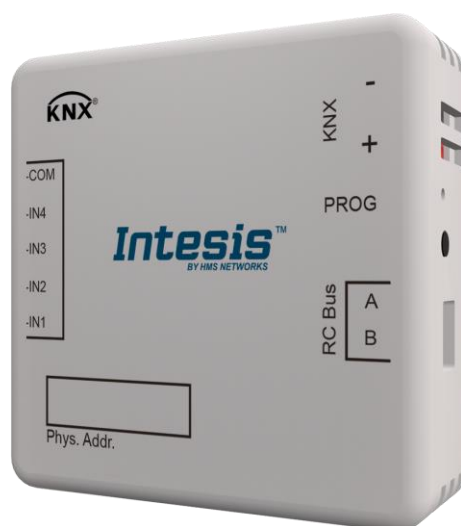


## KNX (TP-1) Interface for HISENSE VRF Air Conditioning

Application's Program Version: 2.1

### USER MANUAL

Issue date: 03/2020 r1.1 ENGLISH



## Important User Information

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## KNX (TP-1) Interface for HISENSE VRF Air Conditioning

| <b>ORDER CODE</b> | <b>LEGACY ORDER CODE</b> |
|-------------------|--------------------------|
| INKNXHIS001R000   | HS-RC-KNX-1i             |

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## 1. Presentation



INKNXHIS001R000 allows a complete and natural integration of HISENSE air conditioners with KNX control systems.

Compatible with VRF air conditioners commercialized by HISENSE.

### 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 wired remote control of the AC unit and by KNX.
- Direct connection to the AC indoor unit.
- 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. Configurable from ETS too, they can be used for switching, dimming, shutter/blind control, and more.

## 2. Connection

### Connection of the INKNXHIS001R000 to the AC indoor unit

#### 2.1 INKNXHIS001R000 without Hisense Remote Controller

The INKNXHIS001R000 can be connected directly to the AB bus of the indoor unit (no HISENSE remote controller -RC from now on- also connected in the AB bus). If this is the case, INKNXHIS001R000 must be configured as master (using the ETS software), see connection diagram below.

#### 2.2 INKNXHIS001R000 with HISENSE Remote Controller

If a HISENSE remote controller (RC) is present and connected to the AB bus, connect the gateway as Slave in parallel with the wired remote controllers (controller acts as Master).

- **Wired remote control available.**

Disconnect mains power from the AC unit and use a 2-wire cable with a diameter of 0.75mm<sup>2</sup> to 1.25mm<sup>2</sup> for the connection of INKNXHIS001R000, Hisense remote controller and its corresponding indoor unit. Screw the suitably peeled cable ends in the corresponding AB terminals of each device, as summarized in the **Figure 2.2**.

Maximum AB bus length is 500 meter. HISENSE RC and INKNXHIS001R000 are no polarity dependent.

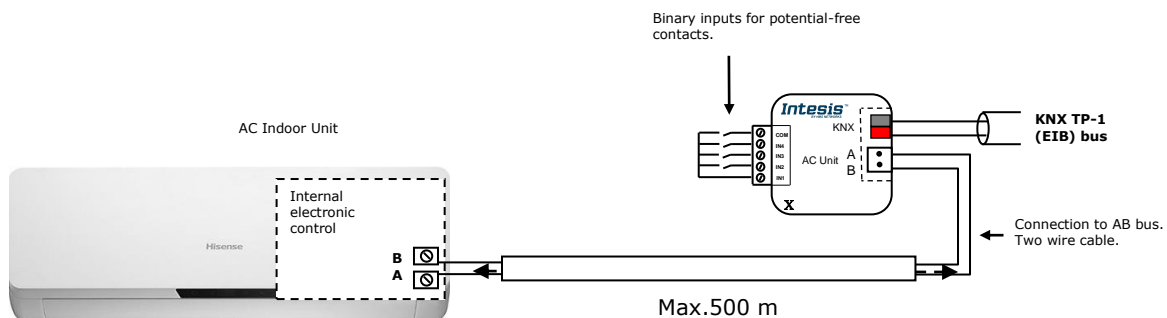
### Connection of the INKNXHIS001R000 to the KNX bus:

Disconnect power of the KNX bus. Connect the INKNXHIS001R000 to the KNX TP-1 (EIB) bus using the KNX standard connector (red/grey) of the INKNXHIS001R000, respect polarity.

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

### Connection diagrams:

#### INKNXHIS001R000 without HISENSE RC



INKNXHIS001R000 with HISENSE RC

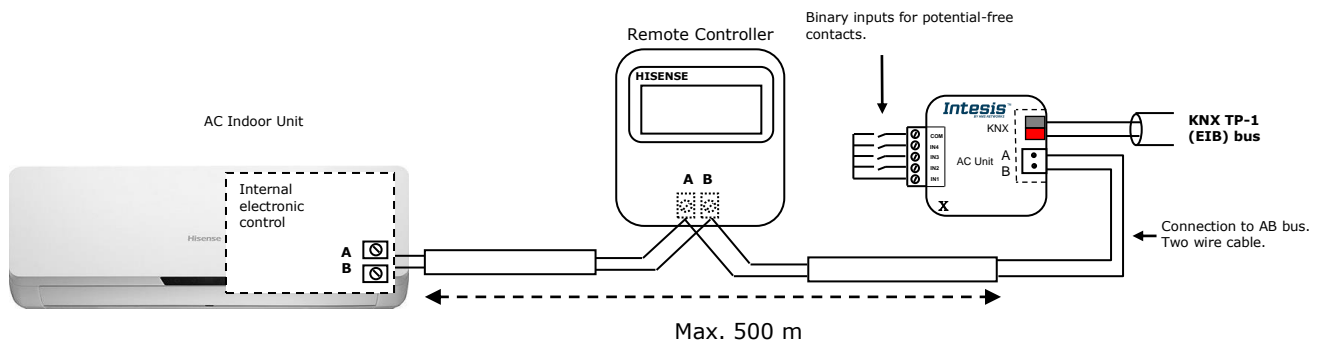


Figure 2.2 INKNXHIS001R000 connection diagrams



### 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:

<https://intesis.com/products/ac-interfaces/knx-gateways/hisense-knx-inputs-vrf-hs-rc-knx-1i>

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 INKNXHIS001R000. 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:

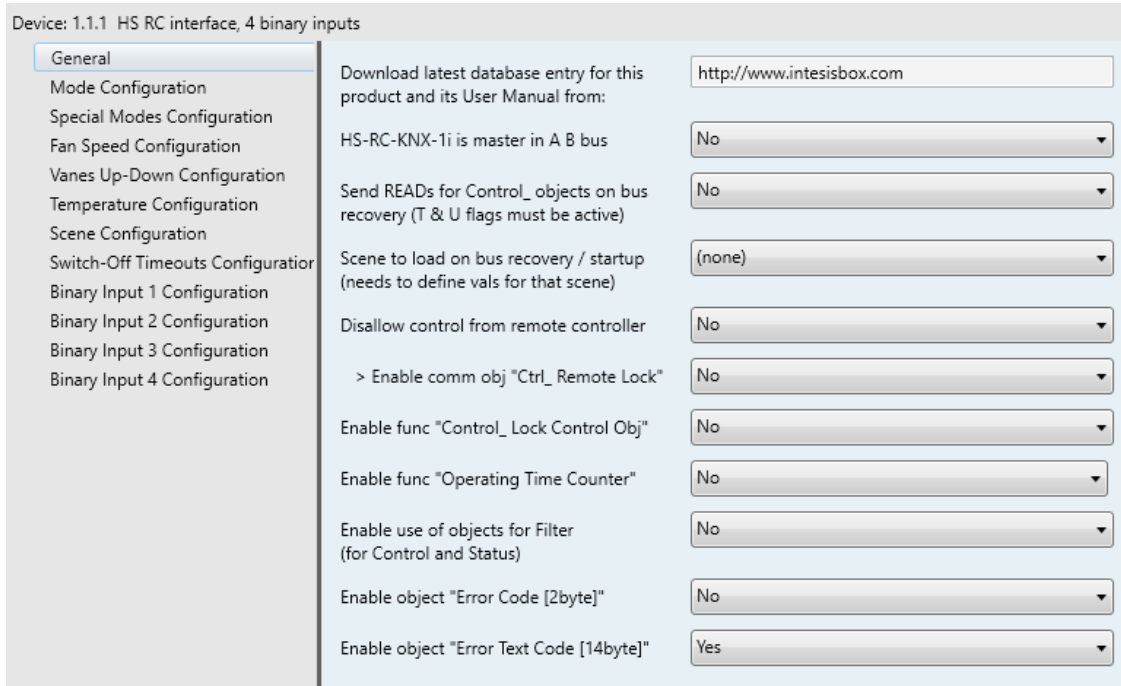


Figure 4.1 Default parameter configuration

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*), the Vane Position (*Control\_ Vanes U-D*) 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 Reference Temp* and *Status\_ Error/Alarm* are shown.

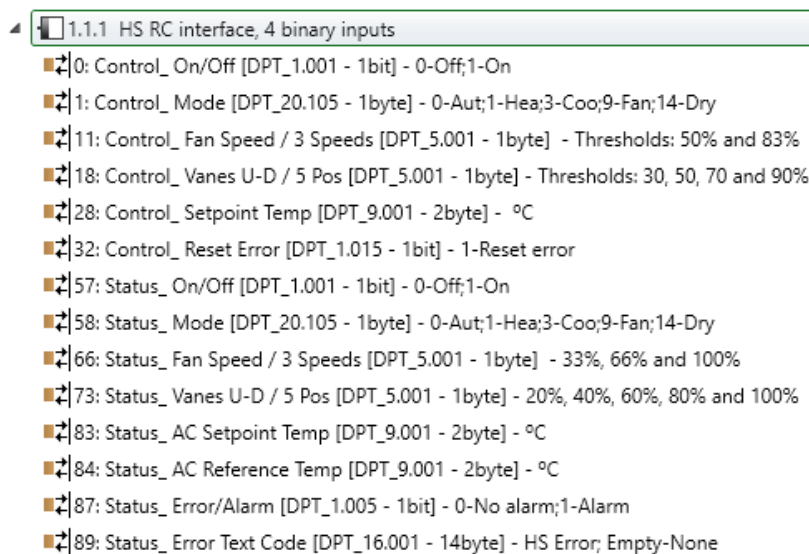


Figure 4.2 Default communication objects

## 4.1 General dialog

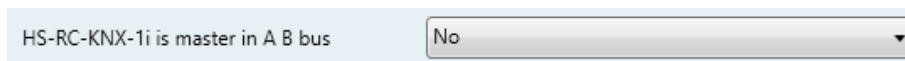
Inside this parameter's dialog it is possible to activate or change the parameters shown in the **Figure 4.1**.

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

### 4.1.1 INKNXHIS001R000 is master in AB bus

This parameter changes the gateway's behavior, being able to program it as master or slave in AB bus.

- If set to **"no"**, the gateway will work as a slave and it will be necessary to have a Hisense remote controller configured as a master.
- If set to **"yes"** the gateway will be master of the bus. It is not necessary to have any Hisense remote controller in this case but, if there are, they must be configured as slave. The next parameter is also shown when selecting INKNXHIS001R000 as master in AB bus:



HS-RC-KNX-1i is master in A B bus

No

**Figure 4.3** Parameter detail

### 4.1.2 Send READs for Control\_ objects on bus recovery

When this parameter is enabled, INKNXHIS001R000 will send READ telegrams for the group addresses associated on its *Control\_* objects on bus recovery or application reset/start-up.

- If set to **"no"** the gateway will not perform any action.
- 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 4.4** 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.

### 4.1.3 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.

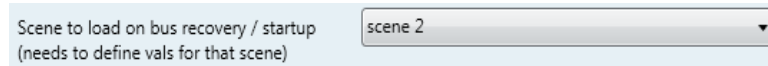


Figure 4.5 Parameter detail

#### 4.1.4 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.
- If set to **“yes”** all the actions performed through the remote controller will be disabled.
  - 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*.

36 Control\_ Lock Remote Control [DPT\_1.002 - 1bit] 0-Unlock;1-Lock

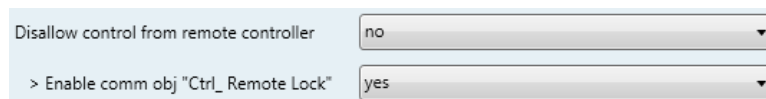


Figure 4.6 Communication object and parameter detail

#### ➤ 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.*

#### 4.1.5 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.

37 37: Control\_ Lock Control Objects [DPT\_1.002 - 1bit] - 0-Unlock;1-Lock

- If set to **“no”** the object will not be shown.

- 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.

#### 4.1.6 Enable use of objects for Filter

This parameter shows/hides *Control\_ Reset Filter* and *Status\_ Filter Status* that lets reset the filter status and also monitor if there is a filter alarm.

- ↕ 31 *Control\_ Reset Filter* [DPT\_1.015 - 1bit] - 1-Reset filter
- ↕ 86 *Status\_ Filter Status* [DPT\_1.005 - 1bit] - 0-No alarm;1-Alarm

- If set to **“no”** the object will not be shown.
- If set to **“yes”** *Control\_ Reset Filter* and *Status\_ Filter Status* objects will appear.
  - When a **“0”** value is shown in the *Status\_* object, it indicates no filter alarm. When a **“1”** value is shown in the *Status\_* object, it indicates that the filter is full. Once the filter has been cleaned, alarm should be reset sending a **“1”** value to the *Control\_ Reset Filter* object.

#### 4.1.7 Enable func “Operating Time Counter”

This parameter shows/hides the *Status\_ Operation Sec Counter* communication object which counts the number of operating seconds for the INKNXHIS001R000.

- If set to **“no”** the object will not be shown.
- If set to **“yes”** the *Status\_ Operation Time Counter* object will appear. It also appears a new parameter.

- ↕ 97: *Status\_ Operating Sec Counter* [DPT\_13.100 - 4byte] - Number of operating seconds

- This object can be read and sends its status every time a whole functioning hour (3600s) 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.*

|   |     |
|---|-----|
| Enable func "Operating Time Counter"    | Yes |
| > Enable func "Operating Hours Counter" | No  |

➤ Enable func "Operating Hours Counter":

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

If set to **"yes"** the *Control\_ Operation Hour Counter* object will appear.

- It provides same functionality as *Status\_ Operating Sec Counter* but provides information in hours instead of seconds.

■ ↕ 96 Status\_ Operation Hour Counter [DPT\_7.001 - 2byte] - Number of operating hours

- ⚠ **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.

#### 4.1.8 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.

■ ↕ 88 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.

#### 4.1.9 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.

■ ↕ 89 Status\_ Error Text Code [DPT\_16.001 - 14byte] - 3-char MH 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.

## 4.2 Mode Configuration dialog

Device: 1.1.1 HS RC interface, 4 binary inputs

| Configuration Option   | Value |
|--|-------|
| Indoor unit has AUTO mode (see docum. for your indoor unit)                  | Yes   |
| When mode is AUTO Status_ objs report actual operating status (HEAT/COOL/..) | No    |
| Enable "Mode Cool/Heat" objects (for Control and Status)                     | No    |
| Enable PID-Compat. Scaling Mode objects (for Control)                        | No    |
| Enable use of +/- object for Mode  | No    |
| Enable use of bit-type Mode objects (for Control)                            | No    |
| Enable use of bit-type Mode objects (for Status)                             | No    |
| Enable use of Text object for Mode   | No    |

**Figure 4.7** Default Mode Configuration dialog

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

➡ 1 Control\_Mode [DPT\_20.105 - 1byte] - 0-Aut;1-Hea;3-Coo;9-Fan;14-Dry

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.

### 4.2.1 When Mode is AUTO Status\_ objs report actual operating status (HEAT/COOL/..)

When set to "no" (default) *Status\_* objects for operating mode will report 'AUTO' as operating mode while indoor unit is in AUTO mode.

If set to "yes", *Status\_* objects for operating mode will report actual operating mode of the whole system ('HEAT' or 'COOL'), according to status reported by the indoor unit.

### 4.2.2 Enable use of Heat / Cool bit-type obj

This parameter shows/hides the *Control\_* and *Status\_ Mode Cool/Heat* communication objects.

➡ 2 Control\_Mode Cool/Heat [DPT\_1.100 - 1bit] - 0-Cool;1-Heat  
 ➡ 59 Status\_Mode Cool/Heat [DPT\_1.100 - 1bit] - 0-Cool;1-Heat

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

### 4.2.3 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

- If set to "no" the objects will not be shown.
- 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.
  - INKNXHIS001R000 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. 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.*

### 4.2.4 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

- If set to **"no"** the object will not be shown.
- 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 4.8 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:



- Up / Increase
- Down / Decrease

⚠ **Important:** Read the documentation of your indoor unit to check if it has AUTO mode available.

#### 4.2.5 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

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

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

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

- ↔ 60 Status\_ Mode Auto [DPT\_1.002 - 1bit] - 1-AUTO mode is active
- ↔ 61 Status\_ Mode Heat [DPT\_1.002 - 1bit] - 1-HEAT mode is active
- ↔ 62 Status\_ Mode Cool [DPT\_1.002 - 1bit] - 1-COOL mode is active
- ↔ 63 Status\_ Mode Fan [DPT\_1.002 - 1bit] - 1-FAN mode is active
- ↔ 64 Status\_ Mode Dry [DPT\_1.002 - 1bit] - 1-DRY mode is active

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

#### 4.2.7 Enable use of Text object for Mode

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

- ↔ 65 Status\_ Mode Text [DPT\_16.001 - 14byte] - ASCII String

- If set to **"no"** the object will not be shown.
- 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<br>(if available) | 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 4.9 Parameter detail

### 4.3 Special Modes Configuration dialog

Device: --- HS RC interface, 4 binary inputs

|                                   |                                       |    |
|-----------------------------------|---------------------------------------|----|
| General                           | Enable use of POWER mode              | No |
| Mode Configuration                | Enable use of ECONOMY mode            | No |
| Special Modes Configuration       | Enable use of ADDITIONAL HEATING mode | No |
| Fan Speed Configuration           | Enable use of ADDITIONAL COOLING mode | No |
| Vanes Up-Down Configuration       |                                       |    |
| Temperature Configuration         |                                       |    |
| Scene Configuration               |                                       |    |
| Switch-Off Timeouts Configuration |                                       |    |
| Binary Input 1 Configuration      |                                       |    |
| Binary Input 2 Configuration      |                                       |    |
| Binary Input 3 Configuration      |                                       |    |
| Binary Input 4 Configuration      |                                       |    |

Figure 4.10 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.

#### 4.3.1 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.

- 38 Control\_ Power Mode [DPT\_1.010 - 1bit] - 0-Stop;1-Start
- 92 Status\_ Power Mode [DPT\_1.001 - 1bit] - 0-Off;1-On

- If set to "no" the objects will not be shown.
- If set to "yes" the *Control\_ Power Mode* and *Status\_ Power Mode* objects and new parameters will appear.

**Figure 4.11** 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.

#### 4.3.2 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.

- ↕ 39 Control\_ Econo Mode [DPT\_1.010 - 1bit] - 0-Stop;1-Start
- ↕ 93 Status\_ Econo Mode [DPT\_1.001 - 1bit] - 0-Off;1-On

- 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, EconoMode will be enabled, and the *Status\_* object will return this value.
  - When a **"0"** value is sent to the *Control\_* communication object, EconoMode 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 EconoMode, 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 EconoMode.

➤ Fan Speed for this mode:

Fan Speed that will be set in the unit while in EconoMode.

#### 4.3.3 Enable use of ADDITIONAL HEATING mode

This parameter shows/hides the *Control\_ 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.

- ↕ 40 Control\_ Additional Heat [DPT\_1.010 - 1bit] - 0-Stop;1-Start
- ↕ 94 Status\_ Additional Heat [DPT\_1.001 - 1bit] - 0-Off;1-On

- If set to “no” the objects will not be shown.
- 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 (°C):

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.

#### 4.3.4 Enable use of ADDITIONAL COOLING mode

This parameter shows/hides the Control\_ 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.

- 41 Control\_ Additional Cool [DPT\_1.010 - 1bit] - 0-Stop;1-Start
- 95 Status\_ Additional Cool [DPT\_1.001 - 1bit] - 0-Off;1-On

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

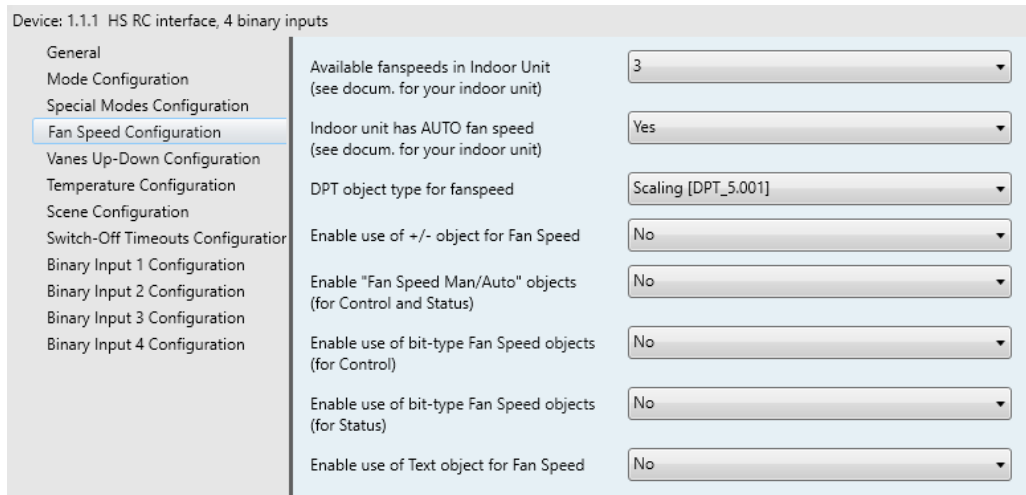
➤ Setpoint temp for this mode (°C):

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.

#### 4.4 Fan Speed Configuration dialog



**Figure 4.12** Default Fan Speed Configuration dialog

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

##### 4.4.1 Available fan speeds in Indoor Unit

This parameter lets choose how many fan speeds are available in the indoor unit.



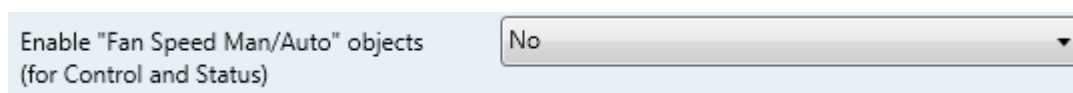
**Figure 4.13** Parameter detail

**⚠ Important:** Read the documentation of your indoor unit to check how many fan speeds are available.

##### 4.4.2 Indoor unit has AUTO fan speed

This parameter lets choose if AUTO fan speed is available in the indoor unit.

- When **“Yes”** is selected, *Enable “Fan Speed Man/Auto” objects* parameter will appear.



**Figure 4.14** Parameter detail

➤ Enable “Fan Speed Man/Auto” objects

When **“Yes”** is selected, objects *Control\_* and *Status\_ Fan Speed Man/Auto* will appear.

- ↕ 12 Control\_ Fan Speed Man/Auto [DPT\_1.002 - 1bit] - 0-Manual;1-Auto
- ↕ 66 Status\_ Fan Speed Man/Auto [DPT\_1.002 - 1bit] - 0-Manual;1-Auto

When value 1-Auto is received at *Control\_* object, indoor unit will be set up Auto Fan Speed. When value 0-Manual is received, indoor unit will be set up in first speed (fan speed 1).

Writing a certain fan speed (1, 2, 3 or 4 (if available)) to its corresponding control object will cancel Auto fan speed.

⚠ **Important:** Read the documentation of your indoor unit to check if AUTO fan speed is available

#### 4.4.3 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.

⚠ **Important:** The communication objects shown in this section may be different depending on the number of fan speeds available, although they all share the same communication object number.

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

- ↕ 11 Control\_ Fan Speed / 3 Speeds [DPT\_5.010 - 1byte] - Speed values: 1,2,3
- ↕ 66 Status\_ Fan Speed / 3 Speeds [DPT\_5.010 - 1byte] - Speed Values: 1,2,3

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 (if available) will be selected sending a **“3”**; the fourth one (if available) will be selected sending a **“4”**.

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 **“4”** is sent to the *Control\_* object, then the maximum fan speed will be selected.

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

- ↕ 11 Control\_ Fan Speed / 3 Speeds [DPT\_5.001 - 1byte] - Thresholds: 50% and 83%
- ↕ 66 Status\_ Fan Speed / 3 Speeds [DPT\_5.001 - 1byte] - 33%, 66% and 100%

The next table shows the range of values that can be sent through the *Control\_* object and the value returned by the *Status\_* object.

|                 | Fan Speed 1 | Fan Speed 2 | Fan Speed 3 | Fan Speed 4 |
|-----------------|-------------|-------------|-------------|-------------|
| <i>Control_</i> | 0% - 49%    | 50% - 82%   | 83% - 100%  |             |
| <i>Status_</i>  | 33%         | 67%         | 100%        |             |
| <i>Control_</i> | 0% - 37%    | 38% - 62%   | 63% - 87%   | 88% - 100%  |
| <i>Status_</i>  | 25%         | 50%         | 75%         | 100%        |

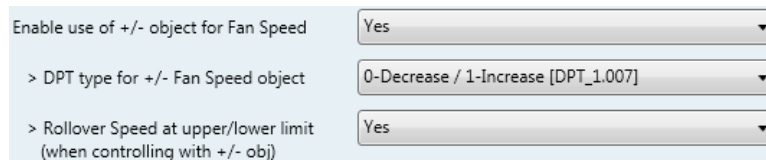
**⚠ Important:** Read the documentation of your indoor unit to check how many fan speeds are available.

#### 4.4.4 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.

🔧 17 *Control\_ Fan Speed -/+* [DPT\_1.007 - 1bit] - 0-Decrease;1-Increase

- If set to **"no"** the object will not be shown.
- If set to **"yes"** the *Control\_ Fan Speed -/+* object and a new parameter will appear.



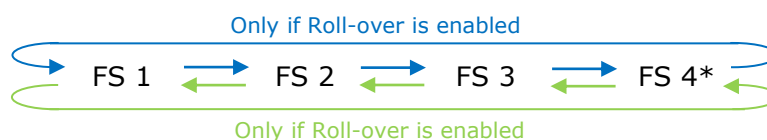
**Figure 4.15** Parameter detail

➤ 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.

➤ 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
- \* If Available

#### 4.4.5 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

- If set to **"no"** the objects will not be shown.
- If set to **"yes"** the *Control\_ Fan Speed* objects for Speed 1, Speed 2, Speed 3 and Speed 4 (if available) will appear. To activate a Fan Speed by using these objects a **"1"** value has to be sent.

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

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

- ↕ 68 Status\_ Fan Speed 1 [DPT\_1.002 - 1bit] - 1-Fan in Speed 1
- ↕ 69 Status\_ Fan Speed 2 [DPT\_1.002 - 1bit] - 1-Fan in Speed 2
- ↕ 70 Status\_ Fan Speed 3 [DPT\_1.002 - 1bit] - 1-Fan in Speed 3
- ↕ 71 Status\_ Fan Speed 4 [DPT\_1.002 - 1bit] - 1-Fan in Speed 4

- If set to **"no"** the objects will not be shown.
- If set to **"yes"** the *Status\_ Fan Speed* objects for Speed 1, Speed 2, Speed 3 and Speed 4 (if available) will appear. When a Fan Speed is enabled, a **"1"** value is returned through its bit-type object.

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

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

- ↕ 72 Status\_ Fan Speed Text [DPT\_16.001 - 14byte] - ASCII String

- If set to **"no"** the object will not be shown.
- If set to **"yes"** the *Status\_ Fan Speed Text* object will appear. Also, in the parameters, will be shown four 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.

|  |         |
|--|---------|
| > String when fan speed is 1                   | SPEED 1 |
| > String when fan speed is 2<br>(if available) | SPEED 2 |
| > String when fan speed is 3<br>(if available) | SPEED 3 |
| > String when fan speed is 4<br>(if available) | SPEED 4 |

Figure 4.16 Parameter detail

## 4.5 Vanes Up-Down Configuration dialog

Device: 1.1.1 HS RC interface, 4 binary inputs

|                                 |   |                     |
|---------------------------------|---|---------------------|
| General                         | Indoor unit has U-D Vanes<br>(see docum. for your indoor unit)          | Yes                 |
| Mode Configuration              | Available positions in Indoor Unit<br>(see docum. for your indoor unit) | 5                   |
| Special Modes Configuration     | DPT object type for Vanes Up-Down                                       | Scaling [DPT_5.001] |
| Fan Speed Configuration         | Enable use of +/- object for Vanes U-D                                  | No                  |
| Vanes Up-Down Configuration     | Enable use of bit-type Vanes U-D objects<br>(for Control)               | No                  |
| Temperature Configuration       | Enable use of bit-type Vanes U-D objects<br>(for Status)                | No                  |
| Scene Configuration             | Enable "Vanes U-D Swing" objects<br>(for Control and Status)            | No                  |
| Switch-Off Timeouts Configurati | Enable use of Text object for Vanes U-D                                 | No                  |
| Binary Input 1 Configuration    |   |                     |
| Binary Input 2 Configuration    |   |                     |
| Binary Input 3 Configuration    |   |                     |
| Binary Input 4 Configuration    |   |                     |

Figure 4.17 Vanes Up-Down Configuration dialog

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

### 4.5.1 Indoor unit has U-D Vanes

This parameter lets choose if the unit has Up-Down Vanes available or not.

|  |     |
|--|-----|
| Indoor unit has U-D Vanes<br>(see docum. for your indoor unit) | Yes |
|--|-----|

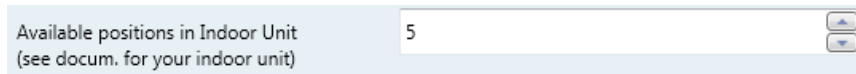
Figure 4.18 Parameter detail

- If set to **"no"** all the parameters and communication objects for the Up-Down Vanes will not be shown.
- If set to **"yes"** all the parameters and communication objects (if enabled in the parameters dialog) for the Up-Down Vanes will be shown.

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

### 4.5.2 Available positions in Indoor Unit

This parameter lets select the number of vane positions available in your indoor unit, from 5 to 7.



**Figure 4.19** Parameter detail

- Number of Vane Positions configured here will have effect on the possible values in *Control\_* and *Status\_* objects for Vanes.

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

### 4.5.3 DPT object type for Vanes Up-Down

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

**⚠ Important:** The communication objects shown in this section may be different depending on the number of vanes position available, although they all share the same communication object number.

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

- 18 *Control\_ Vanes U-D / 5 Pos [DPT\_5.010 - 1byte]* - Position values: 1,2,3,4,5
- 73 *Status\_ Vanes U-D / 5 Pos [DPT\_5.010 - 1byte]* - Position values: 1,2,3,4,5

To choose a vanes position, values from **“1”** to **“7”** can be sent to the *Control\_* object. Each value will correspond to the position (i.e. Value **“3”** = Position 3).

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

**⚠ Important:** If a **“0”** value is sent to the *Control\_* object, the Position 1 will be selected. If a value bigger than **“7”** is sent to the *Control\_* object, then the higher Position will be selected.

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

- 18 *Control\_ Vanes U-D / 5 Pos [DPT\_5.001 - 1byte]* - Thresholds: 30, 50, 70 and 90%
- 73 *Status\_ Vanes U-D / 5 Pos [DPT\_5.001 - 1byte]* - 20%, 40%, 60%, 80% and 100%

The next table shows the range of values that can be sent through the *Control\_* object and the value returned by the *Status\_* object.

|                 | Vanes Pos.1 | Vanes Pos.2 | Vanes Pos.3 | Vanes Pos.4 | Vanes Pos.5 | Vanes Pos.6 | Vanes Pos.7 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Control_</i> | 0% - 29%    | 30% - 49%   | 50% - 69%   | 70% - 89%   | 90% - 100%  |             |             |
| <i>Status_</i>  | 20%         | 40%         | 60%         | 80%         | 100%        |             |             |
| <i>Control_</i> | 0% - 24%    | 25% - 41%   | 42% - 58%   | 59% - 74%   | 75% - 91%   | 92% - 100%  |             |
| <i>Status_</i>  | 16%         | 33%         | 50%         | 67%         | 83%         | 100%        |             |
| <i>Control_</i> | 0% - 20%    | 21% - 35%   | 36% - 49%   | 50% - 64%   | 65% - 78%   | 79% - 92%   | 93% - 100%  |
| <i>Status_</i>  | 14%         | 28%         | 43%         | 57%         | 71%         | 85%         | 100%        |

#### 4.5.4 Enable use of +/- object for Vanes U-D

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

■ 27 Control\_ Vanes U-D -/+ [DPT\_1.007 - 1bit] - 0-Decrease;1-Increase

- If set to **"no"** the object will not be shown.
- If set to **"yes"** the *Control\_ Vanes U-D -/+* object and a new parameter will appear.

Figure 4.20 Parameter detail

➤ DPT type for +/- Vanes U-D object

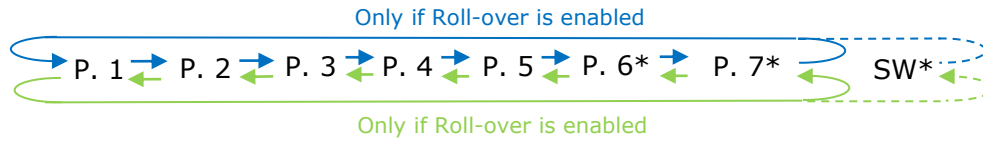
This parameter lets choose between the datapoints **0-Up / 1-Down [DPT\_1.008]** and **0-Decrease / 1-Increase [DPT\_1.007]** for the *Control\_ Vanes U-D -/+* object.

➤ Does +/- sequence include SWING vanes Up-Down?

This parameter lets choose if SWING function is included (**"yes"**) or not (**"no"**) in the sequence when using *Control\_ Vanes U-D -/+* object as shown in the discontinuous segment at the picture below.

➤ Roll over Vanes at upper/lower limit

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



- Up / Increase
- Down / Decrease
- \* If Available

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

This parameter shows/hides the bit-type *Control\_Vanes U-D* objects.

- 19 Control\_Vanes U-D Pos 1 [DPT\_1.002 - 1bit] - 1-Set Position 1
- 20 Control\_Vanes U-D Pos 2 [DPT\_1.002 - 1bit] - 1-Set Position 2
- 21 Control\_Vanes U-D Pos 3 [DPT\_1.002 - 1bit] - 1-Set Position 3
- 22 Control\_Vanes U-D Pos 4 [DPT\_1.002 - 1bit] - 1-Set Position 4
- 23 Control\_Vanes U-D Pos 5 [DPT\_1.002 - 1bit] - 1-Set Position 5
- 24 Control\_Vanes U-D Pos 6 [DPT\_1.002 - 1bit] - 1-Set Position 6
- 25 Control\_Vanes U-D Pos 7 [DPT\_1.002 - 1bit] - 1-Set Position 7

- If set to “**no**” the objects will not be shown.
- If set to “**yes**” the *Control\_Vanes U-D* objects for each Position will appear. To activate a Vanes Position by using these objects, a “**1**” value has to be sent.

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

This parameter shows/hides the bit-type *Status\_Vanes U-D* objects.

- 74 Status\_Vanes U-D Pos 1 [DPT\_1.002 - 1bit] - 1-Vanes in Position 1
- 75 Status\_Vanes U-D Pos 2 [DPT\_1.002 - 1bit] - 1-Vanes in Position 2
- 76 Status\_Vanes U-D Pos 3 [DPT\_1.002 - 1bit] - 1-Vanes in Position 3
- 77 Status\_Vanes U-D Pos 4 [DPT\_1.002 - 1bit] - 1-Vanes in Position 4
- 78 Status\_Vanes U-D Pos 5 [DPT\_1.002 - 1bit] - 1-Vanes in Position 5
- 79 Status\_Vanes U-D Pos 6 [DPT\_1.002 - 1bit] - 1-Vanes in Position 6
- 80 Status\_Vanes U-D Pos 7 [DPT\_1.002 - 1bit] - 1-Vanes in Position 7

- If set to “**no**” the objects will not be shown.
- If set to “**yes**” the *Status\_Vanes U-D* objects for each Position will appear. When a Vanes Position is enabled, a “**1**” value is returned through its bit-type object.

#### 4.5.7 Enable “Vanes U-D Swing” objects (for Control and Status)

This parameter shows/hides the *Control\_ Vanes U-D Swing* and *Status\_ Vanes U-D Swing* communication objects.

- 26 Control\_ Vanes U-D Swing [DPT\_1.002 - 1bit] - 0-Off;1-Swing
- 81 Status\_ Vanes U-D Swing [DPT\_1.002 - 1bit] - 0-Off;1-Swing

- If set to **“no”** the objects will not be shown.
- If set to **“yes”** the *Control\_ Vanes U-D Swing* and *Status\_ Vanes U-D Swing* objects will appear.
  - When a **“1”** value is sent to the *Control\_* communication object, Vanes Up-Down will be in Swing mode, and the *Status\_* object will return this value.
  - When a **“0”** value is sent to the *Control\_* communication object, Vanes Up-Down will stop Swing mode. The *Status\_* object will return this value.

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

This parameter shows/hides the *Status\_ Vanes U-D Text* communication object.

- 82 Status\_ Vanes U-D Text [DPT\_16.001 - 14byte] - ASCII String

- If set to **“no”** the object will not be shown.
- If set to **“yes”** the *Status\_ Vanes U-D Text* object will appear. Also, in the parameters will be shown five text fields, four for the Vane Position and one for the Swing function that will let modify the text string displayed by the *Status\_ Vanes U-D Text* when changing a vane position.

|                                  |           |
|----------------------------------|-----------|
| > String when vanes U-D in POS 1 | U-D POS 1 |
| > String when vanes U-D in POS 2 | U-D POS 2 |
| > String when vanes U-D in POS 3 | U-D POS 3 |
| > String when vanes U-D in POS 4 | U-D POS 4 |
| > String when vanes U-D in POS 5 | U-D POS 5 |
| > String when vanes U-D in POS 6 | U-D POS 6 |
| > String when vanes U-D in POS 7 | U-D POS 7 |
| > String when vanes U-D in SWING | U-D SWING |

**Figure 4.21** Parameter detail

## 4.6 Temperature Configuration dialog

**Figure 4.22** Default Temperature Configuration dialog

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

#### 4.6.1 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 4.23** 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 “4.6.5 Ambient temp. ref. is provided from KNX”.*

#### 4.6.2 Transmission of “Status\_ AC Reference Temp”

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

**Figure 4.24** Parameter detail

- “Status\_ AC Reference Temp” periodic sending time (in sec)

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

#### 4.6.3 Enable use of +/- object for Setpoint Temp

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

■ 29 Control\_ Setpoint Temp -/+ [DPT\_1.007 - 1bit] - 0-Decrease;1-Increase





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

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

Figure 4.25 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) **20°C**  21°C  ...  29°C  **30°C** (Upper limit)

- Up / Increase
- Down / Decrease

#### 4.6.4 Enable limits on Control\_ Setpoint obj

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

|  |         |
|--|---------|
| Enable limits on Control_ Setpoint obj | Yes     |
| > Lower limit (°C)                     | 19.0 °C |
| > Upper limit (°C)                     | 28.0 °C |

Figure 4.26 Parameter detail

- If set to **“no”** the setpoint temperature limits for the *Control\_ Setpoint Temperature* object will be the default: 18°C for the lower limit and 30°C for the upper limit.
- If set to **“yes”** it is possible to define temperature limits for the *Control\_ Setpoint Temperature* object.

##### ➤ Lower limit (°C)



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

➤ Upper limit (°C)

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

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

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

#### 4.6.5 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] - (°C)`

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

$$\text{"AC Setp. Temp"} = \text{"AC Ret. Temp"} - (\text{"KNX Amb. Temp."} - \text{"KNX Setp. Temp"})$$

- AC Setp. Temp: AC indoor unit setpoint temperature
- AC Ret. Temp: AC indoor unit return 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: **19°C** ("KNX Setp. Temp.")

User sensor (a KNX sensor) reads: **21°C** ("KNX Amb Temp.")

Ambient temp. read by HISENSE system is: **24°C** ("AC Ret. Temp")

In this example, the final setpoint temperature that INKNXHIS001R000 will send out to the indoor unit (shown in "Setp. Temp.") will become  $24^{\circ}\text{C} - (21^{\circ}\text{C} - 19^{\circ}\text{C}) = \mathbf{22^{\circ}\text{C}}$ . This is the setpoint that will actually be requested to HISENSE 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).

## 4.7 Scene Configuration dialog

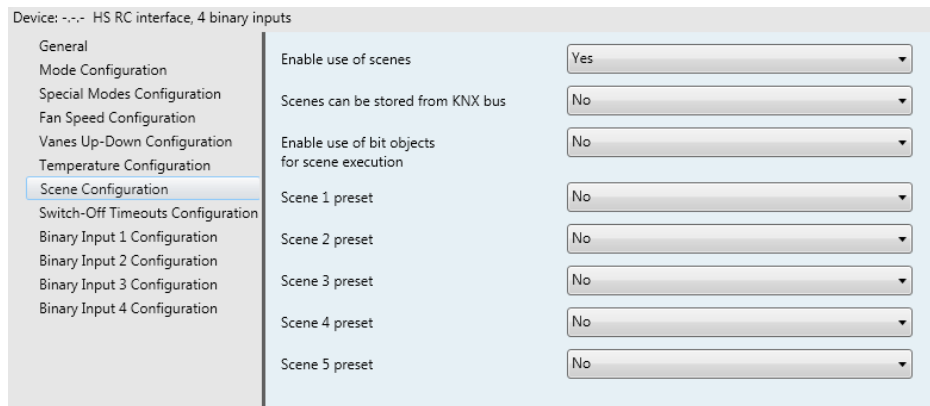


Figure 4.27 Parameter detail

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.

### 4.7.1 Enable use of scenes

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

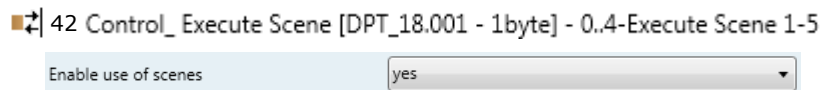
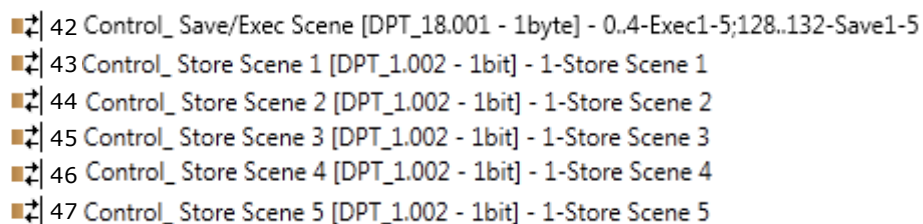


Figure 4.28 Parameter detail

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

### 4.7.2 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.



- If set to **"no"** the communication objects will not be shown.
- If set to **"yes"** the communication objects and a new parameter will appear. To store a scene through the byte-type object, a value from **"128"** to **"132"** has to be sent to the

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

Scenes can be stored from KNX bus

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

Figure 4.29 Parameter detail

➤ 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).

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

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

- 48 Control\_ Execute Scene 1 [DPT\_1.002 - 1bit] - 1-Execute Scene 1
- 49 Control\_ Execute Scene 2 [DPT\_1.002 - 1bit] - 1-Execute Scene 2
- 50 Control\_ Execute Scene 3 [DPT\_1.002 - 1bit] - 1-Execute Scene 3
- 51 Control\_ Execute Scene 4 [DPT\_1.002 - 1bit] - 1-Execute Scene 4
- 52 Control\_ Execute Scene 5 [DPT\_1.002 - 1bit] - 1-Execute Scene 5

Enable use of bit objects for scene execution

Figure 4.30 Parameter detail

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

### 4.7.4 Scene "x" preset

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

Scene 1 preset

Figure 4.31 Parameter detail

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

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

|  |                            |
|--|----------------------------|
| > Scene 1 / Value for On-Off                   | ON                         |
| > Scene 1 / Value for Mode                     | COOL                       |
| > Scene 1 / Value for Fan Speed                | FAN SPEED 2 (if available) |
| > Scene 1 / Value for Vanes U-D (if available) | VANES U-D SWING            |
| > Scene 1 / Value for Setpoint Temp            | 22.0 °C                    |
| > Scene 1 / Value for Remote Lock              | (unchanged)                |

Figure 4.32 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 (if available)"**, **"HEAT"**, **"COOL"**, **"FAN"**, **"DRY"**, or **"(unchanged)"**.

➤ Scene "x" / Value for Fan Speed (if available)

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

➤ Scene "x" / Value for Vanes 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 POS 1"**, **"VANES U-D POS 2"**, **"VANES U-D POS 3"**, **"VANES U-D POS 4"**, **"VANES U-D SWING"** or **"(unchanged)"**.

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

This parameter lets choose the setpoint temperature of the indoor unit when the scene is executed. The following options are available: from **"18°C"** to **"30°C"** (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)"**.

- ⚠ **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.

## 4.8 Switch-Off Timeouts Configuration dialog

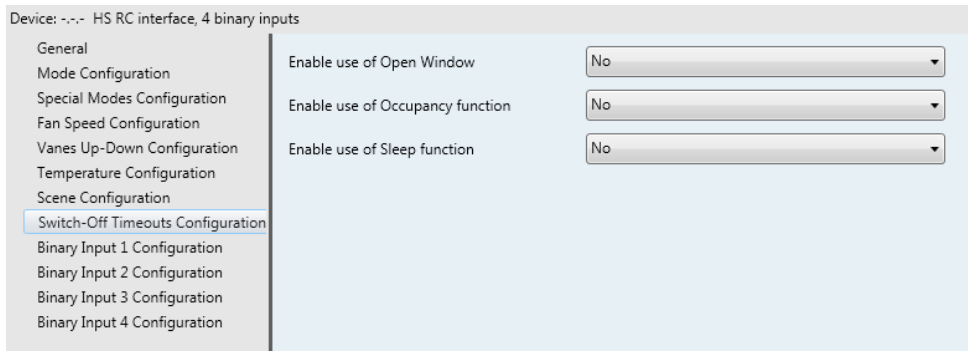


Figure 4.33 Default Switch-Off Timeouts Configuration dialog

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

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

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

➡ 33 Control\_ Window Contact Status [DPT\_1.009 - 1bit] - 0-Open;1-Closed

- If set to **"no"** the object will not be shown.
- If set to **"yes"** the *Control\_ Window Contact Status* 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.

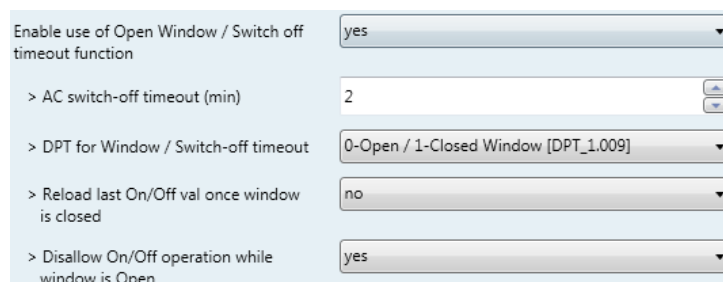


Figure 4.34 Parameter detail

➤ 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

This parameter lets choose between the datapoints **0-Open / 1-Closed Window [DPT\_1.009]** and **0-Closed / 1-Open Window [DPT\_1.019]**.

➤ 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 value 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.

#### 4.8.2 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.

➤ 34 *Control\_ Occupancy* [DPT\_1.018 - 1bit] - 0-Not Occupied;1-Occupied

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

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

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 timeout has elapsed, the indoor unit will be turned off.

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

|  |       |
|--|-------|
| > Temp delta decrease (HEAT) or increase (COOL) (°C) | 2.0°C |
| > Enable secondary timeout                           | yes   |

Figure 4.36 Parameter detail

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

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

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

➤ 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.

|  |                    |
|--|--------------------|
| > Timeout to apply action (min)              | 2                  |
| > Action after timeout elapsed               | Apply Preset Delta |
| > Temp delta dec (HEAT) / or inc (COOL) (°C) | 2.0°C              |

Figure 4.37 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”). This time is considered as a part of the occupancy.

➤ Action after timeout elapsed

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

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

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

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

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

➤ Disallow On/Off operation while not Occupied

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

If set to “**yes**”, once **Switch-Off** action has been executed, On/Off commands will be saved (but not applied). These commands will be used in the next parameter if set to “**yes**”.

The screenshot shows two parameter settings in a light blue box. The first setting is '> Reload last On/Off value when Occupied' with a dropdown menu set to 'yes'. The second setting is '> Disallow On/Off operation while not Occupied' with a dropdown menu set to 'yes'.

Figure 4.38 Parameter detail

Consider that the countdown time (transitional time between occupancy and non-occupancy) is considered as a part of the occupancy status as explained before.

➤ 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.

### 4.8.3 Enable use of SLEEP timeout

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

➔ 35 Control\_ Sleep Timeout [DPT\_1,010 - 1bit] - 0-Stop;1-Start

- If set to "no" the object will not be shown.
- If set to "yes" the *Control\_ 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 timeout: yes

> Sleep function switch-off timeout (minutes): 1

Figure 4.39 Parameter detail

#### ➤ Sleep function switch-off timeout (minutes)

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

## 4.9 Binary Input "x" Configuration dialog

Device: -- HS RC interface, 4 binary inputs

General

Mode Configuration

Special Modes Configuration

Fan Speed Configuration

Vanes Up-Down Configuration

Temperature Configuration

Scene Configuration

Switch-Off Timeouts Configuration

Binary Input 1 Configuration

Binary Input 2 Configuration

Binary Input 3 Configuration

Binary Input 4 Configuration

Enable use of Input 1: Yes

> Contact type: NO: Normally Open

> Debounce time: 50 ms

> Disabling function: No

> 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 4.40 Binary Input Configuration dialog

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

### 4.9.1 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.

- ↕ 99 Status\_In1 - Switching [DPT\_1.001 - 1bit] - 0-Off;1-On
- ↕ 101 Status\_In2 - Switching [DPT\_1.001 - 1bit] - 0-Off;1-On
- ↕ 103 Status\_In3 - Switching [DPT\_1.001 - 1bit] - 0-Off;1-On
- ↕ 105 Status\_In4 - Switching [DPT\_1.001 - 1bit] - 0-Off;1-On

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

### 4.9.2 Contact type

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

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

### 4.9.3 Debounce time

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

### 4.9.4 Disabling function

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

- ↕ 53 Control\_Disable Input 1 [DPT\_1.003 - 1bit] - 0-Disable;1-Enable;
- ↕ 53 Control\_Disable Input 1 [DPT\_1.002 - 1bit] - 0-False;1-True

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

### 4.9.5 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).

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

99 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)   | Toggle (On/Off) |
| > Value on falling edge (contact deactivated) | No action       |
| > Cyclical sending                            | Never           |

Figure 4.41 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 **“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 4.42 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.



**Figure 4.43** Parameter detail

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

- ↕ 101 Status\_In2 - Dimming - On/Off [DPT\_1.001 - 1bit] - 0-Off;1-On
- ↕ 102 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 4.44 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 **“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 4.45 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.

➤ 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:

- For the short operation the binary input will send a "1" value after a "0" value and viceversa.
  - 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.
- When "Shutter/Blind" is selected the communication objects and new parameters for the Input "x" will appear as shown below.

➤ 103 Status\_In3 - Shut/Blind - Step [DPT\_1.023 - 1bit] - 0-Step Up;1-Step Down

➤ 104 Status\_In3 - Shut/Blind - Move [DPT\_1.023 - 1bit] - 0-Move Up;1-Move Down

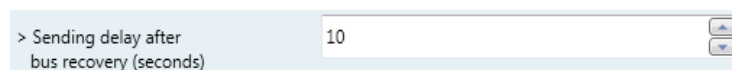
|                                       |                  |
|---------------------------------------|------------------|
| > Function                            | Shutter/Blind    |
| > Send telegram after bus recovery    | No action        |
| > Operation                           | Toggle (Up/Down) |
| > Method                              | Step-Move-Step   |
| > Short/long operation limit (x100ms) | 10               |
| > Vanes adjustment time (x100ms)      | 10               |

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 **"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. The **T2** time has to be defined in the "Vanes adjustment time (x100ms)" parameter too.

➤ 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).

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

■ 106 Status\_In4 - Value [DPT\_5.010 - 1byte] - 1-byte unsigned value

|  |                   |
|--|-------------------|
| > Function                                       | Value             |
| > Send telegram after bus recovery               | Fixed value       |
| > Sending delay after bus recovery (seconds)     | 10                |
| > DPT to be sent                                 | DPT 5.010 (1byte) |
| > Value on raising edge (when contact activated) | 234               |

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).

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

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.

➤ 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 4.48** 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).

- 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).

**Figure 4.49** 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.

- 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.

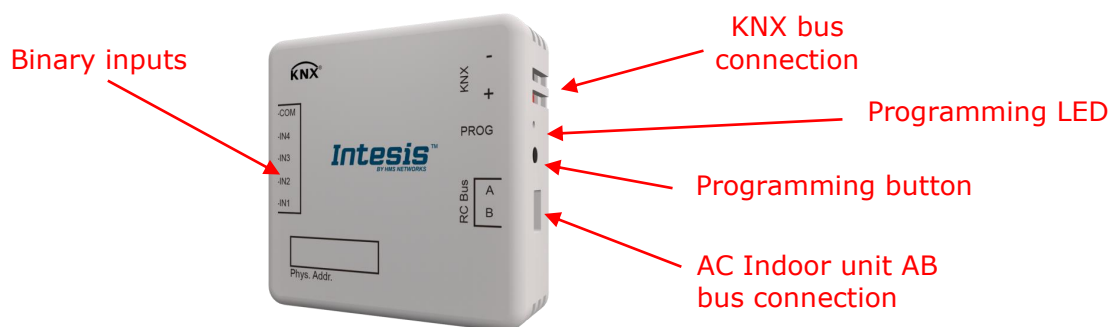
**Figure 4.50** Parameter detail

- 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.

**Figure 4.51** Parameter detail

## 5. Specifications

|                              |  |
|------------------------------|--|
| <b>Envelope</b>              | ABS (UL 94 HB). 2,5 mm thickness   |
| <b>Dimensions</b>            | 70 X 70 X 28 mm  |
| <b>Weight</b>                | 70g  |
| <b>Colour</b>                | Ivory white  |
| <b>Power supply</b>          | 29V DC, 7mA<br>Supplied through KNX bus.   |
| <b>HISENSE AB Bus</b>        | Voltage: 13-18V<br>Current: 80mA   |
| <b>LED indicators</b>        | 1 x KNX programming.   |
| <b>Push buttons</b>          | 1 x KNX programming.   |
| <b>Binary inputs</b>         | 4 x Potential-free binary inputs.<br>Signal cable length: 5m unshielded, 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 |
| <b>Configuration</b>         | Configuration with ETS.  |
| <b>Operating Temperature</b> | From -25°C to 60°C   |
| <b>Storage Temperature</b>   | From -40°C to 85°C   |
| <b>Isolation Voltage</b>     | 2500V  |
| <b>RoHS conformity</b>       | Compliant with RoHS directive (2002/95/CE).  |



## 6. AC Unit Types compatibility.

A list of Hisense indoor unit models compatible with INKNXHIS001R000 can be found in:

[https://www.intesis.com/docs/compatibilities/inxxxhis001r000\\_compatibility](https://www.intesis.com/docs/compatibilities/inxxxhis001r000_compatibility)

## 7. Error Codes

| Error Code KNX | Error in Remote Controller | Error category         | Error Description   |
|----------------|----------------------------|------------------------|---|
| 0              | N/A                        | INKNXHIS001R000        | No active error   |
| 01             | 01                         | Indoor Unit            | Tripping of Protection Device   |
| 02             | 02                         | Outdoor Unit           | Tripping of Protection Device   |
| 03             | 03                         | Transmission           | Abnormality between Indoor and Outdoor  |
| 04             | 04                         | Inverter               | Abnormality between Inverter and Control PCB  |
| 04             | 04.                        |                        |   |
| 05             | 05                         | Transmission           | Abnormality of Power Source Wiring  |
| 06             | 06                         | Voltage drop           | Fan motor locked, overload, over current  |
| 06             | 06.                        |                        | Swing flap motor error  |
| 07             | 07                         | Cycle                  | Overcurrent of AC input   |
| 08             | 08                         |                        | Electronic expansion valve drive error  |
| 09             | 09                         | Outdoor Unit           | Heater overheat   |
| 17             | 11                         | Sensor on Indoor Unit  | Dust collector error / No-maintenance filter error                                      |
| 18             | 12                         |                        | Capacity setting error (indoor)   |
| 19             | 13                         |                        | Shortage of water supply  |
| 20             | 14                         |                        | Malfunctions of a humidifier system (water leaking)                                     |
| 25             | 19                         |                        | Malfunctions in a sensor system   |
| 33             | 21                         | Sensor on Outdoor Unit | Sensor system of drain water error  |
| 34             | 22                         |                        | Heat exchanger (1) (Liquid pipe) thermistor system error                                |
| 35             | 23                         |                        | Heat exchanger (1) (Gas pipe) thermistor system error                                   |
| 36             | 24                         |                        | Sensor system error of fan motor locked, overload                                       |
| 41             | 29                         |                        | Sensor system of swing flap motor error   |
| 48             | 30                         |                        | Sensor system of over-current of AC input   |
| 49             | 31                         |                        | Suction air thermistor error  |
| 50             | 32                         |                        | Discharge air thermistor system error   |
| 53             | 35                         |                        | Contamination sensor error  |
| 54             | 36                         |                        | Humidity sensor error   |
| 56             | 38                         |                        | Remote control thermistor error   |
| 57             | 39                         | Radiation sensor error |   |
| 67             | 43                         | Pressure               | High pressure switch sensor   |
| 68             | 44                         |                        | Protection devices activated  |
| 69             | 45                         |                        | Outdoor unit PCB assembly failure   |
| 70             | 46                         |                        | High pressure switch (HPS) activated  |
| 71             | 47                         |                        | Low pressure switch (LPS) activated   |
| 81             | 51                         | Inverter               | Overload of inverter compressor motor   |
| 82             | 52                         |                        | Over current of STD compressor motor  |
| 83             | 53                         |                        | Overload of fan motor / Over current of fan motor                                       |
| 84             | 54                         |                        | Over current of AC input  |
| 86             | 56                         | Outdoor Fan            | Electronic expansion valve drive error  |
| 87             | 57                         |                        | Four-way valve error  |
| 88             | 58                         |                        | Pump motor over current   |
| 176            | b0                         | IU model setting       | Incorrect setting address or refrigerant cycle  |
| 177            | b1                         | Number setting         | Incorrect setting address or refrigerant cycle  |
| 181            | b5                         |                        | Incorrect setting of indoor unit number for H-LINK type                                 |
| 238            | EE                         | Inverter               | Water temperature abnormal  |
| 65535 (-1)     | N/A                        | INKNXHIS001R000        | Error in the communication of INKNXHIS001R000 or the Remote Controller with the AC unit |

In case you detect an error code not listed, contact your nearest Hisense 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 mode   |
|                               | 6             | Control_ Mode Heat            | 1 bit       | DPT_Bool          | 1.002  |       | W | T |  | 1 - Heat mode   |
|                               | 7             | Control_ Mode Cool            | 1 bit       | DPT_Bool          | 1.002  |       | W | T |  | 1 - Cool mode   |
|                               | 8             | Control_ Mode Fan             | 1 bit       | DPT_Bool          | 1.002  |       | W | T |  | 1 - Fan mode  |
|                               | 9             | Control_ Mode Dry             | 1 bit       | DPT_Bool          | 1.002  |       | W | T |  | 1 - Dry mode  |
|                               | 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  |
|                               | 11            | Control_ Fan Speed / 3 Speeds | 1 byte      | DPT_Scaling       | 5.001  |       | W | T |  | 0%-49% - Speed 1; 50%-82% - Speed 2; 83%-100% - Speed 3 |
|                               |               | Control_ Fan Speed / 3 Speeds | 1 byte      | DPT_Enumerated    | 5.010  |       | W | T |  | 1 - Speed 1; 2 - Speed 2; 3 Speed 3                     |
| Control_ Fan Speed / 4 Speeds |               | 1 byte                        | DPT_Scaling | 5.001             |        | W     | T |   | 0%-37% - Speed 1; 38%-62% - Speed 2; 63%-87% - Speed 3; 88%-100% - Speed 4 |   |

|                          |           |                               |            |                |       |   |                  |  |
|--------------------------|-----------|-------------------------------|------------|----------------|-------|---|------------------|--|
|                          |           | Control_ Fan Speed / 4 Speeds | 1 byte     | DPT_Enumerated | 5.010 | W | T                | 1 - Speed 1; 2 - Speed 2; 3 Speed 3;<br>4 - Speed 4  |
|                          | <b>12</b> | Control_ Fan Speed Man/Auto   | 1 bit      | DPT_Bool       | 1.002 | W | T                | 0 - Manual; 1 - Auto   |
|                          | <b>13</b> | Control_ Fan Speed 1          | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Fan Speed 1  |
|                          | <b>14</b> | Control_ Fan Speed 2          | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Fan Speed 2  |
|                          | <b>15</b> | Control_ Fan Speed 3          | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Fan Speed 3  |
|                          | <b>16</b> | Control_ Fan Speed 4          | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Fan Speed 4  |
|                          | <b>17</b> | 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 |  |
| <b>Vanes<br/>Up-Down</b> | <b>18</b> | Control_ Vanes U-D / 5 pos    | 1 byte     | DPT_Scaling    | 5.001 | W | T                | 0%-29% - Pos1; 30%-49% - Pos2; 50%-69%<br>Pos3; 70%-89% - Pos4; 90%-100% - Pos5                                    |
|                          |           | Control_ Vanes U-D / 5 pos    | 1 byte     | DPT_Enumerated | 5.010 | W | T                | 1 - Pos1; 2 - Pos2; 3 - Pos3;<br>4 - Pos4; 5 - Pos5  |
|                          |           | Control_ Vanes U-D / 6 pos    | 1 byte     | DPT_Scaling    | 5.001 | W | T                | 0%-24% - Pos1; 25%-41% - Pos2; 42%-58%<br>Pos3; 59%-74% - Pos4; 75%-91% - Pos5;<br>92%-100% - Pos6                 |
|                          |           | Control_ Vanes U-D / 6 pos    | 1 byte     | DPT_Enumerated | 5.010 | W | T                | 1 - Pos1; 2 - Pos2; 3 - Pos3;<br>4 - Pos4; 5 - Pos5; 6 - Pos6  |
|                          |           | Control_ Vanes U-D / 7 pos    | 1 byte     | DPT_Scaling    | 5.001 | W | T                | 0%-20% - Pos1; 21%-35% - Pos2; 36%-49%<br>Pos3; 50%-64% - Pos4; 65%-78% - Pos5;<br>79%-92% - Pos6; 93%-100% - Pos7 |
|                          |           | Control_ Vanes U-D / 7 pos    | 1 byte     | DPT_Enumerated | 5.010 | W | T                | 1 - Pos1; 2 - Pos2; 3 - Pos3;<br>4 - Pos4; 5 - Pos5; 6 - Pos6<br>7 - Pos7  |
|                          | <b>19</b> | Control_ Vanes U-D Pos1       | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Position 1   |
|                          | <b>20</b> | Control_ Vanes U-D Pos2       | 1 bit      | DPT_Bool       | 1.002 | W | T                | 1 - Set Position 2   |

|                        |                              |                                |                |                |       |   |                     |                                |
|------------------------|------------------------------|--------------------------------|----------------|----------------|-------|---|---------------------|--------------------------------|
|                        | 21                           | Control_ Vanes U-D Pos3        | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 1 – Set Position 3             |
|                        | 22                           | Control_ Vanes U-D Pos4        | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 1 – Set Position 4             |
|                        | 23                           | Control_ Vanes U-D Pos5        | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 1 – Set Position 5             |
|                        | 24                           | Control_ Vanes U-D Pos6        | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 1 – Set Position 6             |
|                        | 25                           | Control_ Vanes U-D Pos7        | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 1 – Set Position 7             |
|                        | 26                           | Control_ Vanes U-D Swing       | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 0 – Off; 1 – Swing             |
|                        | 27                           | Control_ Vanes U-D -/+         | 1 bit          | DPT_Step       | 1.007 | W |                     | 0 - Decrease; 1 - Increase     |
| Control_ Vanes U-D -/+ |                              | 1 bit                          | DPT_UpDown     | 1.008          | W     |   | 0 - Up; 1 - Down    |                                |
| Temperature            | 28                           | Control_ Setpoint Temperature  | 2 byte         | DPT_Value_Temp | 9.001 | W | T                   | (°C)                           |
|                        | 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 | (°C)                |                                |
| Reset                  | 31                           | Control_ Reset Filter          | 1 bit          | DPT_Reset      | 1.015 | W | T                   | 1 – Reset filter               |
|                        | 32                           | Control_ Reset Error           | 1 bit          | DPT_Reset      | 1.015 | W | T                   | 1 – Reset error                |
| Timeout                | 33                           | Control_ Window Contact Status | 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            |
|                        | 34                           | Control_ Occupancy             | 1 bit          | DPT_Occupancy  | 1.018 | W | T                   | 0 - Not Occupied; 1 - Occupied |
| 35                     | Control_ Sleep Timeout       | 1 bit                          | DPT_Start      | 1.010          | W     | T | 0 - Stop; 1 - Start |                                |
| Locking                | 36                           | Control_ Lock Remote Control   | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 0 - Unlocked; 1 - Locked       |
|                        | 37                           | Control_ Lock Control Objects  | 1 bit          | DPT_Bool       | 1.002 | W | T                   | 0 - Unlocked; 1 - Locked       |
| Special Modes          | 38                           | Control_ Power Mode            | 1 bit          | DPT_Start      | 1.010 | W | T                   | 0 - Stop; 1 - Start            |
|                        | 39                           | Control_ Econo Mode            | 1 bit          | DPT_Start      | 1.010 | W | T                   | 0 - Stop; 1 - Start            |

|                  |           |                          |        |                  |        |  |   |   |   |
|------------------|-----------|--------------------------|--------|------------------|--------|--|---|---|---|
|                  | <b>40</b> | Control_ Additional Heat | 1 bit  | DPT_Start        | 1.010  |  | W | T | 0 - Stop; 1 - Start   |
|                  | <b>41</b> | Control_ Additional Cool | 1 bit  | DPT_Start        | 1.010  |  | W | T | 0 - Stop; 1 - Start   |
| <b>Scenes</b>    | <b>42</b> | Control_ Save/Exec Scene | 1 byte | DPT_SceneControl | 18.001 |  | W | T | 0 to 4 – Control_Exec Scene 1 to 5;<br>128 to 132 – Control_Save Scene 1 to 5 |
|                  | <b>43</b> | Control_ Store Scene1    | 1 bit  | DPT_Bool         | 1.002  |  | W |   | 1 - Store Scene 1   |
|                  | <b>44</b> | Control_ Store Scene2    | 1 bit  | DPT_Bool         | 1.002  |  | W |   | 1 - Store Scene 2   |
|                  | <b>45</b> | Control_ Store Scene3    | 1 bit  | DPT_Bool         | 1.002  |  | W |   | 1 - Store Scene 3   |
|                  | <b>46</b> | Control_ Store Scene4    | 1 bit  | DPT_Bool         | 1.002  |  | W |   | 1 - Store Scene 4   |
|                  | <b>47</b> | Control_ Store Scene5    | 1 bit  | DPT_Bool         | 1.002  |  | W |   | 1 - Store Scene 5   |
|                  | <b>48</b> | Control_ Execute Scene1  | 1 bit  | DPT_Bool         | 1.002  |  | W | T | 1 - Execute Scene 1   |
|                  | <b>49</b> | Control_ Execute Scene2  | 1 bit  | DPT_Bool         | 1.002  |  | W | T | 1 - Execute Scene 2   |
|                  | <b>50</b> | Control_ Execute Scene3  | 1 bit  | DPT_Bool         | 1.002  |  | W | T | 1 - Execute Scene 3   |
|                  | <b>51</b> | Control_ Execute Scene4  | 1 bit  | DPT_Bool         | 1.002  |  | W | T | 1 - Execute Scene 4   |
|                  | <b>52</b> | Control_ Execute Scene5  | 1 bit  | DPT_Bool         | 1.002  |  | W | T | 1 - Execute Scene 5   |
| <b>Disabling</b> | <b>53</b> | 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   |
|                  | <b>54</b> | 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   |
|                  | <b>55</b> | 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   |
|                  | <b>56</b> | 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   |



|                   |           |                              |         |                   |        |   |  |   |   |
|-------------------|-----------|------------------------------|---------|-------------------|--------|---|--|---|---|
| <b>On/Off</b>     | <b>57</b> | Status_ On/Off               | 1 bit   | DPT_Switch        | 1.001  | R |  | T | 0 - Off; 1-On   |
| <b>Mode</b>       | <b>58</b> | Status_ Mode                 | 1 byte  | DPT_HVACContrMode | 20.105 | R |  | T | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry             |
|                   | <b>59</b> | Status_ Mode Cool/Heat       | 1 bit   | DPT_Heat/Cool     | 1.100  | R |  | T | 0 - Cool; 1 - Heat  |
|                   | <b>60</b> | Status_ Mode Auto            | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Auto mode is active                                     |
|                   | <b>61</b> | Status_ Mode Heat            | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Heat mode is active                                     |
|                   | <b>62</b> | Status_ Mode Cool            | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Cool mode is active                                     |
|                   | <b>63</b> | Status_ Mode Fan             | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan mode is active                                      |
|                   | <b>64</b> | Status_ Mode Dry             | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Dry mode is active                                      |
|                   | <b>65</b> | Status_ Mode Text            | 14 byte | DPT_String_8859_1 | 16.001 | R |  | T | ASCII String  |
| <b>Fan Speeds</b> | <b>66</b> | Status_ Fan Speed / 3 Speeds | 1 byte  | DPT_Scaling       | 5.001  | R |  | T | 33% - Speed 1; 67% - Speed 2; 100% - Speed 3                |
|                   |           | Status_ Fan Speed / 3 Speeds | 1 byte  | DPT_Enumerated    | 5.010  | R |  | T | 1 - Speed 1; 2 - Speed 2; 3 Speed 3                         |
|                   |           | Status_ Fan Speed / 4 Speeds | 1 byte  | DPT_Scaling       | 5.001  | R |  | T | 25% - Speed 1; 50% - Speed 2; 75% - Speed 3; 100% - Speed 4 |
|                   |           | Status_ Fan Speed / 4 Speeds | 1 byte  | DPT_Enumerated    | 5.010  | R |  | T | 1 - Speed 1; 2 - Speed 2; 3 Speed 3; 4 - Speed 4            |
|                   | <b>67</b> | Status_ Fan Speed Man/Auto   | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 0 - Manual; 1 - Auto  |
|                   | <b>68</b> | Status_ Fan Speed 1          | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan is in speed 1                                       |
|                   | <b>69</b> | Status_ Fan Speed 2          | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan is in speed 2                                       |
|                   | <b>70</b> | Status_ Fan Speed 3          | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan is in Speed 3                                       |
|                   | <b>71</b> | Status_ Fan Speed 4          | 1 bit   | DPT_Bool          | 1.002  | R |  | T | 1 - Fan is in Speed 4                                       |
|                   | <b>72</b> | Status_ Fan Speed Text       | 14 byte | DPT_String_8859_1 | 16.001 | R |  | T | ASCII String  |

|               |                         |                           |                   |                |       |   |   |                    |  |
|---------------|-------------------------|---------------------------|-------------------|----------------|-------|---|---|--------------------|--|
| Vanes Up-Down | 73                      | Status_ Vanes U-D / 5 pos | 1 byte            | DPT_Scaling    | 5.001 | R |   | T                  | 20% - Pos1; 40% - Pos2; 60% - Pos3; 80% - Pos4; 100% - Pos4                          |
|               |                         | Status_ Vanes U-D / 5 pos | 1 byte            | DPT_Enumerated | 5.010 | R |   | T                  | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5                                     |
|               |                         | Status_ Vanes U-D / 6 pos | 1 byte            | DPT_Scaling    | 5.001 | R |   | T                  | 16% - Pos1; 33% - Pos2; 50% - Pos3; 67% - Pos4; 83% - Pos5; 100% - Pos6              |
|               |                         | Status_ Vanes U-D / 6 pos | 1 byte            | DPT_Enumerated | 5.010 | R |   | T                  | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5; 6 - Pos6                           |
|               |                         | Status_ Vanes U-D / 7 pos | 1 byte            | DPT_Scaling    | 5.001 | R |   | T                  | 14% - Pos1; 28% - Pos2; 43% - Pos3; 57% - Pos4; 71% - Pos5; 85% - Pos6; 100% - Pos7; |
|               |                         | Status_ Vanes U-D / 7 pos | 1 byte            | DPT_Enumerated | 5.010 | R |   | T                  | 1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5; 6 - Pos6; 7 - Pos7                 |
|               | 74                      | Status_ Vanes U-D Pos1    | 1 bit             | DPT_Bool       | 1.002 | R |   | T                  | 1 - Position 1   |
|               | 75                      | Status_ Vanes U-D Pos2    | 1 bit             | DPT_Bool       | 1.002 | R |   | T                  | 1 - Position 2   |
|               | 76                      | Status_ Vanes U-D Pos3    | 1 bit             | DPT_Bool       | 1.002 | R |   | T                  | 1 - Position 3   |
|               | 77                      | Status_ Vanes U-D Pos4    | 1 bit             | DPT_Bool       | 1.002 | R |   | T                  | 1 - Position 4   |
| 78            | Status_ Vanes U-D Pos5  | 1 bit                     | DPT_Bool          | 1.002          | R     |   | T | 1 - Position 5     |  |
| 79            | Status_ Vanes U-D Pos6  | 1 bit                     | DPT_Bool          | 1.002          | R     |   | T | 1 - Position 6     |  |
| 80            | Status_ Vanes U-D Pos7  | 1 bit                     | DPT_Bool          | 1.002          | R     |   | T | 1 - Position 7     |  |
| 81            | Status_ Vanes U-D Swing | 1 bit                     | DPT_Bool          | 1.002          | R     |   | T | 0 - Off; 1 - Swing |  |
| 82            | Status_ Vanes U-D Text  | 14 byte                   | DPT_String_8859_1 | 16.001         | R     |   | T | ASCII String       |  |
| Temperature   | 83                      | Status_ AC Setpoint Temp  | 2 byte            | DPT_Value_Temp | 9.001 | R |   | T                  | (°C)   |
|               | 84                      | Status_ AC Reference Temp | 2 byte            | DPT_Value_Temp | 9.001 | R |   | T                  | (°C)   |
| Filter        | 86                      | Status_ Filter Status     | 1 bit             | DPT_Bool       | 1.005 | R |   | T                  | 0 - No Alarm; 1 - Alarm  |

|                      |            |                                 |         |                      |        |   |  |   |   |
|----------------------|------------|---------------------------------|---------|----------------------|--------|---|--|---|---|
| <b>Error</b>         | <b>87</b>  | Status_ Error/Alarm             | 1 bit   | DTP_Alarm            | 1.005  | R |  | T | 0 - No Alarm; 1 - Alarm                   |
|                      | <b>88</b>  | Status_ Error Code              | 2 byte  | Enumerated           |        | R |  | T | 0 - No Error; Any other see user's manual |
|                      | <b>89</b>  | Status_ Error Text Code         | 14 byte | DPT_String_8859_1    | 16.001 | R |  | T | 3 char MH Error; Empty - none             |
| <b>Special Modes</b> | <b>92</b>  | Status_ Power Mode              | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1-On                             |
|                      | <b>93</b>  | Status_ Econo Mode              | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1-On                             |
|                      | <b>94</b>  | Status_ Additional Heat         | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1-On                             |
|                      | <b>95</b>  | Status_ Additional Cool         | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1-On                             |
| <b>Counter</b>       | <b>96</b>  | Status_ Operation Hour Counter  | 2 byte  | DPT_Value_2_Ucount   | 7.001  | R |  | T | Number of operating hours                 |
|                      | <b>97</b>  | Status_ Operation Sec Counter   | 2 byte  | DPT_LongDeltaTimeSec | 13.100 | R |  | T | Number of operating seconds               |
| <b>Scene</b>         | <b>98</b>  | Status_ Current Scene           | 1 byte  | DPT_SceneNumber      | 17.001 | R |  | T | 0 to 4 - Scene 1 to 5; 63 - No Scene      |
| <b>Binary Inputs</b> | <b>99</b>  | Status_ Inx - Switching         | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1-On                             |
|                      | <b>101</b> | Status_ Inx - Dimming - On/Off  | 1 bit   | DPT_Switch           | 1.001  | R |  | T | 0 - Off; 1 - On                           |
|                      | <b>103</b> | Status_ Inx - Shut/Blind - Step | 1 bit   | DPT_ShutterBlinds    | 1.023  | R |  | T | 0 - Step Up; 1 - Step Down                |
|                      | <b>100</b> | Status_ Inx - Value             | 1 byte  | DPT_Value_1_Ucount   | 5.010  | R |  | T | 1 byte unsigned value                     |
|                      |            | Status_ Inx - Value             | 2 byte  | DPT_Value_2_Ucount   | 7.001  | R |  | T | 2 byte unsigned value                     |
|                      | <b>102</b> | Status_ Inx - Value             | 2 byte  | DPT_Value_2_Count    | 8.001  | R |  | T | 2 byte signed value                       |
|                      | <b>104</b> | Status_ Inx - Value             | 2 byte  | DPT_Value_Temp       | 9.001  | R |  | T | Temperature (°C)                          |
|                      | <b>106</b> | Status_ Inx - Value             | 4 byte  | DPT_Value_4_Ucount   | 12.001 | R |  | T | 4 byte unsigned value                     |
|                      |            | Status_ Inx - Dimming - Step(%) | 4 bit   | DPT_Control_Dimm.    | 3.007  | R |  | T | Dimming step                              |
|                      |            | Status_ Inx - Shut/Blind -Move  | 1 bit   | DPT_ShutterBlinds    | 1.023  | R |  | T | 0 - Move Up; 1 - Move Down                |