# IntesisBox®
## DK-AC-KNX-1i v1.2

User's Manual
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Intesis
software

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

Compatible with Domestic line air conditioners commercialized by Daikin.

Application's Program Version: 1.2

Order Code: **DK-AC-KNX-1i**

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## INDEX

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# 1. Presentation



DK-AC-KNX-1i allows a complete and natural integration of Daikin air conditioners with KNX control systems.

Compatible with all Domestic models commercialized by Daikin.

Main features:

• Reduced dimensions, quick installation.

• Multiple objects for control and status (bit, byte, characters…) with KNX standard datapoint types.

• Status objects for every control available.

• 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.

• AC unit can be controlled simultaneously by the IR remote control of the AC unit and by KNX.

• 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.

• 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.

• Four potential-free binary inputs provide the possibility to integrate many types of external devices. Also configurable from ETS, they can be used for switching, dimming, shutter/blind control, and more

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## 2. Connection

The interface comes with a cable (1,9 meters long) for direct connection to the internal control board of the AC indoor unit.

o   Connection of the interface to the AC indoor unit:

Disconnect mains power from the AC unit. Open the front cover of the indoor unit in order to have access to the internal control board. In the control board locate the socket connector marked as:

      **S21**      in Domestic line units.

Using the cable that comes with the interface, insert one of its connectors, the one installed in the shortest uncovered part, into the socket of the DK-AC-KNX-1i marked as **AC Unit**, and the other connector, the one in the largest uncovered part, into the socket **S21** of the AC unit's control board. Fix the DK-AC-KNX-1i inside or outside the AC indoor unit depending on your needs; remember that DK-AC-KNX-1i must be also connected to the KNX bus. Close the AC indoor unit's front cover again.

⚠ *Important*: Do not modify the length of the cable supplied with the interface, it may affect to the correct operation of the interface

o   Connection of the interface to the KNX bus:

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

o   Connections diagram:
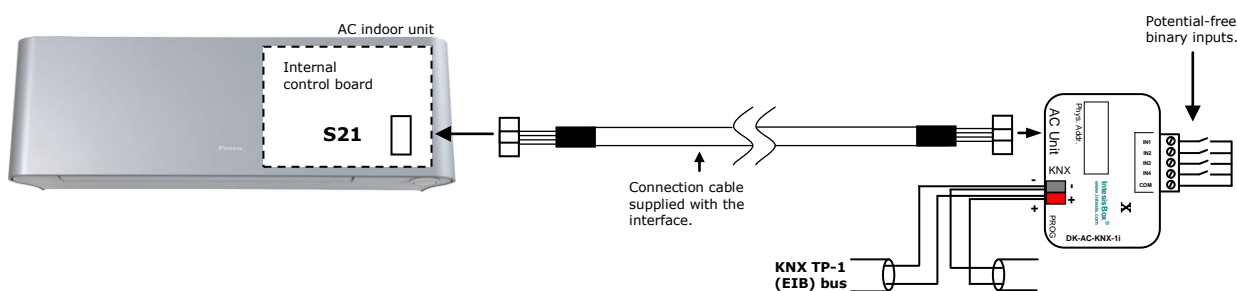


**Figure 2.2** Connection diagram

## 3. Configuration and setup

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

ETS database for this device can be downloaded from:

**http://www.intesis.com/down/eib/DK-AC-KNX-1i.zip**

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

⚠ **Important:** *Do not forget to select the correct settings of AC indoor unit being connected to the DK-AC-KNX-1i this is in "Parameters" of the device in ETS.*

# 4. ETS Parameters

When imported to the ETS software for the first time, the gateway shows the following default parameter configuration:



**Figure 4.1** Default parameter configuration

With this configuration it's possible to send On/Off (*Control_ On/Off*), change the AC Mode (*Control_ Mode*), the Fan Speed (*Control_ Fan Speed*) and also the Setpoint Temperature (*Control_ Setpoint Temperature*). The Status_ objects, for the mentioned Control_ objects, are also available to use if needed. Also objects *Status_ AC Setpoint Temp* and *Status_ Error/Alarm* are shown.



**Figure 4.2** Default communication objects

### *2.1 General dialog*

Inside this parameter's dialog it is possible to activate or change the parameters shown in the **Figure 4.1**.

The first field shows the URL where to download the database and the user manual for the product.

### 2.1.1 Send READs for Control_ objects on bus recovery

When this parameter is enabled, DK-AC-KNX-1i will send READ telegrams for the group addresses associated on its *Control_* objects on bus recovery or application reset/start-up.

o  If set to **"no"** the gateway will not perform any action.

o  If set to **"yes"** 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.

| Send READs for Control_ objects on bus recovery (T and U flags must be active) | yes |
|---|---|
| > Delay before sending READs (sec) | 30 |

**Figure 4.3** Parameter detail

➢  Delay before sending READs (sec):

With this parameter, a delay can be configured between 0 and 30 seconds for the READs sent by the *Control_* objects. This is to give time enough to other KNX devices on the bus to start-up before sending the READs.

### 2.1.2 Scene to load 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).

If the gateway is disconnected from the indoor unit the scene will not be applied, even when connecting to the indoor unit again.

| Scene to load on bus recovery / startup (needs to define vals for that scene) | scene 2 |
|---|---|

**Figure 4.4** Parameter detail

### 2.1.3 Disallow control from remote controller

This parameter allows:

1-  Having the remote controller always locked, or
2-  Decide through a new communication object if the RC is locked or not.

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o   If set to **"yes"** all the actions performed through the remote controller will be disabled.

o   If set to **"no"** the remote controller will work as usually. It also appears a new parameter and the communication object *Control_ Lock Remote Control*.

> ↕ 34: Control_ Lock Remote Control [DPT_1.002 - 1bit] - 0-Unlocked;1-Locked

| Disallow control from remote controller | no | ▼ |
| > Enable comm obj "Ctrl_ Remote Lock" | yes | ▼ |

**Figure 4.5** Communication object and parameter detail

➢   Enable comm obj "Ctrl_ Remote Lock":

If set to **"no"** the object will not be shown.

If set to **"yes"** the *Control_ Lock Remote Control* object will appear.

  •   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.

  ⚠ **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.*

### 2.1.4  Enable func "Control_ Lock Control Obj"

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.

> ↕ 35: Control_ Lock Control Objects [DPT_1.002 - 1bit] - 0-Unlocked;1-Locked

o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Control_ Lock Control Objects* object will appear.

  •   When a **"1"** value is sent to this communication object, all the *Control_* objects will be locked. To unlock a **"0"** value must be sent, as the gateway remembers the last value received even if a KNX bus reset/failure happens.

### 2.1.5  Enable func "Operating Hours Counter"

This parameter shows/hides the *Status_ Operation Hour Counter* communication object which counts the number of operating hours for the DK-AC-KNX-1i.

> ↕ 89: Status_ Operation Hour Counter [DPT_7.001 - 2byte] - Number of operating hours

○ 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.*

### 2.1.6 Enable object "Error Code [2byte]"

This parameter shows/hides the *Status_ Error Code* communication object which shows the indoor unit errors, if occurred, in numeric format.

■↗|83: Status_ Error Code [2byte] - 0-No error /Any other see man.

○ If set to **"no"** the object will not be shown.

○ If set to **"yes"** the *Status_ Error Code [2byte]* object will appear.

- This object can be read and also sends the indoor unit error, if occurred, in numeric format. If a **"0"** value is shown that means no error.

### 2.1.7 Enable object "Error Text Code [14byte]"

This parameter shows/hides the *Status_ Error Text Code* communication object which shows the indoor unit errors, if occurred, in text format.

■↗|84: Status_ Error Text Code [DPT_16.001 - 14byte] - 2 char DK Error;Empty-None

○ If set to **"no"** the object will not be shown.

○ If set to **"yes"** the *Status_ Error Text Code* object will appear.

- This object can be read and also sends the indoor unit error, if occurred, in text format. The errors shown have the same format as at the remote controller and at the error list from the indoor unit manufacturer. If the object's value is empty that means no error.

## 2.2 Mode Configuration dialog



**Figure 4.6** Default Mode Configuration dialog

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.

### 2.2.1 When mode is AUTO Status_ objs report actual operating status

This parameter shows the real status of the indoor unit when Auto mode is enabled.

o  If set to **"no"**, when the indoor unit is set to Auto mode, all the *Status_* objects concerning mode will only show Auto enabled.

o  If set to **"yes"**, when the indoor unit is set to Auto mode, all the *Status_* objects concerning mode will show the real mode which the machine is working (Cool, Heat, Dry, Fan). In case of the bitfield objects, also the *Status_ Mode Auto* will be shown enabled with a **"1"** value.

### 2.2.2 Enable use of Mode Cool / Heat bit object

This parameter shows/hides the *Control_* and *Status_ Mode Cool/Heat* communication objects.



o  If set to **"no"** the objects will not be shown.

o If set to **"yes"** the *Control_* and *Status_ Mode Cool/Heat* objects will appear.

- When a **"1"** value is sent to the *Control_* communication object, **Heat mode** will be enabled in the indoor unit, and the *Status_* object will return this value.

- When a **"0"** value is sent to the *Control_* communication object, **Cool mode** will be enabled in the indoor unit, and the *Status_* object will return this value.

### 2.2.3  Enable PID-Compat. Scaling Mode Objects

This parameter shows/hides the *Control_ Mode Cool & On* and *Control_ Mode Heat & On* communication objects.

■‡|3: Control_ Mode Cool & On [DPT_5.001 - 1byte] - 0%-Off;0.1%-100%-On+Cool
■‡|4: Control_ Mode Heat & On [DPT_5.001 - 1byte] - 0%-Off;0.1%-100%-On+Heat

o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the *Control_ Mode Cool & On* and *Control_ Mode Heat & On* objects will appear.

- These objects provide compatibility with those KNX thermostats that control the demand of heating or cooling by using scaling (percentage) objects. In these thermostats, the percentage demand is meant to be applied on a fluid valve of the heating / cooling system.

- DK-AC-KNX-1i device does not provide individual control on the internal parts of the indoor unit (as can be its compressor, refrigerant valves, etc). Rather, it provides the same level of control as a (user) remote controller.

- Objects "Control_ Mode Cool & On" and "Control_ Mode Heat & On"  intend to bring compatibility between thermostats oriented to the control of custom heating / cooling systems and ready-made AC indoor units, by applying the following logic:

  - Whenever a non-zero value (>0%) is received at "Control_ Mode Cool & On", indoor unit will switch On in COOL mode.

  - Whenever a non-zero value (>0%) is received at "Control_ Mode Heat & On", indoor unit will switch On in HEAT mode.

    - Lastest updated object will define the operating mode

  - Indoor unit will switch off only when both objects become zero (0%) – or when an OFF is requested at object "0. Control_ On/Off [DPT_1.001 - 1bit]"

⚠ **Important:** *These objects function is only to send On/Off and Cool/Heat to the indoor unit. The PID (Inverter system) is calculated by the indoor unit itself. Please consider introducing an appropriate PID configuration to the external KNX thermostat to not interfere the indoor unit PID.*

### 2.2.4 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.

> ⮁ 10: Control_ Mode -/+ [DPT_1.007 - 1bit] - 0-Decrease;1-Increase

o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Control_ Mode +/-* object and a new parameter will appear.

| Enable use of +/- object for Mode | yes |
|---|---|
| > DPT type for +/- Mode Object | 0-Up / 1-Down [DPT_1.008] |

**Figure 4.7** Parameter detail

➢ 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:

AUTO → HEAT → COOL → FAN → DRY

- ■ Up / Increase
- ■ Down / Decrease

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

This parameter shows/hides the bit-type *Control_ Mode* objects.

> ⮁ 5: Control_ Mode Auto [DPT_1.002 - 1bit] - 1-Set AUTO mode
> ⮁ 6: Control_ Mode Heat [DPT_1.002 - 1bit] - 1-Set HEAT mode
> ⮁ 7: Control_ Mode Cool [DPT_1.002 - 1bit] - 1-Set COOL mode
> ⮁ 8: Control_ Mode Fan [DPT_1.002 - 1bit] - 1-Set FAN mode
> ⮁ 9: Control_ Mode Dry [DPT_1.002 - 1bit] - 1-Set DRY mode

o   If set to **"no"** the objects will not be shown.

o   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.

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

This parameter shows/hides the bit-type *Status_ Mode* objects.

> ■↕│58: Status_ Mode Auto [DPT_1.002 - 1bit] - 1-AUTO mode is active
> ■↕│59: Status_ Mode Heat [DPT_1.002 - 1bit] - 1-HEAT mode is active
> ■↕│60: Status_ Mode Cool [DPT_1.002 - 1bit] - 1-COOL mode is active
> ■↕│61: Status_ Mode Fan [DPT_1.002 - 1bit] - 1-FAN mode is active
> ■↕│62: Status_ Mode Dry [DPT_1.002 - 1bit] - 1-DRY mode is active

- o   If set to **"no"** the objects will not be shown.

- o   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.

### 2.2.7 Enable use of Text object for Mode

This parameter shows/hides the *Status_ Mode Text* communication object.

> ■↕│63: Status_ Mode Text [DPT_16.001 - 14byte] - ASCII String

- o   If set to **"no"** the object will not be shown.

- o   If set to **"yes"** the *Status_ Mode Text* object will appear. Also, in the parameters, will be shown five text fields, one for each mode, that will let modify the text string displayed by the *Status_ Mode Text* when changing mode.

| | |
|---|---|
| > String when mode is AUTO | AUTO |
| > String when mode is HEAT | HEAT |
| > String when mode is COOL | COOL |
| > String when mode is FAN | FAN |
| > String when mode is DRY | DRY |

**Figure 4.8** Parameter detail

### 2.2.8 Enable use of Legacy_ object for Mode

This parameter shows/hides the *Legacy_ Mode* communication object

> ■↕│99: Legacy_ Mode [Enumerated - 1byte] - 0-Aut;1-Hea,2-Dry,3-Fan;4-Coo

- o   If set to **"no"** the communication object will not be shown.

- o   If set to **"yes"** the *Legacy_ Mode* communication object will appear. This object lets change the indoor unit mode but it uses a different data type. It is used to maintain compatibility with old gateway models.

## 2.3   Special Modes Configuration dialog
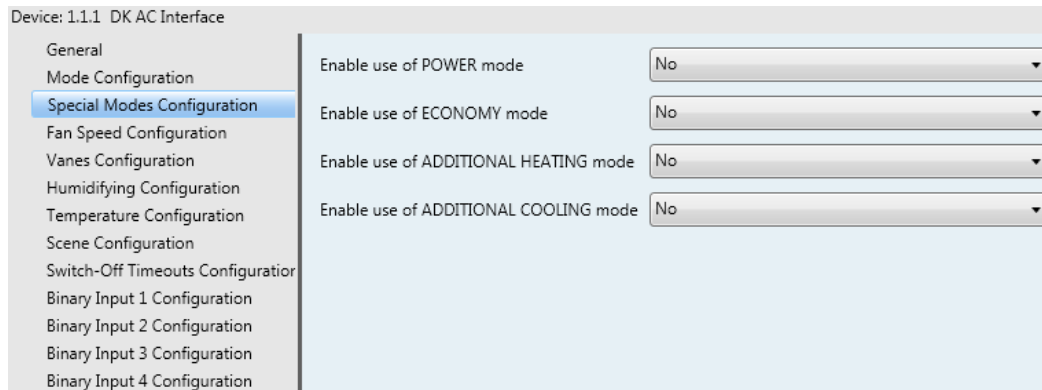


**Figure 4.9** Default Special Modes Configuration dialog

The Special Modes can be parameterized through the ETS parameters dialog, and they can be used to give extra functionality.

⚠ *Important: When executing any of the Special Modes, the real state of the indoor unit will NOT be shown in KNX.*

⚠ *Important: When the predefined time for the Special Mode is finished or a "0" value is sent to stop it, the previous state will be recovered.*

⚠ *Important: If a value concerning On/Off, Mode, Fan Speed or Setpoint Temperature is received from KNX while any Special Mode is running ("1"), the Special Mode will stop and the previous state will be recovered. The value received will be also applied then.*

⚠ *Important: If a value concerning On/Off, Mode, Fan Speed or Setpoint Temperature is modified through the remote controller, the Special Mode will stop WITHOUT recovering the previous state. Then the real indoor unit state will be shown in KNX including the new value received through the remote controller.*

### 2.3.1   Enable use of POWER mode

This parameter shows/hides the *Control_ Power Mode* and *Status_ Power Mode* communication objects. The Power Mode lets change the Setpoint Temperature and the Fan Speed within a given period of time.

■⇄ 36: Control_ Power Mode [DPT_1.010 - 1bit] - 0-Stop;1-Start
■⇄ 85: Status_ Power Mode [DPT_1.001 - 1bit] - 0-Off;1-On

o   If set to **"no"** the objects will not be shown.

o   If set to **"yes"** the *Control_ Power Mode* and *Status_ Power Mode* objects and new parameters will appear.

**Figure 4.10** Parameter detail

- When a **"1"** value is sent to the *Control_* communication object Power Mode will be enabled, and the *Status_* object will return this value.

- When a **"0"** value is sent to the *Control_* communication object, Power Mode will be disabled, and the *Status_* object will return this value.

⚠ **Important:** *This mode will ONLY work if the indoor unit is both turned on and in a Heat, Cool, Auto-Heat or Auto-Cool Mode.*

➢ Action time for this mode (minutes):

Duration of Power Mode, in minutes, once started.

➢ Setpoint delta increase (HEAT) or decrease (COOL) – in Celsius:

Number of degrees Celsius that will increase in Heat Mode, or decrease in Cool Mode, while in Power Mode.

➢ Fan Speed for this mode:

Fan Speed that will be set in the unit while in Power Mode.

## 2.3.2 Enable use of ECONOMY mode

This parameter shows/hides the *Control_ Econo Mode* and *Status_ Econo Mode* communication objects. The Econo Mode lets change the Setpoint Temperature and the Fan Speed within a given period of time.



- If set to **"no"** the objects will not be shown.

- If set to **"yes"** the *Control_ Econo Mode* and *Status_ Econo Mode* objects and new parameters will appear.

  - When a **"1"** value is sent to the *Control_* communication object, Econo Mode will be enabled, and the *Status_* object will return this value.

  - When a **"0"** value is sent to the *Control_* communication object, Econo Mode will be disabled, and the *Status_* object will return this value.

⚠ ***Important:*** *This mode will ONLY work if the indoor unit is both turned on and in a Heat, Cool, Auto-Heat or Auto-Cool Mode.*

➢ Action time for this mode (minutes):

Duration of Econo Mode, in minutes, once started.

➢ Setpoint delta increase (HEAT) or decrease (COOL) – in Celsius:

Number of degrees Celsius that will increase in Heat Mode, or decrease in Cool Mode, while in Econo Mode.

➢ Fan Speed for this mode:

Fan Speed that will be set in the unit while in Econo Mode.

### 2.3.3 Enable use of ADDITIONAL HEATING mode

This parameter shows/hides the *Control_ Start Additional Heat Mode* and *Status_ Additional Heat Mode* communication objects. The Additional Heating Mode lets change the Setpoint Temperature and the Fan Speed within a given period of time.

```
87: Status_ Additional Heat [DPT_1.001 - 1bit] - 0-Off;1-On
38: Control_ Additional Heat [DPT_1.010 - 1bit] - 0-Stop;1-Start
```

o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the Control_ Start Additional Heat Mode and Status_ Additional Heat Mode objects and new parameters will appear.

- When a **"1"** value is sent to the *Control_* communication object, Additional Heating Mode will be enabled, and the *Status_* object will return this value.

- When a **"0"** value is sent to the *Control_* communication object, Additional Heating Mode will be disabled, and the *Status_* object will return this value.

⚠ ***Important:*** *This mode will ALWAYS turn on the indoor unit in Heat mode.*

➢ Action time for this mode (minutes):

Duration of Additional Heating Mode, in minutes, once started.

➢ Setpoint temp for this mode (ºC):

Setpoint temperature that will be applied while in Additional Heating Mode.

➢ Fan Speed for this mode:

Fan Speed that will be set in the unit while in Additional Heating Mode.

### 2.3.4 Enable use of ADDITIONAL COOLING mode

This parameter shows/hides the *Control_ Start Additional Cool Mode* and *Status_ Additional Cool Mode* communication objects. The Additional Heating Mode lets change the Setpoint Temperature and the Fan Speed within a given period of time.

■⇄ 39: Control_ Additional Cool [DPT_1.010 - 1bit] - 0-Stop;1-Start
■⇄ 88: Status_ Additional Cool [DPT_1.001 - 1bit] - 0-Off;1-On

o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the Control_ Start Additional Cool Mode and Status_ Additional Cool Mode objects and new parameters will appear.

- When a **"1"** value is sent to the *Control_* communication object, Additional Cooling Mode will be enabled, and the *Status_* object will return this value.

- When a **"0"** value is sent to the *Control_* communication object, Additional Cooling Mode will be disabled, and the *Status_* object will return this value.

⚠ ***Important:*** *This mode will ALWAYS turn on the indoor unit in Cool mode.*

➢ Action time for this mode (minutes):

Duration of Additional Cooling Mode, in minutes, once started.

➢ Setpoint temp for this mode (ºC):

Setpoint temperature that will be applied while in Additional Cooling Mode.

➢ Fan Speed for this mode:

Fan Speed that will be set in the unit while in Additional Cooling Mode.

### 2.4 Fan Speed Configuration dialog



**Figure 4.11** Default Fan Speed Configuration dialog

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

### 2.4.1 DPT object type for fanspeed

With this parameter is possible to change de 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.

o When **"Enumerated [DPT 5.010]"** is selected, *Control_ Fan Speed* and *Status_ Fan Speed* communication objects for this DPT will appear.



The first fan speed will be selected if a **"1"** is sent to the *Control_* object. The second one will be selected sending a **"2"**; the third one will be selected sending a **"3"**; the fourth one will be selected sending a **"4"**; and the last one will be selected sending a **"5"**.

The *Status_* object will always return the value for the fan speed selected.

⚠ **Important:** *If a "0" value is sent to the Control_ object, the minimum fan speed will be selected. If a value bigger than "5" is sent to the Control_ object, then the maximum fan speed will be selected.*

o When **"Scaling [DPT 5.001]"** is selected, *Control_ Fan Speed* and *Status_ Fan Speed* communication objects for this DPT will appear.

When a value between **0%** and **29%** is sent to the *Control_* object the first fan speed will be selected.

When a value between **30%** and **49%** is sent to the *Control_* object, the second speed will be selected.

When a value between **50%** and **69%** is sent to the *Control_* object, the third speed will be selected.

When a value between **70%** and **89%** is sent to the *Control_* object, the fourth speed will be selected.

When a value between **90%** and **100%** is sent to the *Control_* object, the fifth speed will be selected.

The *Status_* object will return a **20%** when the first speed is selected, a **40%** for the second one, a **60%** for the third one, an **80%** for the fourth one, and a **100%** for the last one.
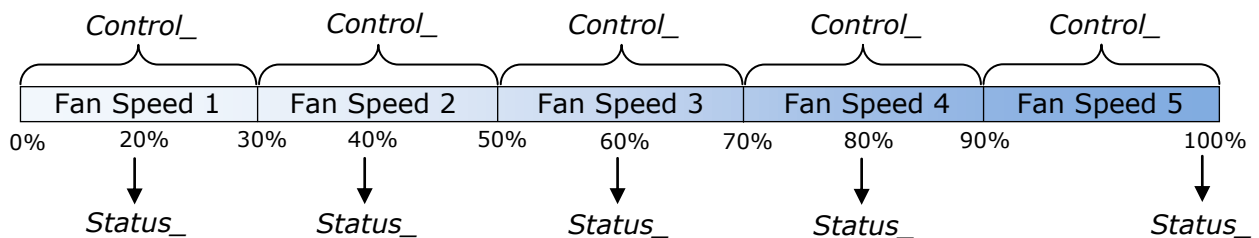


### 2.4.2  Enable use of +/- object for Fan Speed

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

■↕ 18: Control_ Fan Speed -/+ [DPT_1.007 - 1bit] - 0-Decrease;1-Increase

o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Control_ Fan Speed +/-* object and a new parameter will appear.



**Figure 4.12** Parameter detail

➢   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.

➢ Does +/- sequence include fan speed AUTO?

This parameter lets choose if AUTO function is included (**"yes"**) or not (**"no"**) in the sequence when using *Control_ Fan Speed +/-* object as shown in the discontinuous segment at the picture below.

➢ 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.
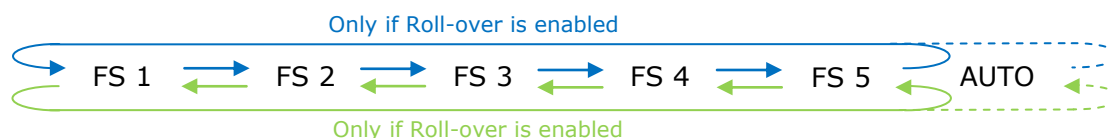


- ■ Up / Increase
- ■ Down / Decrease

## 2.4.3  Enable "Fan Speed Manual/Auto" objects for Control and Status

This parameter shows/hides the *Control_ Fan Speed Manual/Auto* and *Status_ Fan Speed Manual/Auto* communication objects.



o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the *Control_ Fan Speed Manual/Auto* and *Status_ Fan Speed Manual/Auto* objects will appear.

- • When a **"1"** value is sent to the *Control_* communication object, Fan Speed will be in Auto mode, and the *Status_* object will return this value.

- • When a **"0"** value is sent to the *Control_* communication object, Fan Speed will be in Manual mode and the first fan speed will be enabled. The *Status_* object will return this value.

- ⚠ ***Important:*** *When in Auto Mode the indoor unit will choose the most appropriate fan speed, but this will be shown neither in KNX nor in the remote controller.*

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

This parameter shows/hides the bit-type *Control_ Fan Speed* objects.

> 13: Control_ Fan Speed 1 [DPT_1.002 - 1bit] - 1-Set Fan Speed 1
> 14: Control_ Fan Speed 2 [DPT_1.002 - 1bit] - 1-Set Fan Speed 2
> 15: Control_ Fan Speed 3 [DPT_1.002 - 1bit] - 1-Set Fan Speed 3
> 16: Control_ Fan Speed 4 [DPT_1.002 - 1bit] - 1-Set Fan Speed 4
> 17: Control_ Fan Speed 5 [DPT_1.002 - 1bit] - 1-Set Fan Speed 5

o  If set to **"no"** the objects will not be shown.

o  If set to **"yes"** the *Control_ Fan Speed* objects for Speed 1, Speed 2, Speed 3, Speed 4 and Speed 5 will appear. To activate a Fan Speed by using these objects a **"1"** value has to be sent.

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

This parameter shows/hides the bit-type *Status_ Fan Speed* objects.

> 66: Status_ Fan Speed 1 [DPT_1.002 - 1bit] - 1-Fan in speed 1
> 67: Status_ Fan Speed 2 [DPT_1.002 - 1bit] - 1-Fan in speed 2
> 68: Status_ Fan Speed 3 [DPT_1.002 - 1bit] - 1-Fan in speed 3
> 69: Status_ Fan Speed 4 [DPT_1.002 - 1bit] - 1-Fan in speed 4
> 70: Status_ Fan Speed 5 [DPT_1.002 - 1bit] - 1-Fan in speed 5

o  If set to **"no"** the objects will not be shown.

o  If set to **"yes"** the *Status_ Fan Speed* objects for Speed 1, Speed 2, Speed 3, Speed 4 and Speed 5 will appear. When a Fan Speed is enabled, a **"1"** value is returned through its bit-type object.

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

This parameter shows/hides the *Status_ Fan Speed Text* communication object.

> 71: Status_ Fan Speed Text [DPT_16.001 - 14byte] - ASCII String

o  If set to **"no"** the object will not be shown.

o  If set to **"yes"** the *Status_ Fan Speed Text* object will appear. Also, in the parameters, will be shown five text fields, one for each Fan Speed, that will let modify the text string displayed by the *Status_ Fan Speed Text* when changing a fan speed.

**Figure 4.13** Parameter detail

### 2.4.7  Enable use of Legacy_ object for Fan Speed

This parameter shows/hides the *Legacy_ Fan Speed* communication object


100: Legacy_ Fan Speed [Enumerated - 1byte] - 0 - Auto; 1..5 - speed 1..5

o  If set to **"no"** the communication object will not be shown.

o  If set to **"yes"** the communication object will appear. This object lets change the indoor unit fan speed but it uses a different data type. It is used to maintain compatibility with old gateway models.

## 2.5  *Vanes Configuration dialog*
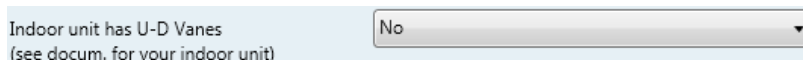


**Figure 4.14** Vanes Configuration dialog

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

### 2.5.1  Indoor unit has U-D Vanes

This parameter lets choose if the unit has Up-Down Vanes available or not.
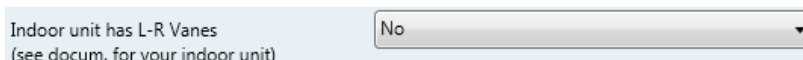
**Figure 4.15** Parameter detail

o   If set to **"no"** all the communication objects for the Up-Down Vanes will not be shown.

o   If set to **"yes"** all the communication objects for the Up-Down Vanes will appear.

⚠ **Important:** *Read the documentation of your indoor unit to check if Up-Down Vanes are available.*

### 2.5.2  Indoor unit has L-R Vanes

This parameter lets choose if the unit has Left-Right Vanes available or not.



**Figure 4.16** Parameter detail

o   If set to **"no"** all the communication objects for the Left-Right Vanes will not be shown.

o   If set to **"yes"** all the communication objects for the Left-Right Vanes will appear.

⚠ **Important:** *Read the documentation of your indoor unit to check if Left-Right Vanes are available.*

### 2.5.3  Enable use of Legacy_ object for Vanes

This parameter shows/hides the *Legacy_ Swing* communication object



o   If set to **"no"** the communication object will not be shown.

o   If set to **"yes"** the communication object will appear. This object lets change the indoor unit vanes behavior but it uses a different data type. It is used to maintain compatibility with old gateway models.

### 2.6   Humidifying Configuration dialog



**Figure 4.17** Default Humidifying Configuration dialog

All the parameters in this section are related with the Humidifying properties and communication objects. This functionality is only available for *xxxxx* models.

> ⚠ **IMPORTANT:** Humidifying mode on IntesisBox does not match Daikin remote controller behaviour.

#### 2.6.1   AC unit has Humidifier

This parameter lets choose if the indoor unit has Humidifier or not, and shows/hides the communication objects and parameters related with it.



**Figure 4.18** Parameter detail

o   If set to **"no"** the objects and parameters will not be shown.

o   If set to **"yes"** the objects and parameters will appear.

#### 2.6.2   DPT object type for Humidifying

With this parameter is possible to change de DPT for the *Control_ Humidif.* and *Status_ Humidif.* byte-type communication objects. Datapoints Scaling (DPT_5.001) and Enumerated (DPT_5.010) can be selected.

o   When **"Enumerated [DPT 5.010]"** is selected, *Control_ Humidif.* and *Status_ Humidif.* communication objects for this DPT will appear.

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The low humidifying intensity will be selected if a **"1"** is sent to the *Control_* object. The mid one will be selected sending a **"2"**; the high one will be selected sending a **"3"**; the continuous one will be selected sending a **"4"**; to **turn off** the humidifying a **"0"** must be sent.

The *Status_* object will always return the value for the Humidifying intensity selected.

⚠ ***Important:*** *If a value bigger than "4" is sent to the Control_ object, then the continuous humidifying intensity will be selected.*

o When **"Scaling [DPT 5.001]"** is selected, *Control_ Humidif.* and *Status_ Humidif.* communication objects for this DPT will appear.

> ⬛⇄ 21: Control_ Humidif. / 5 Intens. [DPT_5.001 - 1byte] - Thresholds: 0%,13%,38%,63%,88%
> ⬛⇄ 74: Status_ Humidif. / 5 Intens. [DPT_5.001 - 1byte] - 0%, 25%, 50%, 75% and 100%

When a value between **0%** is sent to the *Control_* object the humidifying will be turned off.

When a value between **1%** and **37%** is sent to the *Control_* object, the low humidifying intensity will be selected.

When a value between **38%** and **62%** is sent to the *Control_* object, the mid humidifying intensity will be selected.

When a value between **63%** and **87%** is sent to the *Control_* object, the high humidifying intensity will be selected.

When a value between **88%** and **100%** is sent to the *Control_* object, the continuous humidifying intensity will be selected.

The *Status_* object will return a **0%** when humidifying is turned off, a **25%** for the low intensity, a **50%** for the mid intensity, a **75%** for the high intensity, and a **100%** for the continuous intensity.

| *Control_* | *Control_* | *Control_* | *Control_* | *Control_* |
|---|---|---|---|---|
| Off | Low int. | Mid int. | High int. | Continuous int. |
| 0%      1% | 25%      38% | 50%      63% | 75%      88% | 100% |
| *Status_* | *Status_* | *Status_* | *Status_* | *Status_* |
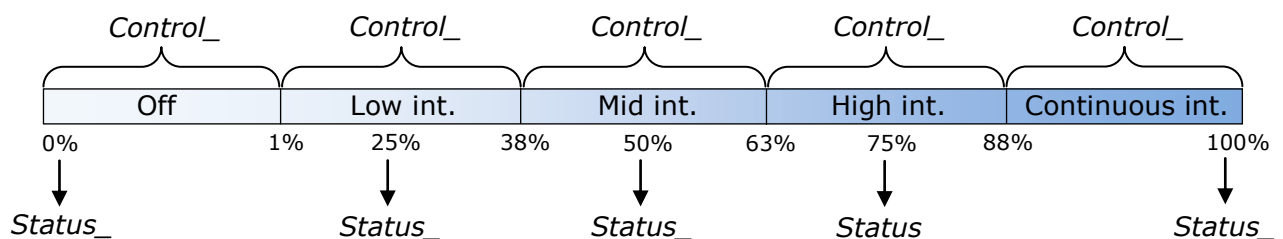
### 2.6.3  Enable use of +/- object for Humidifying

This parameter shows/hides the *Control_ Humidifying +/-* communication object which lets increase/decrease the indoor unit humidifying intensity by using two different datapoint types.

> ⬛⇄ 27: Control_ Humidifying -/+ [DPT_1.007 - 1bit] - 0-Decrease;1-Increase

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o If set to **"no"** the object will not be shown.

o If set to **"yes"** the *Control_ Humidifying +/-* object and a new parameter will appear.



**Figure 4.19** Parameter detail

➢ DPT type for +/- Humidifying 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_ Humidifying +/-* object.

➢ Roll-over Humidifying intensity at upper/lower limit

This parameter lets choose if roll-over will be enabled (**"yes"**) or disabled (**"no"**) for the *Control_ Humidifying +/-* object.
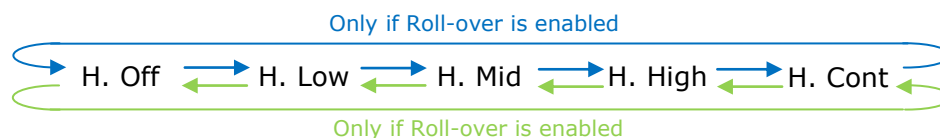


■ Up / Increase
■ Down / Decrease

## 2.6.4  Enable use of bit-type Humidifying objects (for Control)

This parameter shows/hides the bit-type *Control_ Humidifying* objects.



o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the *Control_ Humidifying* objects for off, low intensity, mid intensity, high intensity and continuous intensity will appear. To enable humidifying intensity by using these objects a **"1"** value has to be sent.

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### 2.6.5  Enable use of bit-type Humidifying objects (for Status)

This parameter shows/hides the bit-type *Status_ Humidifying Speed* objects.

> 75: Status_ Humidifying Off [DPT_1.002 - 1bit] - 1-Humidifying Off
> 76: Status_ Humidifying Low [DPT_1.002 - 1bit] - 1-Humidifying Low
> 77: Status_ Humidifying Mid [DPT_1.002 - 1bit] - 1-Humidifying Mid
> 78: Status_ Humidifying High [DPT_1.002 - 1bit] - 1-Humidifying High
> 79: Status_ Humidifying Cont. [DPT_1.002 - 1bit] - 1-Humidifying Cont.

o   If set to **"no"** the objects will not be shown.

o   If set to **"yes"** the *Status_ Humidifying* objects for off, low intensity, mid intensity, high intensity and continuous intensity will appear. When any humidifying intensity (off included) is enabled, a **"1"** value is returned through its bit-type object.

### 2.6.6  Enable use of Text object for Humidifying

This parameter shows/hides the *Status_ Humidifying Text* communication object.

> 80: Status_ Humidifying Text [DPT_14.001 - 14byte] - ASCII String

o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Status_ Humidifying Text* object will appear. Also, in the parameters, will be shown five text fields, one for each Fan Speed, that will let modify the text string displayed by the *Status_ Humidifying Text* when changing a humidifying intensity.

| > String when Humidifying is OFF | HUMI OFF |
|---|---|
| > String when Humidifying is LOW | HUMI LOW |
| > String when Humidifying is MID | HUMI MID |
| > String when Humidifying is HIGH | HUMI HIGH |
| > String when Humidifying is CONT. | HUMI CONT |

**Figure 4.20** Parameter detail

### 2.6.7  Enable use of Legacy_ object for Humi.

This parameter shows/hides the *Legacy_ Humidifying* communication object

> 102: Legacy_ Humidifying [Enumerated - 1byte] - 0-Off;1-Low;2-Mid;3-Hig;4-Cont

o   If set to **"no"** the communication object will not be shown.

o   If set to **"yes"** the communication object will appear. This object lets change the indoor unit humidifying intensity but it uses a different data type. It is used to maintain compatibility with old gateway models.

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### 2.7 Temperature Configuration dialog



**Figure 4.21** Default Temperature Configuration dialog

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

### 2.7.1 Periodic sending of "Status_ AC Setp"

This parameter lets 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.*



**Figure 4.22** Parameter detail

⚠ **Important:** *In case the ambient temperature is provided from KNX, the setpoint temperature returned from this object, will be the one resulting from the formula shown in the section "2.7.4 Ambient temp. ref. is provided from KNX".*

### 2.7.2 Enable use of +/- object for Setpoint Temperature

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



o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Control_ Setpoint Temp +/-* object and a new parameter will appear.

**Figure 4.23** Parameter detail

➢ 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) **18ºC** ⟶ 19ºC ⟶ … ⟶ 30ºC ⟶ **31ºC** (Upper limit)

- ■ Up / Increase
- ■ Down / Decrease

## 2.7.3  Enable limits on Control_ Setpoint obj

This parameter enables to define temperature limits for the *Control_ Setpoint Temperature* object.



**Figure 4.24** Parameter detail

o  If set to **"no"** the setpoint temperature limits for the *Control_ Setpoint Temperature* object will be the default: 18ºC for the lower limit and 31ºC for the upper limit.

o  If set to **"yes"** it is possible to define temperature limits for the *Control_ Setpoint Temperature* object.

➢ Control  Set Temp Lower limit (ºC)

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

➢ Control  Set Temp Upper limit (ºC)

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.*

### 2.7.4 Ambient temp. ref. is provided from KNX

This parameter shows/hides the *Control_ Ambient Temperature* communication object which lets use an ambient temperature reference provided by a KNX device.


30: Control_ Ambient Temperature [DPT_9.001 - 2byte] - (ºC)

o   If set to **"no"** the object will not be shown.

o   If set to **"yes"** the *Control_ Ambient Temperature* object will appear. Meant to be enabled when you want the temperature provided by a KNX sensor to be the reference ambient temperature for the air conditioner. Then, the following formula applies for calculation of real *Control_ Setpoint Temperature* sent to the AC unit:

"AC Setp. Temp." = "KNX Setp. Temp." - ("KNX Amb. Temp." - "KNX Setp. Temp.")/2

- AC Setp. Temp.: AC indoor unit setpoint temperature
- KNX Amb. Temp.: Ambient temperature provided from KNX
- KNX Setp. Temp.: Setpoint temperature provided from KNX

As an example, consider the following situation:

User wants: **19ºC** ("KNX Setp. Temp*.*")
User sensor (a KNX sensor) reads: **21ºC** ("KNX Amb Temp*.*")

In this example, the final setpoint temperature that DK-AC-KNX-1i will send out to the indoor unit (shown in "AC Setp. Temp*.*") will become 19ºC – (21ºC - 19ºC)/2 = **18ºC**. This is the setpoint that will actually be requested to Daikin unit.

This formula will be applied as soon as the *Control_ Setpoint Temperature* and *Control_ Ambient Temperature* objects are written at least once from the KNX installation. After that, they are kept always consistent.

Note that this formula will always drive the AC indoor unit demand in the *right* direction, regardless of the operation mode (Heat, Cool or Auto).

## 2.8   Scene Configuration dialog



**Figure 4.25** Parameter detail

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, Setpoint Temperature and Remote Controller Disablement.

### 2.8.1  Enable use of scenes

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

■⇄|40: Control_ Execute Scene [DPT_18.001 - 1byte] - 0..4-Execute Scene 1-5

| Enable use of scenes | yes ▾ |
|---|---|
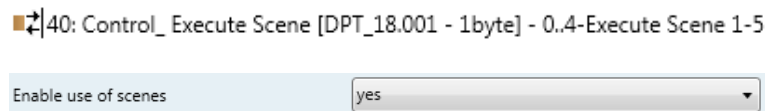
**Figure 4.26** Parameter detail

o   If set to **"no"** the scene parameters and communication objects will not be shown.

o   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, correponding each one to a different scene (i.e. "0" = Scene 1;… "4" = Scene 5).

### 2.8.2  Scenes can be stored from KNX bus

This parameter shows/hides the *Control_ Save/Exec Scene* and all the *Control_ Store Scene* (if enabled) communication objects.
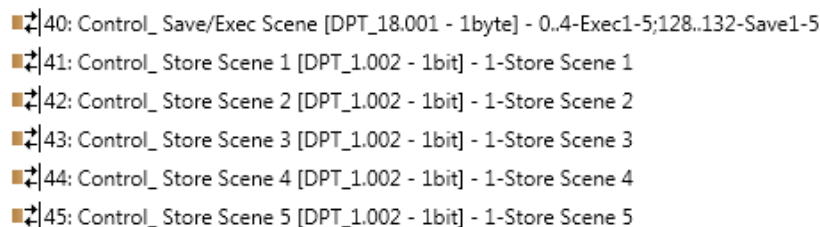
■⇄|40: Control_ Save/Exec Scene [DPT_18.001 - 1byte] - 0..4-Exec1-5;128..132-Save1-5
■⇄|41: Control_ Store Scene 1 [DPT_1.002 - 1bit] - 1-Store Scene 1
■⇄|42: Control_ Store Scene 2 [DPT_1.002 - 1bit] - 1-Store Scene 2
■⇄|43: Control_ Store Scene 3 [DPT_1.002 - 1bit] - 1-Store Scene 3
■⇄|44: Control_ Store Scene 4 [DPT_1.002 - 1bit] - 1-Store Scene 4
■⇄|45: Control_ Store Scene 5 [DPT_1.002 - 1bit] - 1-Store Scene 5

o   If set to **"no"** the communication objects will not be shown.

o   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, correponding each one to a different scene (i.e. "128" = Scene 1;… "132" = Scene 5).

| Scenes can be stored from KNX bus | yes ▾ |
|---|---|
| > Enable use of bit objects for storing scenes (from bus) | yes ▾ |
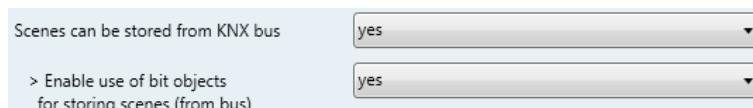
**Figure 4.27** Parameter detail

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➢ 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).

### 2.8.3 Enable use of bit objects for scene execution

This parameter shows/hides the *Control_ Execute Scene* bit-type communication objects.

> ⬛↕ 46: Control_ Execute Scene 1 [DPT_1.002 - 1bit] - 1-Execute Scene 1
> ⬛↕ 47: Control_ Execute Scene 2 [DPT_1.002 - 1bit] - 1-Execute Scene 2
> ⬛↕ 48: Control_ Execute Scene 3 [DPT_1.002 - 1bit] - 1-Execute Scene 3
> ⬛↕ 49: Control_ Execute Scene 4 [DPT_1.002 - 1bit] - 1-Execute Scene 4
> ⬛↕ 50: Control_ Execute Scene5 [DPT_1.002 - 1bit] - 1-Execute Scene 5

| Enable use of bit objects for scene execution | yes ▾ |
|---|---|
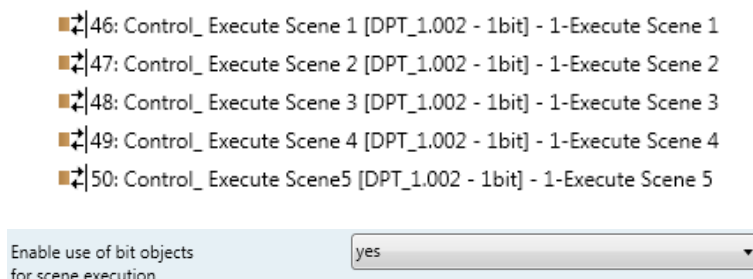
**Figure 4.28** Parameter detail

o If set to **"no"** the communication objects will not be shown.

o 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).

### 2.8.4 Scene "x" preset

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

| Scene 1 preset | yes (scene will NOT be modifiable from KNX bus) ▾ |
|---|---|
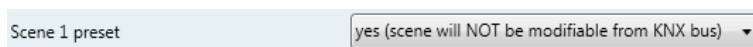
**Figure 4.29** Parameter detail

o If set to **"no"** the preset for the scene "x" will be disabled.

o If set to **"yes"** the preset will be enabled. When a scene is executed the values configured in the preset will be aplied.

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

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**Figure 4.30** Parameter detail

➤ Scene "x" / Value for On-Off

This parameter lets 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 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 choose the fan speed of the indoor unit when the scene is executed. The following options are available: **"SPEED 1"**, **"SPEED 2"**, **"SPEED 3"**, **"SPEED 4"**, **"SPEED 5"**, or **"(unchanged)"**.

➤ Scene "x" / Value for Vane U-D (if available)

This parameter lets choose the vane position of the indoor unit when the scene is executed. The following options are available: **"VANES U-D OFF"**, **"VANES U-D SWING"**, or **"(unchanged)"**.

➤ Scene "x" / Value for Vane L-R (if available)

This parameter lets choose the vane position of the indoor unit when the scene is executed. The following options are available: **"VANES L-R OFF"**, **"VANES L-R SWING"**, or **"(unchanged)"**.

➤ Scene "x" / Value for Setp Temp (ºC)

This parameter lets choose the setpoint temperature of the indoor unit when the scene is executed. The following options are available: from **"18ºC"** to **"31ºC"** (both included), or **"(unchanged)"**.

➢ Scene "x" / Value for Remote Lock

This parameter lets choose the remote controller status of the indoor unit when the scene is executed. The following options are available: **"Locked"**, **"Unlocked"**, or **"(unchanged)"**.

➢ Scene "x" / Value Humidifying (if available)

This parameter lets choose the vane position of the indoor unit when the scene is executed. The following options are available: **"HUMIDIFYING OFF"**, **"HUMIDIFYING LOW"**, **"HUMIDIFYING MED"**, **"HUMIDIFYING HIGH"**, **"HUMIDIFYING CONTINUOUS",** 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.*

## *2.9  Switch-Off Timeouts Configuration dialog*
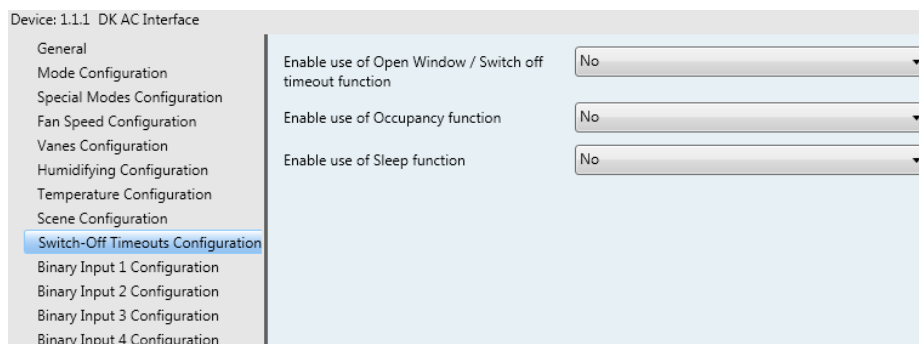


**Figure 4.31** Default Switch-Off Timeouts Configuration dialog

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

### 2.9.1  Enable use of Open Window / Switch off timeout function

This parameter shows/hides the *Control_ Switch Off Timeout* communication object which lets Start/Stop a timeout to switch off the indoor unit.



o If set to **"no"** the object will not be shown.

o If set to **"yes"** the *Control_ Switch Off Timeout* object and new parameters 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.



**Figure 4.32** Parameter detail

➢ AC switch-off timeout (min)

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

➢ DPT for Window / Switch-off timeout

This parameter lets 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*.

➢ Disallow On/Off operation while window is 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"**.

➢ Reload last On/Off val once window is closed?

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_ Switch Off Timeout* 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.

### 2.9.2  Enable use of Occupancy function

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

⇄ 28: Control_ Occupancy [DPT_1.018 - 1bit] - 0-Not Occupied;1-Occupied

o  If set to **"no"** the object will not be shown.

o  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.

| Enable use of Occupancy function | yes |
|---|---|
| > Timeout to apply action (minutes) | 2 |
| > Action after timeout elapsed | Apply Preset Delta |

**Figure 4.33** Parameter detail

➢  Timeout to apply action (minutes)

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

➢  Action after timeout elapsed

When **Switch-Off** 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) (ºC) | 2.0ºC |
|---|---|
| > Enable secondary timeout | yes |

**Figure 4.34** Parameter detail

➢  Temp delta decrease (HEAT) or increase (COOL) (ºC)

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 25ºC setpoint temperature, a +2ºC delta is applied after the occupancy*

*timeout, setting the setpoint at 27ºC because there is no occupancy in the room. If the setpoint is raised to 29ºC during that period, when the room is occupied again, a **-2ºC** delta will be applied and the final setpoint temperature will then be 27ºC).*

> ➢ Enable secondary timeout

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

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



**Figure 4.35** Parameter detail

> ➢ Timeout to apply action (minutes)

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

> ➢ Action after timeout elapsed

When **Switch-Off** is selected, once the timeouthas 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) (ºC)
> >
> > 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.*

> ➢ Disallow On/Off operation while not Occupied

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

- If a **"1"** value is sent to the *Control_ Occupancy* object the switch-off timeout period will begin again.

- If a **"0"** value is sent to the *Control_ Occupancy* object, no action will be performed.

If set to **"yes"**, On/Off commands while not occupied will be saved (but not applied). These commands will be used in the next parameter if set to **"yes"**.

| | |
|---|---|
| > Reload last On/Off value when Occupied | yes |
| > Disallow On/Off operation while not Occupied | yes |

**Figure 4.36** Parameter detail

➢ 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.

## 2.9.3 Enable use of SLEEP timeout

This parameter shows/hides the *Control_ Start Sleep Timeout* communication object which lets start a timeout to automatically turn off the indoor unit.

33: Control_ Sleep Timeout [DPT_1.010 - 1bit] - 0-Stop;1-Start

o If set to **"no"** the object will not be shown.

o If set to **"yes"** the *Control_ Start Sleep Timeout* object and a new parameter will appear. If a **"1"** value is sent to this object the switch-off timeout will begin. If a **"0"** value is sent to this object, the switch-off timeout will stop.

| | |
|---|---|
| Enable use of Sleep function | Yes |
| > Sleep function switch-off timeout (minutes) | 60 |

**Figure 4.37** Parameter detail

➢ Timeout to apply action (minutes)

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

## 2.10 Binary Input "x" Configuration dialog



**Figure 4.38** Binary Input Configuration dialog

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

### 2.10.1 Enable use of Input "x"

This parameter enables the use of the Input "x" and shows/hides the *Status_ Inx* communication object(s) which will act as configured in the "Function" parameter.

> 91: Status_ In1 - Switching [DPT_1.001 - 1bit] - 0-Off;1-On
> 93: Status_ In2 - Switching [DPT_1.001 - 1bit] - 0-Off;1-On
> 95: Status_ In3 - Switching [DPT_1.001 - 1bit] - 0-Off;1-On
> 97: Status_ In4 - Switching [DPT_1.001 - 1bit] - 0-Off;1-On

o If set to **"no"** the objects will not be shown.

o If set to **"yes"** the *Status_ Inx* object(s) and new parameters will appear.

### 2.10.2 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.

o There are two possible options to configure the contact type: **"NO: Normally Open"** and **"NC: Normally Closed"**.

### 2.10.3 Debounce time

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

### 2.10.4 Disabling function

This parameter shows/hides the *Control_ Disable Input x* communication object which will let disable/enable the input x.

■↕|51: Control_ Disable Input 1 [DPT_1.002 - 1bit] - 0-Enable;1-Disable

■↕|51: Control_ Disable Input 1 [DPT_1.003 - 1bit] - 0-Disable;1-Enable;

o  If set to **"no"** any object will be shown.

o  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"**.

o  When **"DPT 1.002: 0-Enable; 1-Disable"** is selected, the input can be disabled using the value **"1"** and enabled using the value **"0"**.

### 2.10.5 Function

This parameter lets choose the function that will have the binary input. There are 7 different functions available: Switching, Dimming, Shutter/Blind, Value, Execute Scene (internal), Occupancy (internal) and Window Contact (internal).

o  When **"Switching"** is selected the communication object and new parameters for the Input "x" will appear as shown below.

■↕|91: Status_ In1 - Switching [DPT_1.001 - 1bit] - 0-Off;1-On

| > Function | Switching |
| > Send telegram after bus recovery | No action |
| > Value on raising edge (contact activated) | No action |
| > Value on falling edge (contact deactivated) | No action |
| > Cyclical sending | Never |

**Figure 4.39** Parameter detail

➢  Send telegram after bus recovery

This parameter lets select if the Binary Input "x" will send a telegram, or not, after a bus recovery, and the type of telegram sent (if enabled).

•  When **"No action"** is selected, no telegram will be sent after a bus recovery.

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- When **"Current status"** is selected, the binary input will send a telegram with its current status after a bus recovery. Also a new parameter will appear (see below).

- When **"On"** is selected, the binary input will send a telegram with a **"1"** value after a bus recovery. Also a new parameter will appear (see below).

- When **"Off"** is selected, the binary input will send a telegram with a **"0"** value after a bus recovery. Also a new parameter will appear (see below).

| > Sending delay after bus recovery (seconds) | 10 | ⬆⬇ |
|---|---|---|

**Figure 4.40** Parameter detail

➤ Sending delay after a bus recovery (seconds)

This parameter lets configure a delay (in seconds) that will be applied after a bus recovery and, after which, a telegram will be sent.

➤ Value on rising edge

This parameter lets select the value that the Binary Input "x" will send on a rising edge (contact activated).

- When **"On"** is selected, the binary input will always send telegrams with a **"1"** value.

- When **"Off"** is selected, the binary input will always send telegrams with a **"0"** value.

- When **"Toggle (On/Off)"** is selected, the binary input will send a **"1"** value after a **"0"** value and viceversa.

- When **"No action"** is selected, the binary input will not perform any action.

➤ Value on falling edge

This parameter lets select the value that the Binary Input "x" will send on a falling edge (contact deactivated).

- When **"On"** is selected, the binary input will always send telegrams with a **"1"** value.

- When **"Off"** is selected, the binary input will always send telegrams with a **"0"** value.

- When **"Toggle (On/Off)"** is selected, the binary input will send a **"1"** value after a **"0"** value and viceversa.

- When **"No action"** is selected, the binary input will not perform any action.

➢ Cyclical sending

This parameter lets enable/disable cyclical sending when a determined condition is met.

- When **"When output value is On"** is selected, everytime a **"1"** value is sent, it will be sent cyclically. Also a new parameter will appear (see below).

- When **"When output value is Off"** is selected, everytime a **"0"** value is sent, it will be sent cyclically. Also a new parameter will appear (see below).

- When **"Always"** is selected, the binary input will send any value cyclically. Also a new parameter will appear (see below).

- When **"Never"** is selected, cyclical sending will be disabled.

➢ Period for cyclical sending (seconds)

This parameter lets configure a time (in seconds) for the cyclical sending.

| > Period for cyclical sending (seconds) | 2 |
|---|---|

**Figure 4.41** Parameter detail

○ When **"Dimming"** is selected the communication objects and new parameters for the Input "x" will appear as shown below.

■↕|93: Status_In2 - Dimming - On/Off [DPT_1.001 - 1bit] - 0-Off;1-On
■↕|94: Status_In2 - Dimming - Step(%) [DPT_3.007 - 4bit] - Dimming step

| > Function | Dimming |
|---|---|
| > Send telegram after bus recovery | No action |
| > Mode for short (long) operation | Toggle: On/Off (increase/decrease) |
| > Increasing step | + 100 % |
| > Decreasing step | - 100 % |
| > Short/long operation limit (x100ms) | 10 |
| > Cyclical sending period (x100ms) (0-No cyclical sending) | 0 |

**Figure 4.42** Parameter detail

➢ Send telegram after bus recovery

This parameter lets select if the Binary Input "x" will send a telegram, or not, after a bus recovery, and the type of telegram sent (if enabled).

- When **"No action"** is selected, no telegram will be sent after a bus recovery.

- When **"On"** is selected, the binary input will send a telegram with a **"1"** value after a bus recovery. Also a new parameter will appear (see below).

- When **"Off"** is selected, the binary input will send a telegram with a **"0"** value after a bus recovery. Also a new parameter will appear (see below).

| > Sending delay after bus recovery (seconds) | 10 |
|---|---|

**Figure 4.43** Parameter detail

➢ Sending delay after a bus recovery (seconds)

This parameter lets configure a delay (in seconds) that will be applied after a bus recovery and, after which, a telegram will be sent.

➢ Mode for short (long) operation

This parameter lets select the value that the Binary Input "x" will send on a rising edge (contact activated), for a short and a long operation.

- When **"On (increase)"** is selected, the binary input will always send telegrams with a **"1"** value for a short operation, and an **"increase step"** for a long operation.

- When **"Off (decrease)"** is selected, the binary input will always send telegrams with a **"0"** value for a short operation, and an **"decrease step"** for a long operation.

- When **"Toggle: On/Off (increase/decrease)"** is selected:

  o For the short operation the binary input will send a **"1"** value after a **"0"** value and viceversa.

  o For the long operation the binary input will send an **"increase step"** after a **"decrease step"** and viceversa.

⚠ *Important: Note that the first long operation in toggle depends on the last short operation, meaning that after a "1" value will be sent a "decrease step" and after a "0" value will be sent an "increase step".*

⚠ *Important: The time period between a short and a long operation is defined in the parameter "Short/long operation limit (x100ms)".*

➢ Increasing step

This parameter lets select the increasing step value (in %) that will be sent for a long operation.

➢ Decreasing step

This parameter lets select the decreasing step value (in %) that will be sent for a long operation.

➢ Short/long operation limit (x100ms)

This parameter lets introduce the time period difference for the short and the long operation.

➢ Cycl. send. period in long oper. (x100ms)

This parameter lets configure a time (in seconds) for the cyclical sending of a long operation.

o When **"Shutter/Blind"** is selected the communication objects and new parameters for the Input "x" will appear as shown below.



**Figure 4.44** Parameter detail

➢ Send telegram after bus recovery

This parameter lets select if the Binary Input "x" will send a telegram, or not, after a bus recovery and the type of telegram sent (if enabled).

- When **"No action"** is selected, no telegram will be sent after a bus recovery.

- When **"Move Up"** is selected, the binary input will send a telegram with a **"0"** value after a bus recovery. Also a new parameter will appear (see below).

- When **"Move Down"** is selected, the binary input will send a telegram with a **"1"** value after a bus recovery. Also a new parameter will appear (see below).



**Figure 4.45** Parameter detail

➢ Sending delay after a bus recovery (seconds)

This parameter lets configure a delay (in seconds) that will be applied after a bus recovery and, after which, a telegram will be sent.

➢ Operation

This parameter lets select the value that the Binary Input "x" will send on a rising edge (contact activated).

- When **"Up"** is selected, the binary input will always send telegrams with a **"0"**.

- When **"Down"** is selected, the binary input will always send telegrams with a **"1"** value.

- When **"Toggle (Up/Down)"** is selected the binary input will send a **"0"** value after a **"1"** value and viceversa.

➢ Method

This parameter lets select the working method for the shutter/blind.

- When **"Step-Move-Step"** is selected: On a rising edge (contact activated) a step/stop telegram will be sent and will begin a time called **T1**. If a falling edge occurs (contact deactivated) during the **T1**, no action will be performed.

  If the rising edge is maintained longer than **T1**, a move telegram will be sent and will start a time called **T2**. If a falling edge occurs during the **T2**, a step/stop telegram will be sent. If a falling edge occurs after **T2** no action will be performed.

- When **"Move-Step"** is selected: On a rising edge a move telegram will be sent and will begin the **T2** time. If a falling edge occurs during the **T2**, a step/stop telegram will be sent. If a falling edge occurs after **T2** no action will be performed.

⚠ *Important: The **T1** time have to be defined in the "Short/long operation limit (x100ms)" parameter. Also the **T2** time have to be defined in the "Vanes adjustment time (x100ms)" parameter.*

➢ Short/long operation limit (x100ms)

This parameter lets introduce the time period difference for the short and the long operation (T1 time).

➢ Vanes adjustment time (x100ms)

This parameter lets introduce the time period for the vanes adjustment/blind movement (T2 time).

o When **"Value"** is selected the communication objects and new parameters for the Input "x" will appear as shown below.



**Figure 4.46** Parameter detail

➢ Send telegram after bus recovery

This parameter lets select if the Binary Input "x" will send a telegram, or not, after a bus recovery and the type of telegram sent (if enabled).

- When **"No action"** is selected, no telegram will be sent after a bus recovery.

- When **"Fixed value"** is selected, the binary input will send a telegram with the same value configured in the "Value on rising edge" parameter. Also a new parameter will appear (see below).
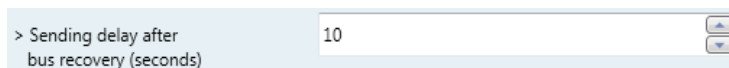


**Figure 4.47** Parameter detail

➢ Sending delay after a bus recovery (seconds)

This parameter lets configure a delay (in seconds) that will be applied after a bus recovery and, after which, a telegram will be sent.



**Figure 4.48** Parameter detail

➢ DPT to be sent

This parameter lets select the DPT type for the value that will be defined in the next parameter. This value will be sent on a rising edge (contact activated).



**Figure 4.49** Parameter detail

> ➢ Value on rising edge (when contact activated)

   This parameter lets define a value for the DTP type configured in the "DPT to be sent" parameter. This value will be sent on a rising edge (contact activated).

o   When **"Execute Scene (internal)"** is selected, the binary input "x" will activate the scene defined in the next parameter, on a rising edge (contact activated).

| > Function | Execute Scene (internal) ▼ |
| --- | --- |
| > Scene when contact is activated (needs to be defined) | Scene 1 ▼ |
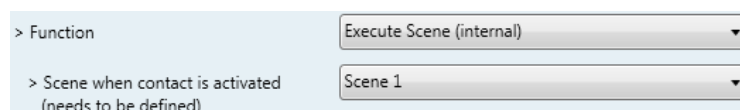
**Figure 4.50** Parameter detail

> ➢ Scene when contact is activated

   This parameter lets choose the scene that will be activated on a rising edge. This scene MUST be defined in the "Scene Configuration" dialog as a preset.

o   When **"Occupancy (internal)"** is selected, the binary input "x" will have the same behavior as configured in the parameter "Enable use of Occupancy function" inside the "Switch-Off Timeouts Configuration" dialog.

| > Function | Occupancy (internal) ▼ |
| --- | --- |
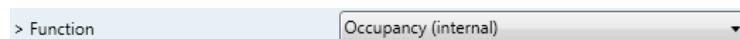
**Figure 4.51** Parameter detail

o   When **"Window Contact (internal)"** is selected, the binary input "x" will have the same behavior as configured in the parameter "Enable use of Open Window / Switch off timeout function" inside the "Switch-Off Timeouts Configuration" dialog.

| > Function | Window Contact (internal) ▼ |
| --- | --- |

**Figure 4.52** Parameter detail

**Intesis** software

# 5. Specifications

| | |
|---|---|
| **Envelope** | ABS (UL 94 HB). 2,5 mm thickness |
| **Dimensions** | 59 x 45 x 21 mm |
| **Weight** | 35g |
| **Colour** | Light Grey |
| **Power supply** | 29V DC, 7mA<br>Supplied through KNX bus. |
| **LED indicators** | 1 x KNX programming. |
| **Push buttons** | 1 x KNX programming. |
| **Binary inputs** | 4 x Potential-free binary inputs.<br>Signal cable length: 5m uschielded, may be extended up to 20m with twisted.<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 |
| **Configuration** | Configuration with ETS. |
| **Operating Temperature** | From -25ºC to 85ºC |
| **Storage Temperature** | From -40ºC to 85ºC |
| **Isolation Voltage** | 4000V |
| **RoHS conformity** | Compliant with RoHS directive (2002/95/CE). |
| **Certifications** | CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC)<br>EN 61000-6-1; EN 61000-6-3; EN 60950-1; EN 50491-3; EN 50090-2-2;<br>EN 50428; EN 60669-1; EN 60669-2-1 |

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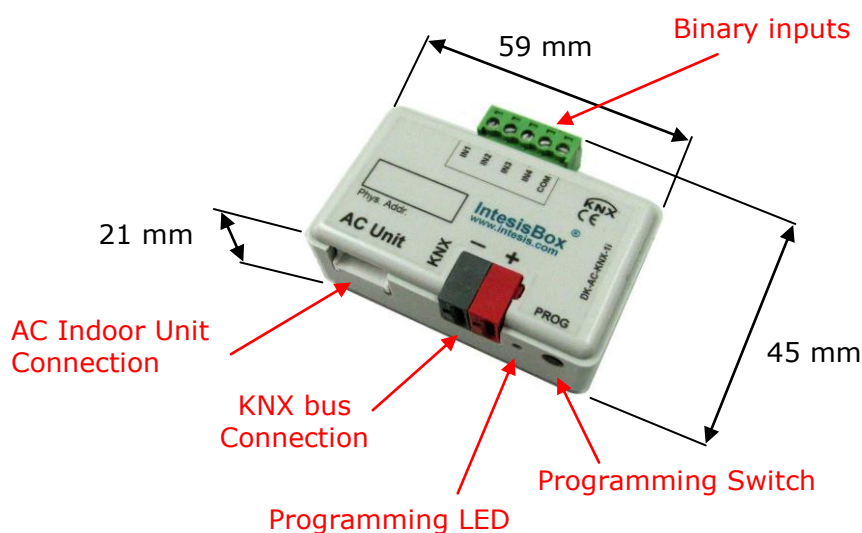
## 6. AC Unit Types compatibility.

A list of Daikin indoor unit models compatible with DK-AC-KNX-1i and their available features can be found in:

http://www.intesis.com/pdf/IntesisBox_DK-AC-xxx-1_AC_Compatibility.pdf

## 7. Error Codes

| Error Code KNX Object | Error in Remote Controller | Error category | Error Description |
|---|---|---|---|
| 17 | A0 | Indoor Unit | External protection devices activated |
| 18 | A1 | | Indoor unit PCB assembly failure |
| 19 | A2 | | Interlock error for fan |
| 20 | A3 | | Drain level system error |
| 21 | A4 | | Temperature of heat exchanger (1) error |
| 22 | A5 | | Temperature of heat exchanger (2) error |
| 23 | A6 | | Fan motor locked, overload, over current |
| 24 | A7 | | Swing flap motor error |
| 25 | A8 | | Overcurrent of AC input |
| 26 | A9 | | Electronic expansion valve drive error |
| 27 | AA | | Heater overheat |
| 28 | AH | | Dust collector error / No-maintenance filter error |
| 30 | AJ | | Capacity setting error (indoor) |
| 31 | AE | | Shortage of water supply |
| 32 | AF | | Malfunctions of a humidifier system (water leaking) |
| 33 | C0 | | Malfunctions in a sensor system |
| 36 | C3 | | Sensor system of drain water error |
| 37 | C4 | | Heat exchanger (1) (Liquid pipe) thermistor system error |
| 38 | C5 | | Heat exchanger (1) (Gas pipe) thermistor system error |
| 39 | C6 | | Sensor system error of fan motor locked, overload |
| 40 | C7 | | Sensor system of swing flag motor error |
| 41 | C8 | | Sensor system of over-current of AC input |
| 42 | C9 | | Suction air thermistor error |
| 43 | CA | | Discharge air thermistor system error |
| 44 | CH | | Contamination sensor error |
| 45 | CC | | Humidity sensor error |
| 46 | CJ | | Remote control thermistor error |
| 47 | CE | | Radiation sensor error |
| 48 | CF | | High pressure switch sensor |
| 49 | E0 | Outdoor Unit | Protection devices activated |
| 50 | E1 | | Outdoor uni9t PCB assembly failure |
| 52 | E3 | | High pressure switch (HPS) activated |
| 53 | E4 | | Low pressure switch (LPS) activated |
| 54 | E5 | | Overload of inverter compressor motor |
| 55 | E6 | | Over current of STD compressor motor |
| 56 | E7 | | Overload of fan motor / Over current of fan motor |
| 57 | E8 | | Over current of AC input |
| 58 | E9 | | Electronic expansion valve drive error |
| 59 | EA | | Four-way valve error |
| 60 | EH | | Pump motor over current |
| 61 | EC | | Water temperature abnormal |
| 62 | EJ | | (Site installed) Protection device activated |
| 63 | EE | | Malfunctions in a drain water |
| 64 | EF | | Ice thermal storage unit error |
| 65 | H0 | | Malfunctions in a sensor system |
| 66 | H1 | | Air temperature thermistor error |
| 67 | H2 | | Sensor system of power supply error |
| 68 | H3 | | High Pressure switch is faulty |
| 69 | H4 | | Low pressure switch is faulty |
| 70 | H5 | | Compressor motor overload sensor is abnormal |
| 71 | H6 | | Compressor motor over current sensor is abnormal |
| 72 | H7 | | Overload or over current sensor of fan motor is abnormal |
| 73 | H8 | | Sensor system of over-current of AC input |
| 74 | H9 | | Outdoor air thermistor system error |
| 75 | HA | | Discharge air thermistor system error |
| 76 | HH | | Pump motor sensor system of over current is abnormal |
| 77 | HC | | Water temperature sensor system error |
| 79 | HE | | Sensor system of drain water is abnormal |
| 80 | HF | | Ice thermal storage unit error (alarm) |
| 81 | F0 | | No.1 and No.2 common protection device operates. |
| 82 | F1 | | No.1 protection device operates. |
| 83 | F2 | | No.2 protection device operates |
| 84 | F3 | | Discharge pipe temperature is abnormal |
| 87 | F6 | | Temperature of heat exchanger(1) abnormal |
| 91 | FA | | Discharge pressure abnormal |
| 92 | FH | | Oil temperature is abnormally high |
| 93 | FC | | Suction pressure abnormal |
| 95 | FE | | Oil pressure abnormal |

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| 96 | FF | | Oil level abnormal |
|---|---|---|---|
| 97 | J0 | | Sensor system error of refrigerant temperature |
| 98 | J1 | | Pressure sensor error |
| 99 | J2 | | Current sensor error |
| 100 | J3 | | Discharge pipe thermistor system error |
| 101 | J4 | | Low pressure equivalent saturated temperature sensor system error |
| 102 | J5 | | Suction pipe thermistor system error |
| 103 | J6 | | Heat exchanger(1) thermistor system error |
| 104 | J7 | | Heat exchanger(2) thermistor system error |
| 105 | J8 | | Oil equalizer pipe or liquid pipe thermistor system error |
| 106 | J9 | | Double tube heat exchanger outlet or gas pipe thermistor system error |
| 107 | JA | | Discharge pipe pressure sensor error |
| 108 | JH | | Oil temperature sensor error |
| 109 | JC | | Suction pipe pressure sensor error |
| 111 | JE | | Oil pressure sensor error |
| 112 | JF | | Oil level sensor error |
| 113 | L0 | | Inverter system error |
| 116 | L3 | | Temperature rise in a switch box |
| 117 | L4 | | Radiation fin (power transistor) temperature is too high |
| 118 | L5 | | Compressor motor grounded or short circuit, inverter PCB fault |
| 119 | L6 | | Compressor motor grounded or short circuit, inverter PCB fault |
| 120 | L7 | | Over current of all inputs |
| 121 | L8 | | Compressor over current, compressor motor wire cut |
| 122 | L9 | | Stall prevention error (start-up error) Compressor locked, etc. |
| 123 | LA | | Power transistor error |
| 125 | LC | | Communication error between inverter and outdoor control unit |
| 129 | P0 | | Shortage of refrigerant (thermal storage unit) |
| 130 | P1 | | Power voltage imbalance, open phase |
| 132 | P3 | | Sensor error of temperature rise in a switch box |
| 133 | P4 | | Radiation fin temperature sensor error |
| 134 | P5 | | DC current sensor system error |
| 135 | P6 | | AC or DC output current sensor system error |
| 136 | P7 | | Total input current sensor error |
| 142 | PJ | | Capacity setting error (outdoor) |
| 145 | U0 | | Low pressure drop due to insufficient refrigerant or electronic expansion valve error, etc. |
| 146 | U1 | | Reverse phase, Open phase |
| 147 | U2 | | Power voltage failure / Instantaneous power failure |
| 148 | U3 | | Failure to carry out check operation, transmission error |
| 149 | U4 | | Communication error between indoor unit and outdoor unit, communication error between outdoor unit and BS unit |
| 150 | U5 | | Communication error between remote control and indoor unit / Remote control board failure or setting error for remote control |
| 151 | U6 | | Communication error between indoor units |
| 152 | U7 | System | Communication error between outdoor units / Communication error between outdoor unit and ice thermal storage unit |
| 153 | U8 | | Communication error between main and sub remote controllers (sub remote control error) / Combination error of other indoor unit / remote control in the same system (model) |
| 154 | U9 | | Communication error between other indoor unit and outdoor unit in the same system / Communication error between other BS unit and indoor/outdoor unit |
| 155 | UA | | Combination error of indoor/BS/outdoor unit (model, quantity, etc.), setting error of spare parts PCB when replaced |
| 156 | UH | | Improper connection of transmission wiring between outdoor and outdoor unit outside control adaptor |
| 157 | UC | | Centralized address duplicated |
| 158 | UJ | | Attached equipment transmission error |
| 159 | UE | | Communication error between indoor unit and centralized control device |
| 160 | UF | | Failure to carrey out check operation Indoor-outdoor, outdoor-outdoor communication error, etc. |
| 209 | 60 | | All system error |
| 210 | 61 | | PC board error |
| 211 | 62 | | Ozone density abnormal |
| 212 | 63 | | Contamination sensor error |
| 213 | 64 | | Indoor air thermistor system error |
| 214 | 65 | | Outdoor air thermistor system error |
| 217 | 68 | | HVU error (Ventiair dust-collecting unit) |
| 219 | 6A | | Dumper system error |
| 220 | 6H | | Door switch error |
| 221 | 6C | Others | Replace the humidity element |
| 222 | 6J | | Replace the high efficiency filter |
| 223 | 6E | | Replace the deodorization catalyst |
| 224 | 6F | | Simplified remote controller error |
| 226 | 51 | | Fan motor of supply air over current or overload |
| 227 | 52 | | Fan motor of return air over current / Fan motor of return air overload |
| 228 | 53 | | Inverter system error (supply air side) |
| 229 | 54 | | Inverter system error (return air side) |
| 241 | 40 | | Humidifying valve error |
| 242 | 41 | | Chilled water valve error |
| 243 | 42 | | Hot water valve error |

| 244 | 43 | | Heat exchanger of chilled water error |
|---|---|---|---|
| 245 | 44 | | Heat exchanger of hot water error |
| 258 | 31 | | The humidity sensor of return air sensor |
| 259 | 32 | | Outdoor air humidity sensor error |
| 260 | 33 | | Supply air temperature sensor error |
| 261 | 34 | | Return air temperature sensor error |
| 262 | 35 | | Outdoor air temperature sensor error |
| 263 | 36 | | Remote controller temperature sensor error |
| 267 | 3A | | Water leakage sensor 1 error |
| 268 | 3H | | Water leakage sensor 2 error |
| 269 | 3C | | Dew condensation error |
| 339 | M2 | | Centralized remote controller PCB error |
| 345 | M8 | | Communication error between centralized remote control devices |
| 347 | MA | | Centralized remote control devices inappropriate combination |
| 349 | MC | | Centralized remote controller address setting error |
| -1 | N/A | DK-AC-KNX-1i | Error in the communication of DK-AC-KNX-1i device with the AC unit |

In case you detect an error code not listed, contact your nearest Daikin technical support service for more information on the error meaning.

## Appendix A – Communication Objects Table

| TOPIC | OBJECT NUMBER | NAME | LENGTH | DATAPOINT TYPE | | FLAGS | | | | FUNCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DPT_NAME | DPT_ID | R | W | T | U | |
| **On/Off** | **0** | Control_ On/Off | 1 bit | DPT_Switch | 1.001 | | W | T | | 0 - Off; 1-On |
| **Mode** | **1** | Control_ Mode | 1 byte | DPT_HVACContrMode | 20.105 | | W | T | | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry |
| | **2** | Control_ Mode Cool/Heat | 1 bit | DPT_Heat/Cool | 1.100 | | W | T | | 0 - Cool; 1 - Heat; |
| | **3** | Control_ Mode Cool & On | 1 byte | DPT_Scaling | 5.001 | | W | T | | 0% - Off; 0.1%-100% - On + Cool |
| | **4** | Control_ Mode Heat & On | 1 byte | DPT_Scaling | 5.001 | | W | T | | 0% - Off; 0.1%-100% - On + Heat |
| | **5** | Control_ Mode Auto | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Auto |
| | **6** | Control_ Mode Heat | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Heat |
| | **7** | Control_ Mode Cool | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Cool |
| | **8** | Control_ Mode Fan | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Fan |
| | **9** | Control_ Mode Dry | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Dry |
| | **10** | 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** | **11** | Control_ Fan Speed / 5 Speeds | 1 byte | DPT_Scaling | 5.001 | | W | T | | 0%-29% - Speed 1; 30%-49% - Speed 2; 50%-69% - Speed 3; 70%-89% - Speed 4; 90%-100% - Speed 5. |
| | | Control_ Fan Speed / 5 Speeds | 1 byte | DPT_Enumerated | 5.010 | | W | T | | 1 - Speed 1; 2 - Speed 2; 3 Speed 3; 4 - Speed 4; 5 Speed 5 |

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| | **12** | Control_ Fan Speed Manual/Auto | 1 bit | DPT_Bool | 1.002 | W | T | | 0 - Manual; 1 - Auto |
| | **13** | Control_ Fan Speed 1 | 1 bit | DPT_Bool | 1.002 | W | T | | 1 - Fan Speed 1 |
| | **14** | Control_ Fan Speed 2 | 1 bit | DPT_Bool | 1.002 | W | T | | 1 - Fan Speed 2 |
| | **15** | Control_ Fan Speed 3 | 1 bit | DPT_Bool | 1.002 | W | T | | 1 - Fan Speed 3 |
| | **16** | Control_ Fan Speed 4 | 1 bit | DPT_Bool | 1.002 | W | T | | 1 - Fan Speed 4 |
| | **17** | Control_ Fan Speed 5 | 1 bit | DPT_Bool | 1.002 | W | T | | 1 - Fan Speed 5 |
| | **18** | Control_ Fan Speed +/- | 1 bit | DPT_Step | 1.007 | W | | | 0 - Decrease; 1 - Increase |
| | | Control_ Fan Speed +/- | 1 bit | DPT_UpDown | 1.008 | W | | | 0 - Up; 1 - Down |
| **Vanes** | **19** | Control_ Vanes U-D Swing | 1 bit | DPT_Bool | 1.002 | W | T | | 0 - Off; 1 – Swing |
| | **20** | Control_ Vanes L-R Swing | 1 bit | DPT_Bool | 1.002 | W | T | | 0 - Off; 1 - Swing |
| **Humidifying** | **21** | Control_ Humidif. / 5 Intens. | 1 byte | DPT_Scaling | 5.001 | W | T | | 0% - Off; 1%-38% - Low; 39%-63% Mid; 64%-88% - High; 89%-100% - Continuous |
| | | Control_ Humidif. / 5 Intens. | 1 byte | DPT_Enumerated | 5.010 | W | T | | 0 - Off; 1- Low; 2 - Mid; 3 - High; 4 - Continuous |
| | **22** | Control_ Humidifying Off | 1 bit | DPT_Bool | 1.002 | W | T | | 1 – Humidifiying Off |
| | **23** | Control_ Humidifying Low | 1 bit | DPT_Bool | 1.002 | W | T | | 1 – Humidifiying Low |
| | **24** | Control_ Humidifying Mid | 1 bit | DPT_Bool | 1.002 | W | T | | 1 – Humidifiying Mid |
| | **25** | Control_ Humidifying High | 1 bit | DPT_Bool | 1.002 | W | T | | 1 – Humidifiying High |
| | **26** | Control_ Humidifying Cont. | 1 bit | DPT_Bool | 1.002 | W | T | | 1 – Humidifiying Continuous |
| | **27** | Control_ Humidifying +/- | 1 bit | DPT_Step | 1.007 | W | | | 0 - Decrease; 1 - Increase |
| | | Control_ Humidifying +/- | 1 bit | DPT_UpDown | 1.008 | W | | | 0 - Up; 1 - Down |

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| **Temperature** | **28** | Control_ Setpoint Temperature | 2 byte | DPT_Value_Temp | 9.001 | | W | T | (ºC) |
| | **29** | 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 |
| | **30** | Control_ Ambient Temperature | 2 byte | DPT_Value_Temp | 9.001 | | W | T | (ºC) |
| **Timeout** | **31** | Control_ Switch Off Timeout | 1 bit | DPT_OpenClose | 1.009 | | W | T | 0 - Open; 1 - Closed |
| | | Control_ Switch Off Timeout | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| | **32** | Control_ Occupancy | 1 bit | DPT_Occupancy | 1.018 | | W | T | 0 - Not Occupied; 1 - Occupied |
| | **33** | Control_ Sleep Timeout | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| **Locking** | **34** | Control_ Lock Remote Control | 1 bit | DPT_Bool | 1.002 | | W | T | 0 - Unlocked; 1 - Locked |
| | **35** | Control_ Lock Control Objects | 1 bit | DPT_Bool | 1.002 | | W | T | 0 - Unlocked; 1 - Locked |
| **Special Modes** | **36** | Control_ Power Mode | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| | **37** | Contorl_ Econo Mode | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| | **38** | Control_ Additional Heat | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| | **39** | Control_ Additional Cool | 1 bit | DPT_Start | 1.010 | | W | T | 0 - Stop; 1 - Start |
| **Scenes** | **40** | Control_ Save/Exec Scene | 1 byte | DPT_SceneControl | 18.001 | | W | T | 0 to 4 - Exec. Scene 1 to 5; 128 to 132 - Save Scene 1 to 5 |
| | **41** | Control_ Store Scene1 | 1 bit | DPT_Bool | 1.002 | | W | | 1 - Store Scene |
| | **42** | Control_ Store Scene2 | 1 bit | DPT_Bool | 1.002 | | W | | 1 - Store Scene |
| | **43** | Control_ Store Scene3 | 1 bit | DPT_Bool | 1.002 | | W | | 1 - Store Scene |
| | **44** | Control_ Store Scene4 | 1 bit | DPT_Bool | 1.002 | | W | | 1 - Store Scene |

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| | **45** | Control_ Store Scene5 | 1 bit | DPT_Bool | 1.002 | | W | | 1 - Store Scene |
| | **46** | Control_ Execute Scene1 | 1 bit | DPT_Bool | 1.002 | | W | T | 1 - Execute Scene |
| | **47** | Control_ Execute Scene2 | 1 bit | DPT_Bool | 1.002 | | W | T | 1 - Execute Scene |
| | **48** | Control_ Execute Scene3 | 1 bit | DPT_Bool | 1.002 | | W | T | 1 - Execute Scene |
| | **49** | Control_ Execute Scene4 | 1 bit | DPT_Bool | 1.002 | | W | T | 1 - Execute Scene |
| | **50** | Control_ Execute Scene5 | 1 bit | DPT_Bool | 1.002 | | W | T | 1 - Execute Scene |
| **Disabling** | **51** | 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 |
| | **52** | 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 |
| | **53** | Control_ Disable Input 3 | 1 bit | DPT_Bool | 1.002 | | W | T | 0 - Enable; 1 - Disable |
| | | Control_ Disable Input 3 | 1 bit | DPT_Enable | 1.003 | | W | T | 0 - Disable; 1 - Enable |
| | **54** | Control_ Disable Input 4 | 1 bit | DPT_Bool | 1.002 | | W | T | 0 - Enable; 1 - Disable |
| | | Control_ Disable Input 4 | 1 bit | DPT_Enable | 1.003 | | W | T | 0 - Disable; 1 - Enable |
| **On/Off** | **55** | Status_ On/Off | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| **Mode** | **56** | Status_ Mode | 1 byte | DPT_HVACContrMode | 20.105 | R | | T | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry |
| | **57** | Status_ Mode Cool/Heat | 1 bit | DPT_Heat/Cool | 1.100 | R | | T | 0 - Cool; 1 - Heat |
| | **58** | Status_ Mode Auto | 1 bit | DPT_Bool | 1.002 | R | | T | 1 - Auto |
| | **59** | Status_ Mode Heat | 1 bit | DPT_Bool | 1.002 | R | | T | 1 - Heat |
| | **60** | Status_ Mode Cool | 1 bit | DPT_Bool | 1.002 | R | | T | 1 - Cool |

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| | **61** | Status_ Mode Fan | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Fan |
| | **62** | Status_ Mode Dry | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Dry |
| | **63** | Status_ Mode Text | 14 byte | DPT_String_8859_1 | 16.001 | R | T | ASCII String |
| **Fan Speed** | **64** | Status_ Fan Speed / 5 Speeds | 1 byte | DPT_Scaling | 5.001 | R | T | 20% - Speed 1; 40% - Speed 2; 60% - Speed 3; 80% - Speed 4; 100% - Speed 5 |
| | | Status_ Fan Speed / 5 Speeds | 1 byte | DPT_Enumerated | 5.010 | R | T | 1 - Speed 1; 2 - Speed 2; 3 Speed 3; 4 - Speed 4; 5 Speed 5 |
| | **65** | Status_ Fan Speed Manual/Auto | 1 bit | DPT_Bool | 1.002 | R | T | 0 – Manual; 1 - Auto |
| | **66** | Status_ Fan Speed 1 | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Speed 1 |
| | **67** | Status_ Fan Speed 2 | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Speed 2 |
| | **68** | Status_ Fan Speed 3 | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Speed 3 |
| | **69** | Status_ Fan Speed 4 | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Speed 4 |
| | **70** | Status_ Fan Speed 5 | 1 bit | DPT_Bool | 1.002 | R | T | 1 - Speed 5 |
| | **71** | Status_ Fan Speed Text | 14 byte | DPT_String_8859_1 | 16.001 | R | T | ASCII String |
| **Vanes** | **72** | Status_ Vanes U-D Swing | 1 bit | DPT_Bool | 1.002 | R | T | 0 - Off; 1 – Swing |
| | **73** | Status_ Vanes L-R Swing | 1 bit | DPT_Bool | 1.002 | R | T | 0 - Off; 1 - Swing |
| **Humidifying** | **74** | Status_ Humidif. / 5 Intens. | 1 byte | DPT_Scaling | 5.001 | R | T | 0% - Off; 25% - Low; 50% - Mid; 75% - High; 100% - Continuous |
| | | Status_ Humidif. / 5 Intens. | 1 byte | DPT_Enumerated | 5.010 | R | T | 0 - Off; 1- Low; 2 - Mid; 3 - High; 4 - Continuous |
| | **75** | Status_ Humidifying Off | 1 bit | DPT_Bool | 1.002 | R | T | 1 – Humidifying Off |
| | **76** | Status_ Humidifying Low | 1 bit | DPT_Bool | 1.002 | R | T | 1 – Humidifying Low |

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| | **77** | Status_ Humidifying Mid | 1 bit | DPT_Bool | 1.002 | R | | T | 1 – Humidifying Med |
| | **78** | Status_ Humidifying High | 1 bit | DPT_Bool | 1.002 | R | | T | 1 – Humidifying High |
| | **79** | Status_ Humidifying Cont. | 1 bit | DPT_Bool | 1.002 | R | | T | 1 – Humidifying Continuous |
| | **80** | Status_ Humidifying Text | 14 byte | DPT_String_8859_1 | 16.001 | R | | T | ASCII String |
| **Temperature** | **81** | Status_ AC Setpoint Temp | 2 byte | DPT_Value_Temp | 9.001 | R | | T | (ºC) |
| **Error** | **82** | Status_ Error/Alarm | 1 bit | DTP_Alarm | 1.005 | R | | T | 0 - No Alarm; 1 - Alarm |
| | **83** | Status_ Error Code | 2 byte | Enumerated | | R | | T | 0 - No Error; Any other see user's manual |
| | **84** | Status_ Error Text code | 14 byte | DPT_String_8859_1 | 16.001 | R | | T | 2 char DK Error; Empty - none |
| **Special Modes** | **85** | Status_ Power Mode | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| | **86** | Status_ Econo Mode | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| | **87** | Status_ Additional Heat | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| | **88** | Status_ Additional Cool | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| **Counter** | **89** | Status_ Operation Hour Counter | 2 byte | DPT_Value_2_Ucount | 7.001 | R | | T | Number of operating hours |
| **Scene** | **90** | Status_ Current Scene | 1 byte | DPT_SceneNumber | 17.001 | R | | T | 0 to 4 - Scene 1 to 5; 63 - No Scene |
| **Binary Inputs** | **91** | Status_ Inx - Switching | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1-On |
| | **93** | Status_ Inx – Dimming - On/Off | 1 bit | DPT_Switch | 1.001 | R | | T | 0 - Off; 1 - On |
| | **95** | | | | | | | | |
| | **97** | Status_ Inx – Shut/Blind - Step | 1 bit | DPT_UpDown | 1.008 | R | | T | 0 – Step Up; 1 – Step Down |

| | | Status_ Inx – Value | 1 byte | DPT_Value_1_Ucount | 5.010 | R | | T | | 1 byte unsigned value |
|---|---|---|---|---|---|---|---|---|---|---|
| | 92 94 96 98 | Status_ Inx – Value | 2 byte | DPT_Value_2_Ucount | 7.001 | R | | T | | 2 byte unsigned value |
| | | Status_ Inx – Value | 2 byte | DPT_Value_2_Count | 8.001 | R | | T | | 2 byte signed value |
| | | Status_ Inx – Value | 2 byte | DPT_Value_Temp | 9.001 | R | | T | | Temperature (ºC) |
| | | Status_ Inx – Value | 4 byte | DPT_Value_4_Ucount | 12.001 | R | | T | | 4 byte unsigned value |
| | | Status_ Inx – Dimming – Step(%) | 1 bit | DPT_Control_Dimm. | 3.007 | R | | T | | Dimming step |
| | | Status_ Inx - Shut/Blind -Move | 1 bit | DPT_UpDown | 1.008 | R | | T | | 0 – Move Up; 1 – Move Down |
| **Legacy** | 99 | Legacy_ Mode | 1 byte | Enumerated | | R | | T | | 0 – Auto; 1 – Heat; 2 – Dry; 3 – Fan; 4 – Cool |
| | 100 | Legacy_ Fan Speed | 1 byte | Enumerated | | R | | T | | 0 – Auto; 1…5 – Speed 1…5; |
| | 101 | Legacy_ Swing | 1 byte | Enumerated | | R | | T | | 0 – Off; 1 – Vertical; 2 – Horizontal; 3 – Both; |
| | 102 | Legacy_ Humidifying | 1 byte | Enumerated | | R | | T | | 0 – Off; 1 – Low; 2 – Mid; 3 – High; 4 – Cont; |