



Control & Management Systems

SIMPLE AND INTUITIVE SOLUTIONS TO MANAGE PLANTS

A SINGLE INTEGRATED SYSTEM

Haier's communication protocol is unique to MRV systems and the residential and commercial products of the Supermatch line. This allows the same controls to be used for both small and large MRV plants.

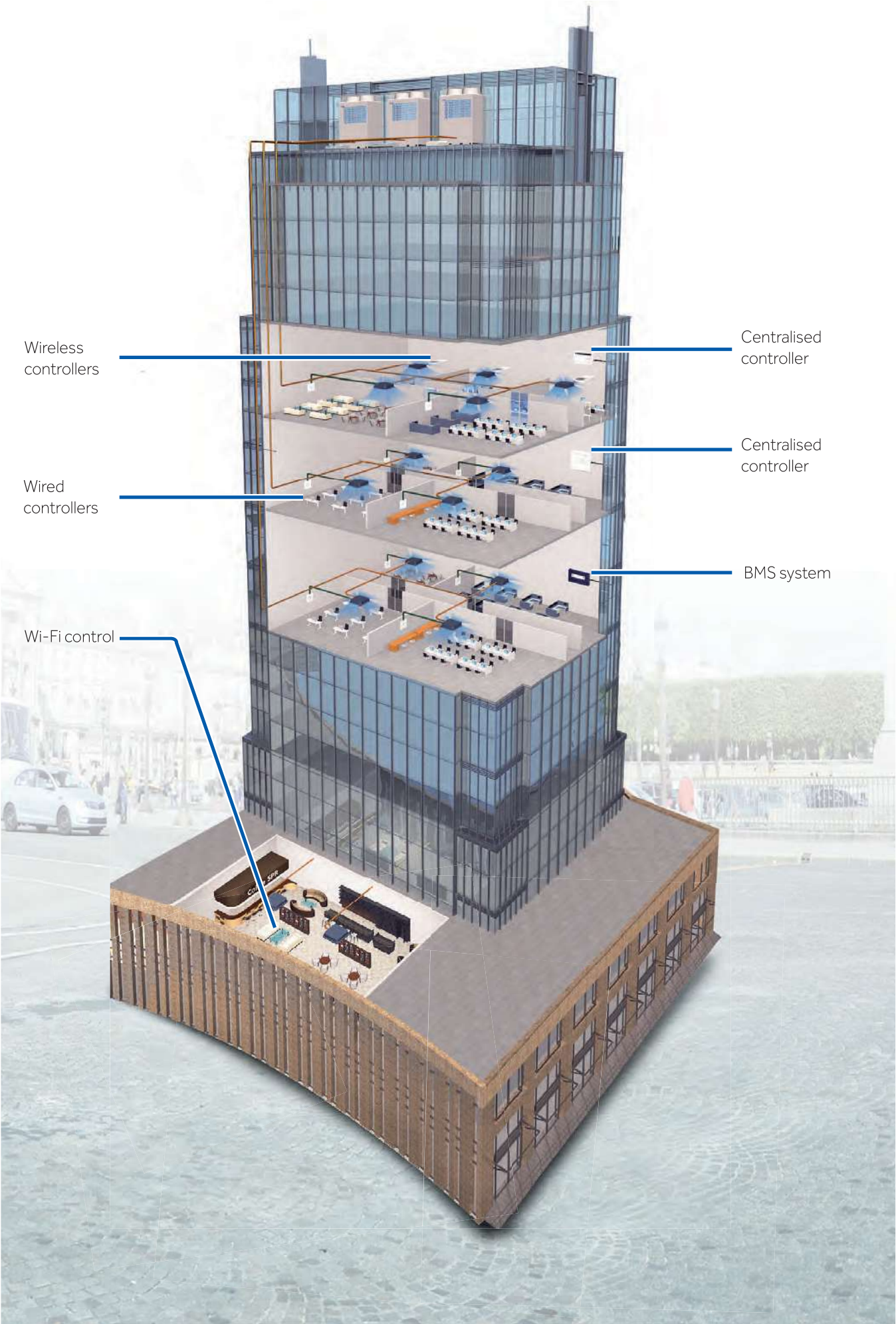
MANAGEMENT AND SUPERVISION

Haier provides reliable and professional supervision systems for better management of preventive maintenance as well.

"SMART" CONTROLS

Systems that can be customised to meet your needs.





CENTRALISED CONTROL

The centralised controls provide a customised control of the entire system from a single point. Manage individual units, groups, or zones and define different settings for each of them.

5" HC-SA164DBT UP TO 64 INDOOR UNITS



7" YCZ-A004 UP TO 256 INDOOR UNITS



12,5" HC-LA1CDBT UP TO 800 INDOOR UNITS

MULTI-
LANGUAGE



HC-SA164DBT

- Possibility to control via WEB/Internet by means of optional Wi-Fi module HI-WA164DBI
- Intelligent system for plants up to 64 indoor units
- 5" LCD TFT full touchscreen display backlit
- Built-in weekly timer
- Possibility of naming units and groups
- Displaying alarms
- Requires HA-MA164AD except when connected directly to MRV5 versions or MRV S II (AU**NFKERA) - for details see following pages
- 32 independent cooling circuits, each with their own HA-MA164AD converter
- Ability to simultaneously control MRV units and Split units Supermatch / Residential.
- MODBUS output as standard



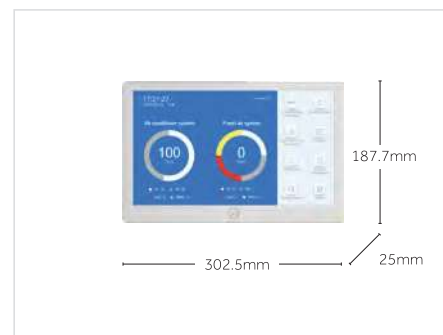
YCZ-A004

- Smart system for medium size plants up to 256 indoor units
- Large 7" LCD TFT full touchscreen display
- Built-in weekly timer
- Possibility of naming units and groups
- Displaying alarms
- Requires HA-MA164AD except when connected directly to MRV5 versions or MRV S II (AU**NFKERA) - for details see following pages
- 32 independent cooling circuits, each with their own HA-MA164AD converter
- **You cannot control MRV units and Supermatch/Residential with the same controller**
- MODBUS output as standard



HC-LA1CDBT

- 12.5-inch TFT LCD touch screen
- Max. 800 MRV indoor units and Max. 128 LCAC IDUs connectable for one controller (totally 928) IDUS connectable
- Floor plan layout view
- Web Access and Email Alarm
- Weekly Schedule and Special day setting
- Integrate 3rd party devices like fire alarm, lighting with Haier indoor units
- All MRV system requires the gateway HA-MA1ADB (one system requires one gateway)
- LCAC products requires PCB adapter YCJ-A002 (One IDU requires one YCJ-A002)
- Total electricity consumption display and consumption distribution for tenant billing (the amp meter would need to be connected to HA-MA1ADB)
- Data curve



HA-MA164AD

- Haier protocol converter to RS-485
- To be connected to centralised systems (not required for series 5 outdoor units)
- Each cooling circuit needs 1 converter
- 1 converter can handle max 64 internal units on single cooling circuit
- This accessory, if NOT connected to a centralised controller as a dedicated converter, can be used individually to transform the communication protocol "Homebus Haier" into "MODBUS". (For this feature, configure the selectors in the desired mode)



HA-MA1ADB

- Interface: Modbus
- Match with 12.5-inch webserver central controller HC-LA1CDBT
- Max. 128 indoor units connectable
- Digital tube display Indoor quantity, gateway address, time and date
- Electricity data collection, calculation, distribution and storage



HI-WA164DBI (WI-FI MODULE)

Features:

This module, connected to an Internet access with Wi-Fi, allows remote control via dedicated APP on tablets and smartphones (no PC).

Each Wi-Fi module can control up to 64 indoor units.

Through the APP, the same functionality as the centraliser, connected to the MRV system, is replicated and managed.

Specifications:

- Control functions, on/off, temperature setting, timer settings, weekly, fan speed.
- Alarm monitoring function, errors, error history.
- User account management, including account registration, password change and account information modification via APP.
- Convenient sharing of the management authority. The primary account can share the management of the primary account with the secondary accounts, without re-registering the units.
- Each individual APP can handle up to 256 indoor units.
Example: 4 Wi-Fi modules with 64 Interior each, or 7 Wi-Fi modules with 36 interiors each
- If a HC-SA164DBT centralised controller is used directly, the Wi-Fi module can be connected directly to the centraliser on a dedicated terminal.
- The Wi-Fi module can be connected directly to the MRV series 5 outdoor units, or to the HA-MA164AD converter if the outdoor units are NOT series 5.

With this configuration it is possible to control the MRV system even without local centralised controllers, using only the APP installed on tablet or smartphone, by ensuring stable and fast Wi-Fi coverage to the module.



If used independently (not connected to a centralized controller) it is necessary to provide 12 DC electric supply (not provided by Haier)

HC-SA164DBT



- Control of up to 64 indoor units
- Control of the operating mode, temperature, ventilation, deflectors
- Error control and alarm memory



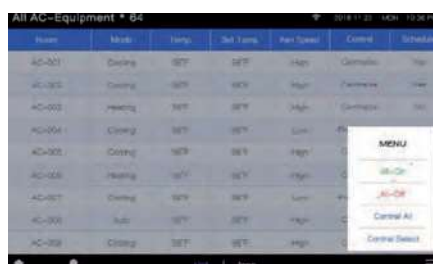
- Daily and weekly programming for single unit
- Free and independent programming

HC-LA1CDBT

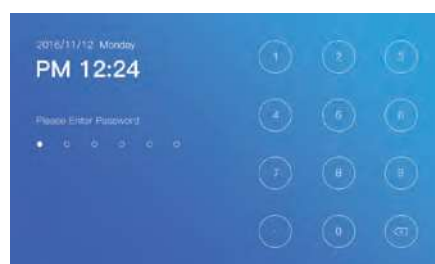


- Monitoring the status of each individual unit

HA-MA1ADB



- Individual - group - total visualisation



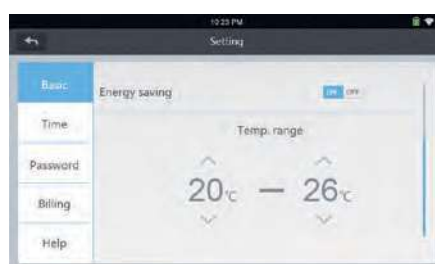
- Password setting at different levels of operation

YCZ-A004



Monitoring and control

- Control of up to 256 indoor units
- Control of the operating mode, temperature, ventilation, deflectors
- Icons displayed similar to those on remote commands



Power-saving function

- User function locking mode
- Defining lower and upper limits for desired temperature selection



Zone management

- Defining zones as per user requests



Timer programmer

- Daily and weekly programming for single unit
- Free and independent programming

WI-FI FEATURES

This module, connected to an Internet access with Wi-Fi, allows remote control via dedicated APP on tablets and smartphones (no PC).

Each Wi-Fi module can control up to a maximum of 64 indoor units, which is the limit of the centraliser. Through the APP, the same functionality as the centraliser, connected to the MRV system, is replicated and managed.

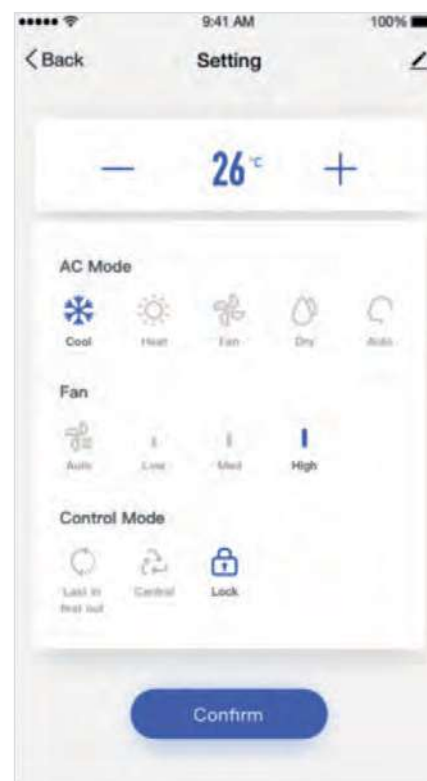
SPECIFICATIONS

- It is connected to the centraliser through the cable supplied, from which it is powered.
- It can be connected up to 100 meters from the centraliser, so as to reach an area covered by Wi-Fi.
- Control functions, on/off, temperature setting, timer settings, weekly, fan speed.
- Alarm monitoring function, errors, error history.
- User account management, including account registration, password change and account information modification via APP.
- Convenient sharing of the management authority. The primary account can share the management of the primary account with the secondary accounts, without re-registering the units.
- Each individual APP can handle up to 256 indoor units.
Example: 4 Wi-Fi modules with 64 Interior each, or 7 Wi-Fi modules with 36 interiors each
- The Wi-Fi module can be connected directly to the MRV series 5 outdoor units, or to the HA-MA164AD converter if the outdoor units are NOT series 5. With this system you can control the MRV system even without a centraliser installed, but through the APP alone by ensuring adequate Wi-Fi coverage to the module.
- The APP is available for Android and iOS.



**WI-FI MODULE
HI-WA164DBI**

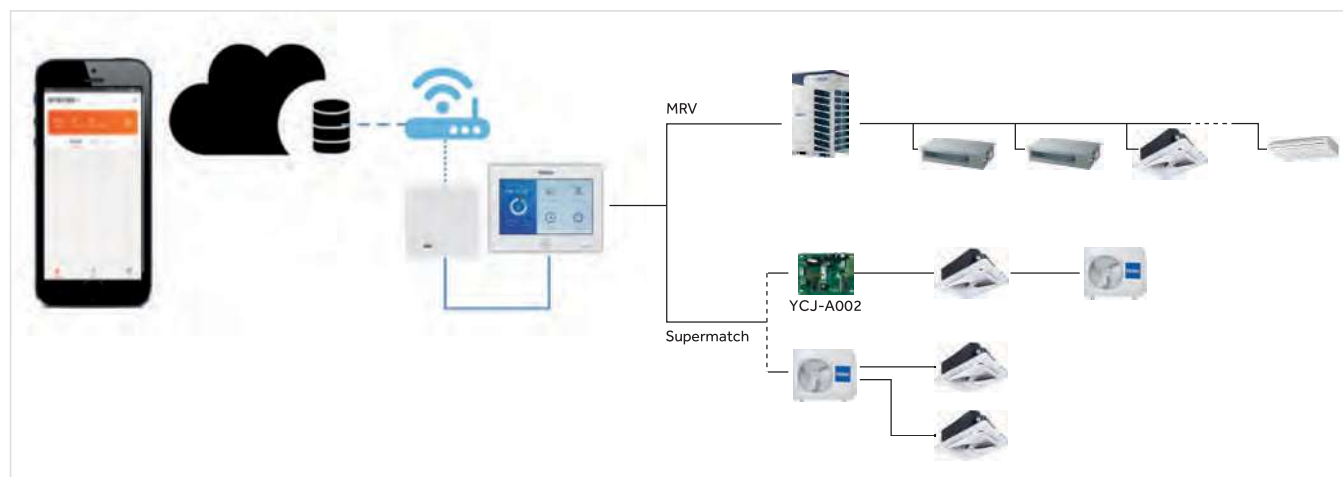
HAIER SMART AIR 2



HI-WA164DBI WI-FI MODULE FOR CENTRALISED CONTROLLER HC-SA164DBT

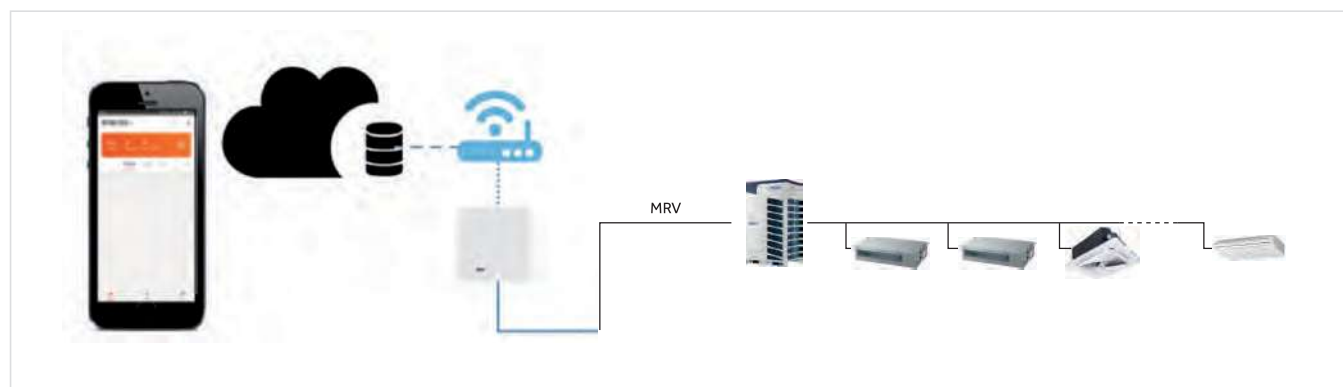


CONFIGURATION WITH CENTRALISER



CONFIGURATION WITHOUT CENTRALISER

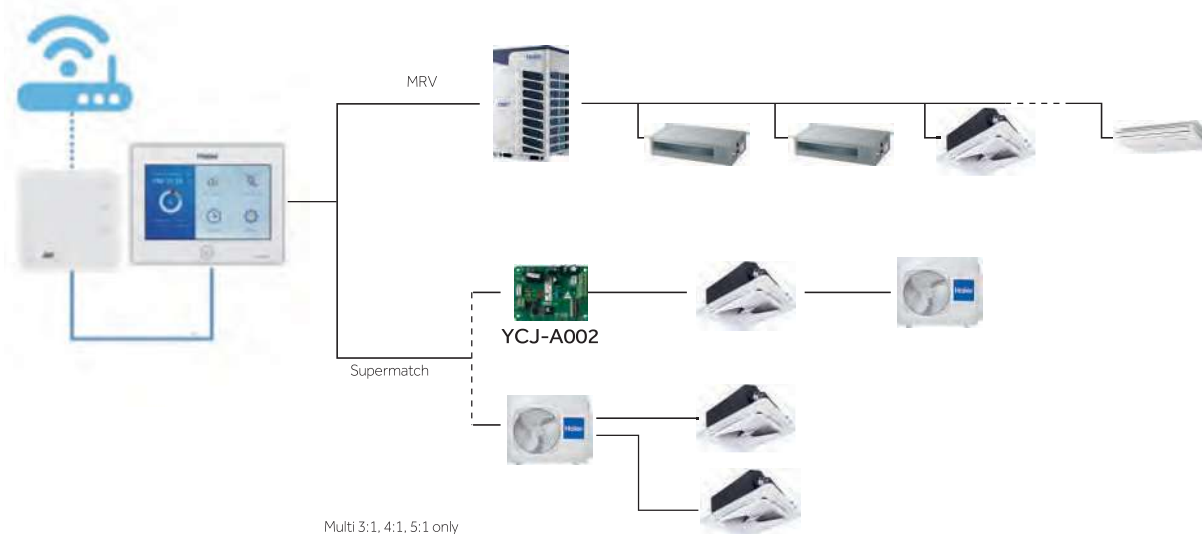
The Wi-Fi module can be connected directly to the MRV series 5 outdoor units, or to the HA-MA164AD converter connected to other non-series 5 MRV outdoor units. With this system you can control the MRV system even without a centraliser installed, but through the APP alone by ensuring adequate Wi-Fi coverage to the module.



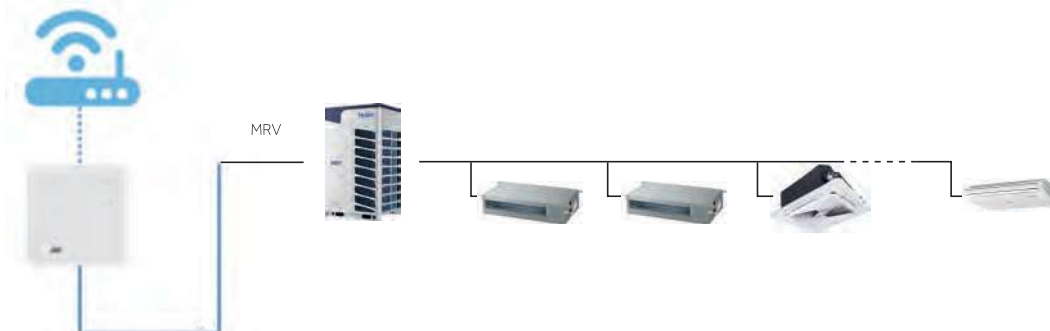
If used independently (not connected to a centralized controller) it is necessary to provide 12 DC electric supply (not provided by Haier)

EXAMPLES OF CONNECTION FOR THE "HI-WA164DBI" WI-FI MODULE ACCORDING TO THE TYPE OF SYSTEM AND THE EXPECTED PRODUCTS

Directly to the HC-SA164DBT centralised controller if provided.
The module can only be connected directly to this centralised controller.

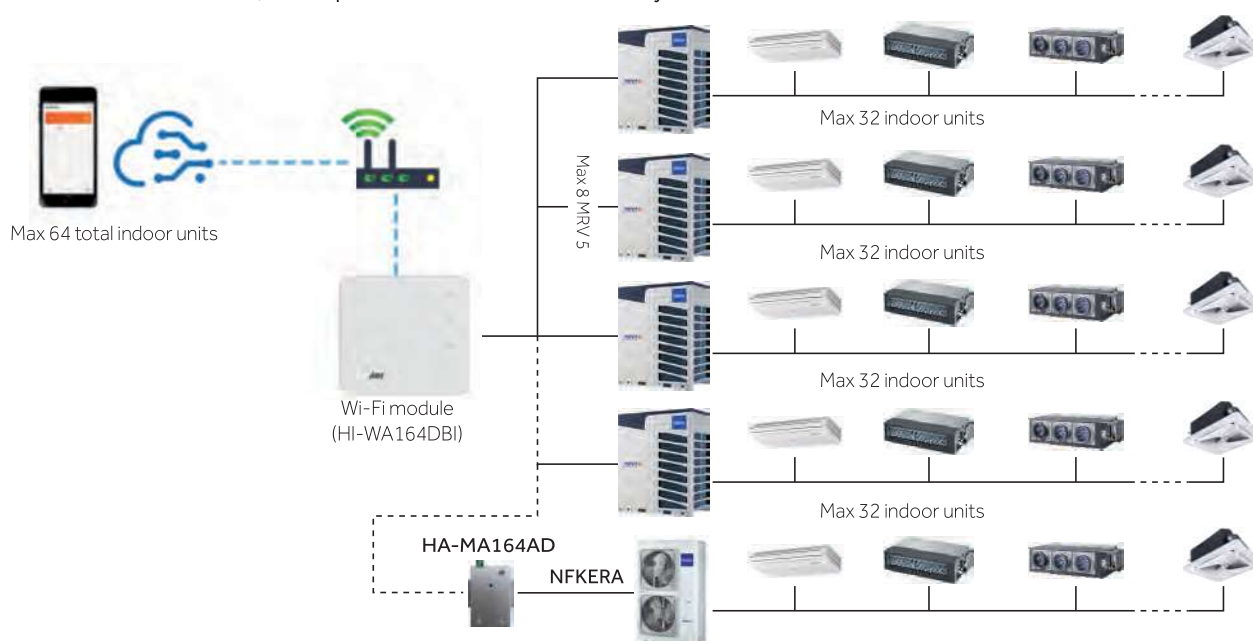


Directly to the plant; therefore, system management only via WEB / Wi-Fi
If the outdoor unit is series 5, the adaptor HA-MA164AD is not necessary.



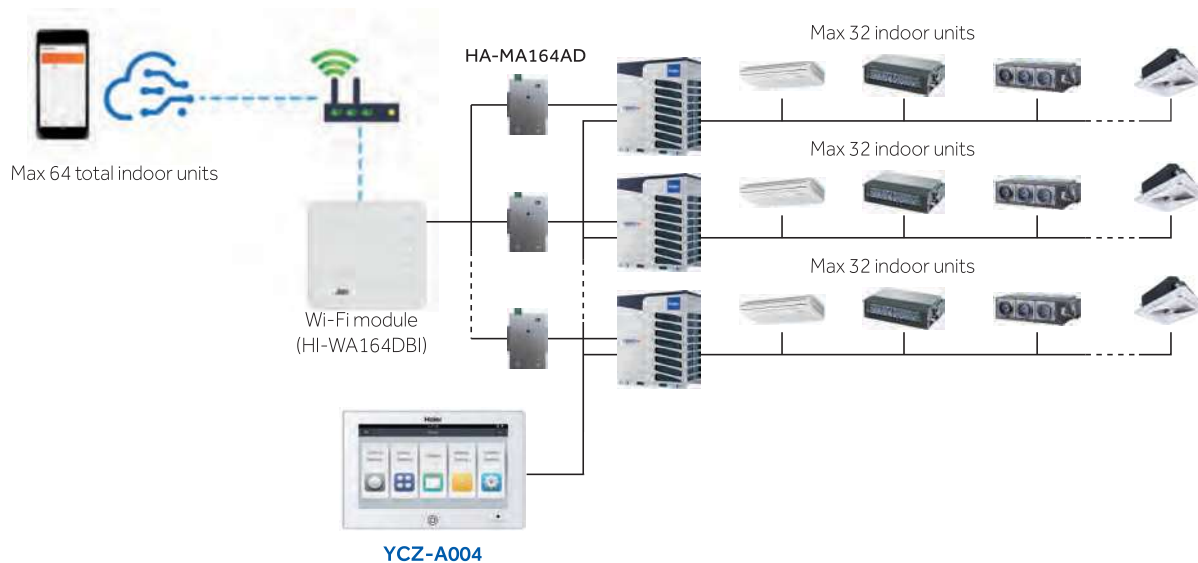
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Directly to the plant; therefore, system management only via WEB / Wi-Fi
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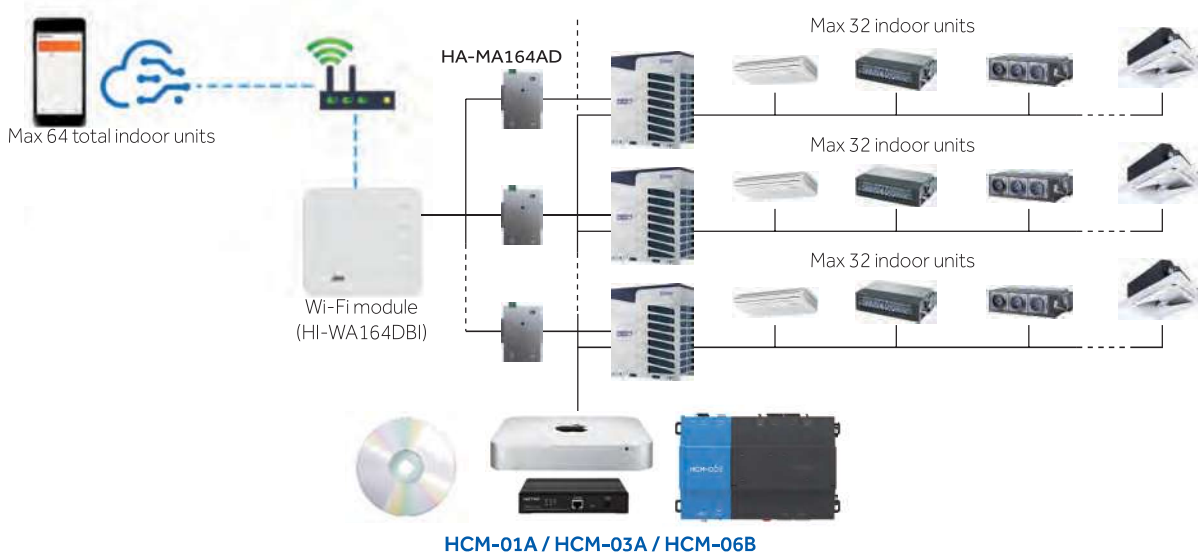


If used independently (not connected to a centralized controller) it is necessary to provide 12 DC electric supply (not provided by Haier)

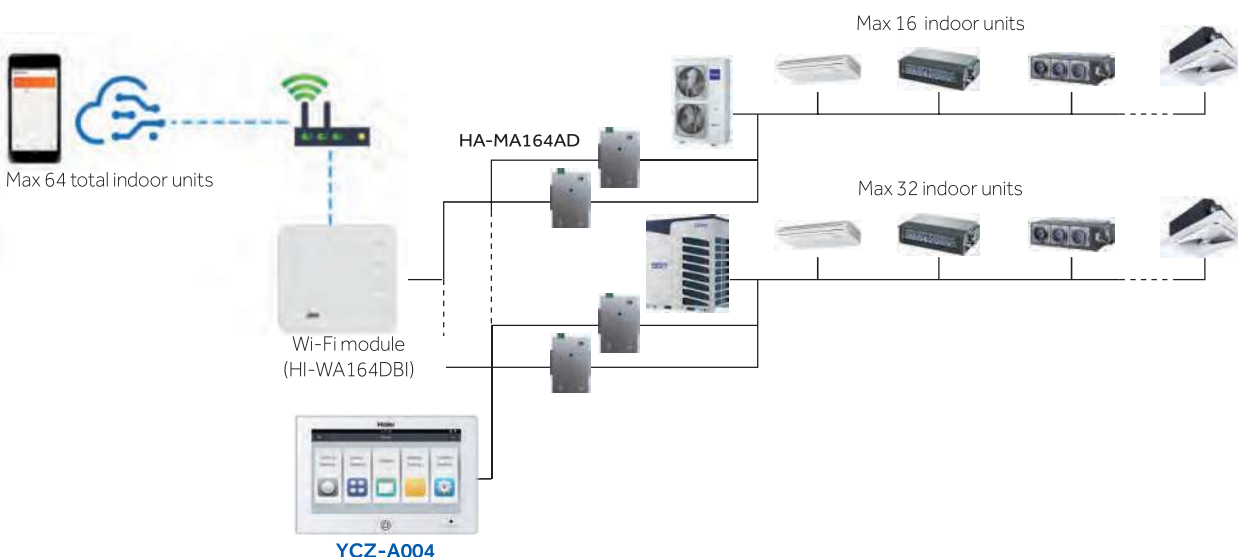
If a centralised controller OTHER THAN the HC-SA164DBT model is required locally, it is necessary to add 1 HA-MA interface for each external unit



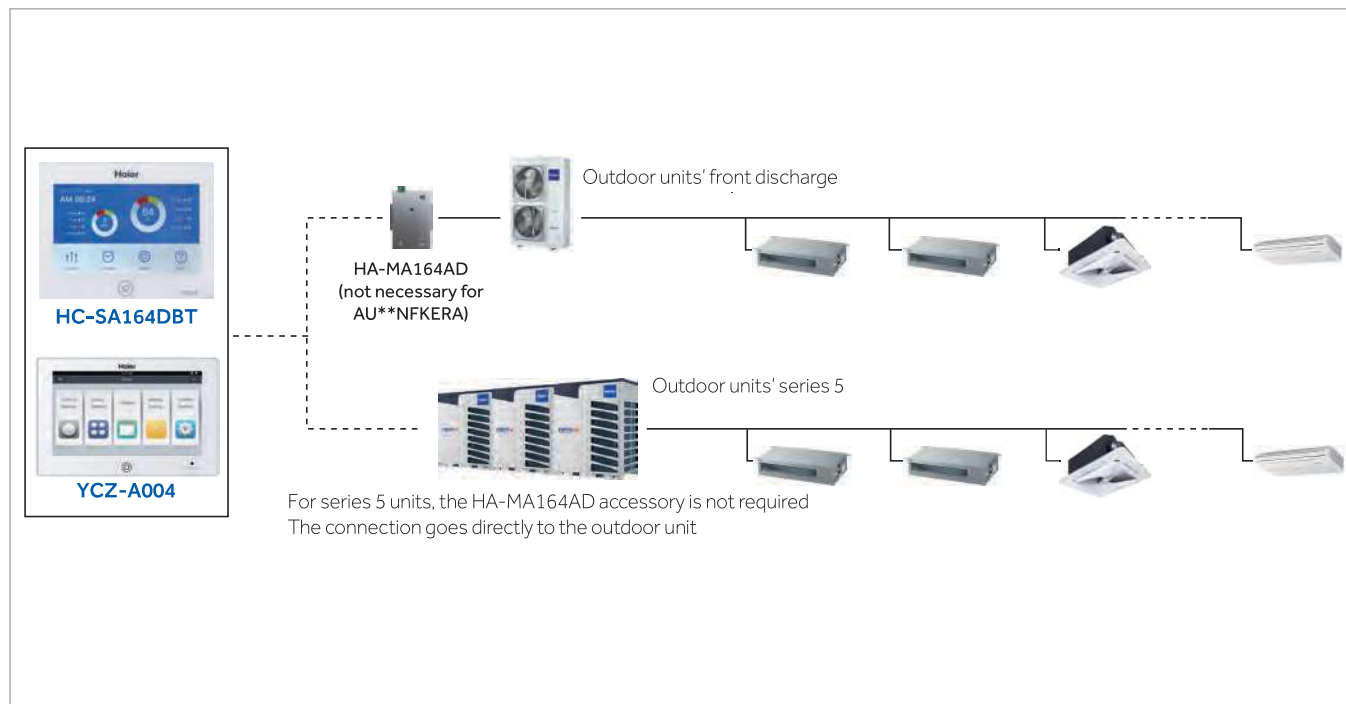
Coupled to a BMS-web or local system, always with the addition of HA-MA adapters



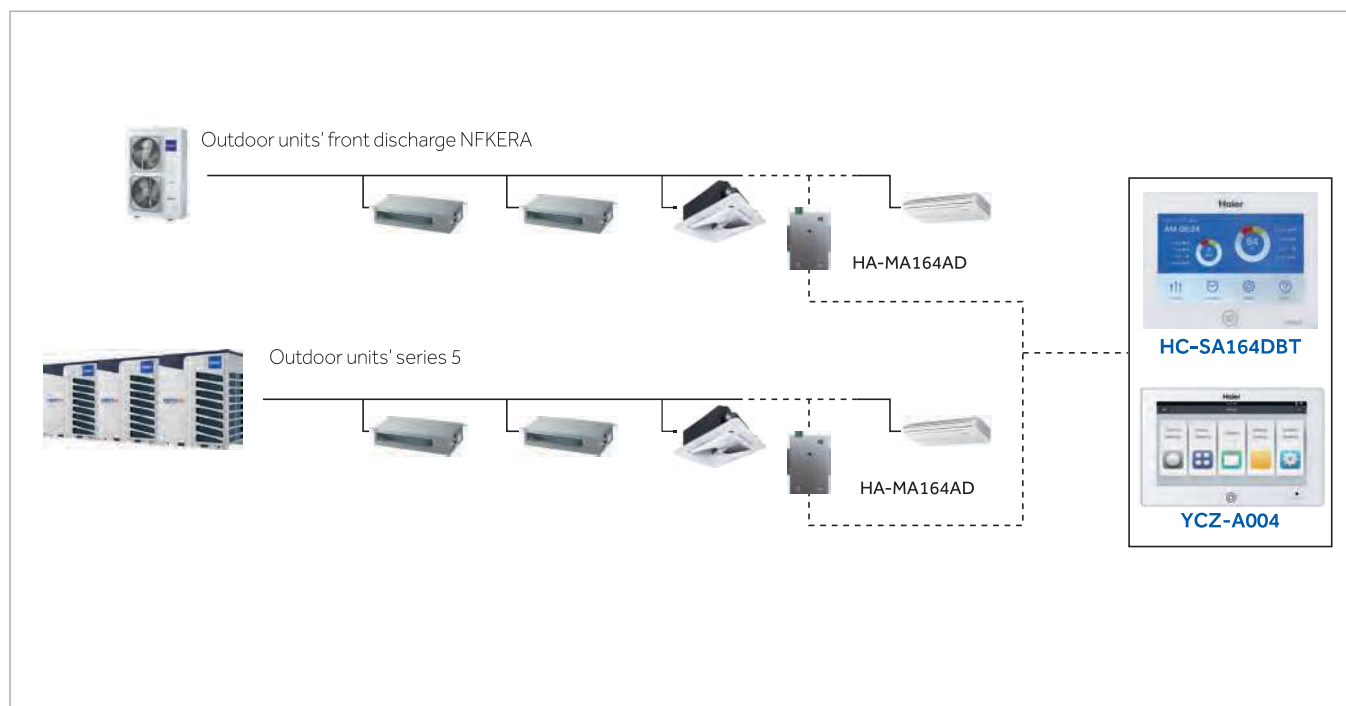
If a centralised controller is required locally and the external units are NOT 5 series, but S-series (front discharge), it is necessary to add 2 HA-MA interface for each outdoor unit, 1 for Wi-Fi and 1 for the centraliser



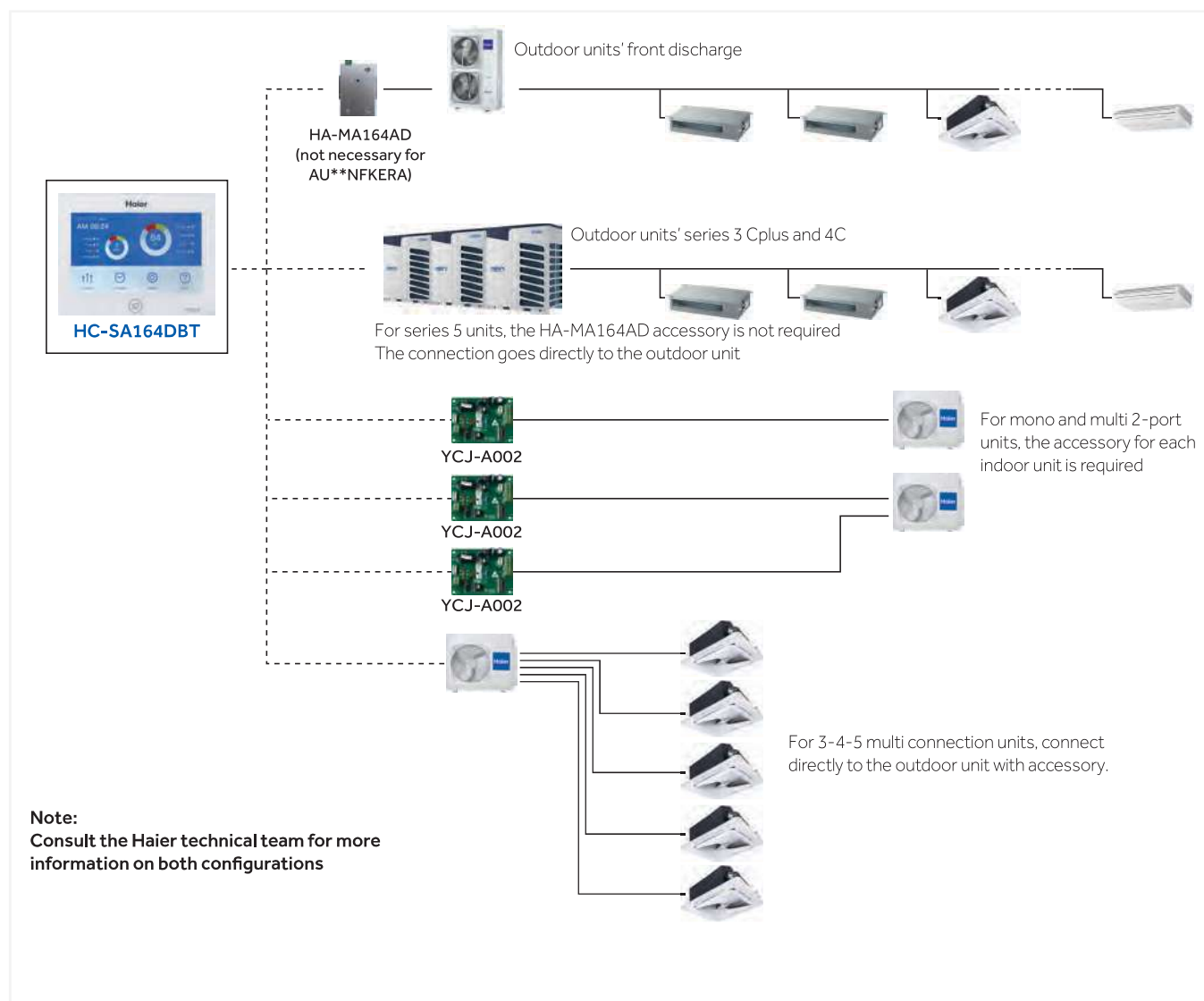
CONNECTION OF CENTRALISED CONTROLLERS DIRECTLY TO OUTDOOR UNITS



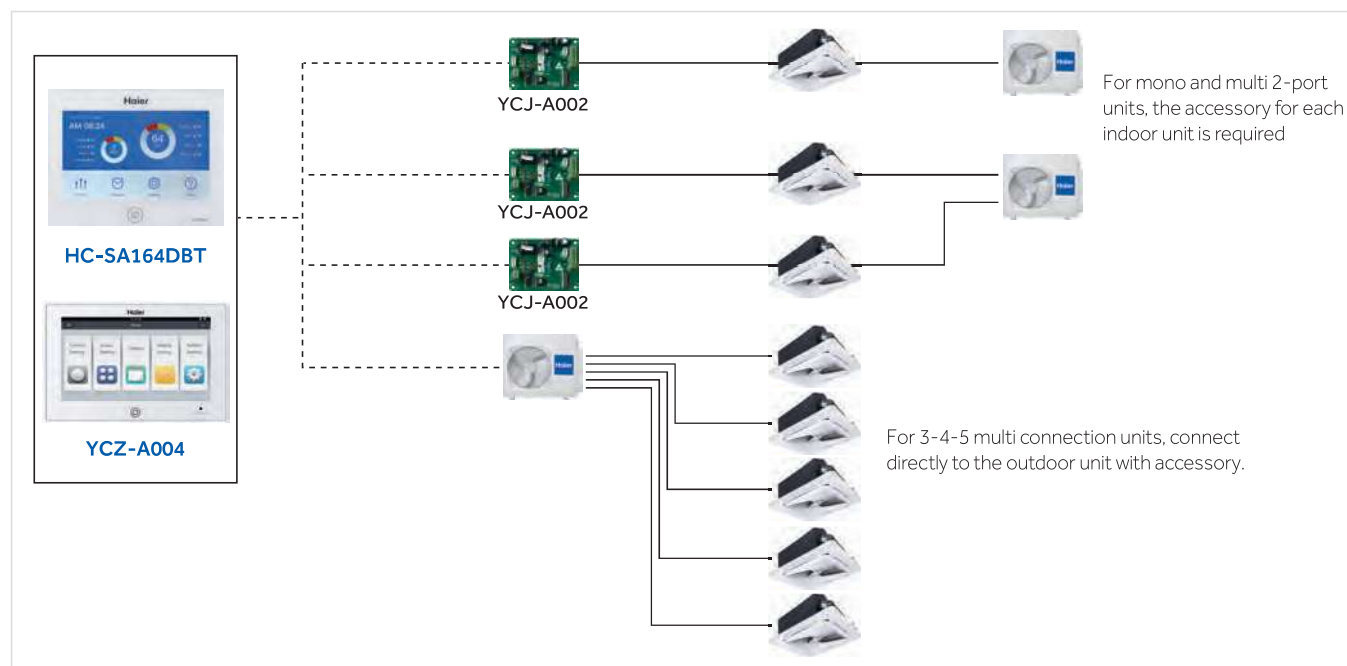
CONNECTION OF CENTRALISED CONTROLLERS IN AN INTERNAL POINT OF THE PLANT IN THIS CONFIGURATION, THE 5 SERIES UNITS ALSO REQUIRE THE HA-MA164AD ACCESSORY



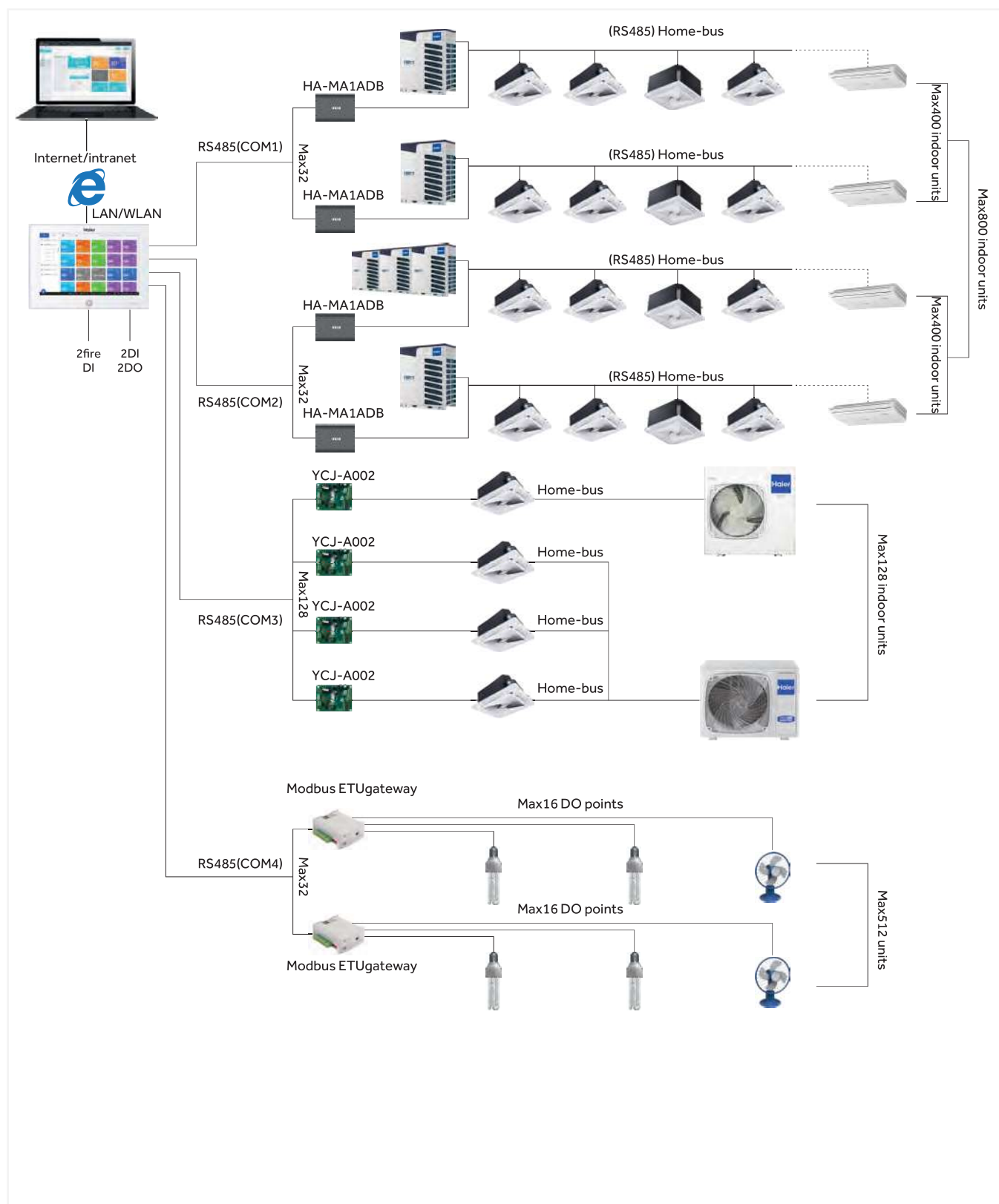
CONNECTION OF CENTRALISED CONTROLLERS IN MIXED MRV AND SUPERMATCH SYSTEMS ONLY FOR HC-SA164DBT



CONNECTION OF CENTRALISED CONTROLLERS TO SYSTEMS COMPOSED ONLY OF SUPERMATCH UNITS



CONNECTION OF THE CENTRALIZED CONTROLLER IN MRV-SUPERMATCH MIXED SYSTEMS ONLY WITH HC-LA1CDBT



REMOTE CONTROLLERS

Haier offers different types of remote controllers to choose from based on your functional and design requirements.

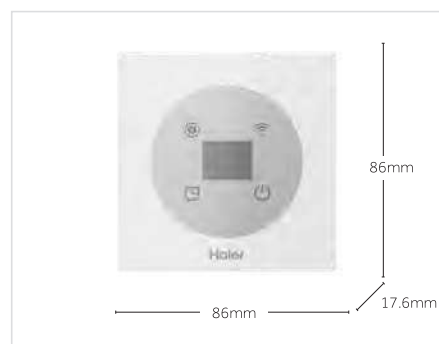
YR-HQS01 **R32** + **R410A**

- On/Off, Operation Mode, Fan speed, Temperature setting, Swing
- Turbo and Quiet
- Individual louver control for "Round flow cassette and Cassette 620
- Clock & Timer
- Health function
- Self-Clean
- Backlight



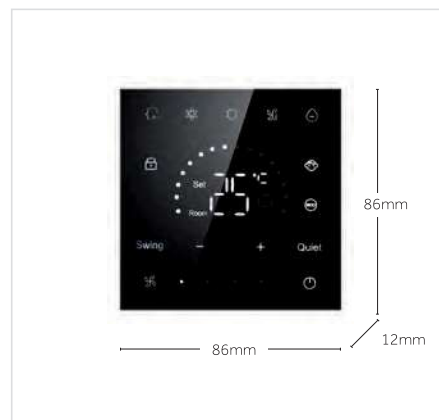
HA-SB101DB **R32** + **R410A**

- Infrared signal receiver
- Realize the remote control of duct type indoor unit
- Model selection depends the duct indoor unit



HW-BA101ABT **R410A**

- Modern, high-intensity LED design
- Full touch black display. Automatic lighting when the keys are pressed. Black screen at rest position.
- NOT equipped with a clock or timer
- Double temperature and fan speed setting mode; a continuous infinite range or by acting on the classic + and -
- Quiet operation
- Operating mode, deflectors in on / off mode
- Possibility of group control of up to 16 indoor units with the same operating mode
- Limited features ideal for hotels
- Filter cleaning interval indication
- Error control
- Function block from centraliser



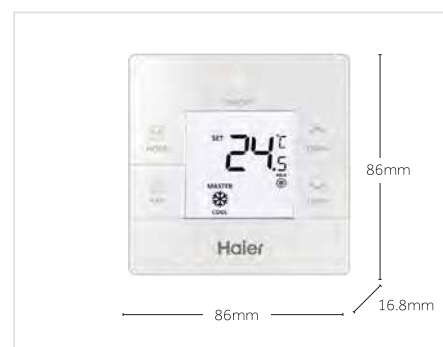
HW-SA201ABK **R410A**

- Modern, high-intensity LED design
- Full touch black display. Automatic lighting when the keys are pressed. Black screen at rest position.
- NOT equipped with a clock or timer
- Double temperature and fan speed setting mode; a continuous infinite range or by acting on the classic + and -
- Quiet operation
- Operating mode, deflectors in on / off mode
- Possibility of group control of up to 16 indoor units with the same operating mode
- Limited features ideal for hotels
- Filter cleaning interval indication
- Error control
- Function block from centraliser



NEW HW-BA316AFK **R32** + **R410A**

- Two core non-polarity wiring, installation convenience
- Basic function: on/off, mode, fan speed, temperature setting
- Individual & group control (max. 16 indoor units)
- Built-in infrared signal receiver for infrared remote control
- R32 visual and acoustic leakage alarm



NEW HW-PB101AFK **R32** + **R410A**

- Two core non-polarity wiring, installation convenience
- Individual & group control (max. 16 indoor units)
- Basic function: on/off, mode, fan speed, temperature setting
- Built-in infrared signal receiver for infrared remote control
- Built-in buzzer
- R32 visual and acoustic leakage alarm
- IDU & ODU parameters checking



NEW HW-SA301AFK **R32** + **R410A**

- Two core non-polarity wiring, installation convenience
- IDU & ODU parameters checking
- Individual & group control (Max. 16 indoor units)
- On/Off, mode, fan speed, temperature, swing
- °C/°F, Temp. adjustment sensitivity $\pm 0.5^{\circ}\text{C}$ ($\pm 1^{\circ}\text{F}$)
- Timer
- Backlight off
- Built-in infrared signal receiver for infrared remote control
- Individual louver control for round-way cassette
- R32 visual and acoustic leakage alarm
- Self-cleaning function



EXAMPLES OF CONNECTION OF REMOTE CONTROLLERS AND WI-FI MODULES

Example of single controller connection for independent operation of each indoor unit

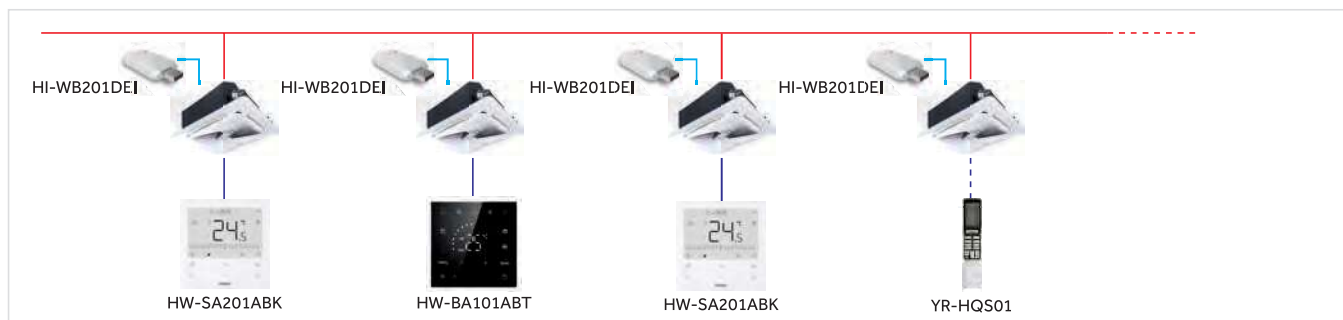


Example of group controller (only for wired controllers - max 16 indoor units on a single controller)

In a group management with a single wired controller, the functions and operating modes of all the internal units connected to that controller will be identical to each other. Independent management is not possible. Each command given will be replicated on all the indoor units in the same way.

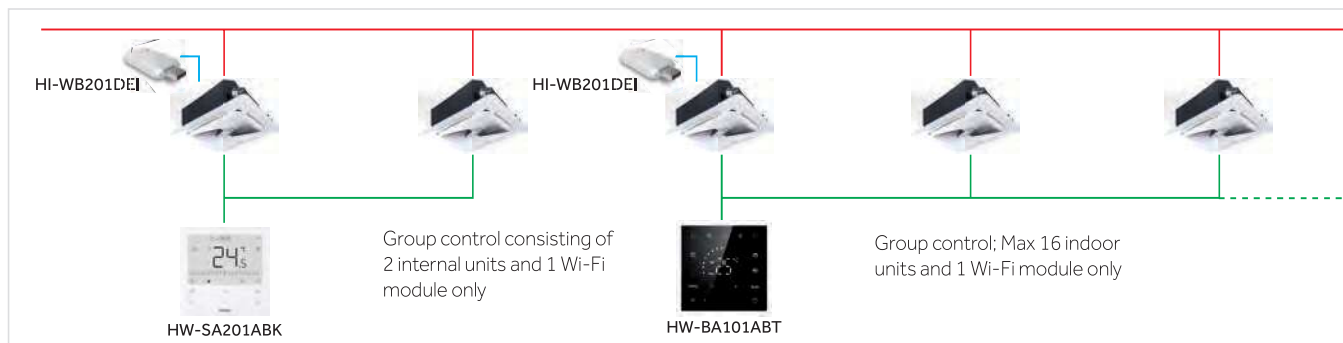


Example of a Wi-Fi module connection, for independent operation of each indoor unit



Example of group management through Wi-Fi module

Connect only one Wi-Fi module on the same Master unit, where the group wired controller is connected. Each command given through the APP, as for a group wire controller, will be replicated in the same way on all the indoor units connected to that wi-fi controller / module.



Infrared receiver on controller.

Wired controller models: HW-BA136AFK, HW-SA301AFK and HW-PB101AFK are equipped with receiver for wireless remote controllers. This function allows you to control an indoor unit with the wired controller and with a remote control simultaneously. (example: wired controller on the wall and remote controller on the desk or on the bedside.)



INTEGRATED MANAGEMENT SYSTEM FOR MEDIUM AND LARGE BMS PLANTS

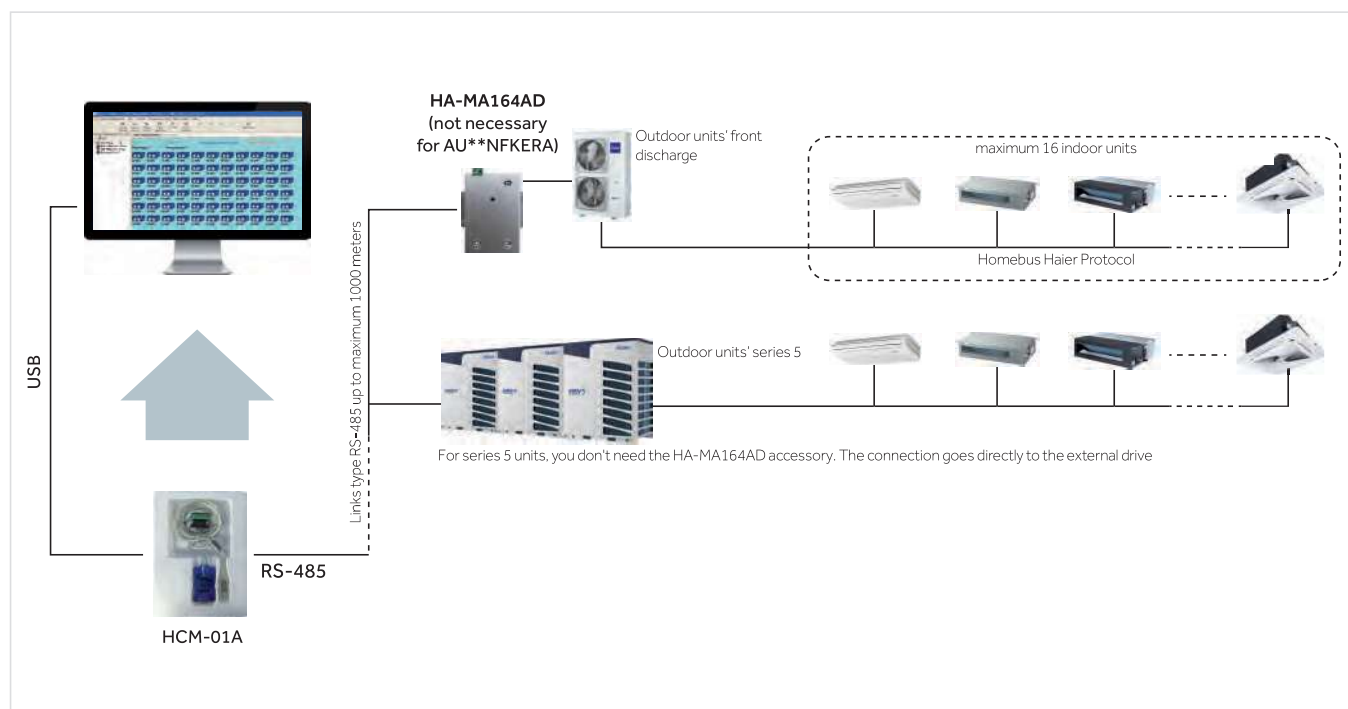


HCM-01A LOCAL MANAGEMENT SYSTEM FOR MEDIUM-SIZED PLANTS

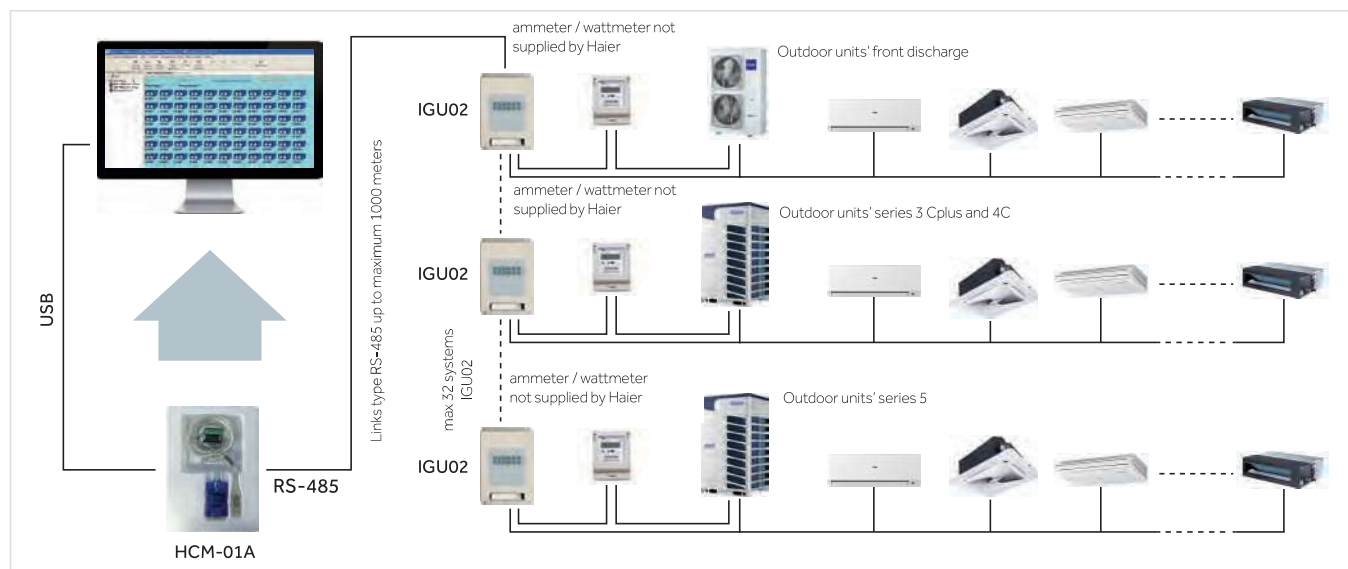
- MRV plant supervision and management system for local use on PC.
- RS-485 protocol converter in RS-232 via USB adapter for local use on PC.
- Control max 400 units and/or maximum 32 independent cooling circuits
- Each cooling circuit requires HA-MA164AD adapter (except for outdoor unit series 5)
- Management of all system parameters by zones / groups / individual units, weekly and monthly timers, error management and alarm history.
- Clear and intuitive visualisation software
- **DOES NOT allow management via web/Internet**
- The software works on Windows platform (7 32/64 bits- 8 Pro -10 Pro)
- The software has a license for use on a single PC. If you plan to use on two or more PCs, you need to purchase 2 or more licenses
- Possibility of accounting for electricity consumption. Providing IGU-02 adapters instead of HA-MA164AD. One IGU-02 for each cooling circuit, also for series 5 outdoor units. For each cooling circuit / IGU-02, a "Wattmeter / pulse generator" must be provided which detects the energy absorption of the outdoor units and proportionally generates counting pulses that the IGU-02 adapter receives and transforms into values to be managed and visualised by the software **(the pulse generator wattmeter / ammeter is not supplied by Haier, as it must be selected and sized according to the power of the plants).**



INDICATIVE DIAGRAM FOR LOCAL MANAGEMENT WITH HCM-01A



INDICATIVE DIAGRAM FOR LOCAL MANAGEMENT WITH HCM-01A AND CONSUMPTION ACCOUNTING



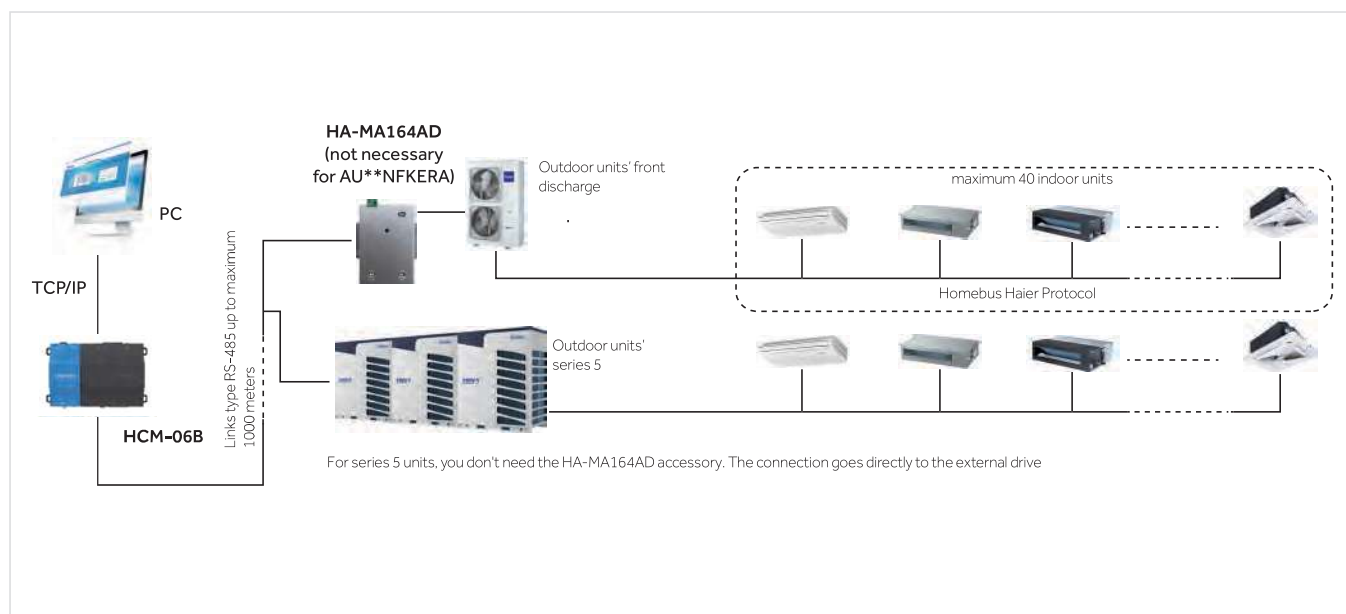
HCM-06B MEDIUM PLANT MANAGEMENT SYSTEM WITH WEB / INTERNET CONTROL FUNCTION INTEGRATED SYSTEM FOR PLANTS UP TO 250 INTERNAL UNITS

- Remote monitoring version
- Third party interface: BACnet ip and Modbus tcp
- Max. 250 indoor units can be controlled for HCM-06B
- Max. 32 systems for HCM-06B. Each system requires one HA-MA1ADB.
- Operation status setting & monitoring
- Schedule setting
- Multi user management with different authorized levels
- Electricity charge report (must use HA-MA1ADB)
- Operation and error history log
- Cooperated technology with honeywell

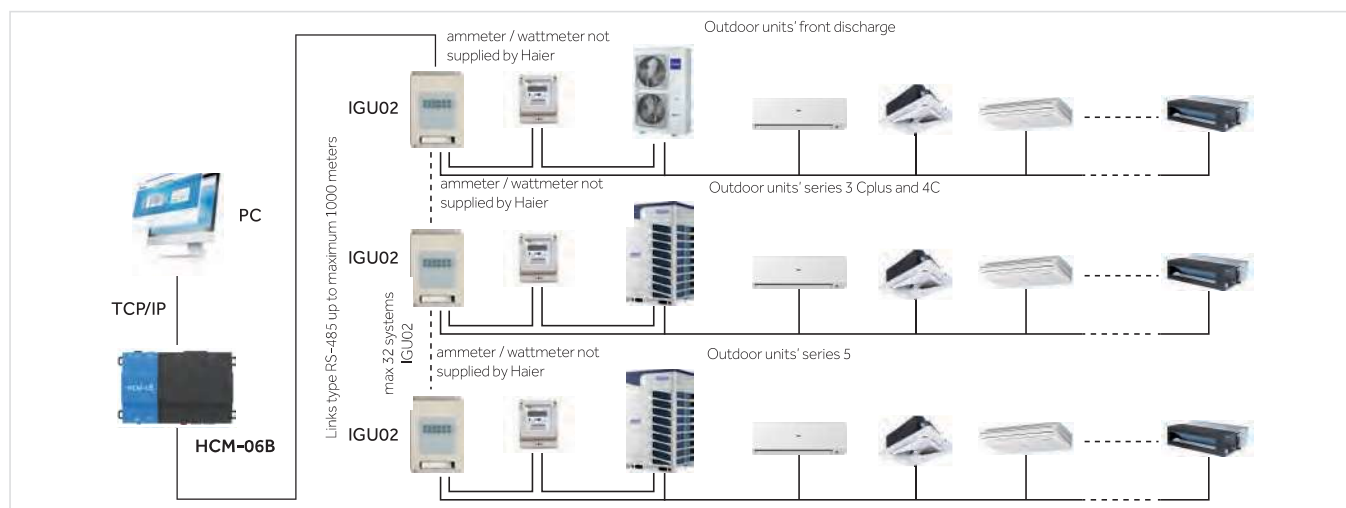
(the pulse generator wattmeter / ammeter is not supplied by Haier, as it must be selected and sized according to the power of the plants).



ILLUSTRATIVE DIAGRAM FOR MANAGEMENT VIA WEB WITH HCM-06



ILLUSTRATIVE DIAGRAM FOR MANAGEMENT VIA WEB WITH HCM-05 WITH CONSUMPTION ACCOUNTING

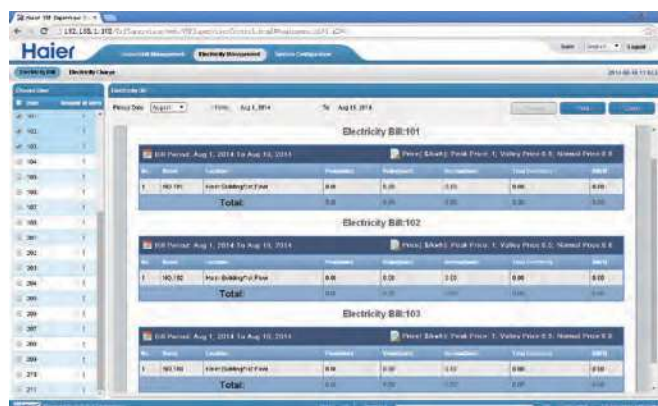




Monitoring

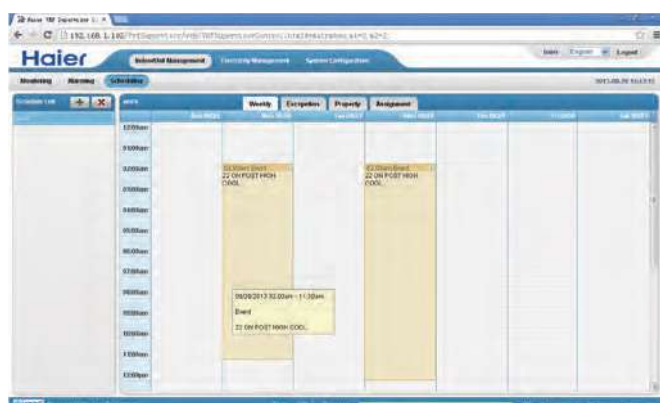
Independent control of up to 500 indoor units

- Mode, temperature, ventilation, deflectors
- Blocking of user functions
- Controlling of blocking levels
- An icon with all the information for each individual unit



Energy consumption report for each unit

- Data store
- Possibility of defining different costs by usage ranges
- Preview and print the results
- Comparison of operating costs over time



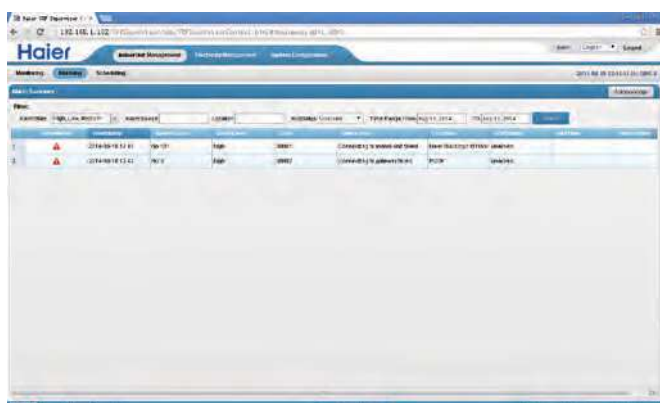
Programming

- Weekly and monthly schedule graph
- Free configuration
- Defining sample programmes



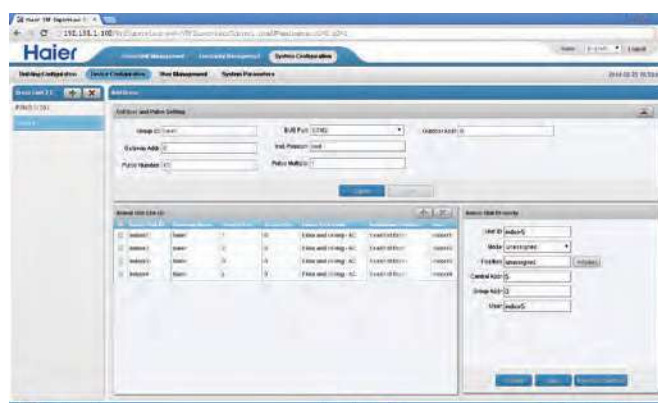
Zone control

- Creation of zones for management that can be customised according to the requests



Alarm management

- History of alarm messages
- Detail of every single alarm



System configuration

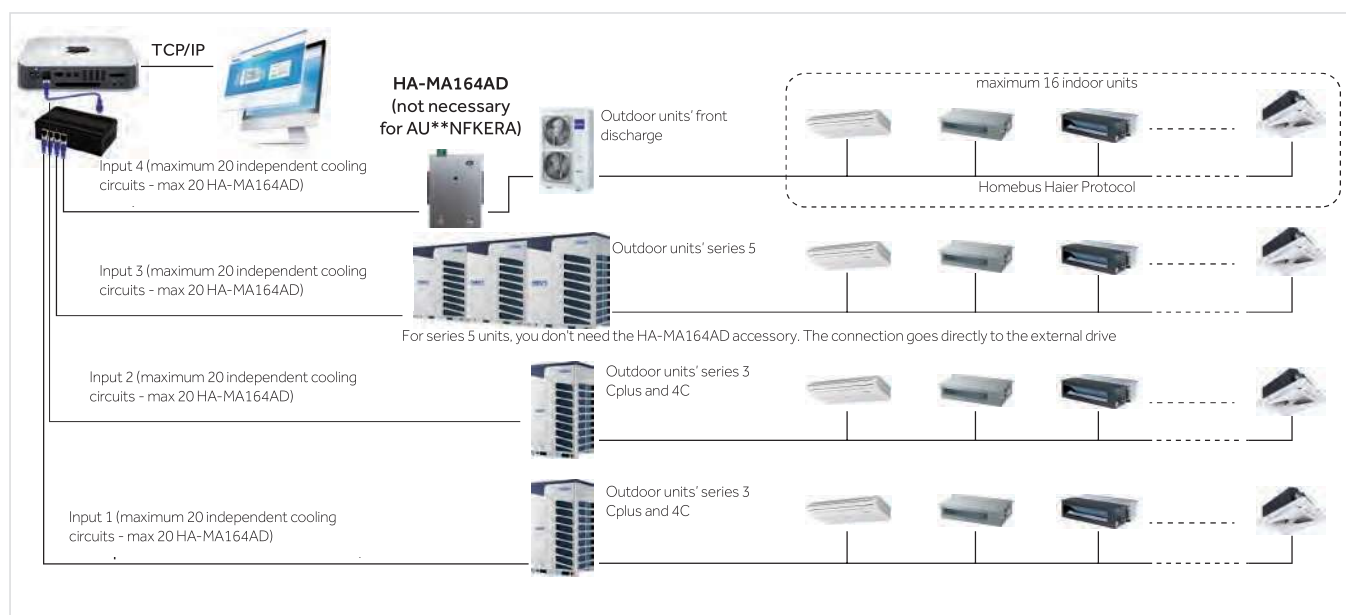
- Building-based configuration
- Equipment configuration
- Management of access levels
- Management of parameters

HCM-03A LARGE PLANT MANAGEMENT SYSTEM WITH WEB/INTERNET CONTROL FUNCTION INTEGRATED SYSTEM FOR PLANTS UP TO 1500 INDOOR UNITS

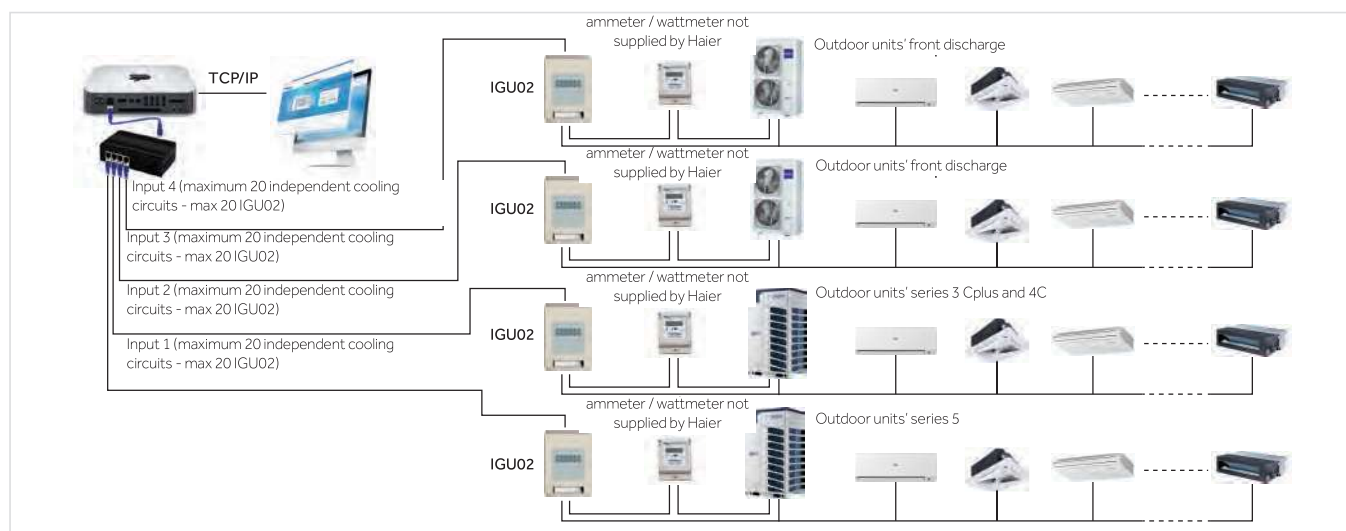
- Local control over the network from PC or remotely via web/internet.
- Each HCM-03A adapter is equipped with a web browser integrated with a specific IP address. Requires a connection to a network with internet access, via ethernet cable. Once configured, anywhere in the world simply enter the IP address supplied with the HCM-03 in the web search engines **Google Chrome or Firefox** to access the system to be controlled. Access to specific system management is protected by multi-level passwords.
- Possibility of communication with systems, not supplied by Haier, through the BACnet - IP, Modbus protocol.
- Max 1500 controllable indoor units.
- Up to 20 independent cooling circuits can be connected to one of the four available ports, in order to obtain a system that provides a maximum of 80 circuits. Each cooling circuit requires HA-MA164AD adapter (except for outdoor unit series 5)
- Management of all system parameters by zones / groups / individual units, weekly and monthly timers, error management and alarm history. Clear and intuitive visualisation software
- Possibility of accounting for electricity consumption. Providing IGU-02 adapters instead of HA-MA164AD. One IGU-02 for each cooling circuit, also for series 5 outdoor units. For each cooling circuit / IGU-02, a "Wattmeter / pulse generator" must be provided which detects the energy absorption of the outdoor units and proportionally generates counting pulses that the IGU-02 adapter receives and transforms into values to be managed and visualised by the software. **(the pulse generator wattmeter / ammeter is not supplied by Haier, as it must be selected and sized according to the power of the plants).**
- Possibility to insert the building layout as a file in the HCM-03A system to create specific command buttons within the reference rooms via the loaded floor plan.
- Technology developed in collaboration with **MAC mini**.



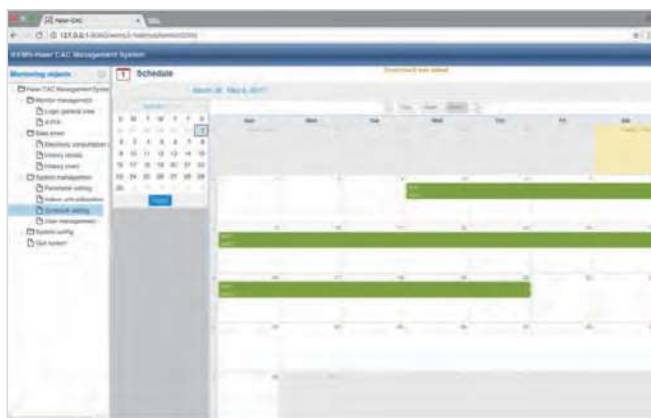
ILLUSTRATIVE DIAGRAM FOR MANAGEMENT VIA WEB WITH HCM-03A.



ILLUSTRATIVE DIAGRAM FOR MANAGEMENT VIA WEB WITH HCM-03A WITH CONSUMPTION ACCOUNTING



SIMPLE AND INTUITIVE NAVIGATION



Building layouts can be inserted as a file in the HCM-03A system to configure by positioning the specific indoor unit and the dedicated controller.

The creation of specific command buttons inside the premises allows direct management of the floor plan, simulating reality more accurately which makes everything more intuitive and simple.



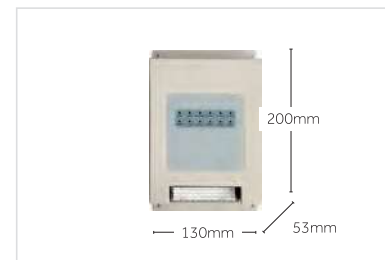
HA-MA164AD (MODBUS ADAPTER)

- Haier to MODBUS protocol converter (not required for series 5 outdoor units)
- Each cooling circuit requires 1 converter
- 1 converter can handle max 64 indoor units on single cooling circuit
- Power supply transformer included
- It is not possible to account for electricity consumption



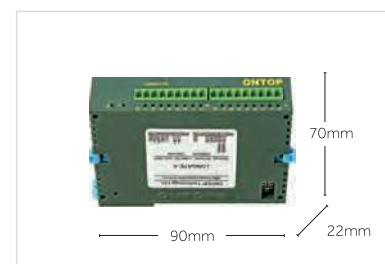
IGU02 (ADAPTOR TO ACCOUNT FOR CONSUMPTION)

- Haier protocol converter to RS-485 to be used in conjunction with BMS systems: HCM-01A / 03A / 05-05A, necessary if you want to monitor the electrical consumption of MRV systems.
- Each IGU-02 can control up to a maximum of 40 indoor units
- You need an IGU-02 for each cooling circuit, even for outdoor 5 series.
For each cooling circuit / IGU-02, a "Wattmeter / pulse generator" must be provided which detects the energy absorption of the outdoor units and proportionally generates counting pulses that the IGU-02 adapter receives and transforms into values to be managed and visualised by the software (**the pulse generator wattmeter / ammeter is not supplied by Haier, as it must be selected and sized according to the power of the plants**).



IGU07 (LONWORKS ADAPTER)

- Modbus > Lonworks protocol converter
- Each IGU-07 can control only 1 cooling circuit and up to a maximum of 32 indoor units
- The cooling circuit connected require adapter HA-MA164AD (except for series 5 outdoor units)
- **The IGU07 adapter does not have a power transformer, therefore it is necessary to have a 24 Volt DC power supply (24 VDC) fitted by the installer.**
- It is not possible to account for electricity consumption



HA-AC-KNX (KNX ADAPTER)

- Haier to KNX protocol converter
- Requires HA-MA164AD adapter
- 3 available models, up to 8, up to 16 and up to 64 controllable indoor units (HA-AC-KNX-8, HA-AC-KNX-16, HA-AC-KNX-64)
- Does not require power supply



HCM-04

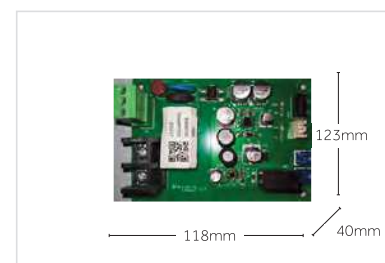
- BACnet gateway, convert modbus rtu to BACnet ip
- Max.128 indoor units/ 4 systems can be controlled. Max. 32 indoor units for one system
- MRV 5 and upgraded MRV SII (8/10/12HP) can connect directly with HCM-04.
- Other MRV systems require IGU02 or HA-MA164AD
- BTL certificate



MTC-001

Application Scenario:

- a. The multi tenant site using separate circuit breaker for each indoor unit
- b. The hotel room using key-tag system which cuts off the power of indoor unit directly
- When it is detected that any connected indoor unit is forcibly cut off, the MTC-001 provides DC power to the indoor PCB to ensure that the indoor unit maintains standby mode: the EEV is turned off and the control signal is blocked to prevent the system from alarming
- Note: If there is power or communication failure in the indoor computer board, MTC-001 cannot be prevented and detected



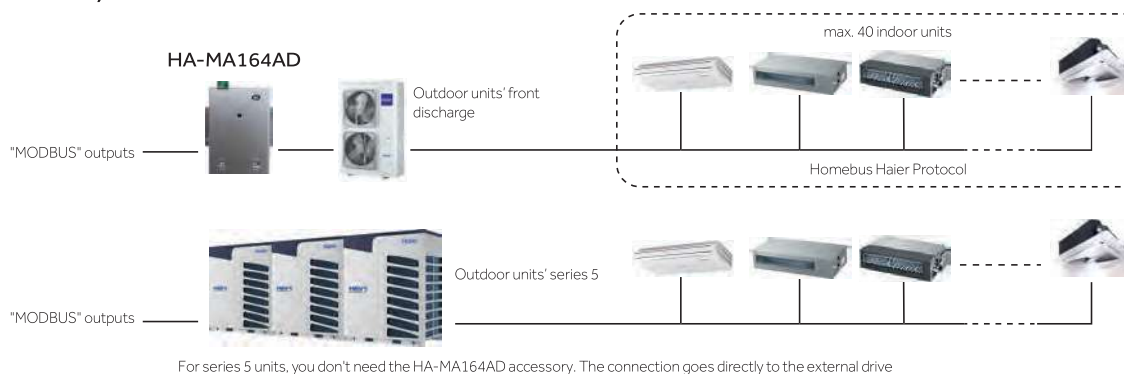
ADDRESS SETTING AND CHECKING TOOL YR-NS

- On/Off, Mode, Fan speed, Temperature setting, Swing
- IDU address checking
- IDU address setting

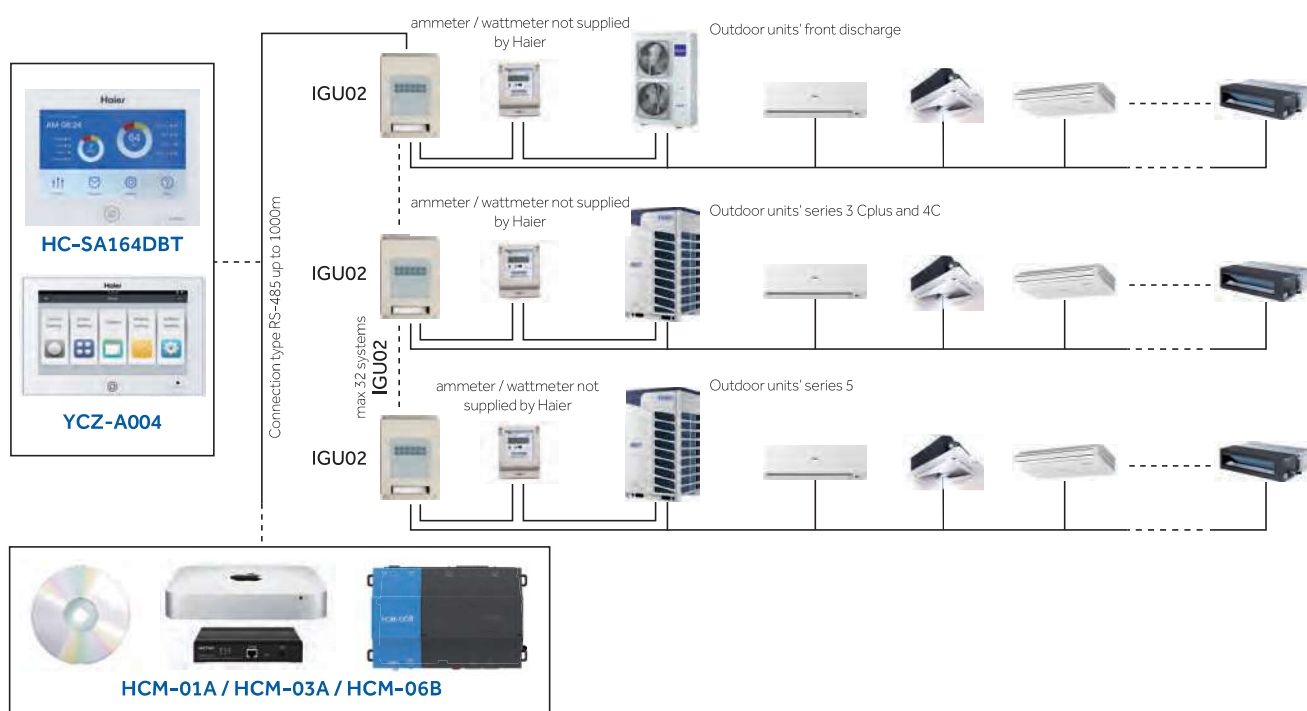


EXAMPLES OF CONNECTION ADAPTERS

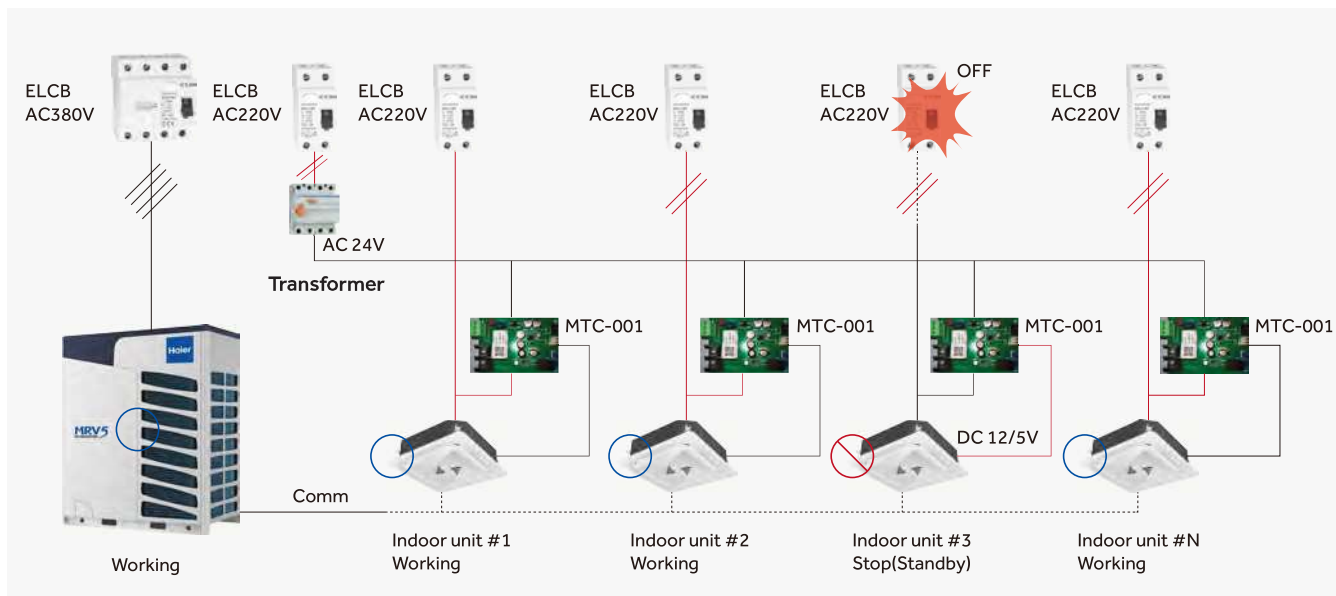
HA-MA164AD, MODBUS ADAPTER



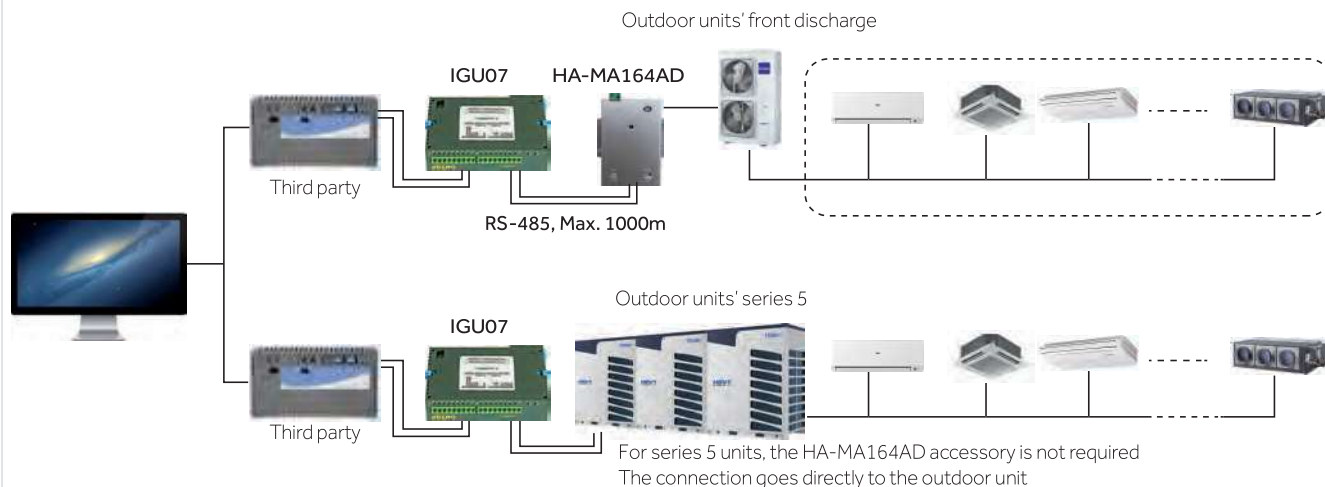
IGU-02 – ADAPTER FOR ACCOUNTING



MTC-001



IGU-07 ILLUSTRATIVE CONNECTION SCHEME FOR LONWORKS SYSTEMS



HA-AC-KNX - KNX ADAPTER

