

The initial configuration of this screen is equivalent to the default setting. However, the following parameters can be customized:

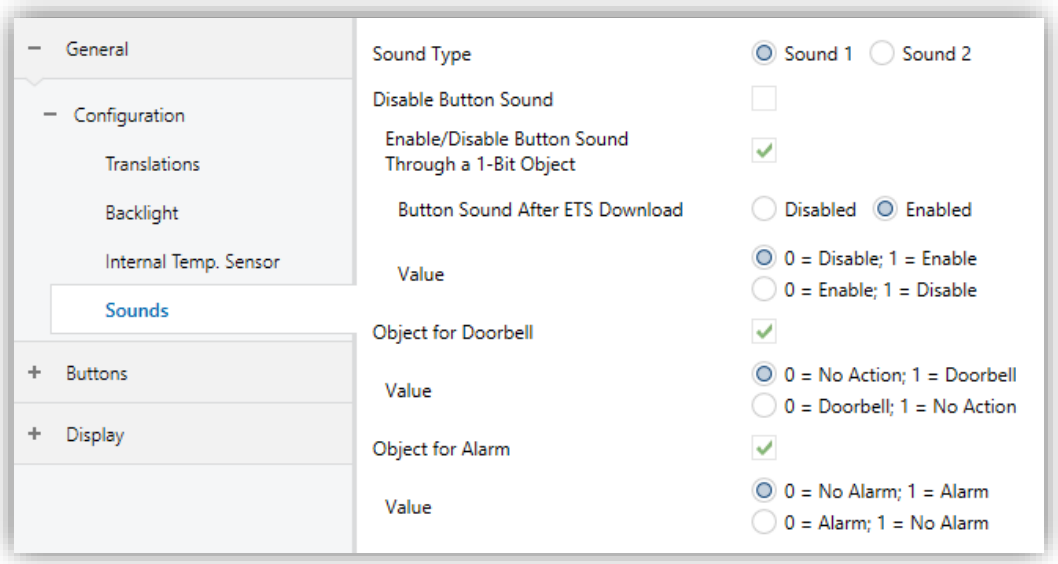

Figure 7. Configuration - Sounds.

- **Sound Type** [*Sound 1 / Sound 2*]: parameter to select which sounds range incorporates the device.

- **Disable Button Sounds** [*disabled/enabled*]: enables or disables the acoustic signals when the actions derived from the button clicks are executed. If enabled, the following parameters will appear:

  - **Enable/Disable Button Sound Through a 1-bit Object** [*disabled/enabled*]: makes it possible to disable / resume the button beeping function in runtime by writing to a specific object ("**[General] Sounds – Disabling Button Sound**").

    - **Button Sound After ETS Download** [*enabled/disabled*]: sets whether the button beeping function should start up enabled (default option) or disabled after an ETS download.

    - **Value** [*0 = Disabled, 1 = Enabled / 0 = Enabled, 1 = Disabled*]: parameter to select which value should trigger which action when received through the indicated object

- **Object for Doorbell** [*disabled/enabled*]: enables or disables the doorbell function. If enabled, a specific object ("**[General] Sounds - Doorbell**") will be included into the project topology.

- **Value** [*0 = No Action, 1 = Doorbell / 0 = Doorbell, 1 = No Action*]: parameter to select which value should trigger which action when received through the indicated object.

- **Object for Alarm** [*disabled/enabled*]: enables or disables the doorbell function. If enabled, a specific object ("**[General] Sounds - Alarm**") will be included into the project topology.

  - **Value** [*0 = No Alarm, 1 = Alarm / 0 = Alarm, 1 = No Alarm*]: parameter to select which value should trigger which action when received through the indicated object.

2.1.2 ADVANCED CONFIGURATION

Tab for the parameterisation of some advanced functions is shown in ETS if enabled from the "Configuration" tab. These functions are explained next.

ETS PARAMETERISATION

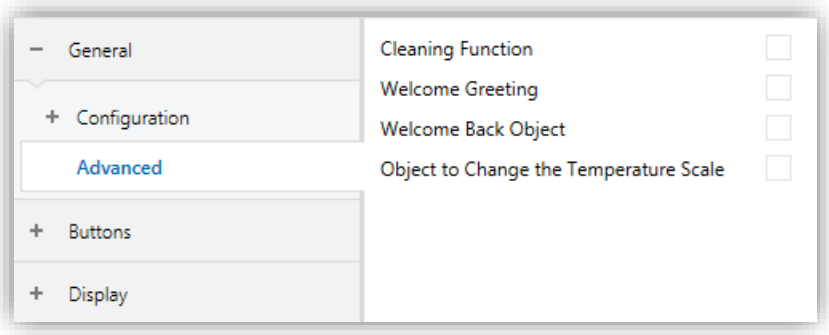

Figure 8. Advanced.

- **Cleaning Function** [*disabled/enabled*]: enables or disables the "Cleaning Function" tab. See section 2.1.2.1 for details.

- **Welcome Greeting** [*disabled/enabled*]: enables or disables the "Welcome Greeting" tab. See section 2.1.2.2 for details.

- **Welcome Back Object** [*disabled/enabled*]: enables or disables the "Welcome Back Object" tab. See section 2.1.2.3 for details.

- **Object to Change the Temperature Scale** [*disabled/enabled*]: enables the 1-bit object **"[General] Temperature Scale"**), which permits changing in runtime

the scale of the temperatures that may show on the screen. By receiving one '0' through this object, the scale will switch to Celsius, while after receiving one '1' it will switch to Fahrenheit.

The selected scale applies to any temperatures shown on the screen, such as:

- The **screensaver** temperature.
- Indicators of **temperature controls** linked to a box in the display ([Climate] Temperature setpoint)
- **Temperature indicators** ([Climate] Temperature).

After enabling this functionality, the following parameter will also appear:

- **Scale After Programming** [*Celsius (ºC) / Fahrenheit (ºF)*]: sets the scale in use after download.

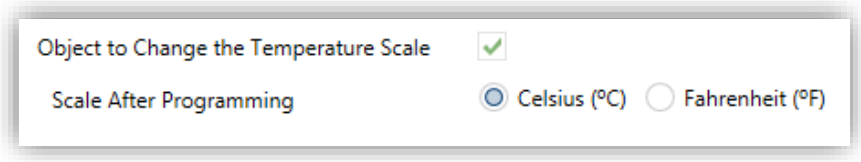

Figure 9. Temperature Scale After Programming.

2.1.2.1 CLEANING FUNCTION

This feature is very similar to the touch locking, that is, it locks the touch area, thus discarding further button touches. The difference is that this function remains active only during a parameterisable time, and then stops.

This function is intended to let the user clean the touch area with the certainty of not triggering unwanted actions.

A message can be shown during the cleaning state. When the timeout is about to end, it is also possible to make this message blink or to make the device beep (or both).

ETS PARAMETERISATION

After enabling **Cleaning Function** from "Advanced" screen (see section 2.1.2), a new tab will be incorporated into the tree on the left.

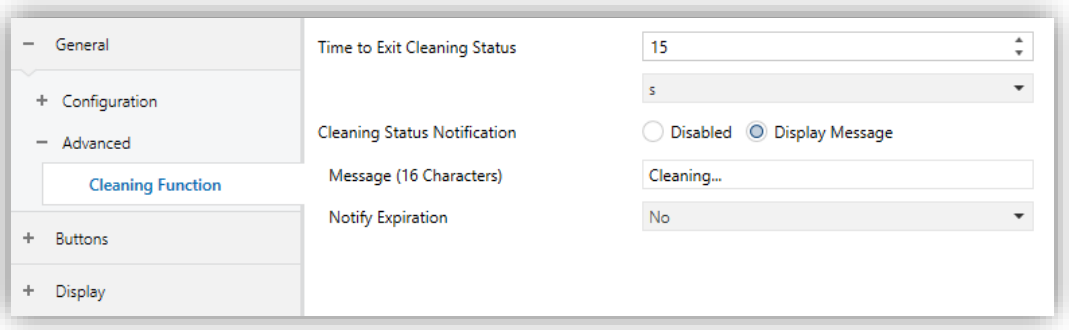

Figure 10. Avanced - Cleaning Function.

- **Time to Exit Cleaning Status** [*5...15…65535*][*s*] [*1…65535*][*min/h*]: timeout to deactivate the cleaning function once triggered.

- **Cleaning Status Notification [***Disabled / Display Message***]**: sets whether to show a message during the cleaning state. When "Display Message" is selected, the following parameters appear:

  - **Message** [*Cleaning…*]: textbox to enter the desired message.

  - **Notify Expiration** [*No / Blink Message / Play Sound / Both*]: sets whether to notify the timeout expiration or not. When any of the three later options is selected, a new parameter shows up:

    - **Length of the Warning** [*1...5…65535*][*s*] [*1…65535*][*min/h*]: sets the ahead-time to start the notification prior to the end of the cleaning function.

The "**[General] Cleaning Function**" one-bit object triggers the cleaning function when it receives a "1" from the KNX bus.

2.1.2.2 WELCOME GREETING

This function permits showing the user a welcome message of up to four lines of text on the display, each of which can be object-dependant or set in parameters.

When a "1" is received through the welcome greeting one-bit object, the display will become blank and show the welcome text. The same will happen if any of the 14-byte objects that define the text lines receives a new value from the bus.

It is also possible to make the button LEDs flash during the welcome state.

The message disappears when touching the screen or receiving a "0" through the welcome greeting object.

Note: *Welcome greeting takes precedence over screensaver. When the welcome greeting is displayed, the screensaver will be disabled until the first one disappears.*

ETS PARAMETERISATION

After enabling **Welcome greeting** (section 2.1.2), a new tab will be incorporated into the tab tree. A one-bit object named "**[General] Welcome Greeting**" will also be shown in the project topology, to trigger the welcome message by sending the value "1" or to end it by sending the value "0".

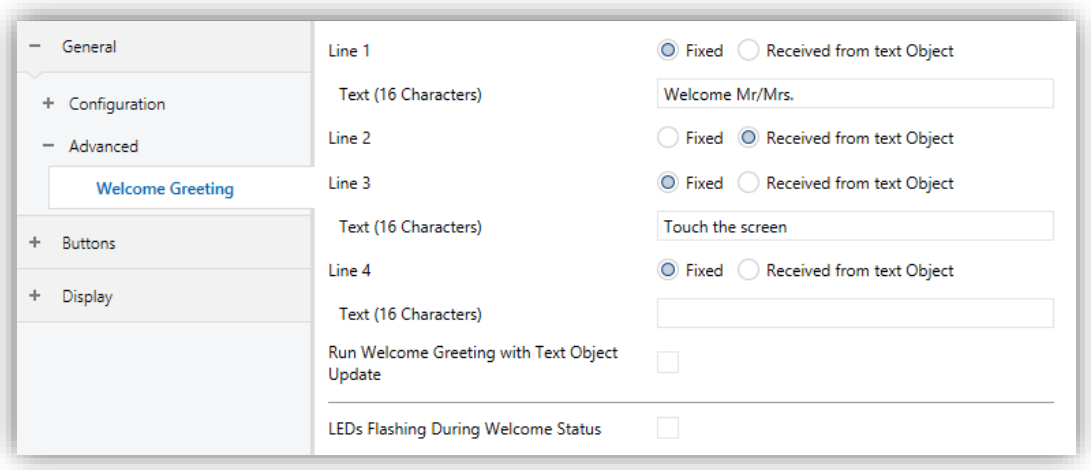

Figure 11. Advanced– Welcome Greeting.

This screen contains the following parameters:

- **Line X** [*Fixed / Received from text Object*]: sets whether the corresponding text line will be pre-defined or object-dependent.

  If "Fixed" is selected, the following parameter will appear:

  - **Text**: textbox to enter the desired text for the corresponding line.

  If "Received from text Object" is selected, the following parameter will appear:

  - **Run Welcome Greeting with Text Object Update** [*enabled/disabled*]: allows choosing whether run the welcome greeting when writing on the 14-byte object "**[General] Welcome Greeting – Line X**". Up to four objects will appear, depending on how many lines have been assigned the "Received from text Object" option.

- **LEDs Flashing During Welcome Status** [*enabled/disabled*]: sets whether the LED of the buttons should blink or not during the welcome greeting.

2.1.2.3 WELCOME BACK OBJECT

Flat Display v2 can send a specific object (a **one-bit** value, a **scene** value or both, depending on the parameterisation) to the KNX bus when the user presses a touch button after a significant amount of time since the last press or presence detection (when the proximity sensor is enabled). Sending it or not can also depend on an **additional**, **configurable** condition consisting in the evaluation of up to five binary objects.

Any actions that in normal operation may be executed will not be if the welcome back object is sent to the bus. Thus, if the user presses a button and this causes that the welcome back object is sent, the normal action of that button will not be triggered.

ETS PARAMETERISATION

After enabling **Welcome Back Object** from "Advanced" screen (see section 2.1.2), a new tab will be incorporated into the tree on the left.

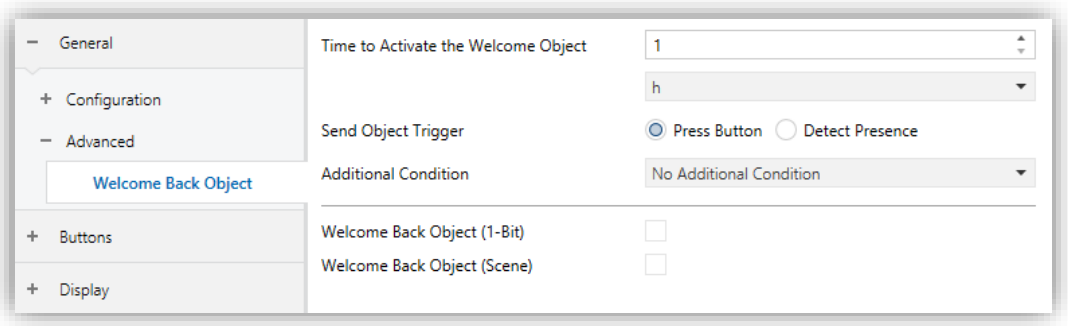

Figure 12. Advanced - Welcome Back Object.

- **Time to Activate the Welcome Object** [*1...65535*][*s*] [*1…65535*][*min/h*]: sets the minimum time that should elapse after the last button touch (or presence detection, when the proximity sensor is enabled) before the next one triggers the execution of the welcome back function.

- **Send Object Trigger** [*Press Button / Detect Presence*]: sets whether the welcome back object is sending after a touch in the screen or when the proximity sensor detects presence.

- **Additional Condition:** sets if sending the welcome back object should also depend on an external condition. The option by default is [*No Additional Condition*]. The following are available too:
  - [*Do not send unless all additional conditions are 0*]: the welcome back object will only be sent if all the condition objects are found to have the value "0".
  - [*Do not send unless all additional conditions are 1*]: the welcome back object will only be sent if all the condition objects are found to have the value "1".
  - [*Do not send unless at least one of the additional conditions is 0*]: the welcome back object will only be sent if at least one of the condition objects is found to have the value "0".
  - [*Do not send unless at least one of the additional conditions is 1*]: the welcome back object will only be sent if at least one of the condition objects is found to have the value "1".
  - **Number of Condition Objects** [*1…5*]: up to 5 objects can be selected for the additional condition ("**[General] Welcome Back Object – Additional Condition**").

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

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

2.2 BUTTONS

For detailed information about the functionality and the configuration of the related parameters, please refer to the specific manual "**Capacitive Touch Switches**" available in the Flat Display v2 product section at the Zennio homepage, www.zennio.com.

2.3 DISPLAY

2.3.1 CONFIGURATION

Flat Display v2 features a **2.4'' 128 x 64 pixel back-lit monochrome screen** with black background and white icons and fonts.

This screen can show useful information to the user, related to the current state of other devices or of its own controls.

The information provided by the display can consist in icons or alphanumeric characters (texts). Please refer to the specific document "**Icons in Flat Display v2**" (available at the Zennio homepage, www.zennio.com) to see the list of available icons.

Three **different font sizes** for the alphanumeric characters are available: **Small**, **Big** and **Extra** (this one only for numeric indicators). On the other hand, the built-in character set is:

- **Basic Latin**[2], in small and big font size.
- **Extended Latin** ("À" to "ÿ"), in small and big font size.
- **Cyrillic** alphabet, in small and big font size.
- **Greek** alphabet, in small and big font size.
- **Symbols**: € ° & - . ;

As Flat Display v2 offers the user a sole control page (instead of alternating, browsable pages), all the content of the display is shown permanently. It only gets hidden when the screensaver or some other special messages (welcome, locking or cleaning) are superimposed.

[2] According to the Unicode classification.

The screen is divided into different zones according to the chosen page style:

- **Normal Page:** 4 zones (**single** boxes –or *big* boxes-), named “A”, “B”, “C” and “D”, each of which can be further divided into two **double** boxes –or *small* boxes–.

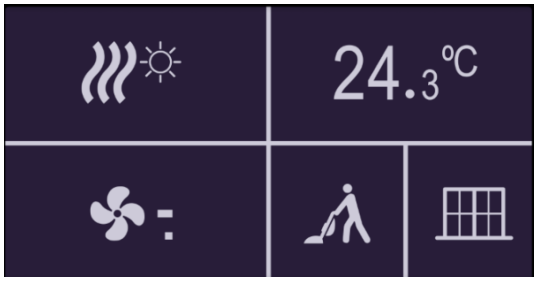

Figure 13. Display – Normal Page

- **Thermostat:** the display is divided into 3 zones, named "A", "B" and "C", distributed as follows:
  - **Zone A**: occupies the left side of the screen and can be configured as a **double** box.
  - **Zone B**: **setpoint** box is displayed centred on the screen and larger than the other boxes.
  - **Zone C**: occupies the right side of the screen and can be configured as a **fan** box or as a **double** box.

Figure 14. Display – Thermostat Page

Each box consists of two areas:

- Lower area, where the box name (configurable through the parameter **Label**) is represented, with the Small text size. The text length depends on the box size: maximum 12 characters for big boxes and 6 characters for small boxes (if the text does not fit in the box, it will be truncated). If this label is left empty, then the indicator fills the box.

- Upper area, where the **Indicator** is represented. There are up to four representation modes, configurable in parameters for each indicator: **Permanent** (always shown), **Temporary** (shown for a moment when the value changes or after a bus recovery), **Intermittent** (intermittent indicator), and **Progressive** (the icon is progressively drawn from top to bottom).

The boxes in the screen can be assigned different functions, as described next.

ETS PARAMETERISATION

An independent tab for the parameterisation of the Display is shown in ETS by default. While all the zones remain disabled, it will only contain a sub-tab named Configuration.

This screen contains the following parameters:

- **Page Style** [*Normal Page / Thermostat*]: sets the layout and functionality of the display.

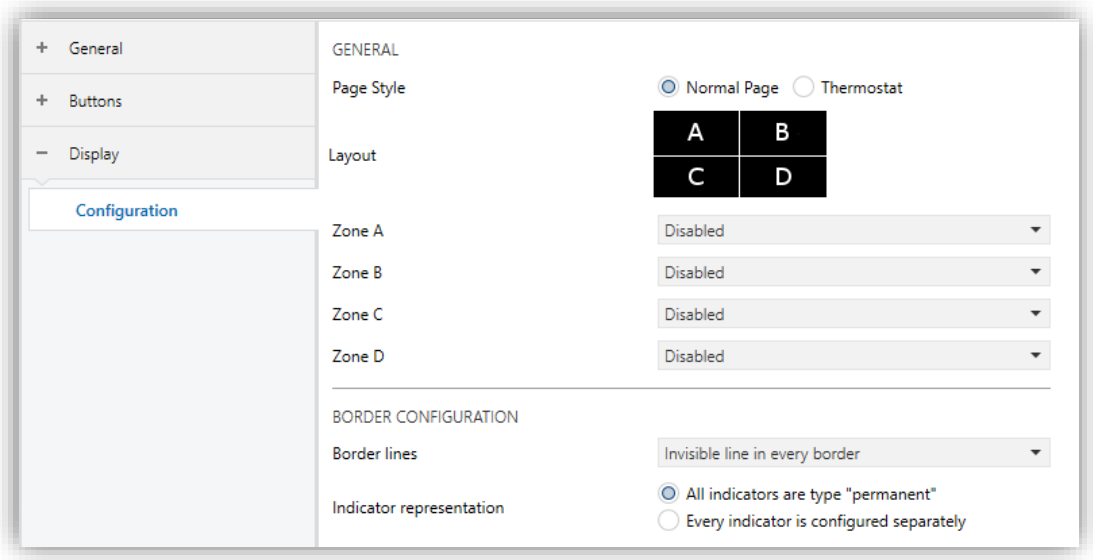

Figure 15. Display – Configuration (Normal Page)

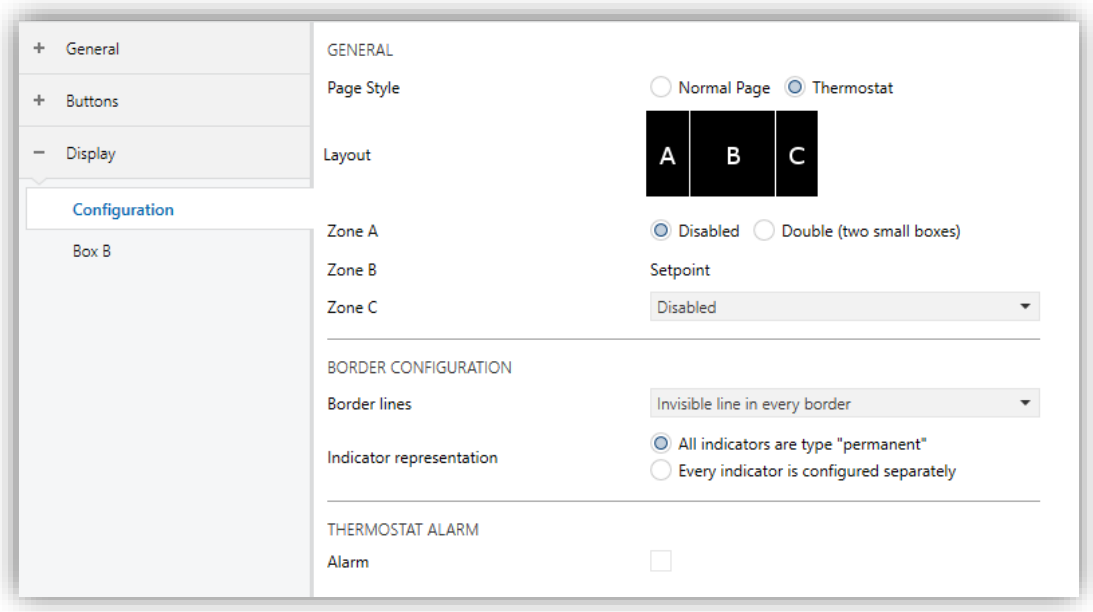

Figure 16. Display – Configuration (Thermostat Page)

One drop-down list is shown per zone. Depend on the page style and the zone, the options may be:

- [*Disabled*]. See section 2.3.2.
- [*Single (one big box)*]. Selecting this option brings a new tab to the tree on the left (named "**Box X**", where X depends on the display zone). See section 2.3.3.

  Note: *This option will be available in all zones when the selected page style is Normal Page.*

- [*Double (two small boxes)*]. Selecting this option brings the checkboxes "**Box X1**" and "**Box X2**" (where X depends on the display zone), which turn each of the two zones enabled or disabled. Depending on this, up to two new tabs (named "**Box Xn**") will be included in the tree on the left. See section 2.3.4.
- [*Fan (one big box)*]. Selecting this option brings a new tab to the tree on the left named "**Box C**". See section 2.3.6.

  Note: *Option only available for **zone C** of Thermostat Page.*

- [*Setpoint*]: Selecting Thermostat Page, this option will always be activated in **zone B**. The "**Box B**" tab is displayed in the left tree.

- **Border lines** [*Solid line in every border / Invisible line in every border / Dotted line in every border / Customize every border*]: lets selecting how the box border lines will be represented.

  In case of selecting "Customize every border", an independent tab appears under Display to configure each box border line (see section 2.3.7).

- **Indicator representation** [*All indicators are type "permanent" / Every indicator is configured separately*]: defines the representation of the indicators on the display.

  In case of selecting "Every indicator is configured separately", there will be a specific parameter for every box to select the desired indicator representation.

- **Alarm** [*disabled/enabled*]: to enabled an alarm to link, for example, with a window opening sensor. The alarm trigger will be received through the object "**[Disp] Alarm**", causing the thermostatic indicator to disappear and an icon and text to appear. Enabling and disabling the alarm functionality at runtime is also possible through the object "**[Disp] Enable Alarm**".

  Note: *only available in "Thermostat" type pages.*

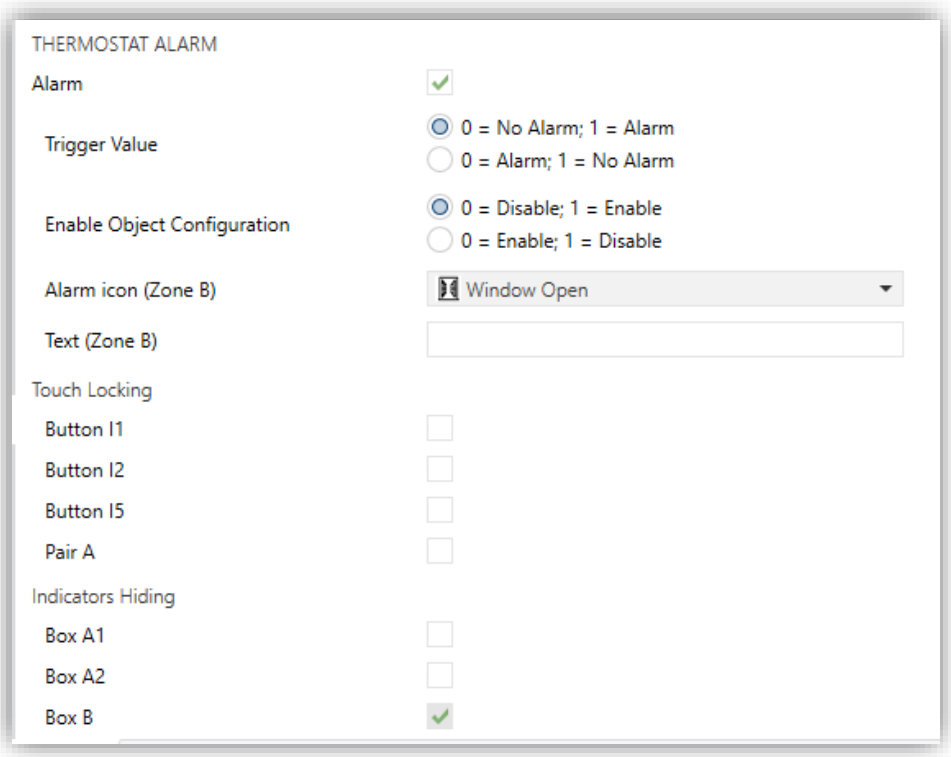

Figure 17. Display – Configuration (Thermostat Page) - Alarm

- **Alarm Configuration:**

- **Trigger Value** [*0 = No Alarm; 1 = Alarm / 0 = Alarm; 1 = No Alarm*]: polarity of the binary alarm binary object "**[Disp] Alarm**".
- **Enable Object Configuration** [*0 = Disable; 1 = Enable / 0 = Enable; 1 = Disable*]: polarity of the alarm enabling object "**[Disp] Alarm Enable**".
- **Alarm icon** [*Window Open*]: drop-down menu to choose the icon shown when the alarm is triggered.
  - **Representation** [Permanent / Temporary / Intermittent / Progressive]: sets the icon representation.

    Note: *this parameter will remain hidden unless having selected "Every indicator is configured separately" in "**Indicator representation**".*
- **Text**: text that appears in the display when the alarm is activated.
- **Touch Locking:** sets which push-button or pair of push-button you wish to lock when the alarm is triggered.
- **Indicators Hiding:** sets which boxes are hiden when the alarm is triggered (except B).

Note: *this functionality is independent of the hiding/locking objects and these will take precedence over the thermostat alarm.*

2.3.2 DISABLED

While a display zone remains disabled, it does not represent anything and cannot be linked to any button – it will remain empty.

ETS PARAMETERISATION

This function has no related parameters.

2.3.3 SINGLE

Single boxes have a size of 64 x 32 pixels. The display can be divided into up to four single boxes.

Single boxes can be assigned the following types of indicators:

- **Icon:** the indicator will represent an icon according to the value of an object. Depending on the type of object there are two types of icons:

  - One bit: an icon represents the On state and another one represents the Off state.

  - Enumeration: up to six different states can be represented through one icon each.

- **Number:** the indicator will represent a number (received through the associated object) and a three-character text representing the units. Different number types are available for the different object types: Scaling, Counter (1-Byte unsigned), Counter (1-Byte signed), Counter (2-Bytes unsigned), Counter (2-Bytes signed), Counter (4-Bytes unsigned), Counter (4-Bytes signed), Float (2-Bytes).

- **Text:** The indicator will represent a text according to the value of an object. This indicator is totally analogous to the Icon indicator, but each value is associated to a text instead of an icon. The types are the same:

  - One bit: a text represents the On state and another one represents the Off state.

  - Enumeration: up to six different states can be represented through one text each.

- **Time of day:** the indicator will represent the time on the screen.

- **Text from object:** Represents a string (up to 14 characters) received through the corresponding communication object.

- **[Climate] Temperature:** represents temperature values as received through the related communication object. Values in the range [-99, 199] ºC and in the range [-142, 390] ºF are available (depending on the selected temperature scale; see section 2.1.2). Values out of range will be replaced by the corresponding limit.

  When the value contains decimals, only the first one will be shown, and it will be represented in a smaller size. Also, if the decimal part does not fit, the number will be rounded to the nearest integer.

- **[Climate] Mode:** represents climate modes as received through the associated communication object. There are two Mode Types:

  - Heat/Cool: only the Heat and Cool modes will be represented, according to the value of a one-bit object.

  - Extended: up to five HVAC climate mode will be represented, according to the value received through a specific one-byte object. The icons are represented with a progressive shift in the box, i.e., the first mode is shown at the left and the last at the right.

  If the object value does not correspond to a valid mode, no icon will be displayed.

- **[Climate] Fan:** represents fan speeds, according to the value of the corresponding object. There are up to 4 fan speed levels: Off/Auto, Min, Med, Max. The number of levels can be customised, as explained later.

  As with climate modes, the icons of the successive levels are represented with a progressive shift, but without hiding the preceding ones.

- **[Climate] On/Off + Mode + Status:** Climate status indicator with three one-bit objects associated: On/Off, Mode and Status. The icon represented depends on the value of these three objects.

- **[Climate] Mode Special:** works in the same way as **[Climate] Mode** in its extended version with the values mentioned in section 2.2.4.

ETS PARAMETERISATION

When a display zone has been configured as Single, a specific tab ("**Box x**") becomes available under "Display" in the tree on the left.

Moreover, the textbox **INFO** allows changing the default name of the tab in the left menu, as shows the following figure, as happen with buttons (see section 2.2).

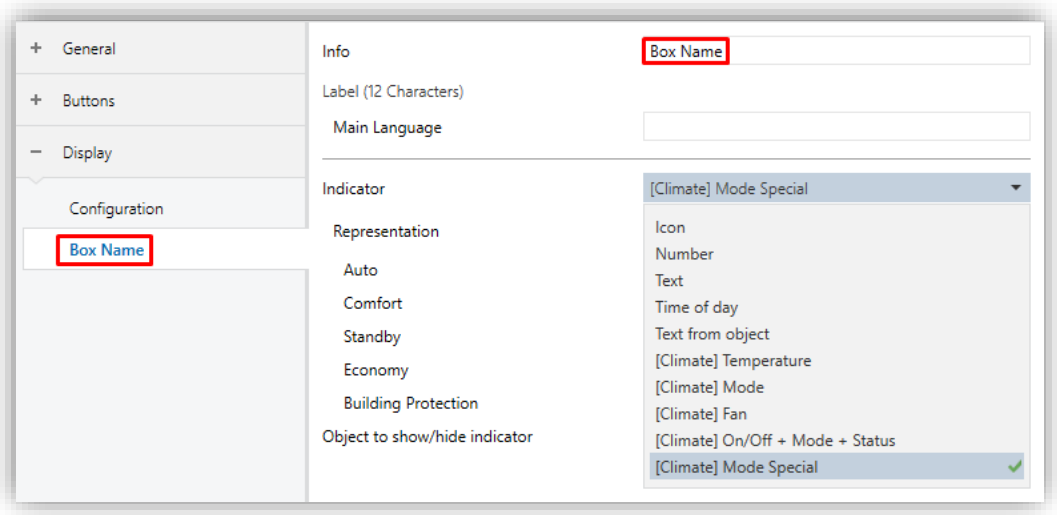

Figure 18. Display – Box a.

The main parameters that need to be configured are:

- **Label:**
  - **Language X**: identifying title for the box for the corresponding language
- **Indicator** [*Icon / Number / Text / Text from object / [Climate] Temperature / [Climate] Mode / [Climate] Fan / [Climate] On/Off + Mode + Status*]: sets the desired indicator to display in the box.
- **Representation** [*Permanent / Temporary / Intermittent / Progressive*]: sets the icon representation.

  Note: *this parameter will remain hidden unless having selected "Every indicator is configured separately" in "**Indicator representation**" (see 2.3.1).*
- **Object to show/hide indicator** [*enabled/disabled*]: enables or disables a one-bit object ("**[Disp] [x] Show/Hide indicator**") to show or hide the indicator in runtime.

Depending on the indicator, some more parameters are shown, as described next. Please note that in the next pages the general notation "**[Disp][X]**" is used for the name of the communication objects, as "x" depends on the display zone (a, b, etc.).

Icon

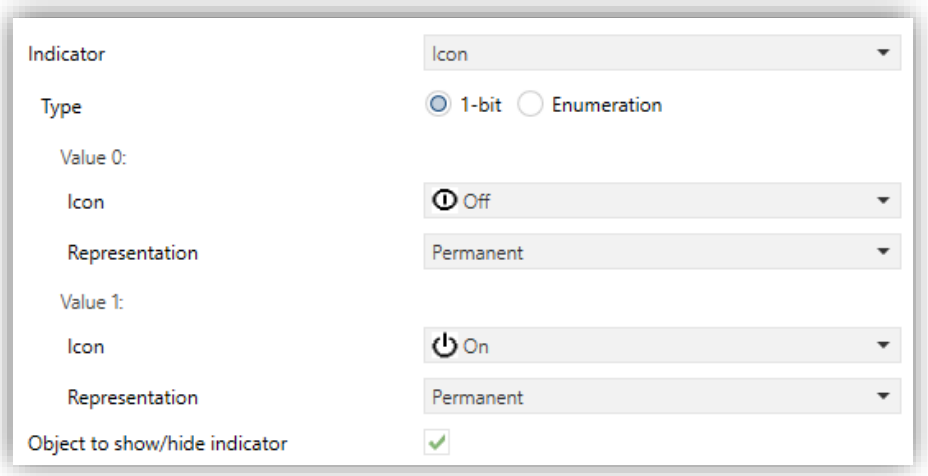

Figure 19. Display indicator – Icon – 1 bit.

- **Type**:

  - [*1-bit*]: the icon represented depends on the value of the one-bit object "**[Disp] [X] Icon – 1-Bit**".

    When selecting this type, the following parameters need to be configured:

    - **Icon**: sets the icon to display for each value.

  - [*Enumeration*]: the icon represented depends on the value of the one-byte object "**[Disp] [X] Icon – Enumeration**".

    When selecting this type, the following parameters need to be configured:

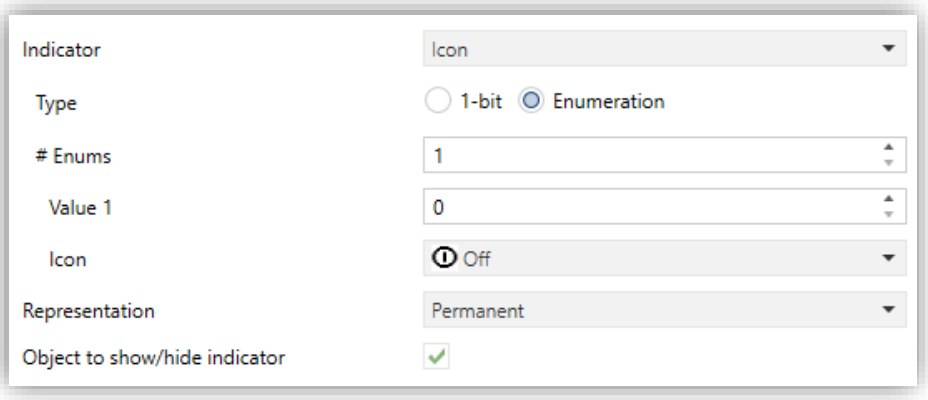

Figure 20. Display indicator – Icon – Enumeration.

- **# Enums** [*1…6*]: sets the number of states of the enumerated list.
  - **Value** [*0…255*]: sets the numerical value assigned to the state.
  - **Icon**: sets the icon to be displayed for each value**.**

Number

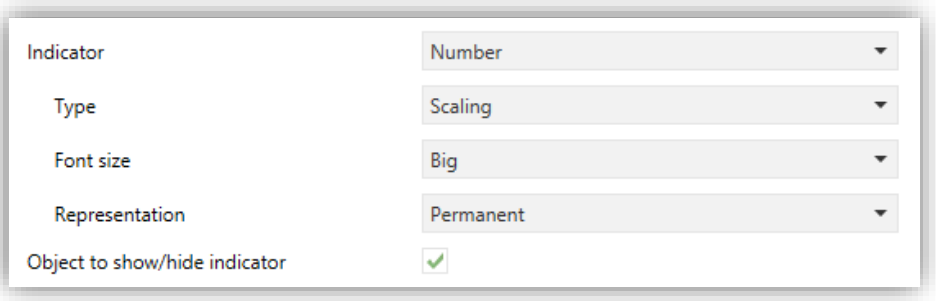

Figure 21. Display indicator – Number – Scaling.

- **Type** [*Scaling / Counter (1-Byte unsigned) / Counter (1-Byte signed) / Counter (2-Bytes unsigned) / Counter (2-Bytes signed) / Counter (4-Bytes unsigned) / Counter (4-Bytes signed) /Float (2 bytes)*]: sets the type of the number indicator.

- **Font size** [*Small / Big / Extra*]: sets the font size of the number.

Text

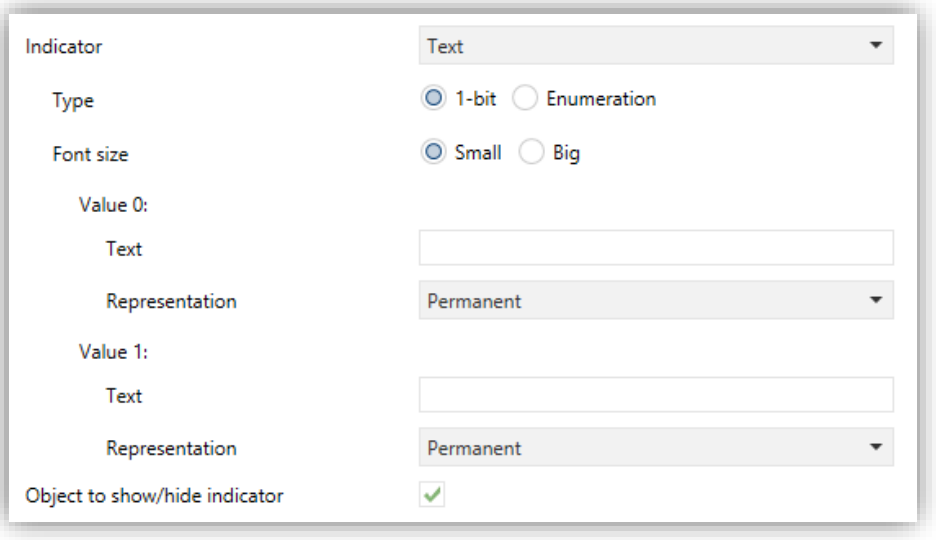

Figure 22. Display indicator – Text – 1 bit.

- **Type**:

  - [*1 bit*] the text represented depends on the value of the one-bit object "**[Disp] [X] Text – 1-Bit**".

    When selecting this type, the following parameters need to be configured.

    - **Text for value 0/1:** sets the text to be displayed for each value.

➢ [*Enumeration*]: the icon represented depends on the value of the one-byte object "**[Disp] [x] Text – Enumeration**".

When selecting this type, the following parameters need to be configured.

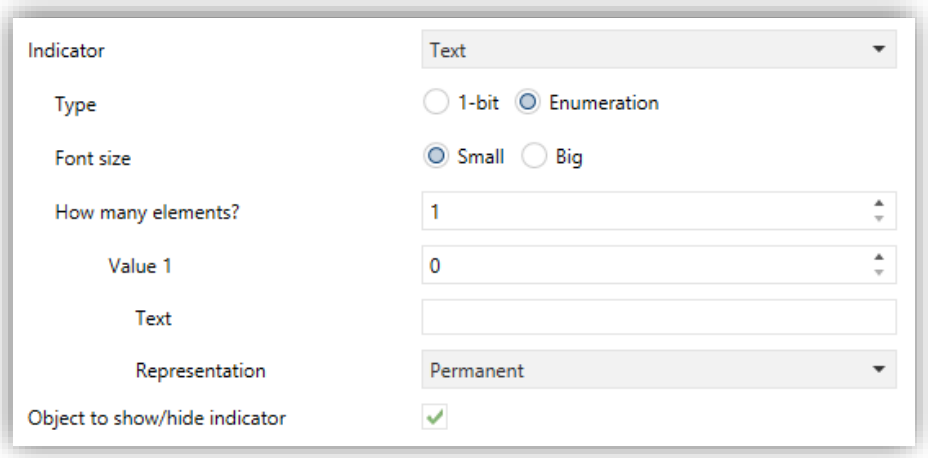

Figure 23. Display indicator – Text – Enumeration.

- **How many elements?** [*1…6*]: sets the number of states of the enumerated list. For each state, the following parameters need to be configured.
  - **Value** [*0…255*]: sets the numerical value assigned to the state.
  - **Icon**: sets the text to be displayed when the above value is received**.**

- **Font size** [*Small (12 Characters) / Big (8 Characters)*]: sets the font size of the texts.

Time of day

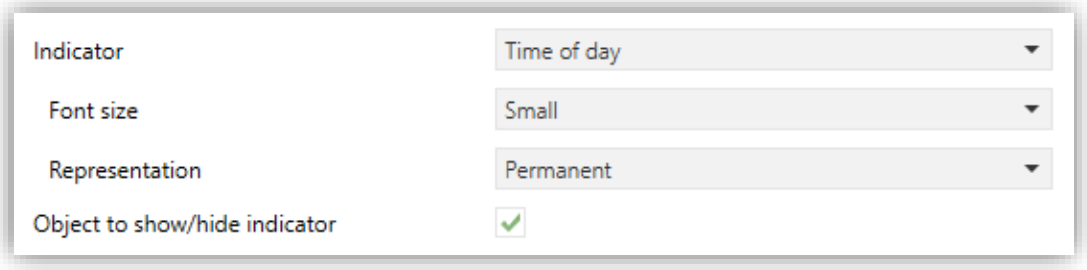

Figure 24. Display indicator – Time.

The hour to be shown is received through the object "**[General] Time**".

- **Font size** [*Small / Big / Extra*]: sets the font size of the time.

Text from object

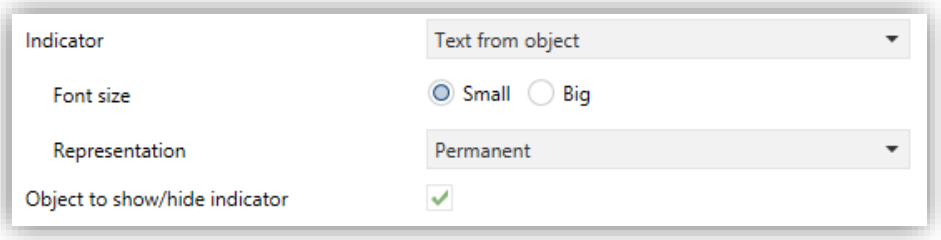

Figure 25. Display indicator – Text from object.

The text to be shown is to be received through the "**[Disp] [X] Text from object**" 14-byte communication object.

- **Font size** [*Small / Big*]: sets the font size of the text.

[Climate] Temperature

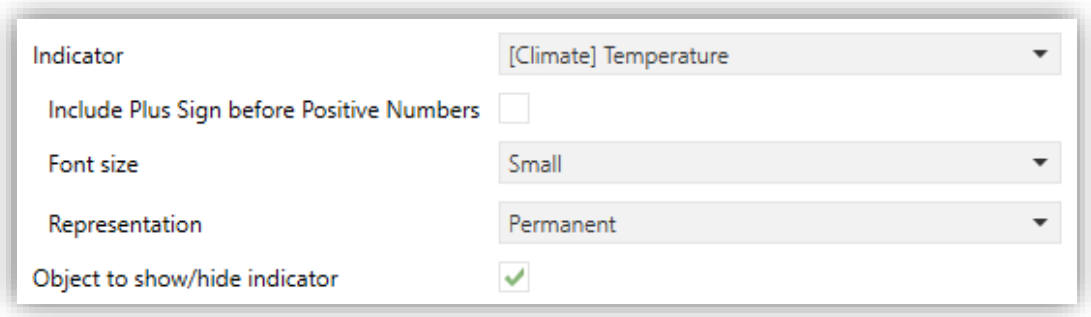

Figure 26 Display indicator – [Climate] Temperature.

The temperature needs to be updated through the "**[Disp] [X] (Climate) Temperature**" two-byte communication object.

- **Include Plus Sign before Positive Numbers** [*disabled/enabled*]: sets whether showing or not the "+" sign before positive temperature values.
- **Font size** [*Small / Big / Extra*]: sets the font size of the temperature label.

[Climate] Mode

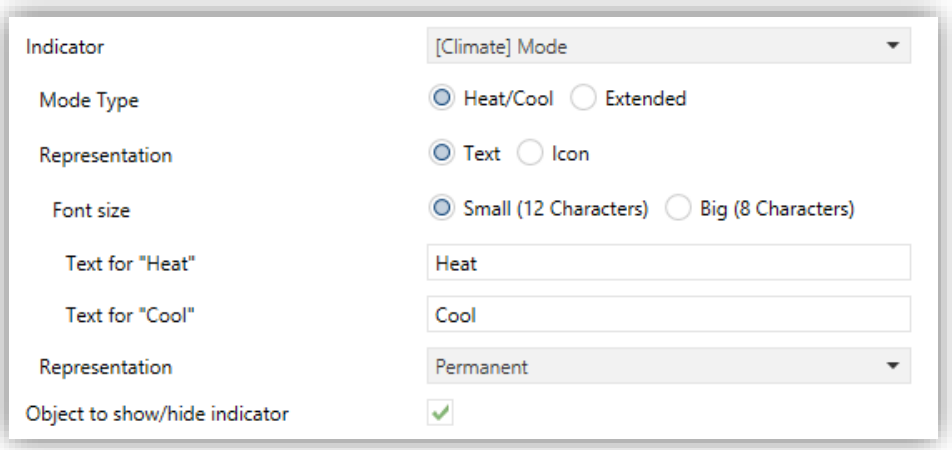

Figure 27. Display indicator – [Climate] Mode – Heat/Cool.

- **Mode Type**:
  - [*Heat/Cool*]: the icon (Heat or Cool) will depend on the value of the "**[Disp] [X] (Climate) Mode**" one-bit object.
  - [*Extended*]: the icon represented will depend on the value of the "**[Disp] [x] (Climate) Mode - Extended**" one-byte object. When selecting this type, five checkboxes appear to select which HVAC modes should be available: **Auto / Heat / Cool / Fan / Dry** (as shown in Figure 28).

- **Representation** [*Text / Icon*]: sets whether the mode is displayed by means of a preset text or icon. the representation. If "Text" is selected, the following parameters will appear:
  - **Font size** [*Small (12 Characters) / Big (8 Characters)*]: sets the font size of the texts.
  - **Text for each value:** sets the text to be displayed for each value.

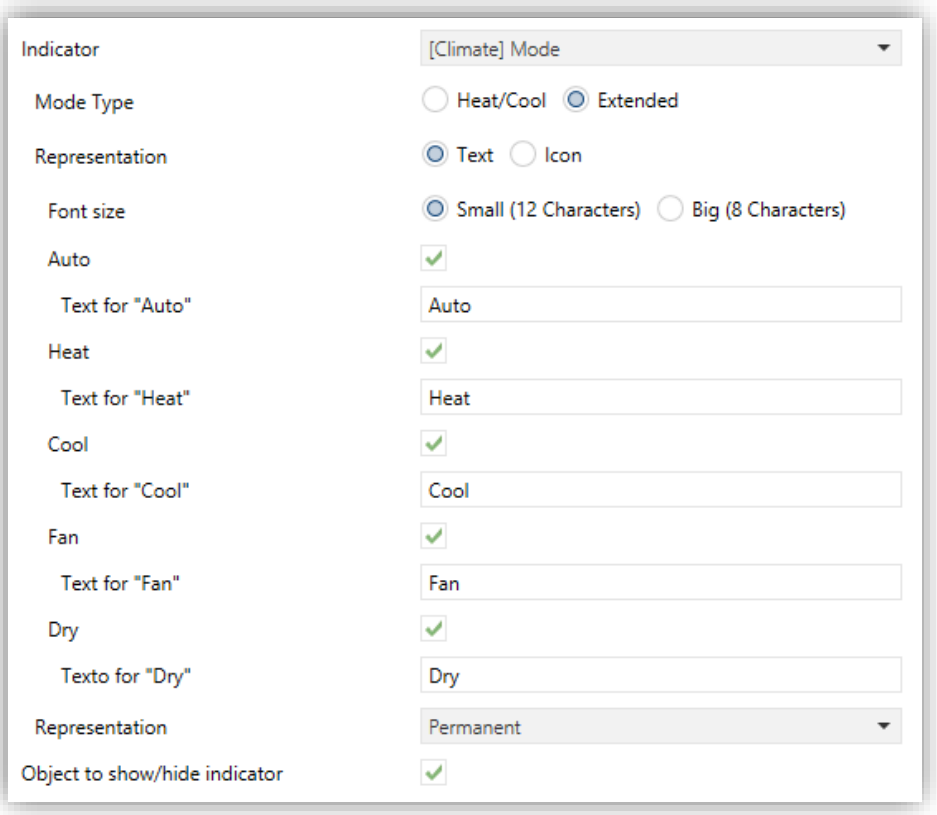

Figure 28. Display indicator – [Climate] Mode – Mode Type: Extended.

[Climate] Fan

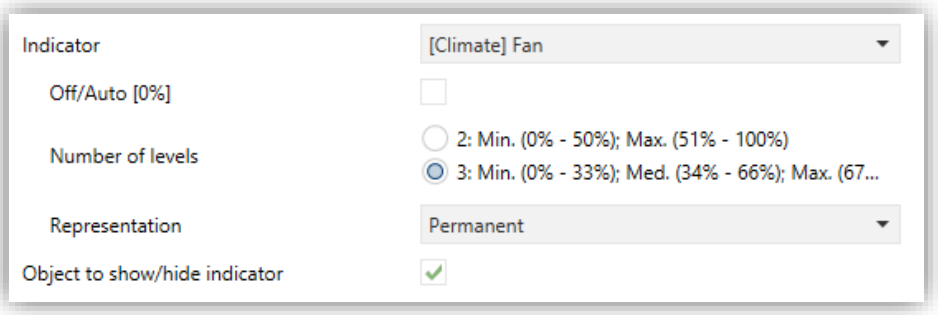

Figure 29. Display indicator – [Climate] Fan.

The value should be updated through the "**[Disp] [x] Fan**" one-byte communication object.

- **Off/Auto [0%]** [*enabled*/*disabled*]: defines whether the Off/Auto level is required to be represented or not. If enabled, the following parameter shows up:

- **How to show Off/Auto status?** [*Show Auto / Show Off / Clear the Box*]: sets how to represent the Auto/Off state.

- **Number of levels**: sets the number of fan speed levels. The available options depend on whether the Off/Auto level is enabled or not:

  - **If Off/Auto is enabled**:

    - [*1: Max. (1% - 100%)*]
    - [*2: Min. (1% - 50%); Max. (51% - 100%)*]
    - [*3: Min. (1% - 33%); Med. (34% - 66%); Max. (67% - 100%)*]

    The value 0% does not correspond to any level, but to the Off/Auto state.

  - **If Off/Auto is disabled**:

    - [*2: Min. (0% - 50%); Max. (51% - 100%)*]
    - [*3: Min. (0% - 33%); Med. (34% - 67%); Max. (68% - 100%)*]

[Climate] On/Off + Mode + Status

Figure 30. Display indicator – [Climate] On/Off + Mode + Status.

The icon to be represented depends on the value of three one-bit objects:

- "**[Disp] [x] (Climate) On/Off" = 0**: no icon is represented.

- **"[Disp] [x] (Climate) On/Off" = 1 and "[Disp] [x] (Climate) On/Off - Status" = 0**, it means that the climate system is on but stopped. The icon represented will depend on the mode selected through "**[Disp] [x] (Climate) On/Off - Mode**" (1 = Heat or 0 = Cool). The representation type will be Permanent.

- **If "[Disp] [x] (Climate) On/Off" = 1 and "[Disp] [x] (Climate) On/Off - Status" = 1**, it means that the climate is on and running. The icon represented will depend on the mode selected through "**[Disp] [x] (Climate) On/Off - Mode**"

(1 = Heat –with waves–, or 0 = Cool –with waves–). The representation type is Progressive.

Note: *for this indicator, the representation type cannot be configured. It is always permanent or progressive, depending on the value of the objects, as explained above.*

[Climate] Mode Special

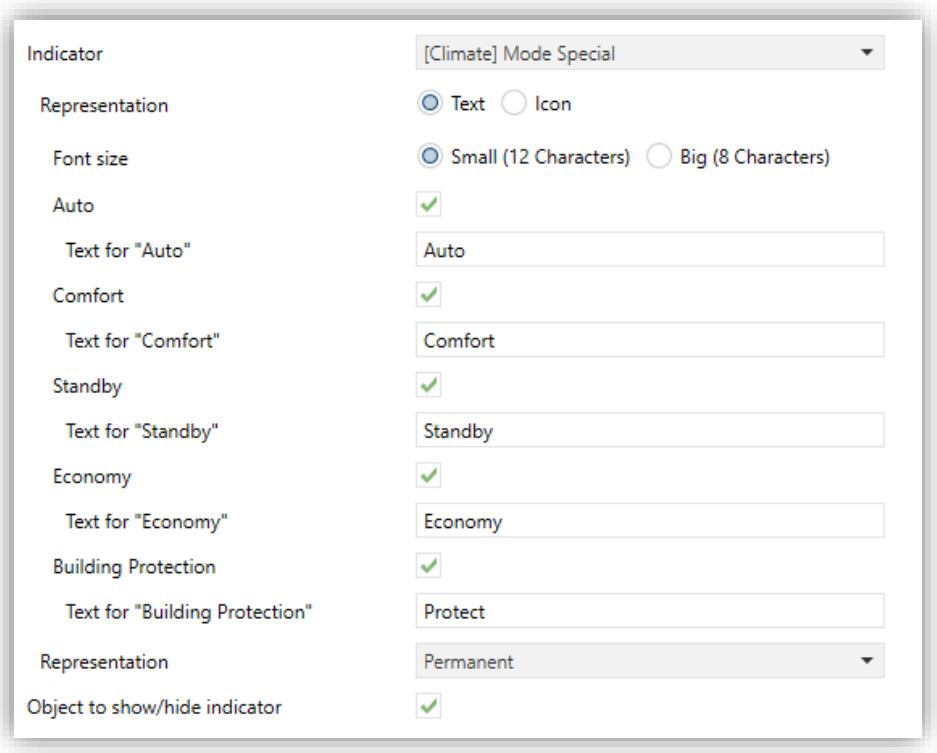

Figure 31. [Climate] Mode Special

- **Auto / Comfort / Standby / Economy / Building Protection** [*disabled*/*enabled*]: five checkboxes to select which of the special modes will be available.

- **Representation** [*Text / Icon*]: Sets whether the mode is displayed on screen by means of text or a preset icon. This representation depends on the value of the object in one byte "**[Disp] [x] (Climate) Mode Special**". If "Text" is selected, the following parameters will appear:

  - **Font size** [*Small (12 Characters) / Big (8 Characters)*]: sets the font size of the texts.

- **Text for each value:** sets the text to be displayed for each value.

2.3.4 DOUBLE

Double boxes have a size of 32 x 32 pixels, so the display can be divided into up to eight double boxes (two per zone).

Double boxes can be assigned exactly the same types of indicators as Single boxes (see section 2.3.3 for details).

The only differences between the two types of boxes are:

- The **maximum number of characters** allowed (up to 6 characters for double boxes; for single boxes the limit is 12 characters).
- The **font size** for some indicators. For example, the Extra size is not allowed for temperature indicators.

ETS PARAMETERISATION

When a display zone has been set to Double, a specific tab ("**Box Xn**") becomes available under "Display" in the tree on the left.

The textbox **INFO** also allows changing the default name of the tab in the left menu.

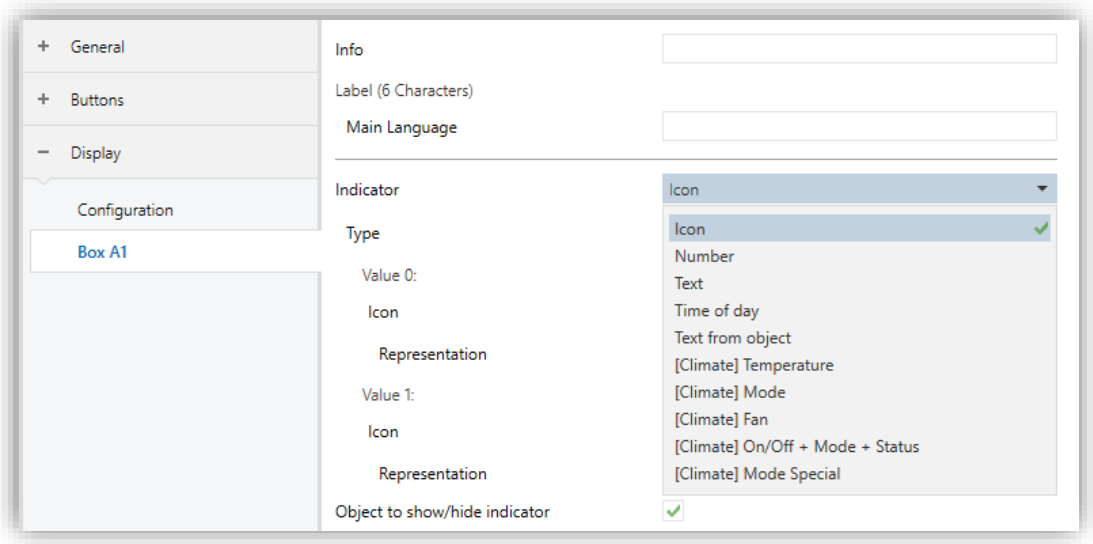

Figure 32. Display – Box a1.

The ETS parameterisation of each indicator is exactly the same as for Single boxes. See section 2.3.3 for details.

2.3.5 SETPOINT

Thermostat type display will have a larger central box (always enabled) for showing the setpoint temperature of an external thermostat. Displaying a second temperature, real temperature, is also possible.

On the other hand, at the top of the display, a moving icon is shown to indicate whether the thermostat is operating. The icon is displayed when a "1" is received through the binary object "**[Disp][Setpoint] Thermostat status**".

ETS PARAMETERISATION

When the display is configured as thermostat, a specific tab ("**Box B**") becomes available under "Display" in the tree on the left.

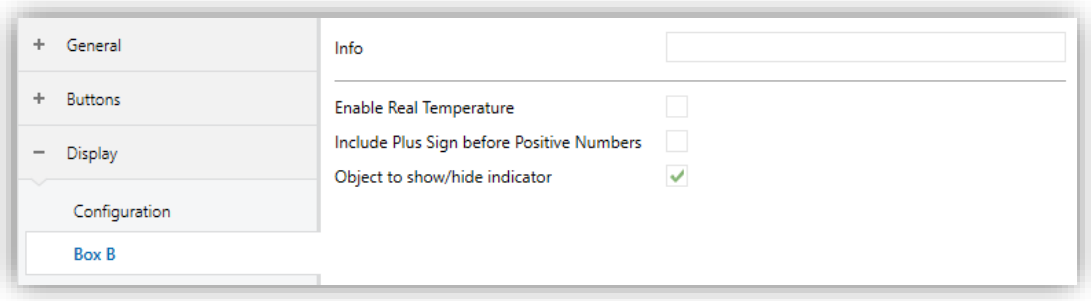

Figure 33. Display - Thermostat - Setpoint (Box B)

This tab contains the following parameters:

- **Setpoint Configuration**:
  - **Enable Real Temperature** [*disabled / enabled*]: when enabled the display will show, in addition to the setpoint temperature, the actual temperature. The following parameter will also appear:
    - **Main Temperature to Show** [*Setpoint / Real*]: sets whether the temperature displayed centered and larger is the setpoint or the actual temperature.

  The setpoint temperature is received through the object "**[Disp][Setpoint] Setpoint Temperature**" and the real temperature through the object "**[Disp][Setpoint] Real temperature**".

- **Include Plus Sign before Positive Numbers** [*disabled/enabled*]: sets whether showing or not the "+" sign before positive temperature values.

- **Object to show/hide indicator** [*enabled/disabled*].

2.3.6 FAN

Fan boxes show ventilation speed indicators on the right side of the screen in a vertical arrangement.

When this box is enabled, the 1-byte status object "**[Disp][Fan] Fan Indicator**" appears. The status object (which needs to be linked to the status object of the fan actuator) will express, in percentage, the value of the current fan level, which also determine the icon that will be shown on the box.

ETS PARAMETERISATION

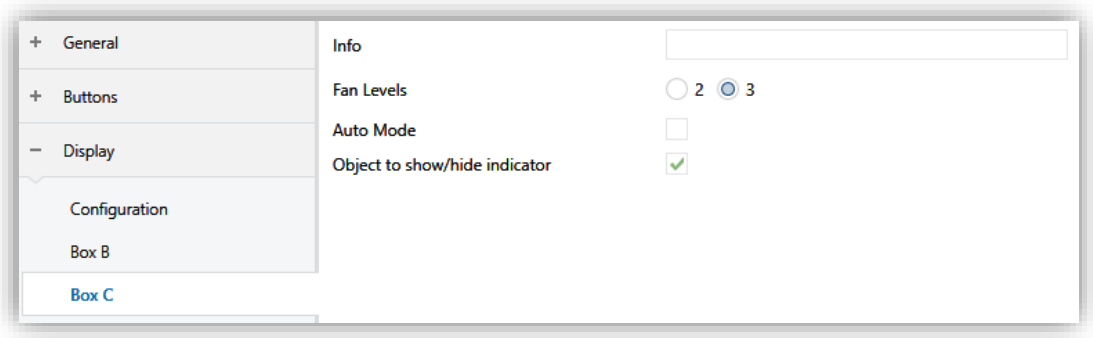

Figure 34. Display - Thermostat - Fan (Box C)

This tab contains the following parameters:

- **Fan Levels** [*2 / 3*]: sets the speed levels that will be available in the indicator.
- **Auto Mode** [*disabled/enabled*]: sets whether the fan Auto mode will be available. If checked, the Auto fan mode will be activated by switching to fan level 0% and the following parameter shows up:
  - **Dedicated Object for Auto Mode** [*disabled / enabled*]: marking the checkbox enables the 1-bit object "**[Disp][Fan] Auto Mode Value**", which will trigger the auto mode when it receives the corresponding value set in **Value to Activate Auto Mode** [*Receive 0 to Set Auto Mode / Receive 1 to Set Auto Mode*] and an arrow will be displayed next to the AUTO icon and next to the currently activated speed.

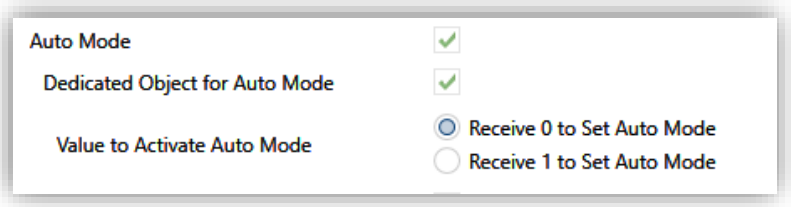

Figure 35. Thermostat Page - Fan - Auto Mode

- **Object to show/hide indicator** [*disabled / enabled*].

2.3.7 BORDERS

Divisions between the boxes can be drawn in three different styles: with **solid lines**, **dashed** (dotted), or **invisible** (without division line). This configuration may be common to all lines or separate for each, as shown in Figure 36.

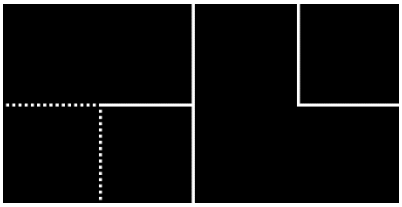

Figure 36. Borders – Different configuration for each border.

ETS PARAMETERISATION

After selecting "Customize every border" in the **Border lines** parameter (see section 2.3.1), a new tab will be incorporated into the tree on the left.

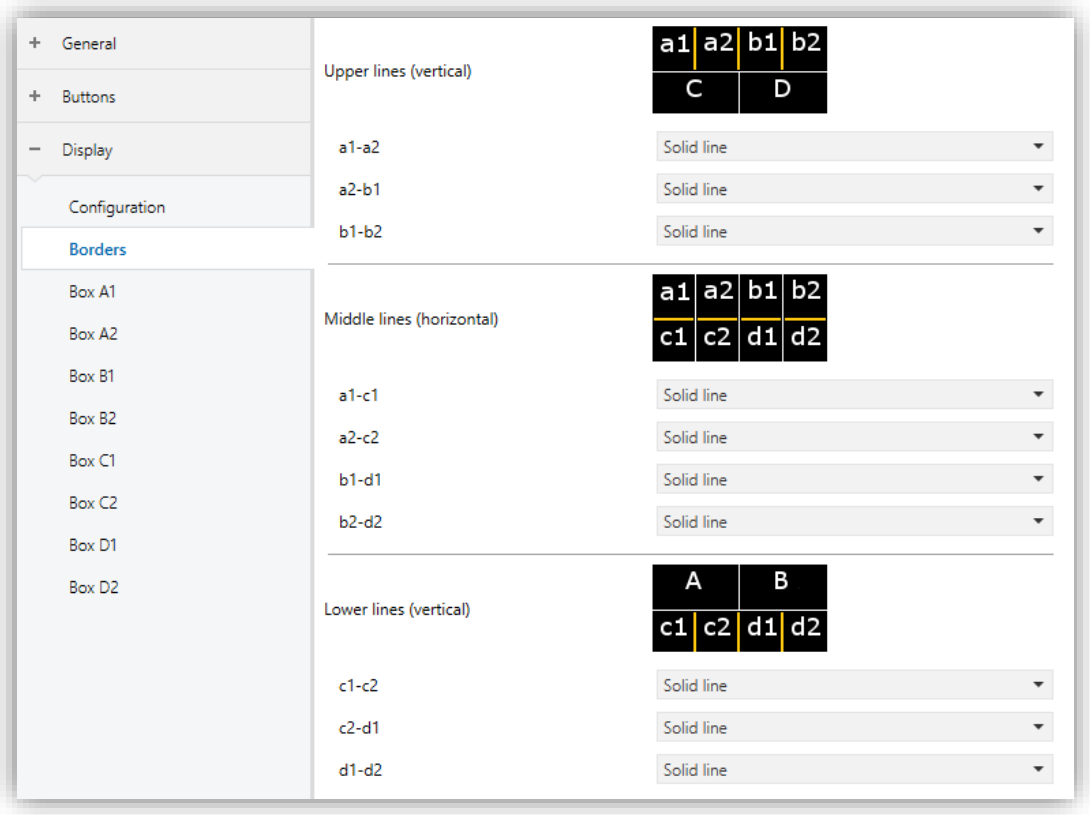

Figure 37. Display – Borders (Normal Page)

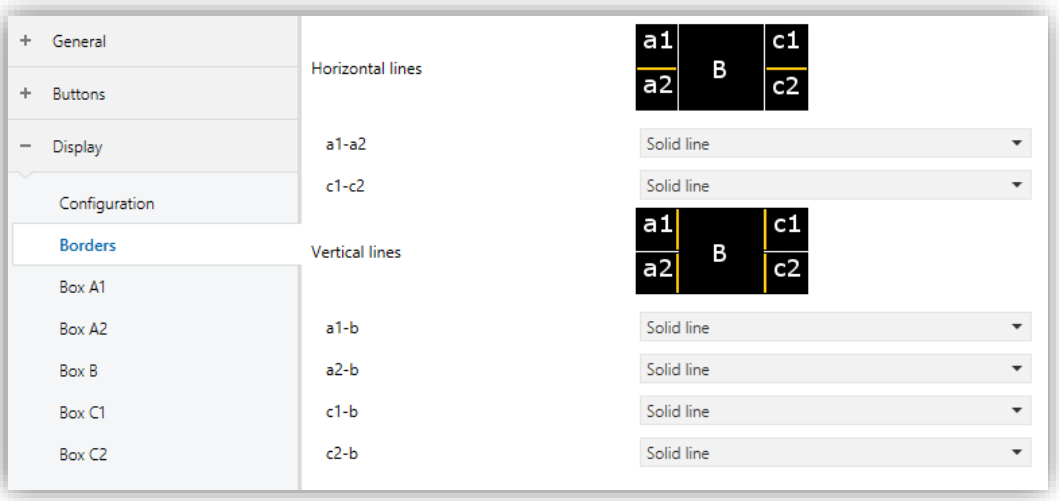

Figure 38. Display – Borders (Thermostat Page)

Depending on the page style selected in the "Configuration" tab (see section 2.3.1), this screen will be divided into the following parts:

- **Normal Page:**

  - **Upper lines (vertical)**: configures the upper vertical lines **a1-a2**, **a2-b1** and **b1-b2**.
  - **Middle lines (horizontal)**: configures the middle horizontal lines **a1-c1**, **a2-c2**, **b1-d1** and **b2-d2**.
  - **Lower lines (vertical)**: configures the lower vertical lines **c1-c2**, **c2-d1** and **d1-d2**.

- **Thermostat Page:**

  - **Horizontal lines:** configures the horizontal lines **a1-a2** y **c1-c2**.
  - **Vertical lines:** configures the vertical lines **a1-b**, **a2-b**, **c1-b** y **c2-b**.

The options available for all the lines are: [*Solid line / Invisible / Dotted line*].

2.4 INPUTS

Flat Display v2 incorporates **two analogue/digital inputs**, each configurable as a:

- **Binary Input**, for the connection of a pushbutton or a switch/sensor.
- **Temperature Probe**, for the connection of a temperature sensor from Zennio.
- **Motion Detector**, for the connection of a motion detector from Zennio.

2.4.1 BINARY INPUT

Please refer to the specific user manual "**Binary Inputs**", available in the Flat Display v2 product section, at the Zennio website (www.zennio.com).

2.4.2 TEMPERATURE PROBE

Please refer to the specific user manual "**Temperature Probe**", available in the Flat Display v2 product section, at the Zennio website (www.zennio.com).

2.4.3 MOTION DETECTOR

It is possible to connect motion detectors from Zennio to the input ports of Flat Display v2. This brings the device with the possibility of monitoring motion and presence in the room. Depending on the detection, different response actions can be parameterised.

Please refer to the specific "**Motion Detector**" user manual (available in the Flat Display v2 product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.5 THERMOSTAT

Flat Display v2 implements **one Zennio thermostat** which can be enabled and fully customised.

Please refer to the specific manual "**Zennio Thermostat**" (available in the Flat Display v2 product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.6 HUMIDITY

Flat Display v2 is capable of measure and monitor humidity measurements, as well as **send these values to the bus** and **report high / low humidity situations**. To that end, it is necessary to configure a set of parameters.

Please refer to the "**Humidity**" user manual, available in the Flat Display v2 product section, at the Zennio website (www.zennio.com).

ANNEX I. COMMUNICATION OBJECTS

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

Number	Size	I/O	Flags	Data type (DPT)	Functional Range	Name	Function
1	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Object to Send '1'	Sending of '1' Periodically
2	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 0
3	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 1
4	3 Bytes	I	C - W T U	DPT_TimeOfDay	00:00:00 - 23:59:59	[General] Time of Day	Time of Day External Reference
5	3 Bytes	I	C - W T U	DPT_Date	01/01/1990 - 31/12/2089	[General] Date	Date External Reference
6	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[General] Scene: Receive	0-63 (Run Scene 1-64)
7	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[General] Scene: Send	0-63/128-191 (Run/Save Scene 1-64)
8	1 Bit	I	C - W - -	DPT_State	0/1	[General] Activity	0 = Inactivity; 1 = Activity
9	1 Bit	I	C - W T U	DPT_Enable	0/1	[General] Touch Locking	0 = Unlock; 1 = Lock
	1 Bit	I	C - W T U	DPT_Enable	0/1	[General] Touch Locking	0 = Lock; 1 = Unlock
10	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Cleaning Function	0 = Nothing; 1 = Clean Now
11	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[General] External Temperature	Temperature to Be Shown
12	1 Bit	I	C - W - -	DPT_DayNight	0/1	[General] Backlight Mode	0 = Night Mode; 1 = Normal Mode
	1 Bit	I	C - W - -	DPT_DayNight	0/1	[General] Backlight Mode	0 = Normal Mode; 1 = Night Mode
13	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[General] Display - Brightness	0% ... 100%
14	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[General] Display - Contrast	0% ... 100%
15	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Proximity Sensor	0 = Disable; 1 = Enable
16	1 Bit	I	C - W - -	DPT_Start	0/1	[General] External Proximity Detection	1 = Detection
17	1 Bit		C - - T -	DPT_Start	0/1	[General] Proximity Detection	Send 1 when Proximity is Detected
18	1 Bit		C - - T -	DPT_Bool	0/1	[General] Luminosity (1-Bit)	0 = Over Threshold; 1 = Under Threshold
	1 Bit		C - - T -	DPT_Bool	0/1	[General] Luminosity (1-Bit)	0 = Under Threshold; 1 = Over Threshold
19	1 Byte	O	C R - - -	DPT_Scaling	0% - 100%	[General] Luminosity (Percentage)	0% ... 100%
20	2 Bytes	O	C R - - -	DPT_Value_Lux		[General] Luminosity (Lux)	0 Lux ... 670760 Lux
21	1 Bit	I	C - W T -	DPT_Switch	0/1	[General] Welcome Greeting	0 = Finish Welcome; 1 = Run Welcome
22, 23, 24, 25	14 Bytes	I	C - W - -	DPT_String_UTF-8		[General] Welcome Greeting - Line x	Text to Show on the Display at Line x

26	1 Byte	I	C - W - -	1.xxx	0/1	[General] Translations - Select Language	0 = Main; 1 = Lang. 2; ...; 4 = Lang. 5
27	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Translations - Main Language	0 = Nothing; 1 = Choose this Language
28, 29, 30, 31	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Translations - Language x	0 = Nothing; 1 = Choose this Language
32	2 Bytes	I	C - W - -	DPT_LanguageCodeAlpha 2_ASCII		[General] Translations - Select Language	Language Selection Through ISO 639-1 Two Letters Code
33	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Disable Sound; 1 = Enable Sound
	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Enable Sound; 1 = Disable Sound
34	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	0 = Play Doorbell Sound; 1 = Nothing
	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	0 = Nothing; 1 = Play Doorbell Sound
35	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	0 = Start Alarm; 1 = Stop Alarm
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	0 = Stop Alarm; 1 = Start Alarm
36	1 Bit		C - - T -	DPT_Switch	0/1	[General] Welcome Back Object	Switch Object Sent on Wake Up
37, 38, 39, 40, 41	1 Bit	I	C - W - -	DPT_Switch	0/1	[General] Welcome Back Object - Additional Condition	Additional Condition Object x
42	1 Bit	I	C - W T U	DPT_Switch	0/1	[General] Temperature Scale	0 = ºC; 1 = ºF
43, 50, 57, 64, 71	1 Bit		C - - T -	DPT_Switch	0/1	[Btn][Ix] Light - On/Off	(Short press) Switch between On and Off
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Ix] Shutter - Stop/Step	(Short press) 0 = Stop shutter/Step up; 1 = Stop shutter/Step down
	1 Bit		C - - T -	DPT_Trigger	0/1	[Btn][Ix] Shutter - Stop	(End pressing) Stop shutter
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Switch: "0"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Switch: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Switch: "0/1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Hold & Release	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Short Press: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Short Press: "0"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Short Press: "0/1"	1-Bit Generic Control
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Ix] Fan Control (Type: 1-Bit)	0 = Decrease; 1 = Increase
44, 51, 58, 65, 72	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Long press) 0 = Up; 1 = Down
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Start pressing) Switch between up and down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Long Press: "1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Long Press: "0"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Two Objects - Long Press: "0/1"	1-Bit Generic Control
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Fan Control - Auto Mode	Switch Auto Mode on Short Press
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] Fan Control - Auto Mode	Switch Auto Mode on Long Press
45, 52, 59, 66, 73	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] LED On/Off	0 = Off; 1 = On

	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] LED On/Off	0 = On; 1 = Off
46, 53, 60, 67, 74	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Btn][Ix] Light - Dimming	(Long press) Switch between dimming up and down
47, 54, 61, 68, 75	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Enumeration	Rotating value change
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Shutter Position	0 - 100 %
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Light Dimming (Status)	0 - 100 %
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] 1-Byte Unsigned Int Value	0 ... 255
	1 Byte	I	C - W T -	DPT_Value_1_Count	-128 - 127	[Btn][Ix] 1-Byte Signed Int Value	-128 ... 127
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Two Objects - Short Press: (1-Byte)	Send Selected 1-Byte Value on Short Press
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] 1-Byte Scaling Value	0% ... 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	50%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	1, 2
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	1, 2, 3
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	1, 2, 3, 4
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	1, 2, 3, 4, 5
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	0, 1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	0, 1, 2, 3, 4, 5
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	0, 1, 2, 3, 4
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	0, 1, 2, 3

	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	0, 1, 2
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	0%, 20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	0%, 33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	0%, 50%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	0%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	0%, 25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	Auto, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	Auto, 20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	Auto, 25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	Auto, 33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Control (Type: Scaling)	Auto, 50%, 100%
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	Auto, 1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	Auto, 1, 2
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	Auto, 1, 2, 3
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	Auto, 1, 2, 3, 4
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Control (Type: Enumeration)	Auto, 1, 2, 3, 4, 5
	1 Byte	I	C - W T -	DPT_SceneNumber	0 - 63	[Btn][Ix] Scene: Send	0-63 (Run Scene 1-64)
	1 Byte	I	C - W T -	DPT_SceneControl	0-63; 128-191	[Btn][Ix] Scene: Send	0-63/128-191 (Run/Save Scene 1-64)
	1 Byte	I	C - W T -	1.xxx	0/1	[Btn][Ix] Room State	0 = Normal; 1 = Make-up room; 2 = Do not disturb
48, 55, 62, 69, 76	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Two Objects - Long Press: (1-Byte)	Send Selected 1-Byte Value on Long Press
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Fan Indicator	0% ... 100%
	1 Byte	I	C - W T -	DPT_Fan_Stage	0 - 255	[Btn][Ix] Fan Indicator	Enumerated Value
49, 56, 63, 70, 77	2 Bytes	I	C - W T -	DPT_Value_2_Ucount	0 - 65535	[Btn][Ix] 2-Byte Unsigned Int Value	0 ... 65535
	2 Bytes	I	C - W T -	DPT_Value_2_Count	-32768 - 32767	[Btn][Ix] 2-Byte Signed Int Value	-32768 ... 32767
	2 Bytes	I	C - W T -	9.xxx	-671088.64 - 670433.28	[Btn][Ix] 2-Byte Float Value	-671088.64 ... 670760.96
78, 85	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Left = 0; Right = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Short press	Left = 1; Right = 0
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Short press	Left = 0; Right = 1
	1 Bit		C - - T -	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short press) Left = Off; Right = On
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short press) Left = Stop/Step down; Right = Stop/Step up

	1 Bit		C - - T -	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End pressing) Left = Stop-down; Right = Stop-up
	1 Bit	I	C - W T -	DPT_Heat_Cool	0/1	[Btn][Px] (Climate) Mode	Left = Cool; Right = Heat
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Left = 1; Right = 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short press) Left = On; Right = Off
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short press) Left = Stop/Step up; Right = Stop/Step down
	1 Bit		C - - T -	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End pressing) Left = Stop-up; Right = Stop-down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Multimedia	Left = Stop/Backward; Right = Start/Forward
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Multimedia	Left = Start/Forward; Right = Stop/Backward
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Px] Fan Control (Type: 1-Bit)	0 = Decrease; 1 = Increase
79, 86	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long press	Left = 0; Right = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long press	Left = 1; Right = 0
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long press) Left = Down; Right = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start pressing) Left = Down; Right = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long press) Left = Up; Right = Down
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start pressing) Left = Up; Right = Down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Fan Control - Auto Mode	Switch Auto Mode on Long Press
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Fan Control - Auto Mode	Switch Auto Mode on Short Press
80, 87	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] LED On/Off	0 = On; 1 = Off
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] LED On/Off	0 = Off; 1 = On
81, 88	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long press) Left = Darker; Right = Brighter
	4 Bit	I	C - W T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long press) Left = Brighter; Right = Darker

82, 89	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Px] Scaling	Left = Decrease percentage; Right = Increase percent.
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Px] Scaling	Left = Increase percentage; Right = Decrease percent.
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Px] Counter - 1-Byte unsigned	Left = Decrease; Right = Increase
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Px] Counter - 1-Byte unsigned	Left = Increase; Right = Decrease
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Px] Enumeration	Rotating value change on short press
	1 Byte	I	C - W T -	DPT_HVACContrMode	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	[Btn][Px] (Climate) Mode - Extended	Rotating change of selected modes on short press
	1 Byte	I	C - W T -	DPT_Value_1_Count	-128 - 127	[Btn][Px] Counter - 1-Byte signed	Left = Decrease; Right = Increase
	1 Byte	I	C - W T -	DPT_Value_1_Count	-128 - 127	[Btn][Px] Counter - 1-Byte signed	Left = Increase; Right = Decrease
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Px] Light Dimming (Status)	0 - 100 %
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	50%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	1, 2
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	1, 2, 3
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	1, 2, 3, 4
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	1, 2, 3, 4, 5
	1 Byte	I	C - W T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Btn][Px] (Climate) Special Mode Control	Auto, Comfort, Standby, Economy, Building Protection
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	0, 1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	0, 1, 2, 3, 4, 5
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	0, 1, 2, 3, 4

	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	0, 1, 2, 3
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	0, 1, 2
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	0%, 20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	0%, 33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	0%, 50%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	0%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	0%, 25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	Auto, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	Auto, 20%, 40%, 60%, 80%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	Auto, 25%, 50%, 75%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	Auto, 33%, 67%, 100%
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Control (Type: Scaling)	Auto, 50%, 100%
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	Auto, 1
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	Auto, 1, 2
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	Auto, 1, 2, 3
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	Auto, 1, 2, 3, 4
	1 Byte		C - - T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Control (Type: Enumeration)	Auto, 1, 2, 3, 4, 5
83, 90	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Px] Fan Indicator	0% ... 100%
	1 Byte	I	C - W T -	DPT_Fan_Stage	0 - 255	[Btn][Px] Fan Indicator	Enumerated Value
84, 91	2 Bytes	I	C - W T -	DPT_Value_2_Count	-32768 - 32767	[Btn][Px] Counter - 2-Byte signed	Left = Decrease; Right = Increase
	2 Bytes	I	C - W T -	DPT_Value_2_Count	-32768 - 32767	[Btn][Px] Counter - 2-Byte signed	Left = Increase; Right = Decrease
	2 Bytes	I	C - W T -	9.xxx	-671088.64 - 670433.28	[Btn][Px] Float	Left = Decrease; Right = Increase
	2 Bytes	I	C - W T -	9.xxx	-671088.64 - 670433.28	[Btn][Px] Float	Left = Increase; Right = Decrease
	2 Bytes	I	C - W T -	DPT_Value_Temp	-273.00º - 670433.28º	[Btn][Px] (Climate) Temperature setpoint	Left = Decrease; Right = Increase
	2 Bytes	I	C - W T -	DPT_Value_Temp	-273.00º - 670433.28º	[Btn][Px] (Climate) Temperature setpoint	Left = Increase; Right = Decrease
	2 Bytes	I	C - W T -	DPT_Value_2_Ucount	0 - 65535	[Btn][Px] Counter - 2-Byte unsigned	Left = Decrease; Right = Increase
	2 Bytes	I	C - W T -	DPT_Value_2_Ucount	0 - 65535	[Btn][Px] Counter - 2-Byte unsigned	Left = Increase; Right = Decrease
92, 108, 124, 140	1 Bit	I	C - W - -	DPT_Switch	0/1	[Disp][a] Show/Hide Box	0 = Hide Box; 1 = Show Box
92, 100, 108, 116, 124, 132, 140, 148	1 Bit	I	C - W - -	DPT_Switch	0/1	[Disp][ax] Show/Hide Box	0 = Hide Box; 1 = Show Box

93, 109, 125, 141	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Disp][a] (Climate) Mode	Mode Indicator Is Shown (0 = Cool; 1 = Heat)
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][a] (Climate) On/Off	0 = Off (hide indicator); 1 = On (show mode or status)
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][a] Text - 1-Bit	Parameterized text shown on new value reception
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][a] Icon - 1-Bit	Selected icon shown on new value reception
93, 101, 109, 117, 125, 133, 141, 149	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][ax] Icon - 1-Bit	Selected icon shown on new value reception
	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Disp][ax] (Climate) Mode	Mode Indicator Is Shown (0 = Cool; 1 = Heat)
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][ax] Text - 1-Bit	Parameterized text shown on new value reception
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][ax] (Climate) On/Off	0 = Off (hide indicator); 1 = On (show mode or status)
94, 110, 126, 142	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Disp][a] (Climate) On/Off - Mode	0 = Cool; 1 = Heat. (Mode Indicator Is Shown when On/Off = 1, and Status = 0)
94, 102, 110, 118, 126, 134, 142, 150	1 Bit	I	C - W T U	DPT_Heat_Cool	0/1	[Disp][ax] (Climate) On/Off - Mode	0 = Cool; 1 = Heat. (Mode Indicator Is Shown when On/Off = 1, and Status = 0)
95, 111, 127, 143	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][a] (Climate) On/Off - Status	0 = Halted; 1 = Running. (Status icon is shown when On/Off = 1, and Status = 1)
95, 103, 111, 119, 127, 135, 143, 151	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][ax] (Climate) On/Off - Status	0 = Halted; 1 = Running. (Status icon is shown when On/Off = 1, and Status = 1)
96, 112, 128, 144	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Number - Scaling	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][a] Number - Counter (1-Byte unsigned)	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_Value_1_Count	-128 - 127	[Disp][a] Number - Counter (1-Byte signed)	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][a] Text - Enumeration	Parameterized text shown on new value reception
	1 Byte	I	C - W T U	DPT_HVACContrMode	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	[Disp][a] (Climate) Mode - Extended	Mode Indicator Is Shown
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Fan	2 levels: Min. (0% - 50%); Max. (51% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Fan	3 levels: Min. (0% - 33%); Med. (34% - 66%); Max. (67% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Fan	Off/Auto + 1 level: Off/Auto = 0%; Max. (1% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Fan	Off/Auto + 2 levels: Off/Auto = 0%; Min. (1% - 50%); Max. (51% - 100%)

	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][a] Fan	Off/Auto + 3 levels: Off/Auto = 0%; Min. (1% - 33%); Med. (34% - 66%); Max. (67% - 100%)
96, 104, 112, 120, 128, 136, 144, 152	1 Byte	I	C - W T U	DPT_HVACContrMode	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	[Disp][ax] (Climate) Mode - Extended	Mode Indicator Is Shown
96, 112, 128, 144	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][a] Icon - Enumeration	Selected icon shown on new value reception
96, 104, 112, 120, 128, 136, 144, 152	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Fan	3 levels: Min. (0% - 33%); Med. (34% - 66%); Max. (67% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Fan	2 levels: Min. (0% - 50%); Max. (51% - 100%)
	1 Byte	I	C - W T U	DPT_Value_1_Count	-128 - 127	[Disp][ax] Number - Counter (1-Byte signed)	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][ax] Number - Counter (1-Byte unsigned)	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Number - Scaling	Object numeric value is shown
	1 Byte	I	C - W T U	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Disp][ax] (Climate) Mode Special	Mode Indicator Is Shown
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][ax] Text - Enumeration	Parameterized text shown on new value reception
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Fan	Off/Auto + 2 levels: Off/Auto = 0%; Min. (1% - 50%); Max. (51% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Fan	Off/Auto + 3 levels: Off/Auto = 0%; Min. (1% - 33%); Med. (34% - 66%); Max. (67% - 100%)
	1 Byte	I	C - W T U	DPT_Value_1_Ucount	0 - 255	[Disp][ax] Icon - Enumeration	Selected icon shown on new value reception
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][ax] Fan	Off/Auto + 1 level: Off/Auto = 0%; Max. (1% - 100%)
96, 112, 128, 144	1 Byte	I	C - W T U	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Disp][a] (Climate) Mode Special	Mode Indicator Is Shown
97, 113, 129, 145	2 Bytes	I	C - W T U	DPT_Value_2_Ucount	0 - 65535	[Disp][a] Number - Counter (2-Byte unsigned)	Object numeric value is shown
	2 Bytes	I	C - W T U	DPT_Value_2_Count	-32768 - 32767	[Disp][a] Number - Counter (2-Byte signed)	Object numeric value is shown
	2 Bytes	I	C - W T U	9.xxx	-671088.64 - 670433.28	[Disp][a] Number - Float (2-Byte)	Object numeric value is shown

	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Disp][a] (Climate) Temperature	Object value is shown (-99ºC to 199ºC)
97, 105, 113, 121, 129, 137, 145, 153	2 Bytes	I	C - W T U	DPT_Value_2_Ucount	0 - 65535	[Disp][ax] Number - Counter (2-Byte unsigned)	Object numeric value is shown
	2 Bytes	I	C - W T U	DPT_Value_2_Count	-32768 - 32767	[Disp][ax] Number - Counter (2-Byte signed)	Object numeric value is shown
	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Disp][ax] (Climate) Temperature	Object value is shown (-99ºC to 199ºC)
	2 Bytes	I	C - W T U	9.xxx	-671088.64 - 670433.28	[Disp][ax] Number - Float (2-Byte)	Object numeric value is shown
98, 114, 130, 146	4 Bytes	I	C - W T U	DPT_Value_4_Ucount	0 - 4294967295	[Disp][a] Number - Counter (4-Byte unsigned)	Object numeric value is shown
	4 Bytes	I	C - W T U	DPT_Value_4_Count	-2147483648 - 2147483647	[Disp][a] Number - Counter (4-Byte signed)	Object numeric value is shown
98, 106, 114, 122, 130, 138, 146, 154	4 Bytes	I	C - W T U	DPT_Value_4_Count	-2147483648 - 2147483647	[Disp][ax] Number - Counter (4-Byte signed)	Object numeric value is shown
	4 Bytes	I	C - W T U	DPT_Value_4_Ucount	0 - 4294967295	[Disp][ax] Number - Counter (4-Byte unsigned)	Object numeric value is shown
99, 115, 131, 147	14 Bytes	I	C - W T U	DPT_String_UTF-8		[Disp][a] Text from object	Received text is shown
99, 107, 115, 123, 131, 139, 147, 155	14 Bytes	I	C - W T U	DPT_String_UTF-8		[Disp][ax] Text from object	Received text is shown
108	1 Bit	I	C - W - -	DPT_Switch	0/1	[Disp][Setpoint] Show/Hide Box	0 = Hide Box; 1 = Show Box
113, 121	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Disp][Setpoint] Real Temperature	-99ºC ... 199ºC
	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Disp][Setpoint] Setpoint Temperature	-99ºC ... 199ºC
124	1 Bit	I	C - W - -	DPT_Switch	0/1	[Disp][Fan] Show/Hide Box	0 = Hide Box; 1 = Show Box
125	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][Fan] Auto Mode Value	Auto Mode With 0
	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][Fan] Auto Mode Value	Auto Mode With 1
128	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][Fan] Fan Indicator	3 levels: Min. (0% - 33%); Med. (34% - 66%); Max. (67% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][Fan] Fan Indicator	2 levels: Min. (0% - 50%); Max. (51% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][Fan] Fan Indicator	Auto + 3 levels: Auto = 0%; Min. (1% - 33%); Med. (34% - 66%); Max. (67% - 100%)
	1 Byte	I	C - W T U	DPT_Scaling	0% - 100%	[Disp][Fan] Fan Indicator	Auto + 2 levels: Auto = 0%; Min. (1% - 50%); Max. (51% - 100%)
141	1 Bit	I	C - W - -	DPT_Enable	0/1	[Disp] Alarm Enable	0 = Disable; 1 = Enable
	1 Bit	I	C - W - -	DPT_Enable	0/1	[Disp] Alarm Enable	0 = Enable; 1 = Disable
142	1 Bit	I	C - W T U	DPT_Alarm	0/1	[Disp] Alarm	0 = No Alarm; 1 = Alarm

	1 Bit	I	C - W T U	DPT_Alarm	0/1	[Disp] Alarm	0 = Alarm; 1 = No Alarm
149	1 Bit	I	C - W T U	DPT_Switch	0/1	[Disp][Setpoint] Thermostat State	0 = Off; 1 = On
156, 160	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Ix] Current Temperature	Temperature Sensor Value
157, 161	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overcooling	0 = No Alarm; 1 = Alarm
158, 162	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overheating	0 = No Alarm; 1 = Alarm
159, 163	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Probe Error	0 = No Alarm; 1 = Alarm
164	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Internal Temp. Probe] Current Temperature	Temperature Sensor Value
165	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Internal Temp. Probe] Overcooling	0 = No Alarm; 1 = Alarm
166	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Internal Temp. Probe] Overheating	0 = No Alarm; 1 = Alarm
167, 173	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Input Lock	0 = Unlock; 1 = Lock
168, 174	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 0	Sending of 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Short Press] 0/1 Switching	Switching 0/1
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Short Press] Brighter	Increase Brightness
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%)	[Ix] [Short Press] Darker	Decrease Brightness

					... 0xF (Inc. by 1%)		
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Short Press] Brighter/Darker	Switch Bright/Dark
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light On	Sending of 1 (On)
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Short Press] Light On/Off	Switching 0/1
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Run Scene	Sending of 0 - 63
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Save Scene	Sending of 128 - 191
	1 Bit	I/O	C R W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] Edge	Sending of 0 or 1
	1 Byte		C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Short Press] Constant Value (Integer)	0 - 255
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Constant Value (Percentage)	0% - 100%
	2 Bytes		C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Short Press] Constant Value (Integer)	0 - 65535
	2 Bytes		C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Short Press] Constant Value (Float)	Float Value
169, 175	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Dimming Status (Input)	0% - 100%
170, 176	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 0	Sending of 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Long Press] 0/1 Switching	Switching 0/1
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)

	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Brighter	Long Pr. -> Brighter; Release -> Stop
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Darker	Long Pr. -> Darker; Release -> Stop
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Brighter/Darker	Long Pr. -> Brighter/Darker; Release -> Stop
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light On	Sending of 1 (On)
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Long Press] Light On/Off	Switching 0/1
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Run Scene	Sending of 0 - 63
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Save Scene	Sending of 128 - 191
	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] [Switch/Sensor] Alarm: Breakdown or Sabotage	1 = Alarm; 0 = No Alarm
	2 Bytes		C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Long Press] Constant Value (Float)	Float Value
	2 Bytes		C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Long Press] Constant Value (Integer)	0 - 65535
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Constant Value (Percentage)	0% - 100%
	1 Byte		C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Long Press] Constant Value (Integer)	0 - 255

171, 177	1 Bit		C - - T -	DPT_Trigger	0/1	[Ix] [Long Press/Release] Stop Shutter	Release -> Stop Shutter
172, 178	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Shutter Status (Input)	0% = Top; 100% = Bottom
179	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[Motion Detector] Scene Input	Scene Value
180	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Motion Detector] Scene Output	Scene Value
181, 210	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Luminosity	0-100%
182, 211	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Open Circuit Error	0 = No Error; 1 = Open Circuit Error
183, 212	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Short Circuit Error	0 = No Error; 1 = Short Circuit Error
184, 213	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Presence State (Scaling)	0-100%
185, 214	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix] Presence State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
186, 215	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix] Presence State (Binary)	Binary Value
	1 Bit	O	C R - T -	DPT_Start	0/1	[Ix] Presence: Slave Output	1 = Motion Detected
187, 216	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Ix] Presence Trigger	Binary Value to Trigger the Presence Detection
188, 217	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] Presence: Slave Input	0 = Nothing; 1 = Detection from slave device
189, 218	2 Bytes	I	C - W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Waiting Time	0-65535 s.
190, 219	2 Bytes	I	C - W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Listening Time	1-65535 s.
191, 220	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Presence: Enable	According to parameters
192, 221	1 Bit	I	C - W - -	DPT_DayNight	0/1	[Ix] Presence: Day/Night	According to parameters
193, 222	1 Bit	O	C R - T -	DPT_Occupancy	0/1	[Ix] Presence: Occupancy State	0 = Not Occupied; 1 = Occupied
194, 223	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] External Motion Detection	0 = Nothing; 1 = Motion detected by an external sensor
195, 200, 205, 224, 229, 234	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] [ax] Detection State (Scaling)	0-100%
196, 201, 206, 225, 230, 235	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix] [ax] Detection State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
197, 202, 207, 226, 231, 236	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix] [ax] Detection State (Binary)	Binary Value
198, 203, 208, 227, 232, 237	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] [ax] Enable Channel	According to parameters
199, 204, 209, 228, 233, 238	1 Bit	I	C - W - -	DPT_Switch	0/1	[Ix] [ax] Force State	0 = No Detection; 1 = Detection
239	1 Byte	I	C - W - -	DPT_SceneControl	0-63; 128-191	[Thermostat] Scene Input	Scene Value

240	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 1	External Sensor Temperature
241	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 2	External Sensor Temperature
242	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Effective Temperature	Effective Control Temperature
243	1 Byte	I	C - W - -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode	1-Byte HVAC Mode
244	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Comfort	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Comfort	0 = Off; 1 = On
245	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Standby	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Standby	0 = Off; 1 = On
246	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Economy	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Economy	0 = Off; 1 = On
247	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Protection	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Protection	0 = Off; 1 = On
248	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Tx] Window Status (Input)	0 = Closed; 1 = Open
249	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Tx] Comfort Prolongation	0 = Nothing; 1 = Timed Comfort
250	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode Status	1-Byte HVAC Mode
251	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint	Thermostat Setpoint Input
	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint	Reference Setpoint
252	1 Bit	I	C - W - -	DPT_Step	0/1	[Tx] Setpoint Step	0 = Decrease Setpoint; 1 = Increase Setpoint
253	2 Bytes	I	C - W - -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset	Float Offset Value
254	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint Status	Current Setpoint
255	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint Status	Current Basic Setpoint
256	2 Bytes	O	C R - T -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset Status	Current Setpoint Offset
257	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Setpoint Reset	Reset Setpoint to Default
	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Offset Reset	Reset Offset
258	1 Bit	I	C - W - -	DPT_Heat_Cool	0/1	[Tx] Mode	0 = Cool; 1 = Heat

259	1 Bit	O	C R - T -	DPT_Heat_Cool	0/1	[Tx] Mode Status	0 = Cool; 1 = Heat
260	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] On/Off	0 = Off; 1 = On
261	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] On/Off Status	0 = Off; 1 = On
262	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Cool)	0 = System 1; 1 = System 2
263	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Heat)	0 = System 1; 1 = System 2
264	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Cool)	0 = Disable; 1 = Enable
265	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Heat)	0 = Disable; 1 = Enable
266, 272	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Cool)	PI Control (Continuous)
267, 273	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Heat)	PI Control (Continuous)
	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable	PI Control (Continuous)
268, 274	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	PI Control (PWM)
269, 275	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	PI Control (PWM)
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	2-Point Control
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	PI Control (PWM)
270, 276	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Cool)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
271, 277	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Heat)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
278	1 Byte	I	C - W - -	DPT_Percent_V8		[Hum] Sensor Calibration	-12% ... 12%
279	2 Bytes	O	C R - T -	DPT_Value_Humidity	-12% - 12%	[Hum] Current Humidity	Humidity Sensor Value
280	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Hum] Dew Point Temperature	Dew Point Temperature Value
281	2 Bytes	I	C - W - -	DPT_Value_Humidity	-12% - 12%	[Hum] High Humidity Alarm Threshold	Value of High Humidity Alarm Threshold
282	2 Bytes	I	C - W - -	DPT_Value_Humidity	-12% - 12%	[Hum] Low Humidity Alarm Threshold	Value of Low Humidity Alarm Threshold
283	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Hum] Surface Temperature	Input Surface Temperature Value
284	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Hum] High Humidity	0 = No Alarm; 1 = Alarm
285	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Hum] Low Humidity	0 = No Alarm; 1 = Alarm
286	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Hum] Condensation	0 = No Alarm; 1 = Alarm

Join and send us your inquiries about Zennio devices:

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