ENGLISH

INKNXMIT001I2** User Manual

Mitsubishi Electric Domestic, Mr Slim, City Multi, and Lossnay Units to KNX TP (Application's Program Version 1.1)

USER MANUAL
Version 1.0.0
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1. Description and Order Codes

KNX TP Secure gateway for Mitsubishi Electric HVAC systems.

Compatible with domestic, Mr. Slim, City Multi, and Lossnay lines commercialized by Mitsubishi Electric.

Use the compatibility tool to get a complete list of compatible units: https://compatibility.intesis.com/

ORDER CODE	LEGACY ORDER CODE
INKNXMIT001I2∗∗	INKNXMIT001I100

2. General Information

2.1. Intended Use of the User Manual

This manual contains the main features of this Intesis gateway and the instructions for its appropriate installation, configuration, and operation.

Any person who installs, configures, or operates this gateway or any associated equipment should be aware of this manual's contents.

Keep this manual for future reference during the installation, configuration, and operation.

2.2. General Safety Information

IMPORTANT
Follow these instructions carefully. Improper work may seriously harm your health and damage the gateway and/or any other equipment connected to it.

Only technical personnel, following these instructions and the country legislation for installing electrical equipment, can install and manipulate this gateway.

Install this gateway indoors, in a restricted access location, avoiding exposure to direct solar radiation, water, high relative humidity, or dust.

Preferably, mount this gateway on a DIN rail inside a grounded metallic cabinet, following the instructions in this manual.

If mounting on a wall, firmly fix this gateway on a non-vibrating surface, following the instructions in this manual.

Connect this gateway only to networks without routing to the outside plant.

All communication ports are considered for indoor use and must only be connected to SELV circuits.

Disconnect all systems from power before manipulating and connecting them to the gateway.

Respect the expected polarity of power and communication cables when connecting them to the gateway.

Take the necessary antistatic precautions before manipulating the gateway to avoid electrostatic discharges.

Binary inputs are potential-free contacts. Do not connect any voltage.

Safety instructions in other languages can be found here.

2.3. Admonition Messages and Symbols

CAUTION
Instruction that must be followed to avoid a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT
Instruction that must be followed to avoid a risk of reduced functionality and/or damage to the equipment or to avoid a network security risk.

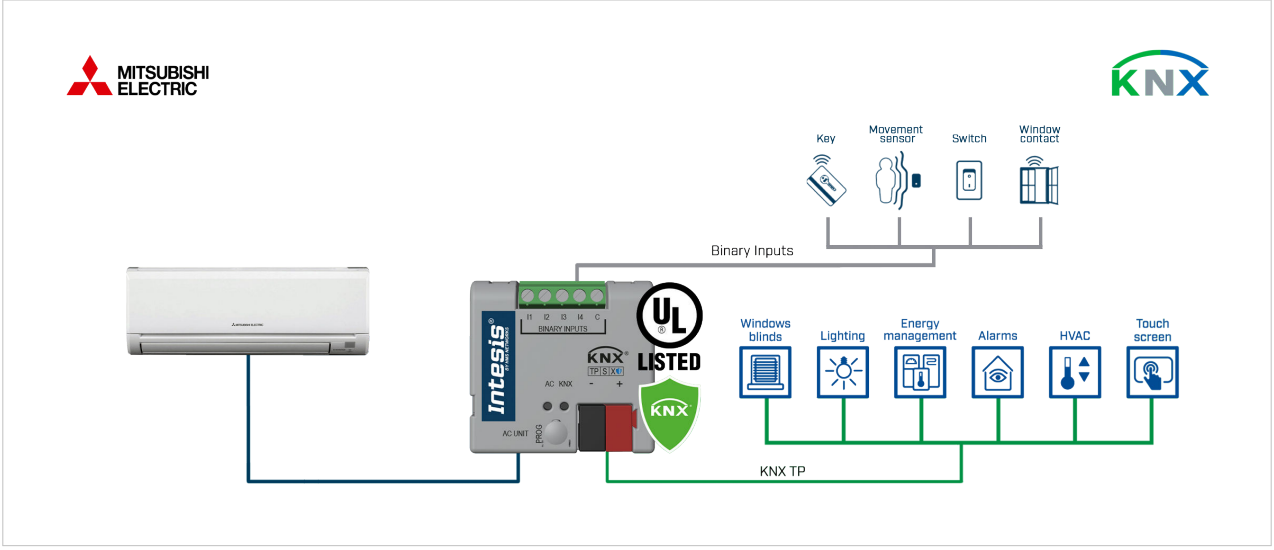
NOTE
Additional information which may facilitate installation and/or operation.

TIP
Helpful advice and suggestions.

NOTICE
Remarkable Information.

3. Overview

*Figure 1. Integration of Mitsubishi Electric AC units into a KNX TP installation using the Intesis INKNXMIT001I2** gateway.*



NOTE
This document assumes the user is familiar with KNX TP and Mitsubishi Electric technologies, including their associated technical terminology.

3.1. Inside the Package

ITEMS INCLUDED

- Intesis INKNXMIT001I2** gateway
- Cable to connect the gateway and the indoor unit
- Installation Guide

3.2. Main Features

- This is a KNX Secure gateway.
- Configuration using ETS, the KNX standard configuration tool.
- Four binary inputs to integrate external devices, such as window contacts, presence detectors, or energy meters (S0 energy meters supported).
- Reduced dimensions: 38.35 x 40.7 x 17.6 mm / 1.51 x 1.6 x 0.69"
- Compatible with all KNX thermostats in the market.
- Simultaneous control of the AC unit by the IR remote controller and by KNX.
- Total control and monitoring of the AC unit from the KNX system, including the AC unit's internal variables, running hours counter (for filter maintenance control), and error indication.

- Up to ten scenes can be saved and executed from KNX.
- External power is not required.
- Significant reduction of the HVAC system energy consumption.

4. Quickstart Guide

1. Place the gateway in the appropriate location.
2. Connect the gateway to the AC unit using the supplied cable.
3. Connect the gateway to the KNX TP bus via its KNX port.
4. Download the ETS database for this product.
5. Import the database and add it to the current ETS project.
6. Link the KNX communication objects of the gateway with the communication objects of the KNX system by matching their group addresses.
7. Download the application program.
8. When the project is already configured, send it from the ETS software to the gateway using the standard procedure.

> **IMPORTANT**
> When configuring the gateway for the first time, use the **Full download** option.

5. Hardware

5.1. Mounting

General indications

IMPORTANT

- Do not mount the gateway in air-handling units or conducts.
- Keep communication wires away from power and ground wires.

If mounting the gateway inside the indoor unit

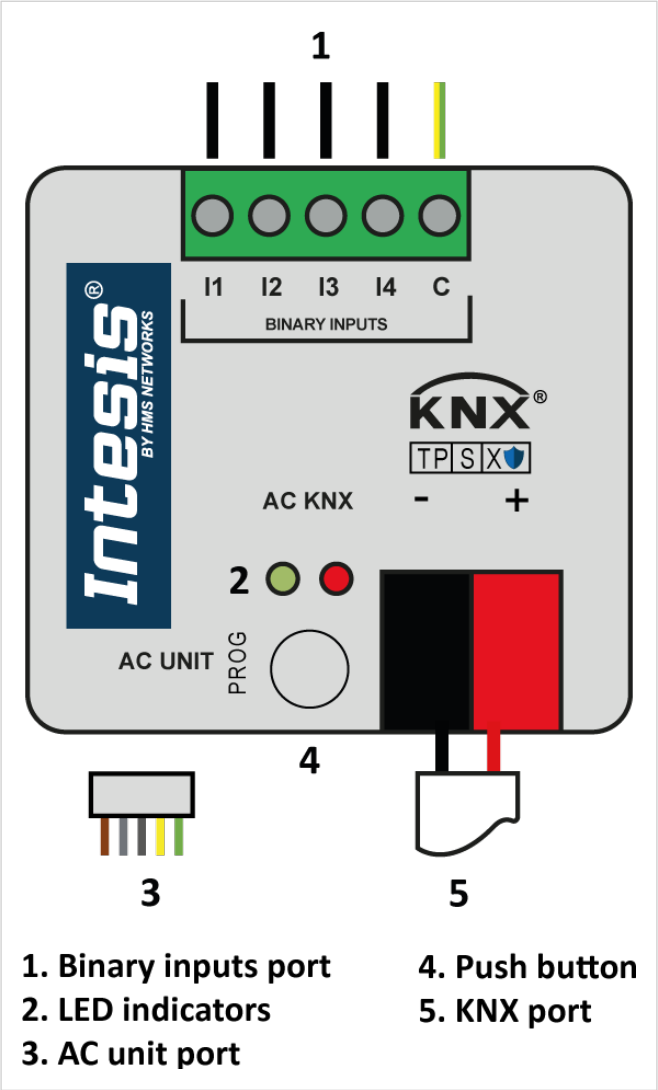
IMPORTANT

- Ensure the gateway does not block any mobile parts of the unit.
- Leave the gateway on top of a secure, plain surface.

TIP

Use double-sided tape to ensure a secure fixing if needed.

5.2. Connections



5.2.1. Connection to the Indoor Unit

IMPORTANT
Disconnect the Mitsubishi Electric indoor unit from power before connecting it to the gateway.

Use the supplied cable to connect the indoor unit and the gateway.

IMPORTANT
This cable is 1.5 m (5.77 feet) long. Its modification in length may affect the correct operation of the gateway.

1. Plug the largest unsheathed cable part connector into the socket CN92 (Mr Slim models) or CN105 (rest of models) of the indoor unit control board.
2. Plug the other end connector, the one on the shortest unsheathed part of the cable, into the gateway's socket labeled as AC Unit.

5.2.2. Connection to the KNX Bus

IMPORTANT
Disconnect the KNX bus from power before proceeding.

Connect the KNX bus to the gateway through its standard KNX terminal block.

IMPORTANT
Observe polarity.

NOTICE
Power is supplied to the gateway through the KNX bus.

- Voltage rating: 29 VDC
- Power consumption: 17 mA

5.2.3. Potential-Free Binary Inputs Connection

The gateway features a five-pole connector labeled **BINARY INPUTS** on top of the housing, used to connect third-party devices such as occupancy sensors, window contacts, or energy meters.

IMPORTANT
Binary inputs are potential-free contacts. Do not connect any voltage.

NOTICE
This connection is compatible with the S0 pulse counter type.

Use terminals **I1**, **I2**, **I3**, and **I4** to connect up to four devices. Use the **C** terminal for the common connection (ground).

IMPORTANT
For occupancy sensors and window contacts, the gateway will only react if the sensor's contact is opened or closed.

TIP
We recommend setting a delay time in your presence sensor or window contact (if available) to prevent continuous contact changes in a very short period of time.

5.3. Push Button

Find the push button below the LED indicators. Use this button to:

- Enable/disable the gateway's KNX programming mode.
- Reset the gateway to the factory settings:

  1. Disconnect the gateway from power.

2. Press and hold the button.
3. Connect the gateway to power again.
4. After five seconds, release the button.

> **NOTE**
> The red LED flashes five times, indicating that the procedure has been completed.

5.4. LED Indicators

Two LEDs are placed above the push button.

LED	Pattern	Description
RED KNX programming mode	Off	Programming mode disabled
	Steady on	Programming mode enabled
	Blinking[1]	Individual address check
YELLOW Gateway power AC bus activity	Off	No power
	Flashing[2]	Communication OK
	Blinking[1]	AC error
	Steady on	Communication error

[1] ***Blinking:*** *50 % on / 50 % off*

[2] ***Flashing:*** *10 % on / 90 % off*

5.5. Technical Specifications

Housing	Material: Plastic, type PC/ABS UL94-V0 Color: Light grey. RAL 7035 Net dimensions (HxWxD): 38.35 x 40.7 x 17.6 mm / 1.51 x 1.6 x 0.69" Protection: IP20
Weight	23 g / 0.8 oz
Mounting	Inside the AC unit
Wiring	Cross-section/gauge per terminal: • One core: 0.2 .. 2.5 mm2 (24 .. 11 AWG) • Two cores: 0.2 .. 1.5 mm2 (24 .. 15 AWG) • Three cores: Not permitted Use solid wires or stranded wires (twisted or with ferrule)
AC port	1 x Specific socket
Binary inputs port	1 x Terminal block (five poles) I1, I2, I3, I4, and C (common)
KNX port	1 x KNX TP-1 standard terminal block (2 poles) • KNX power consumption: 7 ma • Voltage rating: 29 VDC • 4000 V isolation from other ports
Buttons	1 x Push button
LED indicators	1 x RED for KNX programming mode 1 x YELLOW for gateway power and AC bus communication status
Operating conditions	Temperature: 0 .. 60°C / 32 .. 140°F Humidity: 5 .. 95% RH, non-condensing

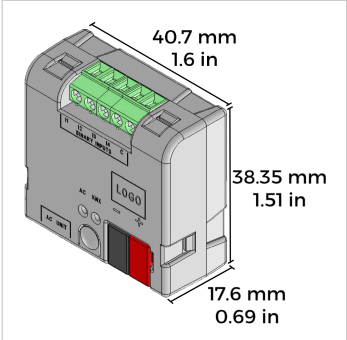
5.6. Dimensions

NET DIMENSIONS (HxWxD):

Millimeters: 38.35 x 40.7 x 17.6 mm

Inches: 1.51 x 1.6 x 0.69"

IMPORTANT
Leave enough clear space to wire the gateway easily and for the subsequent manipulation of elements.



6. Configuration

6.1. Before Starting

IMPORTANT
Power the gateway by connecting it to the KNX bus before starting the configuration process. See Connection to the KNX Bus (page 9).

6.2. Prerequisites

For this integration, you will need:

- The items supplied by HMS Networks:
  - Intesis INKNXMIT001I2** gateway.
  - This User Manual.
  - ETS database for this gateway.

    NOTICE
    Find it on the HMS website's product page under **Support and downloads** → **Configuration files**, or click here to download it.
- An ETS license (version 5.7.7 onwards).
- A Windows® PC to run the ETS configuration tool.

6.3. Downloading the Configuration to the Gateway

IMPORTANT
Depending on the data you have to send, remember to push the gateway's button to activate the programming mode. See Push Button (page 9).

When the configuration is finished, use the standard procedure to download the configuration into the Intesis gateway through the **Download** variants offered by ETS:

Download variant	Shortcut	Comment
Download all	Ctrl + Shift + L	All project data in ETS is downloaded into the gateway: the individual address, application program, parameters, and group addresses and associations.
Partial download	Ctrl + D	Only the parts that have changed in ETS and have not been downloaded before are downloaded.
Download Individual Address	Ctrl + Shift + I	It assigns the individual address to the gateway.
Overwrite Individual Address	Ctrl + Shift + Alt + I	It assigns the individual address to the gateway by overwriting a known address.
Download Application	Ctrl + Shift + Alt + D	It downloads the application program into the gateway.

6.4. ETS Parameters

NOTE
The following sections list all the available ETS parameters for this gateway.

6.4.1. GENERAL

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: GENERAL (page 36).

- **Intesis Interface Order Code**: This parameter shows the gateway's order code: INKNXMIT001I2∗∗.
- **Unit Type**: Select the Mitsubishi Electric model you are integrating.
  - **AC. (Default option)**: Use this option for models of the domestic, Mr. Slim, and City Multi (VRF) series.
  - **Ventilation**: Use this option for models of the Lossnay series.

IMPORTANT
Some menus, parameters, and communication objects are specific to each unit type. If that is the case, a note will indicate it.

- **Behavior after power recovery**: Set the behavior of the AC unit after a power recovery.
  - **No action. (Default option)**: No action is performed.
  - **Send last status before reset**: Send the AC unit's last status.
  - **Activate scene**: Activate a scene.

IMPORTANT
To activate a scene after a power recovery, besides selecting this **Activate scene** option, you also must:

1. Enable the **Scenes (and additional modes)** parameter at the end of this menu.
2. Enter the **SCENES / ADDITIONAL MODES** menu.
3. Select a value >0 in the **Number of scenes (or additional modes)** parameter.
4. Enable the parameter **Activate scene after power recovery**.
5. Configure the **Number** and **Activation delay** parameters.

To know more, see SCENES / ADDITIONAL MODES (page 25).

- **Behavior after download**: Set the behavior of the AC unit after downloading the ETS project to the gateway.
  - **No action. (Default option)**: No action is performed.
  - **Send last status before reset**: Send the the AC unit's last status.
  - **Activate scene**: Activate a scene.

IMPORTANT

To activate a scene after downloading the ETS project to the gateway, besides selecting this **Activate scene** option, you also must:

1. Enable the **Scenes (and additional modes)** parameter at the end of this menu.
2. Enter the **SCENES / ADDITIONAL MODES** menu.
3. Select a value >0 in the **Number of scenes (or additional modes)** parameter.
4. Enable the parameter **Activate scene after download**.
5. Configure the **Number** and **Activation delay** parameters.

To know more, see SCENES / ADDITIONAL MODES (page 25).

- **Read on init delay**: Set the time in seconds before the gateway sends READ telegrams for the group addresses associated with its Control_ objects on bus recovery or application reset/start-up. (0 .. 255 seconds. Default value: **0 sec**).

NOTE

This function gives other KNX devices on the bus enough time to start up before sending READ telegrams.

All Control_ objects with both Transmit (T) and Update (U) flags enabled will send READ telegrams, and their values will be updated with the response when received.

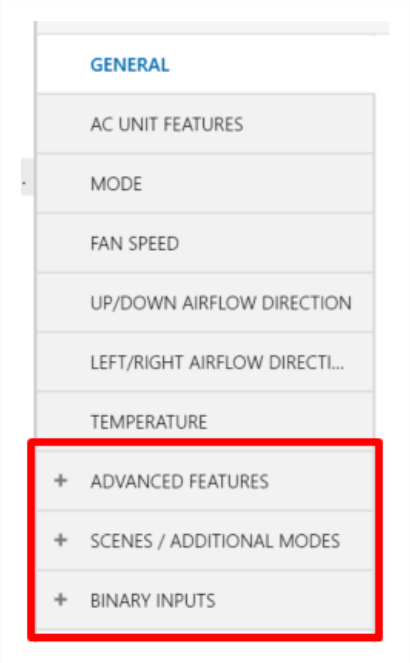
- **Time telegram rate**: Set the time in milliseconds between two telegrams. (0 .. 5000. Default value: **0 ms**).
- **Heartbeat. (Unchecked by default)**: Activate the **Heartbeat (Status)** object, allowing the gateway to report keep-alive notifications.
  - **Notification period**: Set the time in minutes between keep-alive notifications. (1 .. 255. Default value: **15 min**).
- **Error notifications. (Checked by default)**: Activate the **Error: Flag (Status)** object, which reports if there's an error. It also allows the activation of the following parameters.
  - **Error Code notifications [2 bytes]. (Unchecked by default)**: Activate the **Error: Code (Status)** object, which reports the error code when an error occurs.
  - **Error Text notifications [14 bytes]. (Unchecked by default)**: Activate the **Error: Description (Status)** object, which reports a text with information about the error when an error occurs.

  Consult the complete list of error codes and their descriptions in Error Codes (page 64).
- **Remote Control Lock. (Unchecked by default)**: Activate the **Remote Control Lock (Control)** and **Remote Control Lock (Status)** objects, which are used to block/unblock commands sent to the AC unit from its remote control.
- **KNX Control Lock. (Unchecked by default)**: Activate the **KNX Control Lock (Control)** and **KNX Control Lock (Status)** objects, which are used to block/unblock commands sent to the AC unit from KNX.
- **Operating time counter. (Unchecked by default)**: Activate the AC unit operating time counting objects through the following parameters.
  - **Operating time object (seconds). (Checked by default)**: Activate the **Operating Time Counter (s) (Control)** and **Operating Time Counter (s) (Status)** objects, which are used to count the AC unit's running time in seconds.
  - **Operating time object (hours). (Checked by default)**: Activate the **Operating Time Counter (h) (Control)** and **Operating Time Counter (h) (Status)** objects, which are used to count the AC unit's running time in hours.

  - **Notification period <0=disabled>**: Set the time in minutes between operating time counting notifications. (0 .. 65535. Default value: **0 min**).

- **Advanced features. (Unchecked by default)**: Activate the **ADVANCED FEATURES** menu and the **OCCUPANCY**, **WINDOW CONTACT**, and **SLEEP TIMER** submenus.
- **Scenes (and additional modes). (Unchecked by default)**: Activate the **SCENES** menu.
- **Binary Inputs. (Unchecked by default)**: Activate the **BINARY INPUTS** menu.

When activating these three last parameters, new tabs appear in the menu to configure each feature:



6.4.2. AC UNIT FEATURES

- **Supported AC modes**: Select the available modes for the unit you are integrating.

> **NOTICE**
> Options when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

  - **Auto. (Checked by default)**: Activate the **Mode: AC: Auto (Control)** and **Mode: AC: Auto (Status)** objects.
  - **Heat. (Checked by default)**: Activate the **Mode: AC: Heat (Control)** and **Mode: AC: Heat (Status)** objects.
  - **Cool. (Checked by default)**: Activate the **Mode: AC: Cool (Control)** and **Mode: AC: Cool (Status)** objects.
  - **Fan. (Checked by default)**: Activate the **Mode: AC: Fan (Control)** and **Mode: AC: Fan (Status)** objects.
  - **Dry. (Checked by default)**: Activate the **Mode: AC: Dry (Control)** and **Mode: AC: Dry (Status)** objects.

- **Supported AC modes**: Select the available modes for the unit you are integrating.

> **NOTICE**
> Options when the **Unit Type** option is set to **Ventilation**. See GENERAL (page 13).

  - **Auto. (Checked by default)**: Activate the **Mode: Ventilation: Auto (Control)** and **Mode: Ventilation: Auto (Status)** objects.

  - **Heat Exchanger. (Checked by default)**: Activate the **Mode: Ventilation: Heat Exchanger (Control)** and **Mode: Ventilation: Heat Exchanger (Status)** objects.
  - **Bypass. (Checked by default)**: Activate the **Mode: Ventilation: Bypass (Control)** and **Mode: Ventilation: Bypass (Status)** objects.

- **Supported fan speeds**.
  - **Number of fan speeds**: Set the number of fan speeds of the unit. A Control and Status object is activated for each fan speed.

    NOTICE
    The available options depend on the **Unit Type** selection (see GENERAL (page 13)):

    - **AC**: 2 .. 5. Default value: **3**.
    - **Ventilation**: 3, 4. Default value: **4**.

  - **Auto fan speed. (Unchecked by default)**: Activate the **Fan Speed: Auto (Control)** and **Fan Speed: Auto (Status)** objects.

- **Supported Up/Down airflow direction. (Unchecked by default)**: Activate the parameters to configure the up/down airflow positions.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

  NOTE
  When selected, this parameter activates the **Up/Down Airflow Direction: Percentage (Control)** and **Up/Down Airflow Direction: Percentage (Status)** objects.

  - **Number of positions**: Set the number of up/down airflow positions supported by the AC unit. (3 .. 5. Default value: **5**).
  - **Auto/Stop. (Unchecked by default)**: Include the Auto and Stop positions in the Up/Down Air Directions sequence and activate the **Up/Down Air Direction: Auto/Stop (Control) 1=Auto/Stop**, and **Up/Down Air Direction: Auto/Stop (Status) 1=Auto/Stop** objects.
  - **Swing. (Unchecked by default)**: Include the Swing position in the Up/Down Air Directions sequence and activate the **Up/Down Air Direction: Swing (Control)** and **Up/Down Air Direction: Swing (Status)** objects.

- **Supported Left/Right airflow direction. (Unchecked by default)**: Activate the parameters to configure the left/right airflow positions.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

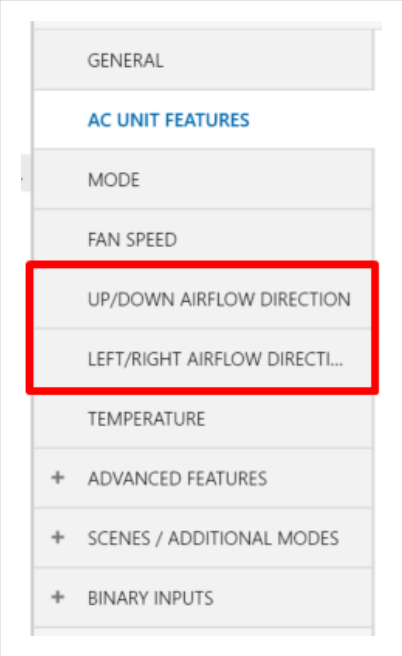
  NOTE
  When selected, this parameter activates the **Left/Right Airflow Direction: Percentage (Control)** and **Left/Right Airflow Direction: Percentage (Status)** objects.

  - **Number of positions**: Set the number of left/right airflow positions supported by the AC unit. (3 .. 6. Default value: **6**).

    IMPORTANT
    For indoor units supporting the Wide position, set the **Number of positions** to **6**. Refer to the **NOTICE** of the **Left/Right Airflow Direction: Enumerated Control** and **Status** objects in Communication Objects: LEFT/RIGHT AIRFLOW DIRECTION (page 42).

– **Swing. (Unchecked by default)**: Include the Swing position in the Left/Right Air Directions sequence and activate the **Left/Right Air Direction: Swing (Control)** and **Left/Right Air Direction: Swing (Status)** objects.

When activating the **Supported Up/Down airflow direction** and **Supported Left/Right airflow direction** parameters, new tabs appear in the menu to configure each feature:



6.4.3. MODE

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: MODE (page 37).

- **1 bit simplified mode (Cool/Heat) objects. (Unchecked by default)**: Activate the **Mode: AC: Simplified (Cool/Heat) (Control)** and **Mode: AC: Simplified (Cool/Heat) (Status)** objects.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

- **1 bit (-/+) step mode object. (Unchecked by default)**: Activate the following parameters.
  – **1 bit (-/+) step mode object polarity: 0=Decrease; 1=Increase. (Unchecked by default)**: Activate the **Mode: AC: Step (-/+) (Control)** object.
  – **1 bit (-/+) step mode object polarity: 1=Decrease; 0=Increase. (Unchecked by default)**: Activate the **Mode: AC: Step (+/-) (Control)** object.
- **Individual objects for each mode. (Unchecked by default)**: Activate the Control and Status objects for each mode.
- **Report real mode in Mode (Status) object when Auto mode is set. (Unchecked by default)**: Select this parameter to report the AC unit's current mode through the **Mode (Status)** object when the **Auto** mode is set.
- **Percentage mode (Heat and Cool) objects (PID Compatible). (Unchecked by default)**: Activate the **Mode AC: Percentage: On/Off + Heat (Control)** and **Mode AC: Percentage: On/Off + Cool (Control)** objects.

NOTICE
This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

6.4.4. FAN SPEED

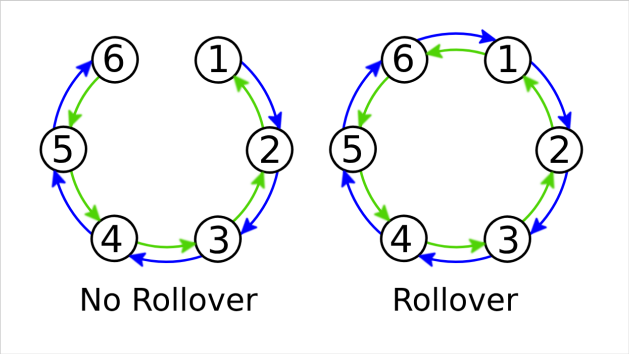
NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: FAN SPEED (page 39).

- **Percentage fan speed objects. (Checked by default)**: Activate the **Fan Speed: Percentage (Control)** and **Fan Speed: Percentage (Status)** objects, which establish different thresholds for the fan speed positions.
  This parameter sets the threshold for the Control object using the formula 100 x (n + 0.5) / N, where "n" is the current position and "N" is the total number of positions supported. For the Status object, the formula is 100 x (n / N).
  For example, in a unit supporting five positions, these are the thresholds for each position:

Position	Threshold for the Control object		Threshold for the Status object	
	Formula	Range of values	Formula	Value reported
1	100 x (1 + 0.5) / 5 = 30	1% .. 30%	100 x (1 / 5) = 20	20%
2	100 x (1 + 0.5) / 5 = 50	31% .. 50%	100 x (2 / 5) = 40	40%
3	100 x (1 + 0.5) / 5 = 70	51% .. 70%	100 x (3 / 5) = 60	60%
4	100 x (1 + 0.5) / 5 = 90	71% .. 90%	100 x (4 / 5) = 80	80%
5	100 x (1 + 0.5) / 5 = 100	91% .. 100%	100 x (5 / 5) = 100	100%

  In this case, writing a value between 1% and 30% in the **Fan Speed: Percentage (Control)** object sets position 1, and the **Fan Speed: Percentage (Status)** object will report a value of 20%.
  - **"0%" means "auto" fan speed. (Unchecked by default)**: If selected, writing a value of 0% in the **Fan Speed: Percentage (Control)** object sets the fan speed to Auto mode.
- **Enumerated fan speed objects. (Unchecked by default)**: Activates the **Fan Speed: Enumerated (Control)** and **Fan Speed: Enumerated (Status)** objects.
  - **"0" means "auto" fan speed. (Unchecked by default)**: If selected, writing a value of 0 in the **Fan Speed: Enumerated (Control)** object sets the fan speed to Auto mode.
- **Fanstage fan speed objects. (Checked by default)**: Activates the **Fan Speed: Fan Stage (Control)** and **Fan Speed: Fan Stage (Status)** objects.
  - **"0" means AC operation "OFF". (Checked by default)**: If selected, writing a value of 0 in the **Fan Speed: Fan Stage (Control)** turns the AC unit off.
- **1 bit (-/+) step fan speed object. (Unchecked by default)**: Activates the following parameters.
  - **1 bit (-/+) step fan speed object polarity 0=Decrease; 1=Increase. (Unchecked by default)**: Activates the **Fan Speed: Step (-/+) (Control)** object.
  - **1 bit (+/-) step fan speed object polarity: 1=Decrease; 0=Increase. (Unchecked by default)**: Activates the **Fan Speed: Step (+/-) (Control)** object.
  - **"Auto" fan speed included in the sequence. (Unchecked by default)**: Include Auto in the fan speed sequence.
  - **Rollover fan speed at upper/lower limit. (Unchecked by default)**: The fan speed sequence allows a cyclic movement:

Figure 2. Difference between a sequence without and with rollover. The example represents a unit supporting six fan speeds.



Blue arrows represent the sequence for the increase steps, while green arrows show the decrease steps.

- **Individual objects for each fan speed. (Unchecked by default)**: Activates Control and Status objects for each fan speed.

6.4.5. UP/DOWN AIRFLOW DIRECTION

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: UP/DOWN AIRFLOW DIRECTION (page 40).

NOTICE
This menu is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

- **Percentage Up/Down airflow direction objects. (Checked by default)**: Activate the **Up/Down Airflow Direction: Percentage (Control)** and **Up/Down Airflow Direction: Percentage (Status)** objects, which establish different thresholds for the up/down airflow positions.
  This parameter sets the threshold for the Control object using the formula 100 x (n + 0.5) / N, where "n" is the current position and "N" is the total number of positions supported. For the Status object, the formula is 100 x (n / N).
  For example, in a unit supporting five positions, these are the thresholds for each position:

Position	Threshold for the Control object		Threshold for the Status object	
	Formula	Range of values	Formula	Value reported
1	100 x (1 + 0.5) / 5 = 30	1% .. 30%	100 x (1 / 5) = 20	20%
2	100 x (1 + 0.5) / 5 = 50	31% .. 50%	100 x (2 / 5) = 40	40%
3	100 x (1 + 0.5) / 5 = 70	51% .. 70%	100 x (3 / 5) = 60	60%
4	100 x (1 + 0.5) / 5 = 90	71% .. 90%	100 x (4 / 5) = 80	80%
5	100 x (1 + 0.5) / 5 = 100	91% .. 100%	100 x (5 / 5) = 100	100%

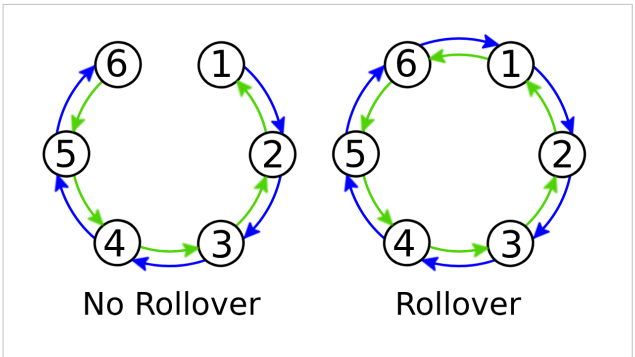
  In this case, writing a value between 1% and 30% in the **Up/Down Airflow Direction: Percentage (Control)** object sets position 1, and the **Up/Down Airflow Direction: Percentage (Status)** object will report a value of 20%.

  - **"0%" sets "auto/stop" Up/Down airflow direction. (Unchecked by default)**: If selected, writing a value of 0% in the **Up/Down Airflow Direction: Percentage (Control)** object sets the up/down airflow position to Auto/Stop.

- **Enumerated Up/Down airflow direction objects. (Unchecked by default)**: Activate the **Up/Down Airflow Direction: Enumerated (Control)** and **Up/Down Airflow Direction: Enumerated (Status)** objects.
  - **"0" sets "auto/stop" Up/Down airflow direction. (Unchecked by default)**: If selected, writing a value of 0 in the **Up/Down Airflow Direction: Enumerated (Control)** object sets the up/down airflow position to Auto/Stop.

- **1 bit (-/+) step Up/Down airflow direction objects. (Unchecked by default)**: Activate the following parameters.
  - **1 bit (-/+) step Up/Down airflow direction object polarity: 0=Decrease; 1=Increase. (Unchecked by default)**: Activate the **Up/Down Airflow Direction: Step (-/+) (Control)** object.
  - **1 bit (+/-) step Up/Down airflow direction object polarity: 1=Decrease; 0=Increase. (Unchecked by default)**: Activate the **Up/Down Airflow Direction: Step (+/-) (Control)** object.
  - **"Auto/Stop" Up/Down airflow direction position included in the sequence. (Unchecked by default)**: Include Auto in the -/+ step sequence.
  - **"Swing" Up/Down airflow direction position included in the sequence. (Unchecked by default)**: Include Swing in the -/+ step sequence.
  - **Rollover Up/Down airflow direction position at upper/lower limit. (Unchecked by default)**: The sequence for up/down airflow positions allows a cyclic movement:

Figure 3. Difference between a sequence without and with rollover. The example represents a unit supporting six positions for the up/down airflow.



Blue arrows represent the sequence for the increase steps, while green arrows show the decrease steps.

- **Individual objects for each Up/Down airflow direction position. (Unchecked by default)**: Activate the Control and Status objects for each Up/Down airflow position.

6.4.6. LEFT/RIGHT AIR FLOW DIRECTION

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: LEFT/RIGHT AIRFLOW DIRECTION (page 42).

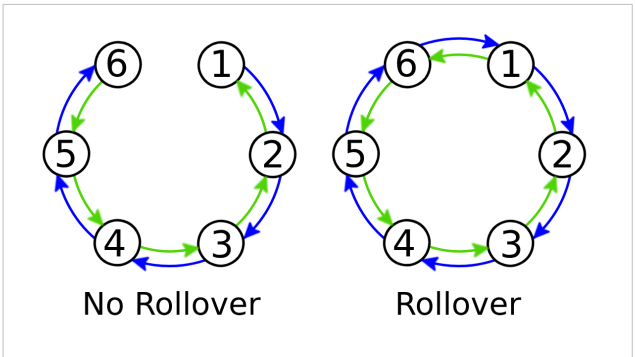
NOTICE
This menu is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

- **Percentage Left/Right airflow direction objects. (Checked by default)**: Activate the **Left/Right Airflow Direction: Percentage (Control)** and **Left/Right Airflow Direction: Percentage (Status)** objects, which establish different thresholds for the left/right airflow positions.
  This parameter sets the threshold for the Control object using the formula 100 x (n + 0.5) / N, where "n" is the current position and "N" is the total number of positions supported. For the Status object, the formula is 100 x (n / N).
  For example, in a unit supporting five positions, these are the thresholds for each position:

Position	Threshold for the Control object		Threshold for the Status object	
	Formula	Range of values	Formula	Value reported
1	100 x (1 + 0.5) / 5 = 30	1% .. 30%	100 x (1 / 5) = 20	20%
2	100 x (1 + 0.5) / 5 = 50	31% .. 50%	100 x (2 / 5) = 40	40%
3	100 x (1 + 0.5) / 5 = 70	51% .. 70%	100 x (3 / 5) = 60	60%
4	100 x (1 + 0.5) / 5 = 90	71% .. 90%	100 x (4 / 5) = 80	80%
5	100 x (1 + 0.5) / 5 = 100	91% .. 100%	100 x (5 / 5) = 100	100%

  In this case, writing a value between 1% and 30% in the **Left/Right Airflow Direction: Percentage (Control)** object sets position 1, and the **Left/Right Airflow Direction: Percentage (Status)** object will report a value of 20%.
- **Enumerated Left/Right airflow direction objects. (Unchecked by default)**: Activate the **Left/Right Airflow Direction: Enumerated (Control)** and **Left/Right Airflow Direction: Enumerated (Status)** objects.
- **1 bit (-/+) step Left/Right airflow direction objects. (Unchecked by default)**: Activate the following parameters.
  - **1 bit (-/+) step Left/Right airflow direction object polarity: 0=Decrease; 1=Increase. (Unchecked by default)**: Activate the **Left/Right Airflow Direction: Step (-/+) (Control)** object.
  - **1 bit (+/-) step Left/Right airflow direction object polarity: 0=Increase; 1=Decrease. (Unchecked by default)**: Activate the **Left/Right Airflow Direction: Step (+/-) (Control)** object.
  - **"Swing" Left/Right airflow direction position included in the sequence. (Unchecked by default)**: Include Swing in the -/+ step sequence.
  - **Rollover Left/Right airflow direction position at upper/lower limit. (Unchecked by default)**: The sequence for Left/Right airflow positions allows a cyclic movement:

Figure 4. Difference between a sequence without and with rollover. The example represents a unit supporting six positions for the left/right airflow.



Blue arrows represent the sequence for the increase steps, while green arrows show the decrease steps.

- **Individual objects for each Left/Right airflow direction position. (Unchecked by default)**: Activate the Control and Status objects for each Left/Right airflow position.

IMPORTANT
The **Wide** position does not have an individual object and must be set by other means, such as the **Enumerated** or **Step** objects. Refer to the list of individual objects in the section Communication Objects: LEFT/RIGHT AIRFLOW DIRECTION (page 42).

6.4.7. TEMPERATURE

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: TEMPERATURE (page 45).

- **1 bit (-/+) step user setpoint object. (Unchecked by default)**: Activate the following parameters.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

  – **1 bit (-/+) step user setpoint object polarity: 0=Decrease; 1=Increase. (Unchecked by default)**: Activate the **Temperature: User Setpoint: Step (-/+) (Control)** object.

  – **1 bit (+/-) step user setpoint object polarity: 1=Decrease; 0=Increase. (Unchecked by default)**: Activate the **Temperature: User Setpoint: Step (+/-) (Control)** object.

- **Setpoint temperature limit objects. (Unchecked by default)**: Activate the following status objects for the setpoint's range of values: **Temperature: AC Setpoint: Lowest Limit (Status), Temperature: AC Setpoint: Highest Limit (Status), Temperature: AC Setpoint: Applied Lower Limit (Status), Temperature: AC Setpoint: Applied Higher Limit (Status)**.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

- **Setpoint temperature limits after download. (Unchecked by default)**: Set lower and upper temperature limits for heating and cooling through the following parameters.

  NOTICE
  This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

  – **Heating lower limit**: Set the lower temperature limit when the AC unit is in Heat mode. (10 .. 32°C. Default value: **19°C**).

  – **Heating upper limit**: Set the upper temperature limit when the AC unit is in Heat mode. (10 .. 32°C. Default value: **23°C**).

  – **Cooling lower limit**: Set the lower temperature limit when the AC unit is in Cool mode. (10 .. 32°C. Default value: **24°C**).

  – **Cooling upper limit**: Set the upper temperature limit when the AC unit is in Cool mode. (10 .. 32°C. Default value: **28°C**).

  NOTICE
  Activate the previous parameter **Setpoint temperature limit objects** to activate all Control and Status objects related to these heating and cooling lower and upper temperature limits.

- **Periodical sending of AC setpoint temperature. (Unchecked by default)**: Activate the following parameter.

NOTICE
This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

- **Notification period**: Set the time in minutes between AC setpoint temperature notifications. (1 .. 255. Default value: **15 min**).

- **Ambient reference temperature provided by an external KNX device object. (Unchecked by default)**: Activate the **Temperature: KNX Ambient Reference (Control)** and **Temperature: Virtual Temperature Function (Status)** objects related to the Virtual Temperature function. To know more, see Virtual Temperature Function (page 62).

NOTICE
This parameter is only available when the **Unit Type** option is set to **AC**. See GENERAL (page 13).

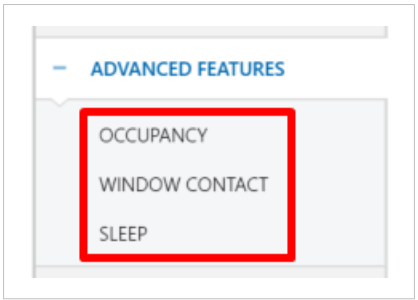
- **Sending of AC Indoor Unit ambient reference temperature**: Select when the gateway sends the room temperature value provided by the indoor unit sensor.
  - **Change of value (default)**: The room temperature value is sent when the current value changes.
    - **Minimum time between sendings**: Set the time in seconds before sending a change-of-value notification. (1 .. 255. Default value: **1 sec**).
    - **Minimum change between sendings**: Set the minimum room temperature change required before sending the change-of-value notification. (1 .. 100. Default value: **1°C**).
  - **Periodically**: The room reference temperature is periodically reported. This option activates the following parameter:
    - **Notification period**: Set the time in minutes between room reference temperature notifications. (1 .. 255. Default value: **15 min**).
  - **Periodically & Change of value**: This option activates the previous parameters for both **Change of value** and **Periodically** options.
- **Sending of AC Outdoor Unit ambient reference temperature**: Select when the gateway sends the outdoor temperature value provided by the outdoor unit sensor.
  - **Change of value (default)**: The outdoor temperature value is sent when the current value changes.
    - **Minimum time between sendings**: Set the time in seconds before sending a change-of-value notification. (1 .. 255. Default value: **1 sec**).
    - **Minimum change between sendings**: Set the minimum outdoor reference temperature change required before sending the change-of-value notification. (1 .. 100. Default value: **1°C**).
  - **Periodically**: The outdoor reference temperature is periodically reported. This option activates the following parameter:
    - **Notification period**: Set the time in minutes between outdoor reference temperature notifications. (1 .. 255. Default value: **15 min**).
  - **Periodically & Change of value**: This option activates the previous parameters for both **Change of value** and **Periodically** options.

6.4.8. ADVANCED FEATURES

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: ADVANCED FEATURES (page 46).

- **Occupancy**: Activate all Control and Status objects for Occupancy.
- **Window Contact**: Activate all Control and Status objects for Window Contact
- **Sleep (Switch-off delay)**: Activate the **Sleep Timer: Stop/Start (Control)** object.

When activating these parameters, you can expand the **ADVANCED FEATURES** menu to configure each feature:



6.4.8.1. OCCUPANCY

ACTION 1

- **First action after unoccupancy**: Select the first AC unit behavior after unoccupancy.
  - **Turn Off AC Unit**: The AC unit turns off.
    - **Delay**: Set the time in minutes before turning the AC unit off after unoccupancy. (0 .. 255. Default value: **10 min**).
  - **Apply setpoint offset. (Default value)**: A setpoint offset is applied, allowing the setpoint to decrease (heating) or increase (cooling).
    - **Delay**: Set the time in minutes before applying the offset. (0 .. 255. Default value: **10 min**).
    - **Offset when heating**: Set the degrees Celsius to decrease when the unit is in HEAT mode (-7 .. 0. Default value: **-2°C**).
    - **Offset when cooling**: Set the degrees Celsius to increase when the unit is in COOL mode(0 .. 7. Default value: **2°C**).
- **Enable second action. (Unchecked by default)**: Set a second action after unoccupancy.

> **NOTICE**
> The parameters for ACTION 2 are the same as for ACTION 1.

- **Disable On/Off operation while unoccupancy. (Checked by default)**: Deactivate the On/Off function until the room is occupied again. It also activates the **Occupancy: On/Off Operation Lock (Status)** object.
- **Recover last status before unoccupancy when occupied again. (Unchecked by default)**: Restore the AC unit to the temperature it was set to before the room became unoccupied when the room is occupied again.
  - **Time limit to recover last status before unoccupancy when occupied again ('0' means always recover)**: Set the time in minutes before restoring the last temperature. (0 .. 65535. Default value: **0 min**).

6.4.8.2. WINDOW CONTACT

- **Window Input objects polarity: 0=Open window; 1=Closed window. (Checked by default)**: Activate the **Window: Input: NO (Control)** and **Window: Input: NO (Status)** objects.

- **Window Input objects polarity: 0=Closed window; 1=Open window. (Unchecked by default)**: Activate the **Window: Input: NC (Control)** and **Window: Input: NC (Status)** objects.
- **Switch-Off delay**: Set the time in minutes before turning the AC unit off when the window is opened. (0 .. 255. Default value: **10 min**).
- **Disable On/Off operation while open window. (Checked by default)**: Deactivate the On/Off function until the window is closed again. This parameter also activates the **Window: On/Off Operation Lock (Status)** object.
- **Recover last status before open window when closed again. (Unchecked by default)**: When the window is closed again, this parameter restores the AC unit to the temperature at which it was operating before opening the window.
  - **Time limit to recover last status before open window when closed again ('0' means to always recover)**: Set the time in minutes before restoring the last temperature. (0 .. 65535. Default value: **0 min**).

6.4.8.3. SLEEP

- **Switch-Off delay**: Set the time in minutes before turning the AC unit off when the Sleep feature is active. (0 .. 255. Default value: **10 min**).

6.4.9. SCENES / ADDITIONAL MODES

NOTE
You can set up to 10 scenes/additional modes.

NOTICE
This menu is only enabled if you select the **Scenes (and additional modes)** parameter from the section GENERAL (page 13).

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: SCENES (page 48).

- **Number of scenes (or additional modes)**: Select how many scenes/additional modes you want to add to your project (0 .. 10. Default value: **0**).
  When setting this parameter with a value >0, you can expand the **SCENES / ADDITIONAL MODES** menu by clicking the + button.
- **Activate scene after power recovery. (Unchecked by default)**: Set the scene you want to activate after a power recovery.

  NOTICE
  This parameter appears only if the **Behavior after power recovery** parameter of the **GENERAL** menu (page 13) is set to **Activate scene** and the value of the **Number of scenes (or additional modes)** in this menu is set to >0.

  - **Number**: Select the number of the scene to activate after a power recovery.
  - **Activation delay**: Set the time in seconds between the power recovery and the activation of the scene.
- **Activate scene after download. (Unchecked by default)**: Set the scene you want to activate after downloading the ETS project to the gateway.

NOTICE
This parameter appears only if the **Behavior after download** parameter of the **GENERAL** menu (page 13) is set to **Activate scene** and the value of the **Number of scenes (or additional modes)** in this menu is set to >0.

- **Number**: Select the number of the scene to activate after downloading the ETS project to the gateway.
- **Activation delay**: Set the time in seconds between the project download and the activation of the scene.

SCENE #1 .. 10

- **Number**: Set a number for this scene/additional mode (1 .. 64. Default value: **1 .. 10**).
- **Description**: Type a description for this scene/additional mode. (64 bytes allowed. Default text: **SCENE #1 ..10**).

NOTE
You can also edit the **Number** and **Description** parameters in the specific configuration menu for each scene/additional mode.

6.4.9.1. S#1 .. 10: SCENE/ADD.MODE #1 .. 10

- **Number**: Set the number for the scene/additional mode. (1 .. 64. Default value: **1 .. 10**).
- **Description**: Type a description for the scene/additional mode. (64 bytes allowed. Default text: **SCENE/ADD. MODE #1 ..10**).
- **Function**: Select one of the following functions.
  - **Scene. (Default value)**
    - **Scene storage (values can be updated with current AC status in runtime). (Checked by default)**: Enable updating the scene's values during runtime.

      TIP
      By enabling this parameter, you allow the end user to customize a scene at runtime through a touch panel or another sensor in the KNX installation, without needing to open the project in ETS and edit the gateway's configuration.

      IMPORTANT
      If you disable this parameter, the values of this scene cannot be updated during runtime. This implies that this scene can only be edited through the ETS project.

    - **On/Off**: Select the AC unit state for this scene.
      - **Unchanged. (Default value)**: This scene does not affect the AC unit's current On/Off state.
      - **Off**: The AC unit turns off.
      - **On**: The AC unit turns on.
    - **Mode**: Select the mode when activating this scene.
      - **Unchanged. (Default value)**: This scene does not affect the AC unit's current mode.
      - **Auto**: The AC unit is set to Auto mode.
      - **Heat**: The AC unit is set to Heat mode.
      - **Cool**: The AC unit is set to Cool mode.
      - **Fan**: The AC unit is set to Fan mode.

  - **Dry**: The AC unit is set to Dry mode.
- **Fan Speed**: Select the fan speed when activating this scene.
  - **Unchanged. (Default value)**: This scene does not affect the AC unit's current fan speed.
  - **Auto**: The fan speed is set to Auto.
  - **Fan Speed 1**: The fan speed is set to 1.
  - **Fan Speed 2**: The fan speed is set to 2.
  - ..
  - **Fan Speed 9**: The fan speed is set to 9.
  - **Fan Speed 10**: The fan speed is set to 10.
- **Setpoint Temperature. (Checked by default)**: Uncheck the **Unchanged** option to establish the setpoint temperature when activating this scene. (10 .. 32. Default value: **25°C**).
- **Remote Control Lock**: Select the remote control lock behavior when activating this scene.
  - **Unchanged. (Default value)**: This scene does not affect the current remote control lock status.
  - **Unlocked**: The remote control is unlocked.
  - **Locked**: The remote control is locked.
- **KNX Control Lock**: Select the KNX control lock behavior when activating this scene.
  - **Unchanged. (Default value)**: This scene does not affect the current KNX control lock status.
  - **Unlocked**: KNX control is unlocked.
  - **Locked**: KNX control is locked.

IMPORTANT
This option prevents any command from KNX from affecting the AC system, including triggering scenes. Therefore, when a scene has this option enabled, no command sent from the KNX system through the gateway will affect the AC system until the scene ends or the value of this parameter is changed.

– **Power Mode**

IMPORTANT
The values of this function cannot be updated during runtime.

- **Fan Speed**: Select the fan speed when activating this function.
  - **Unchanged**: This function does not affect the AC unit's current fan speed.
  - **Auto**: The fan speed is set to Auto.
  - **Fan Speed 1**: The fan speed is set to 1.
  - **Fan Speed 2**: The fan speed is set to 2.
  - ..
  - **Fan Speed 9**: The fan speed is set to 9.
  - **Fan Speed 10. (Default value)**: The fan speed is set to 10.
- **Offset [Δ] when heating [+Δ] / cooling [-Δ] (°C)**: Set the degrees Celsius to increase (HEAT mode) or decrease (COOL mode) when activating this function. (0 .. 7. Default value: **2°C**).

– **Eco Mode**

IMPORTANT
The values of this function cannot be updated during runtime.

- **Fan Speed**: Select the fan speed when activating this function.
  - **Unchanged**: This function does not affect the AC unit's current fan speed.
  - **Auto**: The fan speed is set to Auto.
  - **Fan Speed 1. (Default value)**: The fan speed is set to 1.
  - **Fan Speed 2**: The fan speed is set to 2.
  - ..
  - **Fan Speed 9**: The fan speed is set to 9.
  - **Fan Speed 10**: The fan speed is set to 10.
- **Offset [Δ] when heating [-Δ] / cooling [+Δ] (°C)**: Set the degrees Celsius to decrease (HEAT mode) or increase (COOL mode) when activating this function. (0 .. 7. Default value: **2°C**).

– **Additional Heat**

IMPORTANT
The values of this function cannot be updated during runtime.

- **Fan Speed**: Select the fan speed when activating this function.
  - **Unchanged**: This function does not affect the AC unit's current fan speed.
  - **Auto**: The fan speed is set to Auto.
  - **Fan Speed 1**: The fan speed is set to 1.
  - **Fan Speed 2**: The fan speed is set to 2.
  - ..
  - **Fan Speed 9**: The fan speed is set to 9.
  - **Fan Speed 10. (Default value)**: The fan speed is set to 10.
- **Setpoint Temperature**: Establish the temperature setpoint when this function is active. (10 .. 32. Default value: **32°C**).

– **Additional Cool**

IMPORTANT
The values of this function cannot be updated during runtime.

- **Fan Speed**: Select the fan speed when activating this function.
  - **Unchanged**: This function does not affect the AC unit's current fan speed.
  - **Auto**: The fan speed is set to Auto.
  - **Fan Speed 1**: The fan speed is set to 1.
  - **Fan Speed 2**: The fan speed is set to 2.
  - ..
  - **Fan Speed 9**: The fan speed is set to 9.
  - **Fan Speed 10. (Default value)**: The fan speed is set to 10.

  - **Setpoint Temperature**: Establish the temperature setpoint when this function is active. (10 .. 32. Default value: **18°C**).

- **Timer Options. (Unchecked by default)**: Set a timer for delaying the function and establishing its duration.
  - **Sending delay**: Select the units for the delaying of this function.
    - **Seconds**: Set the time in seconds before starting this function. (0 .. 15300. Default value: **600 sec**).
    - **Minutes. (Default value)**: Set the time in minutes before starting this function. (0 .. 255. Default value: **10 min**).
  - **Duration (0=no end)**: Select the units for the duration of this function.
    - **Seconds**: Set the time in seconds for the duration of this function. (0 .. 15300. Default value: **600 sec**).
    - **Minutes. (Default value)**: Set the time in minutes for the duration of this function. (0 .. 255. Default value: **10 min**).

NOTE
Setting a value of 0 prevents the scenes from ending.

- **Individual object for the scene (or additional mode). (Checked by default)**: Activate the **Scene: Activate 'SCENE #N (Control)** and **Scene: Save 'SCENE #N (Control)** objects.

6.4.10. BINARY INPUTS

Expand this menu by clicking the + button.

NOTE

- You can set up to four binary inputs.
- The binary input contact type by default is Normally Open.
- Open Circuit Logic Level '0': Inactive.
- Short Circuit Logic Level '1': Active.
- Rising Edge: Inactive → Active.
- Falling Edge: Active → Inactive.

NOTICE
This menu is only enabled if you select the **Binary Inputs** parameter from the section GENERAL (page 13).

NOTICE
Refer to the characteristics of the communication objects related to these parameters in the section Communication Objects: BINARY INPUTS (page 49).

- **Number of binary inputs**: 4.
- **Binary Input 1. (Unchecked by default)**: Activate the **Binary Input 1: Physical Input Status (Status)** and **Binary Input 1: Switching (Status)** objects.
  - **Description**: Type a description for this binary input (64 bytes allowed).
- **Binary Input 2. (Unchecked by default)**: Activate the **Binary Input 2: Physical Input Status (Status)** and **Binary Input 2: Switching (Status)** objects.

  - **Description**: Type a description for this binary input (64 bytes allowed).

- **Binary Input 3. (Unchecked by default)**: Activate the **Binary Input 3: Physical Input Status (Status)** and **Binary Input 3: Switching (Status)** objects.
  - **Description**: Type a description for this binary input (64 bytes allowed).
- **Binary Input 4. (Unchecked by default)**: Activate the **Binary Input 4: Physical Input Status (Status)** and **Binary Input 4: Switching (Status)** objects.
  - **Description**: Type a description for this binary input (64 bytes allowed).

6.4.10.1. BINARY INPUTS 1, 2, 3, and 4

For each binary input, you can set these parameters:

- **Binary Input 1. (Unchecked by default)**: Activate binary input 1.
  - **Description**: Type a description for this binary input. (Default text: **BINARY INPUT 1**).
- **Contact type**: Normally Open.
- **Debounce time**: (0 .. 255. Default value: **50 ms**).
- **Function**: Select the function for this binary input.
  - **Switching. (Default value)**: For this function type, you must set the following parameters.
    - **Rising edge action**: Actions to be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
      - **On. (Default value)**
      - **Off**
      - **Toggle (On/Off)**
      - **No action**
    - **Falling edge action**: Actions to be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
      - **On**
      - **Off. (Default value)**
      - **Toggle (On/Off)**
      - **No action**
    - **Periodical sending**
      - **When output value is On**
      - **When output value is Off**
      - **Always**
      - **Never. (Default value)**
    - **Send after reboot**
      - **Current Status**
      - **On**
      - **Off**
      - **No action. (Default value)**

- **Dimming**: For this function type, you must set the following parameters.
  - **Action triggered on**
    - **Rising edge. (Default value)**: Actions will be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
    - **Falling edge**: Actions will be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
  - **Dimming action**
    - **Short press=On; Long press=Brighter. (Default value)**
    - **Short press=Off; Long press=Darker**
    - **Short press=Toggle (On/Off); Long press=Toggle (Brighter/Darker)**
  - **Dimming step (brighter)**
    - **100%**
    - **50%**
    - **25%. (Default value)**
    - **12.50%**
    - **6.25%**
    - **3.13%**
    - **1.56%**
  - **Dimming step (darker)**
    - **-100%**
    - **-50%**
    - **-25%. (Default value)**
    - **-12.50%**
    - **-6.25%**
    - **-3.13%**
    - **-1.56%**
  - **Minimum long press time**: (1 .. 255. Default value: **10x100 ms**).
  - **Periodical sending of long press action. (Unchecked by default)**
    - **Notification period**: (1 .. 255. Default value: **10x100 ms**).
  - **Send after reboot**
    - **On**
    - **Off**
    - **No action. (Default value)**
- **Shutter/Blind**: For this function type, you must set the following parameters.
  - **Action triggered on**
    - **Rising edge. (Default value)**: Actions will be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
    - **Falling edge**: Actions will be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).

- **Shutter/Blind action**
  - **Up. (Default value)**
  - **Down**
  - **Toggle (Up/Down)**
- **Shutter/Blind operation method**
  - **Step-Move-Step. (Default value)**
  - **Move-Step**
- **Minimum long press time**: (1 .. 255. Default value: **20x100 ms**).
- **Vanes adjustment time**: (1 .. 255. Default value: **10x100 ms**).
- **Send after reboot**
  - **Move up**
  - **Move down**
  - **No action. (Default value)**

– **Value**: For this function type, you must set the following parameters.

- **Action triggered on**
  - **Rising edge. (Default value)**: Actions will be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Falling edge**: Actions will be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
- **DPT to be sent**
  - **DPT 5.010 (1 byte). (Default value)**
  - **DPT 7.001 (2 byte)**
  - **DPT 8.001 (2 byte)**
  - **DPT 9.001 (2 byte)**
  - **DPT 12.001 (4 byte)**
  - **Value to send**: (0 .. 255. Default value: **0**).
- **Send after reboot**
  - **Sending delay**: (0 .. 255. Default value: **0 sec**).

– **Scene (Internal)**: For this function type, you must set the following parameters.

- **Action triggered on**
  - **Rising edge. (Default value)**: Actions will be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Falling edge**: Actions will be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
- **Scene number**: (1 .. 64. Default value: **1**).
- **Save scene on long press action. (Unchecked by default)**
  - **Minimum long press time**: (1 .. 255. Default value: **10x100 ms**).

– **Occupancy (Internal)**: For this function type, you must set the following parameters.

- **Rising edge action**: Actions to be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Occupied. (Default value)**
  - **Not occupied**
- **Falling edge action**: Actions to be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
  - **Occupied**
  - **Not occupied. (Default value)**

– **Window contact (Internal)**: For this function type, you must set the following parameters.

- **Rising edge action**: Actions to be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Closed window. (Default value)**
  - **Open window**
- **Falling edge action**: Actions to be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
  - **Closed window**
  - **Open window. (Default value)**

– **Sleep timer (Internal)**: For this function type, you must set the following parameters.

- **Rising edge action**: Actions to be executed on the pulse's rising edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Start. (Default value)**
  - **Stop**
- **Falling edge action**: Actions to be executed on the pulse's falling edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
  - **Start**
  - **Stop. (Default value)**

– **Pulse counter meter**: For this function type, you must set the following parameters.

- **Pulse trigger mode**: Select when to count the pulse.
  - **Rising edge. (Default value)**: Count on the pulse's rising edge (the switch/sensor transitions from closed to open, i.e., the logic value changes from 1 to 0).
  - **Falling edge**: Count on the pulse's falling edge (the switch/sensor transitions from open to closed, i.e., the logic value changes from 0 to 1).
  - **Rising edge and falling edge**: Count for both pulse behaviors.
- **Number of received pulses per counted pulse (pulses/counted pulse)**: (1 .. 10000. Default value: **1**).
- **Increase per counted pulse (unit of measurement/counted pulse)**: (1 .. 10000. Default value: **1**).
- **Pulse width**: Set the pulse with in milliseconds. (1 .. 99999. Default value: **50 ms**).
- **Unit of measurement**:
  - **W**
  - **kW**
  - **W·h. (Default value)**

  - **kW·h**
  - **l**
  - **l/h**
  - **m^3**
  - **m^3/h**
  - **Individual objects for each AC mode (for monitoring AC system consumption). (Unchecked by default)**

    IMPORTANT
    If enabling this parameter, the meter connected to this binary input must monitor the outdoor unit controlled by this gateway.

- **Sending of measures**
  - **Change of value. (Default value)**
    - **Minimum change between sendings**: (0 .. 4294967295. Default value: **0**).
    - **Minimum time between sendings**: (1 .. 255. Default value: **1 sec**).
  - **Periodically**
    - **Notification period <0=disabled>**: (0 .. 255. Default value: **0 min**).
  - **Periodically & change of value**
    - **Minimum change between sendings**: (0 .. 4294967295. Default value: **0**).
    - **Minimum time between sendings**: (1 .. 255. Default value: **1 sec**).
    - **Notification period <0=disabled>**: (0 .. 255. Default value: **0 min**).
- **Send after power recovery. (Unchecked by default)**
  - **Sending delay**: (0 .. 255. Default value: **0 sec**).
- **Measurement values after KNX download**
  - **Keep current value. (Default value)**
  - **Set new value**
    - **New total measurement value**: (0 .. 4294967295. Default value: **0**).
    - **New heat measurement value**: (0 .. 4294967295. Default value: **0**).

      NOTE
      This parameter is visible only when the unit of measurement is **W·h** or **kW·h** and the **Individual objects for each AC mode (for monitoring AC system consumption)** parameter is enabled.

    - **New cool measurement value**: (0 .. 4294967295. Default value: **0**).

      NOTE
      This parameter is visible only when the unit of measurement is **W·h** or **kW·h** and the **Individual objects for each AC mode (for monitoring AC system consumption)** parameter is enabled.

    - **New others measurement value**: (0 .. 4294967295. Default value: **0**).

> **NOTE**
> This parameter is visible only when the unit of measurement is **W·h** or **kW·h** and the **Individual objects for each AC mode (for monitoring AC system consumption)** parameter is enabled.

  - **Unit of measurement**: It shows the unit of measurement previously selected.

- **Binary Input lock. (Unchecked by default)**: Activate the following parameters.
  - **Binary Input lock object polarity: 0=Unlocked; 1=Locked. (Checked by default)**: Activate the **Binary Input 1: Lock/Unlock (Control) - 0=Unlocked; 1=Locked** and **Binary Input 1: Lock/Unlock (Status) - 0=Unlocked; 1=Locked** objects.
  - **Binary Input lock object polarity: 0=Locked; 1=Unlocked. (Unchecked by default)**: Activate the **Binary Input 1: Unlock/Lock (Control) - 0=Locked; 1=Unlocked** and **Binary Input 1: Unlock/Lock (Status) - 0=Locked; 1=Unlocked** objects.

6.5. KNX Communication Objects

NOTICE
Communication object flags:

- **R**: The KNX system can read this signal.
- **W**: The KNX system can write this signal.
- **T**: The KNX system receives a telegram when this signal changes its value.
- **U**: This signal's data is updated after a reboot of either the gateway or the bus.

6.5.1. Communication Objects: GENERAL

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
1	Heartbeat (Status)	1=Alive	1 bit	1	11	X		X	
11	Error: Flag (Status)	0=No Error 1=Error	1 bit	1	5	X		X	
12	Error: Code (Status)	See Error Codes (page 64)	2 byte	8		X		X	
13	Error: Description (Status)	See Error Codes (page 64)	14 byte	16	1	X		X	
21	Operating Time Counter (s) (Control)	0 .. 2147483647 (s)	4 byte	13	100	X	X		X
22	Operating Time Counter (s) (Status)	0 .. 2147483647 (s)	4 byte	13	100	X		X	
23	Operating Time Counter (h) (Control)	0 .. 65535 (h)	2 byte	7	7	X	X		X
24	Operating Time Counter (h) (Status)	0 .. 65535 (h)	2 byte	7	7	X		X	
25	Remote Control Lock (Control)[1]	0=Unlocked 1=Locked	1 bit	1	2	X	X		X
26	Remote Control Lock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	

NOTICE
[1] If a value of **1** is written in the **Remote Control Lock (Control)** object, the AC unit can only be controlled through the KNX system, and any command sent through any remote control will have no effect.

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
27	KNX Control Lock (Control)[2]	0=Unlocked 1=Locked	1 bit	1	2	X	X		X

NOTICE

[2] If a value of **1** is written in the **KNX Control Lock (Control)** object, the AC unit can only be controlled through its own controller, and any command sent through the KNX system will have no effect, including the triggering of scenes.

28	KNX Control Lock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	
29	On/Off (Control)	0=Off 1=On	1 bit	1	1	X	X		X
30	On/Off (Status)	0=Off 1=On	1 bit	1	1	X		X	

6.5.2. Communication Objects: MODE

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
32	Mode: AC (Control)	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	1 byte	20	105	X	X		X
33	Mode: AC (Status)[1]	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	1 byte	20	105	X		X	

NOTICE

[1] If you enable the parameter **Report real mode in Mode (Status) object when Auto mode is set** (page 17), the value **0=Auto** will not be reported; instead, the AC unit's current mode (**1=Heat, 3=Cool, 9=Fan**, or **14=Dry**) will be reported.

34	Mode: AC: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
35	Mode: AC: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
36	Mode: AC: Simplified (Cool/ Heat) (Control)	0=Cool 1=Heat	1 bit	1	100	X	X		X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
37	Mode: AC: Simplified (Cool/ Heat) (Status)	0=Cool 1=Heat	1 bit	1	100	X		X	
38	Mode: AC: Percentage: On/Off + Heat (Control)	0%=Off (1 .. 100)%=On + Heat	1 byte	5	1	X	X		X
39	Mode: AC: Percentage: On/Off + Cool (Control)	0%=Off (1 .. 100)%=On + Cool	1 byte	5	1	X	X		X
40	Mode: AC: Auto (Control)	1=Auto	1 bit	1	2	X	X		X
41	Mode: AC: Auto (Status)	1=Auto	1 bit	1	2	X		X	
42	Mode: AC: Heat (Control)	1=Heat	1 bit	1	2	X	X		X
43	Mode: AC: Heat (Status)	1=Heat	1 bit	1	2	X		X	
44	Mode: AC: Cool (Control)	1=Cool	1 bit	1	2	X	X		X
45	Mode: AC: Cool (Status)	1=Cool	1 bit	1	2	X		X	
46	Mode: AC: Fan (Control)	1=Fan	1 bit	1	2	X	X		X
47	Mode: AC: Fan (Status)	1=Fan	1 bit	1	2	X		X	
48	Mode: AC: Dry (Control)	1=Dry	1 bit	1	2	X	X		X
49	Mode: AC: Dry (Status)	1=Dry	1 bit	1	2	X		X	
50	Mode: Ventilation (Control)	0=Auto 1=Heat Exchanger 2=Bypass	1 byte	20		X	X		X
51	Mode: Ventilation (Status)[2]	0=Auto 1=Heat Exchanger 2=Bypass	1 byte	20		X		X	

NOTICE

[2] If you enable the parameter **Report real mode in Mode (Status) object when Auto mode is set** (page 17), the value **0=Auto** will not be reported; instead, the AC unit's current mode (**1=Heat Exchanger** or **2=Bypass**) will be reported.

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
52	Mode: Ventilation: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
53	Mode: Ventilation: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
54	Mode: Ventilation: Auto (Control)	1=Auto	1 bit	1	2	X	X		X
55	Mode: Ventilation: Auto (Status)	1=Auto	1 bit	1	2	X		X	
56	Mode: Ventilation: Heat Exchanger (Control)	1=Heat Exchanger	1 bit	1	2	X	X		X
57	Mode: Ventilation: Heat Exchanger (Status)	1=Heat Exchanger	1 bit	1	2	X		X	
58	Mode: Ventilation: Bypass (Control)	1=Bypass	1 bit	1	2	X	X		X
59	Mode: Ventilation: Bypass (Status)	1=Bypass	1 bit	1	2	X		X	

6.5.3. Communication Objects: FAN SPEED

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
62	Fan Speed: Percentage (Control)[1]	Thresholds=[100 x (n + 0.5) / N]%	1 byte	5	1	X	X		X
63	Fan Speed: Percentage (Status)[1]	[100 x (n / N)]%	1 byte	5	1	X		X	

NOTICE
[1] To know more about the formulas used for the **Fan Speed: Percentage** objects, see FAN SPEED (page 18).

64	Fan Speed: Enumerated (Control)	0=Auto 1 .. N=Fan Speed 1 .. N	1 byte	5	10	X	X		X
65	Fan Speed: Enumerated (Status)	0=Auto 1 .. N=Fan Speed 1 .. N	1 byte	5	10	X		X	
66	Fan Speed: Fan Stage (Control)	0=Off 1 .. N=Fan Speed 1 .. N	1 byte	5	100	X	X		X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
67	Fan Speed: Fan Stage (Status)	0=Off 1 .. N=Fan Speed 1 .. N	1 byte	5	100	X		X	
68	Fan Speed: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
69	Fan Speed: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
70	Fan Speed: Auto (Control)	1=Auto	1 bit	1	2	X	X		X
71	Fan Speed: Auto (Status)	1=Auto	1 bit	1	2	X		X	
72	Fan Speed: 1 (Control)	1=Fan Speed 1	1 bit	1	2	X	X		X
73	Fan Speed: 1 (Status)	1=Fan Speed 1	1 bit	1	2	X		X	
74	Fan Speed: 2 (Control)	1=Fan Speed 2	1 bit	1	2	X	X		X
75	Fan Speed: 2 (Status)	1=Fan Speed 2	1 bit	1	2	X		X	
76	Fan Speed: 3 (Control)	1=Fan Speed 3	1 bit	1	2	X	X		X
77	Fan Speed: 3 (Status)	1=Fan Speed 3	1 bit	1	2	X		X	
78	Fan Speed: 4 (Control)	1=Fan Speed 4	1 bit	1	2	X	X		X
79	Fan Speed: 4 (Status)	1=Fan Speed 4	1 bit	1	2	X		X	
80	Fan Speed: 5 (Control)	1=Fan Speed 5	1 bit	1	2	X	X		X
81	Fan Speed: 5 (Status)	1=Fan Speed 5	1 bit	1	2	X		X	

6.5.4. Communication Objects: UP/DOWN AIRFLOW DIRECTION

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
92	Up/Down Airflow Direction: Percentage (Control)[1]	Thresholds=[100 x (n + 0.5) / N]%	1 byte	5	1	X	X		X
93	Up/Down Airflow Direction: Percentage (Status)[1]	[1 + 100 x (n / N)]%	1 byte	5	1	X		X	

NOTICE
[1] To know more about the formulas used for the **Up/Down Airflow Direction: Percentage** objects, see UP/DOWN AIRFLOW DIRECTION (page 19).

94	Up/Down Airflow Direction: Enumerated (Control)[2]	0=Auto/Stop 1 .. N=Position 1 .. N 10=Swing 11=Swirl 12=Wide	1 byte	5	10	X	X		X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
95	Up/Down Airflow Direction: Enumerated (Status)[2]	0=Auto/Stop 1 .. N=Position 1 .. N 10=Swing 11=Swirl 12=Wide	1 byte	5	10	X		X	

NOTICE
[2] For the INKNXMIT001I200 gateway, the **Up/Down Airflow Direction: Enumerated** objects do not support **11=Swirl** and **12=Wide**.

96	Up/Down Airflow Direction: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
97	Up/Down Airflow Direction: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
101	Up/Down Airflow Direction: Position 1 (Control)	1=Position 1	1 bit	1	2	X	X		X
102	Up/Down Airflow Direction: Position 1 (Status)	1=Position 1	1 bit	1	2	X		X	
103	Up/Down Airflow Direction: Position 2 (Control)	1=Position 2	1 bit	1	2	X	X		X
104	Up/Down Airflow Direction: Position 2 (Status)	1=Position 2	1 bit	1	2	X		X	
105	Up/Down Airflow Direction: Position 3 (Control)	1=Position 3	1 bit	1	2	X	X		X
106	Up/Down Airflow Direction: Position 3 (Status)	1=Position 3	1 bit	1	2	X		X	
107	Up/Down Airflow Direction: Position 4 (Control)	1=Position 4	1 bit	1	2	X	X		X
108	Up/Down Airflow Direction: Position 4 (Status)	1=Position 4	1 bit	1	2	X		X	
109	Up/Down Airflow Direction: Position 5 (Control)	1=Position 5	1 bit	1	2	X	X		X
110	Up/Down Airflow Direction: Position 5 (Status)	1=Position 5	1 bit	1	2	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
119	Up/Down Airflow Direction: Swing (Control)	1=Swing	1 bit	1	2	X	X		X
120	Up/Down Airflow Direction: Swing (Status)	1=Swing	1 bit	1	2	X		X	

6.5.5. Communication Objects: LEFT/RIGHT AIRFLOW DIRECTION

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
129	Left/Right Airflow Direction: Percentage (Control)[1]	Thresholds=[100 x (n + 0.5) / N]%	1 byte	5	1	X	X		X
130	Left/Right Airflow Direction: Percentage (Status)[1]	[1 + 100 x (n / N)]%	1 byte	5	1	X		X	

NOTICE
[1] To know more about the formulas used for the **Left/Right Airflow Direction: Percentage** objects, see LEFT/RIGHT AIR FLOW DIRECTION (page 20).

131	Left/Right Airflow Direction: Enumerated (Control)[2]	0=Auto/Stop 1 .. N=Position 1 .. N 10=Swing 11=Swirl 12=Wide 13=Spot	1 byte	5	10	X	X		X
132	Left/Right Airflow Direction: Enumerated (Status)[2]	0=Auto/Stop 1 .. N=Position 1 .. N 10=Swing 11=Swirl 12=Wide 13=Spot	1 byte	5	10	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U

NOTICE

[2] For the INKNXMIT001I200 gateway, the values for the **Left/Right Airflow Direction: Enumerated** objects slightly vary:

Control object allowed values	Status object reported values
1 .. 6=Position 1 .. 6*	1 .. 6=Position 1 .. 6*
10=Swing	10=Swing
12=Wide*	6=Wide*

*** For Mitsubishi Electric indoor units supporting the Wide position**: Entering either a 6 or a 12 in the control object sets the Left/Right airflow position to Wide. However, the status object will always report a 6.

133	Left/Right Airflow Direction: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
134	Left/Right Airflow Direction: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
138	Left/Right Airflow Direction: Position 1 (Control)	1=Position 1	1 bit	1	2	X	X		X
139	Left/Right Airflow Direction: Position 1 (Status)	1=Position 1	1 bit	1	2	X		X	
140	Left/Right Airflow Direction: Position 2 (Control)	1=Position 2	1 bit	1	2	X	X		X
141	Left/Right Airflow Direction: Position 2 (Status)	1=Position 2	1 bit	1	2	X		X	
142	Left/Right Airflow Direction: Position 3 (Control)	1=Position 3	1 bit	1	2	X	X		X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
143	Left/Right Airflow Direction: Position 3 (Status)	1=Position 3	1 bit	1	2	X		X	
144	Left/Right Airflow Direction: Position 4 (Control)	1=Position 4	1 bit	1	2	X	X		X
145	Left/Right Airflow Direction: Position 4 (Status)	1=Position 4	1 bit	1	2	X		X	
146	Left/Right Airflow Direction: Position 5 (Control)	1=Position 5	1 bit	1	2	X	X		X
147	Left/Right Airflow Direction: Position 5 (Status)	1=Position 5	1 bit	1	2	X		X	
148	Left/Right Airflow Direction: Position 6 (Control)	1=Position 6	1 bit	1	2	X	X		X
149	Left/Right Airflow Direction: Position 6 (Status)	1=Position 6	1 bit	1	2	X		X	
156	Left/Right Airflow Direction: Swing (Control)	1=Swing	1 bit	1	2	X	X		X
157	Left/Right Airflow Direction: Swing (Status)	1=Swing	1 bit	1	2	X		X	

6.5.6. Communication Objects: TEMPERATURE

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
166	Temperature: User Setpoint (Control)	°C	2 byte	9	1	X	X		X
167	Temperature: User Setpoint (Status)	°C	2 byte	9	1	X		X	
168	Temperature: User Setpoint: Step (-/+) (Control)	0=Decrease 1=Increase	1 bit	1	7	X	X		X
169	Temperature: User Setpoint: Step (+/-) (Control)	0=Increase 1=Decrease	1 bit	1	8	X	X		X
170	Temperature: AC Setpoint (Status)	°C	2 byte	9	1	X		X	
171	Temperature: AC Indoor Ambient Reference (Status)	°C	2 byte	9	1	X		X	
172	Temperature: AC Outdoor Ambient Reference (Status)	°C	2 byte	9	1	X		X	
173	Temperature: KNX Ambient Reference (Control)[1]	°C	2 byte	9	1	X	X		X

NOTICE

[1] Use the **KNX Ambient Reference (Control)** object to write the ambient temperature provided by a thermistor installed in the KNX system. Once a valid value is written in this object, the virtual temperature function is activated. See Virtual Temperature Function (page 62).

175	Temperature: Virtual Temperature Function (Status)[2]	0=Inactive 1=Active	1 bit	1	11	X		X	

NOTICE

[2] The **Temperature: Virtual Temperature Function (Status)** object reports whether the virtual temperature function is active. See Virtual Temperature Function (page 62).

176	Temperature: AC Setpoint: Lowest Limit (Status)	°C	2 byte	9	1	X		X	
177	Temperature: AC Setpoint: Highest Limit (Status)	°C	2 byte	9	1	X		X	
178	Temperature: AC Setpoint: Applied Lower Limit (Status)	°C	2 byte	9	1	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
179	Temperature: AC Setpoint: Applied Upper Limit (Status)	°C	2 byte	9	1	X		X	
180	Temperature: User Setpoint: Lower Limit: Heating (Control)	°C	2 byte	9	1	X	X		X
181	Temperature: User Setpoint: Lower Limit: Heating (Status)	°C	2 byte	9	1	X		X	
182	Temperature: User Setpoint: Upper Limit: Heating (Control)	°C	2 byte	9	1	X	X		X
183	Temperature: User Setpoint: Upper Limit: Heating (Status)	°C	2 byte	9	1	X		X	
184	Temperature: User Setpoint: Lower Limit: Cooling (Control)	°C	2 byte	9	1	X	X		X
185	Temperature: User Setpoint: Lower Limit: Cooling (Status)	°C	2 byte	9	1	X		X	
186	Temperature: User Setpoint: Upper Limit: Cooling (Control)	°C	2 byte	9	1	X	X		X
187	Temperature: User Setpoint: Upper Limit: Cooling (Status)	°C	2 byte	9	1	X		X	

6.5.7. Communication Objects: ADVANCED FEATURES

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
189	Occupancy: Enable/ Disable (Control)	0=Disable 1=Enable	1 bit	1	3	X	X		X
190	Occupancy: Enable/ Disable (Status)	0=Disabled 1=Enabled	1 bit	1	3	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
191	Occupancy: Input (Control)	0=Not occupied 1=Occupied	1 bit	1	18	X	X		X
192	Occupancy: Input (Status)	0=Not occupied 1=Occupied	1 bit	1	18	X		X	
193	Occupancy: Mode (Status)	0=Occupied 1=Standby 2=Not occupied	1 byte	20	3	X		X	
194	Occupancy: Step (Status)	0=Occupied 1=Not occupied (First action timeout) 2=Not occupied (Second action timeout) 3=Not occupied (No pending actions)	1 byte	5		X		X	
195	Occupancy: On/Off Operation Lock (Status)	0=Unlocked 1=Locked (Forced Off)	1 bit	1	2	X		X	
196	Window: Enable/Disable (Control)	0=Disable 1=Enable	1 bit	1	3	X	X		X
197	Window: Enable/Disable (Status)	0=Disabled 1=Enabled	1 bit	1	3	X		X	
198	Window: Input: NO (Control)	0=Open window 1=Closed window	1 bit	1	9	X	X		X
199	Window: Input: NO (Status)	0=Open window 1=Closed window	1 bit	1	9	X		X	
200	Window: Input: NC (Control)	0=Closed window 1=Open window	1 bit	1	19	X	X		X
201	Window: Input: NC (Status)	0=Closed window 1=Open window	1 bit	1	19	X		X	
202	Window: Step (Status)	0=Closed window 1=Open window (Switch-Off timeout) 3=Open window (No pending actions)	1 byte	5		X		X	
203	Window: On/Off Operation Lock (Status)	0=Unlocked 1=Locked (Forced Off)	1 bit	1	2	X		X	
204	Sleep Timer: Stop/Start (Control)	0=Stop 1=Start	1 bit	1	10	X	X		X

6.5.8. Communication Objects: SCENES

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
205	Scene: Activate/Store (Control)[1]	0 .. 63=Activate Scene 1 .. 64 128 .. 191=Store Scene 1 .. 64	1 byte	18	1	X	X		X

NOTICE

[1] The **Scene: Activate/Store (Control)** object allows the activation and saving of each scene through a single object.

- **Activate a scene**: Write the number of the scene -1. For example, to activate Scene 8, you should write 7 in this object.
- **Save a scene**: Write the number of the scene + 127. For example, to save Scene 8, you should write 135 in this object.

206	Scene: Cancel (Control)	0 .. 63=Cancel Scene 1 .. 64	1 byte	17	1	X	X		X
207	Scene: Cancel All (Control)	1=Cancel All Scenes	1 bit	1	2	X	X		X
208	Scene: Current Scene (Status)	0 .. 63=Scene 1 .. 64 255=No scene	1 byte	17	1	X		X	
209	Scene: Activate Scene #1 (Control)	1=Activate scene #1	1 bit	1	2	X	X		X
210	Scene: Save Scene #1 (Control)	1=Save scene #1	1 bit	1	2	X	X		X
211	Scene: Activate Scene #2 (Control)	1=Activate scene #2	1 bit	1	2	X	X		X
212	Scene: Save Scene #2 (Control)	1=Save scene #2	1 bit	1	2	X	X		X
213	Scene: Activate Scene #3 (Control)	1=Activate scene #3	1 bit	1	2	X	X		X
214	Scene: Save Scene #3 (Control)	1=Save scene #3	1 bit	1	2	X	X		X
215	Scene: Activate Scene #4 (Control)	1=Activate scene #4	1 bit	1	2	X	X		X
216	Scene: Save Scene #4 (Control)	1=Save scene #4	1 bit	1	2	X	X		X
217	Scene: Activate Scene #5 (Control)	1=Activate scene #5	1 bit	1	2	X	X		X
218	Scene: Save Scene #5 (Control)	1=Save scene #5	1 bit	1	2	X	X		X
219	Scene: Activate Scene #6 (Control)	1=Activate scene #6	1 bit	1	2	X	X		X
220	Scene: Save Scene #6 (Control)	1=Save scene #6	1 bit	1	2	X	X		X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
221	Scene: Activate Scene #7 (Control)	1=Activate scene #7	1 bit	1	2	X	X		X
222	Scene: Save Scene #7 (Control)	1=Save scene #7	1 bit	1	2	X	X		X
223	Scene: Activate Scene #8 (Control)	1=Activate scene #8	1 bit	1	2	X	X		X
224	Scene: Save Scene #8 (Control)	1=Save scene #8	1 bit	1	2	X	X		X
225	Scene: Activate Scene #9 (Control)	1=Activate scene #9	1 bit	1	2	X	X		X
226	Scene: Save Scene #9 (Control)	1=Save scene #9	1 bit	1	2	X	X		X
227	Scene: Activate Scene #10 (Control)	1=Activate scene #10	1 bit	1	2	X	X		X
228	Scene: Save Scene #10 (Control)	1=Save scene #10	1 bit	1	2	X	X		X

6.5.9. Communication Objects: BINARY INPUTS

Binary Input 1

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
229	Binary Input 1: Physical Input Status (Status)	0=Inactive 1=Active	1 bit	1	11	X		X	
230	Binary Input 1: Lock/Unlock (Control)	0=Unlocked 1=Locked	1 bit	1	2	X	X		X
231	Binary Input 1: Lock/Unlock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	
232	Binary Input 1: Unlock/Lock (Control)	0=Locked 1=Unlocked	1 bit	1	2	X	X		X
233	Binary Input 1: Unlock/Lock (Status)	0=Locked; 1=Unlocked	1 bit	1	2	X		X	
234	Binary Input 1: Switching (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X
235	Binary Input 1: Dimming: On/Off (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
236	Binary Input 1: Dimming: Step (Status)	0=Break ≤0=Darker ≥0=Brighter	4 bit	3	7	X	X	X	
237	Binary Input 1: Shutter/Blind: Move: Up/Down (Status)	0=Up 1=Down	1 bit	1	8	X	X	X	
238	Binary Input 1: Shutter/Blind: Move: Step (Status)	0=Step Up 1=Step Down	1 bit	1	7	X	X	X	
239	Binary Input 1: Value (Status)	0 .. 255 0 .. 65535 -32768 .. 32767 -273 .. 67043328 0 .. 4294967295	4 byte	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	X		X	
240	Binary Input 1: Measurement: Total (Control)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
241	Binary Input 1: Measurement: Total (Status)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
242	Binary Input 1: Measurement: Heat: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
243	Binary Input 1: Measurement: Heat: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
244	Binary Input 1: Measurement: Cool: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
245	Binary Input 1: Measurement: Cool: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
246	Binary Input 1: Measurement: Others: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
247	Binary Input 1: Measurement: Others: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

Binary Input 2

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
248	Binary Input 2: Physical Input Status (Status)	0=Inactive 1=Active	1 bit	1	11	X		X	
249	Binary Input 2: Lock/Unlock (Control)	0=Unlocked 1=Locked	1 bit	1	2	X	X		X
250	Binary Input 2: Lock/Unlock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	
251	Binary Input 2: Unlock/Lock (Control)	0=Locked 1=Unlocked	1 bit	1	2	X	X		X
252	Binary Input 2: Unlock/Lock (Status)	0=Locked 1=Unlocked	1 bit	1	2	X		X	
253	Binary Input 2: Switching (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X
254	Binary Input 2: Dimming: On/Off (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
255	Binary Input 2: Dimming: Step (Status)	0=Break ≤0=Darker ≥0=Brighter	4 bit	3	7	X	X	X	
256	Binary Input 2: Shutter/Blind: Move: Up/Down (Status)	0=Up 1=Down	1 bit	1	8	X	X	X	
257	Binary Input 2: Shutter/Blind: Move: Step (Status)	0=Step Up 1=Step Down	1 bit	1	7	X	X	X	
258	Binary Input 2: Value(Status)	0 .. 255 0 .. 65535 -32768 .. 32767 -273 .. 67043328 0 .. 4294967295	4 byte	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	X		X	
259	Binary Input 2: Measurement: Total (Control)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
260	Binary Input 2: Measurement: Total (Status)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
261	Binary Input 2: Measurement: Heat: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
262	Binary Input 2: Measurement: Heat: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
263	Binary Input 2: Measurement: Cool: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
264	Binary Input 2: Measurement: Cool: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
265	Binary Input 2: Measurement: Others: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
266	Binary Input 2: Measurement: Others: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

Binary Input 3

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
267	Binary Input 3: Physical Input Status (Status)	0=Inactive 1=Active	1 bit	1	11	X		X	
268	Binary Input 3: Lock/Unlock (Control)	0=Unlocked 1=Locked	1 bit	1	2	X	X		X
269	Binary Input 3: Lock/Unlock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	
270	Binary Input 3: Unlock/Lock (Control)	0=Locked 1=Unlocked	1 bit	1	2	X	X		X
271	Binary Input 3: Unlock/Lock (Status)	0=Locked 1=Unlocked	1 bit	1	2	X		X	
272	Binary Input 3: Switching (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X
273	Binary Input 3: Dimming: On/Off (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
274	Binary Input 3: Dimming: Step (Status)	0=Break ≤0=Darker ≥0=Brighter	4 bit	3	7	X	X	X	
275	Binary Input 3: Shutter/Blind: Move: Up/Down (Status)	0=Up 1=Down	1 bit	1	8	X	X	X	
276	Binary Input 3: Shutter/Blind: Move: Step (Status)	0=Step Up 1=Step Down	1 bit	1	7	X	X	X	
277	Binary Input 3: Value(Status)	0 .. 255 0 .. 65535 -32768 .. 32767 -273 .. 67043328 0 .. 4294967295	4 byte	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	X		X	
278	Binary Input 3: Measurement: Total (Control)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
279	Binary Input 3: Measurement: Total (Status)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
280	Binary Input 3: Measurement: Heat: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
281	Binary Input 3: Measurement: Heat: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
282	Binary Input 3: Measurement: Cool: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
283	Binary Input 3: Measurement: Cool: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
284	Binary Input 3: Measurement: Others: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
285	Binary Input 3: Measurement: Others: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

Binary Input 4

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
286	Binary Input 4: Physical Input Status (Status)	0=Inactive 1=Active	1 bit	1	11	X		X	
287	Binary Input 4: Lock/Unlock (Control)	0=Unlocked 1=Locked	1 bit	1	2	X	X		X
288	Binary Input 4: Lock/Unlock (Status)	0=Unlocked 1=Locked	1 bit	1	2	X		X	
289	Binary Input 4: Unlock/Lock (Control)	0=Locked 1=Unlocked	1 bit	1	2	X	X		X
290	Binary Input 4: Unlock/Lock (Status)	0=Locked 1=Unlocked	1 bit	1	2	X		X	
291	Binary Input 4: Switching (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X
292	Binary Input 4: Dimming: On/Off (Status)	0=Off 1=On	1 bit	1	1	X	X	X	X

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
293	Binary Input 4: Dimming: Step (Status)	0=Break ≤0=Darker ≥0=Brighter	4 bit	3	7	X	X	X	
294	Binary Input 4: Shutter/Blind: Move: Up/Down (Status)	0=Up 1=Down	1 bit	1	8	X	X	X	
295	Binary Input 4: Shutter/Blind: Move: Step (Status)	0=Step Up 1=Step Down	1 bit	1	7	X	X	X	
296	Binary Input 4: Value(Status)	0 .. 255 0 .. 65535 -32768 .. 32767 -273 .. 67043328 0 .. 4294967295	4 byte	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	5.010 (1 byte) 7.001 (2 byte) 8.001 (2 byte) 9.001 (2 byte) 12.001 (4 byte)	X		X	
297	Binary Input 4: Measurement: Total (Control)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
298	Binary Input 4: Measurement: Total (Status)	W kW W·h kW·h l l/h m3 m3/h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
299	Binary Input 4: Measurement: Heat: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
300	Binary Input 4: Measurement: Heat: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
301	Binary Input 4: Measurement: Cool: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X	X		X
302	Binary Input 4: Measurement: Cool: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

#	Name	Values	Length	DPT		FLAGS			
				Main	Sub	R	W	T	U
303	Binary Input 4: Measurement: Others: Total (Control)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	
304	Binary Input 4: Measurement: Others: Total (Status)	W·h kW·h	4 byte	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	W=14.056 kW=9.024 W·h=13.0.10 kW·h=13.0.13 l=12.1200 l/h=9.025 m3=12.1201 m3/h=13.002	X		X	

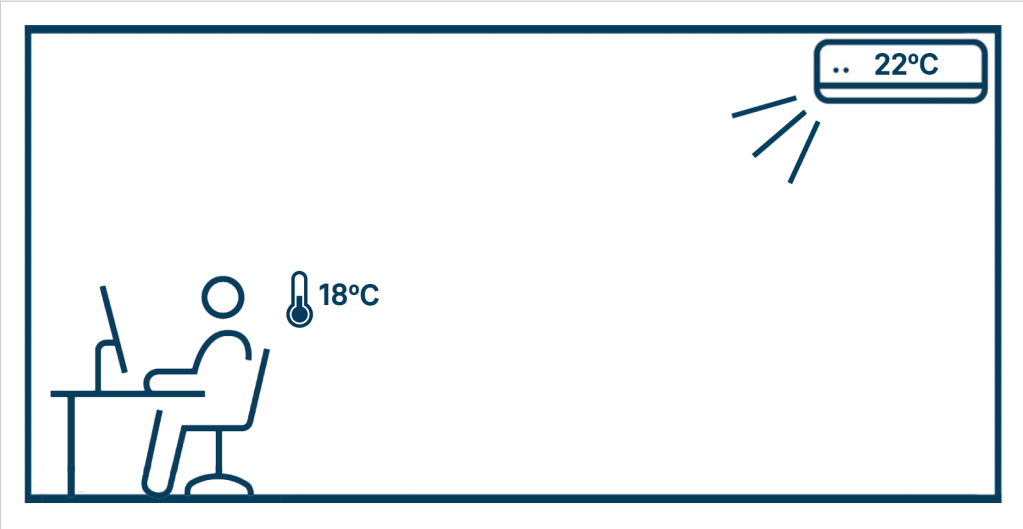
7. Virtual Temperature Function

The Virtual Temperature function is a mechanism designed to offset the difference between the current setpoint temperature used by the AC unit and the actual room temperature in the living area.

To compensate for that difference, the INKNXMIT001I2** gateway allows you to use the temperature obtained through a third-party thermistor connected to the KNX system to establish the reference temperature for the AC system.

USAGE EXAMPLE

In the following image, the target temperature requested by the user is 22°C. However, the indoor unit is mounted near the top of a high ceiling, at some distance from the living area, where the temperature is 18°C.



Given this case, you can place a third-party thermistor in the living area, connect it to the KNX system, and use the gateway's Virtual Temperature function to offset the difference between the temperature delivered by the system and the temperature in the living area.

HOW THE VIRTUAL TEMPERATURE FUNCTION WORKS

When the Virtual Temperature function is active, the gateway is constantly applying the following formula:

$S_{AC} = T_{AC} – (T_{BMS} – S_{BMS})$

Where:

- S_{AC}: Recalculated temperature setpoint sent to the AC system after the gateway applies the formula.
- T_{AC}: AC system's reference temperature. This is the temperature perceived by the thermistor in the indoor unit, which is used to report the room temperature.
- T_{BMS}: Ambient temperature reported by the thermistor placed in the living area and connected to the KNX system.
- S_{BMS}: Requested temperature setpoint.

Given the case of the image, the values used by the Virtual Temperature function are as follows:

$S_{AC} = 22 - (18 - 22)$

When resolving the equation, we get the following result:

S_{AC} = 22 - (-4)

S_{AC} = 22 + 4

S_{AC} = 26

This means that the gateway is sending a setpoint temperature of 26°C, thereby achieving the desired temperature of 22°C that the user specified.

Once activated, the Virtual Temperature function recalculates the setpoint whenever any of these values change, either from the AC system itself or from the KNX system.

HOW TO ACTIVATE THE VIRTUAL TEMPERATURE FUNCTION

Follow this procedure:

1. In the ETS project, enter the **TEMPERATURE** menu and select the **Ambient reference temperature provided by an external KNX device object** parameter as explained in TEMPERATURE (page 22).

   NOTICE
   This will activate the objects needed for the Virtual Temperature function.

   The rest of the procedure is performed from the KNX system once the project is downloaded into the gateway.

2. From the KNX system control interface, write the desired setpoint temperature in the **Temperature: User Setpoint (Control)** object.
3. Write the temperature value reported by the thermistor connected to the KNX system in the **Temperature: KNX Ambient Reference (Control)** object.
4. Once each of these objects receives valid values, the Virtual Temperature function is automatically activated. The object **Temperature: Virtual Temperature Function (Status)** will report a value of **1**.

HOW TO DEACTIVATE THE VIRTUAL TEMPERATURE FUNCTION

Write a value of 0x8000 (32768) in the **Temperature: Virtual Temperature Function (Status)** object.

8. Error Codes

Error Code	Description
-4	Shown during the gateway's startup process
-1	Communication error between the AC unit and the gateway
0	No error
1102	Discharge Temperature high
1108	Internal thermostat detector working (49C)
1110	Outdoor unit fail
1300	Pressure low
1302	Pressure high (High pressure probe working 63H)
1503	Protection against freeze or battery high temperature
1504	Protection against freeze or battery high temperature
1504	Overheating protection
1509	High pressure error (ball valve closed)
1520	Super heating anomaly due to low temp. of discharge. (TH4)
2500	Erroneous operation of drain pump
2502	Erroneous operation of drain pump
2503	Drain sensor anomaly (DS)
4030	Serial transmission error
4100	Compressor pause due to excess of current (initial block)
4101	Compressor pause due to excess of current (overload)
4102	Phase detection opened
4103	Antiphase detection
4108	Phase opened in phase L2 or connector 51CM opened
4118	Error in the antiphase detector (electronic board)
4124	Connector 49L opened
4210	Cut due to overcurrent of compressor
4220	Voltage anomaly
4230	Radiator panel temperature anomaly (TH8)
5101	Ambient temperature probe anomaly (TH1), indoor unit
5102	Liquid probe anomaly (TH2)
5102	Cond/Evap probe anomaly (TH5)
5104	Error detection in discharge temperature

Error Code	Description
5105	Outdoor probe error TH3
5106	Outdoor probe error TH7
5107	Outdoor probe error TH6
5110	Outdoor probe error TH8
5202	Connector 63L opened
5300	Current probe error
6600	MNET duplicated address definition
6602	MNET Line transmission hardware error
6603	MNET BUS busy
6606	MNET Line transmission error
6607	MNET transmission error
6607	MNET without ack
6608	MNET transmission error
6608	MNET without response
6831	AC's remote command transmission error (reception error)
6832	AC's remote command transmission error (transmission error)
6840	Transmission error with the indoor/outdoor unit (reception error)
6841	Transmission error with the indoor/outdoor unit (transmission error)
6844	Error in interconnection cable in the indoor/ outdoor unit, indoor unit number deactivated (5 min or more)
6845	Error in interconnection cable in the indoor/ outdoor unit (cabling error, disconnection)
6846	Initial timer deactivated

NOTICE

These error codes may differ depending on the specific indoor unit model.

Refer to the AC system's original documentation to obtain a complete list of error codes.

If you detect an unknown error code, please contact the Mitsubishi Electric support department.