



# IDAC

## Access Controller for Installation in Door

**ZVIIDAC**

Application Program Version: 2.0

User manual edition: [2.0]\_a

[www.zennio.com](http://www.zennio.com)

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## DOCUMENT UPDATES

| Version | Changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Page(s) |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| [2.0]_a | <p><b>Changes in the application program:</b></p> <ul style="list-style-type: none"> <li>Updating of the access control module: <ul style="list-style-type: none"> <li><b>BLE</b> (Bluetooth Low Energy) module.</li> <li>New object to inform the language and region after the correct reading of a NFC card or BLE key data: <b>"[Access] Locale"</b>.</li> <li>New binary object to inform if accesses granted during a KNX bus failure: <b>"[Access] Offline access"</b>.</li> <li>Possibility to choose the action when one of the groups with granted access tries to access an occupied room.</li> <li>New parameter to select the timeout for the second access attempt.</li> <li>Possibility to restrict the use of the <i>Make Up Room</i> state.</li> </ul> </li> <li>Optimisation of modules: brightness and proximity and luminosity sensor.</li> </ul> | -       |

# 1 INTRODUCTION

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## 1.1 IDAC

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IDAC from Zennio is a KNX interface presented as an access control system to rooms or other parts of the installation through reading ID cards.

The most notable features of this device are:

- **Product consisting of:**
  - **Two Access modules** installed in door.
  - **Lock** that will make possible the opening and closing of the door and the power supply of the modules.
  - **Metal element** installed in the door frame that will receive direct power from KNX bus.
- **Battery charging system and power supply** to KNX bus by means of retractable metal contacts.
- **Outdoor module with rooms access control functionality** using:
  - Cards with **NFC** (Near Field Communication) technology of MIFARE DESFire and MIFARE Classic types.
  - **BLE** (*Bluetooth Low Energy*) keys provided through the Zennio **ZenKey** application. Please refer to the “**ZenKey**” user manual, available under the IDAC product section at [www.zennio.com](http://www.zennio.com), for detailed information.
- **Buzzer** for an audible acknowledgement of user actions (with the possibility of disabling it by object).
- **Communication with Z-Access** for the management and monitoring of accesses.
- **Buttons and LED indicators** on both modules.
- Possibility of **locking / unlocking the buttons** of both modules.

- Possibility of setting a **press detection delay**.
- **Heartbeat**.

## 1.2 INSTALLATION

IDAC connects to the KNX bus through the on-board KNX connector. This device requires an external 24V DC power supply.

1. Access LED indicator.
2. Luminosity and proximity sensor.
3. Touch area.
4. NFC card reader.
5. Tamper switch.
6. 15-pin connector.
7. 12-pin connector.
8. Programming/Test button.
9. Programming/Test LED.
10. Interconnection cable (15-pin).
11. Screws and metal plate for flush mounting on door.
12. Security screw.
13. Touch areas.
14. Luminosity and proximity sensor.

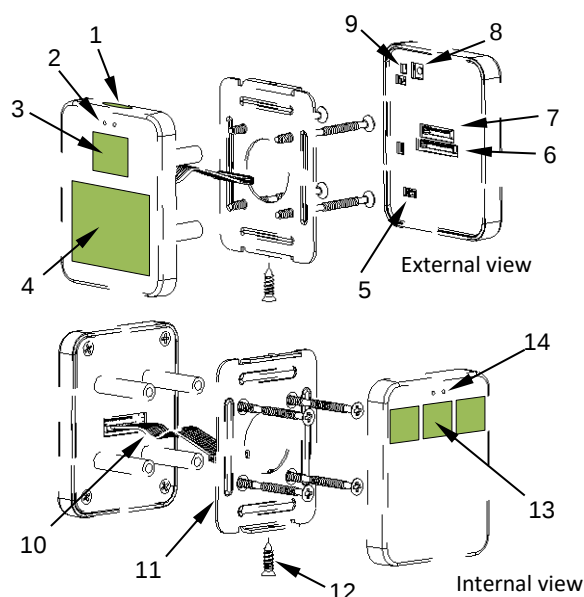


Figure 1. IDAC.

A short press on the **Prog. /Test button** (8) will make the device enter the programming mode. The **Prog. /Test LED** (9) will then light in red. On the contrary, if this button is held while the device gets connected to the bus, the device will enter the **safe mode**. In such case, the programming LED will blink in red colour.

For detailed information about the technical features of the device and about the installation process, please refer to the corresponding **Datasheet** bundled with the original package of the device and the installation manual available at [www.zennio.com/](https://www.zennio.com/).

### 1.3 START-UP AND BUS KNX POWER FAILURE OR OPEN DOOR

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After the device start-up (due to a device reset or programming), it requests date and time through the object “[Access] Request Date and Time”. The group address of this object is the one that must be indicated in Z-Access to respond to the request.

For proper operation of the buttons of both modules, it is recommended not to be pressing them during the initialization, either after programming or after connecting the external power supply.

On the other hand, in the event of a **KNX bus power failure or door opening** the device will **continue operating normally** since it has power supply through a rechargeable battery, although, of course, there will be no communication with the KNX bus. Nevertheless, note that, to reduce the battery consumption:

- All LED are turn off after 5 minutes of the KNX bus power failure or door opening. They are only turn on after a presence detection, press or card reading.
- The BLE module and NFC reader on the external module are turned off when the door opens. In the event of KNX bus power failure with the door closed they will remain active, enabling access to the room.

**Important:** *If the battery is drained out, it is essential that, when the device is restarted during the charging process, the time is correctly received as a response to the object request “[Access] Request Date and Time”. A clock offset caused by the absence of a battery can be critical for user access, as it depends on the date/time specified on their cards.*

## 2 CONFIGURATION

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

### 2.1 GENERAL

The "General" tab contains general settings, those that are independent of the internal and external modules.

#### ETS PARAMETERIZATION

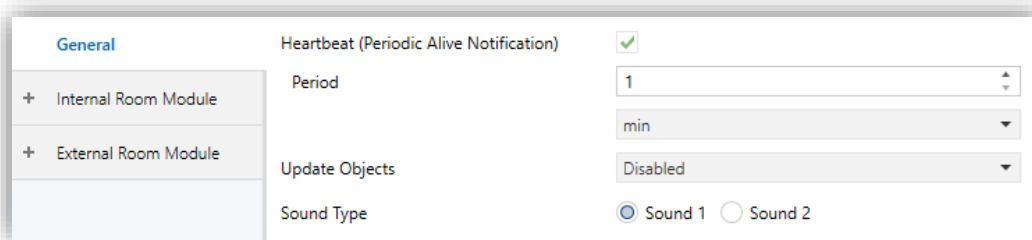


Figure 2. General Configuration.

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

**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 match the period set.

- **Update Objects:** enables the sending of read requests to update status objects. There are four options available, some of them with a configurable delay:
  - [\[Disabled\]](#): no read request, therefore objects are not updated.

<sup>1</sup> The default values of each parameter will be highlighted in blue in this document, as follows: [\[default/rest of options\]](#).

- [After Programming/Reset]: read requests are sent after the parameterised **delay** [1...10...65535] [s/min/h] when a restart (after battery depletion or change), a download or a reset device from ETS occurs.
  - [After Reconnect]: read request are sent when the connection to the bus is recovered, after the parameterised **delay** [1...10...65535] [s/min/h].
  - [After Programming/Reset and Reconnect]: combination of the two above options.
- **Sound Type** [Sound 1 / Sound 2]: determines the range of sounds the device will incorporate for button, doorbell, and alarm acoustic signals.

The project topology shows by default, in addition to the objects of the **access control** module, the following:

- “[General] Scene: Receive” and “[General] Scene: Send”: objects for respectively receiving and sending scene values from/to the KNX bus whenever it is necessary.
- “[General] Bolt – Alarm”: object which will report a mechanical trouble in the bolt for revision.
- “[General] Servomotor – Alarm”: object which will report a problem in the servomotor that makes it possible to open the door. When this happens, it must be checked.
- “[General] Tampering – Alarm”: object which will notify that the enveloping has been removed.
- “[General] Tampering – Date and Time”: 8-byte object that is sent when the enveloping is removed, informing the date and time of the action.

Please refer to the “**Access Control**” user manual, available under the IDAC product section at [www.zennio.com](http://www.zennio.com), for detailed information about the rest of the available objects.

## 2.2 INDOOR MODULE

This module is installed inside the room, embedded in the door.

It consists of a **pair of pushbuttons** or an **individual pushbutton** (depending on the model) to control the state of the room.

In addition, it has a **proximity sensor** and an **ambient luminosity sensor** that will allow the device to react to different situations of presence or illumination.

### 2.2.1 CONFIGURATION

In the "Configuration" tab of the Indoor Module, the general configurable parameters of the module are displayed. Most of them are checkboxes to activate other functionalities.

#### ETS PARAMETERIZATION

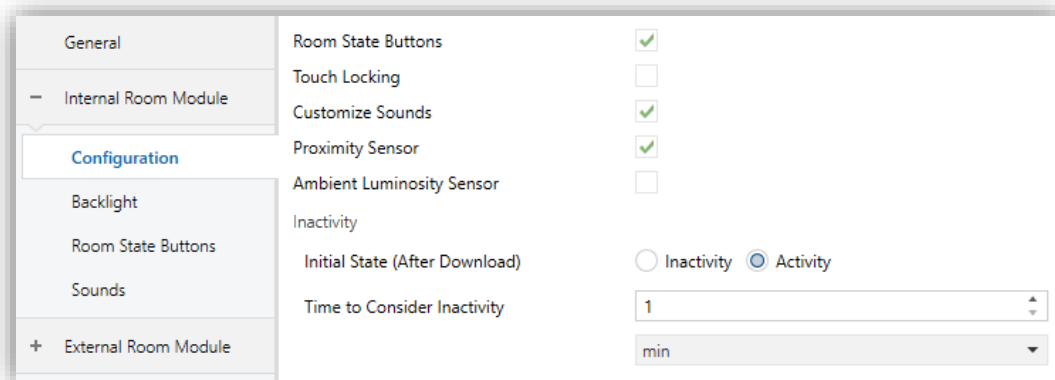


Figure 3. Indoor Module Configuration

- **Room State Buttons** [disabled/enabled]: enables or disables the "Room State Buttons" tab in the tree on the left. See section 2.2.3 for details.
- **Touch Locking** [disabled/enabled]: enables or disables the "Touch Locking" tab in the tree on the left. See section 2.2.4 for details.
- **Customize Sounds** [disabled/enabled]: enables or disables the "Sounds" tab in the tree on the left. See section 2.2.5 for details.

- **Proximity Sensor** [[disabled/enabled](#)]: enables the proximity sensor. This functionality permits “waking up” the device when detecting presence through the proximity sensor

Please refer to the user manual “**Proximity and Luminosity Sensor**” (available in the IDAC product section at the Zennio homepage, [www.zennio.com](http://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” tab in the tree on the left. See section 2.2.6 for details.

- **Inactivity:**

- **Initial State (After Download)** [[Inactivity / Activity](#)]: determines whether the internal module should be started in activity state after a download.
- **Time to Consider Inactivity** [[1...65535](#)] [[s/min/h](#)]: time that must elapse since the last press and/or proximity detection to consider inactivity state and to set the configured brightness level. See section 2.2.2.

The project topology always shows the following objects:

- **“[In] Activity”**: 1-bit object to force activity/inactivity state on the device. For further information, please refer to the user manual “**Proximity and Luminosity Sensor**” and “**Brightness**” (available in the IDAC product section at the Zennio homepage, [www.zennio.com](http://www.zennio.com)).
- **“[In] Sounds - Disabling Button Sound”**: 1-bit object to mute the button sounds.
- **“[In] Proximity Sensor”, “[In] External Proximity Detection” and “[In] 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 IDAC product section at the Zennio homepage, [www.zennio.com](http://www.zennio.com)).

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### 2.2.2 BACKLIGHT

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The Indoor Module allows the brightness of its LED to be managed according to two operating modes: normal and night mode.

Please refer to the specific manual “**Brightness**” (available in the IDAC product section at the Zennio website, [www.zennio.com](http://www.zennio.com)) for detailed information about the functionality and the configuration of the related parameters.

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### 2.2.3 ROOM STATE BUTTONS

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The buttons of the Indoor Module are intended to control the state of the room (*normal*, *do not disturb* and *make-up request*).

Two types of control are available:

- **Do Not Disturb:** a single button that switches between *Normal* and *Do Not Disturb*.
  - If the current state of the room is *Normal* or *Make-Up Request* and the button is pressed, it is activated *Do Not Disturb*.
  - If the current state of the room is *Do Not Disturb* and the button is pressed, it is activated *Normal*.
- **Double:** two buttons of which the right switches between *Do Not Disturb* and *Normal* and the left between *Make-Up Request* and *Normal*.

**Note:** Please, note that the type of control must be selected according to the product design.

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### ETS PARAMETERIZATION

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When the function **Room State Buttons** in “Configuration” tab, in Indoor Module, a new tab will be available in the left tree. In addition, three objects will appear and will allow to monitor and control the state of the room: “[Access] Room State Indicator” and “[Access] Room State”, “[Access] Room State: Make Up Room (Status)” and “[Access] Room State: Do Not Disturb (Status)”.

Please refer to the “**Access Control**” user manual, available under the IDAC product section at [www.zennio.com](http://www.zennio.com), for detailed information.

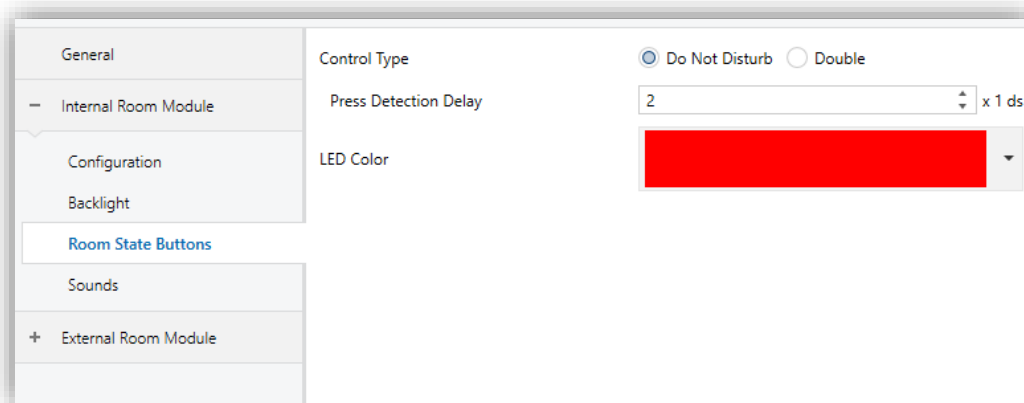


Figure 4. Room State Buttons

- **Control Type** [[Do Not Disturb](#) / [Double](#)]: depending on the type of control selected, one or two buttons will be enabled, located in the central area or on both sides, respectively.
- **Press Detection Delay** [[1...2...255](#)] [[x 1 ds](#)]: during this time, no press will be considered.
- **LED Color**: color of the LED associated to the button when the corresponding state is selected.

## 2.2.4 TOUCH LOCKING

Buttons can optionally be locked or unlocked at any time by receiving a binary value (configurable) addressed to the object provided for this purpose. It can also be done through scene values.

### ETS PARAMETERIZATION

After enabling **Touch Locking** from “Configuration” screen (see section 2.2.1), a new tab will be incorporated into the tree on the left.

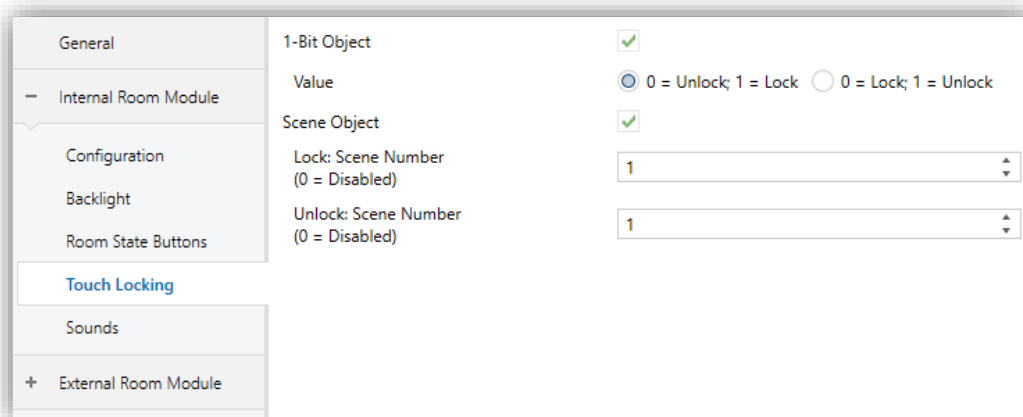


Figure 5. Touch Locking

- **1-Bit Object** [disabled/enabled]: enables the 1-bit object “[In] 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 buttons.
  - **Unlock: Scene Number (0 = Disabled)** [0/1...64]: scene number that unlocks the buttons.

## 2.2.5 SOUNDS

The Indoor Module of IDAC emits **two types of sounds**, depending on the action performed:

- **Sending Confirmation**: a short and sharper beep that 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 doorbell.

The range of sounds emitted when these actions are performing will be different depending on the sound type selected (see section 2.1).

Enabling and disabling the button sounds can be done in parameters or through an object, being also possible to set 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 PARAMETERIZATION

After enabling the **Customize Sounds** in “Configuration” screen, in Indoor Module, (see section 2.2.1), a new tab will be incorporated into the tree on the left.

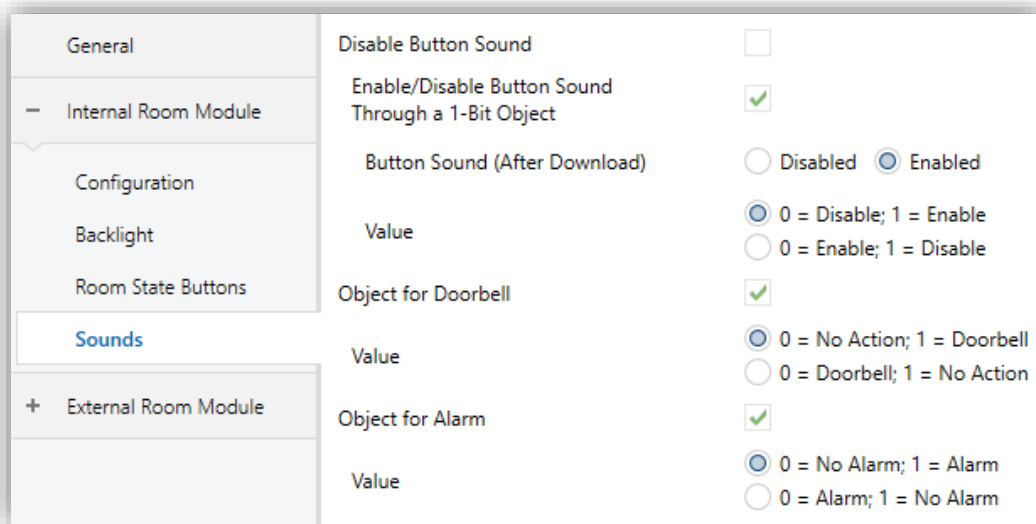


Figure 6. Indoor Module Sounds

- **Disable Button Sounds** [[disabled/enabled](#)]: enables or disables acoustic signals when actions derived from button presses are executed.
- **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 (“[In] Sounds – Disabling Button Sound”).
  - **Button Sound (After Download)** [[enabled/disabled](#)]: sets whether the button beeping function should start up enabled 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 (“**[In] 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 alarm function. If enabled, a specific object (“**[In] 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

## 2.2.6 AMBIENT LUMINOSITY SENSOR

Indoor Module includes a sensor to measure the ambient luminosity level, so that the brightness of the LEDs can be adjusted according to the current luminosity of the room.

Please refer to the specific manual “**Luminosity and Proximity Sensor**” (available in the IDAC product section at the Zennio homepage, [www.zennio.com](http://www.zennio.com)) for detailed information about the functionality and the configuration of the related parameters.

## 2.3 OUTDOOR MODULE

This module will be installed outside the room, embedded in the door, to allow access to authorized persons. For this purpose, it has an NFC reader and an BLE module for reading the access cards and keys of the users.

It also has a **button** for doorbell functionality and, as in the case of the indoor module, it is equipped with a **proximity sensor** and an **ambient luminosity sensor** that will allow to adjust the backlight according to different situations of presence or illumination.

This module does not have the activity functionality; its LEDs will be always on (provided that there is KNX bus connection).

### 2.3.1 CONFIGURATION

In the "Configuration" tab of the Outdoor Module, the general configurable parameters of the module are displayed. Most of them are checkboxes to activate other functionalities.

#### ETS PARAMETERIZATION

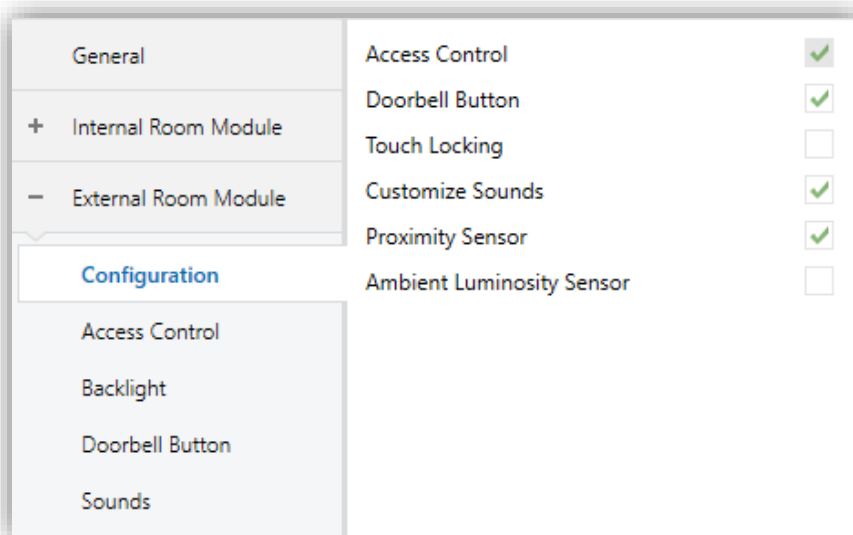


Figure 7. External Module Configuration

- **Access Control** [[enabled](#)]: read-only parameter to make it evident that the “Access Control” tab is always enabled in the tab tree on the left. See section 2.3.2 for details.
- **Doorbell Button** [[disabled/enabled](#)]: enables or disables the “Doorbell Button” tab in the tree on the left. See section 2.3.4 for details.
- **Touch Locking** [[disabled/enabled](#)]: enables or disables the “Touch Locking” tab in the tree on the left. See section 2.3.5 for details.
- **Customize Sounds** [[disabled/enabled](#)]: enables or disables the “Sounds” tab in the tree on the left. See section 2.3.6 for details.
- **Proximity Sensor** [[disabled/enabled](#)]: enables the proximity sensor. This functionality permits “waking up” the device when detecting presence through the proximity sensor

Please refer to the user manual “**Proximity and Luminosity Sensor**” (available in the IDAC product section at the Zennio homepage, [www.zennio.com](http://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” tab in the tree on the left. See section 2.3.7 for details.

The project topology always shows the following objects:

- “[Out] Central Area LED”: 1-bit object that allows to force switch on or off of the LEDs of the central area of the Outdoor Module.
- “[Out] Sounds - Disable Sound”: 1-bit object to mute the buttons and access sounds.
- “[Out][Doorbell] Switch: “0””: object associated to the Doorbell Button enabled by default.
- “[Out] Proximity Sensor”, “[Out] External Proximity Detection” and “[Out] 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 IDAC product section at the Zennio homepage, [www.zennio.com](http://www.zennio.com)).

### 2.3.2 ACCESS CONTROL

IDAC incorporates a functional module for access control to rooms or other areas of a building by reading identification elements (**NFC cards and BLE keys**) issued to each user.

Please refer to the specific user manual “**Access Control**”, available within the product section of the IDAC at [www.zennio.com](http://www.zennio.com), for detailed information about the functionality and configuration of the related parameters

### 2.3.3 BACKLIGHT

The outdoor module has **three LEDs**, each of which has a specific functionality:

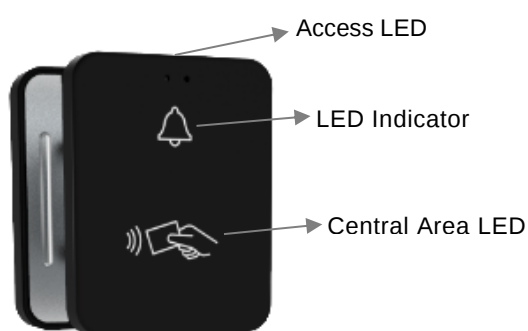
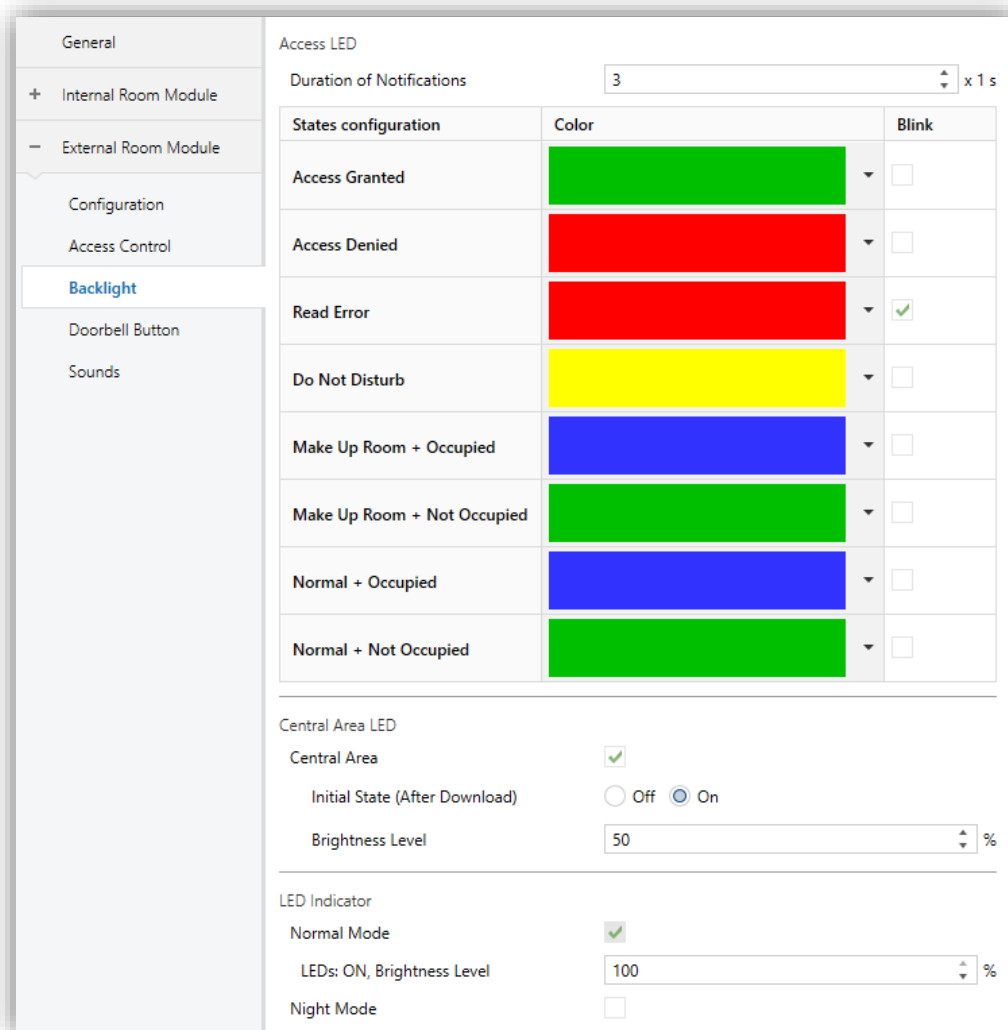


Figure 8. Outdoor Module Backlight.

- **Access LED:** LED at the top of the device that will light for a configurable time after each attempt to access the room. The colour can be selected according to the access result and the state of the room, and if desired, blinking during notification.

- **Central Area LED:** LED that illuminates the NFC card reader icon. If enabled, will have a fixed level of illumination.
- **LED Indicator:** LED associated with the doorbell button also with a fixed level of illumination according to the mode of illumination.

## ETS PARAMETERIZATION



**Access LED**

Duration of Notifications: 3 x 1 s

| States configuration        | Color  | Blink                               |
|-----------------------------|--------|-------------------------------------|
| Access Granted              | Green  | <input type="checkbox"/>            |
| Access Denied               | Red    | <input type="checkbox"/>            |
| Read Error                  | Red    | <input checked="" type="checkbox"/> |
| Do Not Disturb              | Yellow | <input type="checkbox"/>            |
| Make Up Room + Occupied     | Blue   | <input type="checkbox"/>            |
| Make Up Room + Not Occupied | Green  | <input type="checkbox"/>            |
| Normal + Occupied           | Blue   | <input type="checkbox"/>            |
| Normal + Not Occupied       | Green  | <input type="checkbox"/>            |

**Central Area LED**

Central Area: ☒

Initial State (After Download): ☐ Off ☒ On

Brightness Level: 50 %

**LED Indicator**

Normal Mode: ☒

LEDs: ON, Brightness Level: 100 %

Night Mode: ☐

Figure 9. External Module Backlight – Access LED.

### ● Access LED

- **Duration of Notifications** [2...3...5] [x 1 s]: time that the access LEDs will be on when trying to access the room.
- **States Configuration.** For each state of the room, which will depend on the value of the objects "[Access] Room State: Status" and "[Access] Presence: Occupancy State", will be possible configuring the **colour** with the LED will shine and if you want there to be **blinking** during notification.

A colour can be set for each of the following room states:

- **Access Granted**

- Access Denied
- Read Error
- Do Not Disturb
- Make Up Room + Occupied
- Make Up Room + Not Occupied
- Normal + Occupied
- Normal + Not Occupied

In addition, considering the parameters set in **Action When State is "Do not disturb"** and **Action When Room is Occupied**, the colour of the access LED will be applied as follows.

|            |              |                | Access LED Color       |                         |                |               |
|------------|--------------|----------------|------------------------|-------------------------|----------------|---------------|
|            |              |                | Allow                  | Allow on Second Attempt |                | Deny          |
|            |              |                |                        | 1° Attempt              | 2° Attempt     |               |
| Room State | Not occupied | Make Up        | Make Up + Not Occupied |                         |                |               |
|            |              | Normal         | Normal + Not Occupied  |                         |                |               |
|            | Occupied     | Do Not Disturb | Access Granted         | Do Not Disturb          | Access Granted | Access Denied |
|            |              | Make Up        |                        | Make Up + Occupied      |                |               |
|            |              | Normal         |                        | Make Up + Not Occupied  |                |               |

Table 1. State vs Access LED Color.

## ● Central Area LED

- **Central Area** [\[enabled/disabled\]](#): enables or disables the LED guide. If enabled, the binary object "[Out] Central Area LED" will allow it to be turned on and off. In addition, the following parameters will appear:

- **Initial State (After Download)** [\[Off / On\]](#).
- **Brightness Level** [\[0...50...100\]](#) [%]: LED illumination level when is on.

- **LED Indicator.** The brightness of the doorbell button LED will be managed according to two operating modes: normal mode and night mode.

Please refer to the specific manual “**Brightness**” (available in the IDAC product section at the Zennio website, [www.zennio.com](http://www.zennio.com)) for detailed information about the functionality and the configuration of the related parameters

**Note:** This parameter will only be available if **Doorbell Button** is enabled in the “Configuration” tab of the Outdoor Module, and additionally the option selected for the **LED State** parameter is “On”.

### 2.3.4 DOORBELL BUTTON

The Outdoor Module has single button with doorbell functionality. This button type can be configured as:

- **Switch Control:** whenever the user touches the button, a binary value will be sent to the KNX bus. This value is configurable and may be 0 or 1, or alternate with every touch according to the sequence 1 → 0 → 1 → ...
- **Hold & Release Control:** as soon as the user touches the button, a binary value will be sent to the KNX bus. And as long as the user releases the button, another value will be sent through the same object.

### ETS PARAMETERIZATION

When the function **Doorbell Buttons** in “Configuration” tab, in Outdoor Module, a new tab will be available in the left tree.

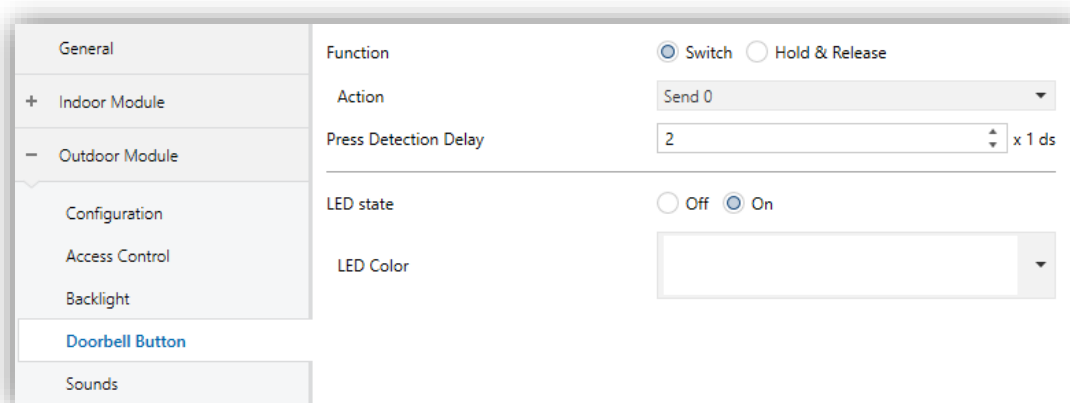


Figure 10. Doorbell Button

- **Function** [[Switch](#) / [Hold & Release](#)]: sets the desired function for the button:

➤ **Switch:**

- **Action** [[Send 0](#) / [Send 1](#) / [Toggle 0/1](#)]: sets the value to be sent to the bus (through object “[Out][Doorbell] Switch: “X”) when the user touches the button.

➤ **Hold & Release**

- **Action on Hold / Release** [[Send 0](#) / [Send 1](#)]: sets the value to be sent to the bus (through “[Out][Doorbell] Hold & Release”) when the user touches or releases the button, respectively.

- **Press Detection Delay** [[1...2...255](#)] [[x1 ds](#)]: during this time, no press will be considered.
- **LED State** [[Off](#) / [On](#)]: sets whether the button LED will be off or on, illuminated at the level set in the "Brightness" tab (see section 2.3.3). If "On" is selected, the **LED Color** parameter will be enabled, allowing you to choose the desired color.

## 2.3.5 TOUCH LOCKING

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Functionality analogous to that described for the Outdoor Module (see section 2.2.4).

## 2.3.6 SOUNDS

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The Outdoor Module of IDAC emits **two types of sounds**, depending on the action performed:

- **Sending Confirmation:** a short and sharper beep than the previous one. It indicates the sending of an object to the bus as a result of a press. The range of sounds emitted when this action is performing will be different depending on the sound type selected (see section 2.1).
- **Access granted:** indicates to the user that the card he has just detected has the access allowed to the room.
- **Access denied:** indicates to the user that the access attempt with the current card has been denied.

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

## ETS PARAMETERIZATION

After enabling the **Customize Sounds** in “Configuration” screen, in Outdoor Module, (see section 2.3.1), a new tab will be incorporated into the tree on the left.

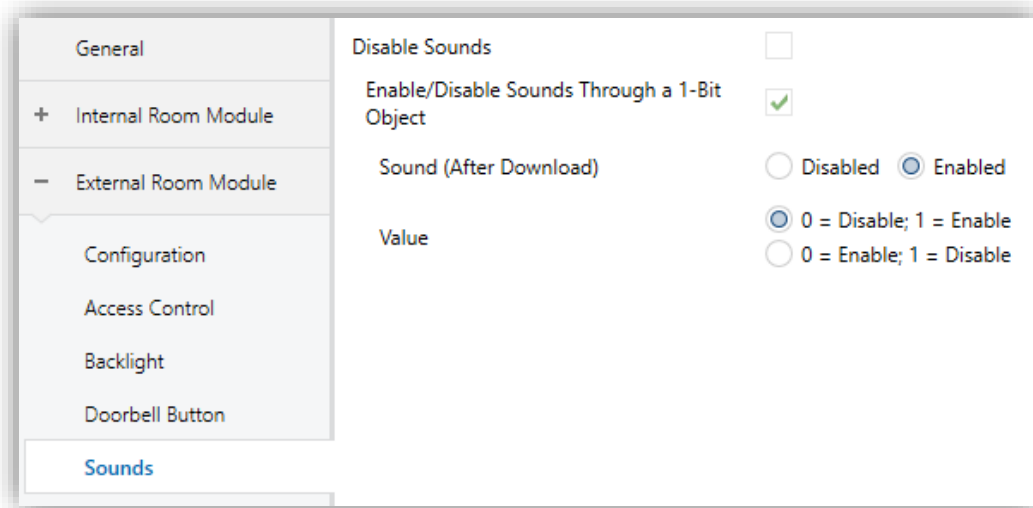


Figure 11. External Module Sounds

- **Disable Button Sounds** [[disabled/enabled](#)]: enables or disables acoustic signals of actions derived from button presses and access attempts.
- **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 (“**[Out] Sounds – Disabling Button Sound**”).
  - **Button Sound (After Download)** [[enabled/disabled](#)]: sets whether the button beeping function should start up enabled 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.

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### 2.3.7 AMBIENT LUMINOSITY SENSOR

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Functionality analogous to that described for the Outdoor Module (see section 2.2.6).

## 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 programme 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 Byte   | O   | C R - T - | DPT_SceneNumber              | 0 - 63           | [General] Scene: Send                                  | Scene Value                                          |
| 3      | 1 Byte   | I   | C - W - - | DPT_SceneNumber              | 0 - 63           | [General] Scene: Receive                               | Scene Value                                          |
| 4      | 1 Bit    | O   | C R - T - | DPT_Alarm                    | 0/1              | [General] Bolt - Alarm                                 | 0 = No Alarm; 1 = Alarm                              |
| 5      | 1 Bit    | O   | C R - T - | DPT_Alarm                    | 0/1              | [General] Servomotor - Alarm                           | 0 = No Alarm; 1 = Alarm                              |
| 6      | 1 Bit    | O   | C R - T - | DPT_Alarm                    | 0/1              | [General] Tampering - Alarm                            | 0 = No Alarm; 1 = Alarm                              |
| 7      | 8 Bytes  |     | C - - T - | DPT_DateTime                 |                  | [General] Tampering - Date and Time                    | Date and Time of Tampering                           |
| 8      | 1 Byte   | I   | C - W T U | 1.xxx                        | 0/1              | [Access] Room State Indicator                          | 0 = Normal; 1 = Make Up Room; 2 = Do Not Disturb     |
| 9      | 1 Byte   | O   | C R - T - | 1.xxx                        | 0/1              | [Access] Room State                                    | 0 = Normal; 1 = Make Up Room; 2 = Do Not Disturb     |
| 10     | 1 Bit    | O   | C R - T - | DPT_Bool                     | 0/1              | [Access] Room State: Make Up Room (Status)             | 0 = No Active; 1 = Active                            |
| 11     | 1 Bit    | O   | C R - T - | DPT_Bool                     | 0/1              | [Access] Room State: Do Not Disturb (Status)           | 0 = No Active; 1 = Active                            |
| 12     | 1 Bit    | I   | C - W - U | DPT_Enable                   | 0/1              | [Access] Room State: "Make Up Room" State Availability | 0 = Not Available; 1 = Available                     |
| 13     | 1 Bit    | I   | C - W T U | DPT_Occupancy                | 0/1              | [Access] Presence: Occupancy State                     | 0 = Not Occupied; 1 = Occupied                       |
| 14     | 1 Bit    |     | C - - T - | DPT_Trigger                  | 0/1              | [Access] Request Date and Time                         | Make Request                                         |
| 15     | 8 Bytes  | O   | C R - - - | DPT_DateTime                 |                  | [Access] Date and Time (Status)                        | Current Date and Time                                |
| 16     | 14 Bytes | O   | C R - T - | DPT_String_8859_1            |                  | [Access] Access Log                                    | Access Log Data                                      |
| 17     | 2 Bytes  | O   | C R - T - | DPT_LanguageCodeAlpha2_ASCII |                  | [Access] Language                                      | User Language                                        |
| 18     | 4 Bytes  | O   | C R - T - | 1.xxx                        | 0/1              | [Access] Locale                                        | User Locale (ISO 639-1/ISO 3166-1 Four Letters Code) |
| 19     | 1 Bit    |     | C - - T - | DPT_Ack                      | 0/1              | [Access] Offline Access                                | Notify Offline Access                                |
| 20     | 1 Bit    | I   | C - W - - | DPT_Ack                      | 0/1              | [Access] Welcome Scenes: Trigger                       | 0 = Send Welcome Scene                               |
|        | 1 Bit    | I   | C - W - - | DPT_Ack                      | 0/1              | [Access] Welcome Scenes: Trigger                       | 1 = Send Welcome Scene                               |
| 21     | 1 Bit    | I   | C - W - - | DPT_DayNight                 | 0/1              | [Access] Welcome Scenes: Day/Night                     | 0 = Day; 1 = Night                                   |
|        | 1 Bit    | I   | C - W - - | DPT_DayNight                 | 0/1              | [Access] Welcome Scenes: Day/Night                     | 1 = Day; 0 = Night                                   |

|            |        |   |           |                    |           |                                                |                                                  |
|------------|--------|---|-----------|--------------------|-----------|------------------------------------------------|--------------------------------------------------|
| 22         | 1 Bit  | I | C - W - - | DPT_Ack            | 0/1       | [Access] Welcome Scenes: Guest First Access    | 1 = Guest First Access                           |
| 23         | 1 Bit  | I | C - W - - | DPT_State          | 0/1       | [In] Activity                                  | 0 = Inactivity; 1 = Activity                     |
| 24         | 1 Bit  | I | C - W - - | DPT_Enable         | 0/1       | [In] Sounds - Disabling Button Sound           | 0 = Disable Sound; 1 = Enable Sound              |
|            | 1 Bit  | I | C - W - - | DPT_Enable         | 0/1       | [In] Sounds - Disabling Button Sound           | 0 = Enable Sound; 1 = Disable Sound              |
| 25         | 1 Bit  | I | C - W - - | DPT_Ack            | 0/1       | [In] Sounds - Doorbell                         | 0 = Play Doorbell Sound; 1 = Nothing             |
|            | 1 Bit  | I | C - W - - | DPT_Ack            | 0/1       | [In] Sounds - Doorbell                         | 0 = Nothing; 1 = Play Doorbell Sound             |
| 26         | 1 Bit  | I | C - W - - | DPT_Alarm          | 0/1       | [In] Sounds - Alarm                            | 0 = Start Alarm; 1 = Stop Alarm                  |
|            | 1 Bit  | I | C - W - - | DPT_Alarm          | 0/1       | [In] Sounds - Alarm                            | 0 = Stop Alarm; 1 = Start Alarm                  |
| 27, 30, 33 | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Switch: "0"                         | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Switch: "1"                         | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Switch: "0/1"                       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Hold & Release                      | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Short Press: "1"      | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Short Press: "0"      | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Short Press: "0/1"    | 1-Bit Generic Control                            |
|            | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [In][Btnx] Two Objects - Short Press: (1-Byte) | Send Selected 1-Byte Value on Short Press        |
|            | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [In][Btnx] Room State                          | 0 = Normal; 1 = Make-up room; 2 = Do not disturb |
| 28, 31, 34 | 1 Byte | I | C - W T - | DPT_SceneNumber    | 0 - 63    | [In][Btnx] Scene: Send                         | 0-63 (Run Scene 1-64)                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Long Press: "1"       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Long Press: "0"       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [In][Btnx] Two Objects - Long Press: "0/1"     | 1-Bit Generic Control                            |
|            | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [In][Btnx] Two Objects - Long Press: (1-Byte)  | Send Selected 1-Byte Value on Long Press         |
| 29, 32, 35 | 1 Bit  | I | C - W T U | DPT_Switch         | 0/1       | [In][Btnx] LED On/Off                          | 0 = Off; 1 = On                                  |
|            | 1 Bit  | I | C - W T U | DPT_Switch         | 0/1       | [In][Btnx] LED On/Off                          | 0 = On; 1 = Off                                  |
| 36         | 1 Bit  | I | C - W T U | DPT_Enable         | 0/1       | [In] Touch Locking                             | 0 = Unlock; 1 = Lock                             |
|            | 1 Bit  | I | C - W T U | DPT_Enable         | 0/1       | [In] Touch Locking                             | 0 = Lock; 1 = Unlock                             |
| 37         | 1 Bit  | I | C - W T U | DPT_DayNight       | 0/1       | [In] Backlight Mode                            | 0 = Night Mode; 1 = Normal Mode                  |
|            | 1 Bit  | I | C - W T U | DPT_DayNight       | 0/1       | [In] Backlight Mode                            | 0 = Normal Mode; 1 = Night Mode                  |
| 38         | 1 Byte | I | C - W T U | DPT_Scaling        | 0% - 100% | [In] Display - Brightness                      | 0% ... 100%                                      |
| 40         | 1 Bit  | I | C - W - - | DPT_Enable         | 0/1       | [In] Proximity Sensor                          | 0 = Disable; 1 = Enable                          |
| 41         | 1 Bit  | I | C - W - - | DPT_Start          | 0/1       | [In] External Proximity Detection              | 1 = Detection                                    |

|            |        |   |           |                    |           |                                                 |                                                  |
|------------|--------|---|-----------|--------------------|-----------|-------------------------------------------------|--------------------------------------------------|
| 42         | 1 Bit  |   | C - - T - | DPT_Start          | 0/1       | [In] Proximity Detection                        | Send 1 when Proximity is Detected                |
| 43         | 1 Bit  |   | C - - T - | DPT_Bool           | 0/1       | [In] Luminosity (1-Bit)                         | 0 = Over Threshold; 1 = Under Threshold          |
|            | 1 Bit  |   | C - - T - | DPT_Bool           | 0/1       | [In] Luminosity (1-Bit)                         | 0 = Under Threshold; 1 = Over Threshold          |
| 44         | 1 Byte | O | C R - - - | DPT_Scaling        | 0% - 100% | [In] Luminosity (Percentage)                    | 0% ... 100%                                      |
| 46         | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out] Central Area LED                          | 0 = Off; 1 = On                                  |
| 47         | 1 Bit  | I | C - W - - | DPT_Enable         | 0/1       | [Out] Sounds - Disabling Sound                  | 0 = Disable Sound; 1 = Enable Sound              |
|            | 1 Bit  | I | C - W - - | DPT_Enable         | 0/1       | [Out] Sounds - Disabling Sound                  | 0 = Enable Sound; 1 = Disable Sound              |
| 48, 51, 54 | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Switch: "0"                         | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Switch: "0/1"                       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Switch: "1"                         | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Hold & Release                      | 1-Bit Generic Control                            |
|            | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [Out][Btnx] Two Objects - Short Press: (1-Byte) | Send Selected 1-Byte Value on Short Press        |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Short Press: "0"      | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Short Press: "1"      | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Short Press: "0/1"    | 1-Bit Generic Control                            |
|            | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [Out][Btnx] Room State                          | 0 = Normal; 1 = Make-up room; 2 = Do not disturb |
|            | 1 Byte | I | C - W T - | DPT_SceneNumber    | 0 - 63    | [Out][Btnx] Scene: Send                         | 0-63 (Run Scene 1-64)                            |
| 49, 52, 55 | 1 Byte | I | C - W T - | DPT_Value_1_Ucount | 0 - 255   | [Out][Btnx] Two Objects - Long Press: (1-Byte)  | Send Selected 1-Byte Value on Long Press         |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Long Press: "0"       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Long Press: "1"       | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Btnx] Two Objects - Long Press: "0/1"     | 1-Bit Generic Control                            |
| 50, 53, 56 | 1 Bit  | I | C - W T U | DPT_Switch         | 0/1       | [Out][Btnx] LED On/Off                          | 0 = Off; 1 = On                                  |
|            | 1 Bit  | I | C - W T U | DPT_Switch         | 0/1       | [Out][Btnx] LED On/Off                          | 0 = On; 1 = Off                                  |
| 51         | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Doorbell] Switch: "0"                     | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Doorbell] Switch: "0/1"                   | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Doorbell] Switch: "1"                     | 1-Bit Generic Control                            |
|            | 1 Bit  | I | C - W T - | DPT_Switch         | 0/1       | [Out][Doorbell] Hold & Release                  | 1-Bit Generic Control                            |
| 57         | 1 Bit  | I | C - W T U | DPT_Enable         | 0/1       | [Out] Touch Locking                             | 0 = Unlock; 1 = Lock                             |
|            | 1 Bit  | I | C - W T U | DPT_Enable         | 0/1       | [Out] Touch Locking                             | 0 = Lock; 1 = Unlock                             |
| 58         | 1 Bit  | I | C - W T U | DPT_DayNight       | 0/1       | [Out] Backlight Mode                            | 0 = Normal Mode; 1 = Night Mode                  |
|            | 1 Bit  | I | C - W T U | DPT_DayNight       | 0/1       | [Out] Backlight Mode                            | 0 = Night Mode; 1 = Normal Mode                  |
| 59         | 1 Byte | I | C - W T   | DPT_Scaling        | 0% - 100% | [Out] Display - Brightness                      | 0% ... 100%                                      |

|    |        |   | U         |             |           |                                    |                                         |
|----|--------|---|-----------|-------------|-----------|------------------------------------|-----------------------------------------|
| 61 | 1 Bit  | I | C - W - - | DPT_Enable  | 0/1       | [Out] Proximity Sensor             | 0 = Disable; 1 = Enable                 |
| 62 | 1 Bit  | I | C - W - - | DPT_Start   | 0/1       | [Out] External Proximity Detection | 1 = Detection                           |
| 63 | 1 Bit  |   | C - - T - | DPT_Start   | 0/1       | [Out] Proximity Detection          | Send 1 when Proximity is Detected       |
| 64 | 1 Bit  |   | C - - T - | DPT_Bool    | 0/1       | [Out] Luminosity (1-Bit)           | 0 = Over Threshold; 1 = Under Threshold |
|    | 1 Bit  |   | C - - T - | DPT_Bool    | 0/1       | [Out] Luminosity (1-Bit)           | 0 = Under Threshold; 1 = Over Threshold |
| 65 | 1 Byte | O | C R - - - | DPT_Scaling | 0% - 100% | [Out] Luminosity (Percentage)      | 0% ... 100%                             |

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**Zennio Avance y Tecnología S.L.**  
C/ Río Jarama, 132. Nave P-8.11  
45007 Toledo. Spain

*Tel. +34 925 232 002*

*www.zennio.com*  
*info@zennio.com*



RoHS