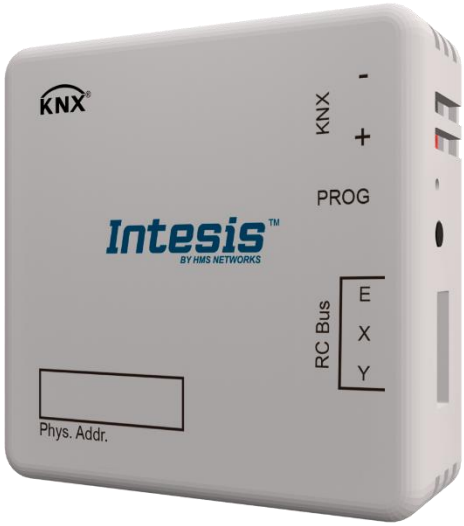
# Interface for integration of Midea air conditioners into KNX TP-1 (EIB) control systems

Compatible with VRF air conditioners line commercialized by Midea

Application's Program Version: 2.5

## USER MANUAL

Issue date: 08/2024 r1.6 ENGLISH



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

Compatible with VRF air conditioners line commercialized by Midea.

Application's Program Version: 2.5

| ORDER CODE | LEGACY ORDER CODE |
|---|---|
| INKNXMID016I000 | MD-AC-KNX-16 |
| INKNXMID064I000 | MD-AC-KNX-64 |

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# Important User Information

## Disclaimer

The information in this document is for informational purposes only. Please inform HMS Industrial Networks of any inaccuracies or omissions found in this document. HMS Industrial Networks disclaims any responsibility or liability for any errors that may appear in this document.

HMS Industrial Networks reserves the right to modify its products in line with its policy of continuous product development. The information in this document shall therefore not be construed as a commitment on the part of HMS Industrial Networks and is subject to change without notice. HMS Industrial Networks makes no commitment to update or keep current the information in this document.

The data, examples and illustrations found in this document are included for illustrative purposes and are only intended to help improve understanding of the functionality and handling of the product. In view of the wide range of possible applications of the product, and because of the many variables and requirements associated with any particular implementation, HMS Industrial Networks cannot assume responsibility or liability for actual use based on the data, examples or illustrations included in this document nor for any damages incurred during installation of the product. Those responsible for the use of the product must acquire sufficient knowledge in order to ensure that the product is used correctly in their specific application and that the application meets all performance and safety requirements including any applicable laws, regulations, codes and standards. Further, HMS Industrial Networks will under no circumstances assume liability or responsibility for any problems that may arise as a result from the use of undocumented features or functional side effects found outside the documented scope of the product. The effects caused by any direct or indirect use of such aspects of the product are undefined and may include e.g. compatibility issues and stability issues.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

**INDEX**

1 Presentation ..... 5
2 Connection ..... 6
3 Configuration and setup ..... 7
4 ETS Parameters ..... 8
4.1 General configuration ..... 9
4.1.1 Download latest database entry for this product and its User Manual from: ..... 9
4.1.2 Intesis Product ..... 9
4.1.3 Number of Indoor Units in ETS ..... 9
4.1.4 First Status Updated to KNX ..... 10
4.1.5 Enable object "Error Code [2byte]" ..... 10
4.1.6 Enable object "Error Text Code [14byte]" ..... 10
4.2 AC supported features ..... 11
4.2.1 Supported operating modes ..... 11
4.2.2 Supported fan speeds ..... 12
4.3 Global mode configuration ..... 12
4.3.1 Enable use of "Operating Mode" objects ..... 13
4.3.2 Enable use of Mode Heat / Cool bit obj ..... 13
4.3.3 Enable use of + / - object for Mode ..... 13
4.3.4 Enable use of bit-type Mode objects (for control) ..... 14
4.3.5 Enable use of bit-type Mode objects (for status) ..... 14
4.3.6 Enable use of Text object for Mode ..... 14
4.4 Fan Speed Configuration dialog ..... 15
4.4.1 DPT object type for fan speed ..... 15
4.4.2 Enable use of +/- object for Fan Speed ..... 17
4.4.3 Enable use of bit-type Fan Speed objects (for Control) ..... 18
4.4.4 Enable use of bit-type Fan Speed objects (for Status) ..... 18
4.4.5 Enable use of Text object for Fan Speed ..... 19
4.5 Global Vanes U-D configuration ..... 19
4.5.1 Enable use of Text object for Vanes U-D ..... 20
4.6 Global temperature configuration ..... 20
4.6.1 Enable use of +/- obj for Setpoint ..... 20
4.6.2 Ambient Ref. Temp. is provided from KNX ..... 21
4.7 Remote Lock Configuration ..... 22
4.7.1 Enable Remote Lock Objects ..... 22
4.7.2 Initial state of remote lock ..... 22
4.8 Addressing of Indoor Units ..... 23
4.9 License ..... 23
5 Specifications ..... 24
6 AC Unit Types compatibility ..... 25
7 Error Codes ..... 25
Appendix A – Communication Objects Table ..... 26

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 1 Presentation




INKNXMID---I000 allows a complete and natural integration of Midea air conditioners with KNX control systems.

Compatible with all models of VRF line of Midea air conditioners.

Main features:

- Reduced dimensions. Installation even inside the A.C. indoor unit.
- Quick and non-visible installation.
- External power not required.
- Direct connection to the KNX EIB bus.
- Direct connection to the AC indoor unit.
- Fully KNX interoperable, configuration from ETS.
- Multiple objects for control (of different types: bit, byte, characters…).
- Control of the AC unit based in the ambient temperature read by the own AC unit, or in the ambient temperature read by any KNX thermostat.
- Total Control and Monitoring of the AC unit from KNX, including monitoring of AC unit's state of internal variables and error indication and error code.
- AC unit can be controlled simultaneously by the IR remote control of the AC unit and by KNX.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 2 Connection

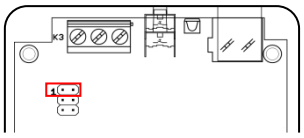
Connection of the interface to the AC indoor unit:

Disconnect mains power from the AC unit. Open the front cover of the indoor unit to gain access to the internal control board. In the control board, locate the socket connector marked as XYE.

Using a 3 wires cable, connect the EXY connector from the INKNXMID---I000 to the XYE connector of the AC unit's control board.

Fix the INKNXMID---I000 inside or outside the AC indoor unit depending on your needs – remember that INKNXMID---I000 must be also connected to the KNX bus. Close the AC indoor unit's front cover again.

**IMPORTANT:** If the INKNXMID---I000 gateway is **not** placed at one end of the EXY bus, the terminal resistor should be deactivated. Remove Jumper 1 to deactivate the 120 Ω terminal resistor.



**IMPORTANT:** The Intesis gateway acts as a central controller. Since the XYE bus supports only one central controller, the only way to use another central controller in addition to the gateway is to add an XYE Extension Kit (not included).

Connection of the interface to the KNX bus:

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

Connections diagram:

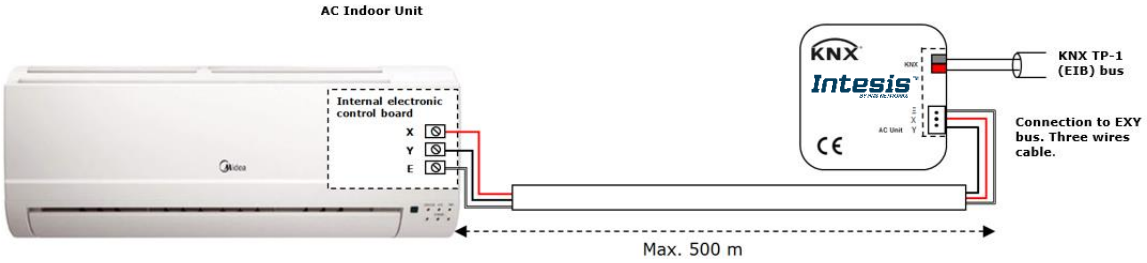



**Figure 2.1** Default parameter configuration

⚠ Please note that address of indoor unit must be set accordingly to the System in parameters dialog. See *4.1.3 Number of Indoor Units in ETS* for more information.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 3 Configuration and setup

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

ETS project for this device can be downloaded from:
**https://www.hms-networks.com/p/inknxmid064i000-midea-commercial-vrf-systems-to-knx?tab=tab-support**

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

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 4 ETS Parameters

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

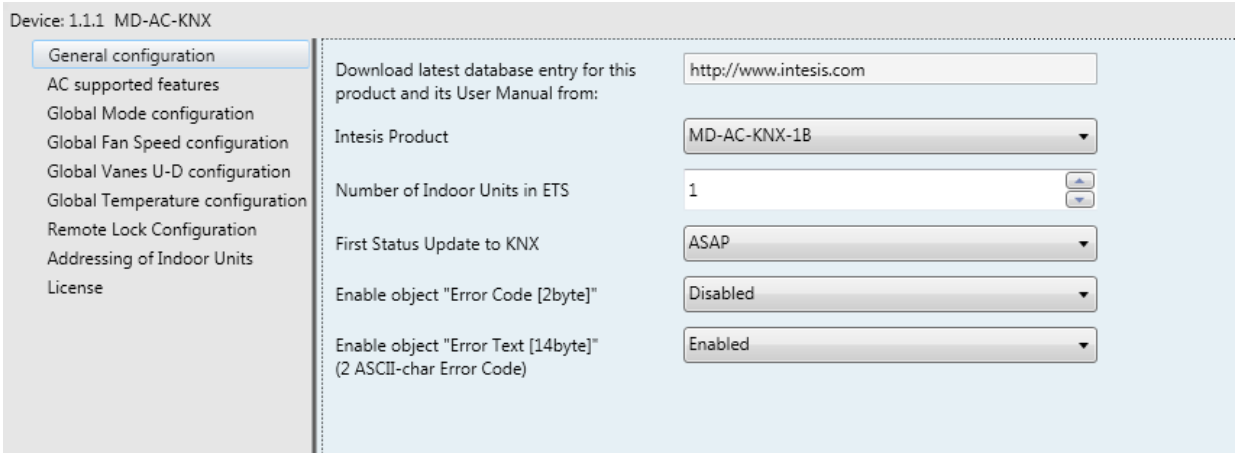



**Figure 4.1** Default parameter configuration

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 Return Temp* and *Status_ Error/Alarm* are shown.

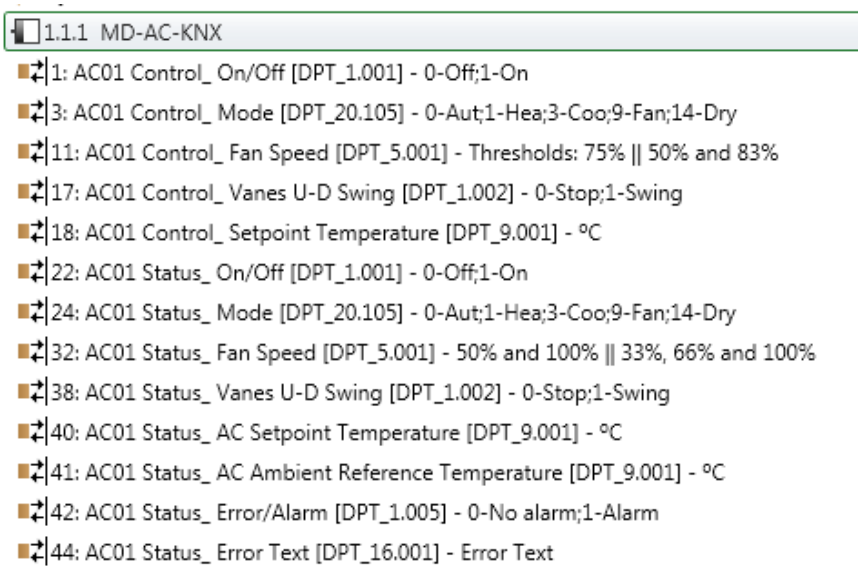



**Figure 4.2** Default communication objects

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

## *4.1 General configuration*

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

### 4.1.1 Download latest database entry for this product and its User Manual from:

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

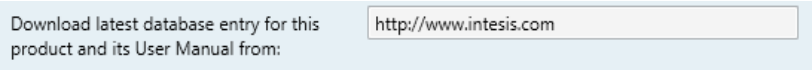



**Figure 4.3** Parameter detail

### 4.1.2 Intesis Product

This parameter is used to check, before sending the programing, the maximum number of AC units your device supports.

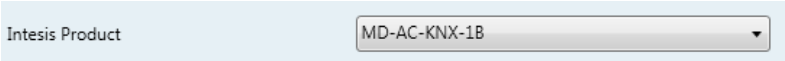



**Figure 4.4** Parameter detail

Select the version of the gateway that you have:

- INKNXMID001I000, if you only want to control 1 AC unit.
- INKNXMID016I000, if you only want to control up to 16 AC units.
- INKNXMID064I000, if you only want to control up to 64 AC units.

### 4.1.3 Number of Indoor Units in ETS

This parameter is used to hide/show communication object according to the number of AC units you need to configure. Value ranges go from 1 to 64.

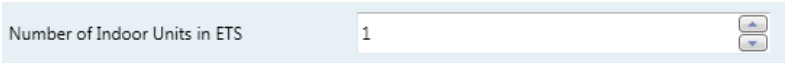



**Figure 4.5** Parameter detail

In case you introduce a number higher than the maximum number of units allowed by your license, you will get a warning message. This is just for information and will not block the configuration process. Configurations with more indoor units configured than the ones allowed by the license will not be downloaded correctly.

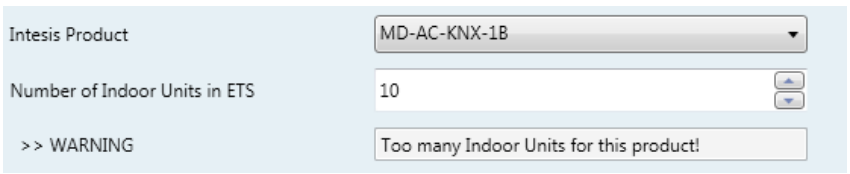



**Figure 4.6** Parameter detail

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

### 4.1.4 First Status Updated to KNX

This parameter defines how fast the status is updated to KNX. Depending on the value selected, more or less priority will be assigned to this action. As there are so many parameters available, it is important to consider carefully how to set this parameter.

- If set to **"ASAP"**, all status communication objects will send its value (if needed).
- If set to **"Slow"**, all status communication objects will send its value (if needed), but slower than in the previous option (ASAP).
- If set to **"Super Slow"**, all status communication objects will send its value (if needed), but slower than in the previous option (Slow).

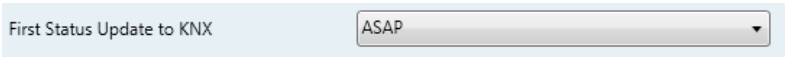



**Figure 4.7** Parameter detail

### 4.1.5 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.

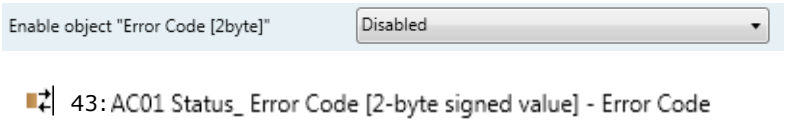



**Figure 4.8** Communication object and parameter detail

- If set to **"Disabled"** the object will not be shown.
- If set to **"Enabled"** the *Status_ Error Code [2byte signed value]* 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.

### 4.1.6 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.

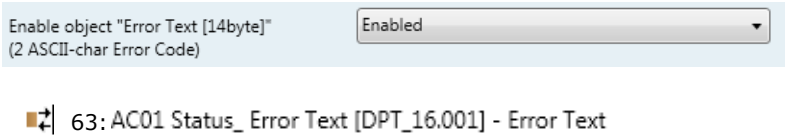



**Figure 4.9** Communication object and parameter detail

- If set to **"Disabled"** the object will not be shown.
- If set to **"Enabled"** the *Status_ Error Text Code* object will appear.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

- 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 in the remote controller and in the error list from the indoor unit manufacturer. If the object's value is empty that means there is no error.

## *4.2 AC supported features*

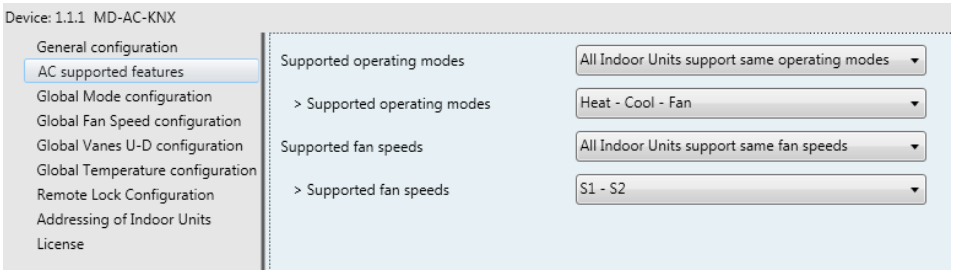



**Figure 4.10** Parameter detail

### 4.2.1 Supported operating modes

This parameter determines all indoor units supported operating modes.




**Figure 4.11** Parameter detail

- If set to **"All Indoor Units support same operating modes"** the supported operating modes will be applied to all indoor units.
- If set to **"Supported modes in each Indoor Unit might differ"**, you will need to select the supported operating modes for each indoor unit individually.

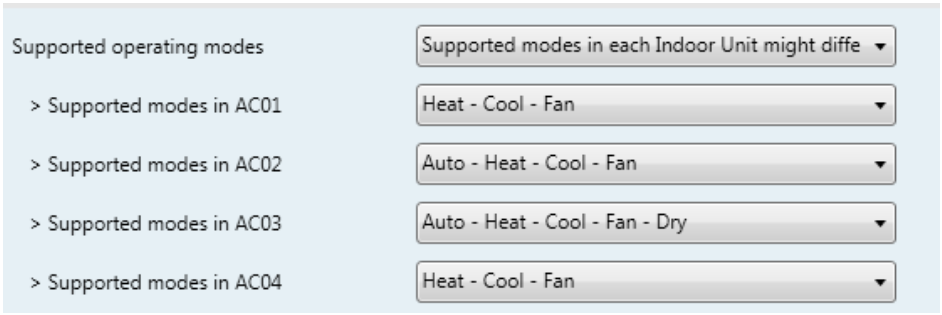



**Figure 4.12** Parameter detail

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

### 4.2.2 Supported fan speeds

This parameter determines all indoor units supported fan speeds.

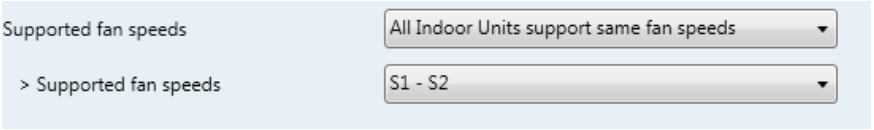



**Figure 4.13** Parameter detail

- If set to **"All Indoor Units support same fan speeds"** the supported operating modes will be applied to all indoor units.
- If set to **"Supported fan speeds in each Indoor Unit might differ"**, you will need to select the supported fan speed for each indoor unit individually.

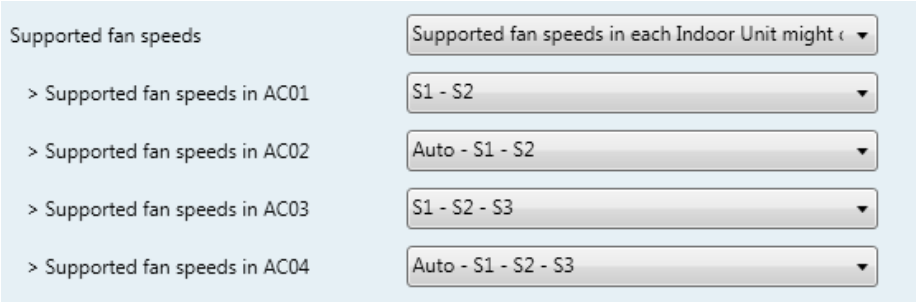



**Figure 4.14** Parameter detail

## *4.3 Global mode configuration*

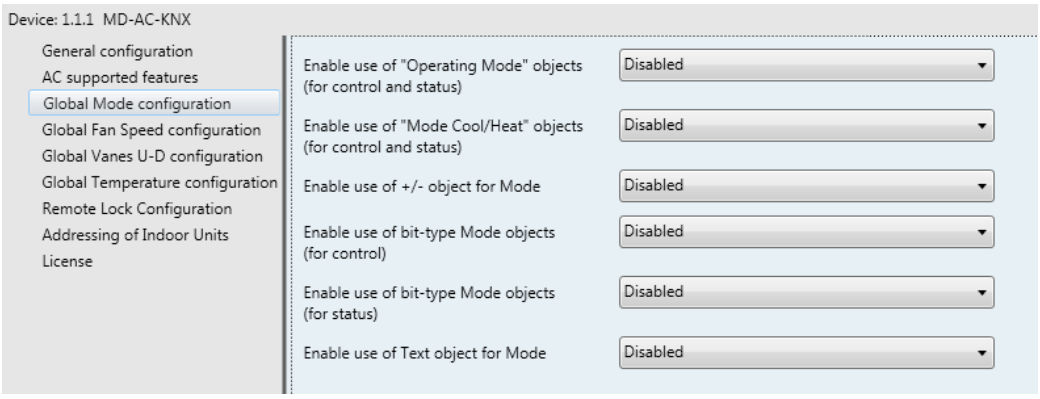
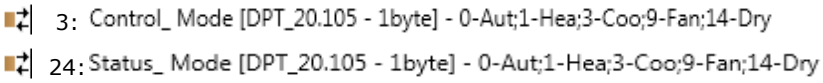



**Figure 4.15** Default Mode Configuration dialog

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

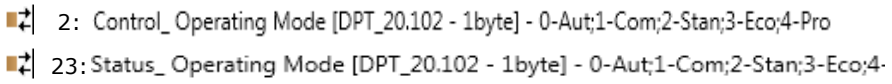



© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

The byte-type communication object for Mode works with the DTP_20.105. Auto mode will be enabled with a **"0"** value, Heat mode with a **"1"** value, Cool mode with a **"3"** value, Fan mode with a **"9"** value and Dry mode with a **"14"** value.

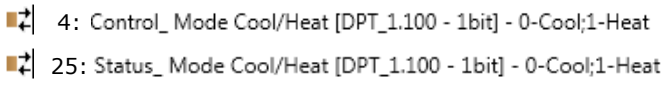
### 4.3.1 Enable use of "Operating Mode" objects

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




### 4.3.2 Enable use of Mode Heat / Cool bit obj

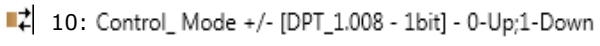
This parameter shows/hides the *Control_* and *Status_ Mode Cool/Heat* communication objects.




- If set to **"Disabled"** the objects will not be shown.
- If set to **"Enabled"** 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.

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

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




- If set to **"Disabled"** the object will not be shown.
- If set to **"Enabled"** the *Control_ Mode +/-* object and a new parameter will appear.

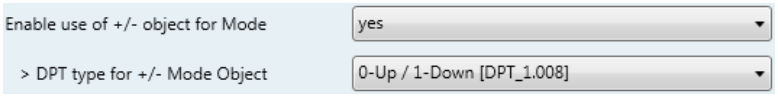



**Figure 4.16** Parameter detail

- DPT type for +/- Mode Object

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

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

The sequence followed when using this object is shown below:

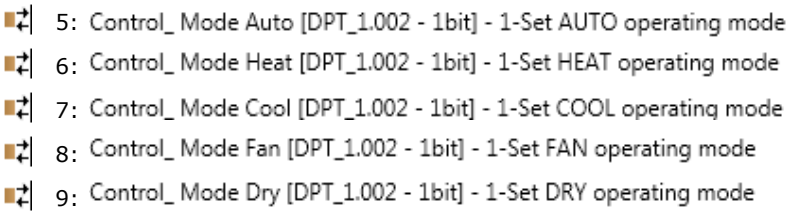



- Up / Increase
- Down / Decrease

Keep in mind that depending on the indoor unit you have and the available features, Auto mode and Dry mode may not be present.

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

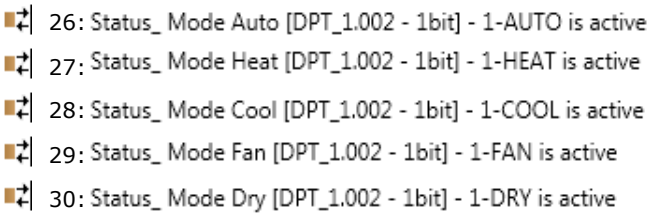
This parameter shows/hides the bit-type *Control_ Mode* objects.




- 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.

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

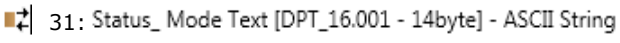
This parameter shows/hides the bit-type *Status_ Mode* objects.




- 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.

### 4.3.6 Enable use of Text object for Mode

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




© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

- 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.

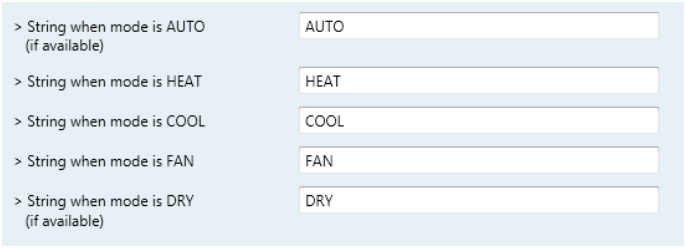



**Figure 4.17** Parameter detail

## 4.4 Fan Speed Configuration dialog

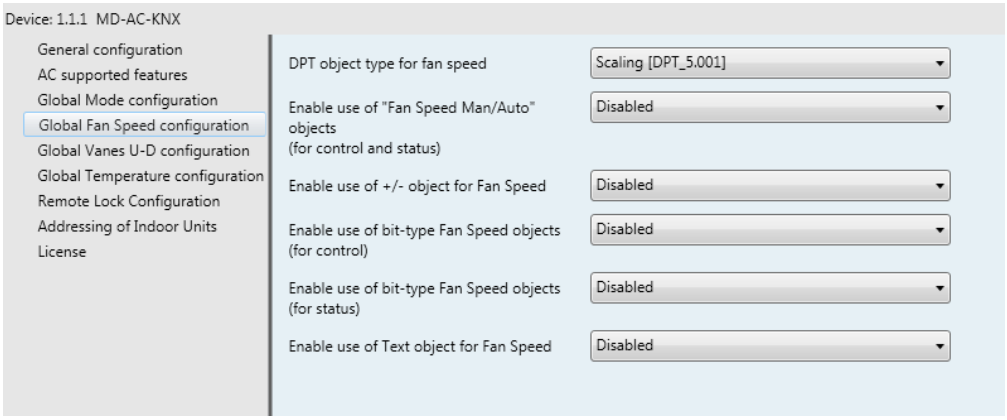



**Figure 4.18** Default Fan Speed Configuration dialog

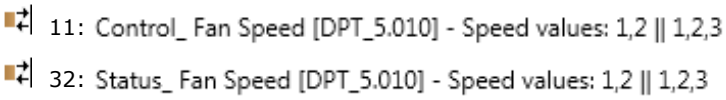
All the parameters in this section are related with the Fan Speed properties and communication objects.

### 4.4.1 DPT object type for fan speed

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.

**NOTE:** Remember that Fan Speeds are selected in the AC supported features tab (see section 4.2.2).

- When **"Enumerated [DPT 5.010]"** is selected, *Control_ Fan Speed* and *Status_ Fan Speed* communication objects for this DPT will appear. Also, depending on the number of fan speeds selected, these objects will be different.




© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

If this DPT is selected with 2 fan speeds:

The first fan speed will be selected if a **"1"** is sent to the *Control_* object. The second fan speed will be selected sending a **"2"**.

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

If this DPT is selected with 3 fan speeds:

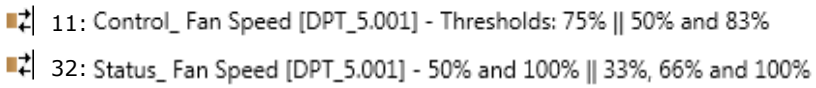
The first fan speed will be selected if a **"1"** is sent to the *Control_* object. The second one will be selected sending a **"2"**, and the last one sending a **"3"**.

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

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

- When **"Scaling [DPT 5.001]"** is selected, *Control_ Fan Speed* and *Status_ Fan Speed* communication objects for this DPT will appear. Also, depending on the number of fan speeds selected, these objects will be different.

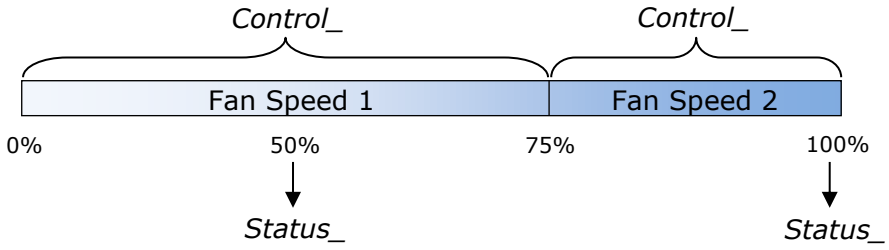
If this DPT is selected with 2 fan speeds:



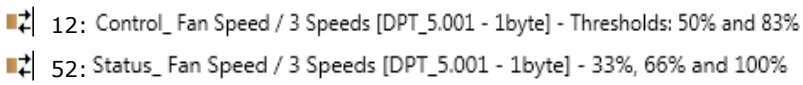

When a value between **0%** and **74%** is sent to the *Control_* object the first fan speed will be selected.

When a value between **75%** and **100%** is sent to the *Control_* object, the second speed will be selected.

The *Status_* object will return a **50%** for the first fan speed, and a **100%** for the second one.




If this DPT is selected with 3 fan speeds:



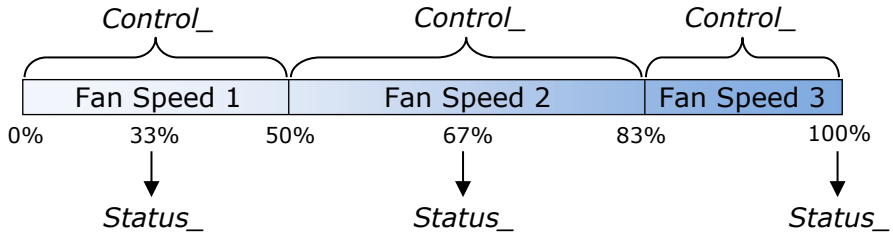

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

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

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

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

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




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

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

16: Control_ Fan Speed +/- [DPT_1.008 - 1bit] - 0-Up;1-Down

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

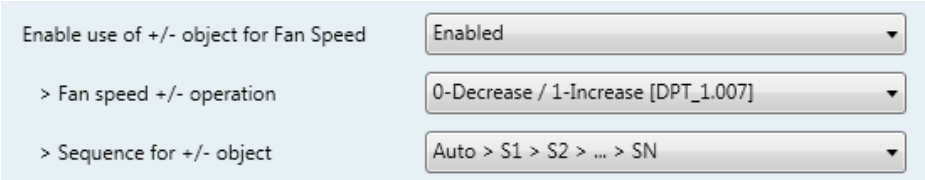



**Figure 4.19** Parameter detail

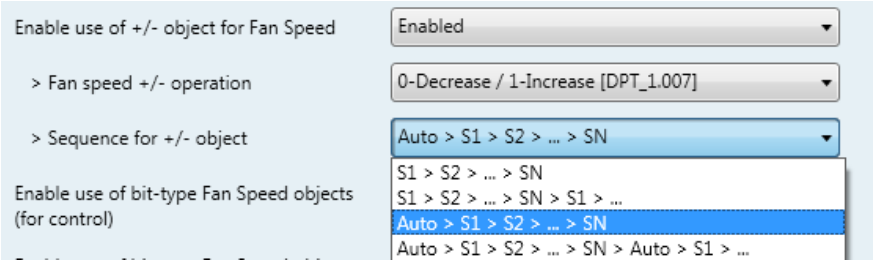
➢ Fan speed +/- operation

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

➢ Sequence for +/- object

This parameter lets choose between the different modes available:

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

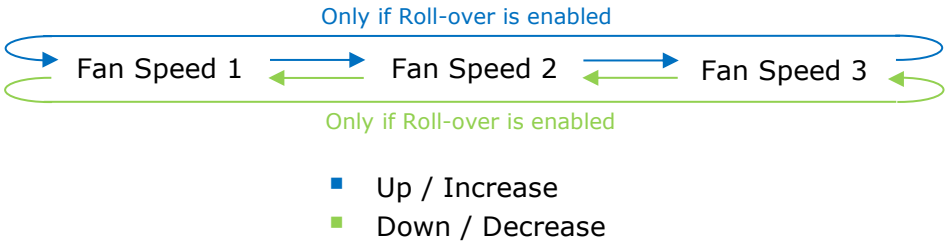



- **S1>S2>….>SN**
  Select this option if you don't have Auto mode and you don't want roll-over to be enabled.

- **S1>S2>….>SN>S1>…**
  Select this option if you don't have Auto mode and you want roll-over to be enabled.

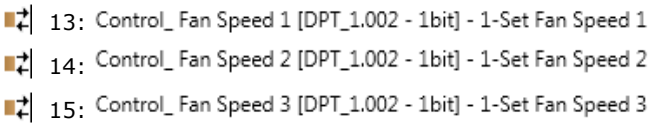
- **Auto>S1>S2>….>SN**
  Select this option if you have Auto mode and you don't want roll-over to be enabled.

- **Auto>S1>S2>….>SN>Auto>S1>…**
  Select this option if you have Auto mode and you want roll-over to be enabled.




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

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

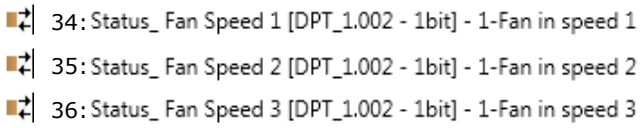



- If set to **"no"** the objects will not be shown.
- If set to **"yes"** the *Control_ Fan Speed* objects for Speed 1, Speed 2 and Speed 3 (if available) will appear. To activate a Fan Speed by using these objects a **"1"** value has to be sent.

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

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

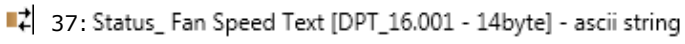
© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice




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

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

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




- 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 two (or three, depending on the number of fan speeds selected) text fields, one for each Fan Speed, that will let modify the text string displayed by the *Status_ Fan Speed Text* when changing a fan speed.

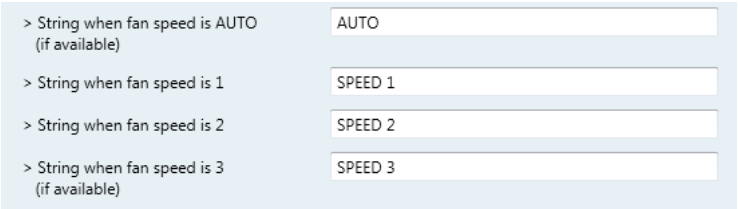



**Figure 4.20** Parameter detail

## *4.5 Global Vanes U-D configuration*

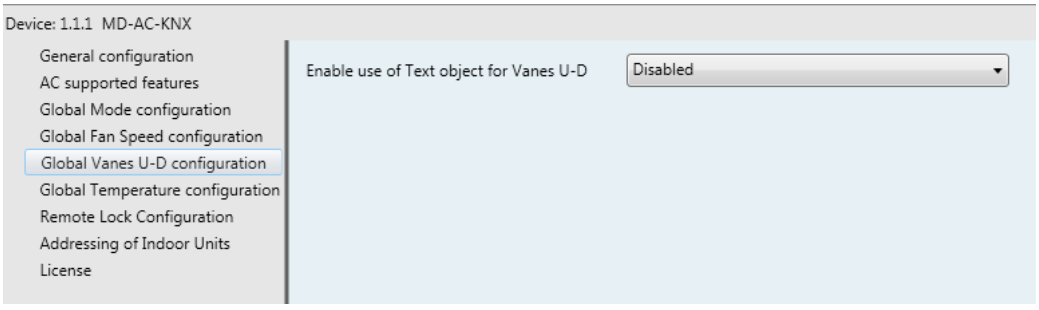



**Figure 4.21** Vane Up-Down configuration dialog

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

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

### 4.5.1 Enable use of Text object for Vanes U-D

This parameter lets you choose if you want to use a Text object to determine the U-D vanes position.

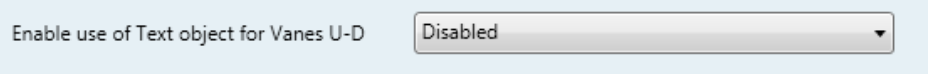
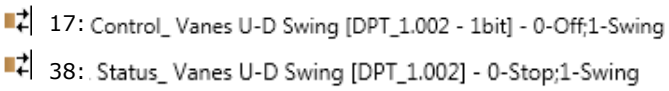
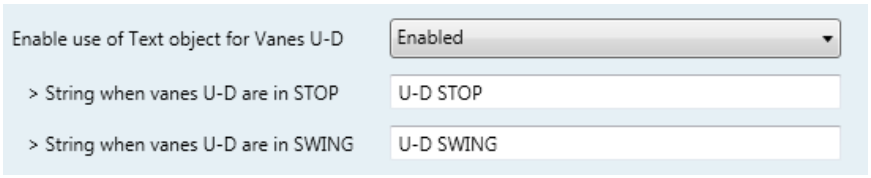


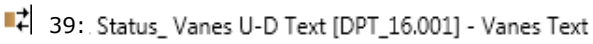

**Figure 4.22** Parameter detail

- If set to **"Disabled"** the only communication objects for the Up-Down Vanes shown will be




- If set to **"Enabled"** 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.*

## *4.6 Global temperature configuration*

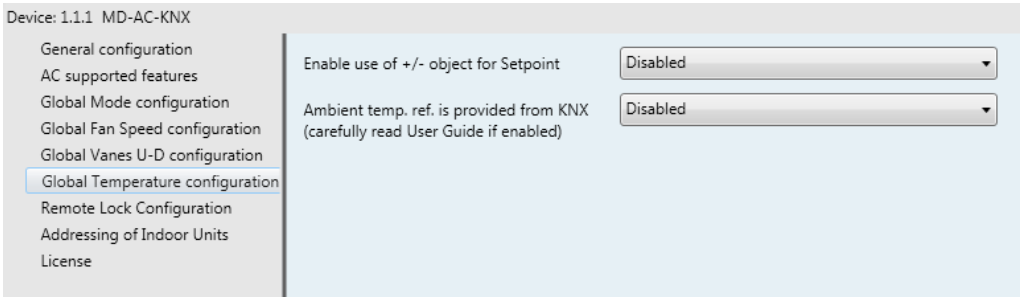



**Figure 4.20** Default Temperature Configuration dialog

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

### 4.6.1 Enable use of +/- obj for Setpoint

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

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

19: Control_ Setpoint Temp +/- [DPT_1.008 - 1bit] - 0-Up;1-Down

- 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.

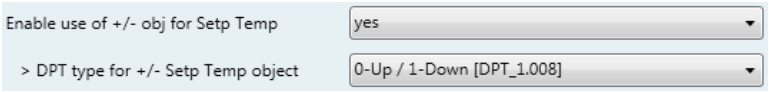



**Figure 4.23** Parameter detail

➢ DPT type for +/- Setp Temp object

This parameter lets choose between the datapoints **0-Up / 1-Down [DPT_1.008]** and **0-Decrease / 1-Increase [DPT_1.007]** for the *Control_ Setpoint Temp +/-* object.

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

- Up / Increase
- Down / Decrease

## 4.6.2 Ambient Ref. Temp. is provided from KNX

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

20: Control_ Ambient Temperature [DPT_9.001 - 2byte] - °C

- If set to **"no"** the object will not be shown.
- If set to **"yes"** the *Control_ Ambient Temperature* object will appear. Meant to be enabled when you want the temperature provided by a KNX sensor to be the reference ambient temperature for the air conditioner. Then, the following formula applies for the calculation of real *Control_ Setpoint Temperature* sent ot the AC unit:

"AC Setp. Temp" = "Ambient ref. Temp" - ("KNX Amb. Temp." - "KNX Setp Temp.")

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

As an example, consider the following situation:

User wants: **19°C** ("KNX Setp. Temp.")
User sensor (a KNX sensor) reads: **21°C** ("KNX Amb Temp.")
Ambient temp. read by Midea system is: **24°C** ("Ambient Ref. Temp")

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

In this example, the final setpoint temperature that INKNXMID---I000 will send out to the indoor unit (shown in "Setp. Temp.") will become 24°C – (21°C – 19°C) = **22°C**. This is the setpoint that will actually be requested to Midea unit.

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

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

## 4.7 Remote Lock Configuration

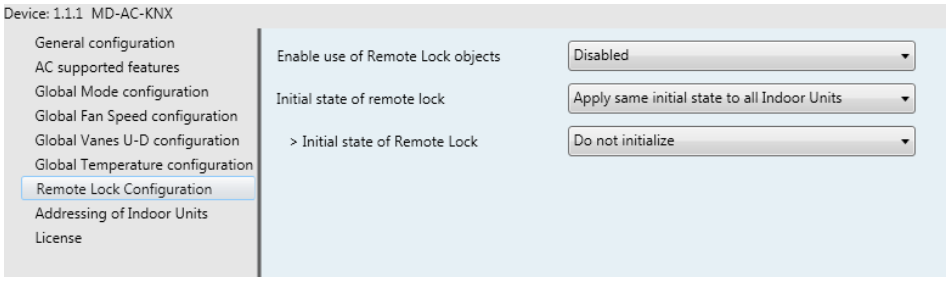



**Figure 4.24** Parameter detail

All the parameters in this section are related to each AC unit and its Remote-Control commands.

### 4.7.1 Enable Remote Lock Objects

This parameter is used to show or hide the remote lock objects related to each indoor unit.

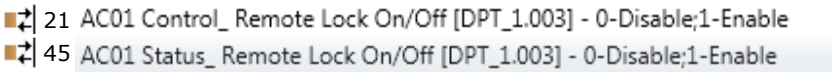



**Figure 4.24** Communication objects shown regarding Remote Lock Objects

### 4.7.2 Initial state of remote lock

This parameter determines the remote lock status when initializing the gateway.

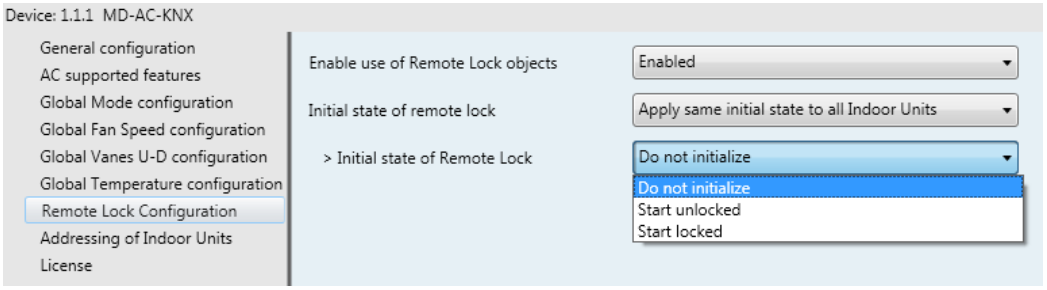



**Figure 4.23** Parameter detail

- If set to **"Apply same initial state to all Indoor Units"**, the same initial status will be applied to all indoor units.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

- If set to **"Initial state for each Indoor Unit might differ"**, different initial status my be defined for each indoor unit individualy.

In both cases, there 3 different initial statuses:

- Do not initialize: The INKNXMID---I000 will not modify the current status after a gateway re-start.
- Start Unlocked: The INKNXMID---I000 will set the remote lock to "unlocked" after a gateway re-start.
- Start Locked: The INKNXMID---I000 will the remote lock to "locked" after a gateway re-start.

## 4.8 Addressing of Indoor Units

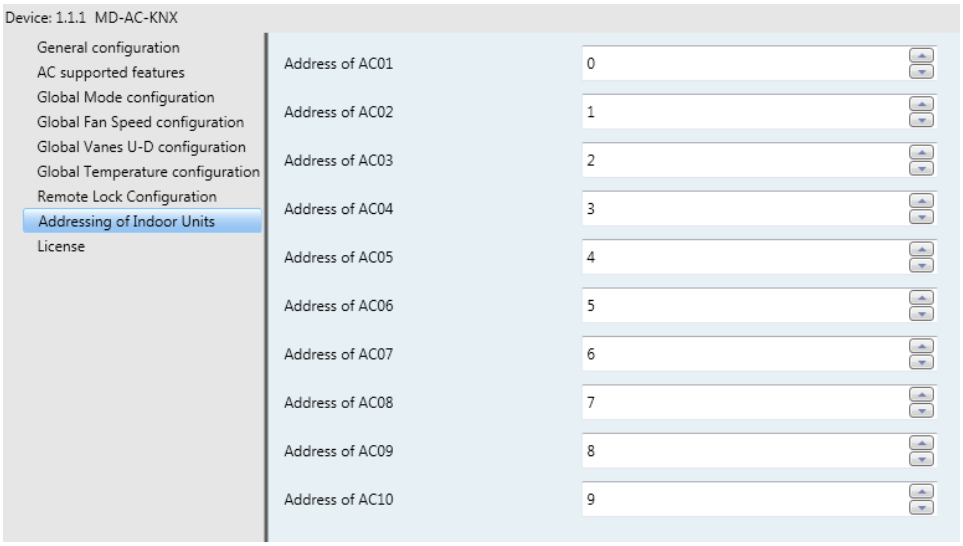



**Figure 4.24** Parameter detail

In this section you will be able to modify the AC addressing for each AC unit present in the configuration.

## 4.9 License

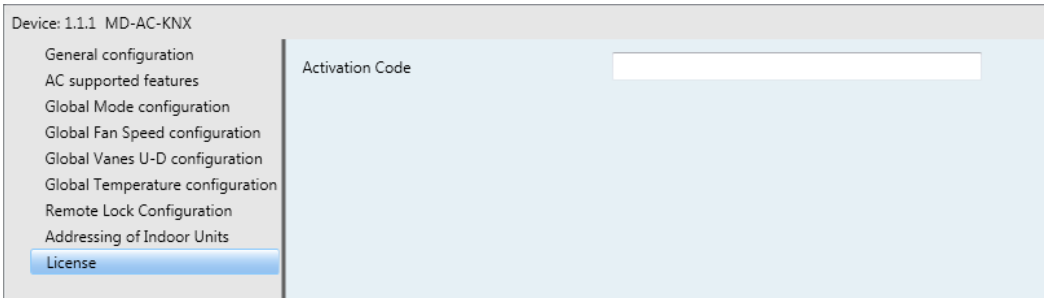


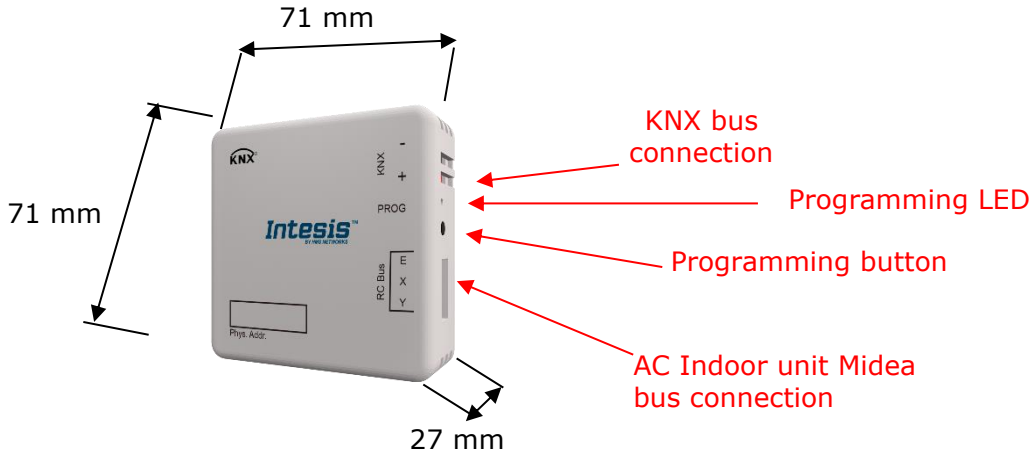

**Figure 4.24** Parameter detail

Use this section to introduce the migration code in case you need to update your box from another version different from the factory default one.

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 5 Specifications

| | |
|---|---|
| **Housing** | Plastic, type ABS (UL 94 V-0). 2,5 mm thickness |
| **Dimensions** | 71 x 71 x 27 mm |
| **Weight** | 42 g |
| **Color** | White, RAL 9010 |
| **Power supply** | 29V DC, 7 mA<br>Supplied through KNX bus |
| **LED indicators** | 1 x KNX programming/bus |
| **Push buttons** | 1 x KNX programming |
| **Configuration** | Configuration with ETS |
| **Operating Temperature** | From 0°C to 60°C |
| **Storage Temperature** | From -40°C to 85°C |
| **Isolation Voltage** | 4000 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)<br>EN 61000-6-2<br>EN 61000-6-3<br>EN 60950-1<br>EN 50491-3 |




© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# 6 AC Unit Types compatibility

A list of Midea indoor unit model references compatible with INKNXMID---I000 and their available features can be found in:

https://hmsnetworks.blob.core.windows.net/nlw/docs/default-source/products/intesis/manuals-and-guides---reference-guides/intesis_inxxxmid0xxi000_ac_compatibility-list.pdf

# 7 Error Codes

| Error Code KNX Object | Error in Remote Controller | Error Name |
|---|---|---|
| 1 | E0 | Phase error or error in the phase sequence |
| 2 | E1 | Communication error |
| 3 | E2 | T1 sensor error |
| 4 | E3 | T2A sensor error |
| 5 | E4 | T2B sensor error |
| 6 | E5 | T3 temperature and T4 temperature Compressor discharge temperature sensors error |
| 7 | E6 | Zero cross error detection |
| 8 | E7 | EEPROM memory error |
| 9 | E8 | Indoor fan speed out of control |
| 10 | E9 | Communication error between the main panel and the visualization panel |
| 11 | EA | Compressor's current overload error (4 times) |
| 12 | EB | Inverter module protection |
| 13 | EC | Cooling error |
| 14 | ED | Outdoor unit fault protection |
| 15 | EE | Water level fault detection |
| 16 | EF | Other errors |
| 101 | P0 | Vaporizer temperature protection |
| 102 | P1 | Thawing or cold air protection |
| 103 | P2 | Condenser high temperatures protection |
| 104 | P3 | Compressor temperature protection |
| 105 | P4 | Evacuation duct temperature protection |
| 106 | P5 | Discharge high pressure protection |
| 107 | P6 | Discharge low pressure protection |
| 108 | P7 | Current overload or under load protection |
| 109 | P8 | Compressor's current overload protection |
| 110 | P9 | Reserved |
| 111 | PA | Reserved |
| 112 | PB | Reserved |
| 113 | PC | Reserved |
| 114 | PD | Reserved |
| 115 | PE | Reserved |
| 116 | PF | Other protection measures |
| -1 | - | Communication error between INKNXMID---I000 and Indoor Unit |
| -100 | - | Licence error / Indoor units not supported by current license |
| -200 | - | Overconsumption error in EXY bus |

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

© HMS Industrial Networks S.L.U. - All rights reserved
This information is subject to change without notice

# Appendix A – Communication Objects Table

| SECTION | OBJECT NUMBER | NAME | LENGTH | DATAPOINT TYPE | | FLAGS | | | | FUNCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DPT_NAME | DPT_ID | R | W | T | U | |
| On/Off | 1 | Control_ On/Off | 1 bit | DPT_Switch | 1.001 | | W | T | | 0 - Off; 1-On |
| Mode | 2 | Control_ Operating Mode | 1 byte | DPT_HVACMode | 20.102 | | W | T | | 0 - Auto; 1 - Com; 2 - Stan; 3 - Eco; 4 – Pro |
| | 3 | Control_ Mode | 1 byte | DPT_HVACControl | 20.105 | | W | T | | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry |
| | 4 | Control_ Mode Cool/Heat | 1 bit | DPT_Cool/Heat | 1.100 | | W | T | | 0 - Cool; 1 – Heat |
| | 5 | Control_ Mode Auto | 1 byte | DPT_Scaling | 5.001 | | W | T | | 1 - Auto |
| | 6 | Control_ Mode Heat | 1 byte | DPT_Scaling | 5.001 | | W | T | | 1 - Heat |
| | 7 | Control_ Mode Cool | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Cool |
| | 8 | Control_ Mode Fan | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 – Dry |
| | 9 | Control_ Mode Dry | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 – Fan |
| | 10 | Control_ Mode +/- | 1 bit | DPT_Step | 1.007 | | W | | | 0 - Decrease; 1 - Increase |
| | | Control_ Mode +/- | 1 bit | DPT_UpDown | 1.008 | | W | | | 0 - Up; 1 - Down |
| Fan Speed | 11 | Control_ Fan Speed / 2 Speeds | 1 byte | DPT_Scaling | 5.001 | | W | T | | 0%-74% - Speed 1; 75%-100% - Speed 2 |
| | | Control_ Fan Speed / 3 Speeds | 1 byte | DPT_Scaling | 5.001 | | W | T | | 0%-49% - Speed 1; 50%-83% - Speed 2; 84%-100% Speed 3 |
| | | Control_ Fan Speed / 2 Speeds | 1 byte | DPT_Enumerated | 5.010 | | W | T | | 1 - Speed 1; 2 - Speed 2 |
| | | Control_ Fan Speed / 3 Speeds | 1 byte | DPT_Enumerated | 5.010 | | W | T | | 1 - Speed 1; 2 - Speed 2; 3 Speed 3 |
| | 12 | Control_ Fan Speed Man/Auto | 1 bit | DPT_Bool | 1.002 | | W | T | | 0 – Manual; 1 – Auto |
| | 13 | Control_ Fan Speed 1 | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Fan Speed 1 |

© HMS Industrial Networks S.L.U - All rights reserved
This information is subject to change without notice

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **14** | Control_ Fan Speed 2 | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Fan Speed 2 |
| | **15** | Control_ Fan Speed 3 | 1 bit | DPT_Bool | 1.002 | | W | T | | 1 - Fan Speed 3 |
| | **16** | Control_ Fan Speed +/- | 1 bit | DPT_Step | 1.007 | | W | T | | 0 - Decrease; 1 - Increase |
| | | Control_ Fan Speed +/- | 1 bit | DPT_UpDown | 1.008 | | W | T | | 0 - Up; 1 - Down |
| **Vanes** | **17** | Control_ Vanes U-D Swing | 1 bit | DPT_Bool | 1.002 | | W | T | | 0 - Off; 1 - Swing |
| **Temperature** | **18** | Control_ Setpoint Temperature | 2 byte | DPT_Value_Temp | 9.001 | | W | T | | 17°C to 30°C |
| | **19** | 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 |
| | **20** | Control_ Ambient Temperature | 2 byte | DPT_Value_Temp | 9.001 | | W | T | | °C value in EIS5 format |
| **Locking** | **21** | Control_ Control Remote Lock | 1 bit | DPT_Bool | 1.003 | | W | T | | 0 - Unlocked; 1 - Locked |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **On/Off** | **22** | Status_ On/Off | 1 bit | DPT_Switch | 1.001 | R | | T | | 0 - Off; 1-On |
| **Mode** | **23** | Status_ Operating Mode | 1 byte | DPT_HVACMode | 20.102 | R | | T | | 0 - Auto; 1 - Com; 2 - Stan; 3 - Eco; 4 – Pro |
| | **24** | Status_ Mode | 1 byte | DPT_HVACContrMode | 20.105 | R | | T | | 0 - Auto; 1 - Heat; 3 - Cool; 9 - Fan; 14 - Dry |
| | **25** | Status_ Mode Cool/Heat | 1 bit | DPT_Heat/Cool | 1.100 | R | | T | | 0 - Cool; 1 - Heat |
| | **26** | Status_ Mode Auto | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Auto |
| | **27** | Status_ Mode Heat | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Heat |
| | **28** | Status_ Mode Cool | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Cool |
| | **29** | Status_ Mode Fan | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Fan |
| | **30** | Status_ Mode Dry | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Dry |
| | **31** | Status_ Mode Text | 14 byte | DPT_String_8859_1 | 16.001 | R | | T | | ASCII String |

© HMS Industrial Networks S.L.U - All rights reserved
This information is subject to change without notice

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fan Speed** | **32** | Status_ Fan Speed / 2 Speeds | 1 byte | DPT_Scaling | 5.001 | R | | T | | 50% - Speed 1; 100% - Speed 2 |
| | | Status_ Fan Speed / 3 Speeds | 1 byte | DPT_Scaling | 5.001 | R | | T | | 33% - Speed 1; 67% - Speed 2; 100% - Speed 3 |
| | | Status_ Fan Speed / 2 Speeds | 1 byte | DPT_Enumerated | 5.010 | R | | T | | 1 - Speed 1; 2 - Speed 2 |
| | | Status_ Fan Speed / 3 Speeds | 1 byte | DPT_Enumerated | 5.010 | R | | T | | 1 - Speed 1; 2 - Speed 2; 3 - Speed 3 |
| | **33** | Status_ Fan Speed Man/Auto | 1 bit | DPT_Bool | 1.002 | R | | T | | 0 – Manual; 1 – Auto |
| | **34** | Status_ Fan Speed 1 | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Speed 1 |
| | **35** | Status_ Fan Speed 2 | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Speed 2 |
| | **36** | Status_ Fan Speed 3 | 1 bit | DPT_Bool | 1.002 | R | | T | | 1 - Speed 3 |
| | **37** | Status_ Fan Speed Text | 14 byte | DPT_String_8859_1 | 16.001 | R | | T | | ASCII String |
| **Vanes** | **38** | Status_ Vane U-D Swing | 1 bit | DPT_Bool | 1.002 | R | | T | | 0 - Stop; 1 - Swing |
| | **39** | Status_ Vane U-D Text | 1 bit | DPT_Bool | 1.002 | R | | T | | ASCII String |
| **Temperature** | **40** | Status_ AC Setpoint Temp | 2 byte | DPT_Value_Temp | 9.001 | R | | T | | 16°C to 32°C |
| | **41** | Status_ AC Ambient Ref Temp | 2 byte | DPT_Value_Temp | 9.001 | R | | T | | °C value in EIS5 format |
| **Error** | **42** | Status_ Error/Alarm | 1 bit | DTP_Alarm | 1.005 | R | | T | | 0 - No Alarm; 1 - Alarm |
| | **43** | Status_ Error Code | 2 byte | Enumerated | | R | | T | | 0 - No Error; Any other see user's manual |
| | **44** | Status_ Error Text code | 14 byte | DPT_String_8859_1 | 16.001 | R | | T | | 2 char MD Error; Empty - none |
| **Remote Lock** | **45** | Status_ Remote Lock | 1 bit | DPT_Bool | 1.003 | | W | T | | 0 - Unlocked; 1 - Locked |

© HMS Industrial Networks S.L.U - All rights reserved
This information is subject to change without notice