Gateway for integration of Fujitsu General Limited air conditioners into KNX TP-1 (EIB) control systems

Application's Program Version: 1.2

USER MANUAL

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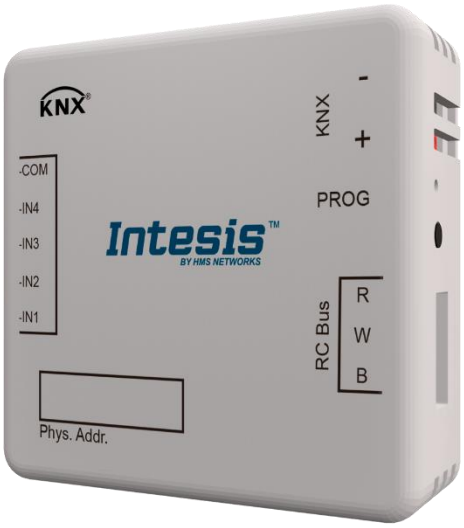

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Gateway for integration of Fujitsu General Limited air conditioners into KNX TP-1 (EIB) control systems.

Application's Program Version: 1.2

ORDER CODE	LEGACY ORDER CODE
INKNXFGL001R000	FJ-RC-KNX-1i

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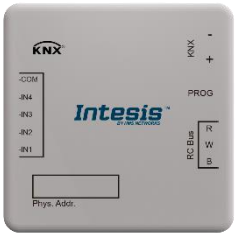
1 Presentation



INKNXFGL001R000 allows a complete and natural integration of Fujitsu General Limited (FGL from now on) air conditioners with KNX control systems.

Main features:

- Reduced dimensions and 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 wired remote controller of the AC unit[1] or 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.
- 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 binary inputs for potential-free contacts provide the possibility to integrate many types of external devices. Also configurable from ETS, they can be used for switching, dimming, shutter/blind control, and more.

[1] This feature requires a Fujitsu wired remote controller equipped with a thermo sensor.

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2 Connection

Connection of the INKNXFGL001R000 to the AC indoor unit

The INKNXFGL001R000 can be connected directly to the RWB (1:Red, 2:White, 3:Black) bus of the indoor unit (No FGL remote controller -RC from Now on- connected in the RWB bus) or with the FGL RC. See connection diagram below.

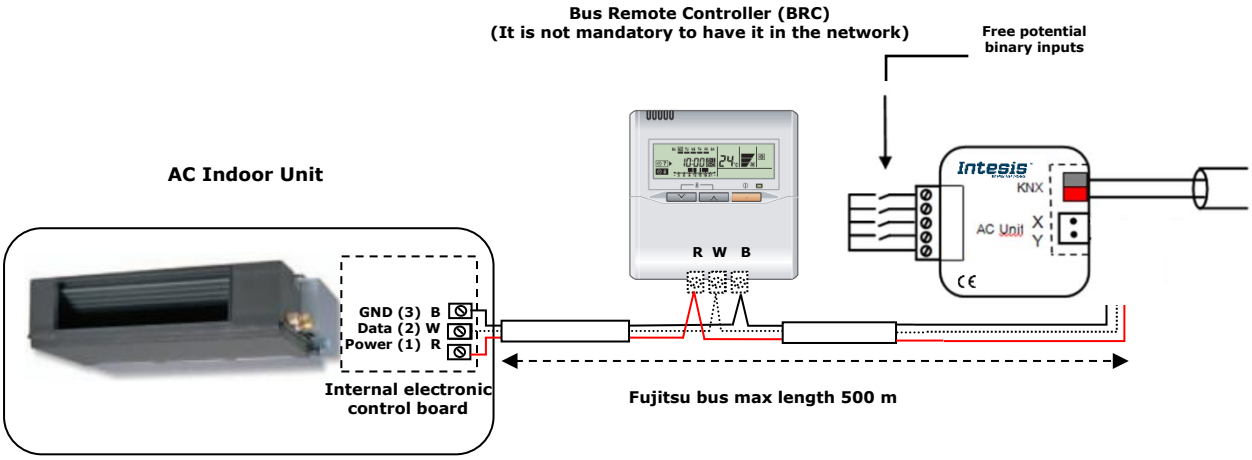

Figure 2.1 INKNXFGL001R000 connection diagrams

2.1 *INKNXFGL001R000 with FGL Remote Controller*

Connection of the INKNXFGL001R000 to the KNX bus:

Disconnect power of the KNX bus. Connect the INKNXFGL001R000 to the KNX TP-1 (EIB) bus using the KNX standard connector (red/grey) of the INKNXFGL001R000, respect polarity.

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

⚠ ***Important**: Please, connect first the Intesis on the KNX bus and then to the AC unit. Afterwards, power the AC unit and wait 30 seconds for the unit and the Intesis to start communicating properly.*

3 Configuration and setup

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

The ETS database for this device can be downloaded from the product page.

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 INKNXFGL001R000. This is in "Parameters" of the device in ETS.*

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4 ETS Parameters

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

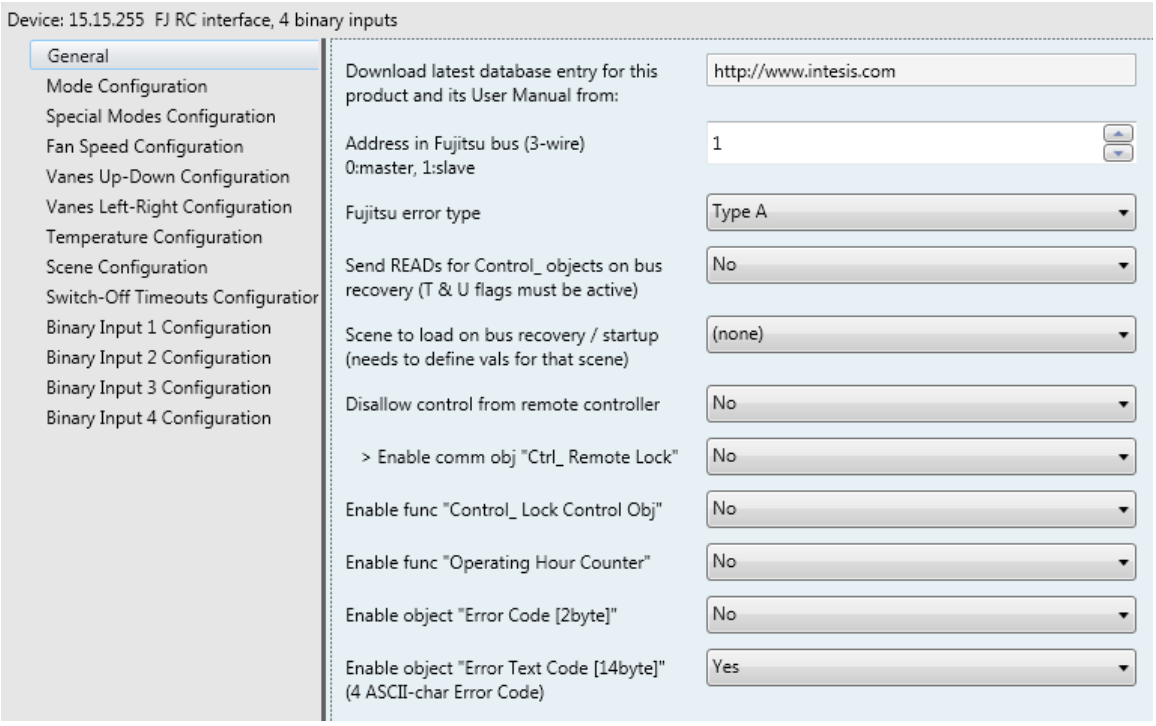

Figure 4.1 Default parameter configuration

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

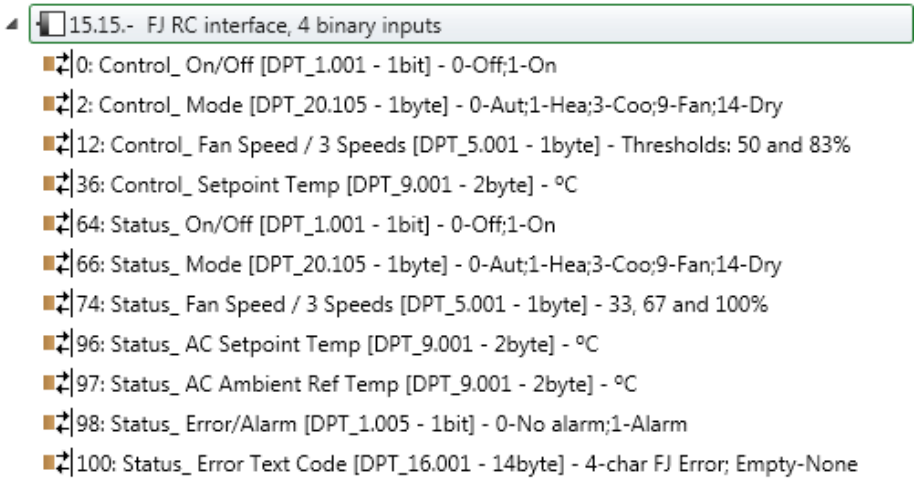

Figure 4.2 Default communication objects

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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. (Currently: https://www.intesis.com)

4.1.1 Address in Fujitsu Remote Controller bus (3 wire)

Fujitsu dual remote controller function setting. 0: master, 1: slave (default).

This parameter is used to select the function our gateway will have in the RWB RC-bus.

- If set to **"0"** the gateway will act as a **master** in the RC-bus. (No BRC present, or BRC set as slave).
- If set to **"1"** the gateway will act as a **slave** in the RC-bus. (BRC present set as master).

Figure 4.3 Parameter detail

⚠ ***Important:*** *After changing this parameters value and downloading to the gateway, it is required to perform a power cycle of the FGL system to apply the changes in the systems active runtime memory.*

4.1.2 Fujitsu Error Type

This parameter defines the type of FGL unit you have and the associated error codes. Please, check table below which value you have to use depending on the AC system type you have.

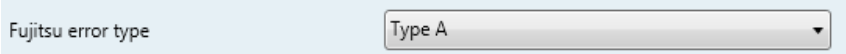

Figure 4.4 Parameter detail

AC System Type	Error Type
RAC Non inverter models RAC inverter models	Type A
VRF V / S / J	Type A
RAC inverter model G* series VRF J-II / V-II / VR-II	Type B

Table 4.1 Parameter detail

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4.1.3 Send READs for Control_ objects on bus recovery

When this parameter is enabled, INKNXFGL001R000 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.

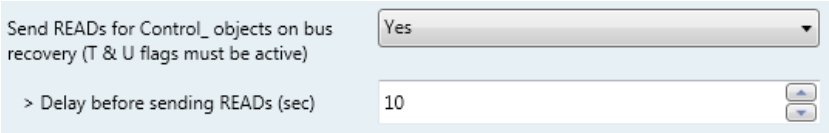


Figure 4.5 Parameter detail

➢ <u>Delay before sending READs (sec):</u>

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.

4.1.4 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 4.8 for more information).

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

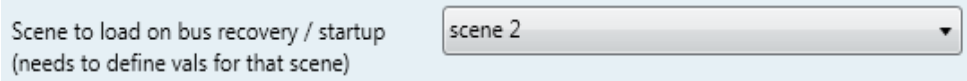


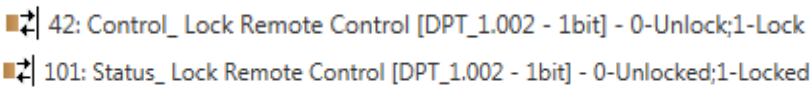
Figure 4.6 Parameter detail

4.1.5 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. (Default)

- 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*.



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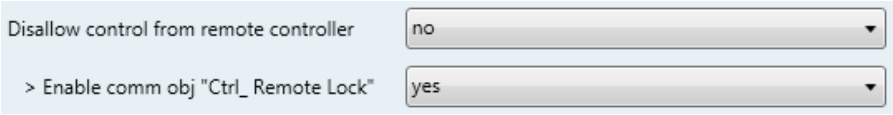


Figure 4.7 Communication Object and parameter detail

➢ Enable comm obj "Ctrl_ Remote Lock":

If set to **"No"** the object will not be shown. (Default).

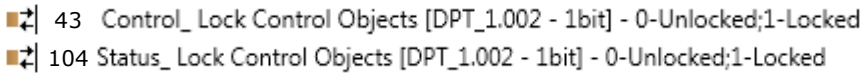
If set to **"Yes"** the *Control_ Lock Remote Control* object will appear.

- 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.*

4.1.6 Enable func "Control_ Lock Control Obj"

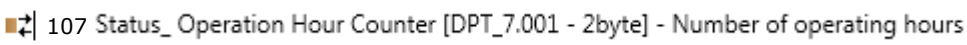
This parameter shows/hide the *Control_ Lock Control Obj* communication object which, depending on the sent value, locks or unlocks ALL the *Control_* communication objects except itself. It also shows/hide the Status_ Lock Control Obj.



- 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.

4.1.7 Enable func "Operating Hours Counter"

This parameter shows/hides the *Status_ Operation Hour Counter* communication object which counts the number of operating hours for the INKNXFGL001R000.



- If set to **"No"** the object will not be shown.
- If set to **"Yes"** the *Status_ Operation Hour Counter* object will appear.

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- This object can be read and sends its status every time an hour is counted. The gateway keeps that count in memory and the status is sent also after a KNX bus reset/failure. Although this object is marked as a *Status_* object it also can be written to update the counter when needed. To reset the counter should be written a **"0"** value.

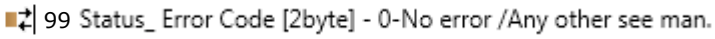
⚠ ***Important:*** *This object comes by default without the write* ***(W)*** *flag activated. If is necessary to write on it, this flag must be activated.*

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

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

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.



- 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.

- 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.

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4.2 *Mode Configuration dialog*

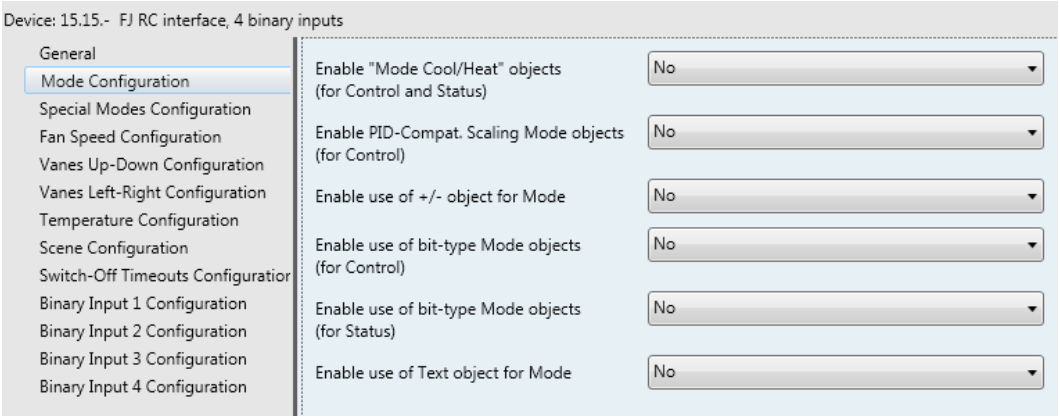
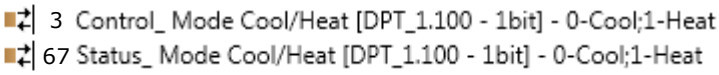


Figure 4.8 Default Mode Configuration dialog

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

4.2.1 Enable "Mode Cool/Heat" objects

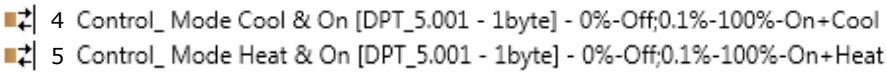
This parameter shows/hides the *Control_* and *Status_ Mode Cool/Heat* communication objects.



- 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.

4.2.2 Enable PID-Compat. Scaling Mode Objects (for Control)

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



- 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.

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- 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.

- INKNXFGL001R000 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.

    - Latest 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.*

4.2.3 Enable use of + / - object for Mode

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

11 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 4.9 Parameter detail

➢ <u>DPT type for +/- Mode Object</u>

This parameter allows you to select between the datapoints **0-Up / 1-Down [DPT_1.008]** and **0-Decrease / 1-Increase [DPT_1.007]** for the *Control_ Mode +/-* object.

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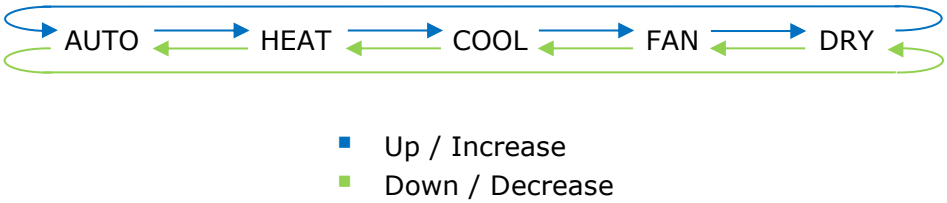
The sequence followed when using this object is shown below:



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

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

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

6 Control_ Mode Auto [DPT_1.002 - 1bit] - 1-Set AUTO mode
7 Control_ Mode Heat [DPT_1.002 - 1bit] - 1-Set HEAT mode
8 Control_ Mode Cool [DPT_1.002 - 1bit] - 1-Set COOL mode
9 Control_ Mode Fan [DPT_1.002 - 1bit] - 1-Set FAN mode
10 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.

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

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

68 Status_ Mode Auto [DPT_1.002 - 1bit] - 1-AUTO mode is active
69 Status_ Mode Heat [DPT_1.002 - 1bit] - 1-HEAT mode is active
70 Status_ Mode Cool [DPT_1.002 - 1bit] - 1-COOL mode is active
71 Status_ Mode Fan [DPT_1.002 - 1bit] - 1-FAN mode is active
72 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.

4.2.6 Enable use of Text object for Mode

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

73 Status_ Mode Text [DPT_16.001 - 14byte] - ASCII String

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- 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.

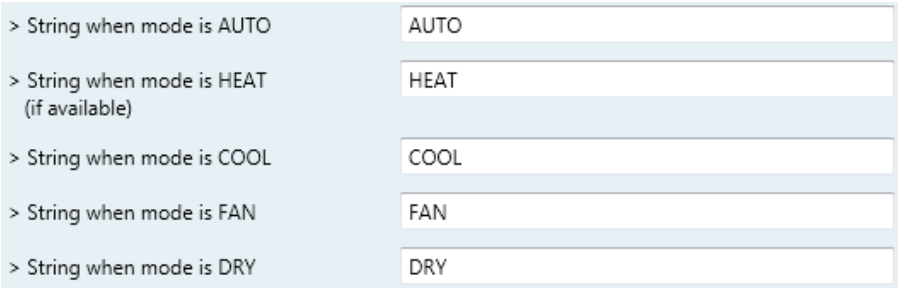

Figure 4.10 Parameter detail

4.3 *Special Modes Configuration dialog*

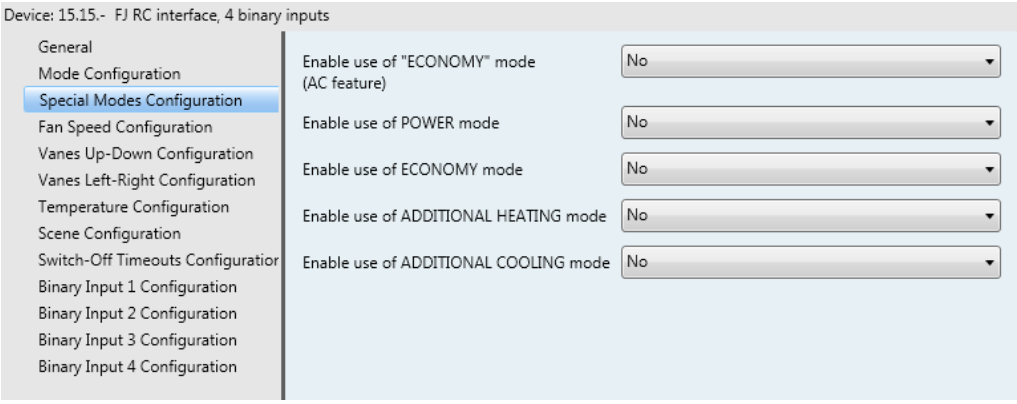

Figure 4.11 Default Special Modes Configuration dialog

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.*

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4.3.1 Enable use of ECONOMY mode (AC feature)

This parameter shows/hides the *Control_ Economy* and *Status_ Economy* communication objects. This communication object is using the Economy function provided by the AC unit itself. Please refer to your user manual for more information on this function.

1 Control_ Economy [DPT_1.002 - 1bit] - 1-Set ECONOMY
65 Status_ Economy [DPT_1.002 - 1bit] - 1-ECONOMY is active

- If set to **"No"** the objects will not be shown.
- If set to **"Yes"** the *Control_ Economy* and *Status_ Economy* objects and new parameters will appear.
  - When a **"1"** value is sent to the *Control_* communication object, Economy will be enabled, and the *Status_* object will return this value.
  - When a **"0"** value is sent to the *Control_* communication object, Economy 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.*

4.3.2 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.

44 Control_ Power Mode [DPT_1.010 - 1bit] - 0-Stop;1-Start
103 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.

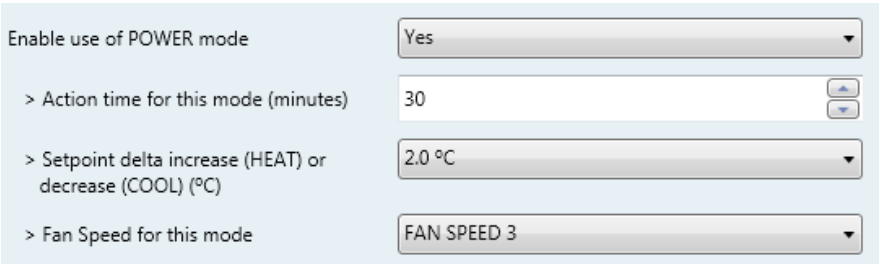

Figure 4.12 Parameter detail

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

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- 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.

4.3.3 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.

45 Control_ Econo Mode [DPT_1.010 - 1bit] - 0-Stop;1-Start
104 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.

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- 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.

4.3.4 Enable use of ADDITIONAL HEATING mode

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

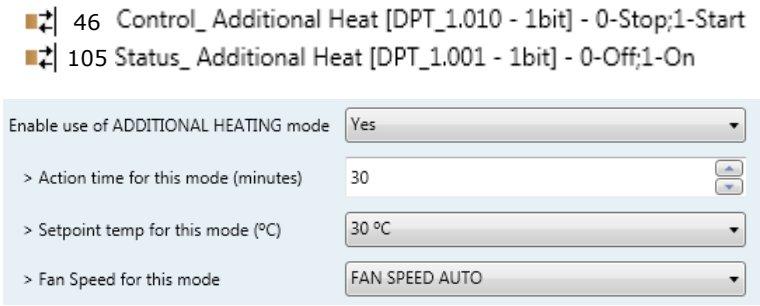

Figure 4.13 Communication object and parameter detail

- 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.

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4.3.5 Enable use of ADDITIONAL COOLING mode

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

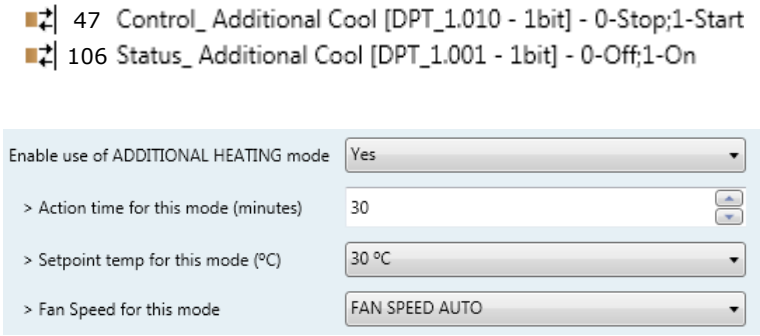

Figure 4.14 Communication object and parameter detail

- 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.*

➢ <u>Action time for this mode (minutes):</u>

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

➢ <u>Setpoint temp for this mode (°C):</u>

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

➢ <u>Fan Speed for this mode:</u>

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

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4.4 *Fan Speed Configuration dialog*

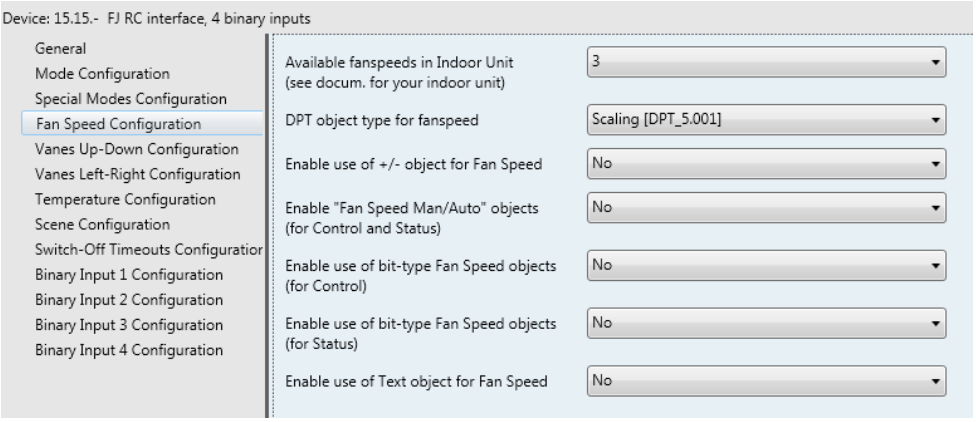


Figure 4.15 Default Fan Speed Configuration dialog

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

4.4.1 Available fanspeeds in Indoor Unit

This parameter needs to be fixed according to your indoor unit capacity. Please check your indoor unit user manual and introduce the right number of fanspeeds.

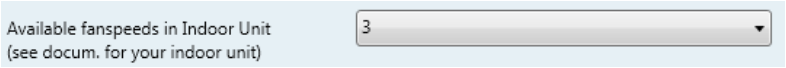


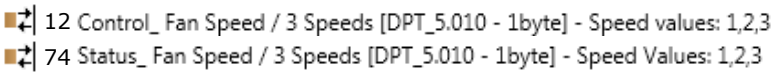
Figure 4.16 Parameter detail

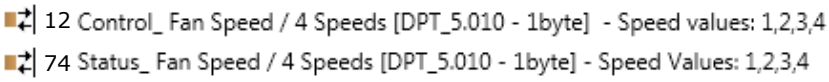
4.4.2 DPT object type for fanspeed

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.





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The first fan speed will be selected if a **"1"** is sent to the *Control_* object. The second one will be selected sending a **"2"**; the third one will be selected sending a **"3"**; the fourth one selecting **"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 greater than **"4"** is sent to the Control_ object, then the maximum fan speed will be selected.*

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

12 Control_ Fan Speed / 3 Speeds [DPT_5.001 - 1byte] - Thresholds: 50 and 83%
74 Status_ Fan Speed / 3 Speeds [DPT_5.001 - 1byte] - 33, 67 and 100%

12 Control_ Fan Speed / 4 Speeds [DPT_5.001 - 1byte] - Thresholds: 38, 63 and 88%
74 Status_ Fan Speed / 4 Speeds [DPT_5.001 - 1byte] - 25, 50, 75 and 100%

The following tables show 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*
*Control_*	0% - 49%	50% - 82%	83% - 100%
*Status_*	33%	67%	100%

	Fan Speed 1	*Fan Speed 2*	*Fan Speed 3*	*Fan Speed 4*
*Control_*	0% - 37%	38% - 62%	63% - 87%	88% - 100%
*Status_*	25%	50%	75%	100%

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

4.4.3 Enable use of the +/- object for Fan Speed

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

18 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.

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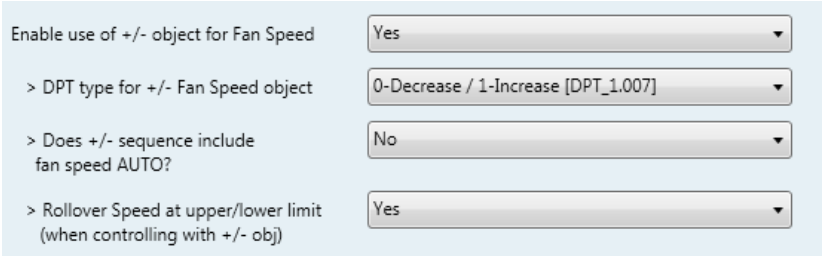


Figure 4.17 Parameter detail

- <u>DPT type for +/- Fan Speed Object</u>

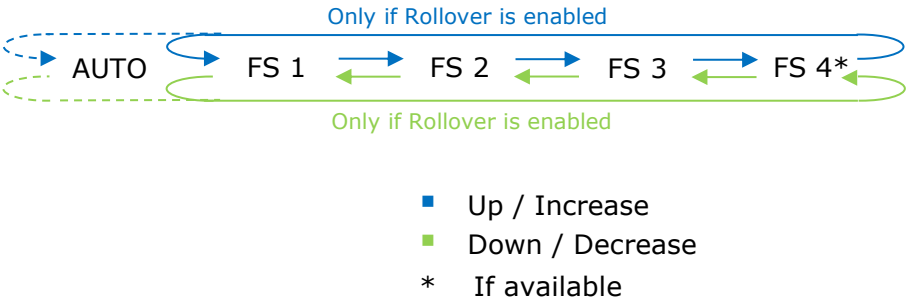
  This parameter allows you to select between the datapoints **0-Up / 1-Down [DPT_1.008]** and **0-Decrease / 1-Increase [DPT_1.007]** for the *Control_ Fan Speed +/-* object.

- <u>Does +/- sequence include fan speed AUTO?</u>

  This parameter includes or excludes the auto mode for the fan speed in the list of available speeds.

- <u>Rollover Speed at upper/lower limit</u>

  This parameter allows you to select if rollover will be enabled (**"Yes"**) or disabled (**"No"**) for the *Control_ Fan Speed +/-* object.



4.4.4 Enable "Fan Speed Man/Auto" objects (for Control and Status)

This parameter shows/hides the bit-type *Control_ Fan Speed* Man/Auto and the *Status_ Fan Speed* Man/Auto objects.

13 Control_ Fan Speed Man/Auto [DPT_1.002 - 1bit] - 0-Manual; 1-Auto
75 Status_ Fan Speed Man/Auto [DPT_1.002 - 1bit] - 0-Manual;1-Auto

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

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

14 Control_ Fan Speed 1 [DPT_1.002 - 1bit] - 1-Set Fan Speed 1
15 Control_ Fan Speed 2 [DPT_1.002 - 1bit] - 1-Set Fan Speed 2
16 Control_ Fan Speed 3 [DPT_1.002 - 1bit] - 1-Set Fan Speed 3
17 Control_ Fan Speed 4 [DPT_1.002 - 1bit] - 1-Set Fan Speed 4*

* Only available if the AC unit has 4 fan speeds.

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- If set to **"No"** the objects will not be shown.
- If set to **"Yes"** the *Control_ Fan Speed* objects for Speed 1, Speed 2 and Speed 3 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.

76 Status_ Fan Speed 1 [DPT_1.002 - 1bit] - 1-Fan in Speed 1
77 Status_ Fan Speed 2 [DPT_1.002 - 1bit] - 1-Fan in Speed 2
78 Status_ Fan Speed 3 [DPT_1.002 - 1bit] - 1-Fan in Speed 3
79 Status_ Fan Speed 4 [DPT_1.002 - 1bit] - 1-Fan in Speed 4*

* Only available if the AC unit has 4 fan speeds.

- 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.

80 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 five text fields, one for each Fan Speed, that will let modify the text string displayed by the *Status_ Fan Speed Text* when changing a fan speed.

ASCII strings shown in comm object "Status_ Fan Speed Text"	<< 14-byte string values >>
> String when fan speed is AUTO	AUTO
> String when fan speed is 1	SPEED 1
> String when fan speed is 2	SPEED 2
> String when fan speed is 3	SPEED 3
> String when fan speed is 4 (if available)	SPEED 4

Figure 4.18 Parameter detail

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4.5 *Vanes Up-Down Configuration dialog*

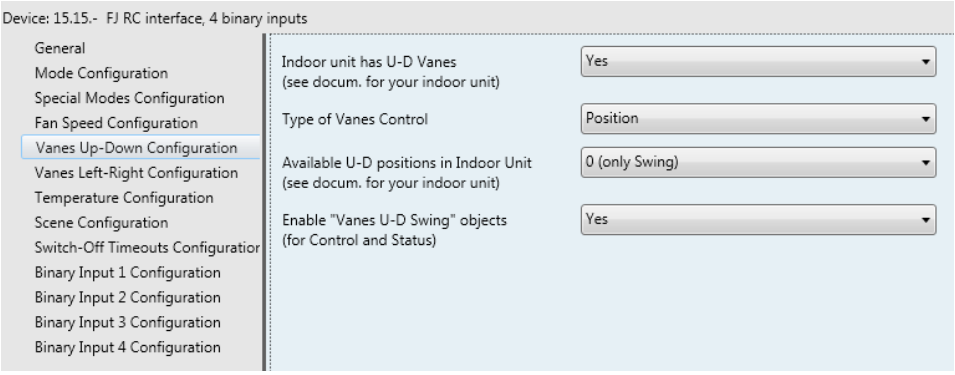


Figure 4.19 Vanes Up-Down Configuration dialog

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

4.5.1 Indoor unit has U-D Vanes

This parameter allows you to select if the unit has Up-Down Vanes available or not.

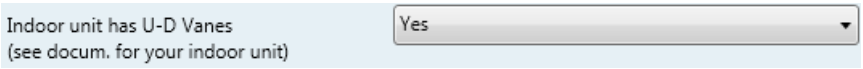


Figure 4.20 Parameter detail

- 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.

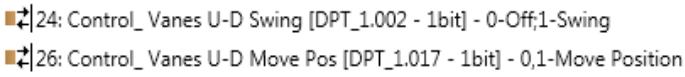
⚠ ***Important:*** *Read the documentation of your indoor unit to check if Up-Down Vanes are available.*

4.5.2 Type of Vanes Control

This parameter allows you to select if the unit uses a step control no the vanes position or directly a position indication.

Figure 4.21 Parameter detail

- If set to **"Step"** only the communication objects only for SWING and STEP will be shown.



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- If set to **"Position"** all the parameters and communication objects for the 4 Vanes positions and Swing will be shown.

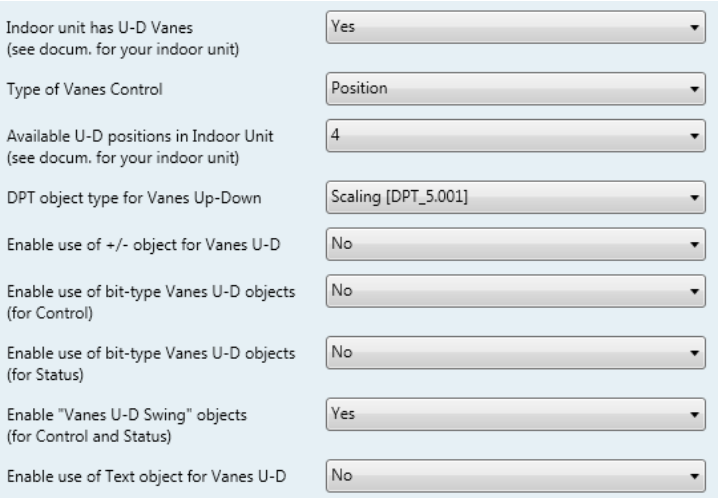
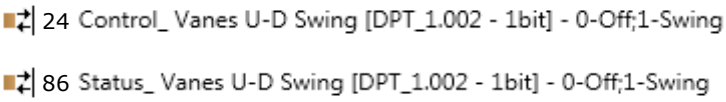


Figure 4.22 Parameter detail

4.5.3 Available U-D positions in Indoor Unit

This parameter lets you choose between **"0 (Only Swing)"** and **"4"**.

- If set to **"0 (Only Swing)"** all the parameters and communication objects (if enabled in the parameters dialog) for the swing positions will be shown.



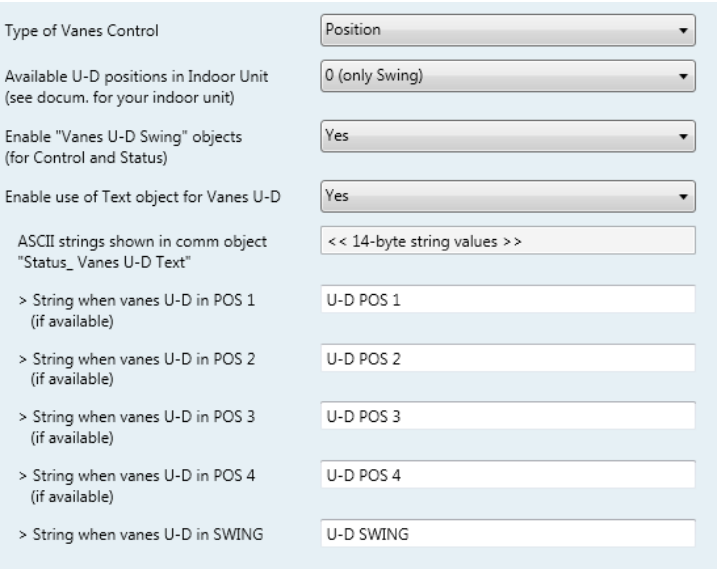


Figure 4.23 Communication Object and parameter details

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- If set to **"4"** all the parameters and communication objects (if enabled in the parameters dialog) for the 4 Vanes positions will be shown.

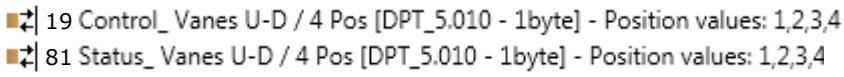
Important: *Read the documentation of your indoor unit to check if Up-Down Vanes positions are available.*

4.5.4 DPT object type for Vanes Up-Down

With this parameter is possible to change de 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.

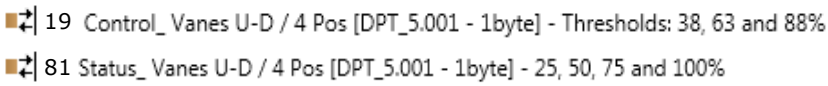


To choose a vanes position, values from **"1"** to **"4"** can be sent to the *Control_* object. Each value will correspond to the position (i.e. Value **"3"** = Position 3).

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 **"4"** is sent to the Control_ object, then the higher Position will be selected.*

- When **"Scaling [DPT 5.001]"** is selected, *Control_ Vane Up-Down* and *Status_ Vane Up-Down* communication objects for this DPT will appear.



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*
*Control_*	0% - 37%	38% - 62%	63% - 87%	88% - 100%
*Status_*	25%	50%	75%	100%

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4.5.5 Enable use of +/- object for Vanes U-D

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

25 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.

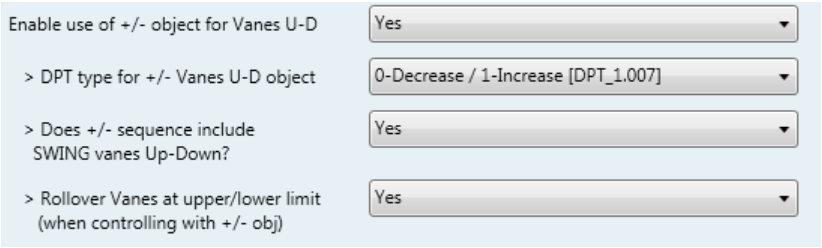


Figure 4.24 Parameter detail

➢ <u>DPT type for +/- Vane Up-Down obj</u>

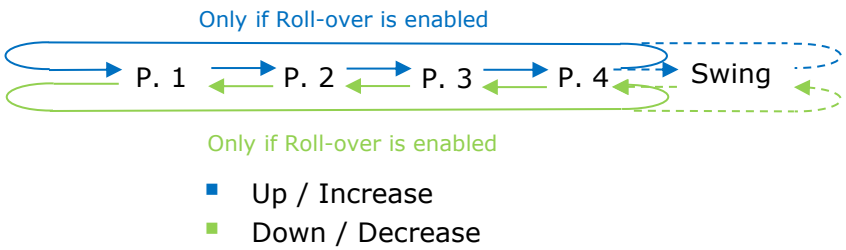
This parameter allows you to select between the datapoints **0-Up / 1-Down [DPT_1.008]** and **0-Decrease / 1-Increase [DPT_1.007]** for the *Control_ Vanes U-D +/-* object.

➢ <u>Does +/- sequence include SWING vanes Up-Down?</u>

This parameter allows you to select 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.

➢ <u>Roll over Vanes at upper/lower limit</u>

This parameter allows you to select if roll-over will be enabled (**"Yes"**) or disabled (**"No"**) for the *Control_ Vanes U-D +/-* object.



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

This parameter shows/hides the bit-type *Control_ Vanes U-D* objects.

20 Control_ Vanes U-D Pos 1 [DPT_1.002 - 1bit] - 1-Set Position 1
21 Control_ Vanes U-D Pos 2 [DPT_1.002 - 1bit] - 1-Set Position 2
22 Control_ Vanes U-D Pos 3 [DPT_1.002 - 1bit] - 1-Set Position 3
23 Control_ Vanes U-D Pos 4 [DPT_1.002 - 1bit] - 1-Set Position 4

- 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.

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

This parameter shows/hides the bit-type *Status_ Vanes U-D* objects.

82 Status_ Vanes U-D Pos 1 [DPT_1.002 - 1bit] - 1-Vanes in Position 1
83 Status_ Vanes U-D Pos 2 [DPT_1.002 - 1bit] - 1-Vanes in Position 2
84 Status_ Vanes U-D Pos 3 [DPT_1.002 - 1bit] - 1-Vanes in Position 3
85 Status_ Vanes U-D Pos 4 [DPT_1.002 - 1bit] - 1-Vanes in Position 4

- 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.

4.5.8 Enable "Vanes U-D Swing" objects (for control and status)

This parameter will only be shown if the value "Position" is selected on the 4.5.2 section. It will show/hide *Control_ Vanes U-D SWING* y *Status_ Vanes U-D SWING* communication objects.

24 Control_ Vanes U-D Swing [DPT_1.002 - 1bit] - 0-Off;1-Swing
86 Status_ Vanes U-D Swing [DPT_1.002 - 1bit] - 0-Off;1-Swing

- If set to **"No"** the object will not be shown.
- If set to **"Yes"** the *Control_ Vanes U-D Swing* y *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 Auto mode and the *Status_* object will return this value.
    - When a **"0"** value is sent to the *Control_* communication object, Vanes Up-Down will be in Manual mode and the *Status_* object will return this value.

⚠ ***Important:*** *When activating Auto Mode in the indoor unit, this one will choose the best position available for the Vanes Up-Down. This position will not be shown either in the KNX bus or in the remote controller.*

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

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4.5.9 Enable use of Text object for Vane U-D

This parameter shows/hides the *Status_ Vanes U-D Text* communication object.

87 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 seven text fields, five 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 (if available)	U-D POS 1
> String when vanes U-D in POS 2 (if available)	U-D POS 2
> String when vanes U-D in POS 3 (if available)	U-D POS 3
> String when vanes U-D in POS 4 (if available)	U-D POS 4
> String when vanes U-D in SWING	U-D SWING

Figure 4.25 Parameter detail

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4.6 *Vanes Left-Right Configuration dialog*

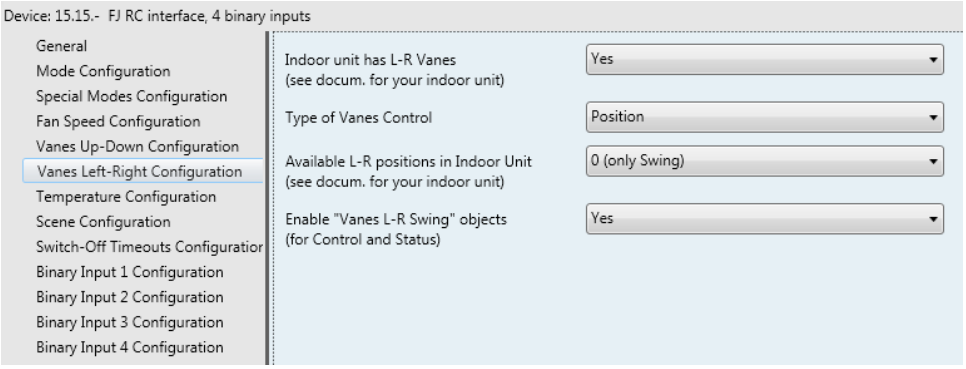

Figure 4.26 Vanes Left-Right Configuration dialog

All the parameters in this section are related to the Vanes Left-Right properties and communication objects.

4.6.1 Indoor unit has L-R Vanes

This parameter allows you to select if the unit has Left-Right Vanes available or not.

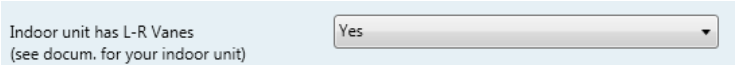

Figure 4.27 Parameter detail

- If set to **"No"** all the parameters and communication objects for the Left-Right Vanes will not be shown.
- If set to **"Yes"** all the parameters and communication objects (if enabled in the parameters dialog) for the Left-Right Vanes will be shown.

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

4.6.2 Type of Vanes Control

This parameter allows you to select if the unit uses a step control no the vanes position or directly a position indication.

Figure 4.28 Parameter detail

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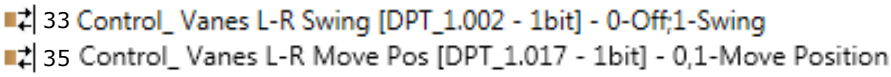
- If set to **"Step"** only the communication objects only for SWING and STEP will be shown.



- If set to **"Position"** all the parameters and communication objects for the 4 Vanes positions and Swing will be shown.

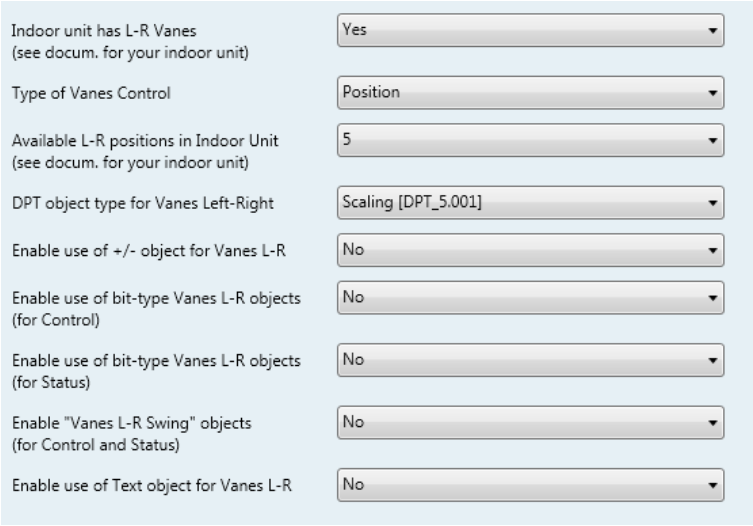


Figure 4.29 Parameter detail

4.6.3 Available L-R positions in Indoor Unit

This parameter lets you choose between **"0 (Only Swing)"** and **"5"**.

- If set to **"0 (Only Swing)"** all the parameters and communication objects (if enabled in the parameters dialog) for the swing positions will be shown.

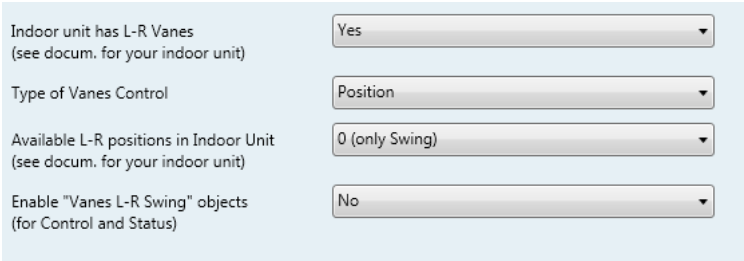


Figure 4.30 Parameter and objects detail

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- If set to **"5"** all the parameters and communication objects (if enabled in the parameters dialog) for the 5 Vanes positions will be shown.

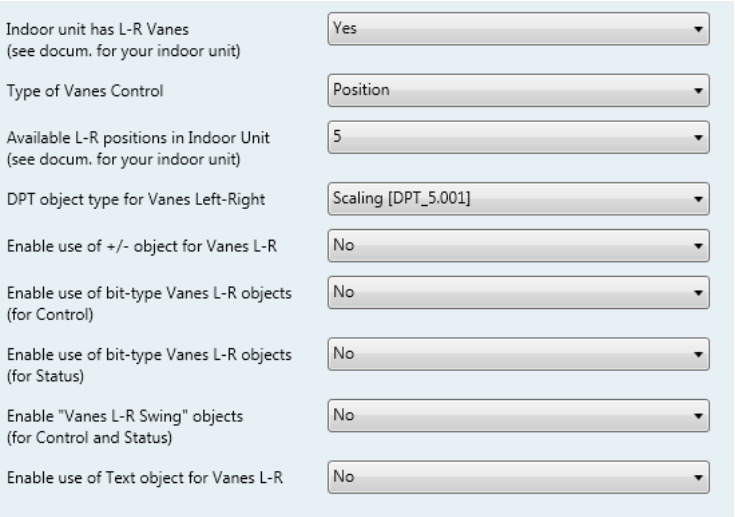


Figure 4.31 Parameter and objects detail

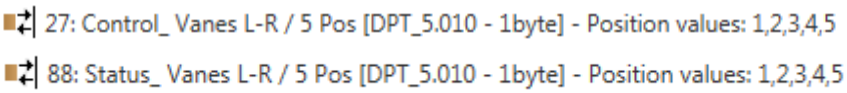
Important: *Read the documentation of your indoor unit to check if Left-Right Vanes positions are available.*

4.6.4 DPT object type for Vanes Left-Right

With this parameter is possible to change de DPT for the *Control_ Vanes L-R* and *Status_ Vanes L-R* 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 L-R* and *Status_ Vanes L-R* communication objects for this DPT will appear.



To choose a vanes position, values from **"1"** to **"5"** 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 **"5"** is sent to the Control_ object, then the higher Position will be selected.*

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- When **"Scaling [DPT 5.001]"** is selected, *Control_ Vane* L-R and *Status_ Vane* L-R communication objects for this DPT will appear.

27 Control_ Vanes L-R / 5 Pos [DPT_5.001 - 1byte] - Thresholds: 30, 50, 70 and 90%
88 Status_ Vanes L-R / 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*
*Control_*	0% - 29%	30% - 49%	50% - 69%	70% - 89%	90% - 100%
*Status_*	20%	40%	60%	80%	100%

4.6.5 Enable use of +/- object for Vanes L-R

This parameter shows/hides the *Control_ Vane L-R +/-* communication object which lets change the indoor unit vane position by using two different datapoint types. It is only present when **"5"** is selected on the "*Available L-R position Indoor Unit*" dropdown menu.

34 : Control_ Vanes L-R -/+ [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 L-R +/-* object and a new parameter will appear.

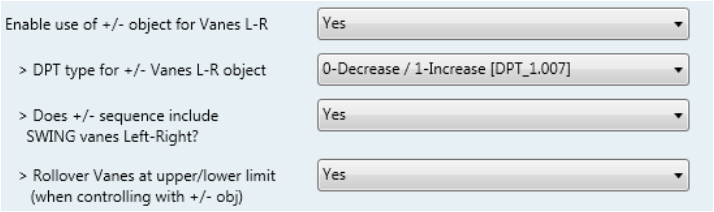

Figure 4.32 Parameter detail

- <u>DPT type for +/- Vane L-R obj</u>

  This parameter allows you to select between the datapoints **0-Up / 1-Down [DPT_1.008]** and **0-Decrease / 1-Increase [DPT_1.007]** for the *Control_ Vanes L-R +/-* object.

- <u>Does +/- sequence include SWING vanes Left-Right?</u>

  This parameter allows you to select if SWING function is included (**"Yes"**) or not (**"No"**) in the sequence when using *Control_ Vanes L-R +/-* object as shown in the discontinuous segment at the picture below.

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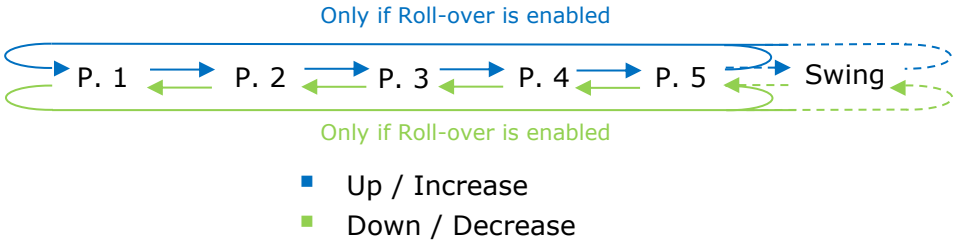
➢ Roll over Vanes at upper/lower limit

This parameter allows you to select if roll-over will be enabled (**"Yes"**) or disabled (**"No"**) for the *Control_ Vanes L-R +/-* object.



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

This parameter shows/hides the bit-type *Control_ Vanes L-R* objects.

28 Control_ Vanes L-R Pos 1 [DPT_1.002 - 1bit] - 1-Set Position 1
29 Control_ Vanes L-R Pos 2 [DPT_1.002 - 1bit] - 1-Set Position 2
30 Control_ Vanes L-R Pos 3 [DPT_1.002 - 1bit] - 1-Set Position 3
31 Control_ Vanes L-R Pos 4 [DPT_1.002 - 1bit] - 1-Set Position 4
32 Control_ Vanes L-R Pos 5 [DPT_1.002 - 1bit] - 1-Set Position 5

- If set to **"No"** the objects will not be shown.
- If set to **"Yes"** the *Control_ Vanes L-R* objects for each Position will appear. To activate a Vanes Position by using these objects, a **"1"** value has to be sent.

4.6.7 Enable use of bit-type Vane L-R objects (for Status)

This parameter shows/hides the bit-type *Status_ Vanes L-R* objects.

89 Status_ Vanes L-R Pos 1 [DPT_1.002 - 1bit] - 1-Vanes in Position 1
90 Status_ Vanes L-R Pos 2 [DPT_1.002 - 1bit] - 1-Vanes in Position 2
91 Status_ Vanes L-R Pos 3 [DPT_1.002 - 1bit] - 1-Vanes in Position 3
92 Status_ Vanes L-R Pos 4 [DPT_1.002 - 1bit] - 1-Vanes in Position 4
93 Status_ Vanes L-R Pos 5 [DPT_1.002 - 1bit] - 1-Vanes in Position 5

- If set to **"No"** the objects will not be shown.
- If set to **"Yes"** the *Status_ Vanes L-R* objects for each Position will appear. When a Vanes Position is enabled, a **"1"** value is returned through its bit-type object.

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4.6.8 Enable "Vanes L-R Swing" objects (for control and status)

This parameter will only be present if parameter on 4.6.2 is set to **"Position"**. It will show/hide *Control_ Vanes L-R SWING* y *Status_ Vanes L-R SWING* communication objects.

33 Control_ Vanes L-R Swing [DPT_1.002 - 1bit] - 0-Off;1-Swing
94 Status_ Vanes L-R Swing [DPT_1.002 - 1bit] - 0-Off;1-Swing

- If set to **"No"** the object will not be shown.
- If set to **"Yes"** the *Control_ Vanes L-R Swing* y *Status_ Vanes L-R Swing* objects will appear.
    - When a **"1"** value is sent to the *Control_* communication object, Vanes Left-Right will be in Auto mode and the *Status_* object will return this value.
    - When a **"0"** value is sent to the *Control_* communication object, Vanes Left-Right will be in Manual mode and the *Status_* object will return this value.

⚠ ***Important:*** *When activating Auto Mode in the indoor unit, this one will choose the best position available for the Vanes* Left-Right*. This position will not be shown either in the KNX bus or in the remote controller.*

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

4.6.9 Enable use of Text object for Vane L-R

This parameter shows/hides the *Status_ Vanes L-R Text* communication object.

95 Status_ Vanes L-R Text [DPT_16.001 - 14byte] - ASCII String

- If set to **"No"** the object will not be shown.
- If set to **"Yes"** the *Status_ Vanes L-R Text* object will appear. Also, in the parameters will be shown seven text fields, five for the Vane Position and one for the Swing function, that will let modify the text string displayed by the *Status_ Vanes L-R Text* when changing a vane position.

ASCII strings shown in comm object "Status_ Vanes L-R Text"	<< 14-byte string values >>
> String when vanes L-R in POS 1 (if available)	L-R POS 1
> String when vanes L-R in POS 2 (if available)	L-R POS 2
> String when vanes L-R in POS 3 (if available)	L-R POS 3
> String when vanes L-R in POS 4 (if available)	L-R POS 4
> String when vanes L-R in POS 5 (if available)	L-R POS 5
> String when vanes L-R in SWING	L-R SWING

Figure 4.33 Parameter detail

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4.7 *Temperature Configuration dialog*

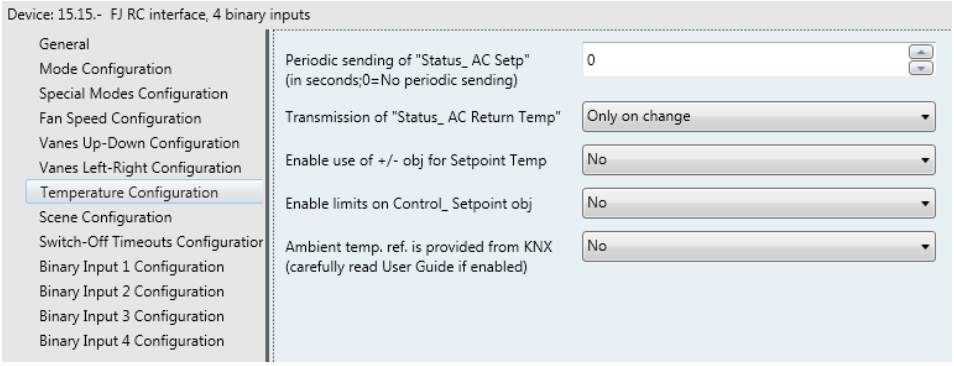


Figure 4.34 Default Temperature Configuration dialog

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

4.7.1 Periodic sending of "Status_ AC Setp"

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

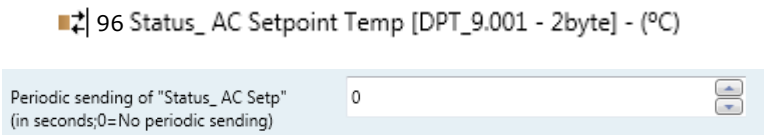
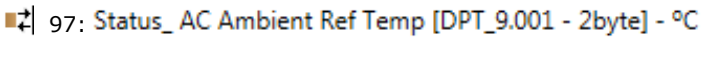


Figure 4.35 Communication object and parameter detail

⚠ ***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 "4.7.5 Ambient temp. ref. is provided from KNX" below.*

4.7.2 Transmission of "Status_ AC Ambient Ref Temp"

This parameter lets you choose if the AC ambient temperature will be sent **"only cyclically"**, **"only on change"** or **"cyclically and on change"**. The AC ambient temperature is sent through the communication object *Status_ AC Ambient Ref Temp.*



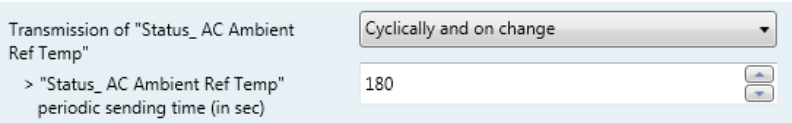


Figure 4.36 Parameter detail

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➢ "Status_ AC Ambient Ref Temp" periodic sending time (in sec)

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

4.7.3 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.

37 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.

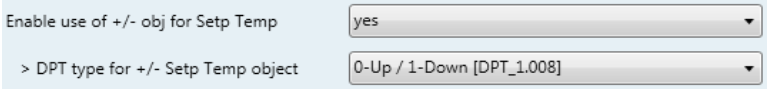

Figure 4.37 Parameter detail

➢ DPT type for +/- Setp Temp object

This parameter allows you to select 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) **18°C** ⇄ 19°C ⇄ … ⇄ 29°C ⇄ **30°C** (Upper limit)

- Up / Increase
- Down / Decrease

4.7.4 Enable limits on Control_ Setpoint obj

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

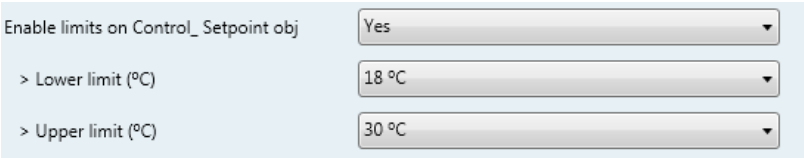

Figure 4.38 Parameter detail

- If set to **"No"** the setpoint temperature limits for the *Control_ Setpoint Temperature* object will be the default: 16°C for the lower limit and 31°C for the upper limit.
- If set to **"Yes"** it is possible to define temperature limits for the *Control_ Setpoint Temperature* object.

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- Control_ Set Temp Lower limit (°C)

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

- Control_ Set Temp Upper limit (°C)

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

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

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

4.7.5 Ambient temp. ref. is provided from KNX

This parameter enables or disables the *Control_ Ambient Temperature* communication object, which allows the use of an ambient temperature reference provided by a KNX device.

- If set to **"No"**, the object will not be shown and the ambient temperature will never be sent to the AC unit.

- If set to **"Yes"**, the *Control_ Ambient Temp* object will appear:

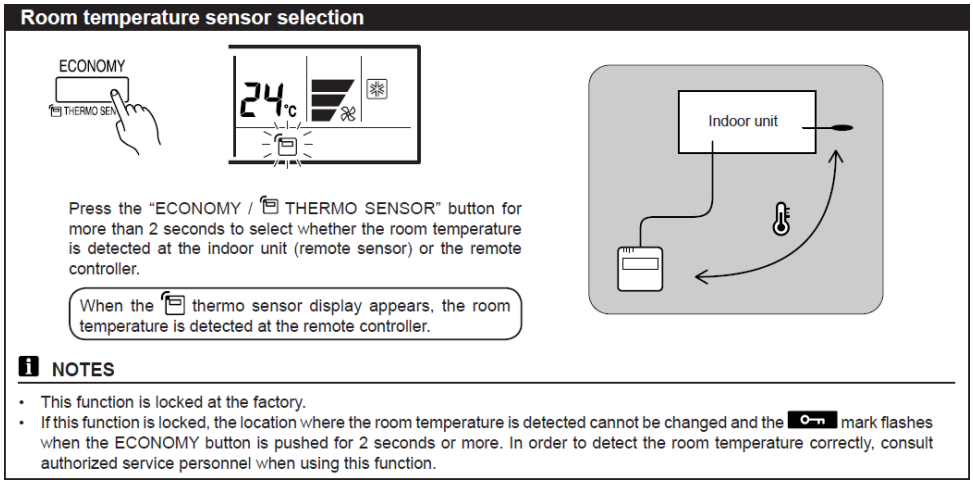
38 Control_ Ambient Temp [DPT_9.001 - 2byte] - °C

This object is meant to be enabled when you want the temperature provided by a KNX sensor to be the reference ambient temperature for the air conditioner. In that case, the following formula applies to calculate the real *Control_Setpoint Temperature* sent to the AC unit:

"AC Setp. Temp" = "AC Amb. Temp" – ("KNX Amb. Temp." – "KNX Setp. Temp")

AC indoor unit setpoint temperature = AC indoor unit Ambient temperature –
(Ambient temperature provided from KNX – Setpoint temperature provided from KNX)

⚠ ***Important:*** *Ambient temperature features require a wired remote controller equipped with a thermo sensor present in the bus. Make sure to set the wired remote controller as the ambient temperature source when using this function. Detailed information on how to set up the wired remote controller can be found in the figure below, which is taken from the Fujitsu wired remote controller manual.*



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As an example, consider the following situation:

The user wants: **19°C** ("KNX Setp. Temp.")
The user sensor (a KNX sensor) reads: **21°C** ("KNX Amb. Temp.")
The ambient temperature read by the Fujitsu system is: **24°C** ("AC Amb. Temp.")

In this example, the final setpoint temperature that the gateway will send to the indoor unit (shown in "Setp. Temp.") will be **22°C**, since 24°C – (21°C – 19°C) = 22°C. This is the setpoint that will be requested to the Fujitsu unit. This formula will be applied as soon as the *Control_ Setpoint Temperature* and the *Control_ Ambient Temperature* objects are written at least once from the KNX installation. After that, they are always kept 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).

4.8 *Scene Configuration dialog*

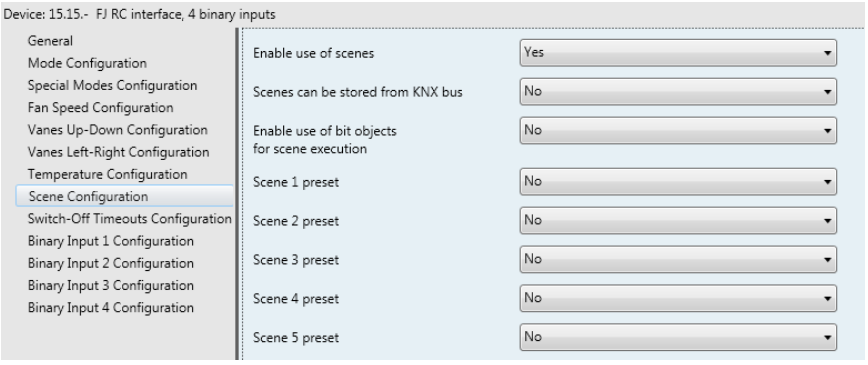

Figure 4.39 Parameter detail

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

4.8.1 Enable use of scenes

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

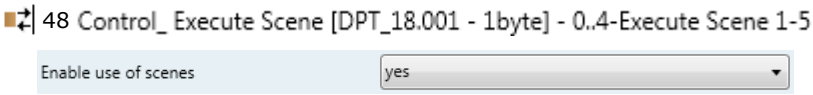

Figure 4.40 Parameter detail

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

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4.8.2 Scenes can be stored from KNX bus

This parameter shows/hides the *Control_ Save/Exec Scene* and all the *Control_ Store Scene* (if enabled) communication objects.

48 Control_ Save/Exec Scene [DPT_18.001 - 1byte] - 0..4-Exec1-5;128..132-Save1-5

- If set to **"No"** the communication objects will not be shown.
- If set to **"Yes"** the communication objects and a new parameter will appear. To store a scene through the byte-type object, a value from **"128"** to **"132"** has to be sent to the object, correponding each one to a different scene (i.e. "128" = Scene 1;… "132" = Scene 5).

Scenes can be stored from KNX bus	yes
> Enable use of bit objects for storing scenes (from bus)	yes

Figure 4.41 Parameter detail

➢ <u>Enable use of bit objects for storing scenes (from bus)</u>

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).

49 Control_ Store Scene 1 [DPT_1.002 - 1bit] - 1-Store Scene 1
50 Control_ Store Scene 2 [DPT_1.002 - 1bit] - 1-Store Scene 2
51 Control_ Store Scene 3 [DPT_1.002 - 1bit] - 1-Store Scene 3
52 Control_ Store Scene 4 [DPT_1.002 - 1bit] - 1-Store Scene 4
53 Control_ Store Scene 5 [DPT_1.002 - 1bit] - 1-Store Scene 5

4.8.3 Enable use of bit objects for scene execution

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

Enable use of bit objects for scene execution	yes

Figure 4.42 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).

54 Control_ Execute Scene 1 [DPT_1.002 - 1bit] - 1-Execute Scene 1
55 Control_ Execute Scene 2 [DPT_1.002 - 1bit] - 1-Execute Scene 2
56 Control_ Execute Scene 3 [DPT_1.002 - 1bit] - 1-Execute Scene 3
57 Control_ Execute Scene 4 [DPT_1.002 - 1bit] - 1-Execute Scene 4
58 Control_ Execute Scene 5 [DPT_1.002 - 1bit] - 1-Execute Scene 5

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4.8.4 Scene "x" preset

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

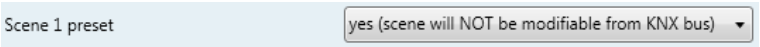

Figure 4.43 Parameter detail

- 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 aplied.

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

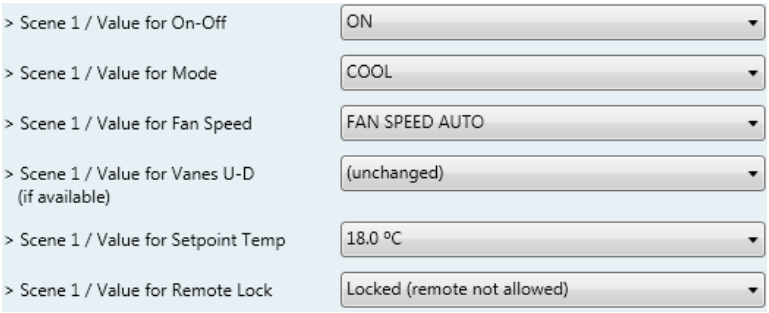

Figure 4.44 Parameter detail

➢ Scene "x" / Value for On-Off

This parameter allows you to select 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 allows you to select the mode of the indoor unit when the scene is executed. The following options are available: **"AUTO"**, **"HEAT", "COOL"**, **"FAN", "DRY"**, or **"(unchanged)"**.

➢ Scene "x" / Value for Fan Speed

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

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

This parameter allows you to select the vane position of the indoor unit when the scene is executed. The following options are available: **"VANES U-D OFF", "VANES U-D POS 1(if available)"**, **"VANES U-D POS 2(if available)"**, **"VANES U-D POS 3(if available)"**, **"VANES U-D POS 4(if available)", "VANES U-D SWING"** or **"(unchanged)"**.

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

  This parameter allows you to select the vane position of the indoor unit when the scene is executed. The following options are available: **"VANES L-R OFF", "VANES L-R POS 1(if available)"**, **"VANES L-R POS 2(if available)"**, **"VANES L-R POS 3(if available)"**, **"VANES L-R POS 4(if available)"**, **"VANES L-R POS 5(if available)"**, **"VANES L-R SWING"**, or **"(unchanged)"**.

- Scene "x" / Value for Setpoint Temp (°C)

  This parameter allows you to select 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 allows you to select the remote controller status of the indoor unit when the scene is executed. The following options are available: **"Locked (remote not allowed)"**, **"unlocked (remote allowed)"**, 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.*

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4.9 *Switch-Off Timeouts Configuration dialog*

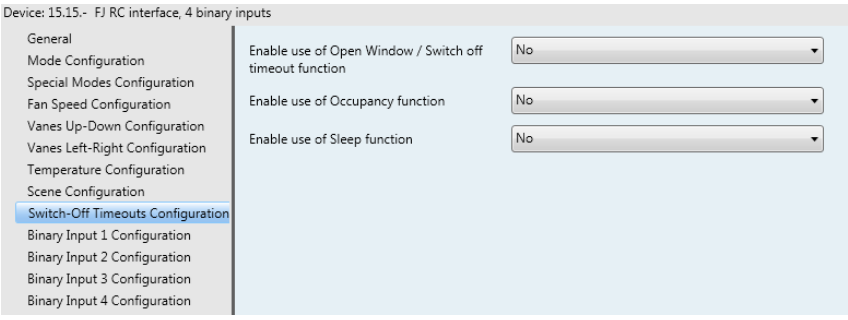
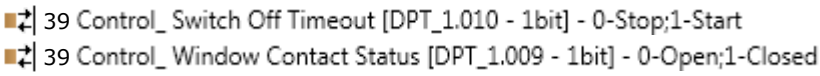


Figure 4.45 Default Switch-Off Timeouts Configuration dialog

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

4.9.1 Enable use of Open Window / Switch off timeout function

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



- If set to **"No"** the object will not be shown.
- If set to **"Yes"** the *Control_ Switch Off Timeout* object and new parameters will appear. If a **"1"** value is sent to this object, and the indoor unit is already turned on, the switch-off timeout will begin. If a **"0"** value is sent to this object, the switch-off timeout will stop.

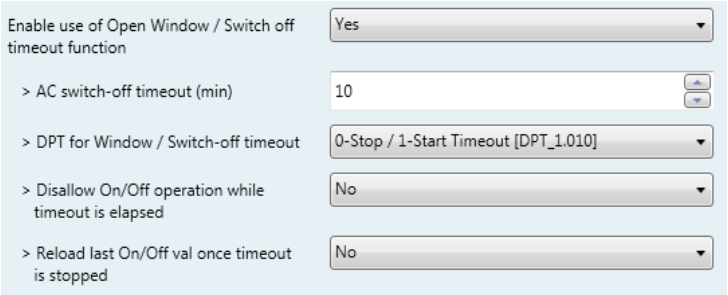


Figure 4.46 Parameter detail

➢ <u>AC switch-off timeout (min)</u>

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

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- DPT for Window / Switch-off timeout

  This parameter allows you to select between the datapoints **0-Open / 1-Closed Window [DPT_1.009]** and **0-Stop / 1-Start Timeout [DPT_1.010]** for the *Control_ Switch Off Timeout*.

- Disallow On/Off operation while window is Open

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

  - If a **"1"** value is sent to the *Control_ Switch Off Timeout* object the switch-off timeout period will begin again.
  - If a **"0"** value is sent to the *Control_ Switch Off Timeout* object, No action will be performed.

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

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

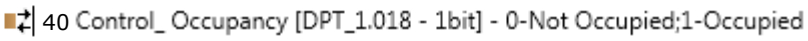
  If set to **"No"**, once the switch-off timeout is stopped, any value will be reloaded.

  If set to **"Yes"**, once the switch-off timeout is stopped, the last On/Off value sent will be reloaded.

  - If a **"1"** value is sent to the *Control_ Switch Off Timeout* object after the timeout period, the indoor unit will **turn on**.
  - If a **"0"** value is sent to the *Control_ Switch Off Timeout* after the timeout period, No action will be performed.

4.9.2 Enable use of Occupancy function

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



- 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.

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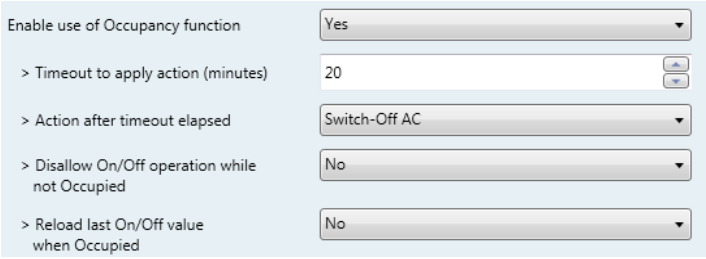

Figure 4.47 Parameter detail

- Timeout to apply action (minutes)

  This parameter allows you to select 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 to save energy (decreasing the setpoint when in Heat mode or increasing the setpoint when in Cool mode). Also new parameters will appear.

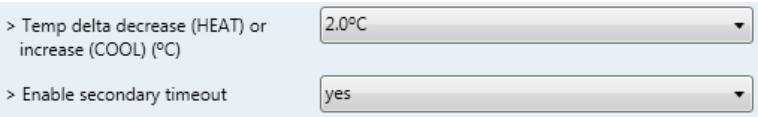

Figure 4.48 Parameter detail

- 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).*

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- Enable secondary timeout

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

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

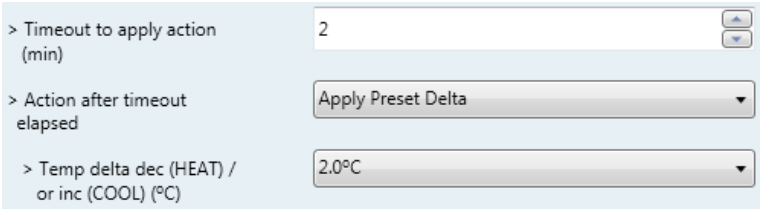

Figure 4.49 Parameter detail

- Timeout to apply action (minutes)

  This parameter allows you to select 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"**.

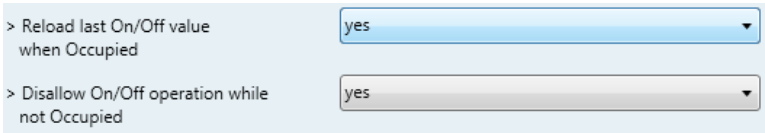

Figure 4.50 Parameter detail

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➢ 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.

4.9.3 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.

41 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.

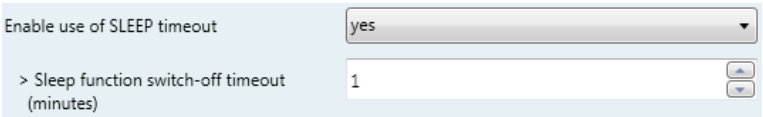

Figure 4.51 Parameter detail

➢ Timeout to apply action (minutes)

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

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4.10 *Binary Input "x" Configuration dialog*

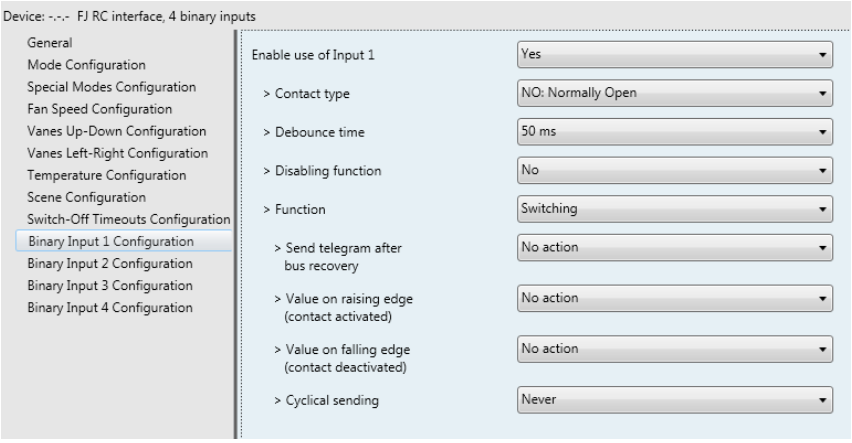
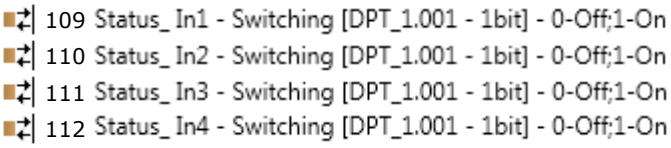


Figure 4.52 Parameter detail

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

4.10.1 Enable use of Input "x"

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



- If set to **"No"** the objects will not be shown.
- If set to **"Yes"** the *Status_ Inx* object(s) and new parameters will appear.

4.10.2 Contact type

This parameter allows you to select 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"**.

4.10.3 Debounce time

This parameter allows you to select a debounce time (in milliseconds) that will be applied to the contact.

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4.10.4 Disabling function

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

59 Control_ Disable Input 1 [DPT_1.003 - 1bit] - 0-Disable;1-Enable;
59 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"**.

4.10.5 Function

This parameter allows you to select 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.

109 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 4.53 Parameter detail

➢ <u>Send telegram after bus recovery</u>

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).

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- 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).

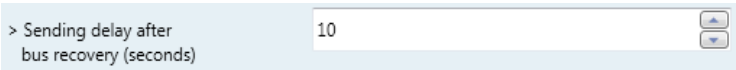

Figure 4.54 Parameter detail

➢ 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.

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➢ 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.

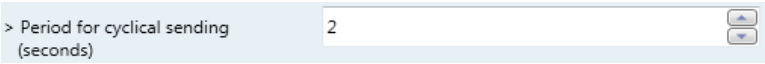

Figure 4.55 Parameter detail

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

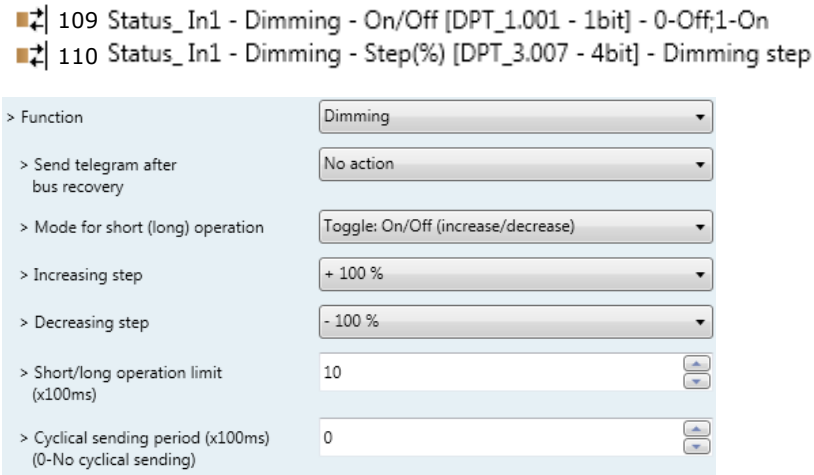

Figure 4.56 Parameter detail

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➢ 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).

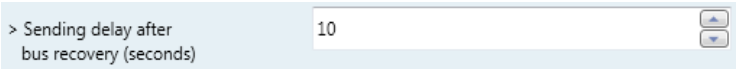

Figure 4.57 Parameter detail

➢ 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)".*

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- 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.

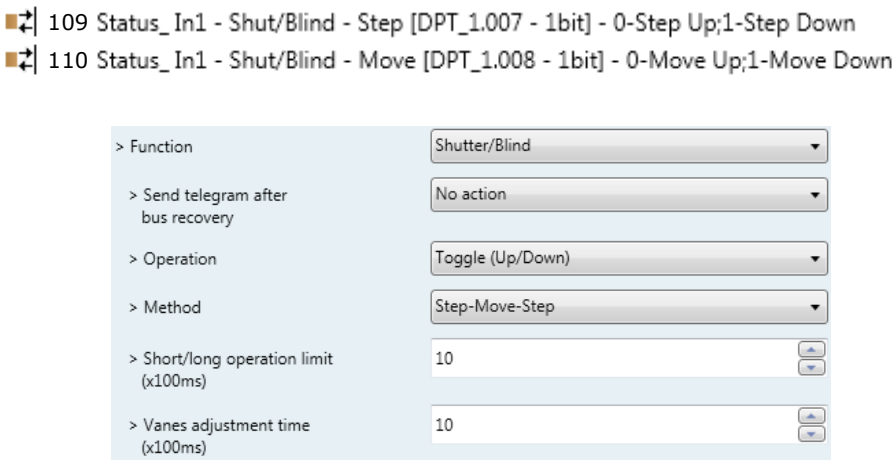

Figure 4.58 Parameter detail

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➢ 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).

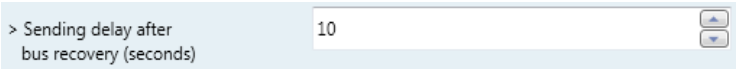

Figure 4.44 Parameter detail

➢ 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.

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

➢ Short/long operation limit (x100ms)

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

➢ Vanes adjustment time (x100ms)

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

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

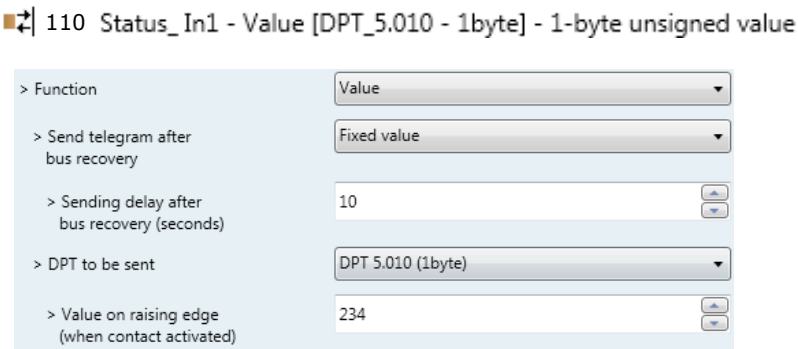

Figure 4.59 Parameter detail

➢ Send telegram after bus recovery

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

- When **"No action"** is selected, No telegram will be sent after a bus recovery.
- When **"Fixed value"** is selected, the binary input will send a telegram with the same value configured in the "Value on rising edge" parameter. Also a new parameter will appear (see below).

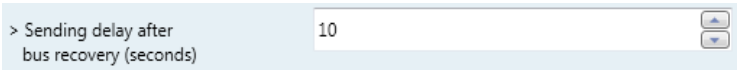

Figure 4.60 Parameter detail

➢ 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.

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➢ 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 4.61 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).

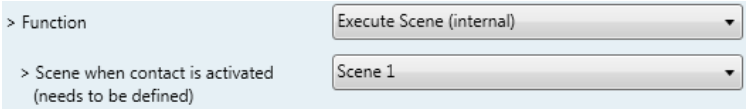

Figure 4.62 Parameter detail

➢ Scene when contact is activated

This parameter allows you to select 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 4.63 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 4.64 Parameter detail

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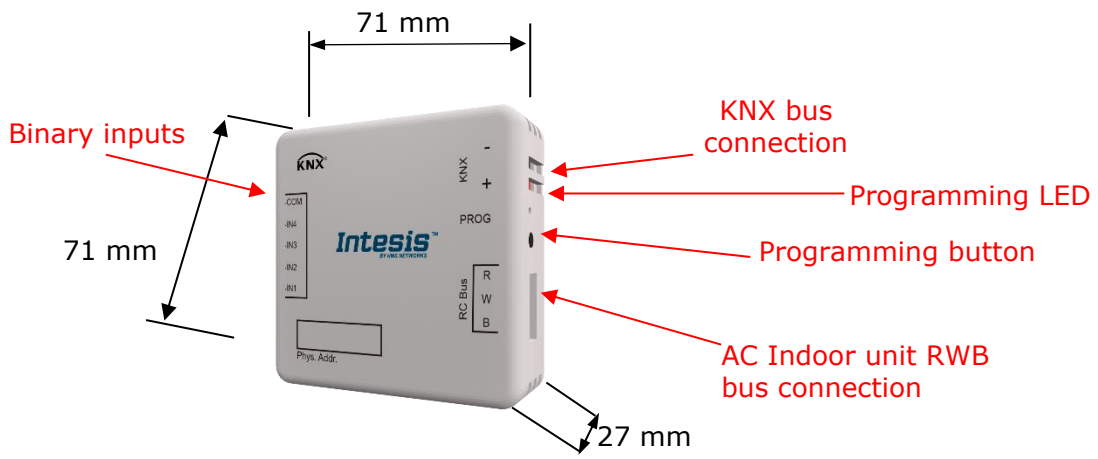
5 Specifications

Housing	Plastic, type ABS (UL 94 V-0). 2,5 mm thickness White RAL 9010
Dimensions	71 × 71 × 27 mm
Weight	70 g
Color	Ivory white
Power supply	29 V DC, 7 mA Supplied through KNX bus
AC Indoor Unit Bus	Voltage: 13-18 V Current: 80 mA
LED indicators	1 × KNX programming
Push buttons	1 × KNX programming
Binary inputs	4 × Potential-free binary inputs Signal cable length: 5 m unshielded, may be extended up to 20 m with twisted. Compliant with the following standards: IEC61000-4-2: level 4 – 15 kV (air discharge) – 8 kV (contact discharge) MIL STD 883E-Method 3015-7: class3B
Configuration	Configuration with ETS
Operating Temperature	From -25°C to 60°C
Storage Temperature	From -40°C to 45°C
Isolation Voltage	2500 V
RoHS conformity	Compliant with RoHS directive (2002/95/CE)
Certifications	CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC) • EN 61000-6-2 • EN 61000-6-3 • EN 60950-1 • EN 50491-3 • EN 50090-2-2 • EN 50428 • EN 60669-1 • EN 60669-2-1



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6 AC Unit Types compatibility

A list of FGL indoor unit model references compatible with INKNXFGL001R000 and their available features can be found in the following links:

- Fujitsu
- General
- Fuji Electric
- Hiyasu

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7 Error Codes

In order to get the right values regarding AC error codes, remember that you have to select the proper AC system type. Please visit section 4.1.2 for more information on the AC system type selection.

AC System Type	Error Type	Error section
RAC Non-inverter models RAC inverter models	Type A	**7.1**
VRF V / S / J	Type A	**7.2**
RAC inverter model G* series VRF J-II / V-II / VR-II	Type B	**7.1**

* G series stands for units that include a 'G' just before the power number in its reference.
E.g.: ASY**G**09LTCA

7.1 *RAC and VRF J-II / V-II / VR-II series*

Error in KNX	Error in Remote Controller	Error Description	AC System Type
-1	**NA**	Communication Error (Hex:FFFF, Dec:65535)	**RAC** Inverter and Non-Inverter
0	**00**	Wired remote controller error	
1	**01**	Indoor signal error	
2	**02**	Indoor room temperature sensor error	
3	**03**	Indoor room temperature sensor error	
4	**04**	Indoor heat exchanger temperature sensor (middle) error	
5	**05**	Indoor heat exchanger temperature sensor (middle) error	
6	**06**	Outdoor heat exchanger temperature sensor (outlet) error	
7	**07**	Outdoor heat exchanger temperature sensor (outlet) error	
8	**08**	Power voltage error	
9	**09**	Float switch operated	
10	**0A**	Outdoor temperature sensor error	
11	**0b**	Outdoor temperature sensor error	
12	**0C**	Outdoor discharge pipe temperature sensor error	
13	**0d**	Outdoor discharge pipe temperature sensor error	
14	**0E**	Heat sink thermistor (Inverter) error	
15	**0F**	Discharge temperature error	
17	**11**	Indoor unit EEPROM error	
18	**12**	Indoor fan error	
19	**13**	Indoor signal error	
20	**14**	Outdoor EEPROM error	
21	**15**	Compressor temperature sensor error	
22	**16**	Pressure switch abnormal, Pressure sensor error	
23	**17**	IPM protection	
24	**18**	CT error	
25	**19**	Active filter error INV voltage protection	
26	**1A**	Compressor location error	
27	**1b**	Outdoor fan error	
28	**1C**	Outdoor unit computer communication error	
29	**1d**	2-way valve temperature sensor error	
30	**1E**	3-way valve temperature sensor error	
31	**1F**	Connected indoor unit error	
32	**20**	Indoor MANUAL AUTO switch error	
33	**21**	reverse VDD permanent stop protection	
34	**22**	VDD permanent stop protection	
36	**24**	Excessive high pressure protection on cooling	
37	**25**	P.F.C. circuit error	
38	**26**	Indoor signal error	
39	**27**	Indoor signal error	
40	**28**	Indoor heat exchanger temperature sensor (inlet) error	
41	**29**	Outdoor heat exchanger temperature sensor (middle) error	
42	**2A**	Power supply frequency detection error	
43	**2b**	Compressor temperature error	
44	**2C**	4-way valve error	
45	**2d**	Heat sink thermistor P.F.C. error	
46	**2E**	Indoor unit damper error Inverter error	
47	**2F**	Low pressure error	
48	**30**	Refrigerant circuit address set-up error	
49	**31**	Master unit, Slave unit set-up error	
50	**32**	Connected the indoor number set-up error	
51	**33**	P.F.C. printed circuit board error	
52	**34**	Indoor fan 2 error	

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53	**35**	Control box thermistor error	
54	**36**	Indoor unit CT error	
55	**37**	Indoor fan motor 1 driving circuit error	
56	**38**	Indoor fan motor 2 driving circuit error	
117	**11**	Serial communication error between indoor/outdoor units	**RAC** Inverter models G series **VRF** J-II / V-II / VR-II Series
118	**12**	Remote controller communication error	
119	**13**	Communication error between outdoor units	
120	**14**	Network communication error	
121	**15**	Scan error	
122	**16**	Peripheral unit communication error	
123	**17**	Electricity charge apportionment error	
133	**21**	Indoor unit initial setting error	
134	**22**	Indoor unit capacity abnormal	
135	**23**	Incompatible series connection error	
136	**24**	Connection unit number error	
137	**25**	Connection pipe length error	
138	**26**	Indoor unit address setting error	
139	**27**	Master/slave unit setting error	
140	**28**	Other setting error	
141	**29**	Connection unit number error in wired remote controller system	
149	**31**	Indoor unit power supply abnormal	
150	**32**	Indoor unit main PCB error	
151	**33**	Indoor unit display PCB error	
152	**34**	Power relay error	
153	**35**	Indoor unit manual auto switch error	
154	**36**	Heater relay error	
155	**37**	Indoor unit transmission PCB error	
156	**38**	Network convertor PCB error	
157	**39**	Indoor unit power supply circuit error	
158	**3A**	Indoor unit communication circuit (wired remote controller) error	
165	**41**	Indoor unit room temp. thermistor error	
166	**42**	Indoor unit heat ex. temp. thermistor error	
167	**43**	Humidity sensor error	
168	**44**	Light sensor error	
169	**45**	Gas sensor error	
170	**46**	Float sensor error	
171	**47**	Water temperature sensor error	
172	**48**	Warm water flow rate sensor error	
173	**49**	Heater sensor error	
181	**51**	Indoor unit fan motor 1 error	
182	**52**	Indoor unit coil (expansion valve) error	
183	**53**	Indoor unit water drain abnormal	
184	**54**	Air cleaning function error	
185	**55**	Filter cleaning function error	
186	**56**	Water circulation pump error	
187	**57**	Indoor unit damper error	
188	**58**	Indoor unit intake grille position error	
189	**59**	Indoor unit fan motor 2 error	
195	**5U**	Indoor unit miscellaneous error	
197	**61**	Outdoor unit power supply abnormal	
198	**62**	Outdoor unit main PCB error	
199	**63**	Outdoor unit inverter PCB error	
200	**64**	Outdoor unit active filter/PFC circuit error	
201	**65**	Outdoor unit IPM error	
202	**66**	Convertor distinction error	
203	**67**	Outdoor unit power short interruption error (protective operation)	
204	**68**	Outdoor unit magnetic relay error	
205	**69**	Outdoor unit transmission PCB error	
206	**6A**	Outdoor unit display PCB error	
213	**71**	Outdoor unit discharge temp. thermistor error	
214	**72**	Outdoor unit compressor temp. thermistor error	
215	**73**	Outdoor unit heat ex. temp. thermistor error	
216	**74**	Outside air temp. thermistor error	
217	**75**	Outdoor unit suction gas temp. thermistor error	
218	**76**	Outdoor unit operating valve thermistor error	
219	**77**	Outdoor unit heat sink temp. thermistor error	
220	**78**	Expansion valve temperature sensor error	
229	**81**	Receiver liquid level detection sensor error	
230	**82**	Outdoor unit sub-cool heat ex. gas temp. thermistor error	
231	**83**	Outdoor unit liquid pipe temp. thermistor error	
232	**84**	Outdoor unit current sensor error	
233	**85**	Fan motor current sensor error	
234	**86**	Outdoor unit pressure sensor error	
235	**87**	Oil sensor error	
245	**91**	Outdoor unit compressor 1 error	
246	**92**	Outdoor unit compressor 2 error	
247	**93**	Outdoor unit compressor start up error	
248	**94**	Outdoor unit trip detection	
249	**95**	Outdoor unit compressor motor control error	
250	**96**	Open loop error(Field-weakening relevant)	**RAC** Inverter models G series
251	**97**	Outdoor unit fan motor 1 error	
252	**98**	Outdoor unit fan motor 2 error	

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253	**99**	Outdoor unit 4-way valve error	**VRF** J-II / V-II / VR-II Series
254	**9A**	Outdoor unit coil (expansion valve) error	
259	**9U**	Outdoor unit miscellaneous error	
261	**A1**	Outdoor unit discharge temperature 1 error	
262	**A2**	Outdoor unit discharge temperature 2 error	
263	**A3**	Outdoor unit compressor temperature error	
264	**A4**	Outdoor unit pressure error 1	
265	**A5**	Outdoor unit pressure error 2	
266	**A6**	Outdoor unit heat exchanger temperature error	
267	**A7**	Suction temperature abnormal	
268	**A8**	Poor refrigerant circulation	
269	**A9**	Current overload error	
270	**AA**	Outdoor unit special operation error	
271	**AC**	Ambient temperature error	
272	**AF**	Out of the possible operation range	
273	**AJ**	Freeze protection operated	
277	**C1**	Peripheral unit main PCB error	
278	**C2**	Peripheral unit transmission PCB error	
279	**C3**	Peripheral unit PCB 1 error	
280	**C4**	PCB 2 error	
281	**C5**	PCB 3 error	
282	**C6**	PCB 4 error	
283	**C7**	PCB 5 error	
284	**C8**	Peripheral unit input device error	
285	**C9**	Display device error	
286	**CA**	EEPROM error	
287	**CC**	Peripheral unit sensor error	
288	**CF**	Peripheral unit external connector error (USB memory)	
289	**CJ**	Other parts error	
293	**F1**	System tool software error	
294	**F2**	System tool adaptor error	
295	**F3**	System tool interface error	
296	**F4**	System tool environment error	
309	**J1**	RB unit error	
310	**J2**	Branch boxes error	
311	**J3**	Total heat exchanging, ventilation unit error	
312	**J4**	Domestic hot water unit error	
313	**J5**	Zone control interface error	

7.2 *VRF V / S / J series*

Error in KNX	Error in Remote Controller	Error Description	
-1	**NA**	Communication Error (Hex:FFFF, Dec:65535)	**VRF** V / S / J series
0	**00**	No Error	
2	**02**	Model information Error	
4	**04**	Power frequency Error	
6	**06**	EEPROM access Error	
7	**07**	EEPROM deletion Error	
9	**09**	Room sensor Error	
10	**0A**	Heat Ex. Middle Sensor Error	
11	**0b**	Heat Ex. Inlet sensor Error	
12	**0C**	Heat Ex. Outlet sensor Error	
13	**0d**	Blower temperature thermistor Error	
17	**11**	Drain Error	
18	**12**	Room temperature Error	
19	**13**	Indoor fan motor Error	
20	**18**	Standard wired remote Error Standard wired token Error	
31	**1F**	Network communication Error	
32	**20**	Node setting error	
33	**21**	Communication Error between Main PCB & Transmission PCB	
34	**32**	Outdoor unit Error	

In case you detect an error code not listed in any of the different tables above, please contact your nearest FGL technical support service.

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8 Appendix A – Communication Objects Table

TOPIC	OBJECT NUMBER	NAME	LENGTH	DATAPOINT TYPE		FLAGS				FUNCTION
				DPT_NAME	DPT_ID	R	W	T	U	
On/Off	0	Control_ On/Off	1 bit	DPT_Switch	1.001		W	T		0 - Off; 1-On
Mode	1	Control_ Economy	1 bit	DPT_Bool	1.002		W	T		1 – Set ECONOMY
	2	Control_ Mode	1 byte	DPT_HVACContrMode	20.105		W	T		0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry
	3	Control_ Mode Cool/Heat	1 bit	DPT_Heat/Cool	1.100		W	T		0 - Cool; 1 - Heat;
	4	Control_ Mode Cool & On	1 byte	DPT_Scaling	5.001		W	T		0% - Off; 0.1%-100% - On + Cool
	5	Control_ Mode Heat & On	1 byte	DPT_Scaling	5.001		W	T		0% - Off; 0.1%-100% - On + Heat
	6	Control_ Mode Auto	1 bit	DPT_Bool	1.002		W	T		1 - Auto
	7	Control_ Mode Heat	1 bit	DPT_Bool	1.002		W	T		1 - Heat
	8	Control_ Mode Cool	1 bit	DPT_Bool	1.002		W	T		1 - Cool
	9	Control_ Mode Fan	1 bit	DPT_Bool	1.002		W	T		1 - Fan
	10	Control_ Mode Dry	1 bit	DPT_Bool	1.002		W	T		1 - Dry
	11	Control_ Mode +/-	1 bit	DPT_Step	1.007		W			0 - Decrease; 1 - Increase
		Control_ Mode +/-	1 bit	DPT_UpDown	1.008		W			0 - Up; 1 - Down
Fan Speed	12	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; 4 - Speed 4
	13	Control_ Fan Speed Man/Auto	1 bit	DPT_Bool	1.002		W	T		0 – Manual; 1 - Auto

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Fan Speed	**14**	Control_ Fan Speed 1	1 bit	DPT_Bool	1.002		W	T		1 – Set Fan Speed 1
	15	Control_ Fan Speed 2	1 bit	DPT_Bool	1.002		W	T		1 – Set Fan Speed 2
	16	Control_ Fan Speed 3	1 bit	DPT_Bool	1.002		W	T		1 – Set Fan Speed 3
	17	Control_ Fan Speed 4	1 bit	DPT_Bool	1.002		W	T		1 – Set Fan Speed 4
	18	Control_ Fan Speed +/-	1 bit	DPT_Step	1.007		W			0 - Decrease; 1 - Increase
		Control_ Fan Speed +/-	1 bit	DPT_UpDown	1.008		W			0 - Up; 1 - Down
Vanes Up-Down	**19**	Control_ Vanes U-D / 4 pos	1 byte	DPT_Scaling	5.001		W	T		0%-37% - Pos1; 38%-62% - Pos2; 63%-87% Pos3; 88%-100% - Pos4
		Control_ Vanes U-D / 4 pos	1 byte	DPT_Enumerated	5.010		W	T		1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4
	20	Control_ Vanes U-D Pos1	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 1
	21	Control_ Vanes U-D Pos2	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 2
	22	Control_ Vanes U-D Pos3	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 3
	23	Control_ Vanes U-D Pos4	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 4
	24	Control_ Vanes U-D Swing	1 bit	DPT_Bool	1.002		W	T		0 - Off; 1 - Swing
	25	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
	26	Control_ Vanes U-D Move Pos	1 bit	DPT_Step	1.017		W			0 – Move position; 1 – Move position
Vanes Left-Right	**27**	Control_ Vanes L-R / 5 pos	1 byte	DPT_Scaling	5.001		W	T		0%-29% - Pos1; 30%-49% - Pos2; 50%-69% Pos3; 70%-89% - Pos4; 90%-100% - Pos5
		Control_ Vanes L-R / 5 pos	1 byte	DPT_Enumerated	5.010		W	T		1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5
	28	Control_ Vanes L-R Pos1	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 1
	29	Control_ Vanes L-R Pos2	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 2
	30	Control_ Vanes L-R Pos3	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 3

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	31	Control_ Vanes L-R Pos4	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 4
	32	Control_ Vanes L-R Pos5	1 bit	DPT_Bool	1.002		W	T		1 – Set Position 5
	33	Control_ Vanes L-R Swing	1 bit	DPT_Bool	1.002		W	T		0 - Off; 1 - Swing
	34	Control_ Vanes L-R +/-	1 bit	DPT_Step	1.007		W			0 - Decrease; 1 - Increase
		Control_ Vanes L-R +/-	1 bit	DPT_UpDown	1.008		W			0 - Up; 1 - Down
	35	Control_ Vanes L-R Move Pos	1 bit	DPT_Step	1.007		W			0 – Move position; 1 – Move position
Temperature	**36**	Control_ Setpoint Temperature	2 bytes	DPT_Value_Temp	9.001		W	T		(°C)
	37	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
	38	Control_ Ambient Temp	2 bytes	DPT_Value_Temp	9.001		W	T		(°C)
Timeout	**39**	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
	40	Control_ Occupancy	1 bit	DPT_Occupancy	1.018		W	T		0 - Not Occupied; 1 - Occupied
	41	Control_ Sleep Timeout	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Start
Locking	**42**	Control_ Lock Remote Control	1 bit	DPT_Bool	1.002		W	T		0 - Unlocked; 1 - Locked
	43	Control_ Lock Control Objects	1 bit	DPT_Bool	1.002		W	T		0 - Unlocked; 1 - Locked
Special Modes	**44**	Control_ Power Mode	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Start
	45	Control_ Econo Mode	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Start
	46	Control_ Additional Heat	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Start
	47	Control_ Additional Cool	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Start
Scenes	**48**	Control_ Save / Control_ Exec Scene	1 byte	DPT_SceneControl	18.001		W	T		128 to 132 - Save Scene 1 to 5; 0 to 4 – Exec. Scene 1 to 5;
	49	Control_ Store Scene1	1 bit	DPT_Bool	1.002		W			1 - Store Scene

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	50	Control_ Store Scene2	1 bit	DPT_Bool	1.002		W			1 - Store Scene
	51	Control_ Store Scene3	1 bit	DPT_Bool	1.002		W			1 - Store Scene
	52	Control_ Store Scene4	1 bit	DPT_Bool	1.002		W			1 - Store Scene
	53	Control_ Store Scene5	1 bit	DPT_Bool	1.002		W			1 - Store Scene
	54	Control_ Execute Scene1	1 bit	DPT_Bool	1.002		W	T		1 - Execute Scene
	55	Control_ Execute Scene2	1 bit	DPT_Bool	1.002		W	T		1 - Execute Scene
	56	Control_ Execute Scene3	1 bit	DPT_Bool	1.002		W	T		1 - Execute Scene
	57	Control_ Execute Scene4	1 bit	DPT_Bool	1.002		W	T		1 - Execute Scene
	58	Control_ Execute Scene5	1 bit	DPT_Bool	1.002		W	T		1 - Execute Scene
Disabling	**59**	Control_ Disable Input 1	1 bit	DPT_Bool	1.002		W	T		0 - False; 1 - True
		Control_ Disable Input 1	1 bit	DPT_Enable	1.003		W	T		0 - Disable; 1 - Enable
	60	Control_ Disable Input 2	1 bit	DPT_Bool	1.002		W	T		0 - False; 1 - True
		Control_ Disable Input 2	1 bit	DPT_Enable	1.003		W	T		0 - Disable; 1 - Enable
	61	Control_ Disable Input 3	1 bit	DPT_Bool	1.002		W	T		0 - False; 1 - True
		Control_ Disable Input 3	1 bit	DPT_Enable	1.003		W	T		0 - Disable; 1 - Enable
	62	Control_ Disable Input 4	1 bit	DPT_Bool	1.002		W	T		0 - False; 1 - True
		Control_ Disable Input 4	1 bit	DPT_Enable	1.003		W	T		0 - Disable; 1 - Enable
On/Off	**64**	Status_ On/Off	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
Mode	**65**	Status_ Economy	1 bit	DPT_Bool	1.002	R		T		1 –Economy is active
	66	Status_ Mode	1 byte	DPT_HVACContrMode	20.105	R		T		0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry
	67	Status_ Mode Cool/Heat	1 bit	DPT_Heat/Cool	1.100	R		T		0 - Cool; 1 - Heat
	68	Status_ Mode Auto	1 bit	DPT_Bool	1.002	R		T		1 - Auto
	69	Status_ Mode Heat	1 bit	DPT_Bool	1.002	R		T		1 - Heat

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	70	Status_ Mode Cool	1 bit	DPT_Bool	1.002	R		T		1 - Cool
	71	Status_ Mode Fan	1 bit	DPT_Bool	1.002	R		T		1 - Fan
	72	Status_ Mode Dry	1 bit	DPT_Bool	1.002	R		T		1 - Dry
	73	Status_ Mode Text	14 bytes	DPT_String_8859_1	16.001	R		T		ASCII String
Fan Speed	**74**	Status_ Fan Speed / 3 Speeds	1 byte	DPT_Scaling	5.001		W	T		33% - Speed 1; 67% - Speed 2; 100% - Speed 3;
		Status_ Fan Speed / 3 Speeds	1 byte	DPT_Enumerated	5.010		W	T		1 - Speed 1; 2 - Speed 2; 3 Speed 3;
		Status_ Fan Speed / 4 Speeds	1 byte	DPT_Scaling	5.001		W	T		25% - Speed 1; 50% - Speed 2; 75% - Speed 3; 100% - Speed 4
		Status_ Fan Speed / 4 Speeds	1 byte	DPT_Enumerated	5.010		W	T		1 - Speed 1; 2 - Speed 2; 3 Speed 3; 4 Speed 4
	75	Status_ Fan Speed Manual/Auto	1 bit	DPT_Bool	1.002	R		T		0 – Manual; 1 - Auto
	76	Status_ Fan Speed 1	1 bit	DPT_Bool	1.002	R		T		1 – Fan is in speed 1
	77	Status_ Fan Speed 2	1 bit	DPT_Bool	1.002	R		T		1 – Fan is in speed 2
	78	Status_ Fan Speed 3	1 bit	DPT_Bool	1.002	R		T		1 - Fan is in Speed 3
	79	Status_ Fan Speed 4	1 bit	DPT_Bool	1.002	R		T		1 - Fan is in Speed 4
	80	Status_ Fan Speed Text	14 bytes	DPT_String_8859_1	16.001	R		T		ASCII String
Vanes UP-Down	**81**	Status_ Vanes U-D / 4 pos	1 byte	DPT_Scaling	5.001	R		T		25% - Pos1; 50% - Pos2; 75% - Pos3; 100% - Pos4
		Status_ Vanes U-D / 4 pos	1 byte	DPT_Enumerated	5.010	R		T		1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4
	82	Status_ Vanes U-D Pos1	1 bit	DPT_Bool	1.002	R		T		1 - Position 1
	83	Status_ Vanes U-D Pos2	1 bit	DPT_Bool	1.002	R		T		1 - Position 2
	84	Status_ Vanes U-D Pos3	1 bit	DPT_Bool	1.002	R		T		1 - Position 3
	85	Status_ Vanes U-D Pos4	1 bit	DPT_Bool	1.002	R		T		1 - Position 4
	86	Status_ Vanes U-D Swing	1 bit	DPT_Bool	1.002	R		T		0 – Off; 1 - Swing
	87	Status_ Vanes U-D Text	14 bytes	DPT_String_8859_1	16.001	R		T		ASCII String

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Vanes Left-Right	88	Status_ Vanes L-R / 5 pos	1 byte	DPT_Scaling	5.001	R		T		20% - Pos1; 40% - Pos2; 60% - Pos3; 80% - Pos4; 100% - Pos5
		Status_ Vanes L-R / 5 pos	1 byte	DPT_Enumerated	5.010	R		T		1 - Pos1; 2 - Pos2; 3 - Pos3; 4 - Pos4; 5 - Pos5
	89	Status_ Vanes L-R Pos1	1 bit	DPT_Bool	1.002	R		T		1 - Position 1
	90	Status_ Vanes L-R Pos2	1 bit	DPT_Bool	1.002	R		T		1 - Position 2
	91	Status_ Vanes L-R Pos3	1 bit	DPT_Bool	1.002	R		T		1 - Position 3
	92	Status_ Vanes L-R Pos4	1 bit	DPT_Bool	1.002	R		T		1 - Position 4
	93	Status_ Vanes L-R Pos5	1 bit	DPT_Bool	1.002	R		T		1 - Position 5
	94	Status_ Vanes L-R Swing	1 bit	DPT_Bool	1.002	R		T		0 – Off; 1 - Swing
	95	Status_ Vanes L-R Text	14 bytes	DPT_String_8859_1	16.001	R		T		ASCII String
Temperature	96	Status_ AC Setpoint Temp	2 bytes	DPT_Value_Temp	9.001	R		T		(°C)
	97	Status_ AC Ambient Ref Temp	2 bytes	DPT_Value_Temp	9.001	R		T		(°C)
Error	98	Status_ Error/Alarm	1 bit	DTP_Alarm	1.005	R		T		0 - No Alarm; 1 - Alarm
	99	Status_ Error Code	2 bytes	Enumerated		R		T		0 - No Error; Any other see user's manual
	100	Status_ Error Text code	14 bytes	DPT_String_8859_1	16.001	R		T		4 char FJ Error; Empty - None
Locking	101	Status_ Lock Remote Control	1 bit	DPT_Bool	1.002		W	T		0 - Unlocked; 1 - Locked
	102	Status_ Lock Remote Control Objects	1 bit	DPT_Bool	1.002		W	T		0 - Unlocked; 1 - Locked
Special Modes	103	Status_ Power Mode	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	104	Status_ Econo Mode	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	105	Status_ Additional Heat	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	106	Status_ Additional Cool	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On

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Counter	**107**	Status_ Operation Hour Counter	2 bytes	DPT_Value_2_Ucount	7.007	R		T		Number of operating hours
Scene	**108**	Status_ Current Scene	1 byte	DPT_SceneNumber	17.001	R		T		0 to 4 - Scene 1 to 5; 63 - No Scene
Binary Inputs	**109**	Status_ Inx - Switching	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	111 **113**	Status_ Inx – Dimming - On/Off	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1 - On
	115	Status_ Inx – Shut/Blind - Step	1 bit	DPT_ShutterBlinds	1.023	R		T		0 – Step Up; 1 – Step Down
	110 **112** **114** **116**	Status_ Inx – Value	1 byte	DPT_Value_1_Ucount	5.010	R		T		1 byte unsigned value
		Status_ Inx – Value	2 bytes	DPT_Value_2_Ucount	7.001	R		T		2 byte unsigned value
		Status_ Inx – Value	2 bytes	DPT_Value_2_Count	8.001	R		T		2 byte signed value
		Status_ Inx – Value	2 bytes	DPT_Value_Temp	9.001	R		T		Temperature (°C)
		Status_ Inx – Value	4 bytes	DPT_Value_4_Ucount	12.001	R		T		4 byte unsigned value
		Status_ Inx – Dimming – Step(%)	1 bit	DPT_Control_Dimm.	3.007	R		T		Dimming step
		Status_ Inx - Shut/Blind -Move	1 bit	DPT_ShutterBlinds	1.023	R		T		0 – Move Up; 1 – Move Down

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