

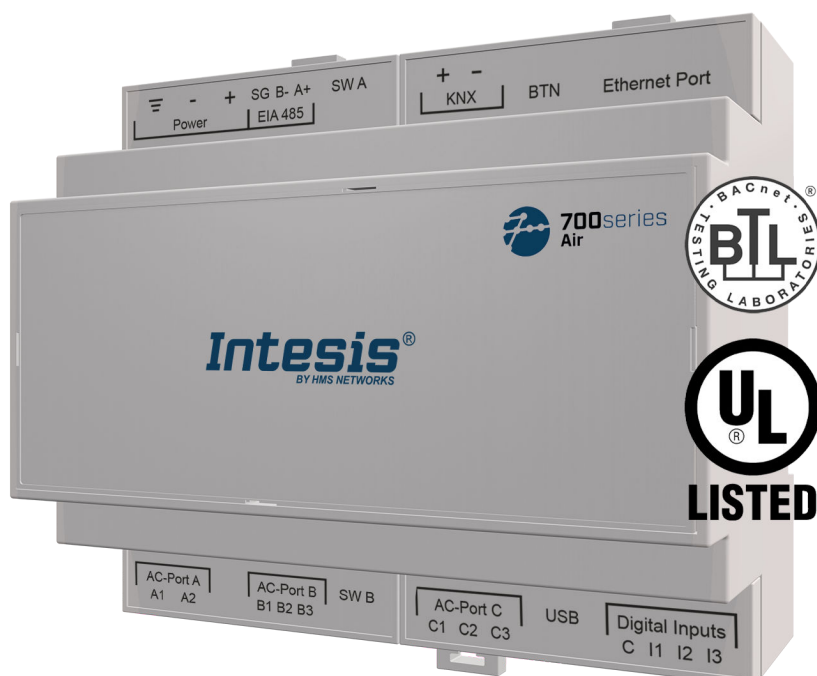
Samsung NASA with KNX, Serial, and IP support

IN770AIR*O000 GATEWAY**

USER MANUAL

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1. Description and Order Codes

IN770AIR*O000 Gateway.**

Modbus®, KNX®, BACnet®, and Home Automation® gateway for Samsung® air conditioning systems.

ORDER CODE	LEGACY ORDER CODE
IN770AIR***O000 ¹	INBACSAM004O000 INBACSAM008O000 INBACSAM016O000 INBACSAM064O000 INKNXSAM004O000 INKNXSAM008O000 INKNXSAM016O000 INKNXSAM064O000 INMBSSAM004O000 INMBSSAM008O000 INMBSSAM016O000 INMBSSAM064O000
¹ *** stands for XXS, S, or M, depending on the license you have purchased. To know more, see Licensing (page 2) .	



NOTE

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

2. Licensing

Distribution license(s) for the IN770AIR***O000 gateway:

Order Code	License	Maximum AC units	
		Indoor units	Outdoor units
IN770AIRXXSO000	XXS	4	16
IN770AIR00SO000	Small	16	16
IN770AIR00MO000	Medium	64	16

**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 power before manipulating and connecting them to the gateway.

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

Use a circuit breaker before the power supply. Rating: 250 V, 6 A.

Supply always a correct voltage to power the gateway. See [Technical Specifications \(page 19\)](#).

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 IN770AIR***O000 gateway supports four applications.

Gateway's client interface	↔	Gateway's server interface
Samsung NASA HVAC systems	to	Modbus TCP and RTU
		KNX TP
		BACnet/IP or MS/TP
		Home Automation

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

Figure 1. Integration of Samsung AC systems into Modbus installations

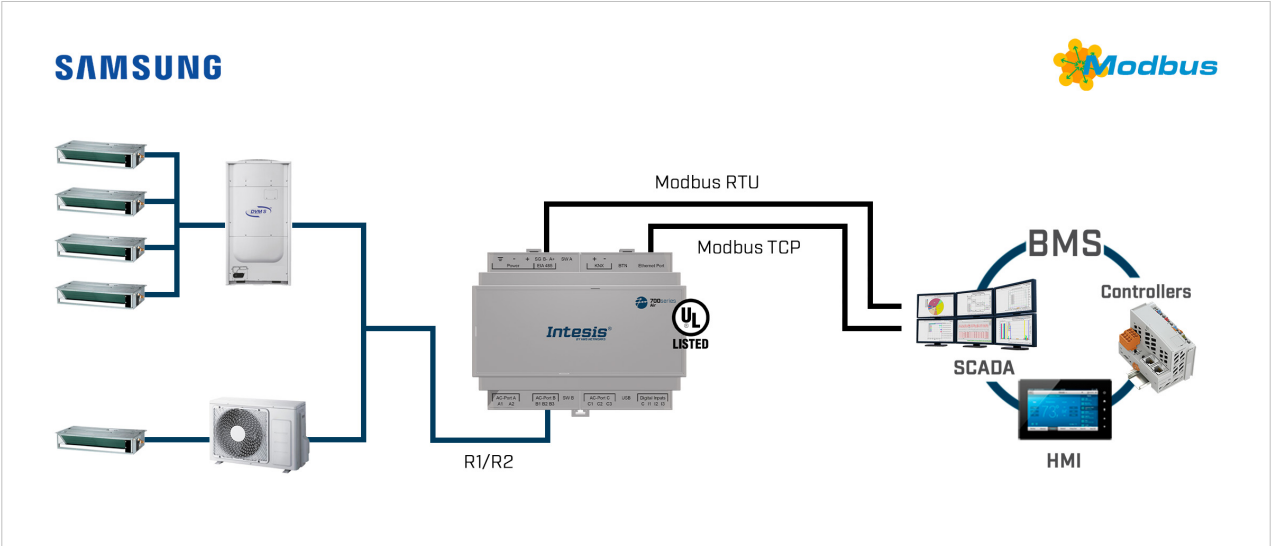


Figure 2. Integration of Samsung AC systems into KNX installations

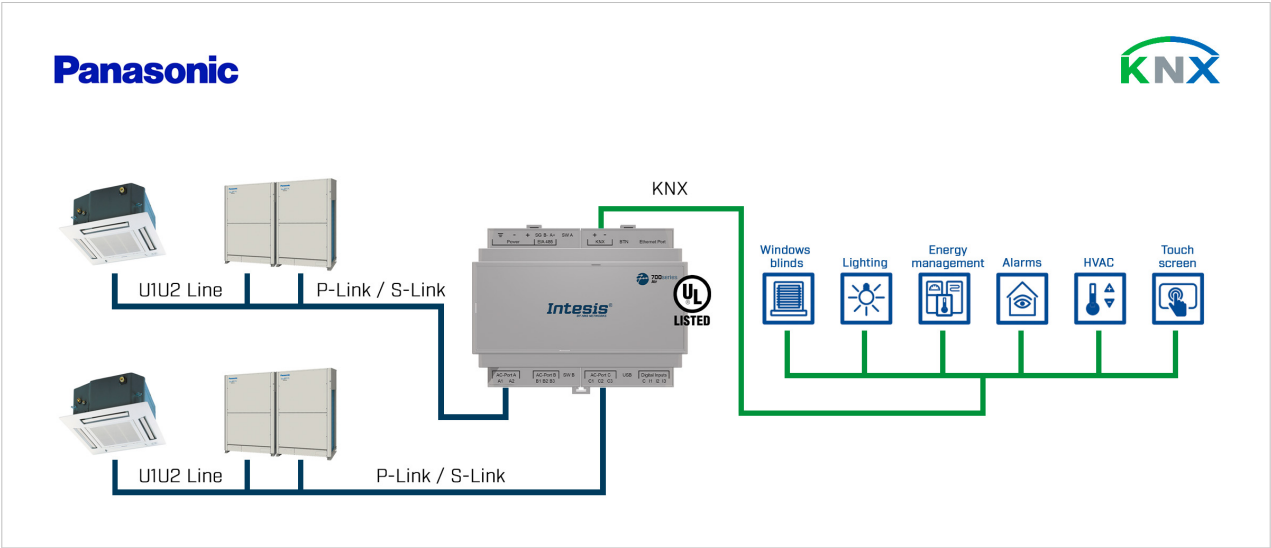


Figure 3. Integration of Samsung AC systems into BACnet installations

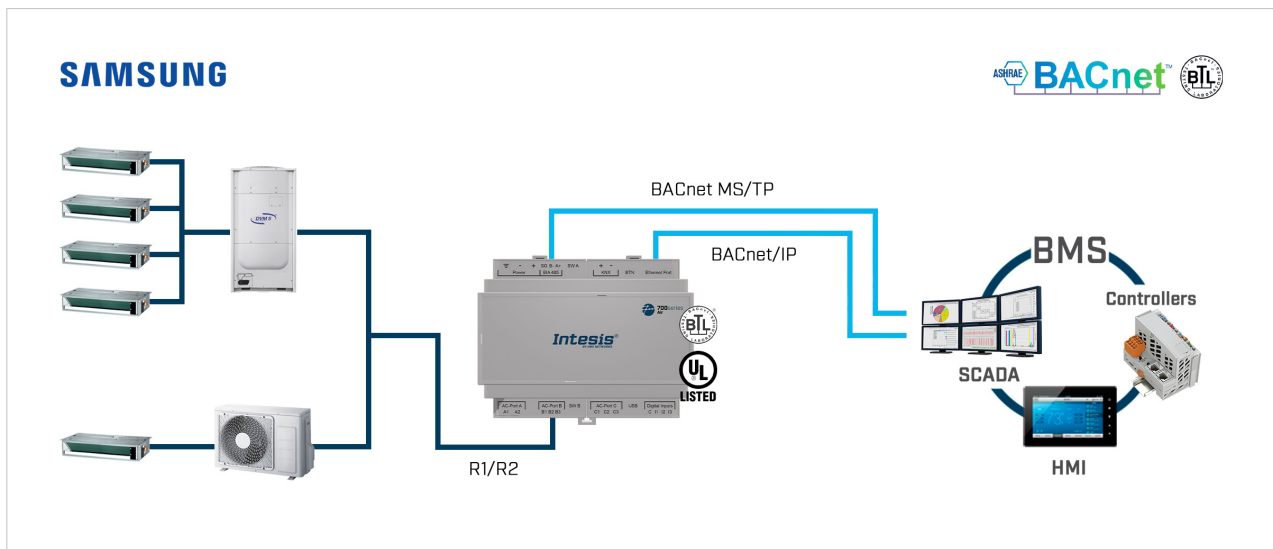
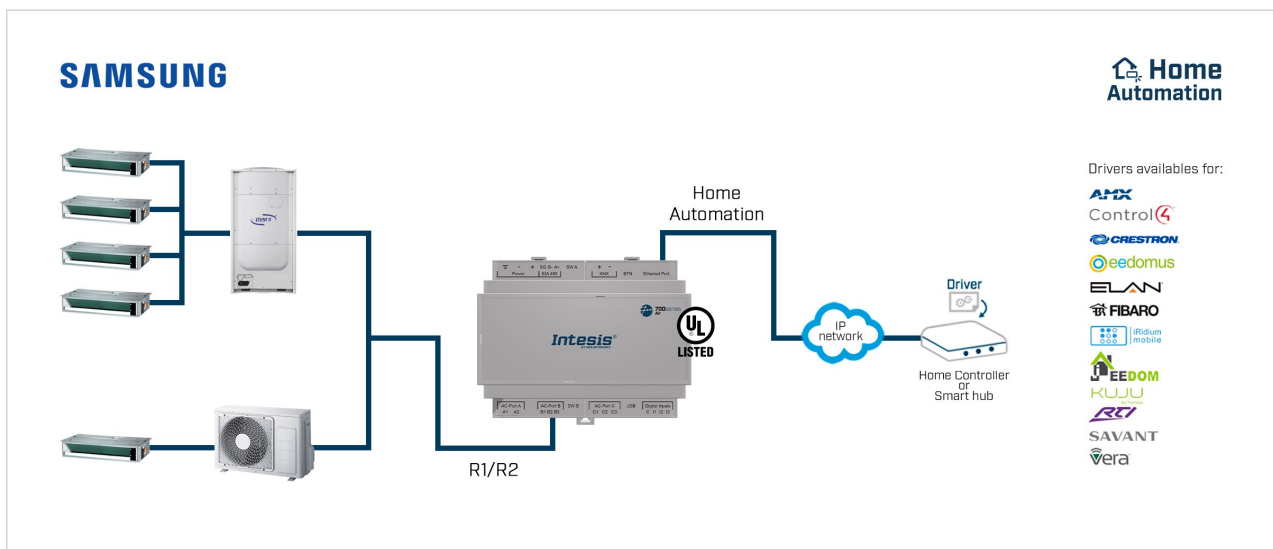


Figure 4. Integration of Samsung AC systems into Home Automation installations



4.1. Inside the Package

Items included:

- Intesis IN770AIR***O000 Gateway
- USB Mini-B type to USB Type-A cable
- Installation Sheet

4.2. 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. See [Gateway Connectors \(page 10\)](#).

4.3. Gateway General Functionality

With this Intesis IN770AIR***O000 gateway, you can easily integrate Samsung NASA 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**

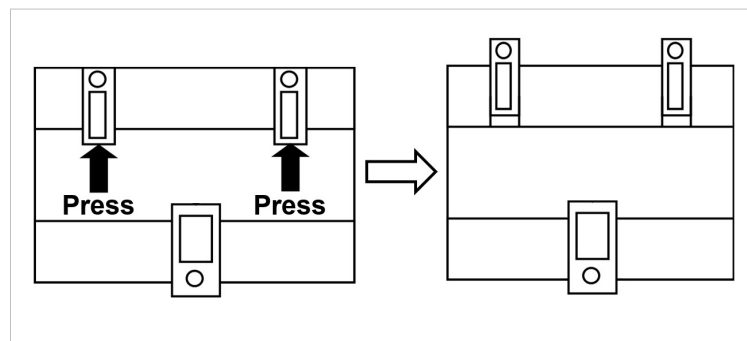
Mount the gateway on a wall or over a DIN rail. We recommend the DIN rail mounting option, preferably inside a grounded metallic industrial cabinet.

**IMPORTANT**

Ensure the gateway has sufficient clearances for all connections when mounted. See [Dimensions \(page 20\)](#).

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.

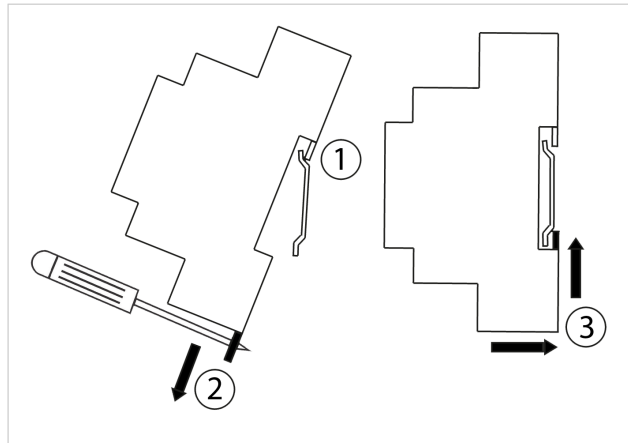
3. Make sure the gateway is firmly fixed.

DIN rail mounting

1. Fit the gateway's top-side clips in the upper edge of the DIN rail.
2. Press the low side of the gateway gently to lock it in the DIN rail.
3. Make sure the gateway is firmly fixed.

**NOTE**

For some DIN rails, to complete step 2, you may need a small screwdriver or similar to pull the bottom clip down.



5.2. Connection



CAUTION

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

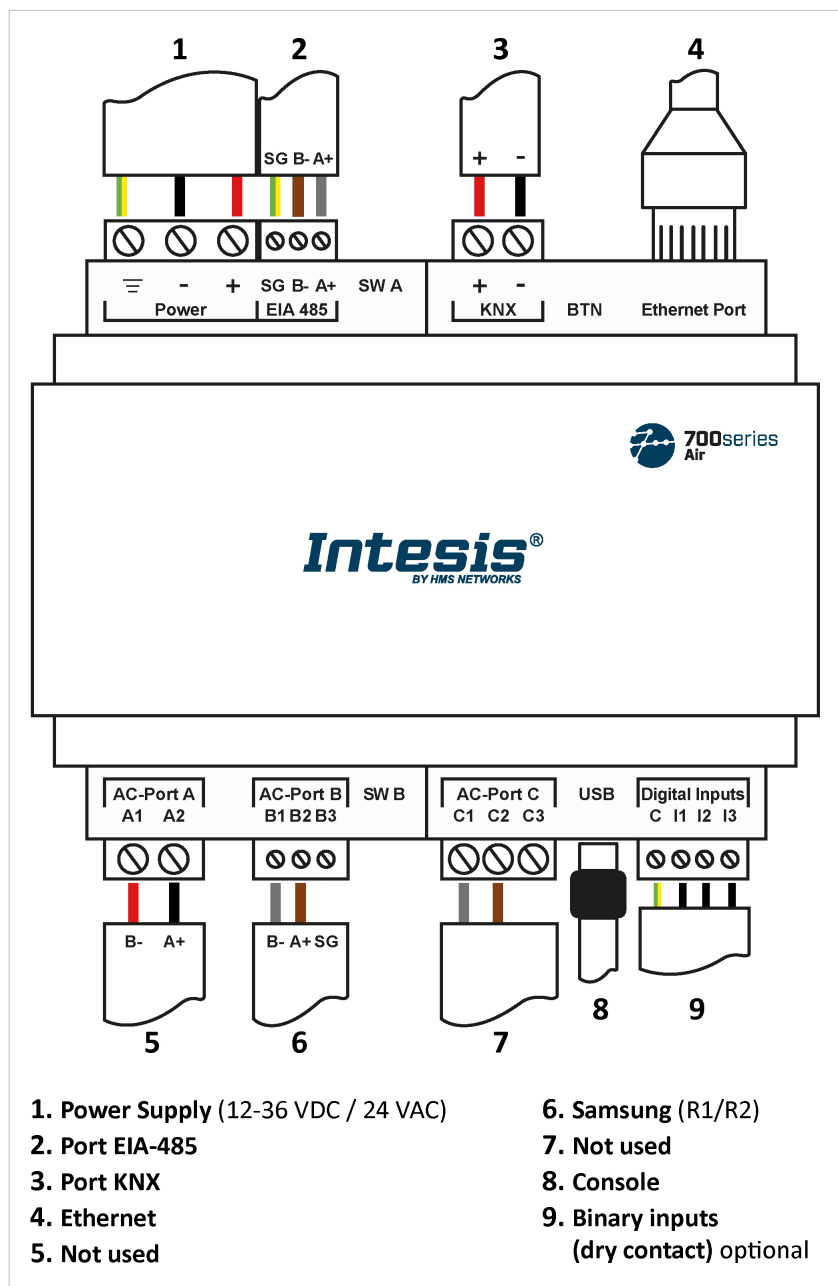


IMPORTANT

Keep communication cables away from power and ground wires.

5.2.1. Gateway Connectors

Figure 5. Wiring diagram



Connectors' wiring:**IMPORTANT**

For all connectors, use solid or stranded wires (twisted or with ferrule).

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

**NOTE**

To know more about each port's specifications, see [Technical Specifications \(page 19\)](#).

**NOTE**

Mount the gateway in the desired installation site before wiring.

Communication ports:

PORT	USAGE	WIRING			
EIA-485	BACnet MS/TP and Modbus RTU	SG: Signal ground	B-	A+	
KNX	KNX bus	+		-	
Ethernet	As an IP/TCP port: BACnet/IP, Modbus TCP, and Home Automation As a console port: Connection to a PC for configuration purposes	Ethernet cable (CAT5 or higher) When using the building LAN, contact the network administrator and make sure traffic is allowed. When starting up 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.			
AC-Port A	Not used				
AC-Port B Observe polarity	Samsung bus	B1: R2	B2: R1	B3: Not used	
AC Port-C	Not used				
USB	Connection to a PC for configuration purposes	USB Mini-B type			
Digital Inputs	Dry contact for input devices	C: Common	I1: Input 1	I2: Input 2	I3: Input 3

Power supply:

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

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.

**IMPORTANT**

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

5.2.2. Connection Procedure for the AC Unit

Connect the Samsung air conditioning network bus (R1/R2) to the gateway using the **B1** and **B2** poles of the **AC-Port B**.

**IMPORTANT**

Samsung NASA AC network allows automatic and manual addressing. For the proper communication of this Intesis gateway, a Samsung installer must set up the indoor and outdoor units' manual addressing through the remote controller or DIP switches (for indoor units) and through DIP switches (for outdoor units).

**IMPORTANT**

Samsung NASA indoor units must be configured to accept **central control**. To do so, segment 5 of the **installation option code** must be set to **1**.

**IMPORTANT**

Observe polarity

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.2.3. Connection Procedure for Modbus

For Modbus TCP:

Connect the Modbus TCP Ethernet cable to the gateway's **Ethernet Port**. The correct cable to use depends on where the gateway is connected:

- **Connecting directly to a Modbus TCP 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.

**NOTE**

Some devices detect the difference automatically and adjust themselves.

**NOTE**

When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. During that time, if there is a DHCP server, an IP address will be automatically assigned to the gateway. After that time, the default IP address 192.168.100.246 will be automatically 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 Modbus RTU:

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

The connector for the EIA-485 bus is a green pluggable terminal block labeled **SG** (signal ground), **B-**, and **A+**.

**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 120 ohms (Ω) termination resistor 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.

Positions 2 and 3

- ON: Polarization active.
- OFF: Polarization inactive.

For further details, see [DIP Switches \(page 17\)](#).

**IMPORTANT**

When installing the gateway at the end of the bus with the termination resistor enabled, do not install an additional termination resistor at that end.

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.2.4. Connection Procedure for KNX

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

**IMPORTANT**

Observe polarity.

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.2.5. Connection Procedure for BACnet

For BACnet/IP:

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.



NOTE

Some devices detect the difference automatically and adjust themselves.



NOTE

When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. During that time, if there is a DHCP server, an IP address will be automatically assigned to the gateway. After that time, the default IP address 192.168.100.246 will be automatically 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:

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

The connector for the EIA-485 bus is a green pluggable terminal block labeled **SG** (signal ground), **B-**, and **A+**.



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 \(page 17\)](#).

**IMPORTANT**

When installing the gateway at the end of the bus with the termination resistor enabled, do not install an additional termination resistor at that end.

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.2.6. Connection Procedure for Home Automation

Connect the Home Automation Ethernet cable to the gateway's **Ethernet Port**. The correct cable to use depends on where the gateway is connected:

- **Connecting directly to a Home Automation 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.

**NOTE**

When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. During that time, if there is a DHCP server, an IP address will be automatically assigned to the gateway. After that time, the default IP address 192.168.100.246 will be automatically 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.

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.2.7. Connection to a PC for Configuration

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

**NOTE**

You can use the **Ethernet Port** to connect the gateway and the PC instead.

**NOTE**

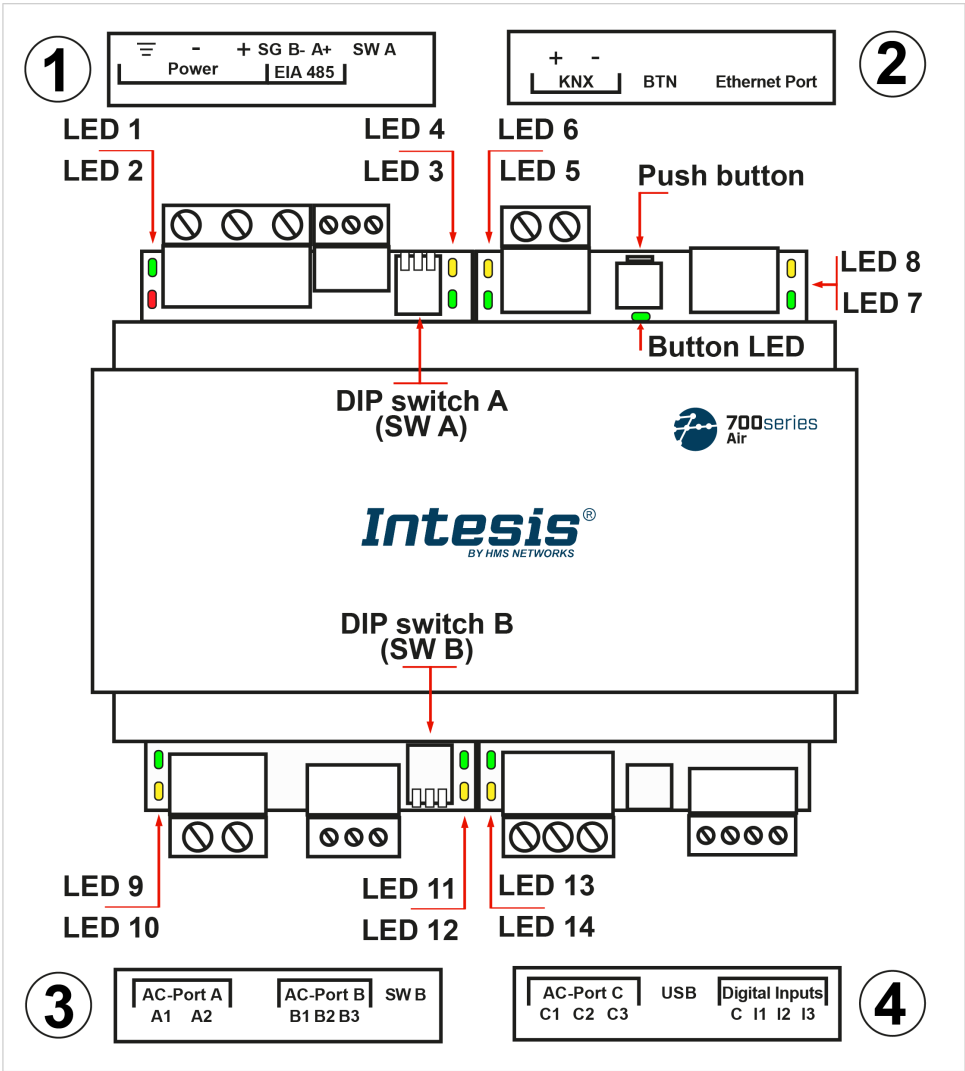
Find all you need to know about the gateway configuration and Intesis MAPS in the [Intesis MAPS Configuration Guide for IN770AIR***0000](#).

**NOTE**

See the [Wiring diagram \(page 10\)](#).

5.3. Gateway Layout

Figure 6. Disposition of hardware elements in the gateway



Plastic covers numbered in the image as ①, ②, ③, and ④ can be easily disassembled.

The following sections explain each element in more detail: LEDs, DIP switches, and the push button.

5.4. LED Indicators

Table 1. LEDs location and behavior

Cover	LED	Color	Description
Top side			
Under frontal cover ①	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)
Under frontal cover ②	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			
Under frontal cover ③	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)
Under frontal cover ④	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 (see the figure [Disposition of hardware elements in the gateway \(page 16\)](#)). These covers are assembled by pressure, so you just need to pull them to remove them.

5.5. DIP Switches

The gateway has two DIP switches (see the figure [Disposition of hardware elements in the gateway \(page 16\)](#)):

- DIP switch A (SW A)
- 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 (position 1) and the polarization (positions 2 and 3) 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

5.6. Push Button

Find the push button at the top side, between the KNX and the Ethernet connectors (see the figure [Disposition of hardware elements in the gateway \(page 16\)](#)).

**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.

5.7. Technical Specifications

Housing	Plastic, type PC (UL 94 V-0). Color: Light Grey. RAL 7035 Net dimensions (dxwxh): Millimeters: 90 x 106 x 58 mm / Inches: 3.5 x 4.2 x 2.3"	
Mounting	Wall: Use M3 25 mm (1") length screws. Secure mounting: below 2 meters (6 feet) DIN rail (recommended mounting) EN60715 TH35	
Wires (for power supply and low-voltage signals)	Wire cross-section/gauge per terminal: One core: 0.2 .. 2.5 mm ² (24 .. 14 AWG) Two cores: 0.2 to 1.5 mm ² (24 .. 16 AWG) Three cores: Not permitted Use solid or stranded wires (twisted or with ferrule). 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	1 x Ethernet 10/100 Mbps RJ45	
Port EIA 485	1 x Green pluggable terminal block (3 poles) SGND (Reference ground or shield) 1500 VDC 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): AC bus connection (R1/R2) 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	1 x Push button Factory reset I-Am message (for BACnet only) Normal mode/programming mode switch (for KNX only)	
Operational temperature	Celsius: 0 .. 60°C Fahrenheit: 32 .. 140°F	
Operational humidity	5 to 95%. No condensation	
Protection	IP20 (IEC60529)	

5.8. Dimensions

- **Net dimensions (DxWxH)**

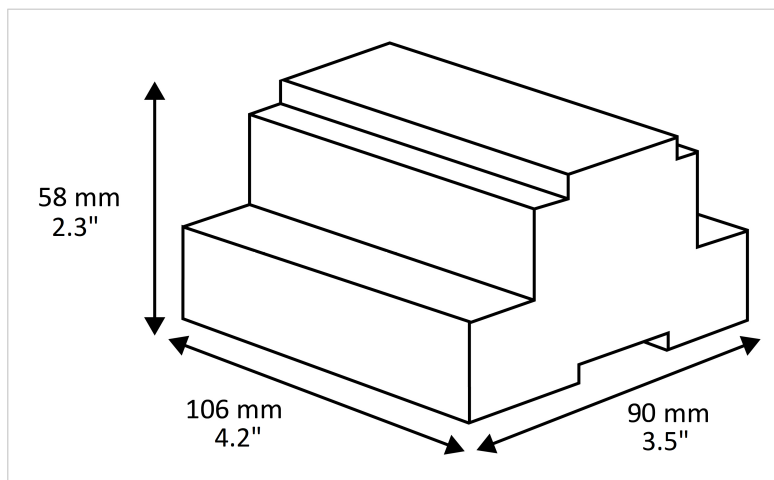
Millimeters: 90 x 106 x 58 mm

Inches: 3.5 x 4.2 x 2.3"



IMPORTANT

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



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 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 2. Global signals

Register name	Possible values	Modbus address	R/W
On (all the units)	1: Set the units On	20	W
Off (all the units)	1: Set the units Off	21	W
Operation Mode Auto (all the units)	1: Set Auto Mode	22	W
Operation Mode Heat (all the units)	1: Set Heat Mode	23	W
Operation Mode Dry (all the units)	1: Set Dry Mode	24	W
Operation Mode Fan (all the units)	1: Set Fan Mode	25	W
Operation Mode Cool (all the units)	1: Set Cool Mode	26	W
Operation Mode Cool Storage (all the units)	1: Set Cool Storage Mode	27	W
Operation Mode Heat Storage (all the units)	1: Set Heat Storage Mode	28	W
Fan Speed Auto (all the units)	1: Set Fan Speed Auto	29	W
Fan Speed Low (all the units)	1: Set Fan Speed Low	30	W
Fan Speed Mid (all the units)	1: Set Fan Speed Mid	31	W
Fan Speed High (all the units)	1: Set Fan Speed High	32	W
Vane Position Swing On (all the units)	1: Set Swing On	33	W
Vane Position Swing Off (all the units)	1: Set Swing Off	34	W
Temperature Setpoint (all the units) (x10°C)	Cool: 18 .. 30 °C / 64 .. 86°F Heat: 16 .. 30 °C / 61 .. 86°F	35	W
Vent. On (all the units)	1: Set Vent. On	36	W
Vent. Off (all the units)	1: Set Vent. Off	37	W

Register name	Possible values	Modbus address	R/W
Hot Water On (all the units)	1: Set Hot Water On	38	W
Hot Water Off (all the units)	1: Set Hot Water Off	39	W
OU Addressing Error	0: OU Addressing OK 1: Manual Addr in OU required	16	R

Table 3. Outdoor units signals

Register name	Possible values	R/W
Oxx_Communication Error	0: No error 1: Error	R
OU_xx_IU Master of mode	0xFF: OU, XX: IU	R

Table 4. Indoor units signals

Register name	Possible values	Modbus address formula	R/W
On/Off	0: Off 1: On	(IU address[1..64] × 100) + 0	R, W
Operation Mode IU/AHU	0: Auto 1: Heat 2: Dry 3: Fan 4: Cool	(IU address[1..64] × 100) + 1	R, W
Operation Mode HE	1: Heat 4: Cool	(IU address[1..64] × 100) + 1	R, W
Operation Mode EHS/ERV+	0: Auto 1: Heat 4: Cool	(IU address[1..64] × 100) + 1	R, W
Operation Mode CHILLER	1: Heat 4: Cool 5: Cool Storage 6: Heat Storage	(IU address[1..64] × 100) + 1	R, W
Fan Speed	0: Auto 1: Low 3: Middle 3-High	(IU address[1..64] × 100) + 2	R, W
Vane Position Swing	0: Swing Off 1: Swing On	(IU address[1..64] × 100) + 3	R, W
Temperature Setpoint (x10)	Cool: 18..30°C / 64 .. 86°F Heat: 16..30°C / 61 .. 86°F	(IU address[1..64] × 100) + 4	R, W
Ambient Temperature (x10)	Celsius: -41 .. 100°C Fahrenheit: -42 .. 212°F	(IU address[1..64] × 100) + 5	R
Discharge Setpoint Temp. Cool IU (x10°C)	Celsius: 8 .. 18°C Fahrenheit: 46 .. 64°F	(IU address[1..64] × 100) + 6	R, W
Discharge Setpoint Temp.. Cool AHU (x10°C)	Celsius: 8 .. 25°C Fahrenheit: 46 .. 77°F	(IU address[1..64] × 100) + 7	R, W
Discharge Setpoint Temp. Heat IU (x10°C)	Celsius: 30 .. 43°C Fahrenheit: 86 .. 109°F	(IU address[1..64] × 100) + 8	R, W
Discharge Setpoint Temp. Heat AHU (x10°C)	Celsius: 18 .. 43°C Fahrenheit: 64 .. 109°F	(IU address[1..64] × 100) + 9	R, W
Discharge Current Temp. (x10°C)	°C / °F	(IU address[1..64] × 100) + 10	R

Register name	Possible values	Modbus address formula	R/W
Unit Error code	0: No Error X: Error (100 .. 999)	(IU address[1..64] × 100) + 11	R
Error of Slave Chiller Unit	0: No error X: Error (100 .. 999)	(IU address[1..64] × 100) + 12	R
Slave Chiller Unit in Error	b0 .. b15: 1-Error in Unit 0 .. 1-Error in Unit 15	(IU address[1..64] × 100) + 13	R
Filter Alarm	0: Normal 1: Alarm	(IU address[1..64] × 100) + 14	R
Filter Alarm Reset	1: Reset	(IU address[1..64] × 100) + 15	W
Communication Status	b0: Exist b1: Ready b2: Data updated b3: Type OK	(IU address[1..64] × 100) + 16	R
Remote control disablement	0: No disabled 1: Disabled	(IU address[1..64] × 100) + 17	R, W
Buzzer Sound On	1: Set buzzer sound On	(IU address[1..64] × 100) + 18	W
Buzzer Sound Off	1: Set buzzer sound Off	(IU address[1..64] × 100) + 19	W
Unit type	0: Not Defined 1: IU 2: HE 3: HT 4: AHU 5: ERV 6: ERV+ 7: EHS 8: MASTER CHILLER	(IU address[1..64] × 100) + 20	R
Hot Water On/Off	0: Off 1: On	(IU address[1..64] × 100) + 21	R, W
Hot Water Mode HE/HT	0: Eco 1: Standby 2: Power	(IU address[1..64] × 100) + 22	R, W
Hot Water Mode EHS	0: Eco 1: Standby 2: Power 3: Force	(IU address[1..64] × 100) + 23	R, W
Hot Water Setpoint Temp. HE (x10°C)	Celsius: 30 .. 75°C Fahrenheit: 86 .. 167°F	(IU address[1..64] × 100) + 24	R, W
Hot Water Setpoint Temp. HT (x10°C)	Celsius: 25 .. 75°C Fahrenheit: 95 .. 167°F	(IU address[1..64] × 100) + 25	R, W
Hot Water Setpoint Temp. EHS (x10°C)	Celsius: 30 .. 70°C Fahrenheit: 86 .. 158°F	(IU address[1..64] × 100) + 26	R, W
Hot Water Current Temp. (x10°C)	°C / °F	(IU address[1..64] × 100) + 27	R
Water In Temp (x10°C)	°C / °F	(IU address[1..64] × 100) + 28	R
Water Out Temp (x10°C)	°C / °F	(IU address[1..64] × 100) + 29	R
Water Out Setpoint Temp. HE (x10°C)	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 50°C / 59 .. 122°F	(IU address[1..64] × 100) + 30	R, W
Water Out Setpoint Temp. HT (x10°C)	Celsius: 25 .. 80 °C Fahrenheit: 77 .. 176°F	(IU address[1..64] × 100) + 31	R, W
Water Out Setpoint Temp. EHS (x10°C)	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 55°C / 59 .. 131°F	(IU address[1..64] × 100) + 32	R, W

Register name	Possible values	Modbus address formula	R/W
Water Out Setpoint Temp. CHILLER (x10°C)	CHILLER-Cool/Cool Storage (-10 .. 25°C) CHILLER-Heat/Hot Water (25 .. 55°C)	(IU address[1..64] × 100) + 33	R, W
Water Out Average Temp. (x10°C)	°C / °F	(IU address[1..64] × 100) + 34	R
Vent. On/Off	0: Off 1: On	(IU address[1..64] × 100) + 35	R, W
Vent. Operating Mode	0: Bypass 1: HeatEx 2: Sleep 3: Auto	(IU address[1..64] × 100) + 36	R, W
Vent. Fan Speed	0: Low 1: High 2: Turbo	(IU address[1..64] × 100) + 37	R, W
WindFree	0: Disable 1: Enable	(IU address[1..64] × 100) + 38	R, W
Air Clean	0: Disable 1: Enable	(IU address[1..64] × 100) + 39	R, W
360 CST Air Flow Direction	0: Spot 1: Mid 2: Wide 3: Swing	(IU address[1..64] × 100) + 40	R, W
Dualsetpoint Heat temperature	Celsius: 16 .. 30°C Fahrenheit: 61 .. 86°F	(IU address[1..64] × 100) + 41	R, W
Dualsetpoint Cool temperature	Celsius: 18 .. 30°C Fahrenheit: 64 .. 86°F	(IU address[1..64] × 100) + 42	R, W
Quiet	0: Off 1: On	(IU address[1..64] × 100) + 43	R, W
Discharge temperature control On/Off	0: Off 1: On	(IU address[1..64] × 100) + 44	R, W
Consumption Yesterday	Wh/KWh	(IU address[1..64] × 100) + 45	R, W
Consumption Today	Wh/KWh	(IU address[1..64] × 100) + 47	R, W
Consumption Total	Wh/KWh	(IU address[1..64] × 100) + 49	R, W
Consumption Yesterday Heat	Wh/KWh	(IU address[1..64] × 100) + 51	R, W
Consumption Today Heat	Wh/KWh	(IU address[1..64] × 100) + 53	R, W
Consumption Total Heat	Wh/KWh	(IU address[1..64] × 100) + 55	R, W
Consumption Yesterday Cool	Wh/KWh	(IU address[1..64] × 100) + 57	R, W
Consumption Today Cool	Wh/KWh	(IU address[1..64] × 100) + 59	R, W
Consumption Total Cool	Wh/KWh	(IU address[1..64] × 100) + 61	R, W

6.2. Integration into KNX Systems

6.2.1. KNX Signals

The following tables list all available KNX signals for this gateway.



NOTE

Physical Address: The gateway supports (P/S) and (P/I/S) format levels.



NOTICE

Communication object flags:

- **Ri (Read on initialization):** The gateway requests this signal's updated data after an initialization instead of waiting for a change in the signal.
- **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.

Table 5. Alarm signals

Object name	Possible values	DPT	Flags
Status_OUXX_Communication Error OU	0: No error 1: Error	1.005-DPT_Alarm (1bit)	R, T
Status_OU Addressing Error	0: OU Addressing OK 1: Manual Addr in OU required	1.005-DPT_Alarm (1bit)	R, T

Table 6. Global signals

Object name	Possible values	DPT	Flags
On/Off (all units)	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Operating Mode (all units)	0: Auto 1: Heat 3: Cool 9: Fan 14: Dry	20.105-DPT_HVACContrMode (1byte)	W
Operating Mode (all units)	0: Auto 1: Heat 2: Dry 3: Fan 4: Cool 5: Cool Storage 6: Heat Storage	5.x (1byte)	W

Object name	Possible values	DPT	Flags
Operating Mode (all units)	0: Cool 1: Heat 2: Dry 3: Fan 4: Auto 5: Cool Storage 6: Heat Storage	5.x (1byte)	W
Fan Speed (all units)	1: Low 2: Mid 3: High	5.x (1byte)	W
Fan Speed AUTO (all units)	1: Set auto fan 0: Stop auto fan	1.001-DPT_Switch (1bit)	W
Vane position swing (all units)	0: Swing Off 1: Swing On	1.001-DPT_Switch (1bit)	W
Temperature Setpoint (all units)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F	9.001-DPT_Value_Temp (2byte)	W
Vent. On/Off (all units)	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Hot Water On/Off (all units)	0: Off 1: On	1.001-DPT_Switch (1bit)	W

Table 7. Individual units signals

Object name	Possible values	DPT	Flags
Control_On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Operation mode	0: Auto 1: Heat 3: Cool 9: Fan 14: Dry	20.105-DPT_HVACContrMode (1byte)	W
Status_OXXUXX_Operation mode	0: Auto 1: Heat 3: Cool 9: Fan 14: Dry	20.105-DPT_HVACContrMode (1byte)	R, T
Control_OXXUXX_Operation mode	0: Auto 1: Heat 2: Dry 3: Fan 4: Cool 5: Cool Storage 6: Heat Storage	5.x (1byte)	W

Object name	Possible values	DPT	Flags
Status_OXXUXX_Operation mode	0: Auto 1: Heat 2: Dry 3: Fan 4: Cool 5: Cool Storage 6: Heat Storage	5.x (1byte)	R, T
Control_OXXUXX_Operation mode	0: Cool 1: Heat 2: Dry 3: Fan 4: Auto 5: Cool Storage 6: Heat Storage	5.x (1byte)	W
Status_OXXUXX_Operation mode	0: Cool 1: Heat 2: Dry 3: Fan 4: Auto 5: Cool Storage 6: Heat Storage	5.x (1byte)	R, T
Control_OXXUXX_Mode Cool/Heat	0: Cool 1: Heat	1.100-DPT_Heat/Cool (1bit)	W
Status_OXXUXX_Mode Cool/Heat	0: Cool 1: Heat	1.100-DPT_Heat/Cool (1bit)	R, T
Control_OXXUXX_Heat mode&ON	0 %: Off 1 .. 100 : On+Heat	5.001-DPT_Scaling (1byte)	W
Control_OXXUXX_Cool mode&ON	0%: Off 1 .. 100 %: On+Cool	5.001-DPT_Scaling (1byte)	W
Control_OXXUXX_Auto mode	1: Set auto mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Auto mode	1: Auto mode active 0: Auto mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Heat mode	1: Set heat mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Heat mode	1: Heat mode active 0: Heat mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Cool mode	1: Set cool mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Cool mode	1: Cool mode active 0: Cool mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Fan mode	1: Set fan mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Fan mode	1: Fan mode active 0: Fan mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Dry mode	1: Set dry mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Dry mode	1: Dry mode active 0: Dry mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Cool storage mode	1: Set cool storage mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Cool storage mode	1: Cool storage mode active 0: Cool storage mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Heat storage mode	1: Set heat storage mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Heat storage mode	1: Heat storage mode active 0: Heat storage mode not active	1.001-DPT_Switch (1bit)	R, T

Object name	Possible values	DPT	Flags
Control_OXXUXX_Fan speed enumerated	1: Low 2: Mid 3: High	5.010 (DPT_Value_1_Ucount)	W
Status_OXXUXX_Fan speed enumerated	1: Low 2: Mid 3: High	5.010 (DPT_Value_1_Ucount)	R, T
Control_OXXUXX_Fan speed scaling	Thresholds: 0 .. 49 % 50 .. 82 % 83 .. 100 %	5.001-DPT_Scaling (1byte)	W
Status_OXXUXX_Fan speed scaling	Thresholds: 33 % 67 % 100 %	5.001-DPT_Scaling (1byte)	R, T
Control_OXXUXX_Fan speed low	1: Set fan speed low	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Fan speed low	1: Speed low active 0: Speed low not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Fan speed mid	1: Set fan speed mid	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Fan speed mid	1: Speed mid active 0: Speed mid not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Fan speed high	1: Set fan speed high	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Fan speed high	1: Speed high active 0: Speed high not active	1.001-DPT_Switch (1bit)	R, T
Control_Fan speed Man/Auto	0: Manual, 1: Auto	1.001-DPT_Switch (1bit)	W
Status_Fan speed Man/Auto	0: Manual 1: Auto	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vane position swing	0: Swing Off 1: Swing On	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vane position swing	0: Swing Off 1: Swing On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Temperature Setpoint (°C)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F (For Samsung EHS, an external sensor is needed)	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_Temperature Setpoint (°C)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F (For Samsung EHS, an external sensor is needed)	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_AC Ambient Temperature (°C)	Celsius: -41 .. 100°C Fahrenheit: -42 .. 212°F (For Samsung EHS, an external sensor is needed)	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_KNX ambient Temperature (°C)	Celsius: -41 .. 100°C Fahrenheit: -42 .. 212°F (For Samsung EHS, an external sensor is needed)	9.001-DPT_Value_Temp (2byte)	W
Control_OXXUXX_Disch.Setpoint Cool IU	Celsius: 8 .. 18°C Fahrenheit: 46 .. 64°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_Disch.Setpoint Cool IU	Celsius: 8 .. 18°C Fahrenheit: 46 .. 64°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_Disch.Setpoint Cool AHU	Celsius: 8 .. 25°C Fahrenheit: 46 .. 77°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_Disch.Setpoint Cool AHU	Celsius: 8 .. 25°C Fahrenheit: 46 .. 77°F	9.001-DPT_Value_Temp (2byte)	R, T

Object name	Possible values	DPT	Flags
Control_OXXUXX_Disch.Setpoint Heat IU	Celsius: 30 .. 43°C Fahrenheit: 86 .. 109°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_Disch.Setpoint Heat IU	Celsius: 30 .. 43°C Fahrenheit: 86 .. 109°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_Disch.Setpoint Heat AHU	Celsius: 18 .. 43°C Fahrenheit: 64 .. 109°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_Disch.Setpoint Heat AHU	Celsius: 18 .. 43°C Fahrenheit: 64 .. 109°F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_Disch. Current Temp.	°C / °F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_Unit error code	0: No error 100 .. 999: Error	8.x (2 byte)	R, T
Status_OXXUXX_Error slave chiller unit	0: No error 100 .. 999: Error	8.x (2 byte)	R, T
Status_OXXUXX_Slave chiller in error	b0 .. b15: 1-Error in unit b0 .. b15	8.x (2 byte)	R, T
Status_OXXUXX_FilterSign	0: Normal 1: Alarm	1.005-DPT_Alarm (1bit)	R, T
Control_OXXUXX_FilterReset	0: No reset 1: Reset	1.015-DPT_Reset (1bit)	W
Status_OXXUXX_Communication status	b0: Exist b1: Ready b2: Data updated b3: Type OK	5.x (1byte)	R, T
Control_OXXUXX_Remote controll disablement	0: No disabled 1: Disabled	1.002 DPT_Bool (1bit)	W
Status_OXXUXX_Remote controll disablement	0: No disabled 1: Disabled	1.002 DPT_Bool (1bit)	R, T
Control_OXXUXX_Buzzer Sound	0: Buzzer On 1: Buzzer Off	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Unit type	1: IU 2: HE 3: HT, 4: AHU 5: ERV 6: ERV+ 7: EHS 8: CHILLER 13: Not Defined	5.x (1byte)	R, T
Control_OXXUXX_HotWater On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_HotWater On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_HotWater Mode HE/HT	0: Eco 1: Standby 2: Power	5.x (1byte)	W
Status_OXXUXX_HotWater Mode HE/HT	0: Eco 1: Standby 2: Power	5.x (1byte)	R, T
Control_OXXUXX_HotWater Mode EHS	0: Eco 1: Standby 2: Power 3: Force	5.x (1byte)	W

Object name	Possible values	DPT	Flags
Status_OXXUXX_HotWater Mode EHS	0: Eco 1: Standby 2: Power 3: Force	5.x (1byte)	R, T
Control_OXXUXX_HotWater Eco Mode	1: Set eco mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_HotWater Eco Mode	1: Eco mode active 0: Eco mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_HotWater Standby Mode	1: Set standby mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_HotWater Standby Mode	1: Standby mode active 0: Standby mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_HotWater Power Mode	1: Set power mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_HotWater Power Mode	1: Power mode active 0: Power mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_HotWater Force Mode	1: Set force mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_HotWater Force Mode	1: Force mode active 0: Force mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_HotWater Setpoint HE	Celsius: 30 .. 75°C Fahrenheit: 86 .. 167°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_HotWater Setpoint HE	Celsius: 30 .. 75°C Fahrenheit: 86 .. 167°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_HotWater Setpoint HT	Celsius: 35 .. 75°C Fahrenheit: 95 .. 167°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_HotWater Setpoint HT	Celsius: 35 .. 75°C Fahrenheit: 95 .. 167°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_HotWater Setpoint EHS	Celsius: 30 .. 70°C Fahrenheit: 86 .. 158°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_HotWater Setpoint EHS	Celsius: 30 .. 70°C Fahrenheit: 86 .. 158°F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_HotWater Current Temperature	°C / °F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_WaterIn Temperature	°C / °F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_WaterOut Temperature	°C / °F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_WaterOut Setpoint HE	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 50°C / 59 .. 122°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_WaterOut Setpoint HE	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 50°C / 59 .. 122°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_WaterOut Setpoint HT	Celsius: 25 .. 80 °C Fahrenheit: 77 .. 176°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_WaterOut Setpoint HT	Celsius: 25 .. 80 °C Fahrenheit: 77 .. 176°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_WaterOut Setpoint EHS	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 55°C / 59 .. 131°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_WaterOut Setpoint EHS	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 55°C / 59 .. 131°F	9.001-DPT_Value_Temp (2byte)	R, T
Control_OXXUXX_WaterOut Setpoint CHILLER	CHILLER-Cool/Cool Storage: -10 .. 25°C / 55 .. 77°F CHILLER-Heat/Hot Water: 25 .. 55°C / 77 .. 131°F	9.001-DPT_Value_Temp (2byte)	W
Status_OXXUXX_WaterOut Setpoint CHILLER	CHILLER-Cool/Cool Storage: -10 .. 25°C / 55 .. 77°F CHILLER-Heat/Hot Water: 25 .. 55°C / 77 .. 131°F	9.001-DPT_Value_Temp (2byte)	R, T
Status_OXXUXX_Water Out Average Temp.	°C / °F	9.001-DPT_Value_Temp (2byte)	R, T

Object name	Possible values	DPT	Flags
Control_OXXUXX_Vent. On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. On/Off	0: Off 1: On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. Operation mode	1: Bypass, 2: HeatEx 3: Sleep 4: Auto	5.x (1byte)	W
Status_OXXUXX_Vent. Operation mode	1: Bypass, 2: HeatEx 3: Sleep 4: Auto	5.x (1byte)	R, T
Control_OXXUXX_Vent. Bypass mode	1: Set Vent. Bypass mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. Bypass mode	1: Vent. Bypass mode active 0: Vent. Bypass mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. HeatEx mode	1: Set Vent. HeatEx mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. HeatEx mode	1: Vent. HeatEx mode active 0: Vent. HeatEx mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. Sleep mode	1: Set Vent. Sleep mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. Sleep mode	1: Vent. Sleep mode active 0: Vent. Sleep mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. Auto mode	1: Set Vent. Auto mode	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. Auto mode	1: Vent. Auto mode active 0: Vent. Auto mode not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. Fan speed enumerated	1: Low, 2: High 3: Turbo	5.x (1byte)	W
Status_OXXUXX_Vent. Fan speed enumerated	0: Low 2: High 3: Turbo	5.x (1byte)	R, T
Control_OXXUXX_Vent. Fan speed scaling	Thresholds: 0 .. 49 % 50 .. 82 % 83 .. 100 %	5.001-DPT_Scaling (1byte)	W
Status_OXXUXX_Vent. Fan speed scaling	Thresholds: 33 % 67 % 100 %	5.001-DPT_Scaling (1byte)	R, T
Control_OXXUXX_Vent. fan speed low	1: Set Vent. Fan speed low	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. fan speed low	1: Vent. Fan speed low active 0: Vent. Fan speed low not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. fan speed high	1: Set Vent. Fan speed high	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. fan speed high	1: Vent. Fan speed high active 0: Vent. Fan speed high not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Vent. fan speed turbo	1: Set Vent. Fan speed turbo	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Vent. fan speed turbo	1: Vent. Fan speed turbo active 0: Vent. Fan speed turbo not active	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_WindFree	0: Off 1: On	1.001-DPT_Switch (1bit)	W

Object name	Possible values	DPT	Flags
Status_OXXUXX_WindFree	0: Off 1: On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_Air clean	0: Off 1: On	1.001-DPT_Switch (1bit)	W
Status_OXXUXX_Air clean	0: Off, 1: On	1.001-DPT_Switch (1bit)	R, T
Control_OXXUXX_360 CST air flow direction	0: Spot 1: Mid 2: Wide 3: Swing	5.x (1byte)	W
Status_OXXUXX_360 CST air flow direction	0: Spot 1: Mid 2: Wide 3: Swing	5.x (1byte)	R, T
Status_Consumption Yesterday	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Today	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Total	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Yesterday Heat	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Today Heat	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Total Heat	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Yesterday Cool	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Today Cool	Wh/KWh	13.010: active energy (Wh) (4byte)	R, T
Status_Consumption Total Cool	Wh/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.

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 8. Error signals

Object name	Possible values	Object type	Object instance
OUIX_Communication Error OU	0: No error 1: Error	3-Binary Input	OU[0..15] + 1
OU Addressing Error	0: OU Addressing OK 1: Manual Addr in OU required	3-Binary Input	0 + 16

Table 9. Global signals

Object name	Possible values	Object type	Object instance
On/Off (all units)	0: Off 1: On	4-Binary Output	0 + 0
Mode (all units)	1: Heat 2: Cool 3: Fan 4: Dry 5: Auto 6: Cool Storage 7: Heat Storage	14-Multistate Output	0 + 0
FanSpeed (all units)	1: Low 2: Mid 3: High 4: Auto	14-Multistate Output	0 + 1
Vane position swing (all units)	0: Swing Off 1: Swing On	4-Binary Output	0 + 1
Temperature Setpoint (all units)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F	1-Analog Output	0 + 0
Vent. On/Off (all units)	0: Off 1: On	4-Binary Output	0 + 2

Object name	Possible values	Object type	Object instance
Hot Water On/Off (all units)	0: Off 1: On	4-Binary Output	0 + 3

Table 10. Individual units signals

Object name	Possible values	Object type	Object instance
OXXUXX_On/Off_S	0: Off 1: On	3-Binary Input	(IU[1..64] × 100) + 0
OXXUXX_On/Off_C	0: Off 1: On	4-Binary Output	(IU[1..64] × 100) + 0
OXXUXX_Mode IU/AHU_S	1: Heat 2: Cool 3: Fan 4: Dry 5: Auto	13-Multistate Input	(IU[1..64] × 100) + 0
OXXUXX_Mode HE_S	1: Heat 2: Cool	13-Multistate Input	(IU[1..64] × 100) + 0
OXXUXX_Mode EHS/ERV+_S	1: Heat 2: Cool 5: Auto	13-Multistate Input	(IU[1..64] × 100) + 0
OXXUXX_Mode CHILLER_S	1: Heat 2: Cool 6: Cool Storage 7: Heat Storage	13-Multistate Input	(IU[1..64] × 100) + 0
OXXUXX_Mode IU/AHU_C	1: Heat 2: Cool 3: Fan 4: Dry 5: Auto	14-Multistate Output	(IU[1..64] × 100) + 0
OXXUXX_Mode HE_C	1: Heat 2: Cool	14-Multistate Output	(IU[1..64] × 100) + 0
OXXUXX_Mode EHS/ERV+_C	1: Heat 2: Cool 5: Auto	14-Multistate Output	(IU[1..64] × 100) + 0
OXXUXX_Mode CHILLER_C	1: Heat 2: Cool 6: Cool Storage 7: Heat Storage	14-Multistate Output	(IU[1..64] × 100) + 0
OXXUXX_Setpoint_S (For Samsung EHS, an external sensor is needed)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F	0-Analog Input	(IU[1..64] × 100) + 0
OXXUXX_Setpoint_C (For Samsung EHS, an external sensor is needed)	Cool: 18 .. 30°C / 64 .. 86°F Heat: 16 .. 30°C / 61 .. 86°F	1-Analog Output	(IU[1..64] × 100) + 0
OXXUXX_FanSpeed_S	1: Low 2: Mid 3: High 4: Auto	13-Multistate Input	(IU[1..64] × 100) + 1
OXXUXX_FanSpeed_C	1: Low 2: Mid 3: High 4: Auto	14-Multistate Output	(IU[1..64] × 100) + 1

Object name	Possible values	Object type	Object instance
OXXUXX_Vane position swing_S	0: Swing Off 1: Swing On	3-Binary Input	(IU[1..64] × 100) + 1
OXXUXX_Vane position swing_C	0: Swing Off 1: Swing On	4-Binary Output	(IU[1..64] × 100) + 1
OXXUXX_Room_Temperature (For Samsung EHS, an external sensor is needed)	Celsius: -41 .. 100°C Fahrenheit: -42 .. 212°F	0-Analog Input	(IU[1..64] × 100) + 1
OXXUXX_Disch.Setpoint Cool IU_S	Celsius: 8 .. 18°C Fahrenheit: 46 .. 64°F	0-Analog Input	(IU[1..64] × 100) + 2
OXXUXX_Disch.Setpoint Cool IU_C	Celsius: 8 .. 18°C Fahrenheit: 46 .. 64°F	1-Analog Output	(IU[1..64] × 100) + 1
OXXUXX_Disch.Setpoint Cool AHU_S	Celsius: 8 .. 25°C Fahrenheit: 46 .. 79°F	0-Analog Input	(IU[1..64] × 100) + 2
OXXUXX_Disch.Setpoint Cool AHU_C	Celsius: 8 .. 25°C Fahrenheit: 46 .. 79°F	1-Analog Output	(IU[1..64] × 100) + 1
OXXUXX_Disch.Setpoint Heat IU_S	Celsius: 30 .. 43°C Fahrenheit: 86 .. 109°F	0-Analog Input	(IU[1..64] × 100) + 3
OXXUXX_Disch.Setpoint Heat IU_C	Celsius: 30 .. 43°C Fahrenheit: 86 .. 109°F	1-Analog Output	(IU[1..64] × 100) + 2
OXXUXX_Disch.Setpoint Heat AHU_S	Celsius: 18 .. 43°C Fahrenheit: 64 .. 109°F	0-Analog Input	(IU[1..64] × 100) + 3
OXXUXX_Disch.Setpoint Heat AHU_C	Celsius: 18 .. 43°C Fahrenheit: 64 .. 109°F	1-Analog Output	(IU[1..64] × 100) + 2
OXXUXX_Disch. Current Temp.	°C / °F	0-Analog Input	(IU[1..64] × 100) + 4
OXXUXX_Unit Error code	0: No Error 100 .. 999: Error	0-Analog Input	(IU[1..64] × 100) + 5
OXXUXX_Error Slave Chiller Unit	0: No error 100 .. 999: Error	0-Analog Input	(IU[1..64] × 100) + 6
OXXUXX_Slave Chiller in Error	b0 .. b15: 1-Error in unit b0 .. b15	0-Analog Input	(IU[1..64] × 100) + 7
OXXUXX_FilterSign	0: Norma 1: Alarm	3-Binary Input	(IU[1..64] × 100) + 2
OXXUXX_FilterReset	0: No reset 1: Reset	4-Binary Output	(IU[1..64] × 100) + 2
OXXUXX_Communication Status	b0: Exist b1: Ready b2: Data updated b3: Type OK	13-Multistate Input	(IU[1..64] × 100) + 2
OXXUXX_RC Restriction_S	0: No restriction 1: Restriction	3-Binary Input	(IU[1..64] × 100) + 3
OXXUXX_RC Restriction_C	0: No restriction 1: Restriction	4-Binary Output	(IU[1..64] × 100) + 3
OXXUXX_Buzzer Sound	0: Buzzer On 1: Buzzer Off	4-Binary Output	(IU[1..64] × 100) + 4

Object name	Possible values	Object type	Object instance
OXXUXX_Unit type	1: Not Defined 2: IU 3: HE 4: HT 5: AHU 6: ERV 7: ERV+ 8: EHS 9: CHILLER	13-Multistate Input	(IU[1..64] × 100) + 3
OXXUXX_HotWater On/Off_S	0: Off 1: On	3-Binary Input	(IU[1..64] × 100) + 4
OXXUXX_HotWater On/Off_C	0: Off 1: On	4-Binary Output	(IU[1..64] × 100) + 5
OXXUXX_HotWater Mode HE/HT_S	1: Eco 2: Standb 3: Power	13-Multistate Input	(IU[1..64] × 100) + 4
OXXUXX_HotWater Mode EHS_S	1: Eco 2: Standb 3: Power 4: Force	13-Multistate Input	(IU[1..64] × 100) + 4
OXXUXX_HotWater Mode HE/HT_C	1: Eco 2: Standb 3: Power	14-Multistate Output	(IU[1..64] × 100) + 2
OXXUXX_HotWater Mode EHS_C	1: Eco 2: Standb 3: Power 4: Force	14-Multistate Output	(IU[1..64] × 100) + 2
OXXUXX_HotWater Setpoint HE_S	Celsius: 30 .. 75°C Fahrenheit: 86 .. 167°F	0-Analog Input	(IU[1..64] × 100) + 8
OXXUXX_HotWater Setpoint HT_S	Celsius: 35 .. 75°C Fahrenheit: 95 .. 167°F	0-Analog Input	(IU[1..64] × 100) + 8
OXXUXX_HotWater Setpoint EHS_S	Celsius: 30 .. 70°C Fahrenheit: 86 .. 158°F	0-Analog Input	(IU[1..64] × 100) + 8
OXXUXX_HotWater Setpoint HE_C	Celsius: 30 .. 75°C Fahrenheit: 86 .. 167°F	1-Analog Output	(IU[1..64] × 100) + 3
OXXUXX_HotWater Setpoint HT_C	Celsius: 35 .. 75°C Fahrenheit: 95 .. 167°F	1-Analog Output	(IU[1..64] × 100) + 3
OXXUXX_HotWater Setpoint EHS_C	Celsius: 30 .. 70°C Fahrenheit: 86 .. 158°F	1-Analog Output	(IU[1..64] × 100) + 3
OXXUXX_HotWater Current Temp.	°C / °F	0-Analog Input	(IU[1..64] × 100) + 9
OXXUXX_WaterIn Temperature	°C / °F	0-Analog Input	(IU[1..64] × 100) + 10
OXXUXX_WaterOut Temperature	°C / °F	0-Analog Input	(IU[1..64] × 100) + 11
OXXUXX_WaterOut Setpoint HE_S	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 50°C / 59 .. 122°F	0-Analog Input	(IU[1..64] × 100) + 12
OXXUXX_WaterOut Setpoint HT_S	Celsius: 25 .. 80°C Fahrenheit: 77 .. 176°F	0-Analog Input	(IU[1..64] × 100) + 12
OXXUXX_WaterOut Setpoint EHS_S	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 55°C / 59 .. 131°F	0-Analog Input	(IU[1..64] × 100) + 12

Object name	Possible values	Object type	Object instance
OXXUXX_WaterOut Setpoint CHILL_S	CHILLER-Cool/Cool Storage: 10 .. 25°C / 14 .. 77°F CHILLER-Heat/Hot Water: Celsius: 25 .. 55°C / Fahrenheit: 77 .. 131°F	0-Analog Input	(IU[1..64] × 100) + 12
OXXUXX_WaterOut Setpoint HE_C	Cool: 5 .. 25°C / 41 .. 77°F Heat(15..50 °C)	1-Analog Output	(IU[1..64] × 100) + 4
OXXUXX_WaterOut Setpoint HT_C	Celsius: 25 .. 80°C Fahrenheit: 77 .. 176°F	1-Analog Output	(IU[1..64] × 100) + 4
OXXUXX_WaterOut Setpoint EHS_C	Cool: 5 .. 25°C / 41 .. 77°F Heat: 15 .. 55°C / 59 .. 131°F	1-Analog Output	(IU[1..64] × 100) + 4
OXXUXX_WaterOut Setpoint CHILL_C	CHILLER-Cool/Cool Storage: 10 .. 25°C / 14 .. 77°F CHILLER-Heat/Hot Water: Celsius: 25 .. 55°C / Fahrenheit: 77 .. 131°F	1-Analog Output	(IU[1..64] × 100) + 4
OXXUXX_WaterOut Average Temp.	°C / °F	0-Analog Input	(IU[1..64] × 100) + 13
OXXUXX_Vent. On/Off_S	0: Off 1: On	3-Binary Input	(IU[1..64] × 100) + 5
OXXUXX_Vent. On/Off_C	0: Off 1: On	4-Binary Output	(IU[1..64] × 100) + 6
OXXUXX_Vent. Mode_S	1: Bypass 2: HeatEx 3: Sleep 4: Auto	13-Multistate Input	(IU[1..64] × 100) + 5
OXXUXX_Vent. Mode_C	1: Bypass 2: HeatEx 3: Sleep 4: Auto	14-Multistate Output	(IU[1..64] × 100) + 3
OXXUXX_Vent. FanSpeed_S	1: Low 2: High 3: Turbo	13-Multistate Input	(IU[1..64] × 100) + 6
OXXUXX_Vent. FanSpeed_C	1: Low 2: High 3: Turbo	14-Multistate Output	(IU[1..64] × 100) + 4
OXXUXX_WindFree_S	0: Disable 1: Enable	3-Binary Input	(IU[1..64] × 100) + 6
OXXUXX_WindFree_C	0: Disable 1: Enable	4-Binary Output	(IU[1..64] × 100) + 7
OXXUXX_Air Clean_S	0: Disable 1: Enable	3-Binary Input	(IU[1..64] × 100) + 7
OXXUXX_Air Clean_C	0: Disable 1: Enable	4-Binary Output	(IU[1..64] × 100) +
OXXUXX_360 CST Air Flow_S	1: Spot 2: Mid 3: Wide 4: Swing	13-Multistate Input	(IU[1..64] × 100) + 7
OXXUXX_360 CST Air Flow_C	1: Spot 2: Mid 3: Wide 4: Swing	14-Multistate Output	(IU[1..64] × 100) + 5
OXXUXX_Consumption Yesterday_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 9
OXXUXX_Consumption Today_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 10
OXXUXX_Consumption Total_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 11

Object name	Possible values	Object type	Object instance
OXXUXX_Consumption Yesterday Heat_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 12
OXXUXX_Consumption Today Heat_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 13
OXXUXX_Consumption Total Heat_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 14
OXXUXX_Consumption Yesterday Cool_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 15
OXXUXX_Consumption Today Cool_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 16
OXXUXX_Consumption Total Cool_S	Wh/kWh	0-Analog Input	(IU[1..64] × 100) + 17

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 11. Indoor units signals

Name	Possible values	acNum ¹	Commands supported
On/Off	ON OFF	See the note below	SET/CHN/GET
Operation Mode IU/AHU	HEAT COOL FAN DRY AUTO		SET/CHN/GET
Operation Mode HE	HEAT COOL		SET/CHN/GET
Operation Mode EHS/ERV+	HEAT COOL AUTO		SET/CHN/GET
Fan Speed	1 2 3 4 5 AUTO		SET/CHN/GET
Vane Position	1 2 3 4		SET/CHN/GET
Temperature Setpoint (x10)	°C / °F		SET/CHN/GET
AC Ambient Temperature (x10)			CHN/GET
Unit Error code	0: No error X: Error		CHN/GET
Error IU	OK ERR		CHN/GET



NOTE

¹ This index must be set according to the Unit ID Index.

For outdoor units, the acNum value must be the same as 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 Configuration Guide for IN770AIR***0000](#).

8. Error Codes



NOTE

These error codes are the same for all applications.

ERROR CODE	DESCRIPTION
101	Indoor unit communication error. Indoor unit can not receive any data from outdoor unit
102	Communication error between indoor unit and outdoor unit. Displayed in indoor unit
108	Error due to repeated address setting (When 2 or more devices has same address within the network)
110	Communication error between Hydro unit HT (Main PBA) and Control kit PBA (Detection from the Control kit)
121	Error on indoor temperature sensor of indoor unit (Short or Open)
122	Error on EVA IN sensor of indoor unit (Short or Open)
123	Error on EVA OUT sensor of indoor unit (Short or Open)
128	EVA IN temperature sensor of indoor unit is detached from EVA IN pipe
129	EVA OUT temperature sensor of indoor unit is detached from EVA OUT pipe
130	Heat exchanger in/out sensors of indoor unit are detached
135	RPM feedback error of indoor unit's cleaning fan
151	Error due to opened EEV of indoor unit (2nd detection)
152	Error due to closed EEV of indoor unit (2nd detection)
153	Error on floating switch of indoor unit (2nd detection)
154	RPM feedback error of indoor unit
161	Mixed operation mode error of indoor unit; When outdoor unit is getting ready to operate in cooling (or heating) and some of the indoor unit is trying to operate in heating (or cooling) mode
162	EEPROM error of MICOM (Physical problem of parts/circuit)
163	Indoor unit's remote controller option input is Incorrect or missing. Outdoor unit EEPROM data error
180	Simultaneous opening of cooling/heating MCU SOL V/V (1st detection)
181	Simultaneous opening of cooling/heating MCU SOL V/V (2nd detection)
185	Cross wiring error between communication and power cable of indoor unit
186	Connection error or problem on SPi
190	No temperature changes in EVA IN during pipe inspection or changes in temperature indoor unit with wrong address
191	No temperature changes in EVA OUT during pipe inspection or changes in temperature is seen in indoor unit with wrong address
198	Error due to disconnected thermal fuse of indoor unit
201	Communication error between indoor and outdoor units (installation number setting error, repeated indoor unit address, indoor unit communication cable error)
202	Communication error between indoor and outdoor units (Communication error on all indoor unit, outdoor unit communication cable error)
203	Communication error between main and sub outdoor units
205	Communication error on all PBA within the outdoor unit C-Box, communication cable error
206	E206-C001: HUB PBA communication error / E206-C002: FAN PBA communication errorE206-C003: INV1 PBA communication error / E206-C004: INV2 PBA communication error
211	When single indoor unit uses 2 MCU ports that are not in series
212	If the rotary switch (on the MCU) for address setting of the indoor unit has 3 or more of the same address
213	When total number of indoor units assigned to MCU is same as actual number of installed indoor units but there is indoor unit that is not installed even though it is assigned on MCU
214	When number of MCU is not set correctly on the outdoor unit or when two or more MCU was installed some of them have the same address
215	When two different MCU's have same address value on the rotary switch
216	When indoor unit is not installed to a MCU port but the switch on the port is set to On
217	When indoor unit is connected to a MCU port but indoor unit is assigned to a MCU and the switch on the port is set to Off
218	When there's at least one or more actual number of indoor unit connection compared to number of indoor units assigned to MCU

ERROR CODE	DESCRIPTION
219	Error on temperature sensor located on MCU intercooler inlet (Short or Open)
220	Error on temperature sensor located on MCU intercooler outlet (Short or Open)
221	Error on outdoor temperature sensor of outdoor unit (Short or open)
231	Error on COND OUT temperature sensor of main outdoor unit (Short or Open)
241	COND OUT sensor is detached
251	Error on discharge temperature sensor of compressor 1 (Short or Open)
257	Error on discharge temperature sensor of compressor 2 (Short or Open)
262	Discharge temperature sensor of compressor 1 is detached from the sensor holder on the pipe
263	Discharge temperature sensor of compressor 2 is detached from the sensor holder on the pipe
266	Top sensor of compressor 1 is detached
267	Top sensor of compressor 2 is detached
269	Suction temperature sensor is detached from the sensor holder on the pipe
276	Error on top sensor of compressor 1 (Short or Open)
277	Error on top sensor of compressor 2 (Short or Open)
291	Refrigerant leakage or error on high pressure sensor (Short or Open)
296	Refrigerant leakage or error on low pressure sensor (Short or Open)
308	Error on suction temperature sensor (Short or Open)
311	Error on temperature sensor of double layer pipe/liquid pipe (sub heat exchanger) (Short or Open)
321	Error on EVI (ESC) IN temperature sensor (Short or Open)
322	Error on EVI (ESC) OUT temperature sensor (Short or Open)
323	Error on suction sensor 2 (Short or Open)
346	Error due to operation failure of Fan2
347	Motor wire of Fan2 is not connected
348	Lock error on Fan2 of outdoor unit
353	Error due to overheated motor of outdoor unit's Fan2
355	Error due to overheated IPM of Fan2
361	Error due to operation failure of inverter compressor 2
364	Error due to over-current of inverter compressor 2
365	V-limit error of inverter compressor 2
366	Error due to over voltage /low voltage of inverter PBA2
367	Error due to unconnected wire of compressor 2
368	Output current sensor error of inverter PBA2
369	DC voltage sensor error of inverter PBA2
374	Heat sink temperature sensor error of inverter PBA2
378	Error due to overcurrent of Fan2
385	Error due to input current of inverter 2
386	Over-voltage/low-voltage error of Fan2
387	Hall IC connection error of Fan2
389	V-limit error on Fan2 of compressor
393	Output current sensor error of Fan2
396	DC voltage sensor error of Fan2
399	Heat sink temperature sensor error of Fan2
400	Error due to overheat caused by contact failure on IPM of Inverter PBA2
407	Compressor operation stop due to high pressure protection control
410	Compressor operation stop due to low pressure protection control or refrigerant leakage
416	Compressor operation stop due to discharge temperature protection control
425	Phase reversal or phase failure (3Ø outdoor unit wiring, R-S-T-N), connection error on 3 phase input
428	Compressor operation stop due abnormal compression ratio
438	EVI (ESC) EEV leakage or internal leakage of intercooler or incorrect connector insertion of EVI (ESC) EEV

ERROR CODE	DESCRIPTION
439	Error due to refrigerant leakage
440	Heating mode restriction due to high air temperature
441	Cooling mode restriction due to low air temperature
442	Refrigerant charging restriction in heating mode when air temperature is over 15°C
443	Operation prohibited due to the pressure drop
445	CCH is detached
446	Error due to operation failure of Fan1
447	Motor wire of Fan1 is not connected
448	Lock error on Fan1
452	Error due to ZPC detection circuit problem or power failure
453	Error due to overheated motor of outdoor unit's Fan1
455	Error due to overheated IPM of Fan1
461	Error due to operation failure of inverter compressor 1
462	Compressor stop due to full current control or error due to low current on CT2
464	Error due to overcurrent of inverter compressor 1
465	V-limit error of inverter compressor 1
466	Error due to over voltage /low voltage of inverter PBA1
467	Error due to unconnected wire of compressor 1
468	Output current sensor error of inverter PBA1
469	DC voltage sensor error of inverter PBA1
474	Heat sink temperature sensor error of inverter PBA1
478	Error due to overcurrent of Fan1
485	Error due to input current of inverter 1
486	Error due to over voltage/low voltage of Fan
487	Hall IC error of Fan1
489	V-limit error on Fan1 of compressor
493	Output current sensor error of Fan1
496	DC voltage sensor error of Fan1
499	Heat sink temperature sensor error of Fan1
500	Error due to overheat caused by contact failure on IPM of Inverter PBA1
503	Error due to alert the user to check if the service valve is closed
504	Error due to self diagnosis of compressor operation
505	Error due to self diagnosis of high pressure sensor
506	Error due to self diagnosis of low pressure sensor
560	Outdoor unit's option switch setting error (when inappropriate option switch is on)
563	Error due to module installation of indoor unit with old version (Micom version needs to be checked)
573	Error due to using single type outdoor unit in a module installation
601	Communication error between remote controller and the DVM Hydro unit / Hydro unit HT
602	Communication error between master and slave remote controller
604	Tracking error between remote controller and the DVM Hydro unit / Hydro unit HT
618	Error due to exceeding maximum numbers of Hydro unit installation (16 units)
627	Error due to exceeding maximum numbers of wired remote controller installation (2 units)
633	Error caused by installing mixed models
653	Remote controller's temperature sensor is disconnected or has problem
654	Data error on remote controller (Memory read/write error)
702	Error due to closed EEV of indoor unit (1st detection)
703	Error due to opened EEV of indoor unit (1st detection)
901	Error on the sensor of water inlet pipe (Short or Open)
902	Error on the sensor of water outlet pipe (Short or Open)

ERROR CODE	DESCRIPTION
904	Error on water tank (Short or open)
907	Error due to pipe rupture protection
908	Error due to freeze prevention (Re-operation is possible)
909	Error due to freeze prevention (Re-operation is impossible)
910	Water temperature sensor on water outlet pipe is detached
911	Flow switch off error, When the switch is turned off within 10 seconds after a pump starts its operation (Re-operation is possible)
913	Six times detection for Flow Switch Error (Re-operation is not possible)
914	Error due to incorrect thermostat connection
915	Error on DC fan (Non-operating)
573	Error due to using single type outdoor unit in a module installation
601	Communication error between remote controller and the DVM Hydro unit / Hydro unit HT
602	Communication error between master and slave remote controller
604	Tracking error between remote controller and the DVM Hydro unit / Hydro unit HT
618	Error due to exceeding maximum numbers of Hydro unit installation (16 units)
627	Error due to exceeding maximum numbers of wired remote controller installation (2 units)
633	Error caused by installing mixed models
653	Remote controller's temperature sensor is disconnected or has problem
654	Data error on remote controller (Memory read/write error)
702	Error due to closed EEV of indoor unit (1st detection)
703	Error due to opened EEV of indoor unit (1st detection)
901	Error on the sensor of water inlet pipe (Short or Open)
902	Error on the sensor of water outlet pipe (Short or Open)
904	Error on water tank (Short or open)
907	Error due to pipe rupture protection
908	Error due to freeze prevention (Re-operation is possible)
909	Error due to freeze prevention (Re-operation is impossible)
910	Water temperature sensor on water outlet pipe is detached
911	Flow switch off error, When the switch is turned off within 10 seconds after a pump starts its operation (Re-operation is possible)
913	Six times detection for Flow Switch Error (Re-operation is not possible)
914	Error due to incorrect thermostat connection
915	Error on DC fan (Non-operating)

**IMPORTANT**

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

**NOTE**

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