InZennio Z38i

KNX Touch Panel

ZN1VI-TP38i

Program version: 2.2

Manual edition: a

INDEX

DOCUMENT UPDATES

Version	Modifications	Page(s)
2.2a	Reorganization of the information in Section 1 into two independent sections: *1. Introduction* and *2. Configuration*	4-9
	More information in section *1.2. Installation*	5,6
	Version 1.1 of *Building* Thermostat has been integrated	-
	New format of the product manuals	All

1. INTRODUCTION

1.1. INZENNIO Z38I

InZennio Z38i is an **LCD Touch Panel** with Room Thermostat, Binary Inputs and IR Receiver built-in**.** Z38i is a great solution for demanding applications in hotel rooms, apartments, offices, and in any room where it is necessary to manage climate, shutters, lights, scenes, etc.

Figure 1.1. InZennio Z38i touch panel

Below, the most relevant features of Z38i are shown:

- **3.8"** LCD Display

- 2 independent **thermostats** configuration

- Full Climate management

- 12 Configurable Direct Control Functions

- 5 parametrizable submenus for every page:

    ➢ **Scenes** control

    ➢ Timers

    ➢ Climate control

> ➢ Technical **Alarms**

> ➢ General panel **configuration**

💠 4 binary inputs for the connection of push buttons or switches/sensors.

💠 Control through an **IR remote control**

1.2. INSTALLATION

In the figure 1.2, the connection scheme of InZennio Z38i is shown:

1.- KNX connector

2.- Programming button

3.- Programming LED

4.- Inputs connection

5.- Display and Tactile area
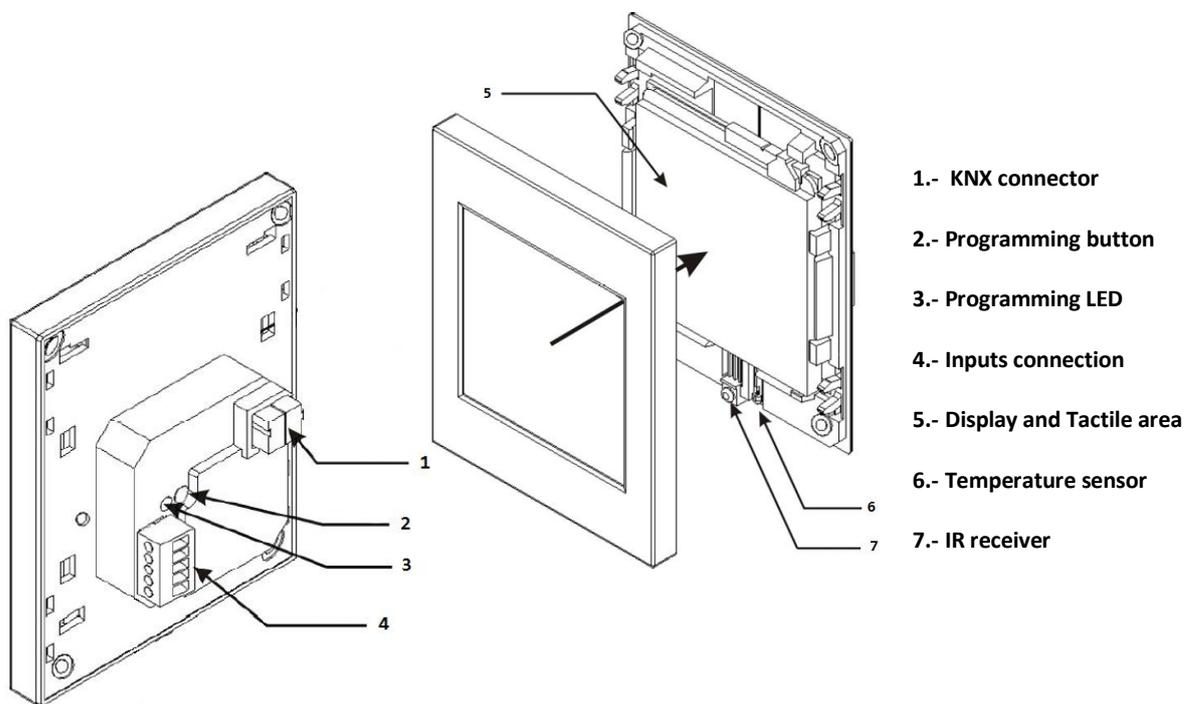
6.- Temperature sensor

7.- IR receiver

Figure 1.2. InZennio Z38i Elements scheme

For installing the device, first it is necessary to connect the KNX connector (1) and the terminal block for the inputs connection (4). Once carried put these connections, the basic enclosure piece must be placed into a standard squared/rounded box, with the corresponding screws and fixing the cover of the touch panel.

The programming button (2) is used to set Z38i in the **programming mode**, by means of a short push (the programming LED (3) lights red). If this button is held while plugging the device into de KNX bus, InZennio Z38i goes into **secure mode**. The LED blinks red.

Note: *This device does not need any additional external power supply since it is powered through the KNX bus.*

In the factory status of the panel, after connecting it to the KNX bus and before carrying out any programming, the calibration screen will be shown. Once calibrated (see steps-to-follow to do so in figure 1.3), it will appear in the header the text "Z38i 2.2", where the version of the pre-installed application is shown; in this case, the version 2.2. When pressing the MENU button, it will be possible to access the Configuration page, where the boxes 1, 4 and 5 have been enabled. By a short-pressing over the right button of the box 1 (PROG. LED), the panel can be set the into the programming mode, without having to physically press the programming button (2).

Once installed the panel, it will be possible to download the desired programming.

After any download from ETS, it must be **calibrated**. This calibration is carried out by pressing the upper left corner and bottom right corner of the Display, in this order (see Figure 1.3). This calibration will be kept although a power failure in the KNX bus occurs. However, every time Z38i is reprogrammed, the panel must be recalibrated.
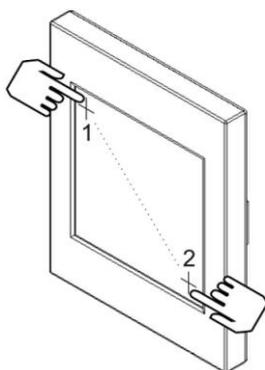
Figure 1.3. Z38i calibration

To obtain more detailed information about the technical features of InZennio Z38i, as well as security and installation information, please read the controller **Datasheet**, included in the original package of the device and also available at: http://www.zennio.com.

It is highly recommended to consult the document "**In factory application program**", included in the original package of the panel.

2. CONFIGURATION

2.1. PRODUCT

The panel InZennio Z38i allows controlling a set of functionalities in a domotic installation in a simple and intuitive way.

There are a set of parameters that refer to the **general working** of the panel, such as: lighting, header configuration, internal temperature sensor, password, etc.

The configuration of Z38i is completed with:

🔴 **Pages**

The information shown in the Display is organized into pages; every page consists of several **parametrizable boxes** and a **header**. The pages that can be enabled and configured are the following:

➢ **Home** (always enabled) and **Home 2**, with 6 configurable boxes each

➢ Specific 1-4: to be configured for controlling **Scenes** (5 configurable boxes), **Timers** (4 configurable boxes) or **Climate** (6 configurable boxes)

➢ Specific 5: **Technical Alarms** (6 configurable boxes)

➢ Specific 6: **Configuration** (always enabled). With 5 configurable boxes.

Note: *The access to the specific pages 1-6 is carried out from the MENU page of Z38i.*

In the figure 2.1 it is schematically shown an example of pages organization in Z38i.
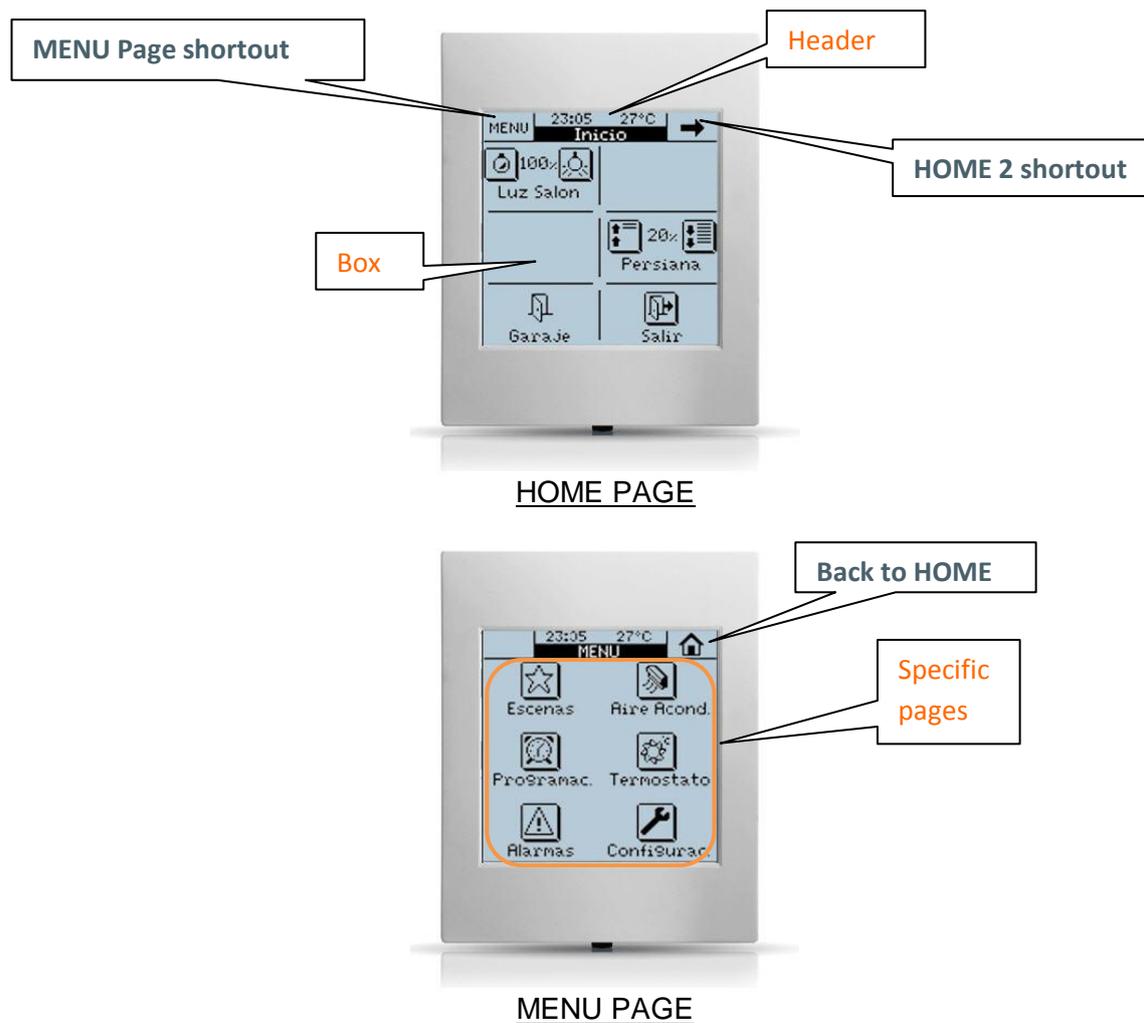
MENU Page shortout

Header

HOME 2 shortout

Box

HOME PAGE

Back to HOME

Specific pages

MENU PAGE

Figure 2.1. Example of the pages organization in Z38i

Inputs

Z38i counts on 4 opto-coupled inputs that may be individually configured as **push button** or **switch/sensor.** Depending on the selected configuration, it is necessary to connect different external elements to the Z38i inputs: push buttons or switches/sensors.

Thermostats

Z38i allows enabling and configuring in an **independent** way the functionality of **up to 2** thermostats, with the "Building" functionality. The working and ETS configuration of this kind of thermostat is detailed in the specific documentation "Zennio Building Thermostat", available at: http://www.zennio.com.

2.2. CONTROL USING IR REMOTE

Z38i has a remote control (optional) that allows the control of the functions in the same way as directly touching over the Display. Short and long-pressings are distinguished.

Figure 2.2. Z38i remote control

As it can be seen in the Figure 2.2, the remote control is divided in two zones, which may remotely control the pages **Home or Home 2** of Z38i, according to the parameterization (see section 3.2. *Remote control*).

Buttons arrangement on the remote controller is similar to the Home and Home 2 boxes structure to make its control easier.

3. ETS PARAMETERIZATION

For starting to parameterize the Z38i touch panel it is necessary, once the ETS program has been opened, importing the data base of the product (version 2.2 of the application program **InZennio Z38i**).

Next, the device is added to the project where desired. Click the right mouse button on the device and select "Edit parameters" for starting with the configuration.

In the following sections there is a detailed explanation about each of the different functionalities of the application in ETS.

3.1. DEFAULT CONFIGURATION

This section shows the default configuration from which the device parameterization starts.
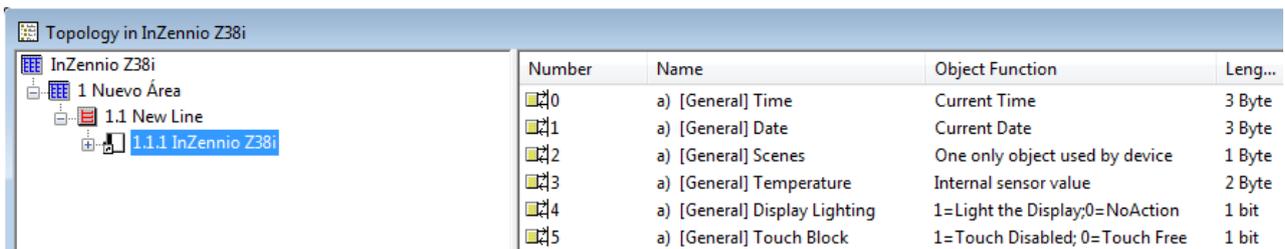
	Number	Name	Object Function	Leng...
	0	a) [General] Time	Current Time	3 Byte
	1	a) [General] Date	Current Date	3 Byte
	2	a) [General] Scenes	One only object used by device	1 Byte
	3	a) [General] Temperature	Internal sensor value	2 Byte
	4	a) [General] Display Lighting	1=Light the Display;0=NoAction	1 bit
	5	a) [General] Touch Block	1=Touch Disabled; 0=Touch Free	1 bit

Topology in InZennio Z38i
InZennio Z38i
1 Nuevo Área
1.1 New Line
1.1.1 InZennio Z38i

Figure 3.1. Default topology

In the figure 3.1, the default communication objects are shown: "[General] Time" and "[General] Date" show the current time and date, respectively; also the scenes object: "[General] Scenes", a 2-bytes object that shows the real temperature of the room, measured by the internal sensor of Z38i ("[General] Temperature") and the objects "[General] Display lighting" and "[General] Touch block", which allow interacting with the panel (when receiving the value "1" through the first one, the Display will light up -if it was off- and when receiving the value "1" through the second one, the Display will be blocked).

When entering for the first time to the parameters edition of Z38i, the following window will be shown:
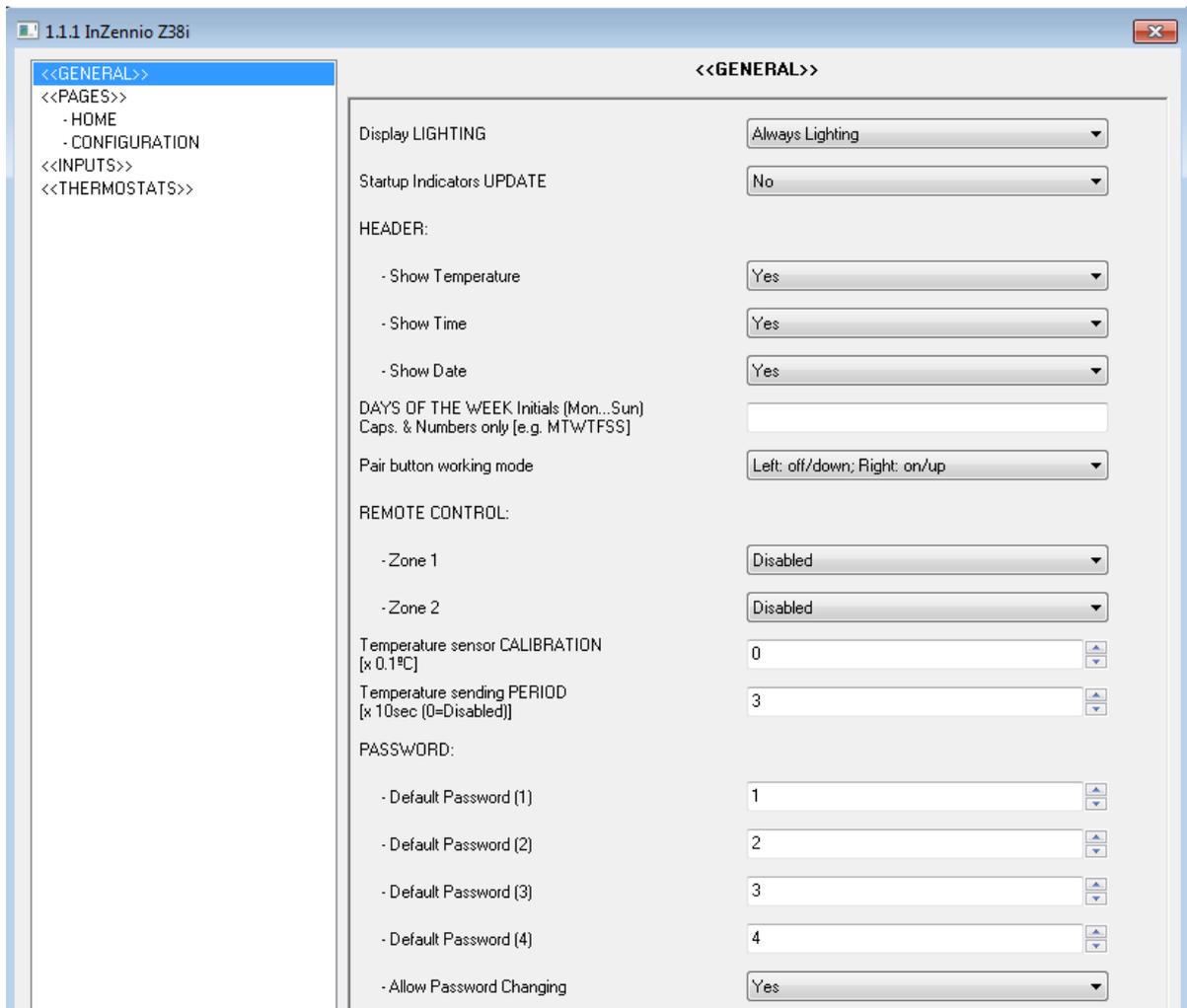
Figure 3.2. Configuration screen by default

As it can be seen in the figure 3.2, the configuration screen has the following main windows:

● **General:** to enable and configure the basic functionalities of the panel and the remote control.

● **Pages**: to enable and configure individually each available page: Home, Home 2 and specific pages.

● **Inputs:** to enable and configure individually each input of the controller.

● **Thermostats**: to enable and configure individually each thermostat of the controller.

In the following sections, all the aforementioned windows are explained in detail.

3.2. GENERAL

The General window allows enabling and configuring the basic functionalities of the panel and the remote control.

The basic functions that can be configured in the section General are the following:

🔸 **Display lighting:** This function allows establishing the luminosity status of the display, by parameter, choosing between:

➢ **Always lighting:** the display remains always ON, even when the it is not in use.

➢ **Automatic luminosity attenuation:** 45 seconds after the last interaction on the display, this will recover its stand-by mode. These options are shown:

• **Luminosity attenuation level:** to choose the option Completely dark (after the corresponding 45 seconds, the Display will remain off) or the option Low luminosity (after the corresponding 45 seconds, the display will light slightly, which may be useful to identify the panel in dark places)**.**

• **Status during attenuation:** to choose the option Display enabled (the display remains always active; this means that any interaction with it will obtain an immediate response) or the option Display disabled (the display needs a first touch over it to be unlocked; after this, the panel can be normally operated).
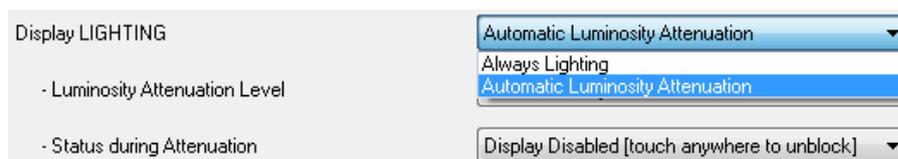

Figure 3.3. Lighting options

🔸 **Startup indicators update:** This function allows that, after a bus power failure, the value of the indicator objects is updated (those with the updating flag "U") by sending Read messages to the external devices connected to the KNX bus that have the reading flag "R". Moreover, this functionality allows establishing a delay for sending the initial values since the power is recovered (to get an immediate sending, set 0 in the field "Delay").

🔹 **Header:** It is possible to select by parameter what to show in the display header, choosing among: Show Temperature, Show Time and/or Show Date (all of them are enabled by default).

If "Show Date" is enabled ("Yes"), it appears a new field to indicate through 7 characters the weekday initials. Only capital letters and numbers can be used.

Both the date and the week-day will appear on any page header, when the "Time Zone" is pressed. (See Figure 3.4).

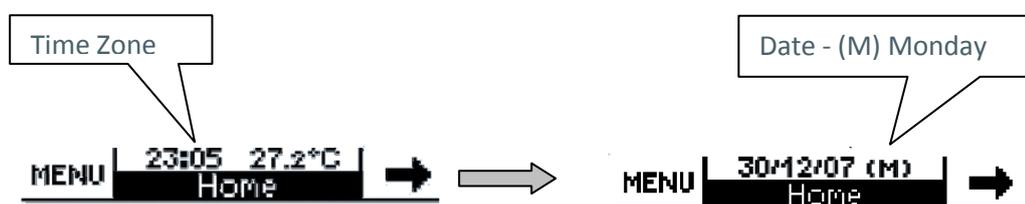**Note:** *Weeks days are automatically calculated by Z38i when adjusting the date on it.*

Figure 3.4. Time, Temperature and Date shown in the header

🔹 **Pair button working mode:** This parameter allows selecting the way the pair buttons (in the individual boxes where its use is configured) will work, choosing between:

➢ **Left: off/down; Right: on/up.** With this configuration, the pair button on the left of the box will send the order to switch off, move down, last and lower, whereas the right button will send the orders to switch on, move up, next and rise, depending on the type of the pair buttons.

➢ **Left: on/up; Right: off/down.** With this configuration, the pair button on the left of the box will send the order to switch on, move up, next and rise, whereas the right button will send the orders to switch off, move down, last and lower, depending on the type of the pair buttons.

Note: *The boxes of the Home and Home 2 pages configured as "Binary control" do not take into account this working mode configuration of the buttons, since they will carry out the order especified by parameter.*

🔹 **Remote control:** This parameter allows enabling the zones of the remote controller and associate each of them to either any of both Home or Home 2 pages, to control them remotely.

Figure 3.5. Remote control options

> **Zone 1:** To enable and associate this IR controller zone to any of the Home or Home 2 pages.

> **Zone 2:** To enable and associate this IR controller zone to any of the Home or Home 2 pages.

Note: *If remote controller is disabled in the parameterization, a press key over any button* ***DOES NOT*** *have effect in the touch panel.*

🔴 **Internal Temp. Sensor:** Z38i counts on an internal temperature sensor that has a 2-byte communication object associated "[General] Temperature", enabled by default.

Figure 3.6. Internal Temperature Sensor

The following parameters can be configured:

> **Temperature sensor calibration:** this option allows calibrating (the setting the tenths of degree) a possible deviation between the measurement made by the sensor and the real temperature of the room.

> **Temperature sending period:** to select by parameter the time (in tens of second) to send cyclically to the KNX bus the current temperature measurement, through the communication object "[General] Temperature". The value 0 indicates that the periodical sending is disabled.

🔴 **Password:** With this option, it will be possible to configure a customizable password, by establishing 4 digits from 0 to 9, which must be written to access those pages on which security was enabled.

Default password is **1234**.

Figure 3.7. Password

In the field "**Allow password changing**", one can choose whether the password can be modified in the panel itself or not. If this change is not allowed, the password cam only be changed through ETS (parameters).

If the password changing is enabled, the following steps must be carried out to properly change it (see also figure 3.8):

> 1.- Press NEW. In the upper part of the box the word "OLD" will appear and the old password has to be written.
>
> 2.- After introducing it correctly, the word "NEW" will appear. That is the moment to insert the new password.
>
> 3 - "REPEAT". Insert again the desired new password.

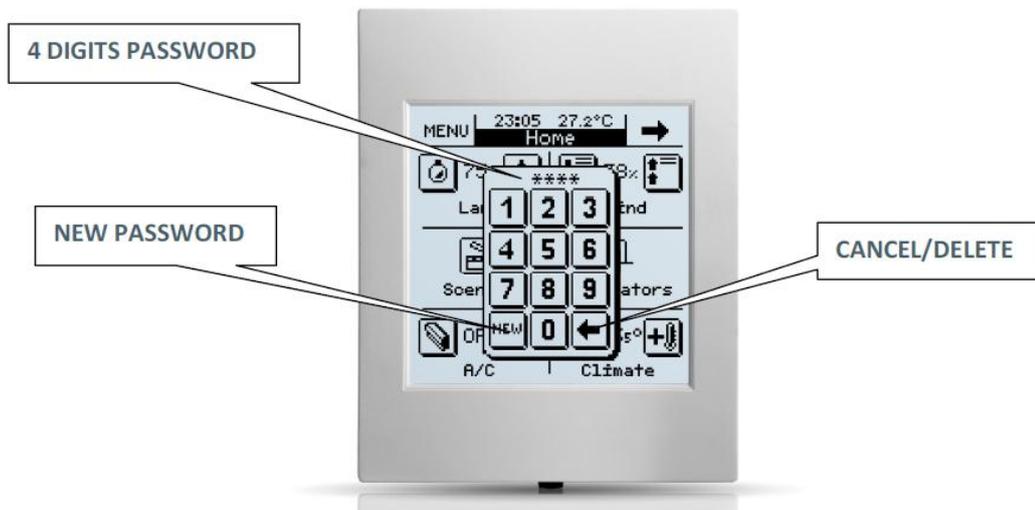The left arrow button allows deleting/cancelling, in case of wrong-typing the digits.

Figure 3.8. Password changing from the panel

3.3. PAGES

In this section it is possible to enable and configure individually each page to be implemented in Z38i.
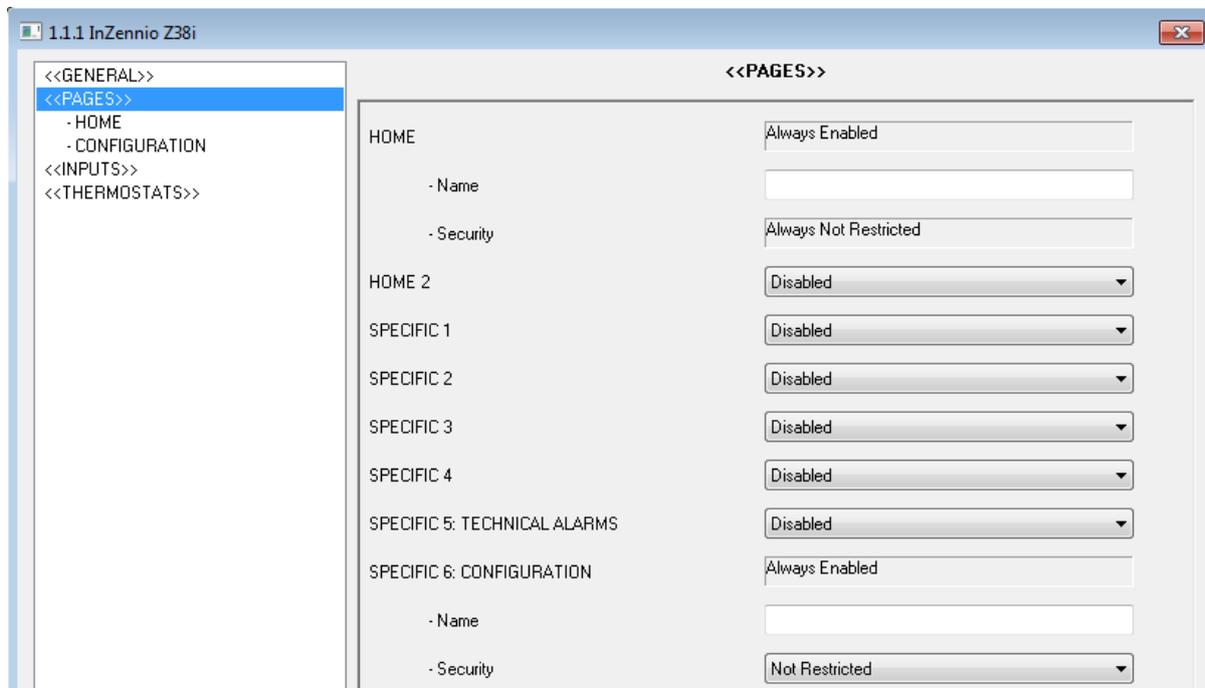
Figure 3.9. Pages configuration

Every enabled page has some parametrizable fields:

🔵 **Name:** This field allow users to associate a name to any of the InZennio Z38i pages; this name will appear on any of the page headers the user is moving through (12 free characters are available to set the name).

Note: *The only page which cannot be renamed is the MENU one (to access Specific Pages).*

🔵 **Security:** A restricted page prevents unauthorized access to it. A 4 digits password is required to enter a protected page (see Section 3.2. *Password*).

Note: *The Home page is always enabled. Access to the "Home" page cannot be restricted.*

Next, the available pages are explained in detail.

3.3.1. HOME AND HOME 2 PAGES

These two pages are intended to parametrize their boxes so that it is easy to access the most common used functions when controlling an installation.
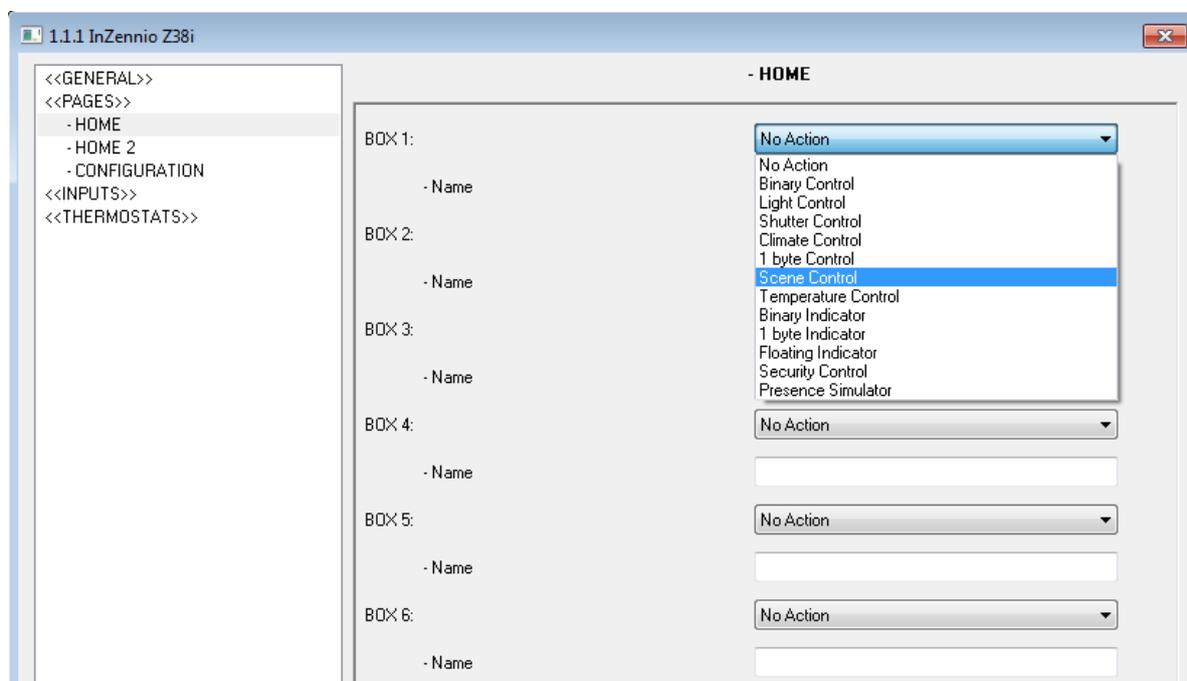
Figure 3.10. Home page

Home a Home 2 pages have 6 parametrizable boxes each, to be configured as: **binary control, light control, shutter control, climate control, 1 byte control, scene control, temperature control, binary indicator, 1 byte indicator, floating indicator, security control** and **presence simulator.**

All of them have the parametrizable field "**Name**", which allows associating a name to the corresponding box in the page. (11 free characters are available to set the name).

Note: *Home Page will be shown again 90 seconds after last interaction on the display took place.*

The field "Security" only appears for Home 2 page. The Home page is enabled by default. Access to the Home page cannot be restricted.

Figure 3.11. Example of configuration of Home page

Next, all the possible configurations for the Home and Home 2 boxes are explained.

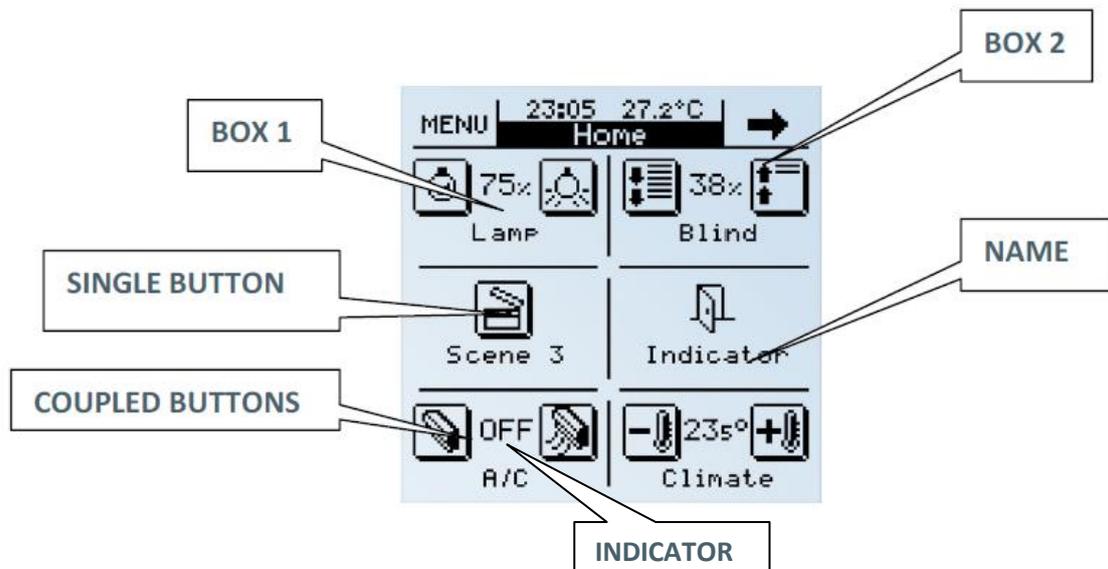**Note:** *For all the options shown below it is possible to configure, through the parameter **Icon**, the icon or pair of icons that will be drawn, pixel by pixel, over the representation of each button in the display. To know the list of available icons, please consult the specific documentation "**List of controls and indicators**".*

🔵 **Binary control:** allows the panel to communicate with the rest of the devices of the installation, by sending a binary value ("0" or "1") through the object "[Home x; Box y] Binary Control". The following options will appear:

➢ **Button 1** (always enabled): to configure the actions associated to a **short press** and to a **long press** over the button, as well as the associated **icon**. The actions of every type of press can be:

- **Nothing**

- **0**: sending of the value "0" to the KNX bus through the corresponding object every time the button 1 is pressed (short or long press).

- **1**: sending of the value "1" to the KNX bus through the corresponding object every time the button 1 is pressed (short or long press).

- **Toggle**: sending the values "0" and "1" in a switched way to the KNX bus through the corresponding object every time the button 1 is pressed (short or long press).

➢ **Button 2:** The configuration options are the same as for Button 1. The two buttons will transmit data independently, but they will do so through the same communication object ("[Home x; Box y] Binary control").

➢ **Indicator:** if only the button 1 is configured, when enabling this indicator, it appears the 1-bit object "[Home x; Box y] Binary indicator", through which receiving from the KNX bus a binary value ("0" or "1"), thus updating the binary control. If the buttons 1 and 2 are configured, besides this indicator object, a status indicator will be inserted between both buttons, which will vary its status in function of the current binary value.

🔴 **Light control:** This control is specifically designed for lighting control. Through its associated communication objects ("[Home x; Box y] Light On/Off", "[Home x; Box y] Light Dimming" and "[Home x; Box y] Precise dimming"), users will be able to turn On/Off any kind of incandescent lamps, low voltage lamps, compact fluorescent lamps, etc., and even controlling their output intensity.

Note: *When trying to control compact fluorescent lamps (CFL), an electronically reactance or a specific KNX actuator would be necessary to control their intensity.*

BOX 1:	Light Control
- Name	Control
- Type	On/Off + Light Dimming (4bits)
Dimming Step	3 (25%)
- Indicator	Percentage
- Icon (see Pairs list)	(7) - Off / On Light

These configuration options are shown:

➢ **Type:** This field allows choosing the control type:

- **ON/OFF:** This is the most basic control type. It can be selected an indicator to show the ON/OFF light status.

- **On/Off + Simple Regulation (4 bits):** It is possible to simulate a common switch action, turn On/Off (short press on the buttons), or a discreet regulation (long press

on the buttons), where depending on the "dimming step" set, keeping the button pressed will reduce or increase the brightness on the controlled lamps.

Dimming step: Seven different regulation levels are available for this duty. A long press on the display buttons will reduce or increase the brightness level step by step the percentage set in this parameter; once the desired level is reached, stop pressing the button on the display to keep the desired value. To know the available dimming steps, please see Table 3.1.

- **Precise dimming (1 byte):** This is the most accurate control method, as any short press on the display buttons will increase or reduce (1%) the brightness level. A long press on any of the two buttons will increase or reduce gradually 10 % the brightness level.

➢ **Indicator:** it will inform about the brightness percentage applied at any time.

Note: *In this case, for this indicator to be functional, it is necessary to use a KNX dimmer to give back the brightness applied to the load.*

Dimming step	Necessary pulsations for a complete regulation (0-100%)
(1) 100%	1
(2) 50%	2
(3) 25%	4
(4) 12.5%	8
(5) 6.25%	16
(6) 3.1%	32
(7) 1.5%	64

Table 3.1. Dimming step

Shutter control: Specifically designed to control any type of shutters, blinds, sun blinds, or any other drive. Through the communication objects "[Home x; Box y] Move shutter" and "[Home x; Box y] Stop shutter", it will be possible to raise/lower shutters and even knowing its exact position at any time (if the corresponding indicator is enabled). There will be two buttons in the box, one for lowering/stopping the shutter and other for rising/stopping it.

The shutter control is carried out as follows:

➢ **Decrease button**: a long press moves down the shutter while a short press stops the shutter, sending the value "1" through the objects "[Home x; Box y] Move shutter" and "[Home x; Box y] Stop shutter", respectively.

➢ **Increase button**: a long press moves up the shutter while a short press stops the shutter, sending the value "0" through the objects "[Home x; Box y] Move shutter" and "[Home x; Box y] Stop shutter", respectively.

Note: *When the object "Move Shutter" sends "0" or "1", the shutter will start moving, and won't stop unless the whole shutter length is covered or that any other order cancelling the previous is received.*

The available options are:

➢ **Icon**: A pair of icons can be associated to the page box.

➢ **Indicator**: by activating this parameter, it is possible to insert an indicator between both buttons to get estimation in percentage terms of the shutter position.

🔵 **Climate control:** Designed specifically to control the functioning of air conditioning devices without the need to access a specific climate page.

This can be very useful if there are free boxes in "Home" or "Home II" pages because that way, the user will avoid browsing between the different pages and will have access directly to determinate specific functions. It is possible to access to this (depending on the configuration applied to the function):

> - **Control type:** to select the climate function to be controlled:

- **Mode type:** Cool-Heat or Auto-Heat-Dry-Fan-Cool

- **Fan**: the indicator type can be selected (no indicator, percentage or integer).

- **Swing**

> - **Icon:** A pair of icons can be associated to the page box.

Note: *Depending on the selected option, a communication object associated to the specific box will appear in the ETS environment; the same object type corresponding the selected option. This characteristic allows controlling also external climate systems.*

⚫ **1 byte control:** This is a generic control to communicate all those devices susceptible to be, by sending a single byte (value in the range 0 - 255) through the object "[Home x; Box y] 1 byte control".

> - **Type:** Three possible options available in this case:

- **Fixed value (one button, no indicator):** By pressing the button on the display, the same value will always be sent; the value selected in the field "Value".

- **Percentage (2 buttons with indicator):** to send a percentage, according to the type of press (Short press: raise or lower 1% with every short key press; Long press: raise or lower 10% with every long key press).

Note: *Take into account that value 0 corresponds with 0% and value 255 with 100%.*

- **Value 0-255 (2 buttons with indicator):** to send a value between 0 and 255, according to the type of press (Short press: raise or lower one single point in the range with every short key press; Long press: raise or lower 10 points in the range with every long key press).

It exists, choosing this option, the possibility to shorten the sending range in the parameterization process with parameters "Minimum Value" and "Maximum Value".

➢ **Icon:** A pair of icons can be associated to the page box.

🔵 **Scene control:** Scenes or "lifestyles" consist of a synchronized activation of some devices in the domotic installation, so that different predefined atmospheres are generated.

There is an only Communication Object associated with scenes: "[General] Scenes".

The available options are:

➢ **Type:** To choose (by using the same button on the display) between:

• **Only Run Scene:** A single press on the display button will generate the atmosphere predefined by the user for that scene.

• **Run + Save Scene:** A short press on the button will generate the atmosphere predefined by the user for that scene (same than above). Additionally, a long press (3 seconds) on the display button gives users the possibility to learn (modify) new scenes. Please consult the scenes example.

➢ **Scene number:** this is a number defined by the user to identify the scene or the "lifestyle" to be created.

➢ **Icon:** An icon can be associated to the page box.

✓ *Scenes Example:*

Guess the "Scene Night" is defined (programming the Panel with parameters and group addresses via ETS):

▪ *Turn all the lights Off*

▪ *Turn Off the Heating and the A/C Systems*

- *Activate the Alarm System.*

Once the scene is defined, every time we run it, a predefined atmosphere is generated.

How does a user modify and learn a scene, with the devices used in the scene described above? For example if the user wants this instead:

- *Turn all the lights Off except one (the one to remain ON, will be a guiding light).*

- *Turn Off the Heating and the A/C Systems*

- *Activate the Alarm System.*

The way to do this:

1. *Run the scene to be modified.*

2. *Turn the light we want it to be the guiding light On*

3. *Just save the new scene into the Panel by keeping a long press (3 seconds) on the original scene "Run" button.*

✓ **This process replaces the original scene by the modified one.**

Temperature control: This is a generic temperature control that allows selecting whether to carry out an absolute temperature control (positive values) or a temperature control through a temperature offset (positive and negative values, to be added to the current temperature when receiving the order via the corresponding communication object). This control is totally independent from the Climate Control.

➢ **Control type:** To select between Absolute Temperature (default range [10ºC, 30ºC] and associated objects "Temperature Control" and "Temperature indicator") or Temperature Offset (default range [-10ºC, 10ºC], and the same associated objects).

➢ **Icon:** A pair of icons can be associated to the page box.

Binary indicator: This control enables a binary status indicator on the display box.

An icon, specifically enabled for this function, may be associated to the page box when a "0" is received through the 1 bit Communication Object "[Home x; Box y] Binary indicator".

Same case if data received is a "1".

➢ **Action when value "0" is received:** This box should be enabled when users need to know when a "0" has been received through the specific Communication Object.

➢ **Action when value "1" is received:** This box should be enabled when users need to know when a "1" has been received through the specific Communication Object.

➢ **Icon:** Different icons can be associated to both of the (ACTION) cases, so that users can identify what is received through the specific Communication Object (a "0" or a "1").

1 byte indicator: One byte provides much more information relating to an event than one bit.

This indicator is normally used with percentages (%) relating to particular events (shutter position, wind speed…), however another possible configuration option is a numerical range among 0 and 255.

> ➢ **Type:** Permits specify the output data type as percentage (%) or as numeric value (0 - 255).

🔵 **Floating point indicator:** Floating Point is a real number representation method that can be adapted to the order of magnitude of the value represented.
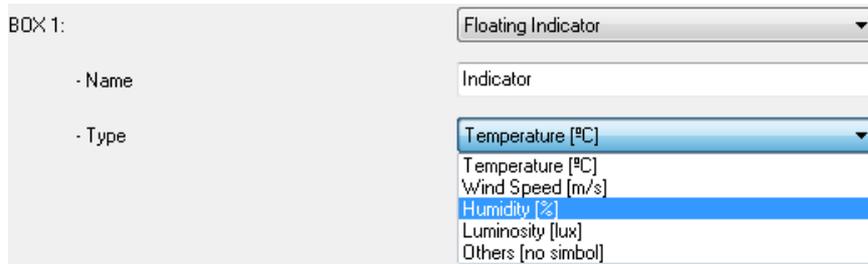
In this particular case, enabling a box as "Floating Point indicator", integrators can select the type of data represented on the display, choosing among:

> ➢ Temperature (ºC) → Range [-273ºC - 670,760ºC]
>
> ➢ Wind speed (m/s) → Range [0m/s - 670,760m/s]
>
> ➢ Humidity (%) → Range [0% - 670,760%]
>
> ➢ Luminosity (lux) → Range [0 lux - 670,760 lux]
>
> ➢ Other (no symbol) → Range [-670,760 - 670,760]

No matter the selected option, the 2 bytes object "[Home x; Box y] Floating point indicator" will be enabled.

Note I: *Depending on the data type selected, a different unit symbol will be shown.*

Note II: *To distinguish the thousands, a separation "space" is defined in the number, whereas to distinguish the decimals a "point" is used.*

🔵 **Security control:** In the same way that it exists the possibility to protect any page (see section 3.2. *Password*) against non-authorized access; this protection is also available for the boxes individually in "Home" and "Home 2".

In this case, the Panel will not send any binary data to the bus unless the correct password is entered.

> **Icon:** A pair of icons can be associated to the page box.

> **Indicator:** by activating this parameter, a status indicator will be inserted between both buttons: Nothing, ON/OFF, 0/1

🔵 **Presence simulator:** This function is designed to simulate presence in a house. Once the devices on the KNX installation have been correctly parameterized, two new Communication Objects become active.

After enabling the presence simulation in ETS, two new 1-bit communication objects will be shown: "[Home x - Box y] Presence simulator" and "[Home x - Box y] Simulation channel". The first one allows activating or deactivating the presence simulation, by sending the value "1" or "0", respectively. The second one is in charge of randomly sending binary values ("0" or "1") to switch on/switch off the devices in the KNX installation, such as light or shutter controllers. This object must be linked to the same group address as the corresponding control objects, in charge of switching on/off the devices of the installation implied in the presence simulation.

The parameters to be configured are:

> **Starting/Finish time:** to establish the time (hours and minutes) when the presence simulation will start and finish (provided that the functionality has been enabled through the object "[Home x; Box y] Presence simulation").

Note: *The stating and the finish time must be different values in order to the presence simulation work properly.*

> **Minimum/Maximum ON/OFF time**: To adjust by parameter the minimum and maximum ON/OFF time for the devices on the installation.

Note: *The value established for Maximum Time (both ON and OFF) must be greater than the value established for Minimum Time, in order not to generate a wrong parameterization that may cause anomalous situations.*

3.3.2. SPECIFIC PAGES

Z38i has 4 specific pages of free configuration, to be parameterized as: <u>Scenes</u>, <u>Timers</u> or <u>Climate</u>.

Next, all of them are explained in detail.

> **Scenes**

Two pages are available ("HOME" and "HOME 2") where there is the possibility to configure one or several boxes to scenes control.
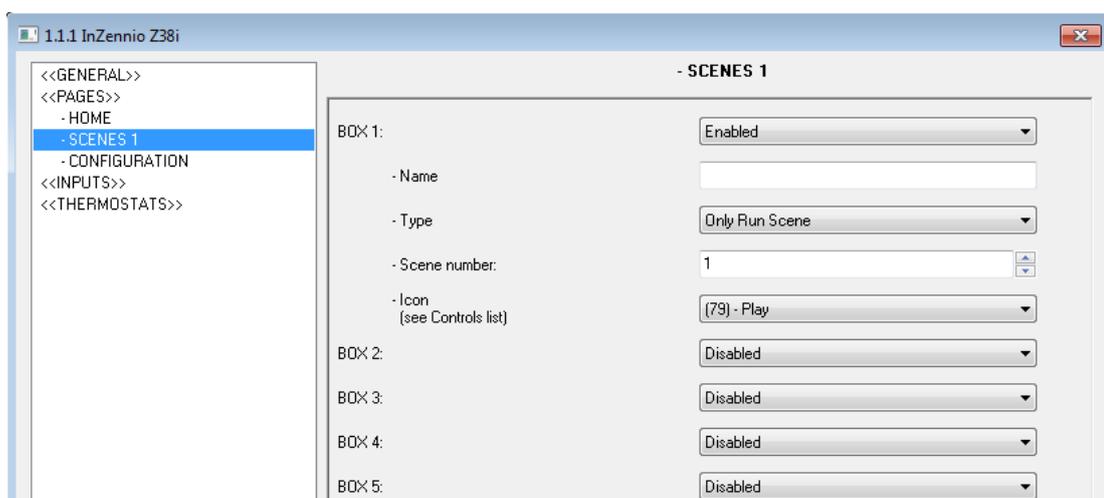
Figure 3.12. Specific page: Scenes

The way to parameterize any of the 5 boxes of a Specific Page to control scenes is exactly the same as that described in section 3.3.1. *Scene control.* To obtain further information on this topic, please read the corresponding section.

🔴 Timers

The daily/weekly programming of certain events the user wants them to happen on the KNX installation is much easier using this Page.

Figure 3.13. Specific page: Timers

The Timers are associated to the On/Off of the devices in the KNX installation, and any specific page enabled to scenes control will have available four boxes (each enabled page) to this purpose.
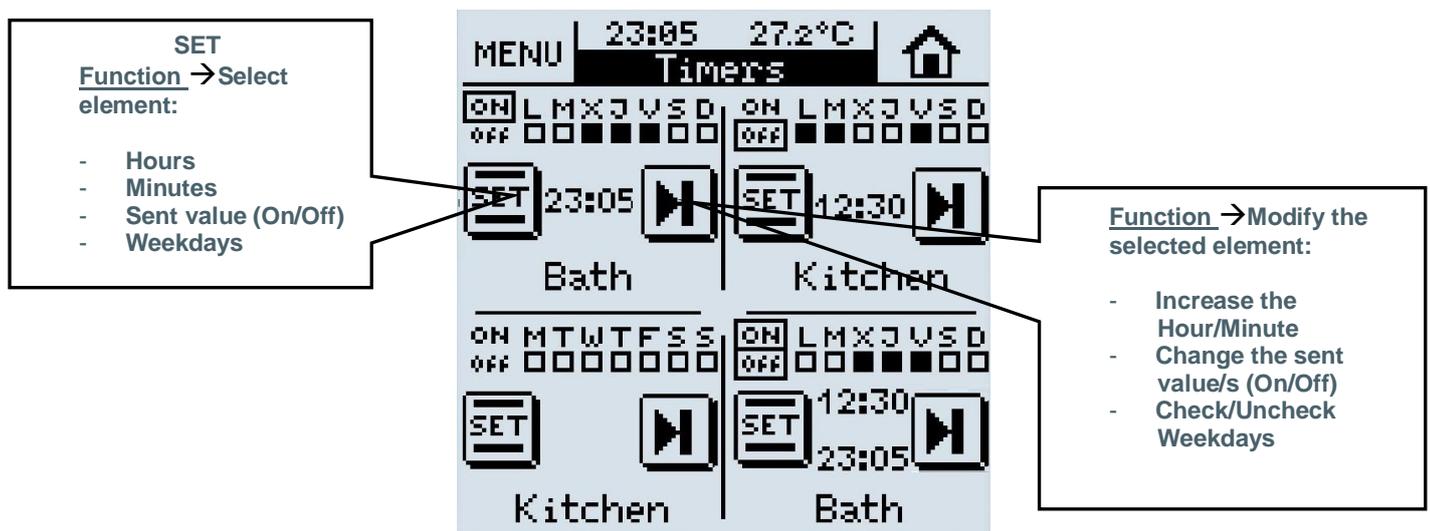
Figure 3.14. Timer page with its 4 boxes configured

Every enabled box for the timers control will have its own output "Channel" (output object of the timers) through which the communication object in charge of controlling the timer will go. The following parameters can be configured for every enabled box:

➢ **Name:** This field allows a user to associate a name with the corresponding box in the page. (11 free characters are available to set the name).

➢ **Linked to scenes:** When this box is enabled, a user can control Scenes by mean of a programming. The possible control associations are:

- **Only for ON:** The **Scene Number (On)** box will appear where it is needed to write the scene number to execute when the ON programming set by the user is fulfilled.

- **Only for OFF:** The **Scene Number (On)** box will appear where it is needed to write the scene number to execute when the ON programming set by the user is fulfilled.

- **Both timer ON and OFF:** The **Scene Number (On)** box and **Scene Number (Off)** will appear.

Note I: *These associations are solved through internal links; this means it is not necessary any kind of addressing process to carry out Schedule Programming associated to Scenes.*

Note II: *When many different schedule programming send different scenes at the same moment, just one of them will be sent, specifically, the scene linked to the last box of the last schedule programming page.*

Please see the following example:

It is parameterized in ETS the specific pages 1 and 3 as Timer pages. The Timer page 1 is configured like this:

- Box 2 → Linked to scene number 64. Only for ON

- Box 3 → Linked to scene number 1. Only for OFF

- Box 4 → Linked to scene number 52. Only for ON

And the timers page 3 this way:

-Box 3 → Linked to Scene number 11. Only for ON

In case that all these timers send their own scene at the same time, the only scene that will be sent is the one linked to the last box of the last Timer page configured, in this example, Z38i will send the scene number 11 (linked to the Box 3, in the Timers page 3).

🔵 Climate

Air Conditioning and Fan Coil Control have been unified in a unique Specific Page called "Climate". Thus, due to the possibility of enabling up to 4 different Climate Specific Pages, up to 4 different Climate Systems can be now controlled from the Z38i. The control of them is done from "Specific Pages 1, 2, 3 and 4", after being enabled to this purpose.

It is possible to control the two internal thermostats of the panel through these specific Climate pages. For this aim, it is necessary to properly link, via group addresses, the communication objects of the Climate page with the objects associated to the different thermostat options.

The number of Specific Pages to control Climate Systems will mainly depend on the number of different Systems to control in the installation.
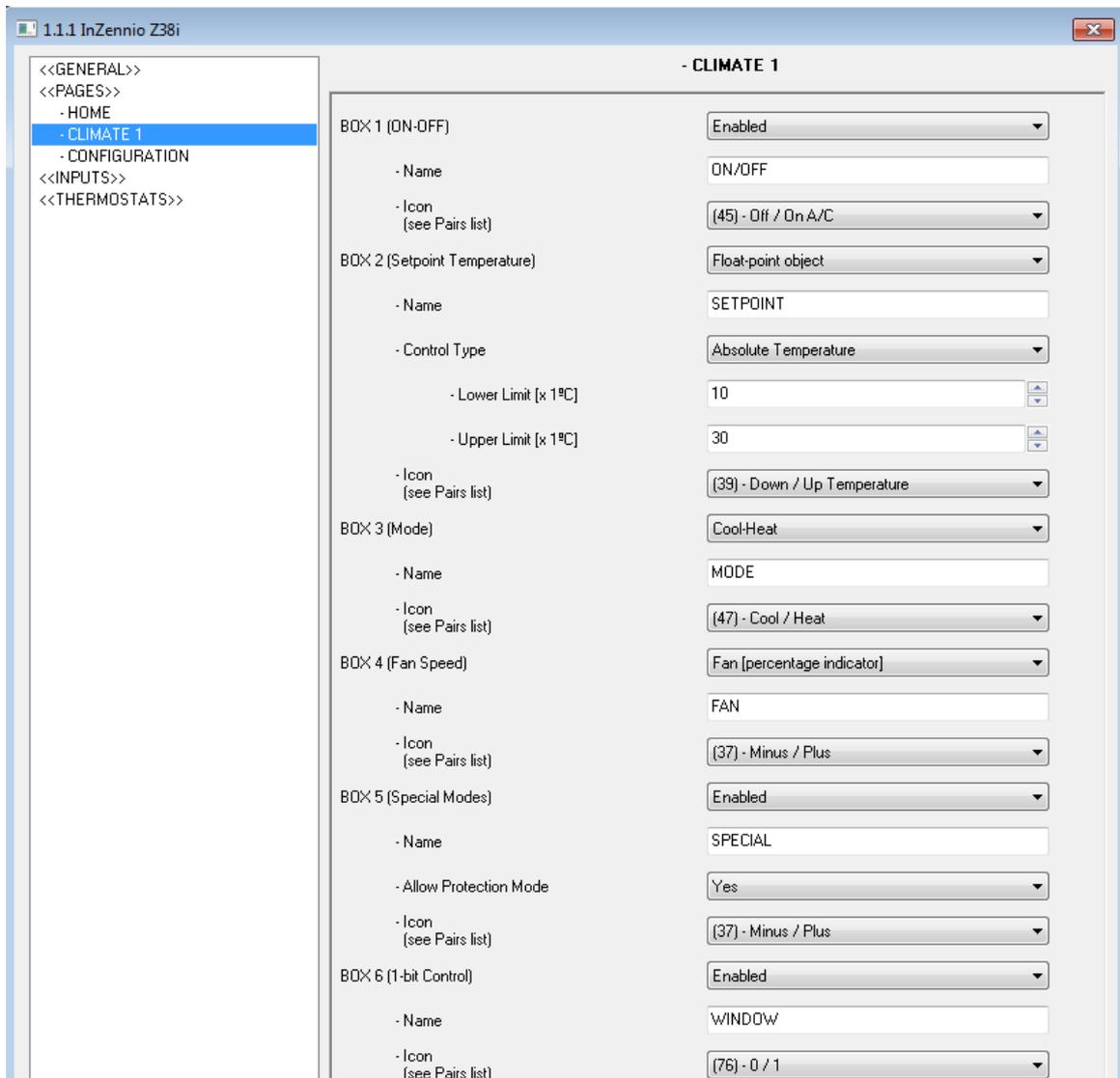
Figure 3.15. Specific page: Climate

Every time a user enables a specific "Climate" page, two different configurable fields become available:

➢ **Name:** This field allows a user to associate a name with the corresponding box in the page. (11 free characters are available to set the name).

➢ **Icon:** A pair of icons can be associated to the page box.

The parameterization of the 6 different boxes in the specific climate page is detailed next:

➤ **BOX 1 (On/Off):** This box is enabled in the Climate page to send the orders to switch on/switch off the climate system connected to the KNX bus. The communication objects related to the switching on/off pf the system are enabled ("On/Off Sending" and "On/Off Reception"). Moreover, a new 1 bit object appears: "Activity indicator" to be associated, through a same group address, to the 1-bit control variables of the climate system. So that, when the control variable of the climate system sends the value "1", an indicator will start blinking in the right upper side of the ON indicator in the first box of the climate page (see figure 2.10). When this object is "0" (because the 1-bit control variable is "0"), the indicator stops blinking. This allows knowing at all times when the climate system is in the "0" cycle (heating/cooling source off) or in the "1" cycle (heating/cooling source on), which may be useful, for instance, to know when the hating of a house is on and when it is off.
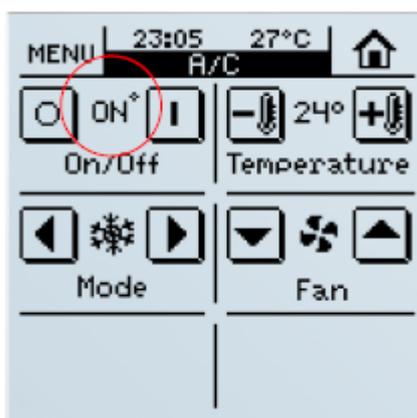
Figure 3.16. Activity indicator ON

➤ **BOX 2 (Setpoint temperature):** By enabling this box, the temperature of the climate system can be controlled and monitored, depending on the parameterized method to set the setpoint.

Once this temperature is fixed and the system turned on, the established value will be considered as the setpoint to be kept by the system.

This setpoint value can be established in two different ways:

• **Float-point object**: the desired setpoint temperature can be controlled in two different ways ("Control Type"), but always through a 2-bytes communication object 2 "[Clima x] Setpoint Sending":

Absolute temperature: the objects "[Clima x] Setpoint Sending" and "[Clima x] Setpoint Reception" are enabled, to send and receive, respectively, the setpoint temperature to be set and the current setpoint of the climate system. Short or long pressings over the box are allowed to set the desired setpoint (the temperature will change in 0.5ºC to 0.5ºC, no matter the type of pressing). It is necessary to set a lower and upper limits, in ºC, for the setpoint temperature. This way, the temperature range of the control can be bounded. The indicator of the box will show the current setpoint temperature.

Temperature offset: the same objects as before are enabled, but now it is sent to the climate system an increase/decrease of the current setpoint temperature in an offset value (in ºC) configured by parameter. After every pressing, short or long, the setpoint value will be updated with the new offset. In the box, the indicator will show the current offset value.

- **1-bit object:** the 1-bit object "[Clima x] Setpoint Offset sending" is enabled, in order to increment ("1") or decrement ("0") the value of the current setpoint in an offset value (in tenths of degree) configured by parameter. Only short pressings are available. After every pressing, the order to increment or decrement the current setpoint value will be sent to the climate system. The box indicator will show the established setpoint value, plus/minus the parameterized offset value. In case, the communication object associated to the indicator is linked, via a same group address, to the setpoint status object, it will be shown in the panel the current setpoint, plus/minus the established offset value.

➢ **BOX 3 (Mode):** Allows choosing the functioning mode of the Climate System. There are two possible options to configure

- Cool/Heat

- Auto/Heat/Dry/Fan/Cool

Note: *This second option can only be selected to control Air Conditioning Systems.*

Depending on the selected option, one of these pairs of communication objects will be enabled:

- For the Cool/Heat configuration: the 1-bit objects "[Clima x] Mode Sending" and "[Clima x] Mode Reception". Via the object "Mode Sending", the value of the current

mode ("1" for Heating or "0" for Cooling) will be sent to the climate system. Via the object "Mode Reception", the panel will receive the status of the current mode of the climate system and will update the central indicator of the box with the corresponding figure of the current working mode.

- For the Auto-Heat-Fry-Fan-Cool configuration: the 1-byte objects "[Clima x] Mode Sending" and "[Clima x] Mode Reception". Via the object "Mode Sending", the value of the current mode ("0" for Auto, "1" for Heating, "14" for Dry, "9" for Fan or "3" for Cooling) will be sent to the climate system. Via the object "Mode Reception", the panel will receive the status of the current mode of the climate system and will update the central indicator of the box with the corresponding figure of the current working mode.

➢ **BOX 4 (Fan speed):** This is an Up/Down (1 bit) control, but its indicator may be three different types:

- **No indicator.** The 1-bit object "[Clima x] Fan Sending" is enabled, in order to send through it the order to increase/decrease the fan speed to the climate system ("0" = Down, "1" = Up).

- **Percentage indicator:** Two new communication objects are available: "[Clima x] Fan Sending", 1-bit object to the to the climate system the orders of raising/lowering the fan speed and the 1-byte object "[Clima x] Fan Reception" through which the current fan speed percentage is received from the system with the following ranges: 0%=Auto;1-33%=Min;34-66%=Med;67-100%=Max

- **Integer indicator:** The following communication objects appear: "[Clima x] Fan Sending", 1-bit object to the to the climate system the orders of raising/lowering the fan speed and the 1-byte object "[Clima x] Fan Reception" through which the current fan speed percentage is received from the system with the following ranges: 0=Auto;1=Min;2=Med;3=Max.

Note: *The central indicator in the box varies its size depending on the value received; thus, whenever the fan speed increases so does the central icon size (progressively) and when the speed decreases, so does the icon size (see Annex II.*

➢ **BOX 5 (Special Modes):** When enabling this box, it will be possible to switch from one special climate mode to another: Comfort, Standby and Economic and it may be

known at every moment the current working mode of the system (for achieving this, it will be necessary to link with the same group address the mode objects of the climate system and the object "Special Modes reception"). It is possible to include the sending/reception of the special mode Protection, by parameter.

The mode sending is not carried out immediately. By the time the special mode changes, it also does the centrol mode indicator.

➢ **BOX 6 (1 bit control):** When enabling this option, two 1-bit communication objects appear: "1-bit sending" and "1-bit reception", which could be linked to the 1-bit objects in charge of the control of functions of the climate system that allows a binary control (for example, for controlling the Comfort prolongation of the thermostat).

3.3.3. PAGE TECHNICAL ALARMS

This is a specific screen, with up to six independent boxes in charge to monitor the bus looking for possible warning conditions in the KNX installation (gas, smoke...). The Touch Panel InZennio Z38i can be configured to warn the user in case of incidents inside or outside of the room where the display is installed.
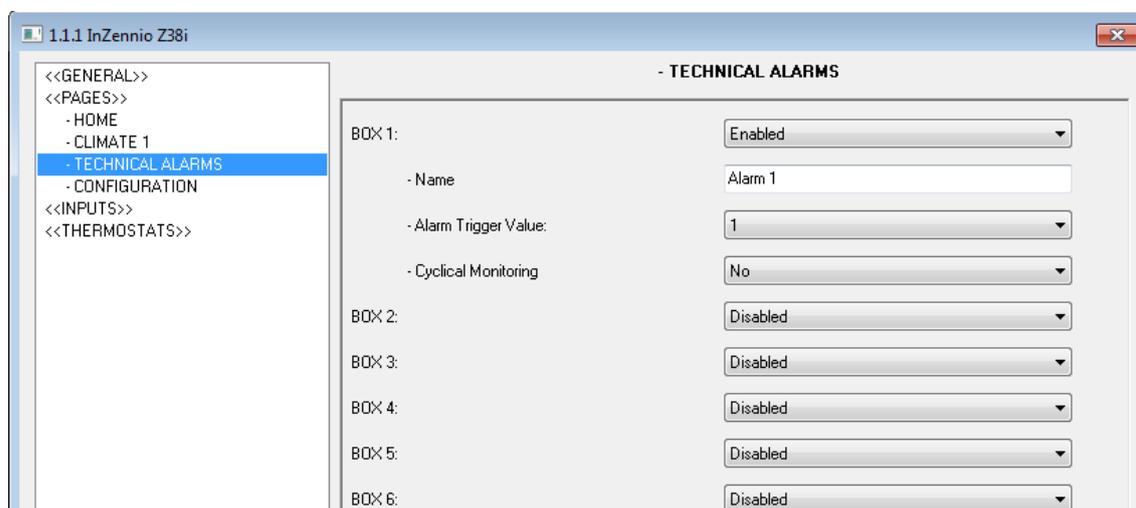
Figure 3.17. Technical alarms page

Every enabled box on the screen has some parameterizable fields:

➢ **Name:** This field allows associating a name with the corresponding box in the page. (11 free characters are available to set the name).

➢ **Alarm trigger value:** To choose the value that will trigger the alarm ("0" or "1"). This will mainly depend on the parameterization of the warning device installed.

➢ **Cyclical monitoring:** The state of the detection devices will be cyclically monitored by enabling this parameter. This parameter assures two features: the detection of incidents in the minor time possible and the security that the device of detection is properly working. It is necessary to define a **cycle time**, in minutes, via the corresponding parameter, thus establishing the particular interval of time to monitor the bus looking for Technical Alarms or a detection device failure.

Note: *When an error or accident is detected on the KNX installation, InZennio Z41 will show the "Technical Alarms Screen", and a danger icon will appear in the box affected; at the same time, the Panel blinks and emits a "beep" to warn the user.*

Once the warning reception is confirmed by the user (pressing the OK button), the screen will recover its normal state.

After 90 seconds, InZennio Z38i display will show again the "Home" default screen.

It is Really Important to know that confirming a warning does not make the Danger icon disappear from the box affected; this icon will only disappear from the screen when the detector device sends again to the bus its "normal status". *If cyclical monitoring is enabled, it will be the own device which sends this status when danger disappears.*

3.3.4. CONFIGURATION PAGE

This is a specific page where the user can adjust some basic parameters of the screen (time, date, contrast, etc.).
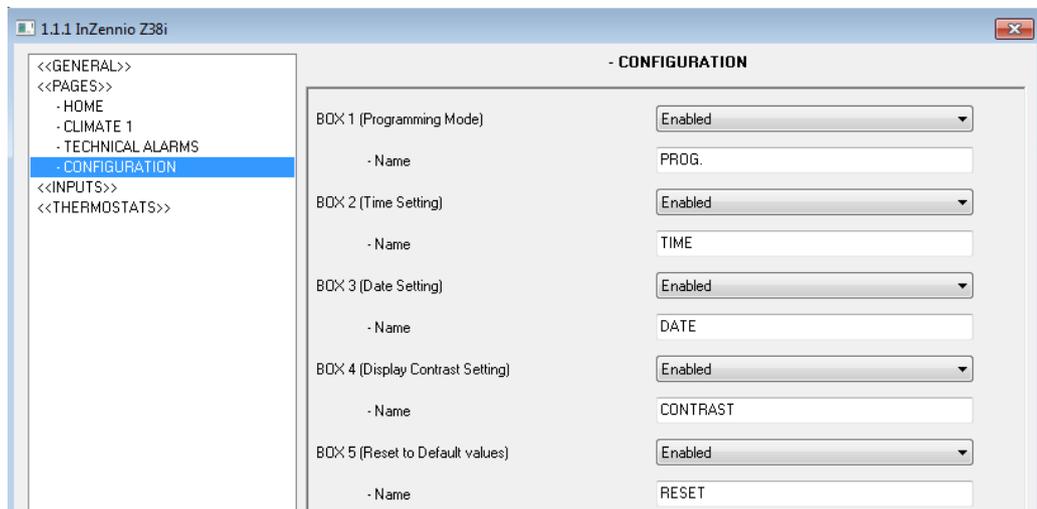
Figure 3.18. Configuration page

All of them have the parametrizable field "**Name**", which allows associating a name to the corresponding box in the page. (11 free characters are available to set the name).

Next, the different function of each box in the "Configuration Page" is described.

Note: *The disabled boxes are configured as blank boxes in the Page.*

🔵 **BOX 1 (Programming button):** When programming a device physical address, users can set the "Programming Mode" directly from this box. This characteristic makes this process easier as the user won't need to access the rear side of the panel to push the "Programming Button" any more.

🔵 **BOX 2 (Time setting):** This box allows setting the time in the Touch Panel. It must be taken into account the next characteristics:

➢ Time (together with the room temperature) is always displayed in the middle upper section of the display.

➢ When setting the time, the display will send the new settings to the bus through its own Communication Objects.

➢ The refresh rate is 1 minute.

➢ When the display recovers from a bus Power failure, this will show the time it had just before the incident.

Note I: *When a Power bus failure occurs, please have on mind the delay this implies to correct it.*

Note II: *There are different KNX devices on the market which can synchronize periodically the time and date of every single device in the installation. Such devices can be really useful when the installation is based on any kind of Schedule programming.*

🔹 **BOX 3 (Date setting):** This box allows setting the date in the Touch Panel.

To see the date in the display, users only have to press on any of the enabled pages "header". The date will be shown during 3 seconds.

Note*: The day of the week does not appear on the display; however, when programming the display, this is automatically configured when setting the date.*

🔹 **BOX 4 (Display contrast setting):** The contrast of the panel can be adjusted from this box. The range for this function lied between 0 and 20. Default value is 12.

🔹 **BOX 5 (Reset to default values)**: After a "Reset" in the display, or after a bus failure, the display will show the same time that it had before these two events.

Note I: *It is necessary to **press continuously** the button for a few seconds to apply the Reset correctly.*

Note II: *Take into account that after the reset a few seconds delay could take place respecting correct time; whereas after a bus failure this delay can be much bigger (it depends on the duration of the bus failure).*

This is the aspect the configuration page shows:
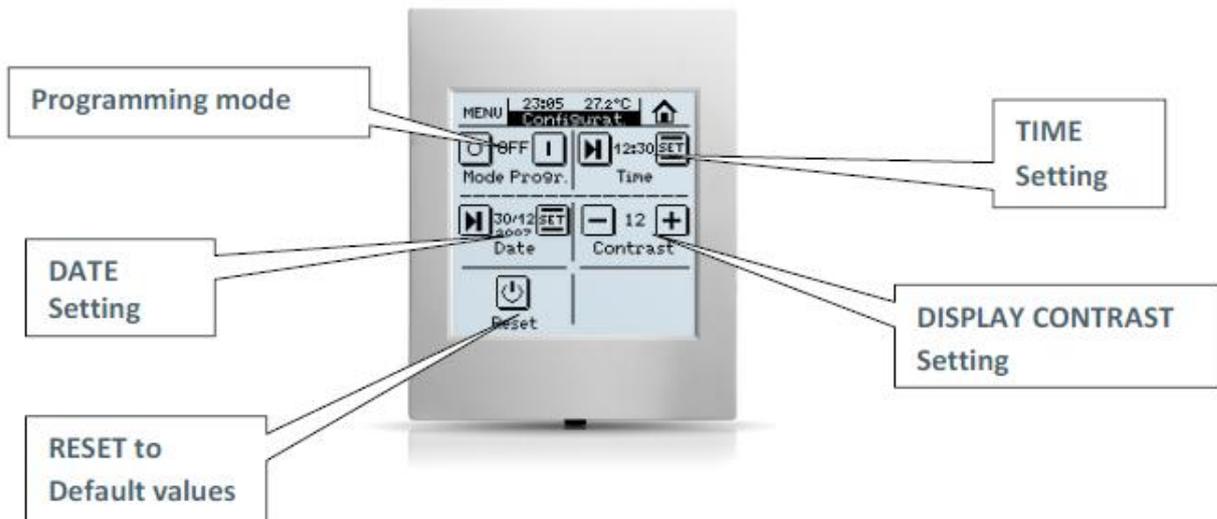
Figure 3.19. Configuration page aspect

3.4. INPUTS

Z38i has 4 binary inputs to be configured as push button o switch/sensor, connecting the corresponding devices.

Once the input is enabled, the access to the corresponding configuration window appears in the main menu according to the configured type of input.

3.4.1. PUSH BUTTON

A push button connected to an input consists of a device, which allows, or not, the current flow while this is being pushed; in normal conditions, push buttons contacts are always open. This event is a **pulsation** and the time it lasts, **threshold time**.

Depending on the "Threshold Time" it can be distinguished two different actions: Short press or Long press.

Typical key press devices, as keyboards, are used to be configured as push button inputs.
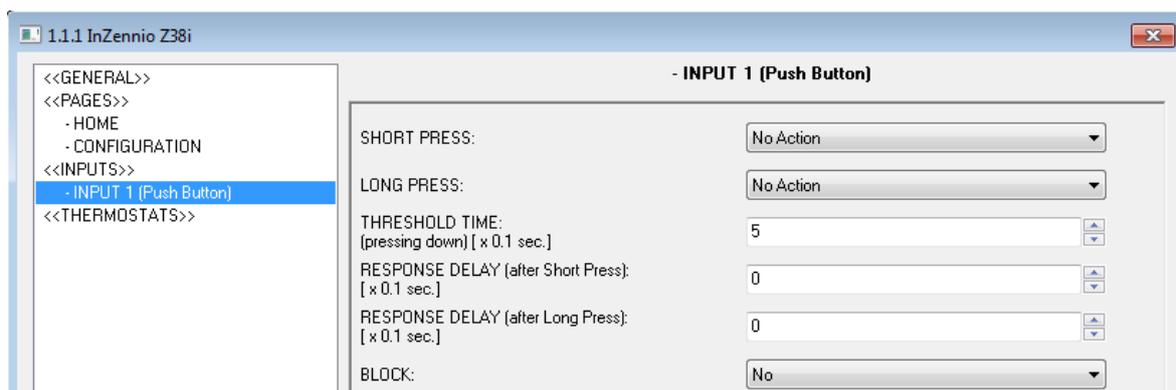
Figure 3.20. Inputs: Push button

Next, the configuration options for the inputs as push buttons are shown. For each of them there are the following configurable common fields:

● **Threshold time:** this parameter defines the time limit, in tenths of second, where a short turns into a long press.

● **Response delay (short press):** This parameter sets the time to wait for the object to be sent to the bus since the action on the input took place. I.e., with a Short Press, for example, the Z38i panel will wait the established time in "Response Delay (Short Press)" before sending the corresponding object to the bus. To get an immediate sending (no delay), set the value 0 in this field.

● **Response delay (long press):** This parameter sets the time to wait for the object to be sent to the bus since the action on the input took place. I.e., with a Short Press, for example, the Z38i panel will wait the established time in "Response Delay (Long Press)" before sending the corresponding object to the bus. To get an immediate sending (no delay), set the value 0 in this field.

● **Block:** This parameter uses the object "[Ix] Block". This object will disable/enable the corresponding input. When receiving the value "1" through this object, the InZennio Z38i will ignore any pulsation on the input. When receiving the value "0", the input is enabled again.

Note: *The actions performed during the block status will not be taken into account when the input is unblocked.*

a) Short press

🔵 **No action:** Z38i does not carry out any action when short pressing over the push button connected to its input.

🔵 **Sending of 0/1:** this function results on sending to the KNX bus a binary value, which will change depending on the chosen option:

➤ Response **0**: sends the value "0" through the object "[Ix][Short Press] 0"

➤ Response **1**: sends the value "1" through the object "[Ix][Short Press] 1"

➤ Response **Switching 0/1**: sends the values "0" and "1" alternately with every short press through the object "[Ix][Short Press] Switching".

🔵 **Shutter control:** This function results on sending 1 bit to the bus, in order to control the shutters. The available options are:

➤ **Up:** Rise the shutter. The value "0" is sent trough the object "[Ix][Short Press] Move Up Shutter".

➤ **Down:** Lower the shutter. The value "1" is sent trough the object "[Ix][Short Press] Move Down Shutter".

➤ **Up/Down (switched):** Alternative switching between the Move Up/Down orders (to manage the shutter with an only input), through the object "[Ix][Short Press] Move Up/Down Shutter".

➤ **Stop/Step up:** Stops the shutter; When talking about shutters with lamellas, this mode allows the user to control them; this parameter moves lamellas a pull up step. The value "0" is sent trough the object "[Ix][Short Press] Stop/Step Down Shutter".

➤ **Stop/Step down:** Stops the shutter. When talking about shutters with lamellas, this mode allows the user to control them; this parameter moves lamellas a pull down step. The value "1" is sent trough the object "[Ix][Short Press] Stop/Step Down Shutter".

➤ **Stop/Switched Step:** Stops the shutter. When talking about shutters with lamellas, this mode allows the user to control them; this parameter alternatively switches the lamellas pull up and down steps, by sending the values "0" and "1" alternately through the object "[Ix][Short Press] Stop/Step Shutter (switched)".

Note I: *The "Stop shutter" configuration include 3 options of step up, step down and switched step to lamellas control; but if the shutter does not have directional lamellas available, any of the three options will stop the shutter.*

Note II: *If the option "up/down (switched)" is chosen to short press, "stop shutter" action will not be able to be done in any point of the trajectory with other short key press over the same input.*

Dimmer control: this function results on sending to the KNX bus an object for controlling the Dimmer, which will change depending on the chosen option:

> **Light ON:** Turn the light ON. The value "1" is sent trough the object "[Ix][Short Press] Dimmer ON".

> **Light OFF:** Turn the light OFF. The value "0" is sent trough the object "[Ix][Short Press] Dimmer OFF".

> **Light On/Off (Switched):** Alternative switching between the ON/OFF orders (to manage the lighting level with an only input). The values "0" and "1" are sent alternately trough the object "[Ix][Short Press] Dimmer ON/OFF".

> **Brighter:** Every press on the screen increases the lighting level; this parameter depends on the "**Dimming Step**" set. A short press reduces the lighting level; a second press stops the Increase. (See Table 3.1 to know the available dimming steps).

> **Darker:** Reduces the lighting level with every press on the screen, this parameter depends on the "**Dimming Step"** set. A short press reduces the lighting level; a second press stops the "Reduction". (See Table 3.1 to know the available dimming steps).

> **Brighter/Darker (switched):** Alternative Switching between the orders Increase and Reduce Light level.

Sending of a Scene: This function results on sending the Scene Control Object "[General] Scenes" to the bus; a scene on the bus may be managed with the input through this Object.

> **Response:** Choose whether the scene will be "Run" or "Saved".

> **Scene:** This parameter identifies the scene to Run/Save with the corresponding Input.

b) Long press

The configuration options are the same as in **Short Press**.

3.4.2. SWITCH/SENSOR

When configuring an input as switching/sensor, it is necessary to select the action to carry out in the falling edge and the rising edge.
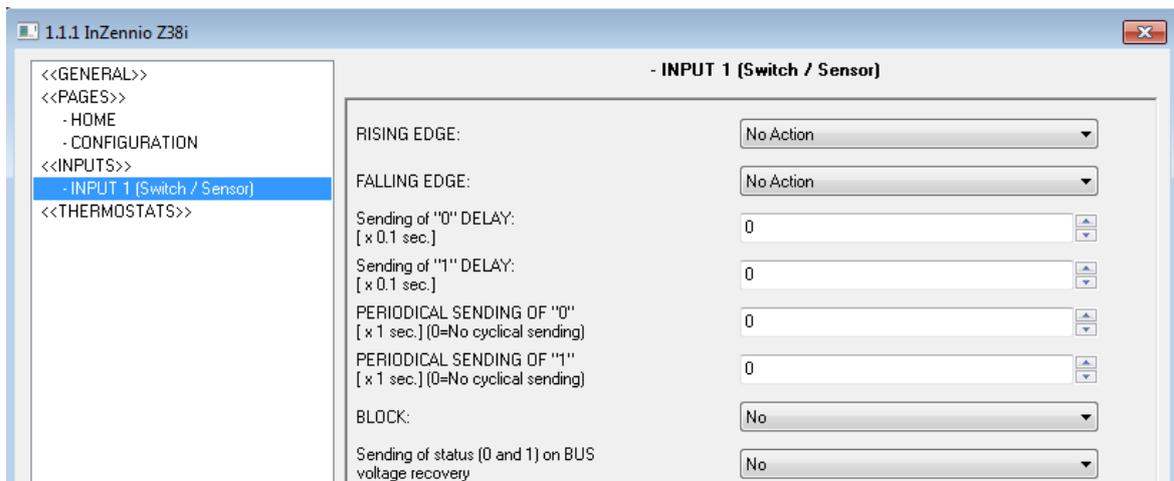
Figure 3.21. Inputs: Switch/Sensor

The available options are:

💠 **Rising edge:** select the sending value when this edge happens:

➢ **Nothing** (no action is performed).

➢ **0**: the object "[Ix] Edge" is sent to the KNX bus with value "0".

➢ **1**: the object "[Ix] Edge" is sent to the KNX bus with value "1".

➢ **Switching**: sending "0" or "1" to the KNX bus, as appropriate.

💠 **Falling edge:** select the sending value when this edge happens: Nothing, 0, 1 or switching.

💠 **Sending of "0" Delay**: specify the time, in seconds, after which the value "0" will be sent, once received the corresponding order.

🔹 **Sending of "1" Delay**: specify the time, in seconds, after which the value "1" will be sent, once received the corresponding order.

🔹 **Periodical sending of "0":** define a cyclical sending, in seconds, of the value "0". The value 0 indicates that the periodical sending is not activated.

🔹 **Periodical sending of "1":** define a cyclical sending, in seconds, of the value "1". The value 0 indicates that the periodical sending is not activated.

🔹 **Block:** if "Yes" is chosen, a new 1-bit communication object "[Ix] Block" is enabled, to block or unblock the corresponding input (sending a "1" or a "0", respectively). During the time the input is blocked, any order received from the KNX bus will be ignored.

🔹 **Sending statuses on bus voltage recovery:** this option allows configuring an automatic sending of the input status after a voltage recovery, with a sending delay (value between 0 and 255, in seconds).

3.5. THERMOSTATS

InZennio Z38i application offers the possibility to enable and configure up to **2 thermsotats**, independently.
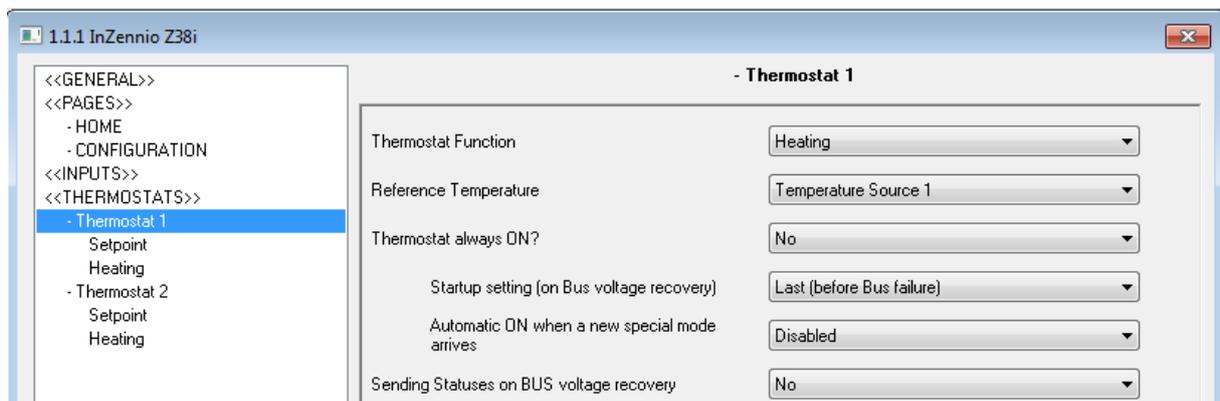
Figure 3.18. Thermostat 1 Configuration

To obtain theoretical information about the Zennio thermostat functioning, as well as information about its ETS configuration, please consult the specific documentation "Thermostat Zennio" available at http://www.zennio.com.

4. ANNEX I. COMMUNICATION OBJECTS

SECTION	NUMBER	SIZE	IN/OUT	FLAGS	VALUES			NAME	DESCRIPTION
					RANGE	1st TIME	RESET		
GENERAL	0	3 bytes	I/O	WT		0:00	Last	Time	Current time
	1	3 bytes	I/O	WT		01/01/2000	Last	Date	Current date
	2	1byte	O	T		Indifferent	Indifferent	Scenes	One only object used by device
	3	2bytes	O	RT	0ºC 60ºC	Indifferent	Indifferent	Temperature	Internal sensor value
	4	1bit	I	W				Display lighting	1=Light the Display; 0=No action
	5	1bit	I	W		Indifferent	Indifferent	Touch blocking	1=Touch Disabled; 0=Touch free
HOME AND HOME 2	6 - 17	1bit	O	T		Indifferent	Indifferent	[Home x Box x] Binary control	1-bit generic control
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Light on/off	0=Off; 1=On
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Move shutter	0=Up; 1=Down
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Security control	0=Deactivate; 1=Activate
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Simulation Channel	0=Off; 1=On
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Fan control	0=Down; 1=Up
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Mode control	0=Cool; 1=Heat
		1bit	O	T		Indifferent	Indifferent	[Home x Box x] Swing control	1=Swing; 0=Stop/Step
	18 – 29	1bit	I	WU		0	Last	[Home x Box x] Binary Indicator	1-bit generic indicator
		1bit	I	WU		0	Last	[Home x Box x] Light Indicator	0=Off; 1=On
		1bit	I	WU		0	Last	[Home x Box x] Security Indicator	0=Disarmed; 1=Armed
		1bit	I	WU				[Home x Box x] Mode control	0=Cool; 1=Heat
		1bit	I	WU				[Home x Box x] Swing indicator	1=Swing; 0=Stop/Step
	30-41	1 bit	I	T		Indifferent	Indifferent	[Home x Box x] Stop shutter	0 or 1 -> Stop
		1 bit	I	T		Indifferent	Indifferent	[Home x Box x] Presence simulation	0=Disabled; 1=Enabled
	42-53	4bits	O	T		Indifferent	Indifferent	[Home x Box x] Light dimming	4-bits dimmer control

SECTION	NUMBER	SIZE	IN/OUT	FLAGS	VALUES			NAME	DESCRIPTION
					RANGE	1st TIME	RESET		
HOME AND HOME 2	54-65	1byte	O	T		Indifferent	Indifferent	[Home x Box x] Precise Light dimming	1-byte dimmer control
			O	T		Indifferent	Indifferent	[Home x Box x] 1 byte control	1 byte generic control
			O	T		Indifferent	Indifferent	[Home x Box x] Mode control	0=Aut;1=Heat;3=Cool;9=Fan; 14=Dry
	66-77	1byte	I	WU		0	Last	[Home x Box x] Light Indicator	0%=Off; 100%=On
			I	WU		0	Last	[Home x Box x] Shutter position	0%=Top; 100%=Bottom
			I	WU		0	Last	[Home x Box x] Mode indicator	0=Auto; 1=Heat; 14=Dry;9=Fan;3=Cool
			I	WU				[Home x Box x] Fan Indicator	0%: Auto; 1-33%: Minimum; 34-66%: Medium; >67%: Maximum
			I	WU				[Home x Box x] Fan Indicator	0=Auto; 1=Minimum; 2=Medium; 3=Maximum
			I	WU				[Home x Box x] 1 byte Indicator	1 byte generic indicator
	78-89	2bytes	O	T	-20ºC to 95ºC	Indifferent	Indifferent	[Home x Box x] Temperature control	from -20ºC to 95ºC
	90-101	2bytes	I	WU	-20ºC to 95ºC	25ºC	Last	[Home x Box x] Floating point Indicator	From -273ºC to 670760ºC From 0 to 670760 m/s From 0% to 670760% From 0 lux to 670760 lux From -670760 to 670760
			I	WU				[Home x Box x] Temperature indicator	from -20ºC to 95ºC
SPECIFIC X (TIMERS)	102-117	1 bit	O	T				[Timers x Box x] Channel	Linked to timer pages
SPECIFIC X (CLIMATE)	102-105	1 bit	O	T				[Clima x] On/Off sending	0=Off; 1=On
	106-109	1 bit	O	T				[Clima x] Fan sending	0=Down; 1=Up
	110-113	1 bit	O	RWTU				[Clima x] 1 bit sending	1=Swing; 0=Stop/Step
	114-117	1 bit	O	RWTU				[Clima x] Mode sending	0=Cool; 1=Heat
	118-121	1 byte	O	RT				[Clima x] Mode sending	0=Auto; 1=Heat; 14=Dry;9=Fan;3=Cool
	122 - 125	2 bytes	O	T				[Clima x] Setpoint sending	Value sent to the machine
	122-125	2 bytes	O	RT				[Clima x] Setpoint offset sending	Float value
	126-129	1 bit	O	T				[Clima x] On/Off reception	0=Off; 1=On
	130-133	1 byte	I	WU				[Clima x] Fan reception	0%=Auto; 1-33%: Minimum; 34-66%: Medium; >67%: Maximum
			I	WU				[Clima x] Fan reception	0=Auto; 1=Minimum; 2=Medium; 3=Maximum
	134-137	1 bit	I	WU				[Clima x] 1 bit reception	0=Off; 1=On

SECTION	NUMBER	SIZE	IN/OUT	FLAGS	VALUES			NAME	DESCRIPTION
					RANGE	1st TIME	RESET		
SPECIFIC X (CLIMATE)	138-141	1 bit	I	WU				[Clima x] Mode reception	0=Cool; 1=Heat
	138-141	1 byte	I	WU				[Clima x] Mode reception	0=Aut;1=Heat;3=Cool;9=Fan;14=Dry
	142-145	2 bytes	I	WU				[Clima x] Setpoint reception	Value returned by the machine
	146-149	1 byte	O	RT				[Clima x] Special Mode sending	1=Comfort; 2=Standby; 3=Economy
	146-149	1 byte	O	RT				[Clima x] Special Mode sending	1=Comfort; 2=Standby; 3=Economy; 4=Protection
	150-153	1 byte	I	WTU				[Clima x] Special Mode reception	Value returned by the machine
	154-157	1 bit	I	T				[Clima x] Setpoint offset sending	0=Decrease; 1=Increase
	158-161	1 bit	I	W				[Clima x] Activity indicator	Input: 1-bit control signal
SPECIFIC 5 (TECHNICAL ALARMS)	162-167	1bit	I	WU	No Alarm		Last	[Tech.Alarms; Box x] Alarm	Trigger value (0/1) -> Alarm
	168-173	1bit	I/O	WT	Indifferent		Indifferent	[Tech.Alarms; Box x] Confirm	1=Alarm confirmed; 0=No action
INPUTS	162-167	1bit	I	WU	No Alarm		Last	[Tech.Alarms; Box x] Alarm	Trigger value (0/1) -> Alarm
	178-185 (EVEN)	1 bit, 4 bits, 1 byte	O	WT	-	-	-	[Ix] [Short Press] "0"	Short Pr. -> Sending of "0"
								[Ix] [Short Press] "1"	Short Pr. -> Sending of "1"
								[Ix] [Short Press] Switching	Short Pr. -> Switching "0/1"
								[Ix] [Short Press] Run Scene	Short Pr. -> Sending of "0-63"
								[Ix] [Short Press] Save Scene	Short Pr. -> Switching "128/-191"
								[Ix] [Short Press] Brighter	Sh.Pr.->Bright; Sh.Pr->Stop
								[Ix] [Short Press] Darker	Sh.Pr.->Dark; Sh.Pr->Stop
								[Ix] [Short Press] Brighter/Darker	Sh.Pr->Bright/Dark;Sh.Pr->Stop
								[Ix] [Short Press] Move Down Shutter	Short Pr. -> Sending of 1 (Down)
								[Ix] [Short Press] Move Up Shutter	Short Pr. -> Sending of 0 (Up)
								[Ix] [Short Press] Move Up/Down Shutter	Short Pr. -> Switching "0/1"
								[Ix] [Short Press] Stop/Step Up Shutter	Short Pr. -> Sending of 0
								[Ix] [Short Press] Stop/Step Down Shutter	Short Pr. -> Sending of 1
								[Ix] [Short Press] Stop/Step Shutter (switched)	Short Pr. -> Switching "0/1"
								[Ix] [Short Press] Dimmer ON	Short Pr. -> Sending of 1 (ON)
								[Ix] [Short Press] Dimmer OFF	Short Pr. -> Sending of 0 (OFF)
								[Ix] [Sensor] Edge	Edge -> Sending of "0" or "1"
	178-185 (ODD)	1 bit, 4 bits, 1 byte	O	WT	-	-	-	[Ix] [Long Press] "0"	Long Pr. -> Sending of "0"
								[Ix] [Long Press] "1"	Long Pr. -> Sending of "1"
								[Ix] [Long Press] Switching	Long Pr. -> Switching "0/1"
								[Ix] [Long Press] Run Scene	Long Pr. -> Sending of "0-63"
								[Ix] [Long Press] Save Scene	Long Pr. -> Switching "128/-191"
								[Ix] [Long Press] Brighter	Lg.Pr.->Bright; Lg.Pr->Stop
								[Ix] [Long Press] Darker	Lg.Pr.->Dark; Lg.Pr->Stop
								[Ix] [Long Press] Brighter/Darker	Lgh.Pr->Bright/Dark;Lg.Pr->Stop
								[Ix] [Long Press] Move Down Shutter	Long Pr. -> Sending of 1 (Down)
								[Ix] [Long Press] Move Up Shutter	Long Pr. -> Sending of 0 (Up)

SECTION	NUMBER	SIZE	IN/OUT	FLAGS	VALUES			NAME	DESCRIPTION
					RANGE	1st TIME	RESET		
INPUTS	178-185 (ODD)	1 bit, 4 bits, 1 byte	O	WT	-	-	-	[Ix] [Long Press] Move Up/Down Shutter	Long Pr. -> Switching "0/1"
								[Ix] [Long Press] Stop/Step Up Shutter	Long Pr. -> Sending of "0"
								[Ix] [Long Press] Stop/Step Down Shutter	Long Pr. -> Sending of "1"
								[Ix] [Long Press] Stop/Step Shutter (switched)	Long Pr. -> Switching "0/1"
								[Ix] [Long Press] Dimmer ON	Long Pr. -> Sending of 1 (ON)
								[Ix] [Long Press] Dimmer OFF	Long Pr. -> Sending of 0 (OFF)
								[Ix] [Long Press] Dimmer ON/OFF	Long Pr. -> Switching "0/1"
								[Ix] [Sensor] Edge	Edge -> Sending of "0" or "1"
THERMOSTAT	186-187	2 bytes	I	W	-40ºC – 150ºC	25ºC	Last	[T1] Temperature source x (x=1,2)	External sensor measure
	188-189	2 bytes	I	W	-40ºC – 150ºC	25ºC	Last	[T2] Temperature source x (x=1,2)	External sensor measure
	190-191	1 byte	I	W	1-4	Parameter.	Parameter.	[Tx] Special Mode:	1-byte HVAC mode
	192-199	1 bit	I	W	0/1	0	Last	[Tx] Special Mode: x (x= Comfort, Standby, Economy or Protection)	0=Nothing; 1=Trigger
		1 bit	I	W	0/1	0	Last	[Tx] Special Mode: x (x= Comfort, Standby, Economy or Protection)	0=Off; 1=On
	200-201	1 bit	I	W	0/1	0	Last	[Tx] Window status (input)	0=Closed; 1=Opened
	202-203	1 bit	I	W	0/1	0	0	[Tx] Comfort prolongation	0=Nothing; 1=Timed Comfort
	204-205	1 byte	O	RT	0-255	Parameter.	Last	"[Tx] Special Mode (Status)	1-byte HVAC mode
	206-207	2 bytes	I	W	-20ºC – 150ºC	Parameter.	Last	[Tx] Basic setpoint	Reference setpoint:
								[Tx] Setpoint	Thermostat Setpoint input
	208-209	1 bit	I	W	0/1	0	Indifferent	[Tx] Setpoint (Step)	0=-0.5ºC;1=+0.5ºC
	210-211	2 bytes	I	W	-10ºC, 10ºC	0	Last	[Tx] Setpoint (Offset)	Float value
	212-213	2 bytes	O	RT	-20ºC – 150ºC	25ºC	Last	[Tx] Setpoint (Status)	Current setpoint
	214-215	2 bytes	O	RT	-20ºC – 150ºC	Parameter.	Last	[Tx] Basic Setpoint (Status)	Current basic setpoint
	216-217	2 bytes	O	RT	-10ºC, 10ºC	0	Last	[Tx] Setpoint (Offset Status)	Current setpoint offset
	218-219	1 bit	I	W	0/1	0	Indifferent	[Ix] Setpoint reset	Reset setpoint to default
		1 bit	I	W	0/1	0	Indifferent	[Tx] Offset Reset	Reset offset
	220-221	1 bit	I	W	0/1	Parameter.	Last	[Tx] Mode	0=Cool; 1=Heat
	222-223	1 bit	O	RT	0/1	Parameter.	Last	[Tx] Mode (Status)	0=Cool; 1=Heat
	224-225	1 bit	I	W	0/1	Parameter.	Parameter.	[Tx] ON/OFF	0=Off; 1=On
	226-227	1 bit	O	RT	0/1	Parameter.	Parameter.	[Tx] ON/OFF (Status)	0=Off; 1=On
	228, 230	1 bit	O	RT	0/1	0	Last	[Tx] Control variable (Cool)	PI control (PWM)
								[Tx] Control variable (Cool)	2-point control
	229, 231	1 bit	O	RT	0/1	0	Last	[Tx] Control variable (Heat)	PI control (PWM)
								[Tx] Control variable (Heat)	2-point control
	232.234	1 byte	O	RT	0-100%	0	Last	[Tx] Control variable (Cool)	PI control (Continuous)
	233.235	1 byte	O	RT	0-100%	0	Last	[Tx] Control variable (Heat)	PI control (Continuous)
	236.238	1 bit	O	RT	0/1	0	Last	[Tx] Additional Cool	Temp > (Setpoint+Band) => "1"
	237.239	1 bit	O	RT	0/1	0	Last	[Tx] Additional Heat	Temp < (Setpoint-Band) => "1"

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