ENGLISH

Mitsubishi Electric domestic and commercial with KNX, Serial and IP support

IN770AIR00XO000 GATEWAY

USER MANUAL
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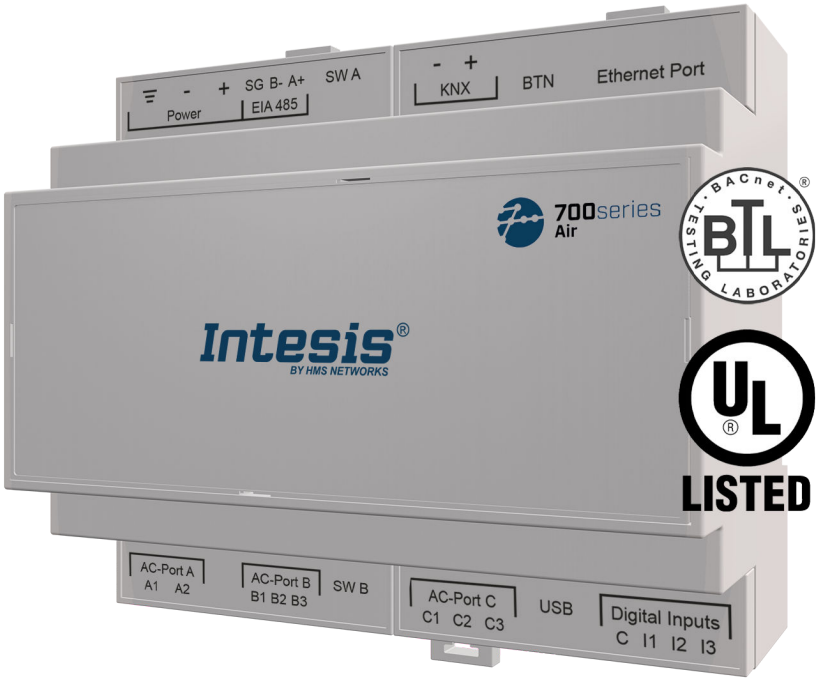

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Table of Contents

1. Description and Order Codes

IN770AIR00xO000 Gateway

Modbus®, KNX®, BACnet®, and Home Automation® gateway for Mitsubishi Electric® air conditioning systems

ORDER CODE	LEGACY ORDER CODE
IN770AIR00xO000[1]	INMBSMIT050C000 INMBSMIT100C000 INKNXMIT015C000 INKNXMIT100C000
[1] The **x** stands for S, M, or L, depending on the license you have purchased. (See the next section).	

NOTE

The order code may vary depending on the product seller and the buyer's location.

2. Licensing

Distribution license(s) for the IN770AIR00xO000 gateway:

Order Code	License	Maximum groups
IN770AIR00SO000	Small	50
IN770AIR00MO000	Medium	100

NOTE
The order code may vary depending on the product seller and the buyer's location.

3. General Information

3.1. 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.

The contents of this manual should be brought to the attention of any person who installs, configures, or operates this gateway or any associated equipment.

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

3.2. 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.

All wires (for communication and power supply, if needed) must only be connected to networks with indoor wiring. All communication ports are considered for indoor use and must only be connected to SELV circuits.

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

Use SELV-rated NEC class 2 or limited power source (LPS) power supply.

Supply always a correct voltage to power the gateway. See Technical Specifications (page 24).

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

3.3. Admonition Messages and Symbols

DANGER
Instructions that must be followed to avoid an imminently hazardous situation that, if not avoided, will result in death or severe injury.

WARNING
Instructions that must be followed to avoid a potentially hazardous situation that, if not avoided, could result in death or severe injury.

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.

4. Overview

This document describes the available applications for this IN770AIR00xO0000 gateway.

IMPORTANT
This document assumes that the user is familiar with these technologies.

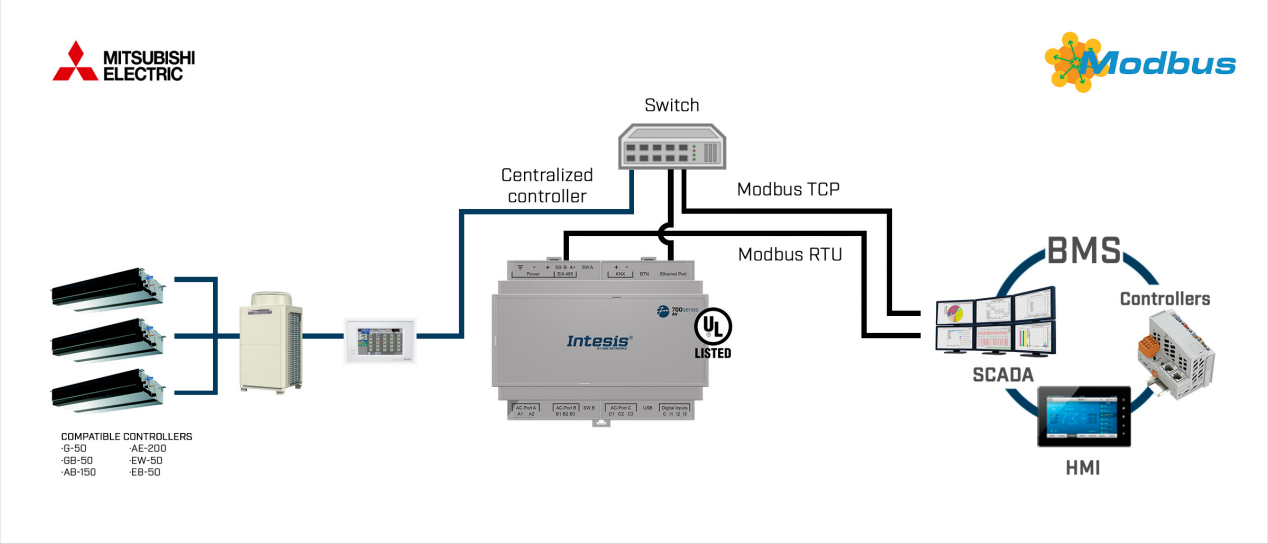


Figure 1. Integration of Mitsubishi Electric AC systems into Modbus installations

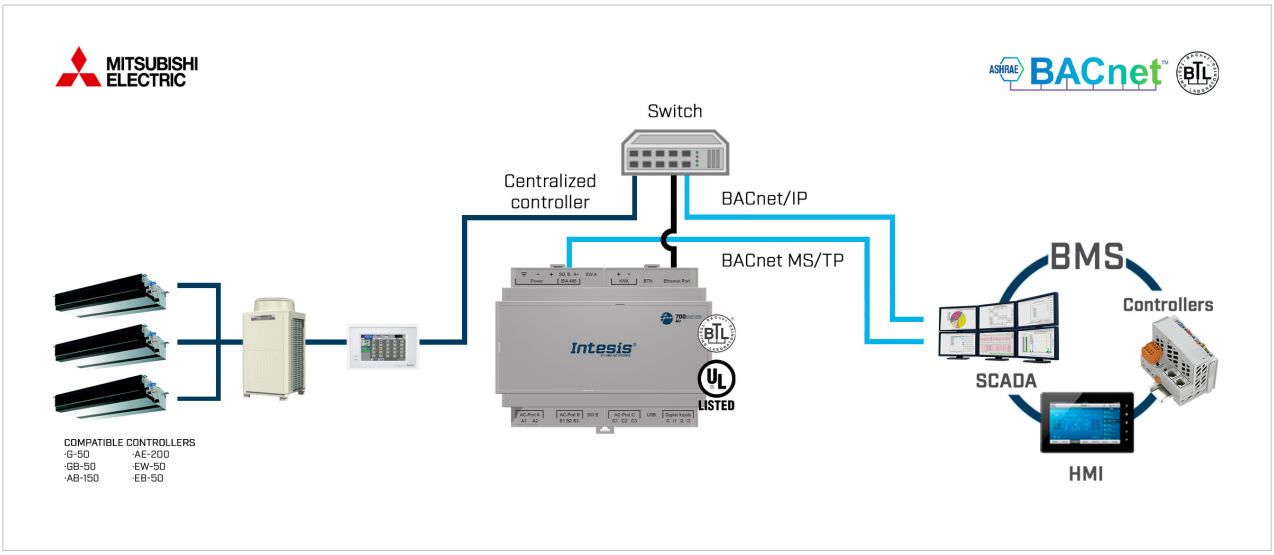


Figure 2. Integration of Mitsubishi Electric AC systems into BACnet installations

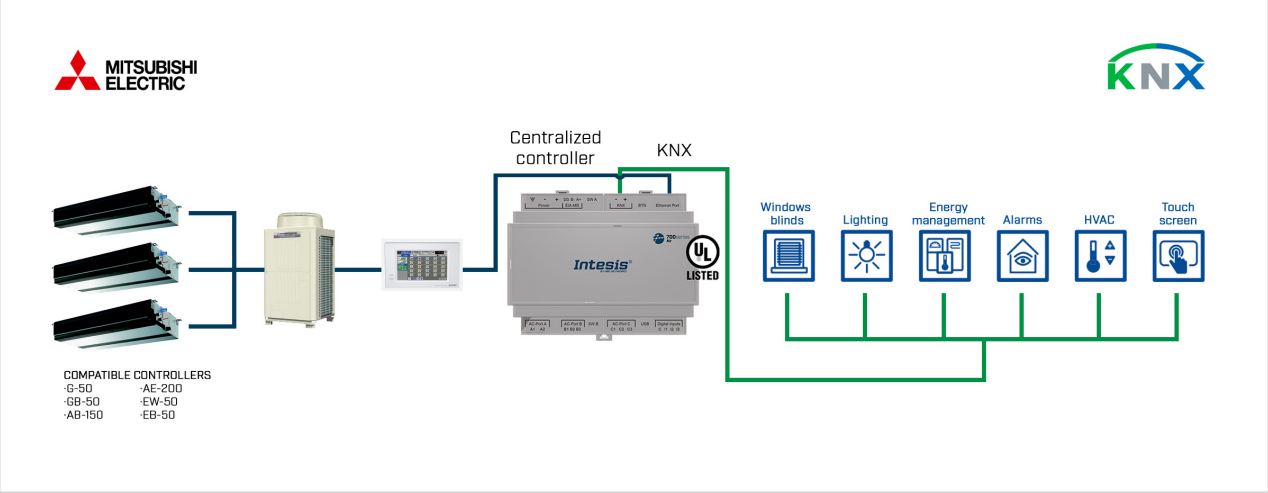


Figure 3. Integration of Mitsubishi Electric AC systems into KNX installations

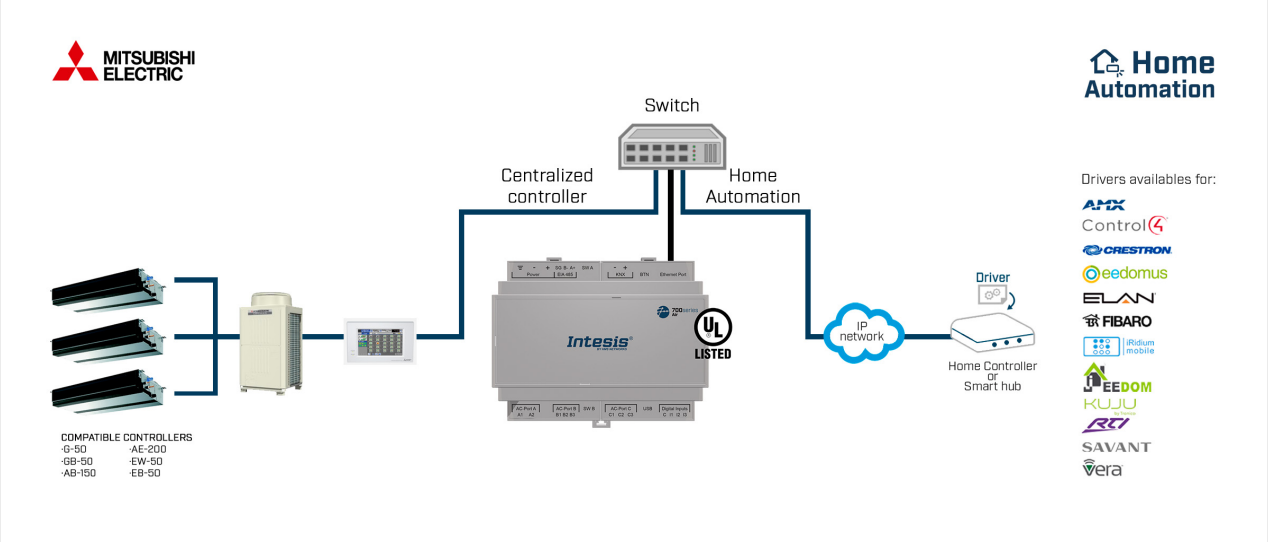


Figure 4. Integration of Mitsubishi Electric AC systems into Home Automation installations

4.1. Inside the Package

Items included:

- Intesis IN770AIR00xO000 gateway
- USB Mini-B type to USB A type cable
- Installation sheet

4.2. Gateway Main Features

- Several applications available: Configurable for BACnet/IP and MS/TP, Modbus TCP and RTU, KNX, and Home Automation communication protocols.
- Late configuration: Change between applications easily.
- Scan function: Find the devices connected to the air conditioning bus.
- Specific signals to monitor outdoor units.
- 2 x DIP switches for the EIA-485 connector termination and polarization configuration.
- 14 LEDs indicate the operating status for both the gateway and the communication bus.
- DIN rail and wall mounting case.

- Accredited with the main certifications for electronic equipment.
- Multiple ports for serial and TCP/IP communication:
  - Green pluggable terminal block for EIA-485 (3 poles)
  - Orange pluggable terminal block for KNX (2 poles)
  - Ethernet
  - Green pluggable terminal block for binary inputs (4 poles)
  - USB Mini-B type 2.0 port for connection to the PC
  - Green pluggable terminal block for AC connection (2 poles)
  - Green pluggable terminal block for AC connection (3 poles)
  - Green pluggable terminal block for AC connection (3 poles)

NOTE
Depending on the AC bus, some of these AC connection ports are not used.

4.3. Gateway General Functionality

With this Intesis IN770AIR00xO000 gateway, you can easily integrate Mitsubishi Electric air conditioning (AC) systems into an installation based on Modbus TCP, Modbus RTU, KNX, BACnet/IP, BACnet MS/TP, or Home Automation. To do so, the gateway acts as a server device of the installation itself, accessing all signals from each air conditioner unit and controlling the whole AC network.

The gateway is continuously polling the AC network, storing in its memory the current status of every signal you want to track and serving this data to the installation when requested. Also, when a signal status changes, the gateway sends a write telegram to the installation, waits for the response, and performs the corresponding action.

A lack of response from a signal activates a communication error, allowing you to know which signal from which AC unit is not correctly working.

5. Hardware

5.1. Mounting

IMPORTANT
Before mounting, please ensure that the chosen installation place preserves the gateway from direct solar radiation, water, high relative humidity, or dust.

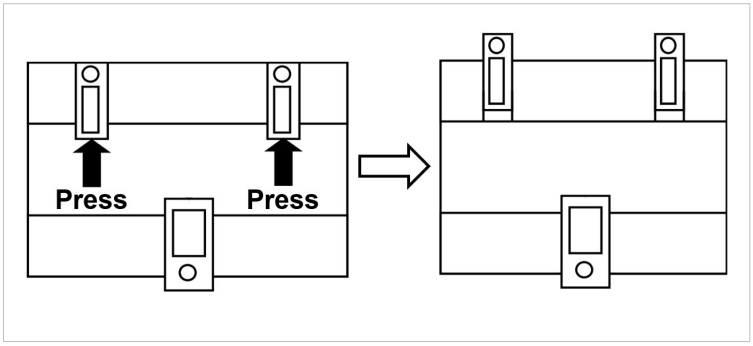
IMPORTANT
Maximum mounting height: below 2 meters (6.5 feet).

NOTE
Mount the gateway on a wall or over a DIN rail. We recommend the DIN rail mounting option, preferably inside a grounded metallic industrial cabinet.

IMPORTANT
Ensure the gateway has sufficient clearances for all connections when mounted. See Dimensions (page 25).

Wall mounting

1. Press the top side mobile clips in the rear panel until you hear a *click*.



2. Use the clip holes to fix the gateway on the wall using screws.

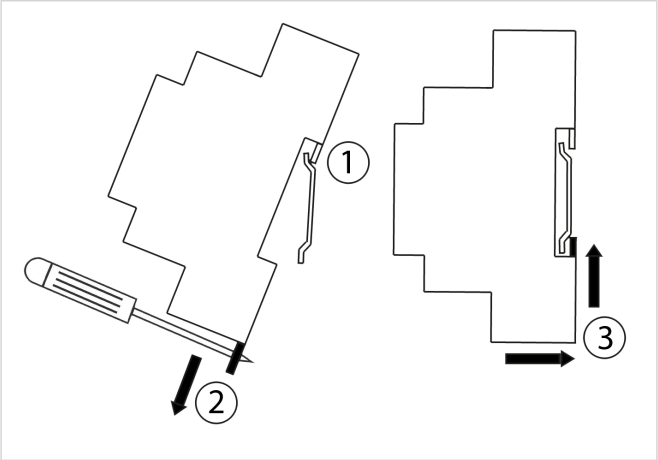
NOTE
Use M3 screws, 25 mm (1") length.

3. Make sure the gateway is firmly fixed.

DIN rail mounting

Keep the clips down in their original position.

1. Fit the gateway's top side clips in the upper edge of the DIN rail.
2. Use a screwdriver or similar to pull the bottom clip down.
3. Fit the low side of the gateway in the DIN rail and let the clip switch back to its original position, locking the gateway to the rail.
4. Make sure the gateway is firmly fixed.



5.2. Connection

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

5.2.1. Gateway Connectors

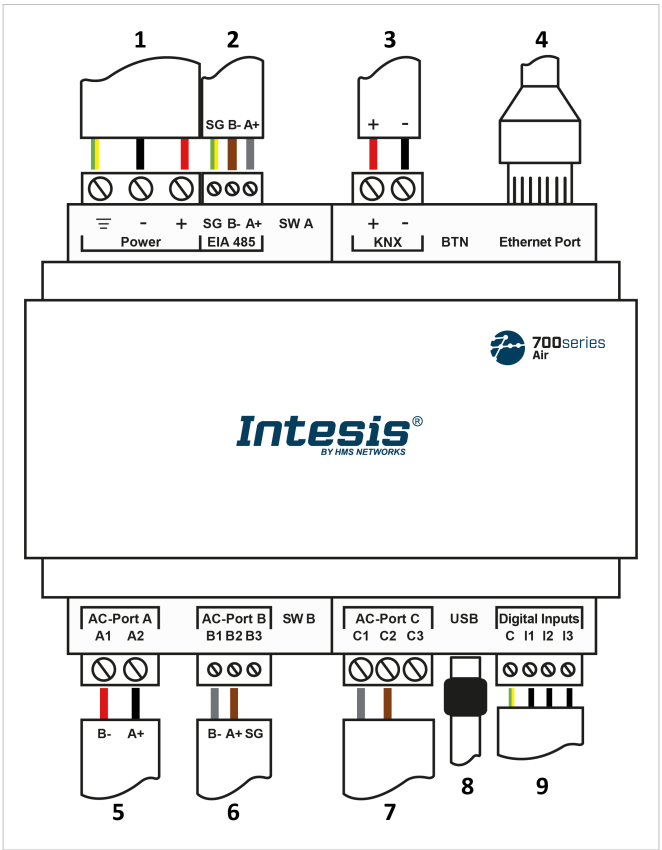


Figure 5. General view of all gateway connectors

1. Power supply: 12 to 36 VDC / 24 VAC

2. Port EIA 485: For RS 485 serial bus connection

3. Port KNX: Exclusive to the KNX bus

4. Ethernet Port: For Mitsubishi Electric centralized controller connection

5. AC-Port A: Not used

6. AC-Port B: Not used

7. AC-Port C: Not used

8. USB: Connection with the PC for configuration purposes

9. Binary inputs: Dry contact (optional)

NOTICE
The common connectors (those used for all applications), specific connectors (those used for each application), and the connection procedures are deeply explained in the following sections.

NOTE
Mount the gateway in the desired installation site before wiring.

IMPORTANT
Use solid or stranded wires (twisted or with ferrule).

Wire cross-section/gauge for all wire connectors:

- 1 core: 0.5 to 2.5 mm^2 (24 to 11 AWG).
- 2 cores: 0.5 to 1.5mm^2 (24 to 15 AWG).
- 3 cores: not permitted.

Summary tables

BMS Protocol	Port EIA 485	Port KNX	Ethernet
BACnet	BACnet MS/TP	(Not used)	BACnet/IP and Console
Modbus	Modbus RTU	(Not used)	Modbus TCP and Console
KNX	(Not used)	KNX	Console
Home Automation	(Not used)	(Not used)	Home Automation and Console

AC Manufacturer	Port A	Port B	Port C	Ethernet
Mitsubishi Electric	(Not used)	(Not used)	(Not used)	Centralized controller

Bus connectors pinout			
EIA 485	**Port A**	**Port B**	**Port C**
B- (NEG pole)	A1 (NEG pole)	B1 (NEG pole)	C1 (NEG pole)
A+ (POS pole)	A2 (POS pole)	B2 (POS pole)	C2 (POS pole)
SG (Ground)		B3 (Ground)	

NOTE
To know more about each port's specifications, see Technical Specifications (page 24).

5.2.2. Common Connections

5.2.2.1. Connecting the Gateway to the Power Supply

The power supply connector is a green pluggable terminal block (3 poles) labeled as **Power**.

IMPORTANT

- Use SELV-rated NEC class 2 or limited power source (LPS) power supply.
- Connect the gateway's ground terminal to the installation grounding.
- A wrong connection may cause earth loops that can damage the Intesis gateway and/or any other system equipment.

Apply the voltage within the admitted range and of enough power:

- **For DC**: 12 .. 36 VDC (+/-10%), Max: 250 mA
- **For AC**: 24 VAC (+/-10 %), 50-60 Hz, Max: 127 mA

Recommended voltage: 24 VDC, Max: 127 mA

IMPORTANT

- **When using a DC power supply:** Respect the polarity labeled on the power connector for the positive and negative wires.
- **When using an AC power supply:** Ensure the same power supply is not powering any other device.

5.2.2.2. Connecting the Gateway to the Air Conditioning System

Connect the Mitsubishi Electric central control network to the gateway using the **Ethernet Port**.

IMPORTANT

Use an Ethernet CAT5 or higher cable.

IMPORTANT

If communicating through the LAN of the building, contact the network administrator and make sure traffic on the used port is allowed through all LAN paths.

NOTE

When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. After that time, the default IP 192.168.100.246 will be set.

IMPORTANT

List of compatible centralized controllers:

- G-50
- GB-50
- AB-150
- AE-200
- EW-50
- EB-50

NOTICE
See the wiring diagram in the gateway connectors figure: General view of all gateway connectors (page 10).

5.2.3. Connection Procedure for Modbus

NOTE
Remember to check the Common Connections (page 12).

For Modbus TCP:

1. Connect the Modbus TCP Ethernet cable to the gateway's **Ethernet Port**.

IMPORTANT
Use a straight Ethernet UTP/FTP CAT5 or higher cable.

IMPORTANT
If communicating through the LAN of the building, contact the network administrator and make sure traffic on the used port is allowed through all LAN paths.

NOTE
When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. After that time, the default IP address 192.168.100.246 will be set.

For Modbus RTU:

1. Connect the Modbus RTU communication cable to the gateway's **EIA-485** port.

IMPORTANT
Observe polarity.

IMPORTANT
Remember the characteristics of the standard EIA-485 bus:

- Maximum distance of 1200 meters (0.75 miles).
- Maximum of 32 devices connected to the bus.
- A termination resistor of 120 ohms (Ω) is needed at each end of the bus. The gateway has an internal bus biasing circuit already incorporating the termination resistor. It can be enabled using the DIP switch block (**SW A**) dedicated to the **EIA-485** port:
  Position 1
  – ON: 120 Ω termination active.
  – OFF: 120 Ω termination inactive.
  Position 2 and 3
  – ON: Polarization active.
  – OFF: Polarization inactive.
  For further details, see DIP Switches (page 22).

IMPORTANT
If the termination resistor is enabled and you install the gateway at an end of the bus, do not install an additional termination resistor at that end.

2. Use the supplied USB Mini-B type to A type cable to connect the gateway, through its **USB** port, to a PC to configure it with Intesis MAPS.

NOTICE
Find all you need to know about the gateway configuration and Intesis MAPS in the IN770AIR00xO000 Gateway configuration guide.

NOTICE
See the wiring diagram in the gateway connectors figure: General view of all gateway connectors (page 10)

5.2.4. Connection Procedure for KNX

NOTE
Remember to check the Common Connections (page 12).

1. Connect the KNX TP communication cable to the gateway's **KNX** port.

   IMPORTANT
   Observe polarity.

2. Use the supplied USB Mini-B type to A type cable to connect the gateway, through its **USB** port, to a PC to configure it with Intesis MAPS.

   NOTICE
   Find all you need to know about the gateway configuration and Intesis MAPS in the IN770AIR00xO000 Gateway configuration guide.

NOTICE
See the wiring diagram in the gateway connectors figure: General view of all gateway connectors (page 10)

5.2.5. Connection Procedure for BACnet

NOTE
Remember to check the Common Connections (page 12).

For BACnet/IP:

1. Connect the BACnet/IP Ethernet cable to the gateway's **Ethernet Port**. The correct cable to use depends on where the gateway is connected:
   - **Connecting directly to a BACnet/IP device:** use a crossover Ethernet UTP/FTP CAT5 or higher cable.
   - **Connecting to a hub or switch of the LAN of the building:** use a straight Ethernet UTP/FTP CAT5 or higher cable.

IMPORTANT
When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. After that time, the default IP address 192.168.100.246 will be set.

IMPORTANT
If communicating through the LAN of the building, contact the network administrator and make sure traffic on the used port is allowed through all LAN paths.

For BACnet MS/TP:

1. Connect the BACnet MS/TP communication cable to the gateway's **EIA-485** port.

IMPORTANT
Observe polarity.

IMPORTANT
Remember the characteristics of the standard EIA-485 bus:

- Maximum distance of 1200 meters (0.75 miles).
- Maximum of 32 devices connected to the bus.
- A termination resistor of 120 ohms (Ω) is needed at each end of the bus. The gateway has an internal bus biasing circuit already incorporating the termination resistor. It can be enabled using the DIP switch block dedicated to the EIA-485 port:
  Position 1
  - ON: 120 Ω termination active.
  - OFF: 120 Ω termination inactive.

  Position 2 and 3
  - ON: Polarization active.
  - OFF: Polarization inactive.

  For further details, see DIP Switches (page 22).

IMPORTANT
If the termination resistor is enabled and you install the gateway at one end of the bus, do not install an additional termination resistor at that end.

2. Use the supplied USB Mini-B type to A type cable to connect the gateway, through its **USB** port, to a PC to configure it with Intesis MAPS.

NOTICE
Find all you need to know about the gateway configuration and Intesis MAPS in the IN770AIR00xO000 Gateway configuration guide.

NOTICE
See the wiring diagram in the gateway connectors figure: General view of all gateway connectors (page 10)

5.2.6. Connection Procedure for Home Automation

NOTE
Remember to check the Common Connections (page 12).

1. Connect the Home Automation Ethernet cable to the gateway's **Ethernet Port**.

   IMPORTANT
   Use a straight Ethernet UTP/FTP CAT5 or higher cable.

   IMPORTANT
   If communicating through the LAN of the building, contact the network administrator and make sure traffic on the used port is allowed through all LAN paths.

   NOTE
   When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. After that time, the default IP address 192.168.100.246 will be set.

2. Use the supplied USB Mini-B type to A type cable to connect the gateway, through its **USB** port, to a PC to configure it with Intesis MAPS.

   NOTICE
   Find all you need to know about the gateway configuration and Intesis MAPS in the IN770AIR00xO000 Gateway configuration guide.

NOTICE
See the wiring diagram in the gateway connectors figure: General view of all gateway connectors (page 10)

5.3. LED Indicators

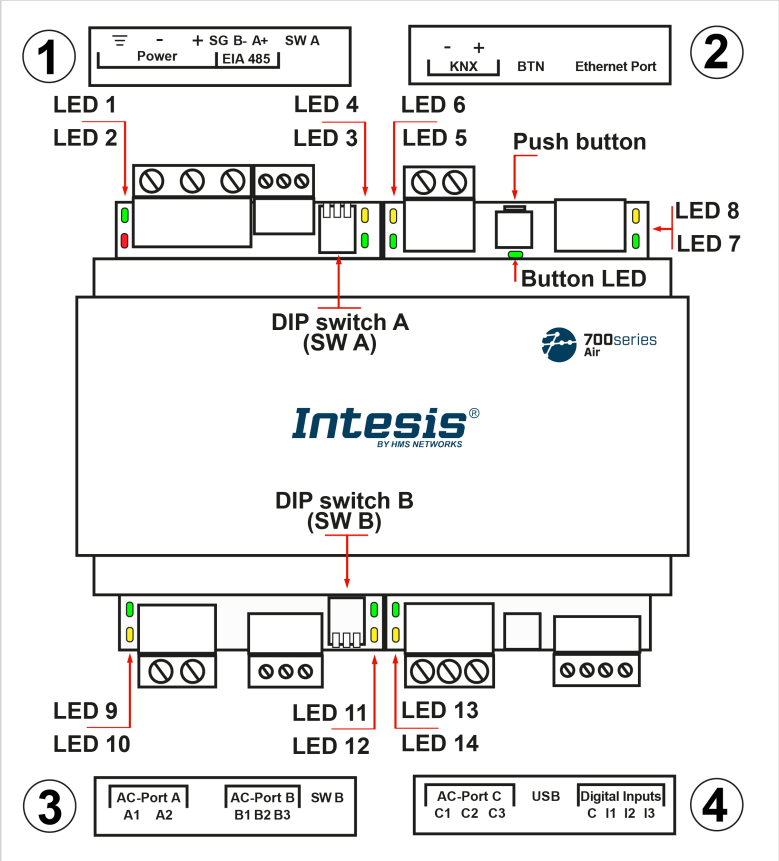


Figure 6. Gateway layout

LED	Color	Description
Top side		
LED 1 (PWR)	Green	Power on (not programmable)
LED 2 (ERR)	Red	Blinking: Hardware error
LED 3	Green	485 Tx (RS485 for BACnet or Modbus)
LED 4	Yellow	485 Rx (RS485 for BACnet or Modbus)
LED 5	Green	KNX Port Tx
LED 6	Yellow	KNX Port Rx
BUTTON LED	Green	**KNX**: Programming mode on **BACnet**: BACnet link established **Modbus** and **Home Automation**: Not used
LED 7	Green	Ethernet link established
LED 8	Yellow	Ethernet speed
Bottom side		
LED 9	Green	AC-Port A Tx (HBS)
LED 10	Yellow	AC-Port A Rx (HBS)
LED 11	Green	AC-Port B Tx (RS485)
LED 12	Yellow	AC-Port B Rx (RS485)
LED 13	Green	AC-Port C Tx (UFO-SLQ)
LED 14	Yellow	AC-Port C Rx (UFO-SLQ)

NOTE
LEDs are hidden behind the four frontal labeled covers. These covers are assembled by pressure, so you just need to pull them to remove them.

5.4. DIP Switches

See figure: Gateway layout (page 20)

1: DIP switch A (SW A).

2: DIP switch B (SW B).

Each DIP switch is dedicated to a 485 port, and its function is to activate or deactivate the termination resistor and the polarization of each port:

Position			Description
1	2	3	
↑	X	X	120 Ω termination active
↓	X	X	120 Ω termination inactive (default position)
X	↑	↑	Polarization active (default position)
X	↓	↓	Polarization inactive

5.5. Push Button

Find the push button at the top side, between the KNX and the Ethernet connectors.

See Figure Gateway layout (page 20)

NOTE
The button is hidden and only accessible using a thin object like a paper clip.

Common functionality:

Reset factory settings

1. Push the button.
2. Power on the gateway.
3. Wait four seconds.
4. Release the button.

Functionalities depending on the current project:

BACnet

- Push the button to send an I-Am message to all BACnet ports.

KNX

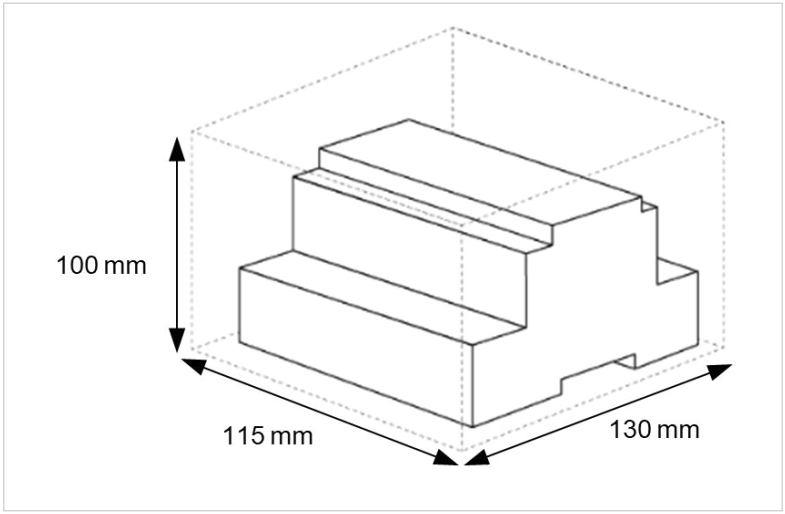
- Push the button to switch between normal mode and programming mode.

5.6. Technical Specifications

Case	Plastic, type PC (UL 94 V-0). Color: Light Grey. RAL 7035 Net dimensions (dxwxh): 90x106x58 mm / 3.5x4.2x2.3" Recommended space for installation (dxwxh): 130x115x100 mm / 5.1x4.5x3.9"	
Mounting	Wall: M3 25mm (1") length screws. Secure mounting: below 2 meters (6 feet) DIN rail (recommended mounting) EN60715 TH35	
Wires (for power supply and low-voltage signals)	Solid wires or stranded wires (twisted or with ferrule) Per terminal: 1 core: 0.5 to 2.5mm^2 (24 to 11 AWG) 2 cores: 0.5 to 1.5mm^2 (24 to 15 AWG) 3 cores: not permitted For distances longer than 3.05 meters (10 feet), use class 2 cables	
Power	1 x Green pluggable terminal block (3 poles) 12 to 36 VDC +/-10%, Max.: 250 mA 24 VAC +/-10% 50-60 Hz, Max.: 127 mA Recommended: 24 VDC	
Ethernet	Use this connector for the AC central control network to the gateway connection 1 x Ethernet 10/100 Mbps RJ45	
Port EIA 485	1 x Green pluggable terminal block (3 poles) SGND (Reference ground or shield) 1500VDC isolation from other ports	
Port KNX	1 x Orange pluggable terminal block (2 poles): A, B	
AC Ports	AC-Port A (serial, 2 poles): Not used AC-Port B (serial, 3 poles): Not used AC-Port C: (serial, 3 poles): Not used	
LEDs	2 x Run (Power/Error) 2 x Port EIA-485 TX/RX 2 x Port KNX TX/TR 1 x Button indicator	2 x Ethernet Link/Speed 2 x AC-Port A TX/RX 2 x AC-Port B TX/RX 2 x AC-Port C TX/RX
Binary inputs	1 x Green pluggable terminal block (4 poles) I1, I2, I3, and Common 1500 VDC isolation from other ports	
Console port	USB Mini-B type 2.0 compliant 1500 VDC isolation	
SW A **SW B**	2 x DIP switch blocks for EIA-485 serial port configuration: Position 1: On: 120 Ω termination active Off: 120 Ω termination inactive Position 2 and 3: On: Polarization active Off: Polarization inactive	
Push button	Refer to the user manual	
Operational temperature	Celsius: 0 .. 60°C Fahrenheit: 32 .. 140ºF	
Operational humidity	5 to 95%. No condensation	
Protection	IP20 (IEC60529)	

5.7. Dimensions

- **Net dimensions (DxWxH)**
  Millimeters: 90 x 106 x 58 mm
  Inches: 3.5 x 4.2 x 2.3"
- **Clear space for installation (DxWxH)**
  Millimeters: 130 x 115 x 100 mm
  Inches: 5.1 x 4.5 x 3.9"



6. Available Applications

6.1. Integration into Modbus Systems

6.1.1. Modbus Registers

NOTICE
This part is common for Modbus RTU and TCP.

Functions to read Modbus registers:

- 03 Read Holding Registers.
- 04 Read Input Registers.

Function to write Modbus registers

- 06 Single Multiple Holding Registers.

Modbus register contents are expressed in most significant bit (MSB) .. less significant bit (LSB).

The following tables list all available Modbus registers for the gateway.

NOTICE
Read/write parameter terminology:

- **R**: Read-only register.
- **W**: Write-only register.
- **RW**: Read and write register.

Table 1. Global signals

Register name	Possible values	Modbus address formula	W/R
Centralized controller communication error	0-Ok, 1-Communication error	((CTRL#-1)×30)+0	R
Reset errors for all the groups	1-Reset errors	((CTRL#-1)×30)+1	W
On (all the groups)	1-Set the groups On	((CTRL#-1)×30)+2	W
Off (all the groups)	1-Set the groups Off	((CTRL#-1)×30)+3	W
Operation Mode Auto (all the IC groups)	1-Set Auto Mode	((CTRL#-1)×30)+4	W
Operation Mode Heat (all the IC groups)	1-Set Heat Mode	((CTRL#-1)×30)+5	W
Operation Mode Dry (all the IC groups)	1-Set Dry Mode	((CTRL#-1)×30)+6	W
Operation Mode Fan (all the IC groups)	1-Set Fan Mode	((CTRL#-1)×30)+7	W
Operation Mode Cool (all the IC groups)	1-Set Cool Mode	((CTRL#-1)×30)+8	W
Operation Mode Setback (all the IC groups)	1-Set Setback Mode	((CTRL#-1)×30)+9	W
Operation Mode LC_Auto (all the LOSSNAY groups)	1-Set LC_Auto Mode	((CTRL#-1)×30)+10	W
Operation Mode Heat Recovery (all the LOSSNAY groups)	1-Set Heat Recovery Mode	((CTRL#-1)×30)+11	W
Operation Mode Bypass (all the LOSSNAY groups)	1-Set Bypass Mode	((CTRL#-1)×30)+12	W
Fan Speed (all the IC groups)	1-Set Fan Speed Auto	((CTRL#-1)×30)+13	W
Fan Speed (all the IC groups)	1-Set Fan Speed Low	((CTRL#-1)×30)+14	W
Fan Speed (all the IC groups)	1-Set Fan Speed Mid-1	((CTRL#-1)×30)+15	W

Register name	Possible values	Modbus address formula	W/R
Fan Speed (all the IC groups)	1-Set Fan Speed Mid-2	((CTRL#-1)×30)+16	W
Fan Speed (all the IC groups)	1-Set Fan Speed High	((CTRL#-1)×30)+17	W
Fan Speed (all the LOSSNAY groups)	1-Set Fan Speed Low	((CTRL#-1)×30)+18	W
Fan Speed (all the LOSSNAY groups)	1-Set Fan Speed Mid-1	((CTRL#-1)×30)+28	W
Fan Speed (all the LOSSNAY groups)	1-Set Fan Speed Mid-2	((CTRL#-1)×30)+29	W
Fan Speed (all the LOSSNAY groups)	1-Set Fan Speed High	((CTRL#-1)×30)+19	W
Vane position (all the IC groups)	1-Set Vanes Auto	((CTRL#-1)×30)+20	W
Vane position (all the IC groups)	1-Set Vanes Horizontal	((CTRL#-1)×30)+21	W
Vane position (all the IC groups)	1-Set Vanes Position-2	((CTRL#-1)×30)+22	W
Vane position (all the IC groups)	1-Set Vanes Position-3	((CTRL#-1)×30)+23	W
Vane position (all the IC groups)	1-Set Vanes Position-4	((CTRL#-1)×30)+24	W
Vane position (all the IC groups)	1-Set Vanes Vertical	((CTRL#-1)×30)+25	W
Vane position (all the IC groups)	1-Set Vanes Swing	((CTRL#-1)×30)+26	W
Individual Temperature Setpoint (ºC) (all the groups)	5 .. 90ºC / 41 .. 194ºF	((CTRL#-1)×30)+27	W

Table 2. Individual group signals

Register name	Possible values	Modbus address formula	R/W
On/Off	0-Off, 1-On	(((CTRL#-1)×50)+Group#×100)+0	R, W
Operation Mode IC	0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool, 5-Auto Heat, 6-Auto Cool, 7-Setback, 8-Setbackheat, 9-Setbackcool	(((CTRL#-1)×50)+Group#×100)+1	R, W
Operation Mode LOSSNAY	0-LC_Auto, 1-Heat Recovery, 2-Bypass	(((CTRL#-1)×50)+Group#×100)+1	R, W
Operation Mode ATW & HWHP	0-Hot_Water, 1-Heating, 2-Heating_Eco, 3-Anti_Freeze, 4-Cooling	(((CTRL#-1)×50)+Group#×100)+1	R, W
Fan Speed IC	0-Auto, 1-Low, 2-Mid2, 3-Mid1, 4-High	(((CTRL#-1)×50)+Group#×100)+2	R, W
Fan Speed LOSSNAY	1-Low, 2-Mid2, 3-Mid1, 4-High	(((CTRL#-1)×50)+Group#×100)+2	R, W
Vane position	0-Auto, 1-Horizontal, 2-Position 2, 3-Position 3, 4-Position 4, 5-Vertical, 6-Swing	(((CTRL#-1)×50)+Group#×100)+3	R, W
Temperature Setpoint (ºC)	Cool or dry: 19 .. 30ºC / 66 .. 86ºF Heat or Auto: 17 .. 28ºC / 63 .. 82ºF	(((CTRL#-1)×50)+Group#×100)+4	R, W
Temperature Setpoint (ºC)	5 .. 90ºC / 41 .. 194ºF	(((CTRL#-1)×50)+Group#×100)+4	R, W
Ambient Temperature (ºC/x10ºC)	0.0 .. 99.9	(((CTRL#-1)×50)+Group#×100)+5	R
Operational Status for Lossnay or OA	0-Off, 1-Low, 2-High	(((CTRL#-1)×50)+Group#×100)+6	R, W
Group operation time (x100 hours)	0 .. 9999	(((CTRL#-1)×50)+Group#×100)+7	R
Group operation time (%100 hours)	0 .. 99	(((CTRL#-1)×50)+Group#×100)+8	R
Group error status	0-No error; 1-Group error	(((CTRL#-1)×50)+Group#×100)+9	R
Group error code	Number of the error code (XXXX)	(((CTRL#-1)×50)+Group#×100)+10	R
Group error reset	1-Reset the error	(((CTRL#-1)×50)+Group#×100)+11	W
Group model	Model of units connected to group	(((CTRL#-1)×50)+Group#×100)+12	R
Allow ON/OFF control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+13	R, W
Allow operation mode control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+14	R, W
Allow set point control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+15	R, W
Allow filter reset control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+16	R, W
Allow air direction control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+17	R, W
Allow fan speed control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+18	R, W
Allow timer control from the local panel	0-Allow, 1-Not allow	(((CTRL#-1)×50)+Group#×100)+19	R, W
Setback control	0-Disable, 1-Enable	(((CTRL#-1)×50)+Group#×100)+20	R, W

Register name	Possible values	Modbus address formula	R/W
Minimum cool setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+21	R, W
Maximum cool setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+22	R, W
Minimum heat setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+23	R, W
Maximum heat setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+24	R, W
Minimum auto setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+25	R, W
Maximum auto setpoint restriction	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+26	R, W
Cool/dry/auto(upper) dual temperature setpoint (x10°C)	4.5 .. 35ºC / 40 .. 95ºF	(((CTRL#-1)×50)+Group#×100)+27	R, W
Heating ATW & HWHP temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+27	R, W
Heat/auto(lower) dual temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+28	R, W
Heating ECO ATW temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+28	R, W
Auto single temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+29	R, W
Hot water ATW & HWHP temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+29	R, W
Setback upper temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+30	R, W
Anti-Freeze ATW temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+30	R, W
Setback lower temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+31	R, W
Cooling ATW temperature setpoint (x10°C)	4.5 .. 90°C / 40 .. 194°F	(((CTRL#-1)×50)+Group#×100)+31	R, W
Room Humidity	0 .. 100%	(((CTRL#-1)×50)+Group#×100)+32	R
Brightness status	0-Dark, 1-Bright	(((CTRL#-1)×50)+Group#×100)+33	R
Occupancy	0-Absence, 1-Occupancy	(((CTRL#-1)×50)+Group#×100)+34	R
Outdoor temperature	0.0 .. 99.9	(((CTRL#-1)×50)+Group#×100)+35	R
Filter status	0-Ok, 1-Dirty	(((CTRL#-1)×50)+Group#×100)+36	R
Dirty filter indication reset	1-Reset the filter	(((CTRL#-1)×50)+Group#×100)+37	W
Consumption Yesterday	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+38	R
Consumption Today	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+39	R
Consumption Total	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+40	R
Consumption Yesterday Heat	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+38	R
Consumption Today Heat	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+39	R
Consumption Total Heat	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+40	R
Consumption Yesterday Cool	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+41	R
Consumption Today Cool	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+42	R
Consumption Total Cool	n Wh / n kWh	(((CTRL#-1)×50)+Group#×100)+43	R

6.2. Integration into KNX Systems

6.2.1. KNX signals

IMPORTANT
The signals available depend on the gateway configuration and/or the unit type (AC indoor unit, Air-to-water booster unit, heat pump, etc.)

To know more, refer to the IN770AIR00XO000 gateway configuration guide.

Table 3. Global group signals

Description	Object function	DPT	Flags
Centralized controller communication error	0-Ok, 1-Communication error	DPT_Alarm (1bit)	R, T
Reset errors for all the groups	1-Reset the errors	DPT_Reset (1bit)	W
On/Off (all the groups)	0-Off, 1-On	DPT_Switch (1bit)	W
Operation Mode (all the IC groups)	0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry	DPT_HVACContrMode (1byte)	W
Operation Mode (all the IC groups)	0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool, 5-Setback	DPT_Enumerated (1byte)	W
Operation Mode (all the IC groups)	0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto, 5-Setback	DPT_Enumerated (1byte)	W
Operation Mode (all the LOSSNAY groups)	0-LC_Auto, 1-Heat Recovery, 2-Bypass	DPT_Enumerated (1byte)	W
Operation Mode (all the ATW & HWHP groups)	0-Hot Water, 1-Heating, 2-Heating_Eco, 3-Anti_Freeze, 4-Cooling	DPT_Enumerated (1byte)	W
Fan Speed (all the IC groups)	1-Speed 1, 2-Speed 2, 3-Speed 3, 4-Speed 4	DPT_Enumerated (1byte)	W
Fan Speed (all the LOSSNAY groups)	1-Speed 1, 2-Speed 2, 3-Speed 3, 4-Speed 4	DPT_Enumerated (1byte)	W
Fan Speed AUTO (all the IC groups)	1-Set auto fan; 0-Stop auto fan	DPT_Switch (1bit)	W
Vane position (all the groups)	1-Horizontal, 2-Position-2, 3-Position-3, 4-Position-4, 5-Vertical	DPT_Enumerated (1byte)	W
Vane position AUTO (all the groups)	1-Set auto vane; 0-Stop auto vane	DPT_Switch (1bit)	W
Vane position Swing (all the groups)	1-Set swing vane; 0-Stop swing vane	DPT_Switch (1bit)	W
Individual Temperature Setpoint (ºC) (all the groups)	5 .. 90ºC / 41 .. 194ºF	DPT_Value_Temp (2byte)	W

Table 4. Individual group signals

Description	Object function	DPT	Flags
Control_On/Off	0-Off, 1-On	DPT_Switch (1bit)	W
Status_On/Off	0-Off, 1-On	DPT_Switch (1bit)	R, T
Control_Operation mode IC	0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry	DPT_HVACContrMode (1byte)	W
Status_Operation mode IC	0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry	DPT_HVACContrMode (1byte)	R, T
Control_Operation mode IC	0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool, 5-Setback	DPT_Enumerated (1byte)	W
Status_Operation mode IC	0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool, 5-Setback	DPT_Enumerated (1byte)	R, T
Control_Operation mode IC	0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto, 5-Setback	DPT_Enumerated (1byte)	W
Status_Operation mode IC	0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto, 5-Setback	DPT_Enumerated (1byte)	R, T
Control_Mode Cool/Heat IC	0-Cool, 1-Heat	DPT_Heat/Cool (1bit)	W
Status_Mode Cool/Heat IC	0-Cool, 1-Heat	DPT_Heat/Cool (1bit)	R, T
Control_Heat mode&ON IC	0%-Off, 1%-100%-On+Heat	DPT_Scaling (1byte)	W
Control_Cool mode&ON IC	0%-Off, 1%-100%-On+Cool	DPT_Scaling (1byte)	W
Control_Auto mode IC	1-Set auto mode	DPT_Switch (1bit)	W
Status_Auto mode IC	1-Auto mode active, 0-Auto mode not active	DPT_Switch (1bit)	R, T
Control_Heat mode IC	1-Set heat mode	DPT_Switch (1bit)	W
Status_Heat mode IC	1-Heat mode active, 0-Heat mode not active	DPT_Switch (1bit)	R, T
Control_Cool mode IC	1-Set cool mode	DPT_Switch (1bit)	W

Description	Object function	DPT	Flags
Status_Cool mode IC	1-Cool mode active, 0-Cool mode not active	DPT_Switch (1bit)	R, T
Control_Fan mode IC	1-Set fan mode	DPT_Switch (1bit)	W
Status_Fan mode IC	1-Fan mode active, 0-Fan mode not active	DPT_Switch (1bit)	R, T
Control_Dry mode IC	1-Set dry mode	DPT_Switch (1bit)	W
Status_Dry mode IC	1-Dry mode active, 0-Dry mode not active	DPT_Switch (1bit)	R, T
Status_Auto heat mode IC	1-Auto heat mode active, 0-Auto heat mode not active	DPT_Switch (1bit)	R, T
Status_Auto cool mode IC	1-Auto cool mode active, 0-Auto cool mode not active	DPT_Switch (1bit)	R, T
Control_Setback mode IC	1-Set setback mode	DPT_Switch (1bit)	W
Status_Setback mode IC	1-Setback mode active, 0-Setback mode not active	DPT_Switch (1bit)	R, T
Status_Setbackheat mode IC	1-Setbackheat mode active, 0-Setbackheat mode not active	DPT_Switch (1bit)	R, T
Status_Setbackcool mode IC	1-Setbackcool mode active, 0-Setbackcool mode not active	DPT_Switch (1bit)	R, T
Control_Operation mode LOSSNAY	0-LC_Auto, 1-Heat Recovery, 2-Bypass	DPT_Enumerated (1byte)	W
Status_Operation mode LOSSNAY	0-LC_Auto, 1-Heat Recovery, 2-Bypass	DPT_Enumerated (1byte)	R, T
Control_LC_auto mode LOSSNAY	1-Set LC_auto mode	DPT_Switch (1bit)	W
Status_LC_auto mode LOSSNAY	1-LC_auto mode active, 0-LC_auto mode not active	DPT_Switch (1bit)	R, T
Control_Heat recovery mode LOSSNAY	1-Set heat recovery mode	DPT_Switch (1bit)	W
Status_Heat recovery mode LOSSNAY	1-Heat recovery mode active, 0-Heat recovery mode not active	DPT_Switch (1bit)	R, T
Control_Bypass mode LOSSNAY	1-Set bypass mode	DPT_Switch (1bit)	W
Status_Bypass mode LOSSNAY	1-Bypass mode active, 0-Bypass mode not active	DPT_Switch (1bit)	R, T
Control_Operation mode ATW & HWHP	0-Hot Water, 1-Heating, 2-Heating_Eco, 3-Anti_Freeze, 4-Cooling	DPT_Enumerated (1byte)	W
Status_Operation mode ATW & HWHP	0-Hot Water, 1-Heating, 2-Heating_Eco, 3-Anti_Freeze, 4-Cooling	DPT_Enumerated (1byte)	R, T
Control_Hot water mode ATW & HWHP	1-Set hot water mode	DPT_Switch (1bit)	W
Status_Hot water mode ATW & HWHP	1-Hot water mode active, 0-Hot water mode not active	DPT_Switch (1bit)	R, T
Control_Heating mode ATW & HWHP	1-Set heating mode	DPT_Switch (1bit)	W
Status_Heating mode ATW & HWHP	1-Heating mode active, 0-Heating mode not active	DPT_Switch (1bit)	R, T
Control_Cooling mode ATW & HWHP	1-Set cooling mode	DPT_Switch (1bit)	W
Status_Cooling mode ATW & HWHP	1-Cooling mode active, 0-Cooling mode not active	DPT_Switch (1bit)	R, T
Control_Heating_Eco mode ATW & HWHP	1-Set heating_eco mode	DPT_Switch (1bit)	W
Status_Heating_Eco mode ATW & HWHP	1-Heating_Eco mode active, 0-Heating_Eco mode not active	DPT_Switch (1bit)	R, T
Control_Anti_Freeze mode ATW & HWHP	1-Set anti_freeze mode	DPT_Switch (1bit)	W
Status_Anti_Freeze mode ATW & HWHP	1-Anti_Freeze mode active, 0-Anti_Freeze mode not active	DPT_Switch (1bit)	R, T
Control_Fan Speed enumerated (4stages)	1-Speed 1, 2-Speed 2, 3-Speed 3, 4-Speed 4	DPT_Enumerated (1byte)	W
Status_Fan Speed enumerated (4stages)	1-Speed 1, 2-Speed 2, 3-Speed 3, 4-Speed 4	DPT_Enumerated (1byte)	R, T
Control_Fan Speed enumerated (3stages)	1-Speed 1, 2-Speed 2, 3-Speed 3	DPT_Enumerated (1byte)	W
Status_Fan Speed enumerated (3stages)	1-Speed 1, 2-Speed 2, 3-Speed 3	DPT_Enumerated (1byte)	R, T
Control_Fan Speed enumerated (2stages)	1-Speed 1, 2-Speed 2	DPT_Enumerated (1byte)	W
Status_Fan Speed enumerated (2stages)	1-Speed 1, 2-Speed 2	DPT_Enumerated (1byte)	R, T
Control_Fan Speed scaling (4stages)	Thersholds (0..37%, 38..62%, 63..87%, 88..100%)	DPT_Scaling (1byte)	W
Status_Fan Speed scaling (4stages)	Thersholds (25%, 50%, 75%, 100%)	DPT_Scaling (1byte)	R, T
Control_Fan Speed scaling (3stages)	Thersholds (0..49%, 50..82%, 83..100%)	DPT_Scaling (1byte)	W
Status_Fan Speed scaling (3stages)	Thersholds (33%, 67%, 100%)	DPT_Scaling (1byte)	R, T
Control_Fan Speed scaling (2stages)	Thersholds (0..74%, 75..100%)	DPT_Scaling (1byte)	W
Status_Fan Speed scaling (2stages)	Thersholds (50%, 100%)	DPT_Scaling (1byte)	R, T
Control_Fan speed 1	1-Set fan speed 1	DPT_Switch (1bit)	W
Status_Fan speed 1	1-Speed 1 active, 0-Speed 1 not active	DPT_Switch (1bit)	R, T

Description	Object function	DPT	Flags
Control_Fan speed 2	1-Set fan speed 2	DPT_Switch (1bit)	W
Status_Fan speed 2	1-Speed 2 active, 0-Speed 2 not active	DPT_Switch (1bit)	R, T
Control_Fan speed 3	1-Set fan speed 3	DPT_Switch (1bit)	W
Status_Fan speed 3	1-Speed 3 active, 0-Speed 3 not active	DPT_Switch (1bit)	R, T
Control_Fan speed 4	1-Set fan speed 4	DPT_Switch (1bit)	W
Status_Fan speed 4	1-Speed 4 active, 0-Speed 4 not active	DPT_Switch (1bit)	R, T
Control_Fan speed Man/Auto	0-Manual; 1-Auto	DPT_Bool (1bit)	W
Status_Fan speed Man/Auto	0-Manual; 1-Auto	DPT_Bool (1bit)	R, T
Control_Vane position enumerated	1-Horizontal, 2-Position-2, 3-Position-3, 4-Position-4, 5-Vertical,	DPT_Enumerated (1byte)	W
Status_Vane position enumerated	1-Horizontal, 2-Position-2, 3-Position-3, 4-Position-4, 5-Vertical,	DPT_Enumerated (1byte)	R, T
Control_Vane position scaling	Thersholds (0..30%, 31..50%, 51..70%, 71..90%, 91..100%)	DPT_Scaling (1byte)	W
Status_Vane position scaling	Thersholds (20%, 40%, 60%, 80%, 100%)	DPT_Scaling (1byte)	R, T
Control_Vane position auto	1-Set auto vane, 0-Stop auto vane	DPT_Switch (1bit)	W
Status_Vane position auto	1-Vane auto active, 0-Vane auto not active	DPT_Switch (1bit)	R, T
Control_Vane position horizontal	1-Set horizontal vane	DPT_Switch (1bit)	W
Status_Vane position horizontal	1-Vane horizontal active, 0-Vane horizontal not active	DPT_Switch (1bit)	R, T
Control_Vane position-2	1-Set position-2 vane	DPT_Switch (1bit)	W
Status_Vane position-2	1-Vane position-2 active, 0-Vane position-2 not active	DPT_Switch (1bit)	R, T
Control_Vane position-3	1-Set position-3 vane	DPT_Switch (1bit)	W
Status_Vane position-3	1-Vane position-3 active, 0-Vane position-3 not active	DPT_Switch (1bit)	R, T
Control_Vane position-4	1-Set position-4 vane	DPT_Switch (1bit)	W
Status_Vane position-4	1-Vane position-4 active, 0-Vane position-4 not active	DPT_Switch (1bit)	R, T
Control_Vane position vertical	1-Set vertical vane	DPT_Switch (1bit)	W
Status_Vane position vertical	1-Vane vertical active, 0-Vane vertical not active	DPT_Switch (1bit)	R, T
Control_Vane position swing	1-Set swing vane; 0-Stop swing vane	DPT_Switch (1bit)	W
Status_Vane position swing	1-Vane swing active, 0-Vane swing not active	DPT_Switch (1bit)	R, T
Control_Temperature Setpoint	Cool or dry: 19 .. 30ºC / 66 .. 86ºF Heat or Auto: 17 .. 28ºC / 63 .. 82ºF	DPT_Value_Temp (2byte)	W
Status_Temperature Setpoint	Cool or dry: 19 .. 30ºC / 66 .. 86ºF Heat or Auto: 17 .. 28ºC / 63 .. 82ºF	DPT_Value_Temp (2byte)	R, T
Control_Temperature Setpoint	5 .. 90ºC / 41 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Temperature Setpoint	5 .. 90ºC / 41 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Status_AC Ambient Temperature	0.0 .. 99.9ºC / 32 .. 212ºF	DPT_Value_Temp (2byte)	R, T
Control_KNX ambient Temperature	0.0 .. 99.9ºC / 32 .. 212ºF	DPT_Value_Temp (2byte)	W
Control_Operational Status for Lossnay or OA	0-Off, 1-Low, 2-High	DPT_Enumerated (1byte)	W
Status_Operational Status for Lossnay or OA	0-Off, 1-Low, 2-High	DPT_Enumerated (1byte)	R, T
Control_On/Off control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	W
Status_On/Off control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	R, T
Control_operating mode control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	W
Status_operating mode control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	R, T
Control_set point control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	W
Status_set point control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	R, T
Control_filter reset control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	W
Status_filter reset control disablement	0-Enabled, 1-Disabled	DPT_Enable (1bit)	R, T
Status_Group operation time (secs)	0 .. 9999999999	DPT_LongDeltaTimeSec (4bytes)	R, T

Description	Object function	DPT	Flags
Status_group error	0-No error; 1-Group error	DPT_Alarm (1bit)	R, T
Status_group error code	Number of the error code (XXXX)	8.x: (2byte, Signed Value)	R, T
Control_group error reset	1-Reset the error	DPT_Switch (1bit)	W
Status_group model	0-IC, 1-KIC, 2-AIC, 3-LC, 4-FU, 5-BU, 6-WH, 7-CEh	DPT_String_ASCII (14 bytes)	R, T
Control_Setback	1-Enable, 0-Disable	DPT_Enable (1bit)	W
Status_Setback	1-Enable, 0-Disable	DPT_Enable (1bit)	R, T
Control_Cool/dry/auto(upper) dual temperature setpoint (ºC)	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Cool/dry/auto(upper) dual temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Heating ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Heating ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Heat/auto(lower) dual temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Heat/auto(lower) dual temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Heating ECO ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Heating ECO ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Auto single temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Auto single temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Hot water ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Hot water ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Setback upper temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Setback upper temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Anti-Freeze ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Anti-Freeze ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Setback lower temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Setback lower temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Control_Cooling ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	W
Status_Cooling ATW temperature setpoint	4.5 .. 90ºC / 40 .. 194ºF	DPT_Value_Temp (2byte)	R, T
Status_Outdoor temperature	0.0 .. 99.9ºC / 32 .. 212ºF	DPT_Value_Temp (2byte)	R, T
Status_Filter	0-Ok, 1-Dirty	DPT_Alarm (1bit)	R, T
Control_Dirty filter indication reset	1-Reset the filter	DPT_Reset (1bit)	W
Status_Consumption Yesterday	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Today	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Total	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Yesterday Heat	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Today Heat	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Total Heat	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Yesterday Cool	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T

Description	Object function	DPT	Flags
Status_Consumption Today Cool	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T
Status_Consumption Total Cool	n Wh / n kWh	13.010 active energy (Wh) (4byte)	R, T

NOTE
The default unit for the consumption signals is Wh, but you can set it in KWh instead. If so, the DPT number changes from 13.010 to 13.013.

Table 5. Individual error code signals for indoor and outdoor units

Controller	Unit	Description	Value	DPT	Flags
Controller 1 .. 2	Indoor Unit 1 .. 50	Status_Indoor Unit n error code	Number of the error code (XXXX)	DPT_7.N (2byte)	R, T
Controller 1 .. 2	Outdoor Unit 1 .. 50	Status_Outdoor Unit n error code	Number of the error code (XXXX)	DPT_7.N (2byte)	R, T

6.3. Integration into BACnet Systems

NOTICE
You can see the Protocol Implementation Conformance Statement (PICS) document on https://www.intesis.com/docs/bacnet-client-pic-statement-770

6.3.1. BACnet Objects

NOTICE
This part is common for BACnet MS/TP and BACnet/IP.

Input object types:

- Binary input.

Output object types:

- Binary output.
- Multistate output.
- Analog output.

The following tables list all available BACnet objects for this gateway.

Table 6. Global signals

Object name	Possible values	Object type	Object instance
Centralized controller communication error	0-Ok, 1-Communication error	3-Binary Input	(CC[0..1]*1000)+0
Reset errors (all groups)	0-No Reset, 1-Reset errors	4-Binary Output	(CC[0..1]*1000)+0
On/Off (all groups)	0-Off, 1-On	4-Binary Output	(CC[0..1]*1000)+1
Mode (all IC groups)	1-Heat, 2-Cool, 3-Fan, 4-Dry, 5-Auto, 6-Setback	14-Multistate Output	(CC[0..1]*1000)+0
Mode (all Lossnay groups)	1-LC_Auto, 2-HeatRecovery, 3-Bypass	14-Multistate Output	(CC[0..1]*1000)+1
Fan Speed (all IC groups)	1-Auto, 2-Low, 3-Mid1, 4-Mid2, 5-High	14-Multistate Output	(CC[0..1]*1000)+2
Fan Speed (all Lossnay groups)	1-Low, 2-Mid1, 3-Mid2, 4-High	14-Multistate Output	(CC[0..1]*1000)+3
Vane Position (all IC groups)	1-Auto, 2-Horizontal, 3-Pos2, 4-Pos3, 5-Pos4, 6-Vertical, 7-Swing	14-Multistate Output	(CC[0..1]*1000)+4
Setpoint (all the groups)	5 .. 90ºC / 41 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+0

Table 7. Individual groups signals

Object name	Possible values	Object type	Object instance
CXGX_On/Off_S	0-Off, 1-On	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_On/Off_C	0-Off, 1-On	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_Mode_S	1-Auto, 2-Heat, 3-Dry, 4-Fan, 5-Cool,6-AutoHeat, 7-AutoCool, 8-Setback, 9-Setbackheat, 10-Setbackcool	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_Mode_S	1-LC_Auto, 2-Heat Recovery, 3-Bypass	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+1
CXGX_Mode_S	1-Hot_Water, 2-Heating, 3-Heating_Eco, 4-Anti_Freeze, 5-Cooling	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_Mode_C	1-Auto, 2-Heat, 3-Dry, 4-Fan, 5-Cool, 6-Setback	14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_Mode_C	1-LC_Auto, 2-Heat Recovery, 3-Bypass	14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+1

Object name	Possible values	Object type	Object instance
CXGX_Mode_C	1-Hot_Water, 2-Heating, 3-Heating_Eco, 4-Anti_Freeze, 5-Cooling	14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_FanSpeed_S	The values depend on the number of fan speeds selected in the configuration tool: 2: 1-Auto, 2-Low, 3-High 3: 1-Auto, 2-Low, 3-Mid1, 4-High 4: 1-Auto, 2-Low, 3-Mid1, 4-Mid2, 5-High	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_FanSpeed_S		13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_FanSpeed_C		14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_FanSpeed_C		14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_Vanes_S	1-Auto, 2-Horizontal, 3-Pos2, 4-Pos3, 5-Pos4, 6-Vertical, 7-Swing	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+5
CXGX_Vanes_C	1-Auto, 2-Horizontal, 3-Pos2, 4-Pos3, 5-Pos4, 6-Vertical, 7-Swing	14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+5
CXGX_Setpoint_S	Cool or dry: 19 .. 30ºC / 66 .. 86ºF Heat or Auto: 17 .. 28ºC / 62 .. 82ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_Setpoint_S	5 .. 90ºC / 41 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+1
CXGX_Setpoint_C	Cool or dry: 19 .. 30ºC / 66 .. 86ºF Heat or Auto: 17 .. 28ºC / 62 .. 82ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+0
CXGX_Setpoint_C	5 .. 90ºC / 41 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+1
CXGX_AmbientTemp_S	0.0 .. 99.9ºC / 32 .. 212ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_OperationalStatus_LS_OA_S	1-Off, 2-Low, 3-High	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_OperationalStatus_LS_OA_C	1-Off, 2-Low, 3-High	14-Multistate Output	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_OperationTimex100_S	0 .. 9999	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_OperationTime%100_S	0 .. 99	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_ErrorStatus_S	0-No error, 1-Group error	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+1
CXGX_ErrorCode_S	0-No Error, n-Error (0 .. 255)	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+5
CXGX_ErrorReset_C	0-No Reset, 1-Reset	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+1
CXGX_Model_S	1-IC, 2-KIC, 3-AIC, 4-LC, 5-FU, 6-BU, 7-WH, 8-CEh, 9-DC, 10-AHC, 11-RC, 12-ME, 13-RC, 14-URC, 15-GW, 16-TR, 17-AN, 18-GR, 19-SR, 20-ST, 21-SC, 22-??, 23-NONE	13-Multistate Input	(CC[0..1]*1000)+ (G[1..50]*100)+7
CXGX_Allow_ONOFF_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_Allow_ONOFF_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_Allow_MODE_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_Allow_MODE_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_Allow_SETPOINT_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_Allow_SETPOINT_Panel_c	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_Allow_FILTERRESET_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+5
CXGX_Allow_FILTERRESET_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+5

Object name	Possible values	Object type	Object instance
CXGX_Allow_FANSPEED_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_Allow_FANSPEED_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_Allow_VANES_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+7
CXGX_Allow_VANES_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+7
CXGX_Allow_TIMER_Panel_S	0-Allow, 1-Not allow	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+8
CXGX_Allow_TIMER_Panel_C	0-Allow, 1-Not allow	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+8
CXGX_SetbackControl_S	0-Disable, 1-Enable	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+9
CXGX_SetbackControl_C	0-Disable, 1-Enable	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+9
CXGX_Min_Cool_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_Min_Cool_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+2
CXGX_Max_Cool_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+7
CXGX_Max_Cool_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+3
CXGX_Min_Heat_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+8
CXGX_Min_Heat_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+4
CXGX_Max_Heat_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+9
CXGX_Max_Heat_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+5
CXGX_Min_Auto_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+10
CXGX_Min_Auto_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+6
CXGX_Max_Auto_Setpoint_S	4.5 .. 35ºC / 40 .. 95ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+11
CXGX_Max_Auto_Setpoint_C	4.5 .. 35ºC / 40 .. 95ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+7
CXGX_CoolDryAuto_Upper_DualSetpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+12
CXGX_CoolDryAuto_Upper_DualSetpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+8
CXGX_Heating_ATW_HWHP_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+13
CXGX_Heating_ATW_HWHP_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+9
CXGX_AutoHeat_Lower_DualSetpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+14
CXGX_AutoHeat_Lower_DualSetpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+10
CXGX_HeatingECO_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+15
CXGX_HeatingECO_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+11
CXGX_AutoSingle_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+16

Object name	Possible values	Object type	Object instance
CXGX_AutoSingle_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+12
CXGX_HotWater_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+17
CXGX_HotWater_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+13
CXGX_Setback_Upper_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+18
CXGX_Setback_Upper_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+14
CXGX_Setback_Lower_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+19
CXGX_Setback_Lower_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+15
CXGX_Antifreeze_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+20
CXGX_Antifreeze_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+16
CXGX_Cooling_Setpoint_S	4.5 .. 90ºC / 40 .. 194ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+21
CXGX_Cooling_Setpoint_C	4.5 .. 90ºC / 40 .. 194ºF	1-Analog Output	(CC[0..1]*1000)+ (G[1..50]*100)+17
CXGX_Room_Humidity_S	0 .. 100%	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+22
CXGX_Brightness_S	0-Dark, 1-Bright	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+10
CXGX_Occupancy_S	0-Absence,1-Occupancy	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+11
CXGX_Outdoor_Temperature_S	0 .. 99.9ºC / 32 .. 212ºF	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+23
CXGX_FilterStatus_S	0-Ok, 1-Dirty	3-Binary Input	(CC[0..1]*1000)+ (G[1..50]*100)+12
CXGX_DirtyFilter_Reset_C	0-No Reset, 1-Reset	4-Binary Output	(CC[0..1]*1000)+ (G[1..50]*100)+10
CXGX_Consumption Yesterday_S	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+24
CXGX_Consumption Today_S	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+25
CXGX_Consumption Total_S	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+26
CXGX_Consumption Yesterday_S_Heat	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+27
CXGX_Consumption Today_S_Heat	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+28
CXGX_Consumption Total_S_Heat	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+29
CXGX_Consumption Yesterday_S_Cool	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+30
CXGX_Consumption Today_S_Cool	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+31
CXGX_Consumption Total_S_Cool	n Wh / n kWh	0-Analog Input	(CC[0..1]*1000)+ (G[1..50]*100)+32

Table 8. Individual units error code signals

Object name	Possible values	Object type	Object instance
CXIndoorUnitX_ErrorCode_S	0-No alarm .. 9999-Error code	0-Analog Input	(CC[0..1]*1000) + IUAddress[0..49] + 15000
CXOutdoorUnitX_ErrorCode_S	0-No alarm .. 9999-Error code	0-Analog Input	(CC[0..1]*1000) + OUAddress[0..49] + 15051

6.4. Integration into Home Automation Systems

6.4.1. Home Automation Signals

The following tables list all available Home Automation signals for this gateway.

NOTE

- **SET**: Command used to control the indoor unit. It is sent by the client.
- **CHN**: Command used to get notifications of changes in the status of a specific function of the gateway. It is sent spontaneously by the gateway itself.
- **GET**: Command used to get the status of a specific function. It is sent by the client.

To know more about the Home Automation protocol, see the Protocol specifications manual.

Table 9. Indoor units signals

Name	Possible values	acNum[1]	Commands supported
On/Off	ON/OFF	See the note below	SET/CHN/GET
Operation Mode	HEAT/COOL/FAN/DRY/AUTO		SET/CHN/GET
Fan Speed	1/2/3/4/5/AUTO		SET/CHN/GET
Vane Position	1/2/3/4/5/AUTO/SWING		SET/CHN/GET
Temperature Setpoint (x10)	°C / °F		SET/CHN/GET
AC Ambient Temperature (x10)	°C / °F		CHN/GET
Group Error code	0-No Error, X-Error		CHN/GET
Group error	OK/ERR		CHN/GET

NOTE

[1] This index must be set accordingly to the Unit ID Index.

For outdoor units, the acNum value must be the same than the minimum indoor unit associated in the CONFIGURATION section.

7. Late Configuration: Change the Gateway's Protocol

Reconfiguring the gateway with a different protocol is very easy:

1. Connect the gateway to the PC and open the configuration tool Intesis MAPS.
2. Select the new template you need.
3. Click **Next** or double-click the template in the list.
4. A message will pop up, asking if you want to save the project currently loaded in the gateway.
5. Click **Yes** or **No**, depending on your needs.
6. Configure the needed parameters and signals for your new project.
7. Send the configuration to the gateway.

NOTE
For a complete gateway configuration guide, please refer to the Intesis MAPS User manual for IN770AIR00xO000.

8. Error Codes

NOTE
These error codes are the same for all applications.

Error Code	Description
65535 (-1)	Communication error between the gateway and the AC unit
0	No active error
1102	Discharge temperature high
1108	Internal thermostat detector working (49C)
1110	Outdoor unit failure
1300	Low pressure
1302	High pressure (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 the drain pump
2502	Erroneous operation of the 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	Anti-phase detection
4108	Phase opened in phase L2 or connector 51CM opened
4118	Error in the anti-phase detector (electronic board)
4124	Connector 49L opened
4210	Cut due to over-current 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	Condensation/Evaporation probe anomaly (TH5)
5104	Error detection in discharge temperature
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	M-NET duplicated address definition
6602	M-NET line transmission hardware error
6603	M-NET bus busy
6606	M-NET line transmission error
6607	M-NET transmission error
6607	M-NET without ack

6608	M-NET transmission error
6608	M-NET without response
6831	Remote controller transmission error (reception error)
6832	Remote controller 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 the inter-connection cable in the indoor/outdoor unit, indoor unit number deactivated (5 min or more)
6845	Error in the inter-connection cable in the indoor/outdoor unit (cabling error, disconnection)
6846	Initial timer deactivated

NOTE

If you detect a non-listed error code, please contact Mitsubishi Electric technical support.