

**Intesis**<sup>®</sup>  
BY HMS NETWORKS

Gateway solutions  
for building and home integration



- Protocol translators
- Air conditioning interfaces
- Cloud solutions

**HMS**

# Intesis — connecting buildings and homes

Intesis gateways for building and home automation covers all relevant standards and technologies, and includes the market’s most comprehensive portfolio for HVAC integration with solutions for all major AC-brands.

Highly reliable, robust, easy to configure and install, the Intesis protocol translators, AC interfaces, and cloud solutions are widely used for system integration. Users benefit from efficient commissioning and uninterrupted operation.

## Intesis by HMS Networks

Intesis is a part of HMS Networks, market leader in solutions for industrial communication and the Industrial Internet of Things, IIoT. The Intesis brand is HMS central brand for Building Automation products and solutions. The other main markets for HMS are Manufacturing, Power, Energy, Transportation, Infrastructure and Logistics.

## About HMS Networks

With millions of installed products worldwide, HMS Networks is the leading supplier of solutions for Industrial ICT (Information & Communication Technology).

We enable valuable data and insights from industrial equipment, allowing our customers to increase productivity and sustainability.

- Employees: > 700
- Locations: in 16 countries
- Distributors: > 50 countries
- Brands: Anybus, Ewon, Intesis, Ixxat
- Customers: Device manufacturers, machine builders, system integrators, end users
- Year founded: 1988





## High quality standards

Intesis products are subject to extensive testing and certification processes to ensure the highest quality standards. Also, additional tests are implemented for specific markets.

### 100% tested

Every single product manufactured by Intesis is tested to ensure the highest quality standards.

### UL listed

Intesis products contain UL marked components and the production line is subject to periodic UL audits. It is with pride that we put the UL mark on all main Intesis products.

### Global coverage

In addition to rigorous internal quality tests, Intesis products are also certified by independent testing labs to fulfill national legal requirements on different markets.

### Protocol certifications

All implementations of standard protocols in Intesis products are performed rigorously according to each protocol specification. Full interoperability is then ensured thanks to testing and certification by external accredited laboratories.



# Solutions for every project

## Protocol translators

BACnet, KNX, Modbus, DALI, M-Bus, ASCII, PROFINET, LonWorks, OCPP, EtherNet/IP — all are supported by the Intesis protocol translators. With cutting edge technology built on a reliable platform, integration solutions are offered for all your needs.

## Cloud solutions

Intesis long experience of Building Automation protocols and communication solutions for HVAC integration brought to the cloud for straight-forward remote device management.

No matter what building automation protocol or AC brand...

Modern buildings include equipment from many different vendors that need to communicate in highly advanced networks.

System integrators, BMS vendors, HVAC manufacturers and professionals in the automation market all over the world have one thing in common – they trust Intesis products in their building automation integration projects.



## Air conditioning interfaces

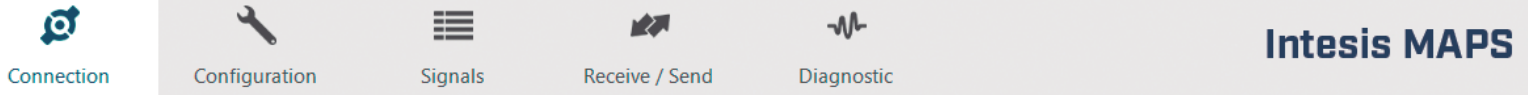
Developed with and for all major air conditioning manufacturers, Intesis AC interfaces enable high quality integration of climate systems into BACnet, KNX, Modbus, and 2,4 GHz wireless installations.



...Intesis has the communication solution!

# Intesis MAPS – a software tool for fast and easy configuration

Home Project Tools Help



Intesis MAPS

Connection Mode

Connection Mode

- IP
- USB Port

Discovered Devices

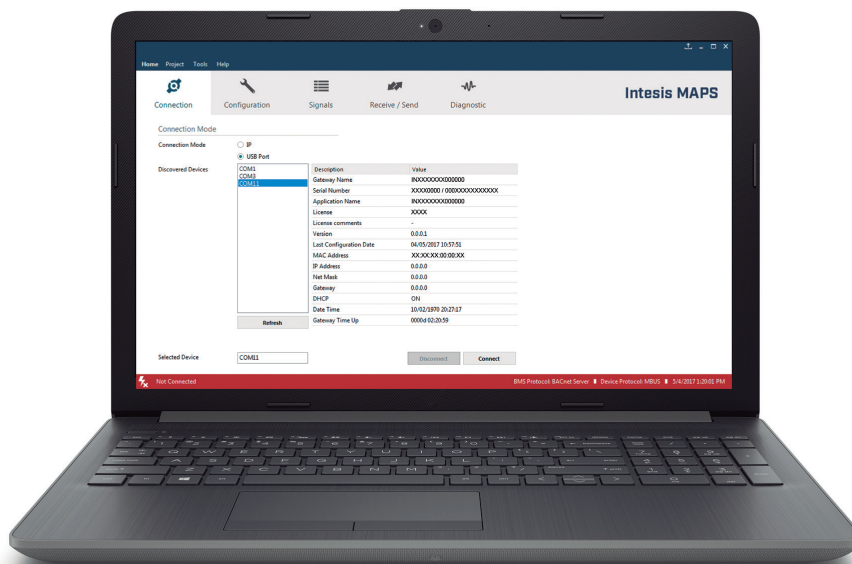
Description	Value
Gateway Name	INXXXXXXXX000000
Serial Number	XXXX0000 / 000XXXXXXXXXXXX
Application Name	INXXXXXXXX000000
License	XXXX
License comments	-
Version	0.0.0.1
Last Configuration Date	04/05/2017 10:57:51
MAC Address	XX:XX:XX:00:00:XX
IP Address	0.0.0.0

## Intesis MAPS

Powerful configuration of all Intesis protocol translators for fast and straight-forward commissioning.

Intesis MAPS enables easy configuration of all possible protocol combinations available in the Intesis protocol translator portfolio, offering a simple and consistent way to program all your devices, regardless of the protocols used. Upon launching MAPS, the user selects the right template for the protocol translator and the configuration procedure can start.

Intesis MAPS provides device templates which import data automatically. Conversions such as scaling and offset are supported to allow the desired data transformation. MAPS also enables advanced diagnostics and troubleshooting by the user.



# Multi Addressing Point Solution



## Project templates

For every gateway there is a template providing a step by step setup guide for both protocols in the gateway.



## Product templates

Product templates are provided for automatic import of all device data, removing the need for manual work.



## Device scan

By using the scanning functionality, users can find devices in the field and import all their data automatically.



## Data conversion

Data can be transformed into the desired format, e.g. adjusting offset, scaling or converting from degrees Celsius into Fahrenheit.



## Diagnostics

Problems and errors can be detected and solved with Intesis MAPS diagnostics.



## Secure and safe configuration

MAPS configuration projects are protected by passwords to prevent unauthorized manipulation of projects and installations.



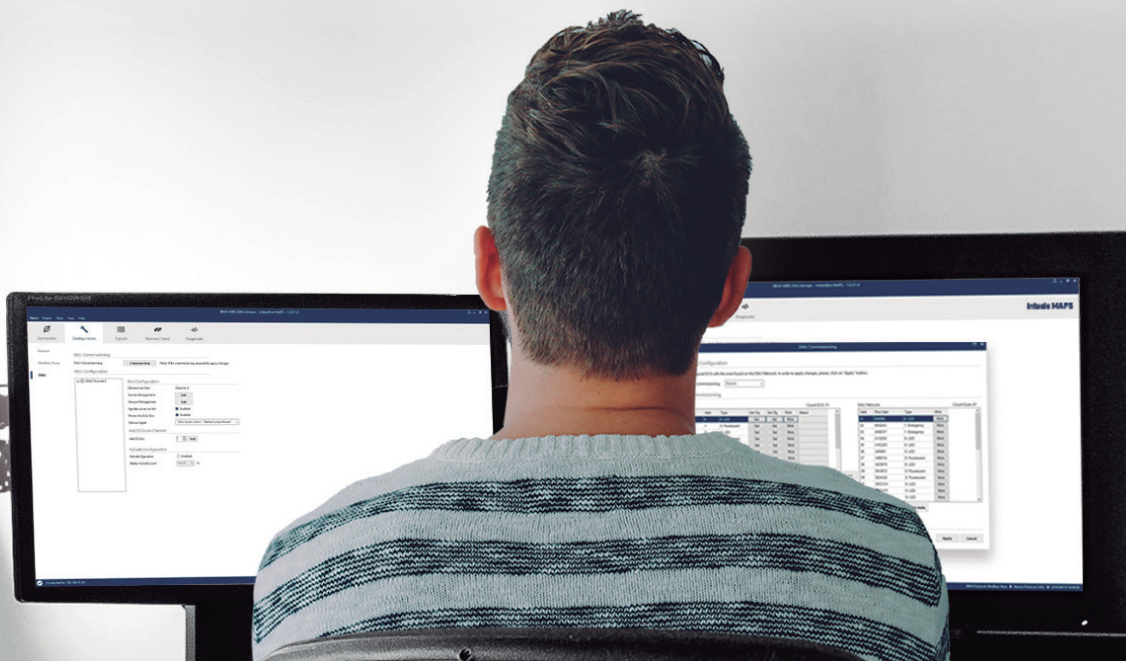
## Recovery

Users can save the gateway configuration project to file for e.g. recovery purposes or in case of gateway replacement.



## Update information

The tool informs whenever there is a new software version available for the gateway or MAPS itself.



# Taking care of your projects in advance

Get ready to start your project even if you are not on site

Intesis MAPS offers you the possibility of starting your projects even without the Intesis device. Simply start creating your configuration file from the device manufacturer manual and/or the BMS or SCADA engineer information.

Get everything ready before commissioning

Check your configuration, simulate communications, use our templates, consult our manuals, attend our webinars and get the most of our team experience in a powerful tool. Everything in its right place for a smooth commissioning process.

Template functionality

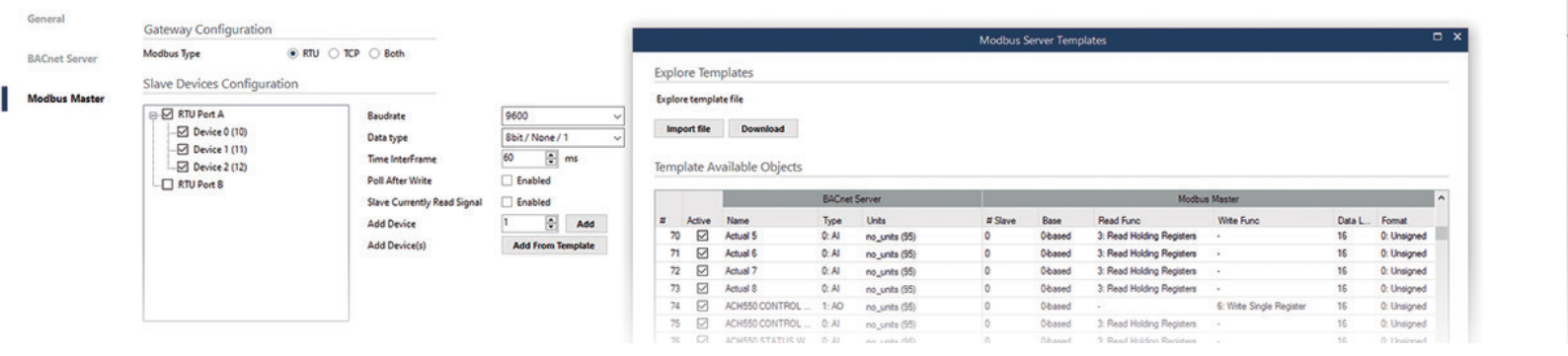
Thanks to our template functionality you can import already existing templates from third party devices\* and include them in your project with a simple click of the mouse. Moreover, you can create your own templates and use them in any of your projects.

\* Requires Internet connection.



**Intesis MAPS**





## Fast, save and secure commissioning and troubleshooting

Even if you are not on site, remote connections are available to the gateway through IP\*, which ensures the possibility of testing the project during the commissioning stage. You can also troubleshoot any possible issue you may face from your office.

## Save money and time with less travelling

A remote connection drastically reduces the need for travelling since commissioning or troubleshooting can be done from anywhere.

Using the Diagnostic section along with the remote connection, you will be able to ensure your projects are up and running on time and with all guarantees.

With four simple steps you will be ready to go:

**1**

### Create your configuration project

Use our templates, import options and our documentation to easily create your configuration projects.

**3**

### Download the configuration

Download your configuration project from your remote location.

**2**

### Enable communications

Enable an EtherNet/IP connection to the gateway and we are ready to start communication with the gateway.

**4**

### Test and/or troubleshoot

Once connected and with the configuration downloaded, you will be able to start testing and troubleshooting anything you need connected to the Intesis device.

\*Check with your IT department for more information about external communication configurations.

Now, everything is up and running and you can do commissioning and troubleshooting from anywhere



## Protocol translators

When choosing an Intesis protocol translator, you can be sure that you get a ready-to-use product which easily solves the complex task of integrating between building automation protocols.

**ASCII**

 LonWorks

 **BACnet™**

**M-Bus**

 **DALI 2**

 **Modbus**

**EtherNet/IP™**

 **OCPP**

 **KNX**

 **PROFINET®**

# Protocol translators with the latest technology

Intesis protocol translators include the most recent and modern technology, assembled in user-friendly products to facilitate installation, configuration and deployment.



## LED indicator matrix

Multiple LED indicators confirm that all protocols are communicating properly or indicate if there is a communication issue.



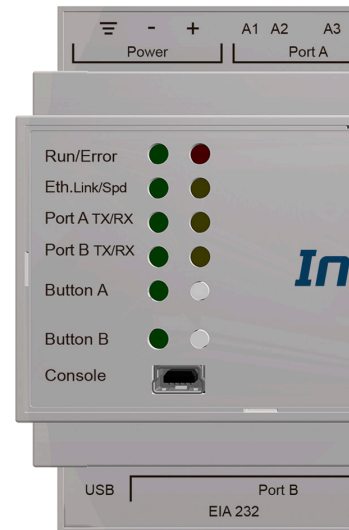
## IP/USB console

Direct and safe access to the configuration via USB or the Ethernet port.



## USB host

Configuration can be performed with the USB host port, from downloading projects or generating log files to updating the firmware.



## Multiple ports

With multiple ports for the different physical layers (cable/network types), all common connectivity requirements are met.



## Design for DIN-rail mounting

Using just five DIN-Rail modules, it is easy to fit Intesis protocol translators into cabinets.



## Low power

The protocol translators are designed for low power consumption for energy efficient operation on site.

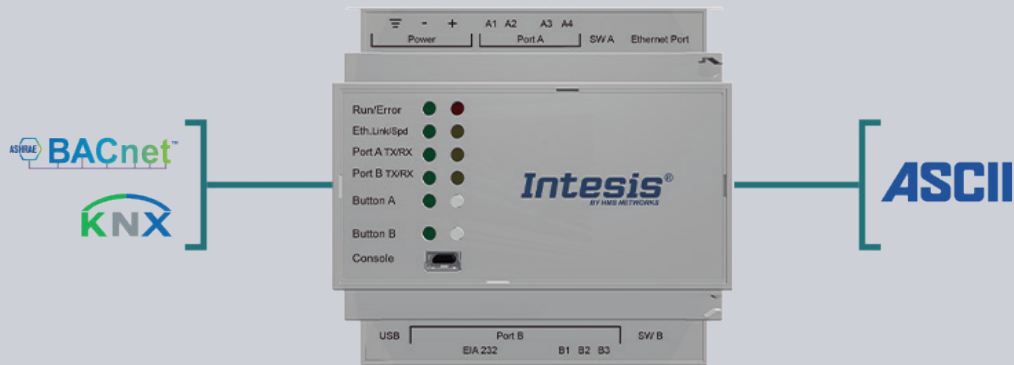


## MAPS Configuration

Powerful configuration of all Intesis protocol translators for a fast and straight-forward commissioning.

Global connectivity enabled!

# ASCII protocol translators



## General features for ASCII

Supervision and control of BACnet or KNX devices can be done from an ASCII-based control system using simple ASCII messages over serial (EIA232, EIA485) or TCP/IP interfaces.

- Both ASCII Serial and IP supported
- Custom string signals
- Custom string commands
- Easy integration to any BMS



*BACnet to ASCII*



**ORDER CODE**

**INASCBAC6000000**  
**INASCBAC3K00000**

**POINT VERSION**

**600 P.V.**  
**3000 P.V.**



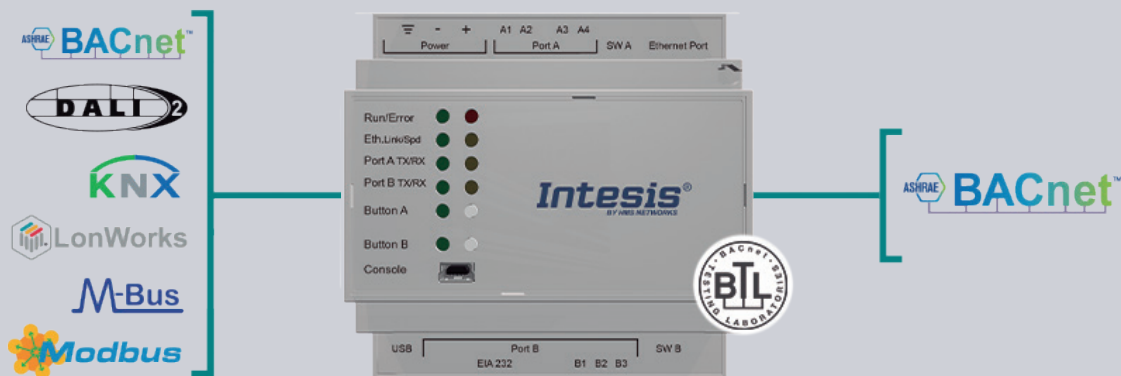
*KNX to ASCII*

**INASCKNX6000000**  
**INASCKNX3K00000**

**600 P.V.**  
**3000 P.V.**



# BACnet protocol translators



## General features for BACnet

An Intesis protocol translator for BACnet acts as a BACnet/IP Server or BACnet MSTP slave, allowing BACnet controllers to perform subscription requests (COV) and reads/writes to its internal points.

- BTL certified
- BACnet IP and MSTP
- BBMD and foreign Device
- Notification Classes



*KNX to BACnet*

ORDER CODE

POINT VERSION

INBACKNX1000000	100 P.V.
INBACKNX2500000	250 P.V.
INBACKNX6000000	600 P.V.
INBACKNX1K20000	1200 P.V.
INBACKNX3K00000	3000 P.V.



*LonWorks to BACnet*

INBACLON1000000	100 P.V.
INBACLON2500000	250 P.V.
INBACLON6000000	600 P.V.
INBACLON1K20000	1200 P.V.
INBACLON3K00000	3000 P.V.



*Modbus to BACnet*

INBACMBM1000000	100 P.V.
INBACMBM2500000	250 P.V.
INBACMBM6000000	600 P.V.
INBACMBM1K20000	1200 P.V.
INBACMBM3K00000	3000 P.V.



*DALI to BACnet*

INBACDAL0640200	64 D.V.
INBACDAL1280200	128 D.V.



*M-Bus to BACnet*

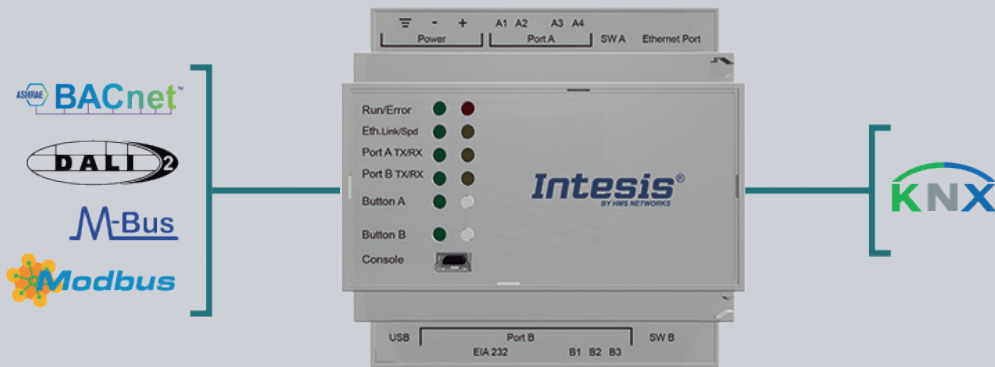
INBACMEB0100000	10 D.V.
INBACMEB0200000	20 D.V.
INBACMEB0600000	60 D.V.
INBACMEB1200000	120 D.V.



*BACnet MSTP to BACnet IP Router*

INBACRTR0320000	32 D.V.
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# KNX protocol translators



## General features for KNX

A protocol translator with KNX connects directly to the KNX TP-1 bus carrying the same configuration and operational characteristics as any other KNX device.

- Standard KNX Datapoint Types
- Extended group addresses
- Sending and listening addresses
- Ri flag: Read on initialization flag



*BACnet to KNX*



ORDER CODE

POINT VERSION

INKNXBAC100000  
 INKNXBAC250000  
 INKNXBAC600000  
 INKNXBAC1K20000  
 INKNXBAC3K00000

100 P.V.  
 250 P.V.  
 600 P.V.  
 1200 P.V.  
 3000 P.V.



*Modbus TCP/RTU to KNX*

INKNXMBM100000  
 INKNXMBM250000  
 INKNXMBM600000  
 INKNXMBM1K20000  
 INKNXMBM3K00000

100 P.V.  
 250 P.V.  
 600 P.V.  
 1200 P.V.  
 3000 P.V.

*Modbus RTU to KNX*

INKNXMBM1000100

100 P.V.



*DALI to KNX*

INKNXDAL0640200

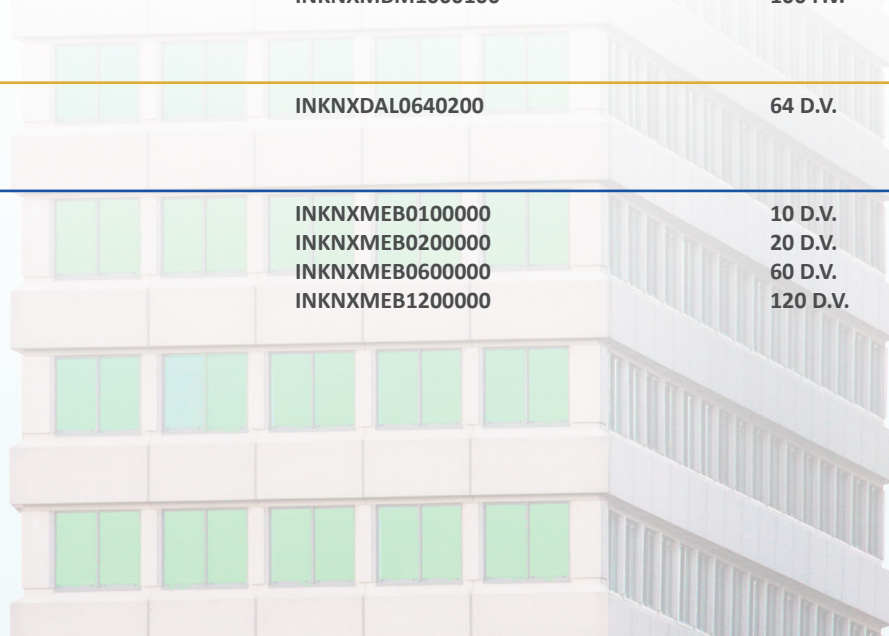
64 D.V.



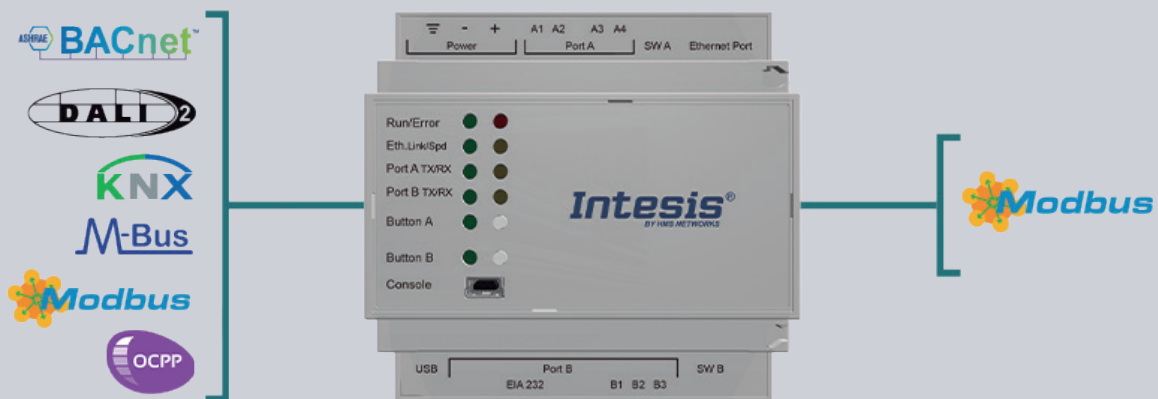
*M-Bus to KNX*

INKNXMEB0100000  
 INKNXMEB0200000  
 INKNXMEB0600000  
 INKNXMEB1200000

10 D.V.  
 20 D.V.  
 60 D.V.  
 120 D.V.










# Modbus protocol translators



## General features for Modbus

On Modbus, Intesis protocol translators act either as Modbus TCP Servers (Ethernet connection) and/or Modbus RTU slaves (serial EIA232,EIA485).

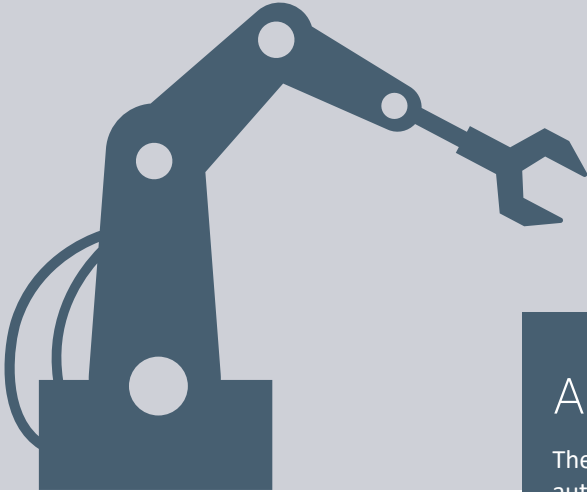
- Modbus TCP and RTU simultaneously
- Coils, holding registers and bitfields supported
- Multiple data formats
- Big-endian or Little-endian

	ORDER CODE	POINT VERSION
 BACnet to Modbus 	INMBSBAC1000000 INMBSBAC2500000 INMBSBAC6000000 INMBSBAC1K20000 INMBSBAC3K00000	100 P.V. 250 P.V. 600 P.V. 1200 P.V. 3000 P.V.
 KNX to Modbus	INMBSKNX1000000 INMBSKNX2500000 INMBSKNX6000000 INMBSKNX1K20000 INMBSKNX3K00000	100 P.V. 250 P.V. 600 P.V. 1200 P.V. 3000 P.V.
 DALI to Modbus	INMBSDAL0640200 INMBSDAL1280200	64 D.V. 128 D.V.
 M-Bus to Modbus	INMBSMEB0100000 INMBSMEB0200000 INMBSMEB0600000 INMBSMEB1200000	10 D.V. 20 D.V. 60 D.V. 120 D.V.
 Modbus RTU to Modbus TCP router	INMBSRTR0320000	32 D.V.
 OCPP to Modbus	INMBSOCP0010100 INMBSOCP0200100	1 Charger 20 Chargers

# Factory-to-building products

Bring all your valuable data from factories to standard BACnet BMS or SCADA solutions in a fast, efficient and reliable way.

In these gateways, HMS combines its proven Anybus® and Intesis communication technologies for industrial and building respectively, trusted by customers in millions of installations world-wide.



## Anybus CompactCom

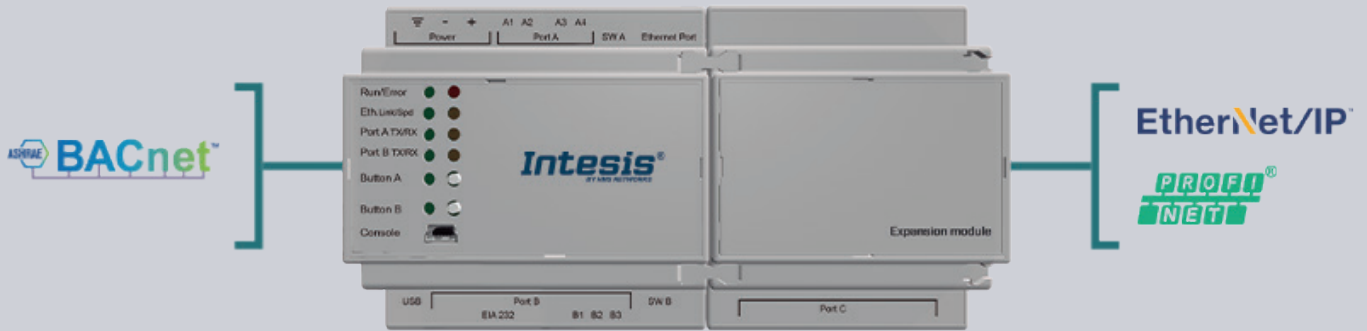
The built-in CompactCom modules brings the best of factory automation protocols, enabling PROFINET and EtherNet/IP connectivity for the every high performance applications.

**Anybus®**  
BY HMS NETWORKS





# Factory-to-building products



## General features for Factory-to-building

The Intesis gateway allows you to seamlessly inter-connect PLC/BMS systems and their connected devices between BACnet Control systems and PROFINET™ or EtherNet/IP™ networks.

- BACnet IP & MSTP server/slave interfaces (BTL Certified)
- PROFINET™-IO Device interface
- EtherNet/IP™ adapter interface
- Generation of GSD, EDS and project files



*BACnet - PROFINET*

ORDER CODE

INBACPR1K20000

POINT VERSION

1200 P.V.



*BACnet - EtherNet/IP*

INBACEIP1K20000

1200 P.V.



## Air conditioning interfaces

The Intesis air conditioning interfaces form a portfolio of highly reliable solutions for air conditioning integration, developed in collaboration with all major AC manufacturers. Take a look at the world's most comprehensive portfolio of AC interfaces for integration into KNX, Modbus, BACnet and Home Automation.

**Hisense**

**SAMSUNG**

**DAIKIN**

 **MITSUBISHI  
ELECTRIC**

**Midea**

**Haier**

**FUJITSU**

**Panasonic**

**HITACHI**

 **LG**

 **MITSUBISHI  
HEAVY INDUSTRIES**

**TOSHIBA**

# Intesis – The right choice for HVAC integration

In 2006, Intesis launched the first certified product able to directly integrate expansion air conditioning units into KNX. Today, after many years of experience gained and more than 700.000 AC units integrated all over the world, Intesis can offer a wide range of Intesis AC Interfaces is offered for integration of air conditioners from major brands into all commonly used building automation protocols.

## Energy efficient

HVAC systems account for a major part of the energy costs in a building. With the Intesis AC interfaces, these can be controlled for optimal energy usage, enabling significant savings.

## Reliable

All developments are based strictly on AC manufacturers' specifications, with subsequent validation and approval by the AC manufacturers to ensure the right compatibility with their AC units.

## Easy to use

Thanks to the smart scanning functionality, connected AC units can be detected automatically.

## Trusted

AC interfaces from Intesis are trusted by system integrators all over the world, covering all major protocols needed within building automation.

## Intesis AC interfaces – key features



### One to one

All the info from one indoor unit directly to one AC interface.



### Multi-unit

Control multiple indoor units from a single AC interface.



### Brand specific products

Specific solutions for all major air conditioning brands.



### Direct connection

Save costs by using AC interfaces that connect directly to the AC bus without any intermediate interface devices.



### Universal IR solution

Supports any AC brand on the market that uses infrared (IR) remotes.



### AC units scan

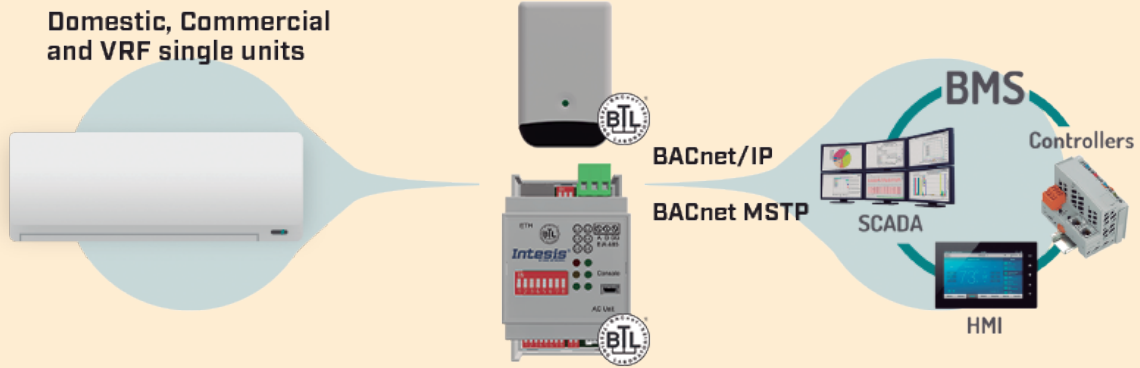
Save configuration time with the powerful scanning functionality.

Our expertise packaged in the best solution for you!



# BACnet interfaces for air conditioners

Intesis offers a large portfolio of BACnet interfaces for integration of specific AC brands, supporting both BACnet/IP and BACnet MS/TP integrations with BTL certified solutions.



## Specific features for one-to-one solutions

- Fast and easy configuration thanks to a dip switch on the product.
- External power supply is not required since it is powered by the AC unit itself.
- Two types of solutions: Brand specific solutions with direct connections supporting the unit's error code data, and a universal solution based on infrared (IR) communication.

## Specific features for multi-unit solutions

- Provides advanced BACnet functions such as notification class, trend logs or calendars.
- Controls all connected units from a single BACnet object.

### VRF systems



**ORDER CODE****POINT VERSION**

<i>AC Domestic units to BACnet IP/MSTP</i>	<b>INBACDAI001I000</b>	<b>1 I.U.</b>
<i>AC Domestic units to BACnet MSTP</i>	<b>INBACDAI001I100</b>	<b>1 I.U.</b>
<i>VRV and Sky systems to BACnet MSTP</i>	<b>INBACDAI001R100</b>	<b>1 I.U.</b>
<i>VRV and Sky systems to BACnet IP/MSTP</i>	<b>INBACDAI001R000</b>	<b>1 I.U.</b>



<i>Fujitsu RAC and VRF to BACnet MSTP</i>	<b>INBACFGL001I100</b>	<b>1 I.U. (to CN connector)</b>
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**Hisense**

<i>VRF systems to BACnet IP/MSTP</i>	<b>INBACHIS016O000</b>	<b>16 I.U.</b>
	<b>INBACHIS064O000</b>	<b>64 I.U.</b>

**HITACHI**

<i>VRF systems to BACnet IP/MSTP</i>	<b>INBACHIT016O000</b>	<b>16 I.U.</b>
	<b>INBACHIT064O000</b>	<b>64 I.U.</b>
<i>Commercial and VRF systems to Bacnet IP/MSTP</i>	<b>INBACHIT001R000</b>	<b>1 I.U.</b>



<i>Midea Comm. &amp; VRF to BACnet MSTP</i>	<b>INBACMID001I100</b>	<b>1 I.U.</b>
<i>Commercial and VRF systems to BACnet IP/MSTP</i>	<b>INBACMID004I000</b>	<b>4 I.U.</b>



<i>Domestic, Mr.Slim and City Multi to BACnet IP/MSTP</i>	<b>INBACMIT001I000</b>	<b>1 I.U.</b>
<i>Domestic, Mr.Slim and City Multi to BACnet MSTP</i>	<b>INBACMIT001I100</b>	<b>1 I.U.</b>



<i>FD and VRF systems to BACnet IP/MSTP</i>	<b>INBACMH001R000</b>	<b>1 I.U.</b>
<i>FD and VRF systems to BACnet MSTP</i>	<b>INBACMH001R100</b>	<b>1 I.U.</b>

**Panasonic**

<i>Etherea AC units to BACnet IP/MSTP</i>	<b>INBACPAN001I000</b>	<b>1 I.U.</b>
<i>Etherea AC units to BACnet MSTP</i>	<b>INBACPAN001I100</b>	<b>1 I.U.</b>
<i>ECOi and PACi systems to BACnet IP/MSTP</i>	<b>INBACPAN001R000</b>	<b>1 I.U.</b>
<i>ECOi and PACi systems to BACnet MSTP</i>	<b>INBACPAN001R100</b>	<b>1 I.U.</b>
<i>ECOi, ECOg and PACi systems to BACnet IP/MSTP</i>	<b>INBACPAN016O000</b>	<b>16 I.U.</b>
	<b>INBACPAN064O000</b>	<b>64 I.U.</b>
<i>ECOi, ECOg and PACi systems to BACnet IP</i>	<b>INBACPAN128O000</b>	<b>128 I.U.</b>

**SAMSUNG**

<i>NASA VRF systems to BACnet IP/MSTP</i>	<b>INBACSAM004O000</b>	<b>4 I.U.</b>
	<b>INBACSAM008O000</b>	<b>8 I.U.</b>
	<b>INBACSAM016O000</b>	<b>16 I.U.</b>
	<b>INBACSAM064O000</b>	<b>64 I.U.</b>

**TOSHIBA**

<i>VRF and Digital systems to BACnet IP/MSTP</i>	<b>INBACTOS001R000</b>	<b>1 I.U.</b>
<i>VRF and Digital systems to BACnet MSTP</i>	<b>INBACTOS001R100</b>	<b>1 I.U.</b>

**UNIVERSAL**

<i>Universal IR air conditioner to BACnet MSTP</i>	<b>IN485UNI001I000</b>	<b>1 I.U.</b>
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# KNX interfaces for air conditioners

For the last decade, Intesis AC interfaces for KNX have been the reference when it comes to integrating air conditioning systems into KNX projects. Specific solutions are offered for the most popular AC brands, including a universal solution based on infrared communication.

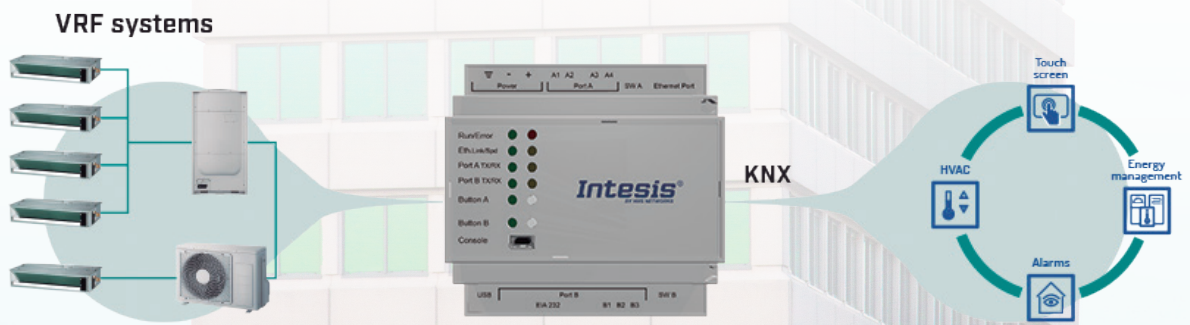


## Specific features for one to one solutions

- Supports all required DPT objects to be compatible with all KNX thermostats in the market.
- Binary inputs for window contacts or presence detectors available in most of the interfaces.
- Two types of solutions: Brand specific solutions with direct connections supporting the unit's error code data, and a universal solution based on infrared (IR) communication.

## Specific features for multi-unit solutions

- Smooth integration of KNX thermostats thanks to the "virtual temperature" function.
- Covers a wide range of standard DPTs which ensures interoperability with other KNX devices.



**ORDER CODE****POINT VERSION***AC Domestic units to KNX*

INKNXDAI001I000  
 INKNXDAI001I100  
 INKNXDAI001R000  
 INKNXDAI001R100

1 I.U.  
 1 I.U. with Binary Inputs  
 1 I.U.  
 1 I.U. with Binary Inputs

*VRV and Sky systems to KNX*

*Fujitsu RAC and VRF to KNX*  
*RAC and VRF systems to KNX*  
*VRF systems to KNX*

INKNXFGL001I000  
 INKNXFGL001R000  
 INKNXFGL016O000

1 I.U. with B.I. (to CN connector)  
 1 I.U. with B.I. (to remote controller)  
 16 I.U.

*Commercial and VRF systems to KNX*

INKNXHAI008C000  
 INKNXHAI016C000  
 INKNXHAI064C000

8 I.U.  
 16 I.U.  
 64 I.U.

*VRF systems to KNX*

INKNXHIS001R000  
 INKNXHIS016O000  
 INKNXHIS064O000

1 I.U. with Binary Inputs  
 16 I.U.  
 64 I.U.



*Commercial and VRF systems to KNX*  
*VRF systems to KNX*

INKNXHIT001R000  
 INKNXHIT016O000  
 INKNXHIT064O000  
 INKNXHIT001A000

1 I.U. with Binary Inputs  
 16 I.U.  
 64 I.U.  
 1 I.U.

*Air to Water to KNX*

*VRF systems to KNX*  
*VRF systems to KNX*

INKNXLGE001R000  
 INKNXLGE016O000  
 INKNXLGE064O000

1 I.U. with Binary Inputs  
 16 I.U.  
 64 I.U.

*Commercial and VRF systems to KNX*

INKNXMID001I000  
 INKNXMID016I000  
 INKNXMID064I000

1 I.U.  
 16 I.U.  
 64 I.U.

*Domestic, Mr.Slim and City Multi to KNX*

INKNXMIT001I000  
 INKNXMIT001I100  
 INKNXMIT015C000  
 INKNXMIT100C000

1 I.U.  
 1 I.U. with Binary Inputs  
 15 I.U.  
 100 I.U.

*City Multi systems to KNX*

*FD and VRF systems to KNX*  
*VRF systems to KNX*

INKNXMHI001R000  
 INKNXMHI048O000  
 INKNXMHI128O000

1 I.U. with Binary Inputs  
 48 I.U.  
 128 I.U.



*Etherea AC units to KNXunit*  
*ECOi and PACi systems to KNX*  
*ECOi, ECOg and PACi systems to KNX*

INKNXPAN001I000  
 INKNXPAN001R000  
 INKNXPAN016O000  
 INKNXPAN064O000  
 INKNXPAN001A000

1 I.U. with Binary Inputs  
 1 I.U. with Binary Inputs  
 16 I.U.  
 64 I.U.  
 1 I.U.

*Air to Water (Aquarea H) to KNX**NASA VRF systems to KNX*

INKNXSAM004O000  
 INKNXSAM008O000  
 INKNXSAM016O000  
 INKNXSAM064O000

4 I.U.  
 8 I.U.  
 16 I.U.  
 64 I.U.



*VRF and Digital systems to KNX*  
*VRF systems to KNX*

INKNXTOS001R000  
 INKNXTOS016O000  
 INKNXTOS064O000

1 I.U. with Binary Inputs  
 16 I.U.  
 64 I.U.

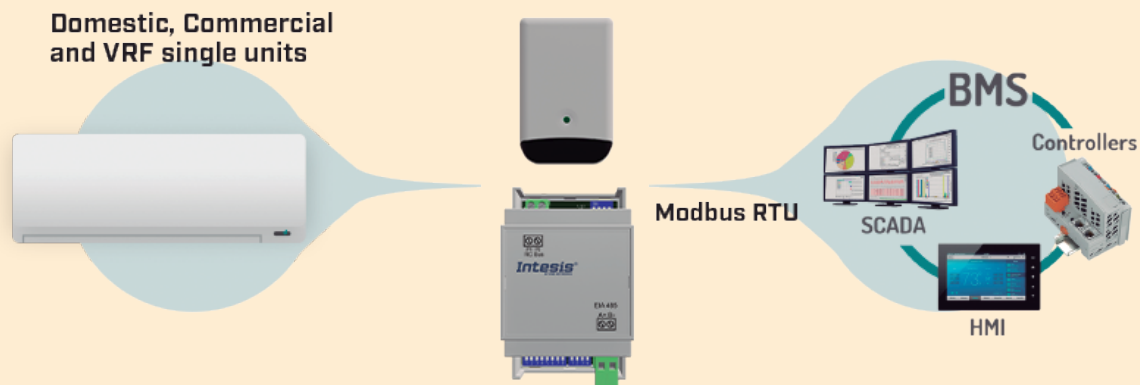
*Universal IR air conditioner to KNX*

INKNXUNI001I000

1 I.U. with Binary Inputs

# Modbus interfaces for air conditioners

Intesis AC interfaces for Modbus form one of the largest portfolios on the market for integration of air conditioners into Modbus. The consistent Modbus register mapping used for all AC brands helps shortening the integration time in each project.

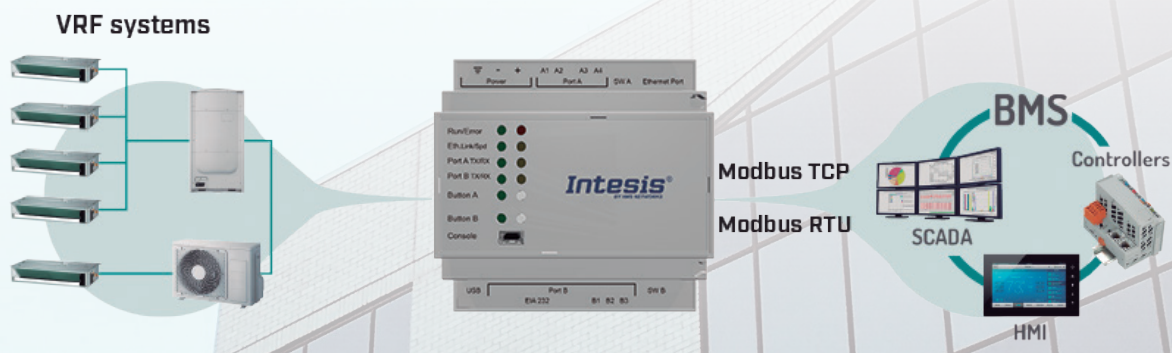


## Specific features for one-to-one solutions

- Consistent register mapping presents a common interface for all AC brands.
- Fast and easy configuration thanks to a dip switch on the product.
- Two types of solutions: Brand specific solutions with direct connections supporting the unit's error code data, and a universal solution based on infrared (IR) communication.

## Specific features for multi-unit solutions

- Supports both Modbus RTU and TCP simultaneously.
- Control all connected AC units from a single Modbus register.





**ORDER CODE****POINT VERSION**

AC Domestic units to Modbus RTU  
VRV and Sky systems to Modbus RTU

INMBSDAI001I000  
INMBSDAI001R000

1 I.U.  
1 I.U.



RAC and VRF systems to Modbus RTU  
VRF systems to Modbus TCP/RTU

INMBSFGL001R000  
INMBSFGL001I000  
INMBSFGL016O000

1 I.U. (to remote controller)  
1 I.U. (to CN connector)  
16 I.U.



VRF systems to Modbus RTU  
VRF systems to Modbus TCP/RTU

INMBSHIS001R000  
INMBSHIS016O000  
INMBSHIS064O000

1 I.U.  
16 I.U.  
64 I.U.



Commercial and VRF systems to Modbus RTU  
VRF systems to Modbus TCP/RTU

INMBSHIT001R000  
INMBSHIT016O000  
INMBSHIT064O000

1 I.U.  
16 I.U.  
64 I.U.



VRF systems to Modbus RTU

INMBSLGE001R000

1 I.U.



Commercial and VRF systems to Modbus RTU

INMBSMID001I000  
INMBSMID004I000  
INMBSMID008I000  
INMBSMID032I000

1 I.U.  
4 I.U.  
8 I.U.  
32 I.U.



Domestic, Mr. Slim and City Multi lines to Modbus RTU  
City multi systems to Modbus TCP/RTU

INMBSMIT001I000  
INMBSMIT050C000  
INMBSMIT100C000

1 I.U.  
50 I.U.  
100 I.U.



FD and VRF systems to Modbus RTU  
VRF systems to Modbus TCP/RTU

INMBSMHI001R000  
INMBSMHI048O000  
INMBSMHI128O000

1 I.U.  
48 I.U.  
128 I.U.



Etherea AC units to Modbus RTU  
ECOi and PACi systems to Modbus RTU  
ECOi, ECOg and PACi systems to Modbus TCP/RTU  
ECOi, ECOg and PACi systems to Modbus TCP  
Air to Water (Aquarea H) to Modbus RTU

INMBSPAN001I100  
INMBSPAN001R000  
INMBSPAN016O000  
INMBSPAN064O000  
INMBSPAN128O000  
INMBSPAN001A000

1 I.U.  
1 I.U.  
16 I.U.  
64 I.U.  
128 I.U.  
1 I.U.



NASA units to Modbus RTU  
NASA VRF systems to Modbus TCP/RTU

INMBSSAM001R100  
INMBSSAM004O000  
INMBSSAM008O000  
INMBSSAM016O000  
INMBSSAM064O000  
INMBSSAM001R000

1 I.U.  
4 I.U.  
8 I.U.  
16 I.U.  
64 I.U.  
1 I.U.

NON-NASA units to Modbus RTU



VRF and Digital systems to Modbus RTU

INMBSTOS001R000

1 I.U.



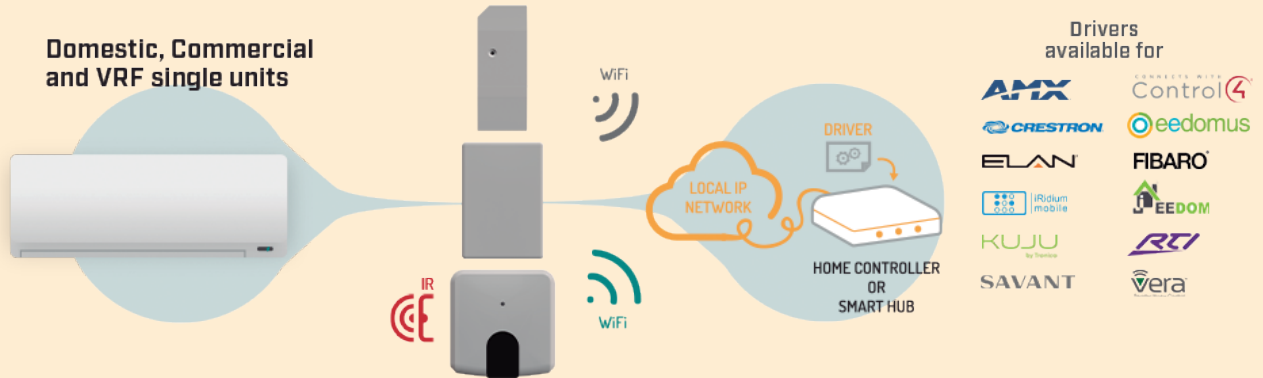
Universal IR air conditioner to Modbus RTU

IN485UNI001I000

1 I.U.

# Home automation interfaces for air conditioners

Intesis home automation interfaces have been specifically designed for AC integration into home automation systems. The communication is based on a simple ASCII protocol that can be easily implemented as a driver in home controllers or smart hubs. With drivers already available from many home automation platforms on the market, air conditioning units can be easily integrated and controlled.



## Specific features for one-to-one solutions

- Wi-Fi configuration supporting both dynamic or static IPs.
- Auto-discovering of Wi-Fi devices installed in the network.
- Two types of solutions: Brand specific solutions with direct connections supporting the unit's error code data, and a universal solution based on infrared (IR) communication.

## Specific features for multi-unit solutions

- Integrate up to 128 AC units with a single interface.
- Direct ethernet connection to the home's local IP network.
- All the benefits of having MAPS as configuration and diagnostic tool.



**ORDER CODE****POINT VERSION**

AC Domestic units to Home Automation  
VRV and Sky systems to Home Automation

INWMPDAI001I000  
INWMPDAI001R000

1 I.U.  
1 I.U.



RAC and VRF systems to Home Automation  
VRF systems to Home Automation

INWMPFGL001R000  
INWMPFGL001I000  
INMBSFGL016O000

1 I.U. (to remote controller)  
1 I.U. (to CN connector)  
16 I.U.



VRF systems to Home Automation

INMBSHIS016O000  
INMBSHIS064O000

16 I.U.  
64 I.U.



VRF systems to Home Automation

INMBSHIT016O000  
INMBSHIT064O000

16 I.U.  
64 I.U.



VRF systems to Home Automation

INWMPLGE001R000

1 I.U.



Domestic, Mr.Slim and City Multi to Home Automation  
City multi systems to Home Automation

INWMPMIT001I000  
INMBSMIT050C000  
INMBSMIT100C000

1 I.U.  
50 I.U.  
100 I.U.



FD and VRF systems to Home Automation  
Domestic units to Home Automation

INWMPMH001R000  
INWMPMH001I000

1 I.U.  
1 I.U.



Etherea AC units to Home Automation  
ECOi and PACi systems to Home Automation  
ECOi, ECOg and PACi systems to Home Automation

INWMPAN001I000  
INWMPAN001R000  
INMBSPAN016O000  
INMBSPAN064O000  
INMBSPAN128O000

1 I.U.  
1 I.U.  
16 I.U.  
64 I.U.  
128 I.U.



VRF and Digital systems to Home Automation

INWMPDOS001R000

1 I.U.



NASA VRF systems to Home Automation

INMBSSAM004O000  
INMBSSAM008O000  
INMBSSAM016O000  
INMBSSAM064O000

4 I.U.  
8 I.U.  
16 I.U.  
64 I.U.



Universal IR air conditioner to Home Automation

INWMPUNI001I000

1 I.U.

# Never before has it been so easy to check AC compatibilities

## AC Compatibility Tool

The new AC compatibility tool provides a fast and reliable way to check the compatibility of air conditioning units with Intesis interfaces.

Forget the time-consuming task of searching an AC unit's reference into the endless compatibility document. Thanks to the search engine of the new web-based tool, get the answer you are looking for with a click of the mouse.

In addition, the maintenance of the compatibilities is much easier now and therefore we ensure a tool always up to date.



### Search Engine

Type the first letters of your AC reference and get suggestions to make the search even easier.



### Updated information

We can ensure updated information thanks to the ease of maintenance of the tool.



### Compatible AC units

More than 2500 models already in our database. New units included every day!



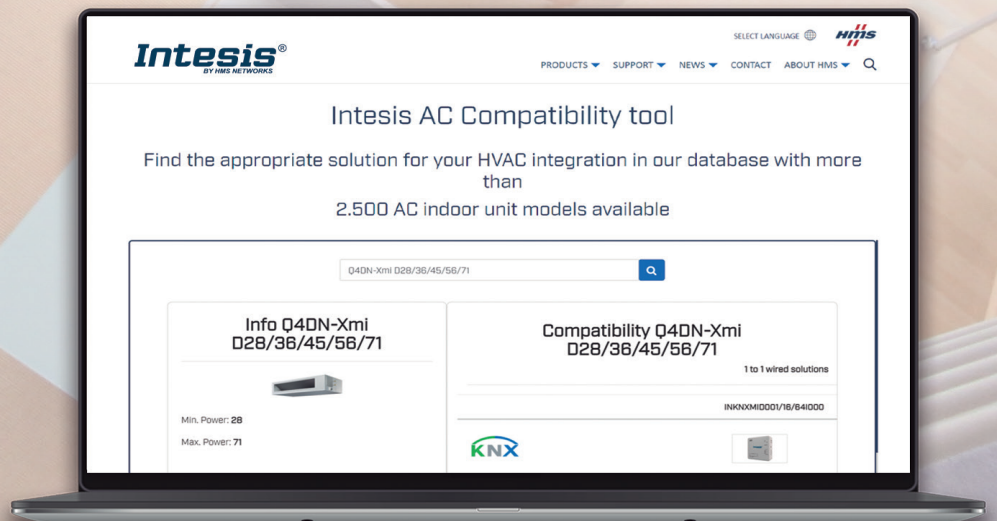
### The support behind

Can't you find your AC unit in the database? Send us a request and we will indicate the best solution for your AC.



### Compatible interfaces

Get an overview of all the compatible one-to-one Intesis interfaces with the AC unit searched.



# Intesis helps you to reduce your carbon footprint

Intesis is committed to reduce the CO2 emission of air conditioning units by offering the best integration product portfolio.

For more than 10 years, we have provided gateways to control more than 700,000 air conditioning units around the world. The estimated energy consumption from this units is more than 1.3 billion KWh/year. But thanks to our gateways, 411 million kWh are saved, that means 121 million Kg CO2 savings.

This figure is equivalent to the total CO2 that 527 million PCs generate during an hour, or the same than almost 5 million trees absorb in one year.



CO2 saved by...  
**4,851,582 trees**  
in one year



CO2 generated by...  
**18,951 European people**  
in a year



CO2 generated by...  
**527,345,920 PC working**  
during one hour



CO2 generated by...  
**275,658 flights**  
from London to New York



## Cloud solutions

Intesis has long experience of building automation protocols and communication solutions for HVAC integration brought to the cloud for straight-forward remote management. Control and monitor any building device, anywhere, anytime.



# Cloud Solutions

Driven by the fast adoption of internet technologies globally, demand is growing in the building and home automation markets for smart cloud-based device connectivity solutions.

With Intesis cloud solutions powered by HMS Hub™, customers are able to perform secure remote cloud-based monitoring and control of previously non-connected devices. Packaged as easy-to-deploy end-to-end solutions, Intesis cloud solutions include all needed elements to get you going!



## Native application

End-user-oriented Android and iOS app for mobile device management.



## Web dashboard

Professional web based device management tool developed for real-time control and monitoring of the installation.



## Flexible and adaptable

Adaptable cloud solutions for any project size, need and location, such as residential buildings, schools, bank offices, shops, public buildings and more.



## Distributed projects

Ideal for projects with distributed installations. Allows multiple sites to be controlled from the same dashboard.



## User and permission management

Grant access for other users and set permissions based on individual needs.



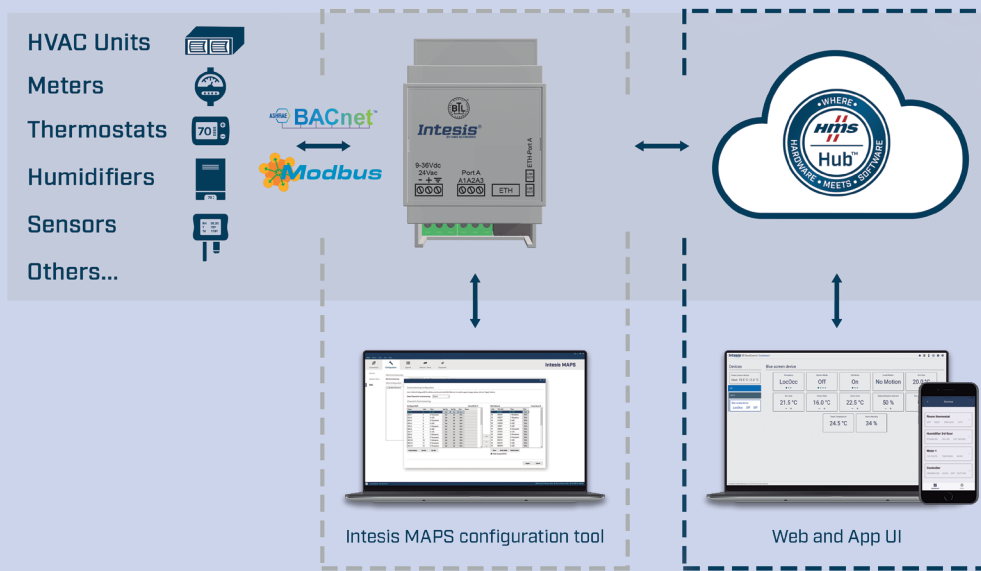
## Quick installation

Easy-to-install devices and intuitive configuration tools for fast project commissioning.



Cloud-based device management

# Intesis ST Cloud Control—remote management of BACnet and Modbus devices



Intesis ST Cloud Control is a cloud-based solution from HMS which enables easy monitoring and control of any BACnet or Modbus device from an end user oriented app and a web based dashboard.

Users simply install the ST Cloud Control gateway in the desired location and use Intesis MAPS for PC-based configuration. Here, the widgets can be created (e.g. Booleans, Operating Modes, Dimmers, Analog Values, Error Signals, etc.), mapping them with the BACnet objects or Modbus registers of choice.

Once the gateway is configured and assigned to a user, all devices and widgets will appear automatically in the app and web interfaces, presented in a dashboard. Each user is allowed to create their own, customized dashboards, in which devices and widgets can be renamed and reorganized according to personal preference.

Intesis ST Cloud Control uses HMS Hub™ for communication between connected devices and the the cloud interface. HMS Hub is an industrially proven edge™ connectivity solution by HMS Networks, which is now also brought to the building management arena to ensure safe and secure transformation of information.





# Manage and control any BACnet or Modbus device from an app or web interface

With ST Cloud Control you are able to connect all types of BACnet or Modbus devices to the cloud, for an intuitive and centralized remote device management through an app or a web interface using a common dashboard.



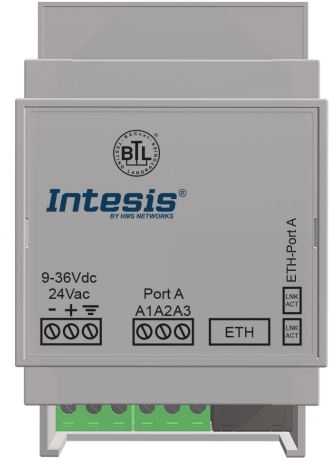
## Gateway features

- BACnet IP/MSTP or Modbus TCP/RTU connectivity
- Up to 32 devices can be connected to each gateway
- Up to 12 widgets per device
- Easy device configuration using Intesis MAPS



## Next level service

- Industrial grade connectivity now for Building Automation
- Fast and scalable real time edge connectivity over HMS Hub™
- Full data control and protection
- Secure and remote updates during the application lifetime



## System Features

- Monitor and control all devices in an intuitive way
- Comes with a native iOS and Android app and a web interface
- Create scenes and interact with multiple concurrent devices
- Calendar that shows the daily planned installation commands
- Notifications keep you updated about system status
- Device sharing and user permissions management
- Multiple site management from a common dashboard

or

BACnet or Modbus



ORDER CODE

- INSTMCG0040000
- INSTMCG0080000
- INSTMCG0160000
- INSTMCG0320000

DEVICE VERSION

- 4 D.V.
- 8 D.V.
- 16 D.V.
- 32 D.V.

Make conventional BACnet or Modbus devices smart with Intesis ST Cloud Control

# ST Cloud Control—Make BACnet and Modbus thermostats smart

The demand for cloud control of building automation devices is constantly increasing, and the conventional device manufacturers are losing business against smart devices.

Creating and maintaining an IoT infrastructure is a complex task, often distracting device manufacturers from what they are good at. ST Cloud Control provide cloud connectivity to any BACnet or Modbus device.

ST Cloud Control provides a cloud-based, easy-to-install solution which turns any BACnet or Modbus device into smart one. This reduces the time to market of smart devices, while offering a general solution for all brand products.

The flexibility and scalability of the platform allows to integrate as many variables as needed of an unlimited number of devices, and also provides a user friendly Android and iOS app for the customers to have on hand control.

## Benefits

- Reduce time to market
- Reduce infrastructure and maintenance costs
- Increase the user's comfort
- Increase the energy savings
- Reduce the configuration time



# ST Cloud Control—Establish a central control point for your installation

Since BACnet and Modbus are two of the most used protocols in the buildings, the number of devices using those protocols is increasing day by day.

In many installations, using a BMS is not the most convenient solution due to configuration complexity and price. However, a management tool is needed.

ST Cloud Control fits perfectly in automation projects with buildings in different locations (petrol stations, shop chains, rental apartments...) or with small automation needs (schools, small hotels, worker camps...).

In these installations the local management is highly appreciated, while a general installation view of all sites from a common dashboard is a must to apply different energy saving or maintenance policies.

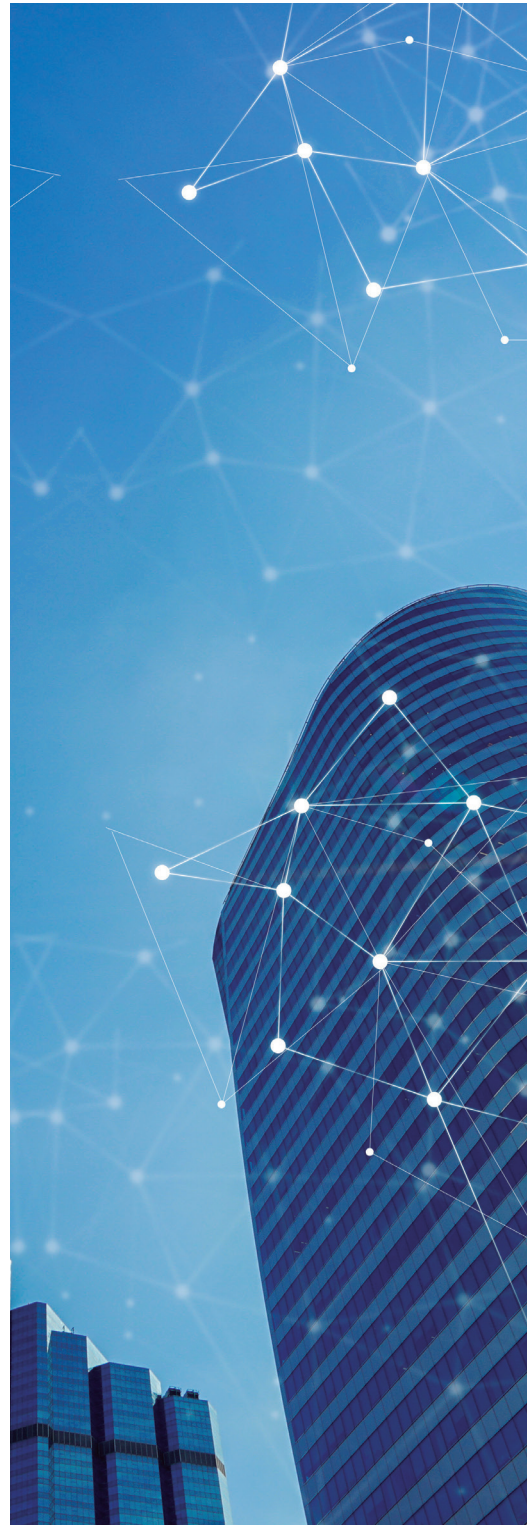
Using ST Cloud Control, you will be able to connect any Modbus and BACnet devices to the cloud for an intuitive and centralized management.

Thanks to the web-based dashboard there is no need to install or configure any additional software, simplifying the project commissioning.

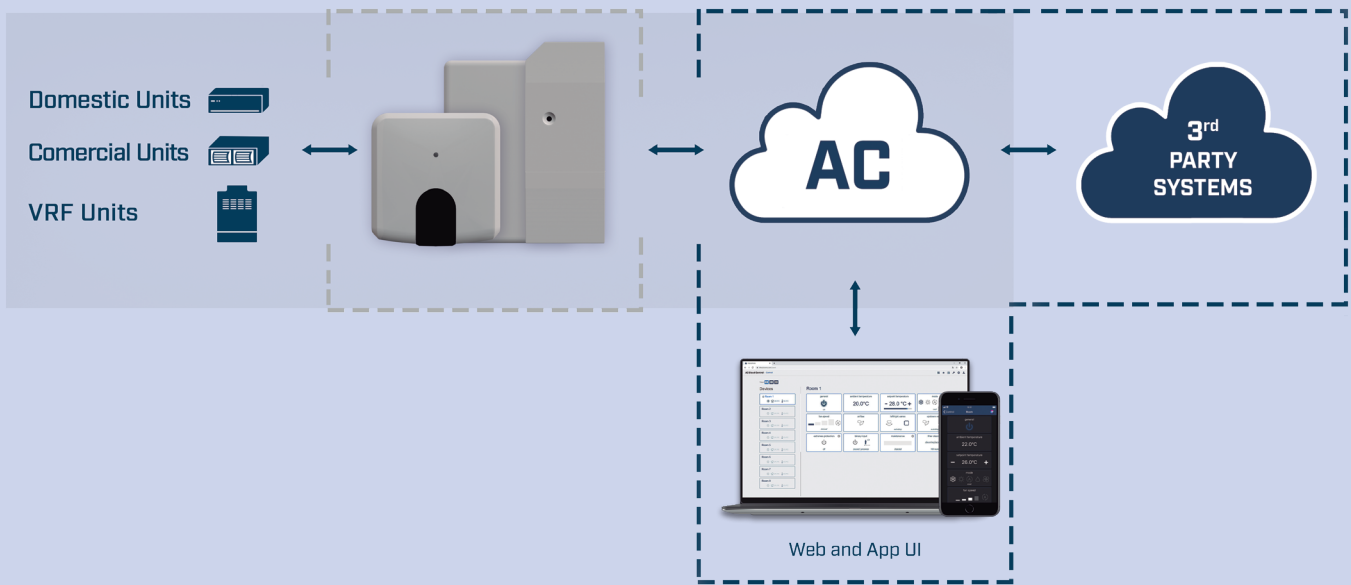
Using any web browser, all devices can be managed both locally and remotely, while the android and iOS app provide control and monitoring.

## Benefits

- Monitor and control the status of all connected devices locally and remotely
- Provide different access permissions to each user
- Minimize the commissioning time
- Improve maintenance efficiency
- Improve the performance of your installation



# Intesis AC Cloud Control—HVAC IoT solution for building and facility management



AC Cloud Control is an HVAC IoT solution created by Intesis for building and facility management. A cloud-based remote-control system, that allows comfortable and intuitive control of air conditioners and heat pumps from a smartphone, tablet, smart watch or from a simple internet browser.

The AC Cloud Control gateways, developed together with the major AC manufacturers, offer cloud connectivity to a wide range of compatible AC units. No cables are needed for cloud connectivity, as the devices use Wi-Fi technology to bring all the data to the cloud.

The bidirectional communication between Intesis devices and the AC unit, ensures the end user can keep using the manufacturers remote controller if desired, while keeping the cloud system updated with the real status of the HVAC units.



















Once the communication in between the device and the cloud system is established, the AC unit can be easily managed. All devices can be connected to a common dashboard regardless of the air conditioner or heat pump manufacturer, offering a new smart functionalities ensuring energy savings and unit maintenance.

The devices can be managed using a web-based dashboard, so no additional management tool needs to be installed. User friendly Android and iOS apps are available.

More advanced integrations are also available thanks to the professional Full REST API, available for cloud to cloud communication. The API is used for many cloud integrations like Google Assistant, Amazon Alexa or IFTTT among others.

Integrate any air conditioning system  
and control it from anywhere

# AC Cloud Control Functionalities

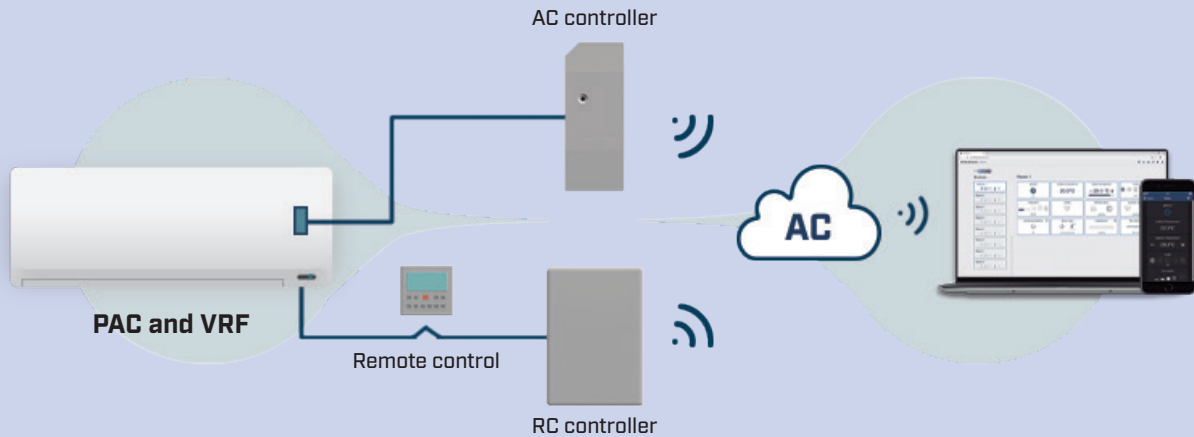
Remote control					
	ON/OFF	T° Set point	Mode	Ambient T°	Fan & vane control
	Smart				
		Email & push notifications	Timer & scenes	Multi-language	Error codes & descriptions
					
Voice over		Anti-frost & overheat	Operating hours	Auto updates	
Professional					
	Maintenance & filter cleaning	Binary input	Schedule calendar	T° limitation	Multiple sites

## AC Cloud Control main strengths

	<p><b>Multiple brands and multiple sites</b> Organize any brand and model in three different levels.</p>		<p><b>Energy saving and maintenance functionalities</b> Special functionalities to help our customers increase energy efficiency.</p>
	<p><b>Secondary users</b> Manage who can monitor and control each unit.</p>		<p><b>Professional API for 3rd party integration</b> Connect your system to Intesis cloud solutions and offer bidirectional HVAC control to your customers.</p>
	<p><b>Email and push notifications</b> Be aware of everything that happens in your climate system.</p>		<p><b>OEM projects</b> Reduce the time to market and maintenance costs, our R&amp;D resources are at your disposal.</p>

# Smart interfaces for air conditioning and heat pumps

AC Cloud Control devices are developed to interface with AC units and provide cloud connectivity using the local Wi-Fi network. They are b/g/n compatible and use 2.4GHz frequency, ensuring a strong data connection within the installation. Communication issues are avoided thanks to IoT-optimized communication protocols. They are firewall friendly since only outbound ports are used, ensuring an easy and secure configuration.



## Specific features for brand specific devices

- Devices manufactured along with the major AC manufacturers use the proprietary communication protocol of each manufacturer.
- Offers advanced parameters like error signals, error codes, power consumption\*.
- The AC controller is directly connected to the internal electronic card, and specifically designed for RAC and domestic lines.
- The RC controller is connected to the HVAC remote control bus, and specifically designed for PAC and VRF.

## Specific features for universal controller

- Offers compatibility for thousands of AC models.
- Only requires an indoor unit that has an IR receiver working with a standard wireless infrared remote controller.
- Equipped with an IR receiver.
- Allows using the universal and the manufacturer's controller at the same time.
- The Universal controller is specifically designed for PAC, RAC and VRF.



\*Depending on the AC brand.

**ORDER CODE****POINT VERSION**

AC Domestic units to Wi-Fi (ASCII)  
VRV and Sky systems to Wi-Fi (ASCII)

INWFIDAI001I000  
INWFIDAI001R000

1 I.U.  
1 I.U.



RAC and VRF systems to Wi-Fi (ASCII)

INWFIFGL001I000  
INWFIFGL001R000

1 I.U.  
1 I.U.



VRF systems to Wi-Fi (ASCII)

INWFILGE001R000

1 I.U.



FD and VRF systems to Wi-Fi (ASCII)  
Domestic units to Wi-Fi (ASCII)

INWFIMHI001I000  
INWFIMHI001R000

1 I.U.  
1 I.U.



Etherea AC units to Wi-Fi (ASCII)  
ECOi and PACi systems to Wi-Fi (ASCII)

INWFIPAN001I000  
INWFIPAN001R000

1 I.U.  
1 I.U.



VRF and Digital systems to Wi-Fi (ASCII)

INWFITOS001R000

1 I.U.



Universal IR air conditioner to Wi-Fi (ASCII)

INWFIUNI001I000

1 I.U. with Binary Inputs

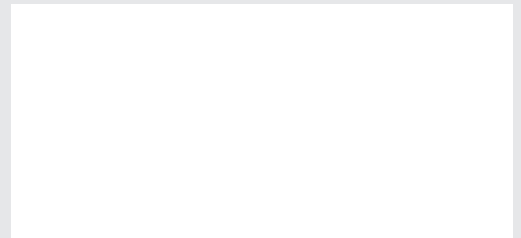


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[www.hms-networks.com/contact](http://www.hms-networks.com/contact)



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