

# **IntesisBox®** **IS-IR-KNX-1i** v1.0

**User's Manual**

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## Gateway for integration of IR air conditioners into KNX TP-1 (EIB) control systems.

Compatible with AC units, of most AC brands, provided with an IR receiver.

Application's Program Version: 1.0

Order Code: **IS-IR-KNX-1i**

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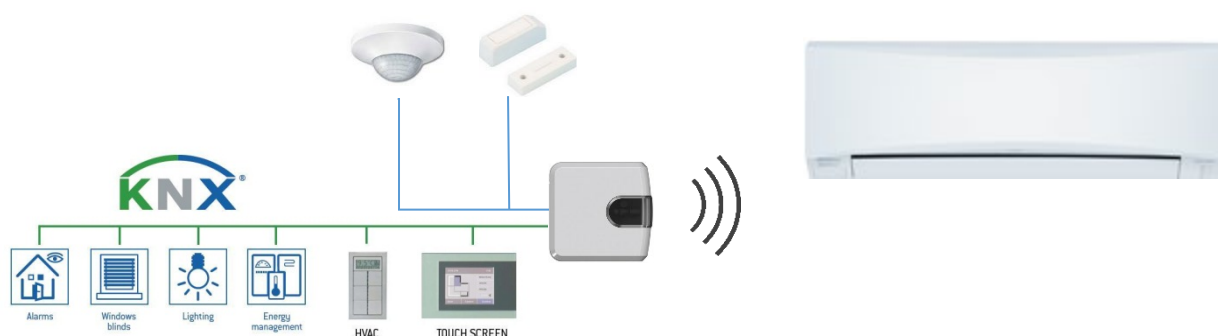
## 1 Presentation



IntesisBox® IS-IR-KNX-1i allows monitoring and control of Air Conditioners from KNX installations.

Compatible with most AC units with an IR receiver.

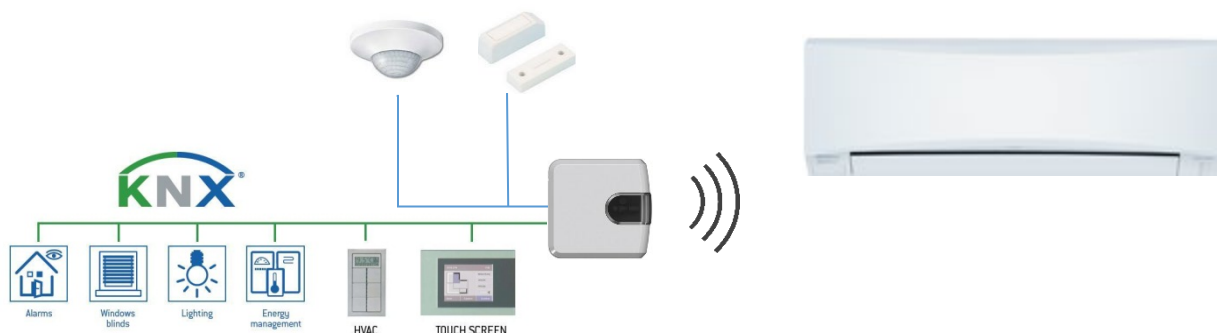
Great flexibility of integration into your KNX projects. Configuration is made directly from ETS, the database of the device comes with a complete set of communication objects allowing, from a simple and quick integration using the basic objects, allowing a simple and quick integration.



### Main features:

- Reduced dimensions and quick installation.
- Includes a USB connector for fast programming download.
- Multiple objects for control and status (bit, byte, characters...) with KNX standard datapoint types.
- Status objects for every control available.
- Special Modes available (Power, Economy, Additional Heating and Additional Cooling).
- Timeout for Open Window and Occupancy. Sleep function also available.
- Control of the AC unit based in the ambient temperature read by the own AC unit, or in the ambient temperature read by any KNX thermostat.
- Total Control and Monitoring of the AC unit from KNX, including monitoring of AC unit's state of internal variables, running hours' counter (for filter maintenance control), and error indication and error code.
- AC unit can be controlled simultaneously by the remote controller of the AC unit and by KNX.
- Up to 5 scenes can be saved and executed from KNX, fixing the desired combination of Operation Mode, Set Temperature, Fan Speed, Vane Position and Remote Controller Lock in any moment by using a simple switching.
- Two binary inputs for potential-free contacts provide the possibility to integrate many types of external devices for window status control (window contacts) and occupancy (presence sensor)

## 2 Quick setup



**Figure 2.1** IS-IR-KNX-1i integration example

1. Check the interface location that best fits the installation (section 3.1)
2. Connect the interface to the KNX bus.
3. Download the ETS database for this product, import it and add it to the current ETS project.
4. Access the parameter section of the IntesisBox device. Notice that parameters for this interface are configured through a specific plugin (section 5).
5. Select the communication objects to be used and other parameters. This step can be omitted if working with the default objects and parameters.
6. Save the configuration file and download the application program.
7. Close the plugin and apply changes when asked.
8. Link the group address from the communication object of the KNX device with the communication object inside the IntesisBox interface.
9. Download the ETS parameters as with any other standard KNX device.

### 3 Device Installation

#### 3.1 Location selection

Determining that the IntesisBox device will be working as expected in the installation location is an important stage. In order to determine the best location for your IntesisBox device, use the Wireless Controller (the one of your AC unit).

When selecting the installation location, please keep in mind that the IntesisBox device has 2 IR emitters and 1 IR receiver. The 2 emitters increase the installation possibilities allowing many different suitable positions for the device location. On the other hand, the receiver offers the possibility to get the feedback from the IR wireless remote controller so the KNX status objects can be updated with that feedback.

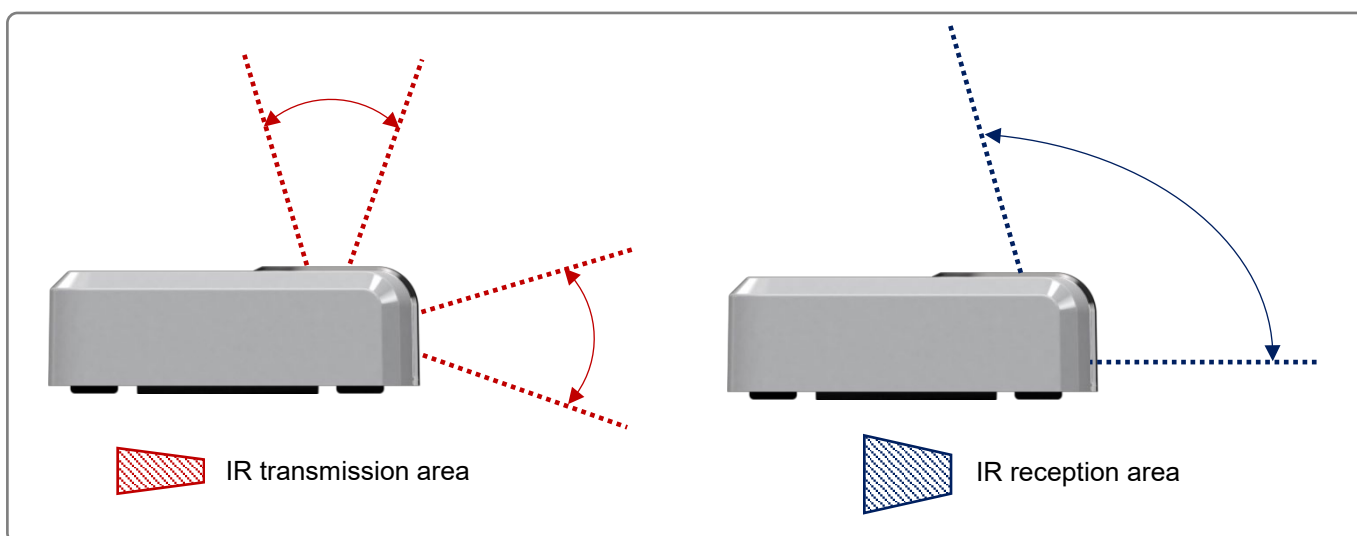


Figure 3.1 IR emitters and IR receiver location

### 3.2 Connection to IR and location

There is no special requirement to match the IR receiver and the IntesisBox IS-IR-KNX-1i interface. Simply select your model from the list present in the plugin. If your AC unit is not present, please check the compatibility list as in section 7. You can find more information about the IR configuration in section 5.



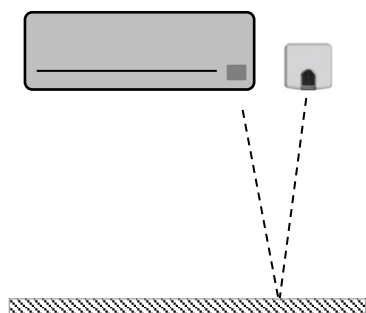
**IMPORTANT:** Keep in mind that some furniture and materials (carpets, curtains, glass, metal...) may affect on the IR communication.



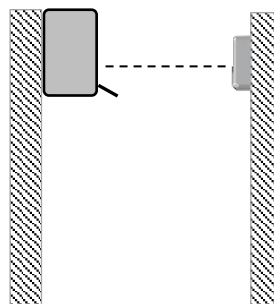
**NOTE:** The IntesisBox device has 2 IR emitters pointing at 2 different locations. Considering this and IR reflections, valid locations for the IntesisBox device may be many and very different depending on each installation. Check section 3.1 for more information.

IntesisBox IS-IR-KNX-1i can be installed in many different locations.

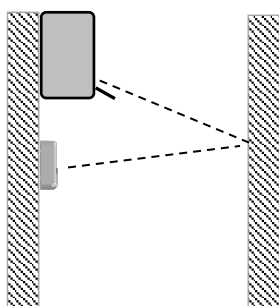
**A) Side-by-side with the AC unit**



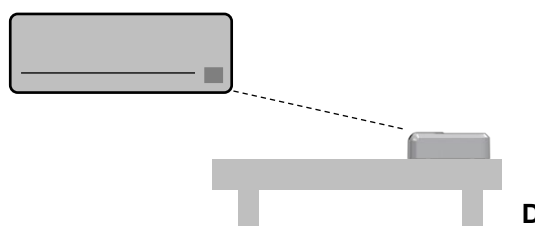
**B) In front of the AC unit**



**C) Under the AC unit**



**D) Desktop position**



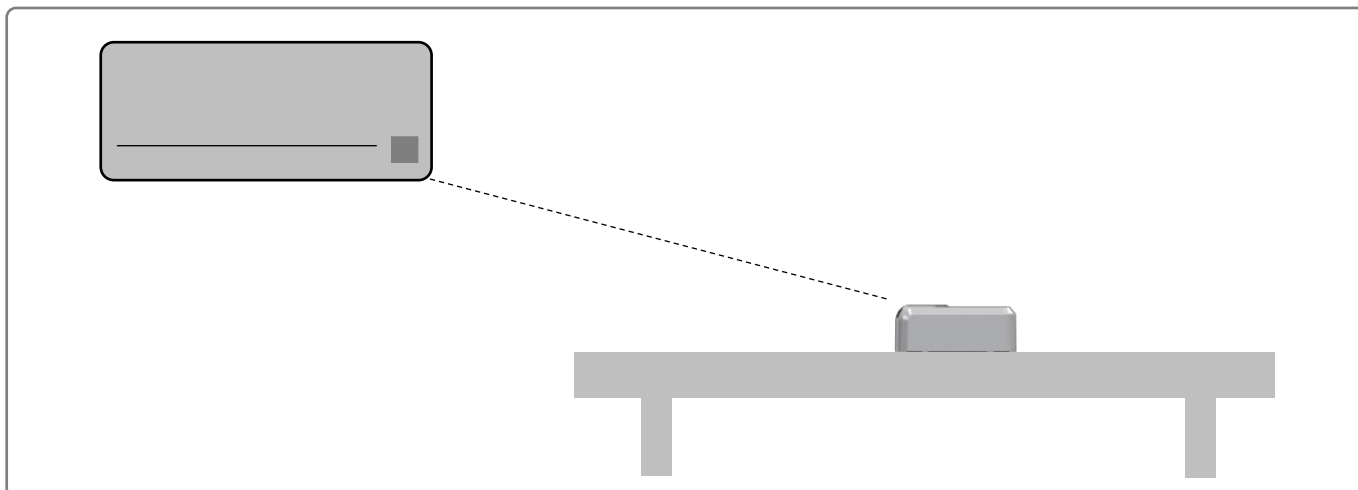
**Figure 3.2** IR emitters and IR receiver location

**Case A:** Installed side-by-side with the AC unit. In that case, the signal will travel from the IntesisBox device to the AC unit taking advantage of the rebounds on the floor or other furniture present in the room.

**Case B:** Installed in front of the AC unit. In that case, the signal will travel from the IntesisBox device directly to the AC unit.

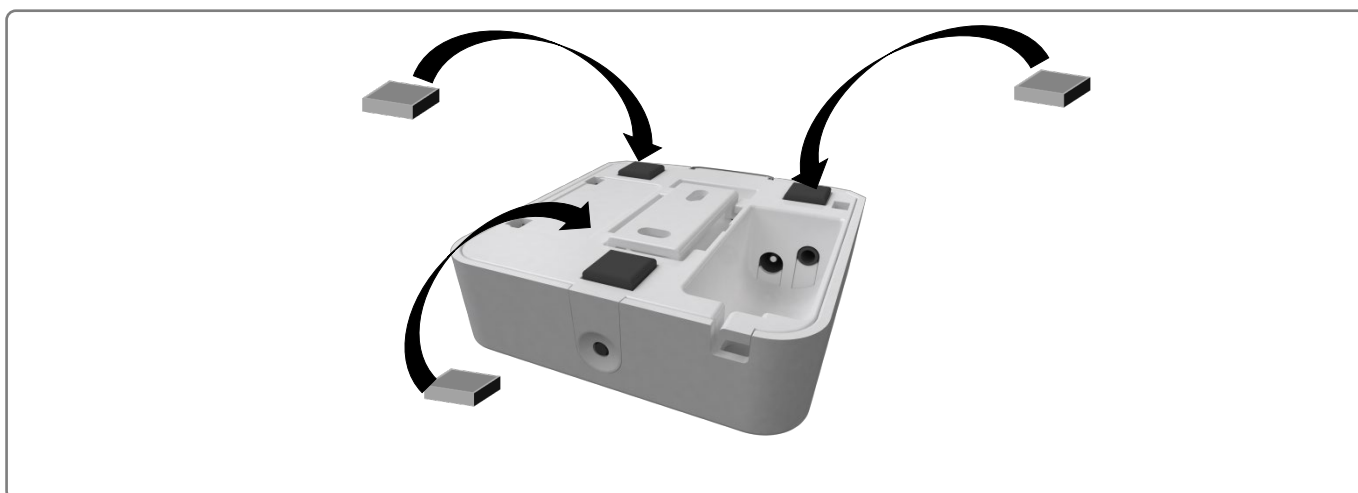
**Case C:** Installed below the AC unit. In that case, the signal will travel from the IntesisBox device to the AC unit taking advantage of the rebounds on the wall in front of it or other furniture present in the room.

**Case D:** If you want to place the device on your desktop or any other horizontal surface, please consider the sketch below. In this case, the signal will travel directly from the IntesisBox device to the AC unit.



**Figure 3.3** Desktop mounted position

In order not to produce marks or scratches on the surface and also to improve the device stability, you can use the rubber dumper included in the package. Please, check **Figure 3.4**.

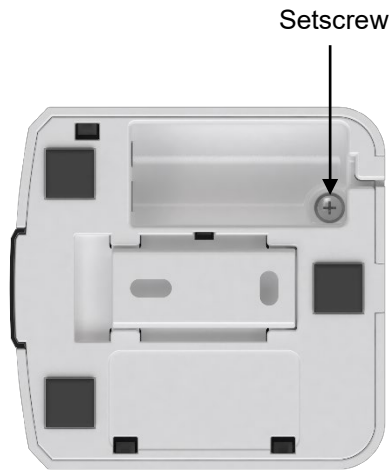


**Figure 3.4** Rubber dumpers location

### 3.3 Connection to KNX

IntesisBox device needs to be connected directly through a KNX TP-1 bus.

To get access to the KNX connector, remove the screw as seen in Figure 3.5.



**Figure 3.5** Top lid release and KNX connection

Disconnect power of the KNX bus. Connect the IS-IR-KNX-1i to the KNX TP-1 (EIB) bus using the KNX standard connector (red/grey) of the IS-IR-KNX-1i, respect polarity.

Reconnect power of the KNX bus, and mains power of the AC unit.

### 3.4 Binary Input connection

IntesisBox IS-IR-KNX.1i interface is equipped with Binary Inputs from factory. To use the built-in binary inputs in all the IR KNX Controllers, a standard 3,5mm stereo jack connector is required.

Connections will be as in the image below.

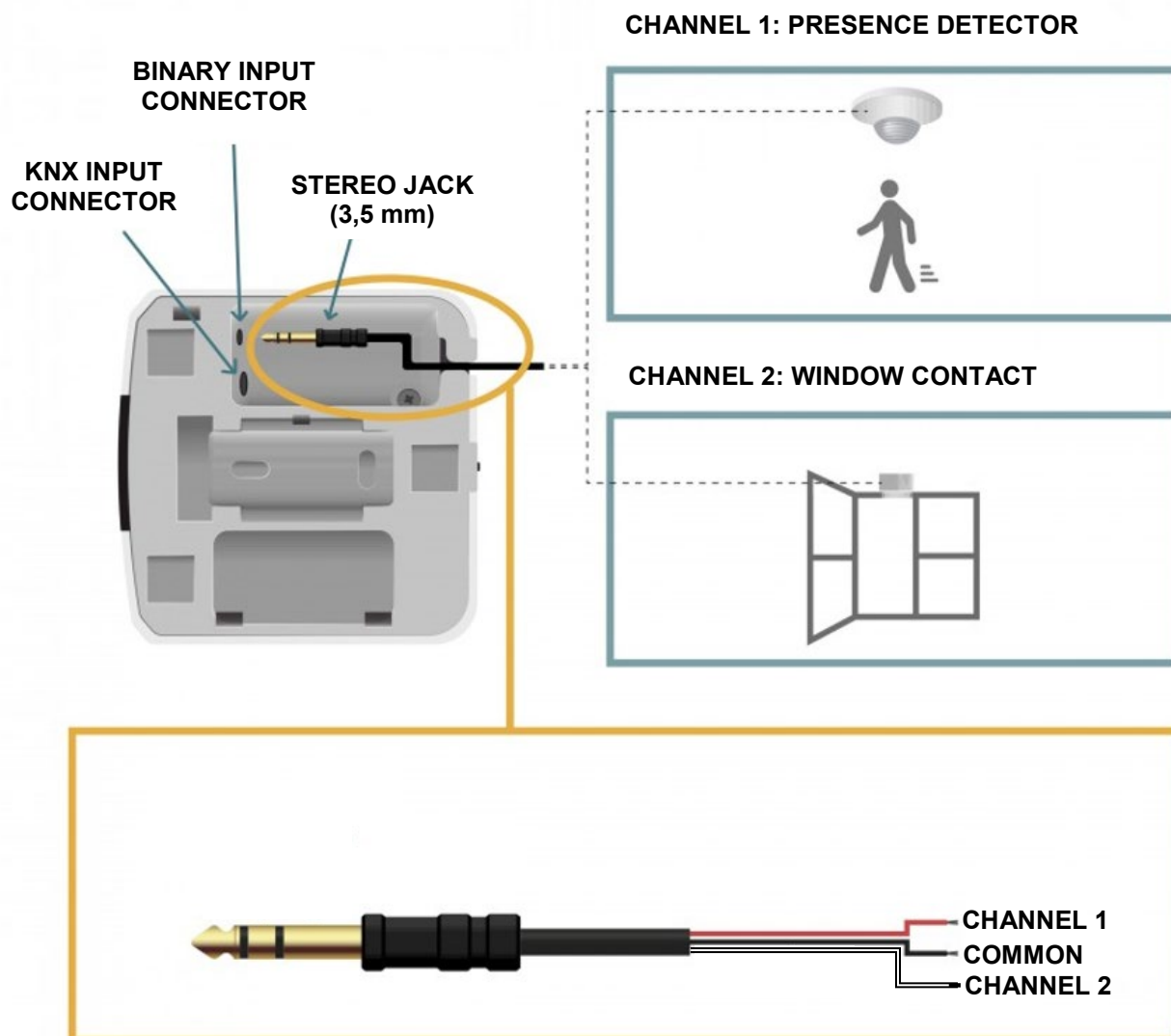


Figure 3.6 Binary Input connection

Before proceeding, please check the technical specification of the binary input below:

#### Potential free binary input

Signal cable length: 5m unshielded, may be extended up to 20m with twisted

Compliant with the following standards:

IEC61000-4-2: level 4 – 15kV (air discharge) - 8kV (contact discharge)

MIL STD 883E-Method 3015-7: class 3B

Once you are sure your installation is compliant with the specifications, please check the presence sensor or window contact you would like to use. Basically, sensors only need to be equipped with a potential free external contact. No matter if the contact is NO (Normally Open) or NC (Normally closed) as you will be able to configure the contact type (NO or NC) of your sensor in the settings of the Binary Input function (Go to Settings menu in the IntesisBox WEB Site).

**IMPORTANT NOTE:** Please, note that IS-IR-KNX-1i interface will only react if the contact of your sensor is opened or closed. In the case of the presence sensor, the installer needs to decide the specific settings of the presence sensor to be applied. IntesisBox will be not responsible of the incorrect settings or incorrect installations.

**Recommendation:** In some presence sensors or window contacts it is possible to setup a delay time to the external contact. As you will see in this manual, IntesisBox Settings allow the user to setup a timer before starting with the configured actions. Anyway, we recommend to setup a certain delay time in your presence sensor or window contact to prevent continuous contact changes in a very short period of time.

## 4 Configuration and setup

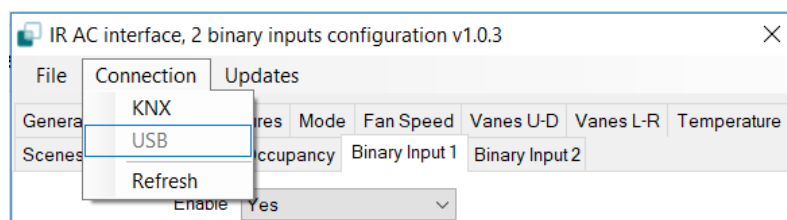
This is a fully compatible KNX device which must be configured and setup using standard KNX tool ETS.

Before starting with the configuration, please make sure that the binary inputs (if used) and the USB cable are properly connected to the interface. Make sure as well, that the interface is connected to the KNX bus to allow the proper download of the KNX programming.

In order to proceed with the configuration and set up, it is recommended to follow instructions next:

1. Download and install the latest version of the ETS data base (section 5).
2. Open the product's plugin and make sure that the catalog is in its last available version (section 5).
3. Select your AC brand and model (section 5.1).
4. Download the infrared configuration to the IntesisBox pushing on the “**Download IR parameters**”.

**NOTE:** Check the current connection to the IntesisBox. Notice that in order to send the Infrared configuration, you can use the standard KNX connection (the same used to program the device) or a USB connection.



USB connection is faster than KNX connection. Notice that this is only available for the infrared configuration settings.

5. Proceed with the rest of AC unit settings and other parameters.
6. Proceed with the KNX programming.
7. Download the programming to the interface as any other KNX device.

## 5 ETS Parameters and Configuration

The IntesisBox IS-IR-KNX-1i interface is configured through ETS. General KNX parameters, such as the physical address, group addresses or DPTs can be configured as usual using the ETS interface. For the specific AC unit configuration and IR communication, the use of the specific plugin included in the ETS database is required.

ETS database for this device can be downloaded from:

[https://www.intesisbox.com/intesis/product/media/IS-IR-KNX-1i\\_ETS\\_database.zip](https://www.intesisbox.com/intesis/product/media/IS-IR-KNX-1i_ETS_database.zip)

Please consult the README.txt file, located inside the downloaded zip file, to find instructions on how to install the database.

Once the database is imported, the plugin can be accessed when editing parameters. To get access to parameters edition, click on the **Parameter** tab, located in the project screen, and then press the specific parameter dialog.

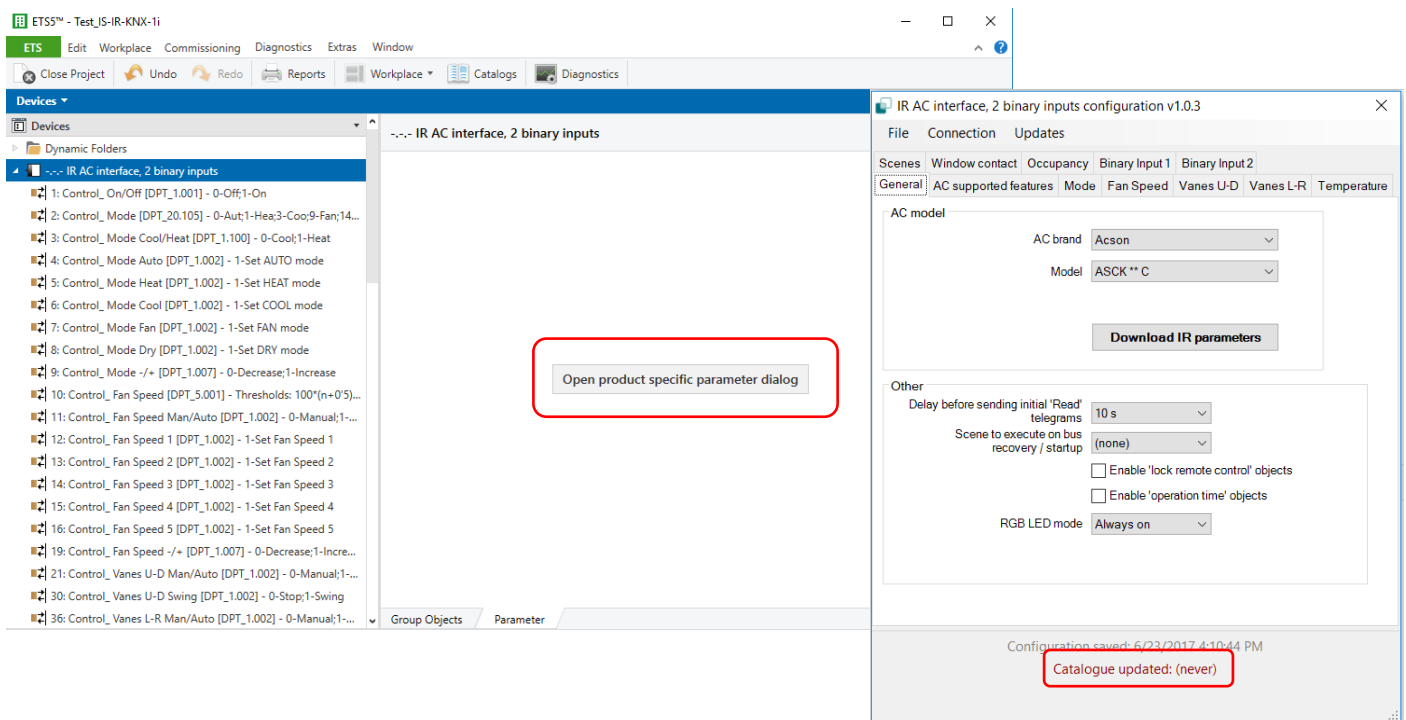


Figure 5.1 ETS Project managing and plugin screen

Remember that before start using the IntesisBox interface along with the AC unit, you need to set up at least the brand and type of you AC unit. Check section 5.1 for more information about it.

**IMPORTANT:** Please, update the Catalogue before proceeding with the device configuration and programming. The laptop where ETS is running shall have Internet connection to update the catalogue.

## 5.1 General configuration

Inside this parameter's dialog it is possible to activate or change the parameters shown below:

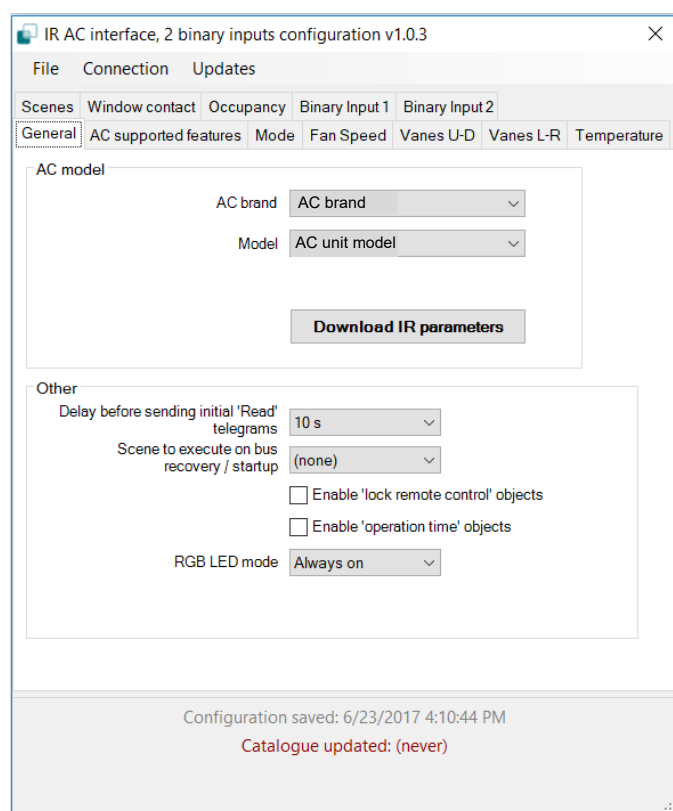


Figure 5.2 General parameters

### 5.1.1 AC brand

Use the dropdown menu to select the AC brand of the AC unit you want to control.

In case your AC unit brand is not present, please select the IS-IR-KNX-1i and contact our support department for more information about the Model to select.

### 5.1.2 Model

Use the dropdown menu to select the AC brand of the AC unit you want to control.

In case your AC unit brand is not present in the AC brand list, please select the IS-IR-KNX-1i and contact our support department for more information about the Model to select.

### 5.1.3 Delay before sending initial “Read” telegrams

This parameter sets the delay before the interface will send READ telegrams for the group addresses associated on its *Control\_* objects on bus recovery or application reset/start-up. All *Control\_* objects with both Transmit (**T**) and Update (**U**) flags enabled will send READs and their values will be updated with the response when received.

Valid values go from 10 to 60 seconds. This is to give time enough to other KNX devices on the bus to start-up before sending the READs.

### 5.1.4 Scene to execute on bus recovery / startup

This parameter executes a selected scene on bus recovery or startup, only if the selected scene has an enabled preset or values previously saved from KNX bus (see Scene Configuration dialog). You can select any of the 5 available scenes.

### 5.1.5 Enable “lock control” objects

This parameter shows/hide the *Control\_Lock Control Obj* communication object which, depending on the sent value, locks or unlocks ALL the *Control\_* communication objects except itself.

When a “1” value is sent to this communication object, the remote controller is locked. To be unlocked a “0” value must be sent. The gateway remembers the last value received even if a KNX bus reset/failure happens.

**Figure 5.3** Communication object detail

**⚠ Important:** If an initial scene is enabled and it has as Value for Remote Lock (unchanged) or unlocked, this would unlock the remote controller because the initial scene has priority over the *Control\_Lock Remote Control* communication object.

### 5.1.6 Enable func “Operation time objects”

This parameter shows/hides the *Status\_Operating Hour Counter* and *Status\_Operating Second Counter* communication object which counts the number of operating hours for the IS-IR-KNX-1i.

**Figure 5.4** Communication object detail

- If set to “no” the object will not be shown.
- If set to “yes” the *Status\_Operation Hour Counter* object will appear.
  - This object can be read and sends its status every time an hour is counted. The gateway keeps that count in memory and the status is sent also after a KNX bus reset/failure. Although this object is marked as a *Status\_* object it also can be written to update the counter when needed. To reset the counter should be written a “0” value.

**⚠ Important:** This object comes by default without the write (**W**) flag activated. If is necessary to write on it, this flag must be activated.

**⚠ Important:** This object will also return its status, every time a value is written, only if it's different from the existing one.

**⚠ Important:** If the stored value is 0 hours, the gateway will not send the status to KNX.

### 5.1.7 RGB LED mode

This parameter determines the working mode of the interface LED.

- If set to **“Always off”** the LED will always be off.
- If set to **“Always on”** the LED will always be on.
- If set to **“Only on changes”** the LED will always change when there is a change of value in any of the active communication objects.

## 5.2 AC supported features

Select the AC features of your AC unit to match both: the AC unit features with the enabled communication objects and parameters.

Please, select these parameters carefully, otherwise not expected behavior may occur.

The screenshot shows a software window titled "IR AC interface, 2 binary inputs configuration v1.0.3". It has a menu bar with "File", "Connection", and "Updates". Below the menu bar are several tabs: "Scenes", "Window contact", "Occupancy", "Binary Input 1", "Binary Input 2", "General", "AC supported features" (which is selected), "Mode", "Fan Speed", "Vanes U-D", "Vanes L-R", and "Temperature". The "AC supported features" tab contains several groups of settings:

- Mode:** A group of checkboxes for "Cool", "Heat", "Auto", "Dry", and "Fan", all of which are checked.
- Fan speed:** A group containing a checked "Auto" checkbox and a dropdown menu showing "3" with the label "Speeds".
- Airflow:** A group with checkboxes for "Up/down vanes" and "Left/right vanes", both of which are unchecked.
- Up/down vanes:** A group containing a "Specific positions" checkbox (unchecked), a sub-group with "Auto", "Swing", and "Swirl" checkboxes (all unchecked), a dropdown menu showing "None" with the label "Positions", and a "Wide" checkbox (unchecked).
- Left/right vanes:** A group containing a checked "Specific positions" checkbox, a sub-group with "Auto", "Swing", and "Swirl" checkboxes (all checked), a dropdown menu showing "None" with the label "Positions", and a "Wide" checkbox (unchecked).

At the bottom of the window, there is a status bar that reads "Configuration saved: 6/23/2017 4:10:44 PM" and "Catalogue updated: (never)".

**Figure 5.5** AC supported features

## 5.3 Mode

All the parameters in this section are related with the different mode properties and communication objects.

The byte-type communication object for Mode works with the DTP\_20.105. Auto mode will be enabled with a “0” value, Heat mode with a “1” value, Cool mode with a “3” value, Fan mode with a “9” value and Dry mode with a “14” value.

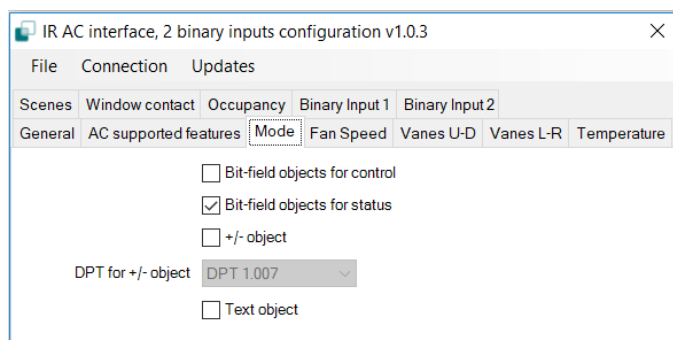


Figure 5.6 AC mode additional communication objects

### 5.3.1 Enable use of bit-type Mode objects (for control)

This parameter shows/hides the bit-type *Control\_ Mode* objects.

- 4: Control\_ Mode Auto [DPT\_1.002] - 1-Set AUTO mode
- 5: Control\_ Mode Heat [DPT\_1.002] - 1-Set HEAT mode
- 6: Control\_ Mode Cool [DPT\_1.002] - 1-Set COOL mode
- 7: Control\_ Mode Fan [DPT\_1.002] - 1-Set FAN mode
- 8: Control\_ Mode Dry [DPT\_1.002] - 1-Set DRY mode

Figure 5.7 Communication object detail

- If set to “no” the objects will not be shown.
- If set to “yes” the *Control\_ Mode* objects for Auto, Heat, Cool, Fan and Dry will appear. To activate a mode by using these objects a “1” value has to be sent.

### 5.3.2 Enable use of bit-type Mode objects (for status)

This parameter shows/hides the bit-type *Status\_ Mode* objects.

- 74: Status\_ Mode Auto [DPT\_1.002] - 1-AUTO mode is active
- 75: Status\_ Mode Heat [DPT\_1.002] - 1-HEAT mode is active
- 76: Status\_ Mode Cool [DPT\_1.002] - 1-COOL mode is active
- 77: Status\_ Mode Fan [DPT\_1.002] - 1-FAN mode is active
- 78: Status\_ Mode Dry [DPT\_1.002] - 1-DRY mode is active

Figure 5.8 Communication object detail

- If set to “no” the objects will not be shown.
- If set to “yes” the *Status\_Mode* objects for Auto, Heat, Cool, Fan and Dry will appear. When enabled, a mode will return a “1” through its bit-type object.

### 5.3.3 Enable use of + / - object for Mode

This parameter shows/hides the *Control\_Mode* +/- communication object which lets change the indoor unit mode by using two different datapoint types.

■ 9: Control\_Mode +/- [DPT\_1.007] - 0-Decrease;1-Increase

- If set to “no” the object will not be shown.
- If set to “yes” the *Control\_Mode* +/- object and a new parameter will appear.

#### ➤ DPT type for +/- Mode Object

This parameter lets choose between the datapoints **0-Up / 1-Down [DPT\_1.008]** and **0-Decrease / 1-Increase [DPT\_1.007]** for the *Control\_Mode* +/- object.

The sequence followed when using this object is shown below:



- Up / Increase
- Down / Decrease

### 5.3.4 Enable use of Text object for Mode

This parameter shows/hides the *Status\_Mode Text* communication object.

■ 79: Status\_Mode Text [DPT\_16.001] - ASCII String

- If set to “no” the object will not be shown.
- If set to “yes” the *Status\_Mode Text* object will appear.

## 5.4 Fan Speed

All the parameters in this section are related with the Fan Speed properties and communication objects.

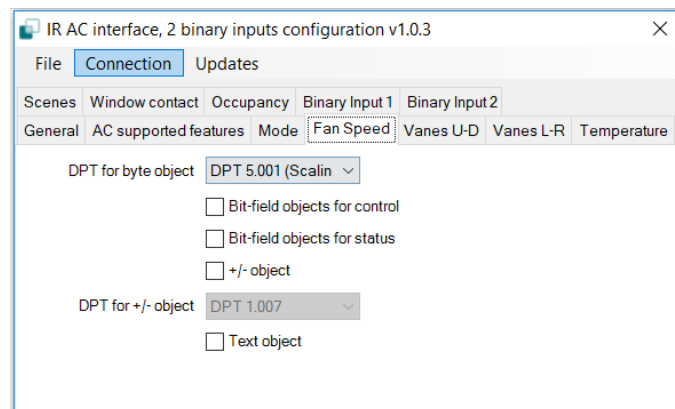


Figure 5.9 Fan Speed parameters

### 5.4.1 DPT object type for fan speed

With this parameter is possible to change the DPT for the *Control\_Fan Speed* and *Status\_Fan Speed* byte-type communication objects. Datapoints Scaling (DPT\_5.001) and Enumerated (DPT\_5.010) can be selected.

- When “**Enumerated [DPT 5.010]**” is selected, *Control\_Fan Speed* and *Status\_Fan Speed* communication objects for this DPT will appear. Also, depending on the number of fan speeds selected, these objects will be different.

10: Control\_Fan Speed [DPT\_5.010] - Speed values: 1,2,3,...  
80: Status\_Fan Speed [DPT\_5.010] - Speed values: 1,2,3,...

The first fan speed will be selected if a “1” is sent to the *Control\_* object. The second fan speed will be selected sending a “2” and so on.

The *Status\_* object will always return the value for the fan speed selected.

**⚠ Important:** In both cases if a “0” value is sent to the *Control\_* object, the minimum fan speed will be selected. If a value bigger than “2” (in case of 2 speeds) or bigger than “3” (in case of 3 fan speeds) is sent to the *Control\_* object, then the maximum fan speed will be selected.

- When “**Scaling [DPT 5.001]**” is selected, *Control\_Fan Speed* and *Status\_Fan Speed* communication objects for this DPT will appear. Also, depending on the number of fan speeds selected, these objects will be different.

10: Control\_Fan Speed [DPT\_5.001] - Thresholds:  $100 \cdot (n + 0.5) \dots$   
80: Status\_Fan Speed [DPT\_5.001] -  $100 \cdot n / N \%$

The formula used to calculate the value to be set in the Control object is ' $100 \cdot (n+0,5) / N \%$ ', where n is the current fan speed and N the maximum number of fan speeds.

On the other hand, the formula to calculate the status to be read according to the current value is ' $100 \cdot n / N$ ', where n is the current fan speed and N the maximum number of fan speeds.

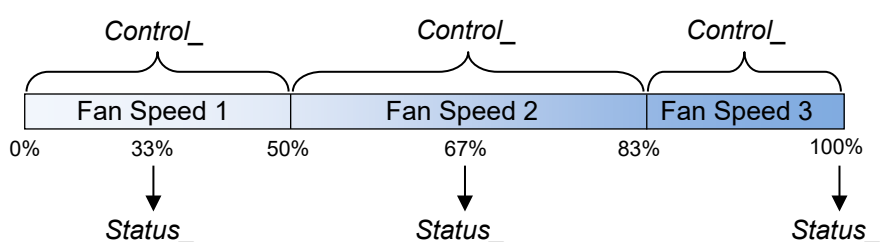
Check this example with 3 fan speeds:

When a value between **0%** and **49%** is sent to the *Control\_* object the first fan speed will be selected.

When a value between **50%** and **83%** is sent to the *Control\_* object, the second speed will be selected.

When a value between **84%** and **100%** is sent to the *Control\_* object, the third speed will be selected.

The *Status\_* object will return a **33%** when the first speed is selected, a **67%** for the second one and a **100%** for the third one.



#### 5.4.2 Enable use of bit-type Fan Speed objects (for Control)

This parameter shows/hides the bit-type *Control\_ Fan Speed* objects.

- 12: Control\_ Fan Speed 1 [DPT\_1.002] - 1-Set Fan Speed 1
- 13: Control\_ Fan Speed 2 [DPT\_1.002] - 1-Set Fan Speed 2
- 14: Control\_ Fan Speed 3 [DPT\_1.002] - 1-Set Fan Speed 3
- 15: Control\_ Fan Speed 4 [DPT\_1.002] - 1-Set Fan Speed 4
- 16: Control\_ Fan Speed 5 [DPT\_1.002] - 1-Set Fan Speed 5
- 17: Control\_ Fan Speed 6 [DPT\_1.002] - 1-Set Fan Speed 6
- 18: Control\_ Fan Speed 7 [DPT\_1.002] - 1-Set Fan Speed 7

- If set to **“no”** the objects will not be shown.
- If set to **“yes”** the *Control\_ Fan Speed* objects for Speed 1, Speed 2 and Speed 3 (if available) will appear. To activate a Fan Speed by using these objects a **“1”** value has to be sent.

#### 5.4.3 Enable use of bit-type Fan Speed objects (for Status)

This parameter shows/hides the bit-type *Status\_ Fan Speed* objects.

- 82: Status\_ Fan Speed 1 [DPT\_1.002] - 1-Fan in Speed 1
- 83: Status\_ Fan Speed 2 [DPT\_1.002] - 1-Fan in Speed 2
- 84: Status\_ Fan Speed 3 [DPT\_1.002] - 1-Fan in Speed 3
- 85: Status\_ Fan Speed 4 [DPT\_1.002] - 1-Fan in Speed 4
- 86: Status\_ Fan Speed 5 [DPT\_1.002] - 1-Fan in Speed 5
- 87: Status\_ Fan Speed 6 [DPT\_1.002] - 1-Fan in Speed 6
- 88: Status\_ Fan Speed 7 [DPT\_1.002] - 1-Fan in Speed 7

- If set to “**no**” the objects will not be shown.
- If set to “**yes**” the *Status\_ Fan Speed* objects for Speed 1, Speed 2 and Speed 3 (if available) will appear. When a Fan Speed is enabled, a “1” value is returned through its bit-type object.

#### 5.4.4 Enable use of +/- object for Fan Speed

This parameter shows/hides the *Control\_ Fan Speed +/-* communication object which lets you increase/decrease the indoor unit fan speed by using two different datapoint types.

- 19: Control\_ Fan Speed +/- [DPT\_1.007] - 0-Decrease;1-Incre...

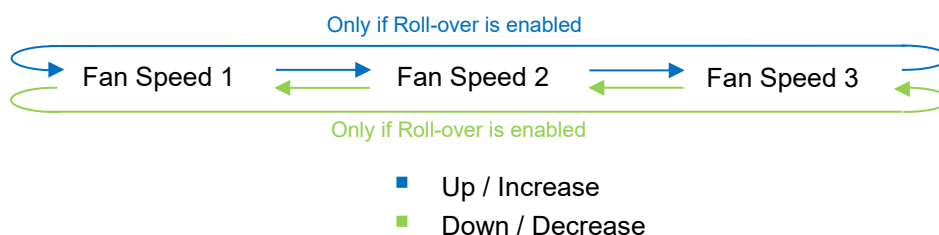
- If set to “**no**” the object will not be shown.
- If set to “**yes**” the *Control\_ Fan Speed +/-* object.

##### ➤ DPT type for +/- Fan Speed Object

This parameter lets choose between the datapoints **0-Up / 1-Down [DPT\_1.008]** and **0-Decrease / 1-Increase [DPT\_1.007]** for the *Control\_ Fan Speed +/-* object.

##### ➤ Roll-over Speed at upper/lower limit

This parameter lets choose if roll-over will be enabled (“**yes**”) or disabled (“**no**”) for the *Control\_ Fan Speed +/-* object.



#### 5.4.5 Enable use of Text object for Fan Speed

This parameter shows/hides the *Status\_ Fan Speed Text* communication object.

- 89: Status\_ Fan Speed Text [DPT\_16.001] - ASCII String

- If set to “no” the object will not be shown.
- If set to “yes” the *Status\_ Fan Speed Text* object will appear.

## 5.5 Up-Down vanes configuration dialog

All the parameters in this section are related with the Vane Up-Down properties and communication objects.

### 5.5.1 DPT object type for Vane Up-Down

With this parameter is possible to change the DPT for the *Control\_ Vane Up-Down* and *Status\_ Vane Up-Down* byte-type communication objects. Datapoints Scaling (DPT\_5.001) and Enumerated (DPT\_5.010) can be selected.

- When “**Enumerated [DPT 5.010]**” is selected, *Control\_ Vane Up-Down* and *Status\_ Vane Up-Down* communication objects for this DPT will appear.

20: Control\_ Vanes U-D [DPT\_5.010] - Position values: 1,2,3,...

90: Status\_ Vanes U-D [DPT\_5.010] - Position values: 1,2,3,...

To choose a vane position, values from “1” to “N” can be sent to the *Control\_* object. Each value will correspond to the position (i.e. Value “3” = Position 3).

The *Status\_* object will always return the value for the vane position selected.

**⚠ Important:** If a “0” value is sent to the *Control\_* object, the Position 1 will be selected. If a value bigger than “N” is sent to the *Control\_* object, then the Position N will be selected.

- When “**Scaling [DPT 5.001]**” is selected, *Control\_ Vane Up-Down* and *Status\_ Vane Up-Down* communication objects for this DPT will appear.

20: Control\_ Vanes U-D [DPT\_5.001] - Thresholds: 100\*(n+0'5)...

90: Status\_ Vanes U-D [DPT\_5.001] - 100\*n/N %

The formula used to calculate the value to be set in the Control object is ‘ $100*(n+0,5)/N$  %’, where n is the current fan speed and N the maximum number of fan speeds.

On the other hand, the formula to calculate the status to be read according to the current value is ‘ $100*n/N$ ’, where n is the current fan speed and N the maximum number of fan speeds.

Check the example with 5 positions:

When a value between **0%** and **29%** is sent to the *Control\_* object the first vane position will be selected.

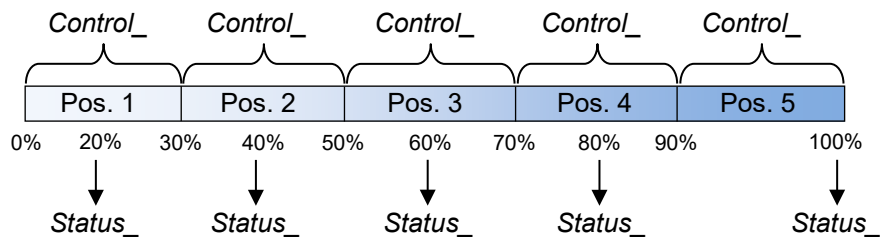
When a value between **30%** and **49%** is sent to the *Control\_* object, the second vane position will be selected.

When a value between **50%** and **69%** is sent to the *Control\_* object, the third vane position will be selected.

When a value between **70%** and **89%** is sent to the *Control\_* object, the fourth vane position will be selected.

When a value between **90%** and **100%** is sent to the *Control\_* object, the fifth vane position will be selected.

The *Status\_* object will return a **20%** for the first vane position, a **40%** for the second one, a **60%** for the third one, an **80%** for the fourth one and a **100%** for the fifth and last one.



### 5.5.2 Enable use of bit-type Vane U-D objects (for Control)

This parameter shows/hides the bit-type *Control\_ Vane Up-Down* objects.

- 22: Control\_ Vanes U-D Pos 1 [DPT\_1.002] - 1-Set Position 1
- 23: Control\_ Vanes U-D Pos 2 [DPT\_1.002] - 1-Set Position 2
- 24: Control\_ Vanes U-D Pos 3 [DPT\_1.002] - 1-Set Position 3
- 25: Control\_ Vanes U-D Pos 4 [DPT\_1.002] - 1-Set Position 4
- 26: Control\_ Vanes U-D Pos 5 [DPT\_1.002] - 1-Set Position 5
- 27: Control\_ Vanes U-D Pos 6 [DPT\_1.002] - 1-Set Position 6
- 28: Control\_ Vanes U-D Pos 7 [DPT\_1.002] - 1-Set Position 7
- 29: Control\_ Vanes U-D Pos 8 [DPT\_1.002] - 1-Set Position 8

- If set to **“no”** the objects will not be shown.
- If set to **“yes”** the *Control\_ Vane Up-Down* objects for each Position (1 to 5) will appear. To activate a Vane Position by using these objects, a **“1”** value has to be sent.

### 5.5.3 Enable use of bit-type Vane U-D objects (for Status)

This parameter shows/hides the bit-type *Status\_ Vane Up-Down* objects.

- 92: Status\_ Vanes U-D Pos 1 [DPT\_1.002] - 1-Vanes in Position...
- 93: Status\_ Vanes U-D Pos 2 [DPT\_1.002] - 1-Vanes in Position...
- 94: Status\_ Vanes U-D Pos 3 [DPT\_1.002] - 1-Vanes in Position...
- 95: Status\_ Vanes U-D Pos 4 [DPT\_1.002] - 1-Vanes in Position...
- 96: Status\_ Vanes U-D Pos 5 [DPT\_1.002] - 1-Vanes in Position...
- 97: Status\_ Vanes U-D Pos 6 [DPT\_1.002] - 1-Vanes in Position...
- 98: Status\_ Vanes U-D Pos 7 [DPT\_1.002] - 1-Vanes in Position...
- 99: Status\_ Vanes U-D Pos 8 [DPT\_1.002] - 1-Vanes in Position...

- If set to **“no”** the objects will not be shown.
- If set to **“yes”** the *Status\_ Vane Up-Down* objects for each Position (1 to N) will appear. When a Vane Position is enabled, a **“1”** value is returned through its bit-type object.

### 5.5.4 Enable use of +/- obj for Vane Up-Down

This parameter shows/hides the *Control\_ Vane Up-Down +/-* communication object which lets you change the indoor unit vane position by using two different datapoint types.

■ 33: Control\_ Vanes U-D +/- [DPT\_1.007] - 0-Decrease;1-Incre...

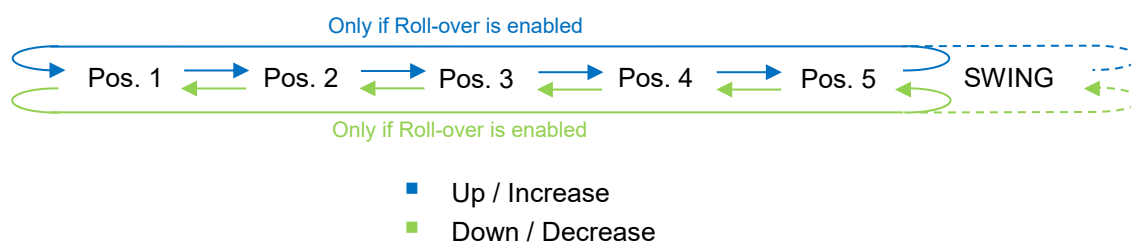
- If set to “no” the object will not be shown.
- If set to “yes” the *Control\_ Vane Up-Down +/-* object.

#### ➤ DPT type for +/- Vane Up-Down obj

This parameter lets choose between the datapoints **0-Up / 1-Down [DPT\_1.008]** and **0-Decrease / 1-Increase [DPT\_1.007]** for the *Control\_ Vane Up-Down +/-* object.

#### ➤ Rollover Vane at upper/lower limit

This parameter lets choose if roll-over will be enabled (“yes”) or disabled (“no”) for the *Vane Up-Down +/-* object.



### 5.5.5 Enable use of Text object for Vane U-D

This parameter shows/hides the *Status\_ Vane Up-Down Text* communication object.

■ 103: Status\_ Vanes U-D Text [DPT\_16.001] - ASCII String

- If set to “no” the object will not be shown.
- If set to “yes” the *Status\_ Vane Up-Down Text* object will appear.

## 5.6 Left-Right vanes configuration dialog

All the parameters in this section are related with the Vane Up-Down properties and communication objects.

### 5.6.1 DPT object type for Vane Left-Right

With this parameter is possible to change the DPT for the *Control\_ Vane Left-Right* and *Status\_ Vane Left-Right* byte-type communication objects. Datapoints Scaling (DPT\_5.001) and Enumerated (DPT\_5.010) can be selected.

- When **“Enumerated [DPT 5.010]”** is selected, *Control\_ Vane Left-Right* and *Status\_ Vane Left-Right* communication objects for this DPT will appear.

■ 35: Control\_ Vanes L-R [DPT\_5.010] - Position values: 1,2,3,...

■ 104: Status\_ Vanes L-R [DPT\_5.010] - Position values: 1,2,3,...

To choose a vane position, values from **“1”** to **“N”** can be sent to the *Control\_* object. Each value will correspond to the position (i.e. Value **“3”** = Position 3).

The *Status\_* object will always return the value for the vane position selected.

**⚠ Important:** If a **“0”** value is sent to the *Control\_* object, the Position 1 will be selected. If a value bigger than **“N”** is sent to the *Control\_* object, then the Position N will be selected.

- When **“Scaling [DPT 5.001]”** is selected, *Control\_ Vane Up-Down* and *Status\_ Vane Up-Down* communication objects for this DPT will appear.

■ 35: Control\_ Vanes L-R [DPT\_5.001] - Thresholds:  $100 \cdot (n+0.5) / N$ ...

■ 104: Status\_ Vanes L-R [DPT\_5.001] -  $100 \cdot n / N$  %

The formula used to calculate the value to be set in the Control object is **‘ $100 \cdot (n+0.5) / N$  %’**, where n is the current fan speed and N the maximum number of fan speeds.

On the other hand, the formula to calculate the status to be read according to the current value is **‘ $100 \cdot n / N$ ’**, where n is the current fan speed and N the maximum number of fan speeds.

Check the example with 5 positions:

When a value between **0%** and **29%** is sent to the *Control\_* object the first vane position will be selected.

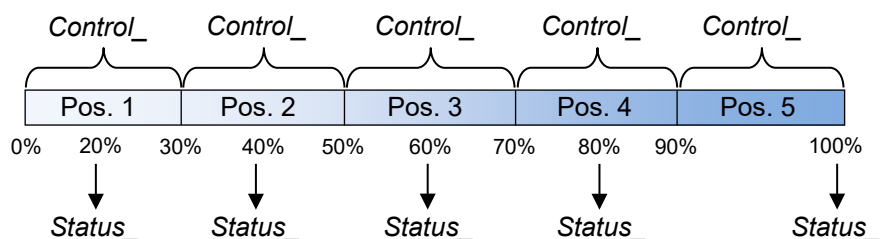
When a value between **30%** and **49%** is sent to the *Control\_* object, the second vane position will be selected.

When a value between **50%** and **69%** is sent to the *Control\_* object, the third vane position will be selected.

When a value between **70%** and **89%** is sent to the *Control\_* object, the fourth vane position will be selected.

When a value between **90%** and **100%** is sent to the *Control\_* object, the fifth vane position will be selected.

The *Status\_* object will return a **20%** for the first vane position, a **40%** for the second one, a **60%** for the third one, an **80%** for the fourth one and a **100%** for the fifth and last one.



### 5.6.2 Enable use of bit-type Vane L-R objects (for Control)

This parameter shows/hides the bit-type *Control\_ Vane Left-Right* objects.

- 37: Control\_ Vanes L-R Pos 1 [DPT\_1.002] - 1-Set Position 1
- 38: Control\_ Vanes L-R Pos 2 [DPT\_1.002] - 1-Set Position 2
- 39: Control\_ Vanes L-R Pos 3 [DPT\_1.002] - 1-Set Position 3
- 40: Control\_ Vanes L-R Pos 4 [DPT\_1.002] - 1-Set Position 4
- 41: Control\_ Vanes L-R Pos 5 [DPT\_1.002] - 1-Set Position 5
- 42: Control\_ Vanes L-R Pos 6 [DPT\_1.002] - 1-Set Position 6
- 43: Control\_ Vanes L-R Pos 7 [DPT\_1.002] - 1-Set Position 7
- 44: Control\_ Vanes L-R Pos 8 [DPT\_1.002] - 1-Set Position 8

- If set to “no” the objects will not be shown.
- If set to “yes” the *Control\_ Vane Up-Down* objects for each Position (1 to N) will appear. To activate a Vane Position by using these objects, a “1” value has to be sent.

### 5.6.3 Enable use of bit-type Vane U-D objects (for Status)

This parameter shows/hides the bit-type *Status\_ Vane Up-Down* objects.

- 106: Status\_ Vanes L-R Pos 1 [DPT\_1.002] - 1-Vanes in Positio...
- 107: Status\_ Vanes L-R Pos 2 [DPT\_1.002] - 1-Vanes in Positio...
- 108: Status\_ Vanes L-R Pos 3 [DPT\_1.002] - 1-Vanes in Positio...
- 109: Status\_ Vanes L-R Pos 4 [DPT\_1.002] - 1-Vanes in Positio...
- 110: Status\_ Vanes L-R Pos 5 [DPT\_1.002] - 1-Vanes in Positio...
- 111: Status\_ Vanes L-R Pos 6 [DPT\_1.002] - 1-Vanes in Positio...
- 112: Status\_ Vanes L-R Pos 7 [DPT\_1.002] - 1-Vanes in Positio...
- 113: Status\_ Vanes L-R Pos 8 [DPT\_1.002] - 1-Vanes in Positio...

- If set to “no” the objects will not be shown.
- If set to “yes” the *Status\_ Vane Up-Down* objects for each Position (1 to N) will appear. When a Vane Position is enabled, a “1” value is returned through its bit-type object.

### 5.6.4 Enable use of +/- obj for Vane Left-Right

This parameter shows/hides the *Control\_ Vane Left-Right +/-* communication object which lets you change the indoor unit vane position by using two different datapoint types.

■ 48: Control\_ Vanes L-R +/- [DPT\_1.007] - 0-Decrease;1-Increase

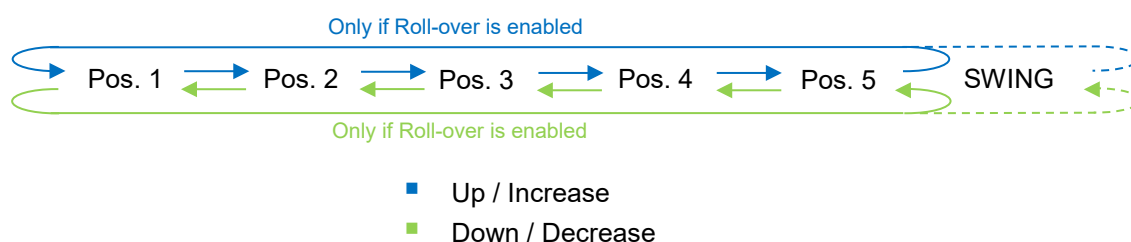
- If set to “**no**” the object will not be shown.
- If set to “**yes**” the *Control\_ Vane Left-Right +/-* object.

#### ➤ DPT type for +/- Vane Left-Right obj

This parameter lets choose between the datapoints **0-Up / 1-Down** [DPT\_1.008] and **0-Decrease / 1-Increase** [DPT\_1.007] for the *Control\_ Vane Left-Right +/-* object.

#### ➤ Rollover Vane at upper/lower limit

This parameter lets choose if roll-over will be enabled (“**yes**”) or disabled (“**no**”) for the *Vane Up-Down +/-* object.



### 5.6.5 Enable use of Text object for Vane U-D

This parameter shows/hides the *Status\_ Vane Up-Down Text* communication object.

■ 117: Status\_ Vanes L-R Text [DPT\_16.001] - ASCII String

- If set to “**no**” the object will not be shown.
- If set to “**yes**” the *Status\_ Vane Up-Down Text* object will appear.

## 5.7 Temperature configuration dialog

All the parameters in this section are related with the Temperature properties and communication objects.

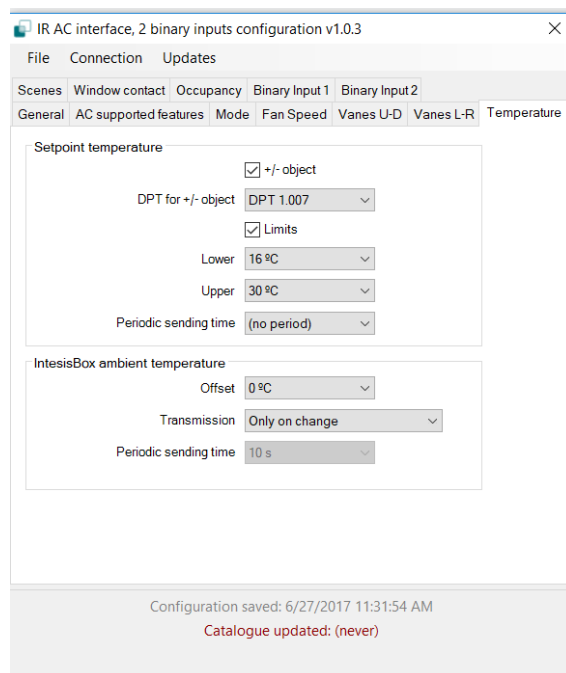


Figure 5.10 Temperature settings

### 5.7.1 Set Point - Enable use of +/- obj for Setp Temp

This parameter shows/hides the *Control\_ Setpoint Temp +/-* communication object which lets you change the indoor unit setpoint temperature by using two different datapoint types.

51: Control\_ Setpoint Temp +/- [DPT\_1.007] - 0-Decrease;1-I...

- If set to “no” the object will not be shown.
- If set to “yes” the *Control\_ Setpoint Temp +/-* object.

#### ➤ DPT type for +/- Setp Temp object

This parameter lets choose between the datapoints **0-Up / 1-Down [DPT\_1.008]** and **0-Decrease / 1-Increase [DPT\_1.007]** for the *Control\_ Setpoint Temp +/-* object.

(Lower limit) **16°C**  17°C  ...  31°C  **32°C** (Upper limit)

- Up / Increase
- Down / Decrease

### 5.7.2 Set Point - Enable limits on Control\_ Setpoint obj

This parameter enables to define temperature limits for the *Control\_ Setpoint Temperature* object.

- If set to “**no**” the setpoint temperature limits for the *Control\_ Setpoint Temperature* object will be the default: 16°C for the lower limit and 32°C for the upper limit.
- If set to “**yes**” it is possible to define temperature limits for the *Control\_ Setpoint Temperature* object.

➤ Control\_ Set Temp Lower limit (°C)

This parameter lets to define the lower limit for the setpoint temperature.

➤ Control\_ Set Temp Upper limit (°C)

This parameter lets to define the upper limit for the setpoint temperature.

⚠ **Important:** *If a setpoint temperature above the upper defined limit (or below the lower defined limit) is sent through the Control\_ Setpoint Temperature object, it will be ALWAYS applied the limit defined.*

⚠ **Important:** *When limits are enabled, any setpoint temperature sent to the AC (even through scenes, special modes, etc.) will be limited.*

### 5.7.3 Set Point - Periodic sending time

This parameter lets you change the interval of time (in seconds, from 0 to 255) at the end of which the AC setpoint temperature is sent to the KNX bus. For a “0” value, the AC setpoint temperature will **ONLY** be sent on change. The AC setpoint temperature is sent through the communication object *Status\_ AC Setpoint Temp*.

■ 118: Status\_ AC Setpoint Temperature [DPT\_9.001] - °C

### 5.7.4 Ambient - Transmission of “Status\_ IntesisBox Ref Temp”

This parameter lets to you choose if the IntesisBox reference temperature will be sent “**only cyclically**”, “**only on change**” or “**cyclically and on change**”. The IntesisBox reference temperature is sent through the communication object *Status\_ IntesisBox Reference Temperature*.

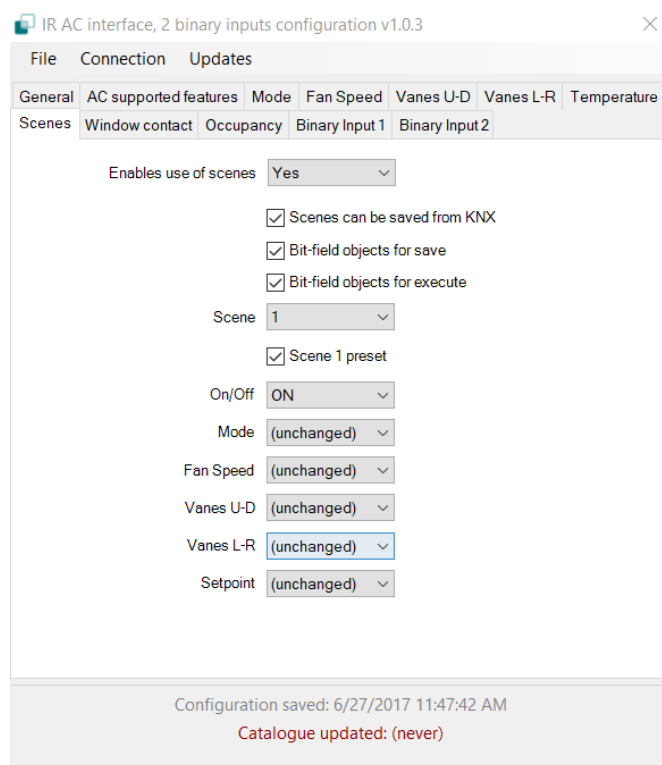
■ 120: Status\_ IntesisBox Reference Temperature [DPT\_9.001] - ...

### 5.7.5 Ambient - Periodic sending time

This parameter will only be available for the “**only cyclically**” and “**cyclically and on change**” options, and lets you change the interval of time (in seconds, from 1 to 255) at the end of which the IntesisBox reference temperature is sent to the KNX bus.

## 5.8 Scene Configuration dialog

All the parameters in this section are related with the Scene properties and communication objects. A scene contains values of: On/Off, Mode, Fan speed, Vane position and Setpoint Temperature.



**Figure 5.11** Scene configuration settings

### 5.8.1 Enable use of scenes

This parameter shows/hides the scene configuration parameters and communication objects.

58: Control\_ Save/Execute Scene [DPT\_18.001] - 0..4-Exec1-5;...

- If set to **“no”** the scene parameters and communication objects will not be shown.
- If set to **“yes”** the scene parameters and communication objects will be shown. To execute a scene through the byte-type object, a value from **“0”** to **“4”** has to be sent, corresponding each one to a different scene (i.e. **“0”** = Scene 1;... **“4”** = Scene 5).

### 5.8.2 Scenes can be saved from KNX

This parameter shows/hides the *Control\_ Save/Exec Scene* and all the *Control\_ Save Scene* (if enabled) communication objects.

- 58: Control\_ Save/Execute Scene [DPT\_18.001] - 0..4-Exec1-5;...
- 59: Control\_ Save Scene 1 [DPT\_1.002] - 1-Save Scene 1
- 60: Control\_ Save Scene 2 [DPT\_1.002] - 1-Save Scene 2
- 61: Control\_ Save Scene 3 [DPT\_1.002] - 1-Save Scene 3
- 62: Control\_ Save Scene 4 [DPT\_1.002] - 1-Save Scene 4
- 63: Control\_ Save Scene 5 [DPT\_1.002] - 1-Save Scene 5

- If set to “no” the communication objects will not be shown.
- If set to “yes” the communication objects and a new parameter will appear. To store a scene through the byte-type object, a value from “128” to “132” has to be sent to the object, corresponding each one to a different scene (i.e. “128” = Scene 1;... “132” = Scene 5).

➤ Enable use of bit objects for storing scenes (from bus)

If set to “no” the objects will not be shown.

If set to “yes” the *Control\_ Store Scene* objects for storing scenes will appear. To store a scene by using these objects, a “1” value has to be sent to the scene’s object we want to store (i.e. to store scene 4, a “1” has to be sent to the *Control\_ Store Scene 4* object).

### 5.8.3 Enable use of bit-field objects for save

This parameter shows/hides the *Control\_ Execute Scene* bit-type communication objects.

- 58: Control\_ Save/Execute Scene [DPT\_18.001] - 0..4-Exec1-5;...
- 59: Control\_ Save Scene 1 [DPT\_1.002] - 1-Save Scene 1
- 60: Control\_ Save Scene 2 [DPT\_1.002] - 1-Save Scene 2
- 61: Control\_ Save Scene 3 [DPT\_1.002] - 1-Save Scene 3
- 62: Control\_ Save Scene 4 [DPT\_1.002] - 1-Save Scene 4
- 63: Control\_ Save Scene 5 [DPT\_1.002] - 1-Save Scene 5

- If set to “no” the communication objects will not be shown.
- If set to “yes” the communication objects will appear. To execute a scene by using these objects, a “1” value has to be sent to the scene’s object we want to execute (i.e. to execute scene 4, a “1” has to be sent to the *Control\_ Execute Scene 4* object).

### 5.8.4 Enable use of bit-field objects for execute

This parameter shows/hides the *Control\_ Execute Scene* bit-type communication objects.

- 64: Control\_ Execute Scene 1 [DPT\_1.002] - 1-Execute Scene 1
- 65: Control\_ Execute Scene 2 [DPT\_1.002] - 1-Execute Scene 2
- 66: Control\_ Execute Scene 3 [DPT\_1.002] - 1-Execute Scene 3
- 67: Control\_ Execute Scene 4 [DPT\_1.002] - 1-Execute Scene 4
- 68: Control\_ Execute Scene 5 [DPT\_1.002] - 1-Execute Scene 5

- If set to “no” the communication objects will not be shown.
- If set to “yes” the communication objects will appear. To execute a scene by using these objects, a “1” value has to be sent to the scene's object we want to execute (i.e. to execute scene 4, a “1” has to be sent to the *Control\_ Execute Scene 4* object).

### 5.8.5 Scene “x” preset

This parameter lets you define a preset for a scene (the following description is valid for all the scenes).

- If set to “no” the preset for the scene “x” will be disabled.
- If set to “yes” the preset will be enabled. When a scene is executed the values configured in the preset will be applied.

**⚠ Important:** *If a scene's preset is enabled, will not be possible to modify (store) the scene from the KNX bus.*

➤ Scene “x” / Value for On-Off

This parameter lets you choose the power of the indoor unit when the scene is executed. The following options are available: “ON”, “OFF” or “(unchanged)”.

➤ Scene “x” / Value for Mode

This parameter lets you choose the mode of the indoor unit when the scene is executed. The following options are available: “AUTO”, “HEAT”, “COOL”, “FAN”, “DRY”, or “(unchanged)”.

➤ Scene “x” / Value for Fan Speed

This parameter lets you choose the fan speed of the indoor unit when the scene is executed. The following options are available: “SPEED 1”, “SPEED 2”... “SPEED N”, or “(unchanged)”.

➤ Scene “x” / Value for Vane Up-Down

This parameter lets you choose the vane position of the indoor unit when the scene is executed. The following options are available: “POSITION 1”, “POSITION 2”... “POSITION N”, “SWIRL”, “SWING” or “(unchanged)”.

➤ Scene “x” / Value for Vane Left-Right

This parameter lets you choose the vane position of the indoor unit when the scene is executed. The following options are available: “POSITION 1”, “POSITION 2”... “POSITION N”, “SWIRL”, “SWING” or “(unchanged)”.

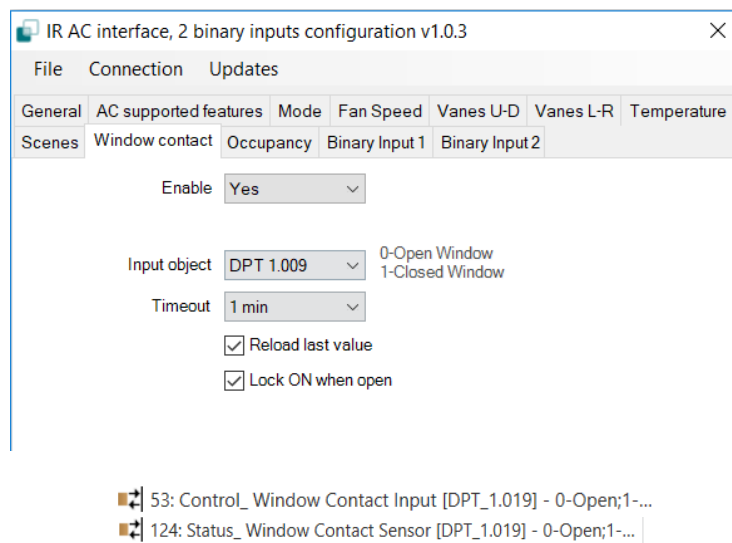
➤ Scene “x” / Value for Setp Temp (°C)

This parameter lets you choose the setpoint temperature of the indoor unit when the scene is executed. The following options are available: from “16°C” to “32°C” (both included), or “(unchanged)”.

- ⚠ **Important:** If any preset value is configured as “(unchanged)”, the execution of this scene will not change current status of this feature in the AC unit.
- ⚠ **Important:** When a scene is executed, *Status\_ Current Scene* object shows the number of this scene. Any change in previous items does *Status\_ Current Scene* show “No Scene”. Only changes on items marked as “(unchanged)” will not disable current scene.

## 5.9 Enable use of Open Window

This parameter shows/hides the *Control\_ Window Contact Input* communication object which lets you Start/Stop a timeout to switch off the indoor unit.



- If set to “no” the object will not be shown.
- If set to “yes” the *Control\_ Window Contact Input* object will appear. If a “1” value is sent to this object, and the indoor unit is already turned on, the switch-off timeout will begin. If a “0” value is sent to this object, the switch-off timeout will stop.

### ➤ Input Object

This parameter lets you choose between the datapoints **0-Open / 1-Closed Window [DPT\_1.009]** and **0-Stop / 1-Start Timeout [DPT\_1.010]** for the *Control\_ Switch Off Timeout*.

### ➤ Timeout (min)

This parameter lets you select how much time (in minutes) to wait before switching off the indoor unit.

### ➤ Reload last Value

If set to “no”, once the switch-off timeout is stopped, any value will be reloaded.

If set to “yes”, once the switch-off timeout is stopped, the last On/Off value sent will be reloaded.

- If a “1” value is sent to the *Control\_ Window Contact Input* object after the timeout period, the indoor unit will **turn on**.

- If a “0” value is sent to the *Control\_ Switch Off Timeout* after the timeout period, no action will be performed.

➤ Lock ON when Open

If set to “no”, On/Off commands while the window is open will be accepted.

- If a “1” value is sent to the *Control\_ Switch Off Timeout* object the switch-off timeout period will begin again.
- If a “0” value is sent to the *Control\_ Switch Off Timeout* object, no action will be performed.

If set to “yes”, On/Off commands, while the window is open, will be saved (but not applied). These commands will be used in the next parameter if set to “yes”.

## 5.10 Enable use of Occupancy function

This parameter shows/hides the *Control\_ Occupancy Input* communication object which lets you apply different parameters to the indoor unit depending on the presence/no presence in the room.

The screenshot shows a software window titled "IR AC interface, 2 binary inputs configuration v1.0.3". It has a menu bar with "File", "Connection", and "Updates". Below the menu bar are several tabs: "General", "AC supported features", "Mode", "Fan Speed", "Vanes U-D", "Vanes L-R", "Temperature", "Scenes", "Window contact", "Occupancy", "Binary Input 1", and "Binary Input 2". The "Occupancy" tab is currently selected. Inside this tab, there are several configuration options:
 

- Enable:** A dropdown menu set to "Yes".
- Timeout:** A dropdown menu set to "10 min".
- Action:** A dropdown menu set to "Apply Preset delta".
- Delta temp.:** A dropdown menu set to "2 °C".
- Second action:** A checkbox that is checked.
- Timeout (2nd):** A dropdown menu set to "30 min".
- Action (2nd):** A dropdown menu set to "Switch Off AC".
- Delta temp. (2nd):** A dropdown menu set to "3 °C".
- Reload last value:** A checkbox that is checked.
- Lock ON when unoccupied:** A checkbox that is checked.

54: Control\_ Occupancy Input [DPT\_1.018] - 0-Not Occupied;...

- If set to “no” the object will not be shown.
- If set to “yes” the *Control\_ Occupancy* object and new parameters will appear. If a “1” value is sent to this object (no room occupancy), the timeout will begin. If a “0” value is sent to this object, the timeout will stop.

Figure 4.33 Parameter detail

➤ Timeout to apply action (minutes)

This parameter lets you choose how much time to wait (in minutes) before executing the action specified in the next parameter ("Action after timeout elapsed").

➤ Action

When **Switch Off AC** is selected, once the timeout has elapsed, the indoor unit will be turned off.

When **Apply Preset Delta** is selected, once the timeout has elapsed, a delta temperature will be applied in order to save energy (decreasing the setpoint when in Heat mode, or increasing the setpoint when in Cool mode). Also new parameters will appear.

➤ Temp delta decrease (HEAT) or increase (COOL) (°C)

This parameter lets configure the delta temperature (increase or decrease) that will be applied when the timeout has elapsed.

**⚠ Important:** When there is occupancy again after the application of a delta, the same delta will be applied inversely. (i.e. In a room with AC in cool mode and 25°C setpoint temperature, a +2°C delta is applied after the occupancy timeout, setting the setpoint at 27°C because there is no occupancy in the room. If the setpoint is raised to 29°C during that period, when the room is occupied again, a -2°C delta will be applied and the final setpoint temperature will then be 27°C).

➤ Second Action

If set to **"no"** nothing will be applied.

If set to **"yes"**, a new timeout will be enabled and two new parameters will appear.

➤ Timeout (2nd)

This parameter lets you choose how much time to wait (in minutes) before executing the action specified in the next parameter ("Action after timeout elapsed").

➤ Action (2nd)

When **Switch-Off** is selected, once the timeout has elapsed, the indoor unit will turn off.

When **Apply Preset Delta** is selected, once the timeout configured is extinguished, a delta temperature will be applied (decreasing the setpoint when in Heat mode, or increasing the setpoint when in Cool mode). Also new parameters will appear.

➤ Temp delta decrease (HEAT) or increase (COOL) (°C)

This parameter lets configure the delta temperature that will be applied when the timeout is extinguished.

**⚠ Important:** When there is occupancy again after the application of a delta, the same delta will be applied inversely as explained above.

➤ Reload last On/Off value when Occupied

If set to “no”, once the switch-off timeout has elapsed, any value will be reloaded.

If set to “yes”, once the switch-off timeout has elapsed, the last On/Off value will be reloaded.

- If a “1” value is sent to the *Control\_ Occupancy* object after the timeout period, the indoor unit will **turn on**.
- If a “0” value is sent to the *Control\_ Occupancy* after the timeout period no action will be performed.

➤ Lock ON when occupied

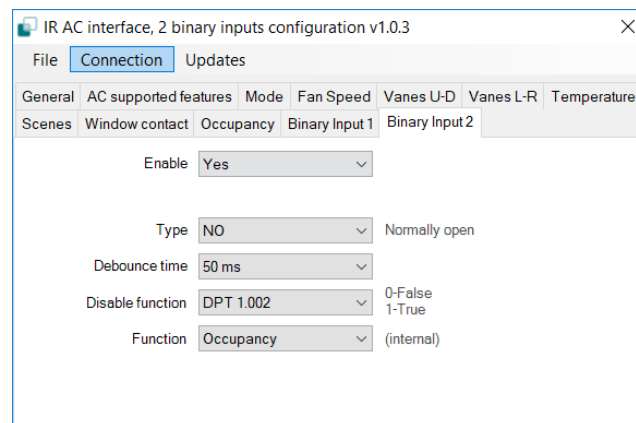
If set to “no”, On/Off commands while the room is occupied will be accepted.

- If a “1” value is sent to the *Control\_ Switch Off Timeout* object the switch-off timeout period will begin again.
- If a “0” value is sent to the *Control\_ Switch Off Timeout* object, no action will be performed.

If set to “yes”, On/Off commands, while the window is open, will be saved (but not applied). These commands will be used in the next parameter if set to “yes”.

## 5.11 Binary Input “x” configuration dialogs

All the parameters in this section are related with the binary inputs properties and communication objects.



### 5.11.1 Enable use of Input “x”

This parameter enables the use of the Input “x”.

- If set to “no” the objects will not be shown.
- If set to “yes” the *Status\_ Inx* object(s) and new parameters will appear.

### 5.11.2 Contact type

This parameter lets choose the behavior that will have the binary input depending on if the contact is normally open or normally closed.

- There are two possible options to configure the contact type: **“NO: Normally Open”** and **“NC: Normally Closed”**.

### 5.11.3 Debounce time

This parameter lets choose a debounce time (in milliseconds) that will be applied to the contact.

### 5.11.4 Disabling function

This parameter shows/hides the *Control\_Disable Input x* communication object which will let disable/enable the input x.

 69: Control\_Disable Input 1 [DPT\_1.002] - 0-False;1-True  
 70: Control\_Disable Input 2 [DPT\_1.002] - 0-False;1-True

- If set to **“no”** any object will be shown.
- When **“DPT 1.003: 0-Disable; 1-Enable”** is selected, the input can be disabled using the value **“0”** and enabled using the value **“1”**.
- When **“DPT 1.002: 1-True (Disable); 0-False (Enable)”** is selected, the input can be disabled using the value **“1”** and enabled using the value **“0”**.

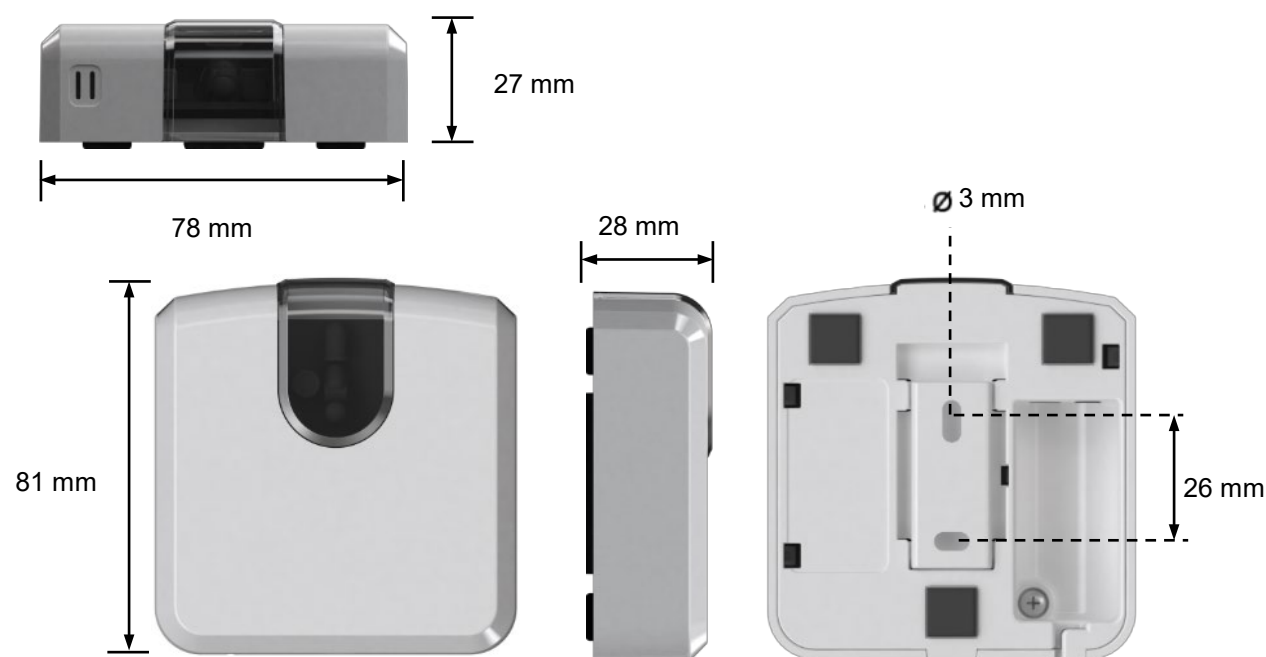
### 5.11.5 Function

This parameter lets choose the function that will have the binary input. There are 3 different functions available: Occupancy (internal), On/Off and Window Contact (internal).

- When **“Occupancy”** is selected, the binary input “x” will have the same behavior as configured in the parameter “Occupanys” (section 5.10).
- When **“On/Off”** is selected, the AC unit will turn off when the binary inpyt “x” is active.
- When **“Window Contact (internal)”** is selected, the binary input “x” will have the same behavior as configured in the parameter “Window Contact” (section 5.9).

## 6 Electrical and Mechanical features

|                              |                                                                                                                                                                                                                                                                                               |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Enclosure</b>             | ABS (V-0). 2,1 mm thickness<br>PC (V-2). 1 mm thickness                                                                                                                                                                                                                                       |
| <b>Dimensions</b>            | 81 x 78 x 28 mm                                                                                                                                                                                                                                                                               |
| <b>Weight</b>                | 76 g                                                                                                                                                                                                                                                                                          |
| <b>Color</b>                 | Ivory white                                                                                                                                                                                                                                                                                   |
| <b>Power supply</b>          | 29V DC, 17mA<br>Supplied through KNX bus                                                                                                                                                                                                                                                      |
| <b>Mounting</b>              | Wall and desktop                                                                                                                                                                                                                                                                              |
| <b>LED indicators</b>        | 1 x Device status and KNX programming                                                                                                                                                                                                                                                         |
| <b>Push buttons</b>          | 1 x KNX programming.                                                                                                                                                                                                                                                                          |
| <b>Binary inputs</b>         | 2 x binary inputs for potential-free contacts.<br>Signal cable length: 5m unshielded, may be extended up to 20m with twisted.<br><br>Compliant with the following standards:<br>IEC61000-4-2: level 4 - 15kV (air discharge) - 8kV (contact discharge)<br>MIL STD 883E-Method 3015-7: class3B |
| <b>Console port</b>          | Mini USB port for console usage                                                                                                                                                                                                                                                               |
| <b>Configuration</b>         | Configuration with ETS                                                                                                                                                                                                                                                                        |
| <b>Operating Temperature</b> | From 0°C to 40°C                                                                                                                                                                                                                                                                              |
| <b>Operating humidity</b>    | <93% HR, no condensation                                                                                                                                                                                                                                                                      |
| <b>Stock humidity</b>        | <93% HR, no condensation                                                                                                                                                                                                                                                                      |



## 7 List of compatible AC indoor units.

A list of indoor unit model references compatible with IS-IR-KNX-1 and their available features can be found in:

[http://intesis.com/pdf/IntesisBox\\_IS-IR-xxx-1\\_AC\\_Compatibility.pdf](http://intesis.com/pdf/IntesisBox_IS-IR-xxx-1_AC_Compatibility.pdf)

## 8 Appendix A – Communication Objects Table

| TOPIC     | OBJECT NUMBER | NAME                          | LENGTH | DATAPOINT TYPE    |        | FLAGS |   |   |   | FUNCTION                                                                           |
|-----------|---------------|-------------------------------|--------|-------------------|--------|-------|---|---|---|------------------------------------------------------------------------------------|
|           |               |                               |        | DPT_NAME          | DPT_ID | R     | W | T | U |                                                                                    |
| On/Off    | 1             | Control_ On/Off               | 1 bit  | DPT_Switch        | 1.001  |       | W | T |   | 0 - Off; 1-On                                                                      |
| Mode      | 2             | Control_ Mode                 | 1 byte | DPT_HVACContrMode | 20.105 |       | W | T |   | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry                                    |
|           | 3             | Control_ Mode Cool/Heat       | 1 bit  | DPT_Heat/Cool     | 1.100  |       | W | T |   | 0 - Cool; 1 - Heat                                                                 |
|           | 4             | Control_ Mode Auto            | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Auto                                                                           |
|           | 5             | Control_ Mode Heat            | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Heat                                                                           |
|           | 6             | Control_ Mode Cool            | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Cool                                                                           |
|           | 7             | Control_ Mode Fan             | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan                                                                            |
|           | 8             | Control_ Mode Dry             | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Dry                                                                            |
|           | 9             | Control_ Mode +/-             | 1 bit  | DPT_Step          | 1.007  |       | W |   |   | 0 - Decrease; 1 - Increase                                                         |
|           |               | Control_ Mode +/-             | 1 bit  | DPT_UpDown        | 1.008  |       | W |   |   | 0 - Up; 1 - Down                                                                   |
| Fan Speed | 10            | Control_ Fan Speed / N Speeds | 1 byte | DPT_Scaling       | 5.001  |       | W | T |   | 100*(n+0,5)/N %                                                                    |
|           |               | Control_ Fan Speed / N Speeds | 1 byte | DPT_Enumerated    | 5.010  |       | W | T |   | 1 - Speed1; 2 - Speed2; 3 - Speed3; 4 - Speed4; 5 - Speed5; 6 - Speed6; 7 - Speed7 |
|           | 11            | Control_ Fan Speed Man/Auto   | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 0 - Manual; 1 - Auto                                                               |
|           | 12            | Control_ Fan Speed 1          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 1                                                                    |
|           | 13            | Control_ Fan Speed 2          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 2                                                                    |
|           | 14            | Control_ Fan Speed 3          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 3                                                                    |
|           | 15            | Control_ Fan Speed 4          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 4                                                                    |
|           | 16            | Control_ Fan Speed 5          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 5                                                                    |
|           | 17            | Control_ Fan Speed 6          | 1 bit  | DPT_Bool          | 1.002  |       | W | T |   | 1 - Fan Speed 6                                                                    |

|       |    |                                   |        |                |       |  |   |   |                                                                                |
|-------|----|-----------------------------------|--------|----------------|-------|--|---|---|--------------------------------------------------------------------------------|
|       | 18 | Control_ Fan Speed 7              | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Fan Speed 7                                                                |
|       | 19 | Control_ Fan Speed +/-            | 1 bit  | DPT_Step       | 1.007 |  | W | T | 0 - Decrease; 1 - Increase                                                     |
|       |    | Control_ Fan Speed +/-            | 1 bit  | DPT_UpDown     | 1.008 |  | W | T | 0 - Up; 1 - Down                                                               |
| Vanes | 20 | Control_ Vane Up-Down / N pos     | 1 byte | DPT_Scaling    | 5.001 |  | W | T | 100*(n+0,5)/N %                                                                |
|       |    | Control_ Vane Up-Down / N pos     | 1 byte | DPT_Enumerated | 5.010 |  | W | T | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5; 6 - Pos6; 7 - Pos7; 8 - Pos8 |
|       | 21 | Control_ Vane Up-Down Man/Auto    | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 0 - Manual; 1 - Auto                                                           |
|       | 22 | Control_ Vane Up-Down Pos1        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 1                                                                 |
|       | 23 | Control_ Vane Up-Down Pos2        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 2                                                                 |
|       | 24 | Control_ Vane Up-Down Pos3        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 3                                                                 |
|       | 25 | Control_ Vane Up-Down Pos4        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 4                                                                 |
|       | 26 | Control_ Vane Up-Down Pos5        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 5                                                                 |
|       | 27 | Control_ Vane Up-Down Pos6        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 6                                                                 |
|       | 28 | Control_ Vane Up-Down Pos7        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 7                                                                 |
|       | 29 | Control_ Vane Up-Down Pos8        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 8                                                                 |
|       | 30 | Control_ Vane Up-Down Swing       | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 0 - Stop; 1 – Swing                                                            |
|       | 31 | Control_ Vane Up-Down Swirl       | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 0 - Stop; 1 – Swirl                                                            |
|       | 32 | Control_ Vane Up-Down Wide        | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 0 - Stop; 1 – Wide                                                             |
|       | 33 | Control_ Vane Up-Down +/-         | 1 bit  | DPT_Step       | 1.007 |  | W |   | 0 - Decrease; 1 - Increase                                                     |
|       |    | Control_ Vane Up-Down +/-         | 1 bit  | DPT_UpDown     | 1.008 |  | W |   | 0 - Up; 1 - Down                                                               |
|       | 34 | Control_ Vane Up-Down Move Pos    | 1 bit  | DPT_Trigger    | 1.002 |  | W | T | 0,1 Move Position                                                              |
|       | 35 | Control_ Vane Left-Right / N pos  | 1 byte | DPT_Scaling    | 5.001 |  | W | T | 100*(n+0,5)/N %                                                                |
|       |    | Control_ Vane Left-Right / N pos  | 1 byte | DPT_Enumerated | 5.010 |  | W | T | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5; 6 - Pos6; 7 - Pos7; 8 - Pos8 |
|       | 36 | Control_ Vane Left-Right Man/Auto | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 0 - Manual; 1 - Auto                                                           |
|       | 37 | Control_ Vane Left-Right Pos1     | 1 bit  | DPT_Bool       | 1.002 |  | W | T | 1 - Position 1                                                                 |

|                |    |                                   |        |                    |        |  |   |   |                                                                |
|----------------|----|-----------------------------------|--------|--------------------|--------|--|---|---|----------------------------------------------------------------|
|                | 38 | Control_ Vane Left-Right Pos2     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 2                                                 |
|                | 39 | Control_ Vane Left-Right Pos3     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 3                                                 |
|                | 40 | Control_ Vane Left-Right Pos4     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 4                                                 |
|                | 41 | Control_ Vane Left-Right Pos5     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 5                                                 |
|                | 42 | Control_ Vane Left-Right Pos6     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 6                                                 |
|                | 43 | Control_ Vane Left-Right Pos7     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 7                                                 |
|                | 44 | Control_ Vane Left-Right Pos8     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 1 - Position 8                                                 |
|                | 45 | Control_ Vane Left-Right Swing    | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 0 - Stop; 1 – Swing                                            |
|                | 46 | Control_ Vane Left-Right Swirl    | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 0 - Stop; 1 – Swirl                                            |
|                | 47 | Control_ Vane Left-Right Wide     | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 0 - Stop; 1 – Wide                                             |
|                | 48 | Control_ Vane Left-Right +/-      | 1 bit  | DPT_Step           | 1.007  |  | W |   | 0 - Decrease; 1 – Increase                                     |
|                |    | Control_ Vane Left-Right +/-      | 1 bit  | DPT_UpDown         | 1.008  |  | W |   | 0 - Up; 1 – Down                                               |
|                | 49 | Control_ Vane Left-Right Move Pos | 1 bit  | DPT_Trigger        | 1.002  |  | W | T | 0,1 Move Position                                              |
| Temperature    | 50 | Control_ Setpoint Temperature     | 2 byte | DPT_Value_Temp     | 9.001  |  | W | T | 16°C to 32°C                                                   |
|                | 51 | Control_ Setpoint Temp +/-        | 1 bit  | DPT_Step           | 1.007  |  | W |   | 0 - Decrease; 1 – Increase                                     |
|                |    | Control_ Setpoint Temp +/-        | 1 bit  | DPT_UpDown         | 1.008  |  | W |   | 0 - Up; 1 – Down                                               |
|                | 52 | Control_ Ambient Temperature      | 2 byte | DPT_Value_Temp     | 9.001  |  | W | T | °C value                                                       |
| Window         | 53 | Control_ Window Contact Input     | 1 bit  | DPT_Window_Door    | 1.019  |  | W | T | 0 - Closed; 1 - Open                                           |
| Occupancy      | 54 | Control_ Occupancy Input          | 1 bit  | DPT_Occupancy      | 1.018  |  | W | T | 0 – Not Occupied; 1 - Occupied                                 |
| Locking        | 55 | Control_ Lock Remote Control      | 1 bit  | DPT_Bool           | 1.002  |  | W | T | 0 - Unlocked; 1 – Locked                                       |
| Operating Time | 56 | Control_ Operating Hour Counter   | 2 byte | DPT_Time (Hours)   | 7.007  |  | W | T | Number of operating hours                                      |
|                | 57 | Control_ Operating Second Counter | 2 byte | DPT_Time_Lag (Sec) | 13.100 |  | W | T | Number of operating seconds                                    |
| Scenes         | 58 | Control_ Save/Exec Scene          | 1 byte | DPT_SceneControl   | 18.001 |  | W |   | 0 to 4 - Exec. Scene 1 to 5;<br>128 to 132 - Save Scene 1 to 5 |
|                | 59 | Control_ Store Scene1             | 1 bit  | DPT_Bool           | 1.002  |  | W |   | 1 - Store Scene                                                |
|                | 60 | Control_ Store Scene2             | 1 bit  | DPT_Bool           | 1.002  |  | W |   | 1 - Store Scene                                                |

|           |    |                          |       |            |       |  |   |   |  |                         |
|-----------|----|--------------------------|-------|------------|-------|--|---|---|--|-------------------------|
|           | 61 | Control_ Store Scene3    | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Store Scene         |
|           | 62 | Control_ Store Scene4    | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Store Scene         |
|           | 63 | Control_ Store Scene5    | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Store Scene         |
|           | 64 | Control_ Execute Scene1  | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Execute Scene       |
|           | 65 | Control_ Execute Scene2  | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Execute Scene       |
|           | 66 | Control_ Execute Scene3  | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Execute Scene       |
|           | 67 | Control_ Execute Scene4  | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Execute Scene       |
|           | 68 | Control_ Execute Scene5  | 1 bit | DPT_Bool   | 1.002 |  | W |   |  | 1 - Execute Scene       |
| Disabling | 69 | Control_ Disable Input 1 | 1 bit | DPT_Bool   | 1.002 |  | W | T |  | 0 - Enable; 1 - Disable |
|           |    | Control_ Disable Input 1 | 1 bit | DPT_Enable | 1.003 |  | W | T |  | 0 - Disable; 1 - Enable |
|           | 70 | Control_ Disable Input 2 | 1 bit | DPT_Bool   | 1.002 |  | W | T |  | 0 - Enable; 1 - Disable |
|           |    | Control_ Disable Input 2 | 1 bit | DPT_Enable | 1.003 |  | W | T |  | 0 - Disable; 1 - Enable |
|           |    |                          |       |            |       |  |   |   |  |                         |

|        |    |                        |         |                   |        |   |  |   |                                                 |
|--------|----|------------------------|---------|-------------------|--------|---|--|---|-------------------------------------------------|
| On/Off | 71 | Status_ On/Off         | 1 bit   | DPT_Switch        | 1.001  | R |  | T | 0 - Off; 1-On                                   |
| Mode   | 72 | Status_ Mode           | 1 byte  | DPT_HVACContrMode | 20.105 | R |  | T | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry |
|        | 73 | Status_ Mode Cool/Heat | 1 bit   | DPT_Heat/Cool     | 1.100  | R |  | T | 0 - Cool; 1 - Heat                              |
|        | 74 | Status_ Mode Auto      | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Auto                                        |
|        | 75 | Status_ Mode Heat      | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Heat                                        |
|        | 76 | Status_ Mode Cool      | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Cool                                        |
|        | 77 | Status_ Mode Fan       | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan                                         |
|        | 78 | Status_ Mode Dry       | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Dry                                         |
|        | 79 | Status_ Mode Text      | 14 byte | DPT_String_8859_1 | 16.001 | R |  | T | ASCII String                                    |

|           |     |                              |         |                   |        |   |   |                                                                                    |
|-----------|-----|------------------------------|---------|-------------------|--------|---|---|------------------------------------------------------------------------------------|
| Fan Speed | 80  | Status_ Fan Speed / N Speeds | 1 byte  | DPT_Scaling       | 5.001  | R | T | 100*(n+0,5)/N %                                                                    |
|           |     | Status_ Fan Speed / N Speeds | 1 byte  | DPT_Enumerated    | 5.010  | R | T | 1 - Speed1; 2 - Speed2; 3 - Speed3; 4 - Speed4; 5 - Speed5; 6 - Speed6; 7 - Speed7 |
|           | 81  | Status_ Fan Speed Man/Auto   | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Manual; 1 - Auto                                                               |
|           | 82  | Status_ Fan Speed 1          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 1                                                                        |
|           | 83  | Status_ Fan Speed 2          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 2                                                                        |
|           | 84  | Status_ Fan Speed 3          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 3                                                                        |
|           | 85  | Status_ Fan Speed 4          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 4                                                                        |
|           | 86  | Status_ Fan Speed 5          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 5                                                                        |
|           | 87  | Status_ Fan Speed 6          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 6                                                                        |
|           | 88  | Status_ Fan Speed 7          | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Speed 7                                                                        |
| Vanes     | 89  | Status_ Fan Speed Text       | 14 byte | DPT_String_8859_1 | 16.001 | R | T | ASCII String                                                                       |
|           | 90  | Status_ Vane Up-Down / 8 pos | 1 byte  | DPT_Scaling       | 5.001  | R | T | 100*(n+0,5)/N %                                                                    |
|           |     | Status_ Vane Up-Down / 8 pos | 1 byte  | DPT_Enumerated    | 5.010  | R | T | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5; 6 - Pos6; 7 - Pos7; 8 - Pos8     |
|           | 91  | Status_ Vane Man/Auto        | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Manual; 1 - Auto                                                               |
|           | 92  | Status_ Vane Up-Down Pos1    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 1                                                                     |
|           | 93  | Status_ Vane Up-Down Pos2    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 2                                                                     |
|           | 94  | Status_ Vane Up-Down Pos3    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 3                                                                     |
|           | 95  | Status_ Vane Up-Down Pos4    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 4                                                                     |
|           | 96  | Status_ Vane Up-Down Pos5    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 5                                                                     |
|           | 97  | Status_ Vane Up-Down Pos6    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 6                                                                     |
|           | 98  | Status_ Vane Up-Down Pos7    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 7                                                                     |
|           | 99  | Status_ Vane Up-Down Pos8    | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 8                                                                     |
|           | 100 | Status_ Vane Up-Down Swing   | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Swing                                                                |
|           | 101 | Status_ Vane Up-Down Swirl   | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Swirl                                                                |

|             |     |                                   |         |                   |        |   |   |                                                                                   |
|-------------|-----|-----------------------------------|---------|-------------------|--------|---|---|-----------------------------------------------------------------------------------|
|             | 102 | Status_ Vane Up-Down Wide         | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Wide                                                                |
|             | 103 | Status_ Vane Up-Down Text         | 14 byte | DPT_String_8859_1 | 16.001 | R | T | ASCII String                                                                      |
|             | 104 | Status_ Vane Left-Right / 8 pos   | 1 byte  | DPT_Scaling       | 5.001  | R | T | 100*(n+0,5)/N %                                                                   |
|             |     | Status_ Vane Left-Right / 8 pos   | 1 byte  | DPT_Enumerated    | 5.010  | R | T | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5;<br>6 - Pos6; 7 - Pos7; 8 - Pos8 |
|             | 105 | Status_ Vane Left-Right Man/Auto  | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Manual; 1 - Auto                                                              |
|             | 106 | Status_ Vane Left-Right Pos1      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 1                                                                    |
|             | 107 | Status_ Vane Left-Right Pos2      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 2                                                                    |
|             | 108 | Status_ Vane Left-Right Pos3      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 3                                                                    |
|             | 109 | Status_ Vane Left-Right Pos4      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 4                                                                    |
|             | 110 | Status_ Vane Left-Right Pos5      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 5                                                                    |
|             | 111 | Status_ Vane Left-Right Pos6      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 6                                                                    |
|             | 112 | Status_ Vane Left-Right Pos7      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 7                                                                    |
|             | 113 | Status_ Vane Left-Right Pos8      | 1 bit   | DPT_Bool          | 1.002  | R | T | 1 - Position 8                                                                    |
|             | 114 | Status_ Vane Left-Right Swing     | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Swing                                                               |
|             | 115 | Status_ Vane Left-Right Swirl     | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Swirl                                                               |
|             | 116 | Status_ Vane Left-Right Wide      | 1 bit   | DPT_Bool          | 1.002  | R | T | 0 - Stop; 1 - Wide                                                                |
| Temperature | 117 | Status_ Vane Left-Right Text      | 14 byte | DPT_String_8859_1 | 16.001 | R | T | ASCII String                                                                      |
|             | 118 | Status_ AC Setpoint Temp          | 2 byte  | DPT_Value_Temp    | 9.001  | R | T | 16°C to 32°C                                                                      |
|             | 119 | Status_ IntesisBox Ambient Temp   | 2 byte  | DPT_Value_Temp    | 9.001  | R | T | °C value                                                                          |
| Error       | 120 | Status_ IntesisBox Reference Temp | 2 byte  | DPT_Value_Temp    | 9.001  | R | T | °C value                                                                          |
|             | 121 | Status_ Error/Alarm               | 1 bit   | DTP_Alarm         | 1.005  | R | T | 0 - No Alarm; 1 - Alarm                                                           |
|             | 122 | Status_ Error Code                | 2 byte  | Enumerated        |        | R | T | 0 - No Error; Any other see user's manual                                         |
| Window      | 123 | Status_ Error Text code           | 14 byte | DPT_String_8859_1 | 16.001 | R | T | 2 char Error; Empty - none                                                        |
|             | 124 | Status_ Window Contact Sensor     | 1 bit   | DPT_Window_Door   | 1.019  | R | T | 0 - Closed; 1 - Open                                                              |
|             | 125 | Status_ Window Contact Step       | 8 bit   | Enumerated        |        | R | T | 0-Window Closed; 1-Window Open; 2-AC switched off                                 |

|           |     |                                  |        |                    |        |   |   |                                                        |
|-----------|-----|----------------------------------|--------|--------------------|--------|---|---|--------------------------------------------------------|
| Occupancy | 126 | Status_ Occupancy Sensor         | 1 bit  | DPT_Occupancy      | 1.018  | R | T | 0 – Not Occupied; 1 – Occupied                         |
|           | 127 | Status_ Occupancy Mode           | 8 bit  | DPT_OCC_MODE       | 20.003 | R | T | 0 – Occupied; 1 – Stand by; 2 – Not Occupied           |
|           | 128 | Status_ Occupancy State          | 8 bit  | Enumerated         |        | R | T | 0 - Occupied; 1 - Unoccupied; 2 - Action1; 3 - Action2 |
|           | 129 | Status_ Lock Remote Control      | 1 bit  | DPT_Bool           | 1.002  | R | T | 0 - Unlocked; 1 – Locked                               |
| Counter   | 130 | Status_ Operating Hour Counter   | 2 byte | DPT_Value_2_Ucount | 7.001  | R | T | Number of operating hours                              |
|           | 131 | Status_ Operating Second Counter | 2 byte | DPT_Value_2_Ucount | 13.100 | R | T | Number of operating seconds                            |
| Scene     | 132 | Status_ Current Scene            | 1 byte | DPT_SceneNumber    | 17.001 | R | T | 0 to 4 - Scene 1 to 5; 63 - No Scene                   |