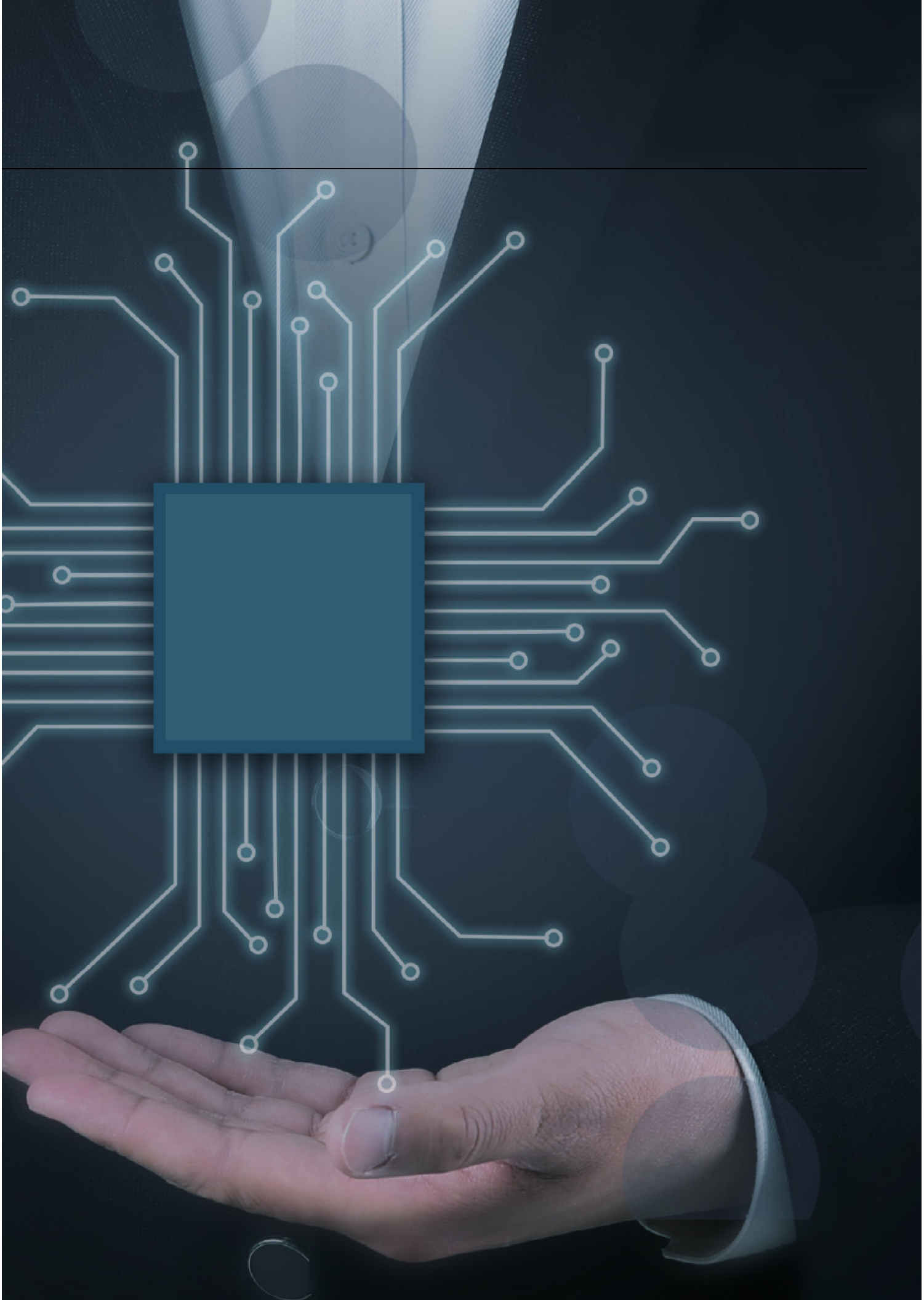# CONTROL SOLUTIONS

# CONTROLLER LINEUP

| Wireless Remote Controllers | Wired Controllers | Centralized Controllers | |
|---|---|---|---|
| WL-12B-CM | WR-86K-CM | CRF-180A-CM | |
| WL-12D-CM | WR-86KD-CM | CRF-270A-CM | |
| | WR-120G-CM | | |

| Network Control System | BMS Gateways | Accessories |
|---|---|---|
| 4GNS-20-CM | NW-BAC-CM | Hotel Key Card Interface Module |
| | | CA-NIM05/E |
| | | CA-NIM05B/E |
| + | GW-LON | Infrared Sensor Controller |
| 4GNS-20-IF | | MD-NIM09/E |
| IMMPRO | | CA-NIM09 |
| CRF-270A-CM | NW-MOD-CM | Diagnosis software |
| + | | |
| 4GNS-20-IF | | VRF-DIAG-B |
| IMMPRO | | |

# Wireless Remote Controllers

# Features

| Model | WL-12B-CM | WL-12D-CM |
|---|---|---|
| On / Off | ● | ● |
| Mode selection | ● | ● |
| Temperature setting | ● (0.5°C or 1°C steps) | ● (0.5°C or 1°C steps) |
| 7-speed fan control | ● | ● |
| Auto swing | ● | ● |
| 5-step swing louver | ● | ● |
| Address setting | ● | ● |
| Follow me | ● | ● |
| Eco mode | ● | ● |
| Night silent mode | ● | ● |
| Display shut-off | ● | ● |
| Daily timer | ● | ● |
| Keyboard lock | ● | ● |
| Background light | ● | ● |
| Dimensions (H  W  D) (mm) | 150  65  20 | 170  48  20 |
| Batteries | 1.5V (LR03/AAA)   2 | |

# Temperature Setting

Set temperature can be adjusted in 0.5°C or 1°C steps, enabling precise comfort control.
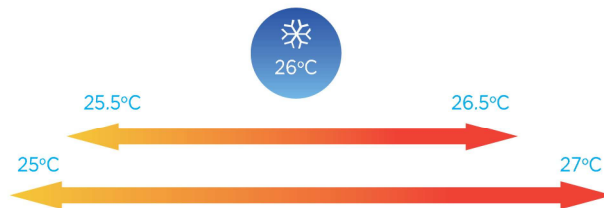


# 7-Speed Fan Control

7 indoor fan speeds provide control flexibility to meet the needs of different indoor conditions.



Rest time soft airflow

Leisure time gentle airflow

Exercise time strong airflow

Fan speed 1    Fan speed 2    Fan speed 3    Fan speed 4    Fan speed 5    Fan speed 6    Fan speed 7

Soft airflow      Strong airflow
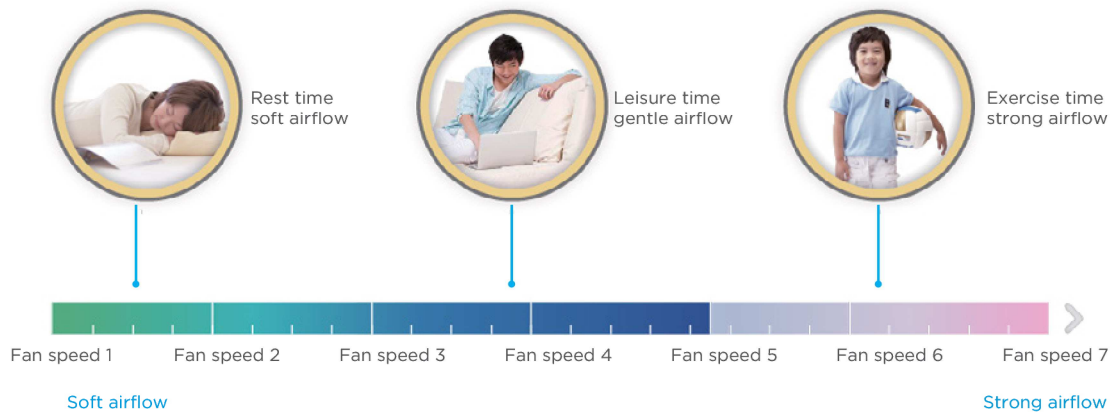
# Dispaly Shut-off

Indoor unit displays can be shut off at night, creating a better environment for rest.
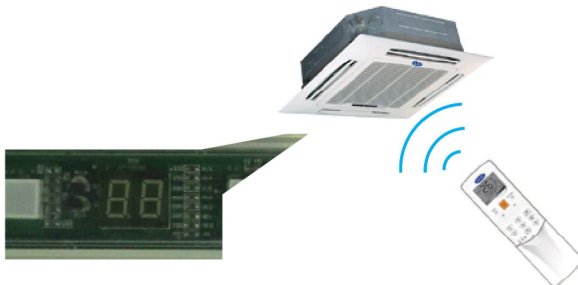
## 5-step Swing Louver

The air is comfortably spread upwards and downwards thanks to the 5-step swing louver that can be programmed via the controller.



# Follow Me

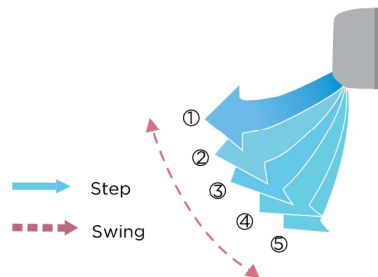With the follow me function, the indoor unit responds to the temperature measured by the temperature sensor built-in to the wireless remote controller, rather than the temperature sensor in the indoor unit itself, enabling more precise control of the temperature in the user's immediate environment.



# Eco Mode

Eco mode saves energy whilst retaining a comfortable indoor environment.

# Wired Controllers

# Features

| Model | WR-86KD-CM | WR-86K-CM | WR-120G-CM |
|---|---|---|---|
| On / Off | ● | ● | ● |
| Mode selection | ● | ● | ● |
| Temperature setting | ● (0.5°C or 1°C steps) | ● (0.5°C or 1°C steps) | ● (0.5°C or 1°C steps) |
| Dual temperature set points | ● | — | ● |
| 7-speed fan control | ● | ● | ● |
| Auto swing | ● | ● | ● |
| 5-step swing louver | ● | ● | ● |
| Address setting | ● | ● | ● |
| Follow me | ● | ● | ● |
| Eco mode | ● | ● | ● |
| Room temperature display | ● | — | ● |
| °F/°C display | ● | ● | ● |
| Keyboard lock | — | — | ● |
| Background light | ● | ● | ● |
| Daily timer | ● | ● | ● |
| Weekly schedule timer | — | — | ● |
| Auto restart | ● | ● | ● |
| 2 permission levels | — | — | ● |
| Bi-directional communication | ● | — | ● |
| Group control | — | — | ● |
| Main or secondary controller setting | ● | — | ● |
| Display shut-off | ● | ● | ● |
| Night silent mode | ● | ● | ● |
| Remote signal receiver | ● | ● | ● |
| Clean filter reminder | ● | ● | ● |
| Extension function | — | — | ● |
| Daylight saving time | — | — | ● |
| Clock display | — | — | ● |
| Dot matrix display | — | — | ● |
| Error check function | ● | — | ● |
| System parameter querying | ● | — | ● |
| System setting control | ● | — | ● |
| Dimensions (WxHxD) (mm) | 86x86x18 | 86x86x18 | 120x120x20 |
| Power supply | 18 DC | 5V DC | 18 DC |

# Group Control

One controller can be used to unify the settings across up to 16 indoor units.



# Main or Secondary Controller Setting

Two controllers can be used together, with the indoor units' operating mode and settings being set according to the most recent instruction received. The controller display screens are synchronized so that both displays update when a setting is adjusted.



**One indoor unit**



**Two or more indoor units**

# 2 Permission Levels

2 permission levels ensure users can easily access control functions and allow administrators convenient access to operating parameters.
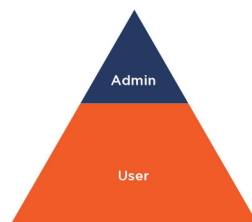
# Extension Function
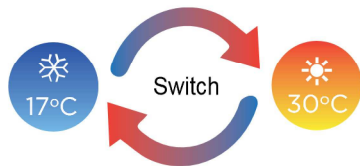
The extension function is specifically designed for users working overtime. Pressing the delay button postpones system shutdown by 1 or 2 hours.

| | | | |
|---|---|---|---|
| ON | 24°C | OFF | Extension |

# Dual Temperature Set Points

With dual temperature set point control, the set temperature changes automatically when the operating mode is changed.

17°C  Switch  30°C

# Weekly Schedule Timer

The weekly schedule timer allows users to set multiple schedules each with its own operating mode, temperature settings and fan speeds.

**Weekly Schedule**

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|

OFF        HEAT        COOL        FAN
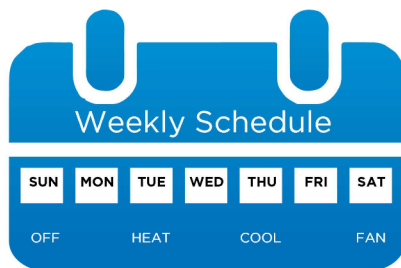
# Bi-directional Communication

The wired controller can query the system operating parameters thanks to the new bi-directional communication functionality. In addtion, settings including static pressure, cold draft prevention and temperature compensation can be configured on the wired controller.

Bi-directional                    Bi-directional

# Centralized Controllers

# Features

| | CRF-180A-CM | CRF-270A-CM |
|---|---|---|
| Model | | |
| Max. number of indoor units | 64 | 384 |
| Max. number of outdoor units | 32 | 192 |
| Max. number of refrigerant systems | 8 | 48 |
| Touch screen | ● (6.2-inch) | ● (10.1-inch) |
| On / Off | ● | ● |
| Mode selection | ● | ● |
| Temperature setting | ● (0.5°C or 1°C steps) | ● (0.5°C steps) |
| Dual temperature set points | ● | ● |
| 7-speed fan control | ● | ● |
| Auto swing | ● | ● |
| 5-step swing louver | ● | ● |
| Room temperature display | — | ● |
| Outdoor unit Eco mode setting | ● | ● |
| Holiday setting | ● | ● |
| °C/°F display | ● | ● |
| Schdule management | ● | ● |
| Clock display | ● | ● |
| 2 permission levels | ● | ● |
| Extension function | ● | — |
| Unit model recognition | ● | ● |
| Electricity charge distribution | — | ● |
| Visual schematic | — | ● |
| Energy management | ● | ● |
| Group management | ● | ● |
| Error check function | ● | ● |
| System parameter querying | ● | — |
| USB output | Error report | Error report, operation record and electricity consumption report |
| Report display | | |
| Operation log | — | ● |
| LAN access | — | ● |
| languages supported | English, French, Spanish | English, French, Spanish |
| Dimensions (W  H  D) (mm) | 182x123x34 | 270x183x27 |
| Power supply | 12V DC | 24V AC |

# Touch Screen

Colorful touch screen and vivid display make operation more convenient and simple.



# Electricity Charge Distribution

The controllers estimate the electricity consumption of the outdoor units and then divide it among the indoor units so that the electricity charges can be equitably divided among building occupants.
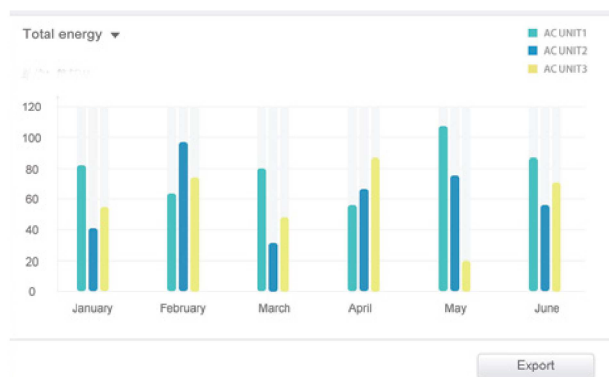


# Energy Management

User can set limits or locks on an indoor unit, such as minimum cooling temperature, maximum heating temperature, fan speed, operation mode, swing lock, remote controller lock and wired controller lock.
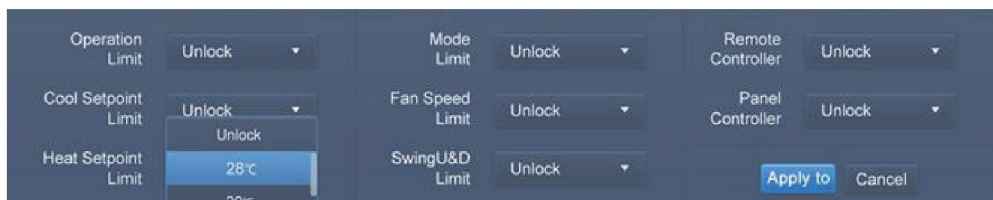
## Visual Schematic

By importing floor plans and then dragging and dropping the indoor units to their actual positions on the floor plan, users can create a tailored system schematic which enables monitoring and control of the indoor units through a clear visual representation of the system layout.



## Group Management

Units can be viewed according to group, system or location, making unit management clearer and more convenient.
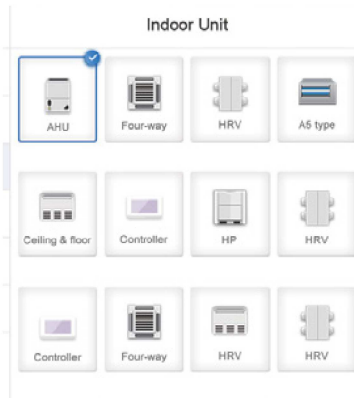


## Outdoor Unit Configuration

Outdoor unit configuration and settings can be monitored and controlled without having to go outdoors.
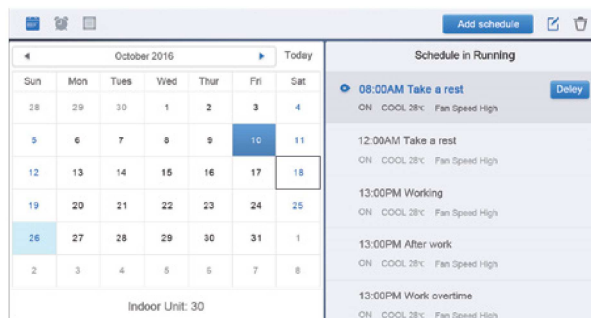
## Unit Model Recognition

The controller recognizes the model of indoor and outdoor units and different models are represented by different icons.



## Schedule Management

Daily, weekly or annual schedules can be used to set unit settings such as on/off, operating mode, set temperature, fan speed and swing.
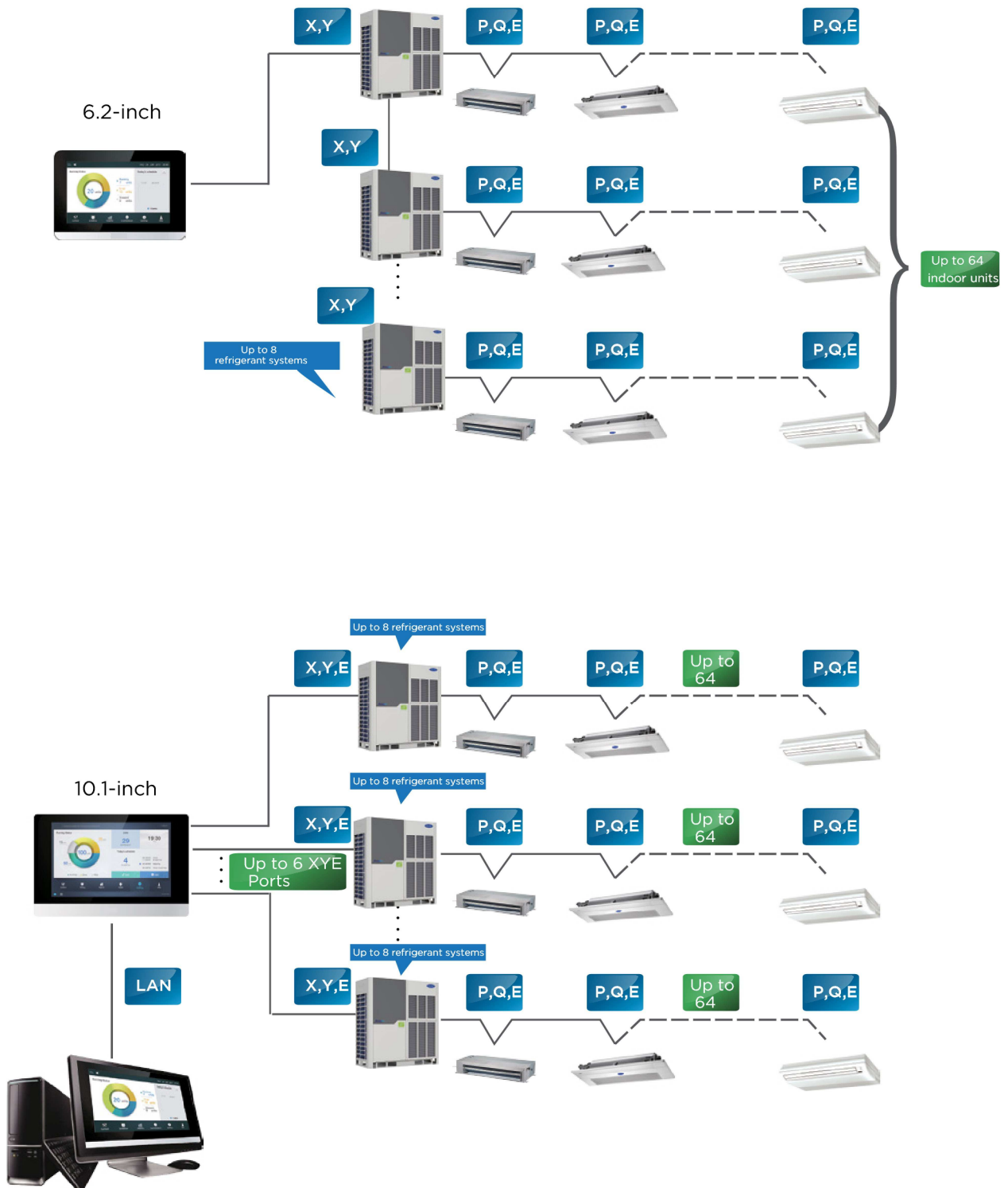


## LAN Access

A desktop or laptop PC can be used for browser-based access via a LAN connection.

# Wiring Flexibility

The controllers can be connected to the master outdoor unit directly.



6.2-inch

X,Y

P,Q,E    P,Q,E    P,Q,E

X,Y

P,Q,E    P,Q,E    P,Q,E

X,Y

Up to 8
refrigerant systems

P,Q,E    P,Q,E    P,Q,E

Up to 64
indoor units



10.1-inch

Up to 8 refrigerant systems

X,Y,E    P,Q,E    P,Q,E    Up to 64    P,Q,E

Up to 8 refrigerant systems

X,Y,E    P,Q,E    P,Q,E    Up to 64    P,Q,E

Up to 6 XYE
Ports

Up to 8 refrigerant systems

X,Y,E    P,Q,E    P,Q,E    Up to 64    P,Q,E

LAN

# Network Control System

# Features

| Software model | 4GNS-20-IF | |
|---|---|---|
| Hardware model |  4GNS-20-CM |  CRF-270A-CM |
| Max. number per IMM system | 10 | 10 |
| Max. number of indoor units | 2560 | 3840 |
| Max. number of outdoor units | 1280 | 1920 |
| Max. number of refrigerant systems | 320 | 480 |
| Temperature setting | ● (0.5°C steps) | ● (0.5°C steps) |
| Dual temperature set points | ● | ● |
| 7-speed fan control | ● | ● |
| Auto swing | ● | ● |
| 5-step swing louver | ● | ● |
| Outdoor unit Eco mode setting | ● | ● |
| Holiday setting | ● | ● |
| Schedule management | ● | ● |
| Clock display | ● | ● |
| 2 permission levels | ● | ● |
| Unit model recognition | ● | ● |
| Electricity charge distribution | ● | ● |
| Visual schematic | ● | ● |
| Energy management | ● | ● |
| Group management | ● | ● |
| Error check function | ● | ● |
| System parameter querying | ● | ● |
| Report output | ● | ● |
| Operation log | ● | ● |
| LAN access | ● | ● |
| Data backup | ● | ● |
| Remote VPN access | ● | ● |
| Languages supported | English, French, Spanish | English, French, Spanish |
| Dimensions (W  H  D) (mm) | 251x319x66 | 270x183x27 |
| Power supply | 1 phase, 100-240V, 50/60Hz | 24V AC |

CONTROL SOLUTIONS

## User-friendly Interface

Simple, practical user interface makes for a user-friendly experience even for first-time users.
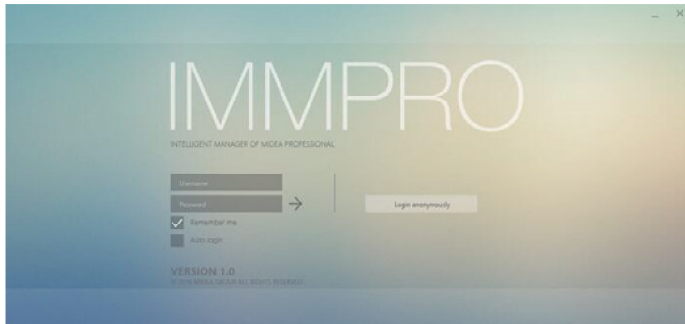


## Outdoor Unit Configuration

Outdoor unit configuration and settings can be monitored and controlled without having to go outdoors.
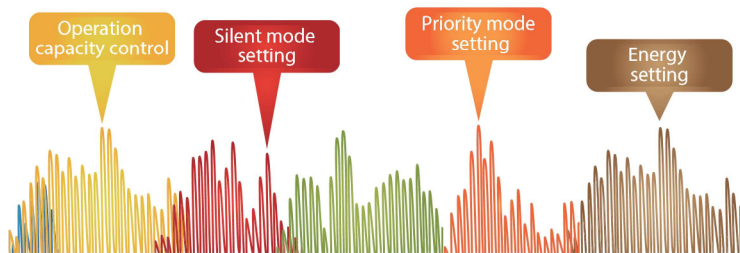


## Electricity Charge Distribution

The IMMPRO uses the Calculation Method to estimate the electricity consumption of the outdoor units and then divide it among the indoor units so that the electricity charges can be equitably divided among building occupants.

## Public and Idle Devices

Marking a unit as a public device or idle device ensures the electricity charge distribution is more accurate and reasonable.
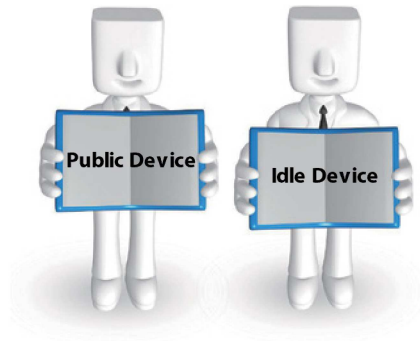


## Visual Schematic

By importing floor plans and then dragging and dropping the indoor units to their actual positions on the floor plan, users can create a tailored system schematic which enables monitoring and control of the indoor units through a clear visual representation of the system layout.



## Schedule Management

Daily, weekly or annual schedules can be used to set unit settings such as on/off, operating mode, set temperature, fan speed and swing.
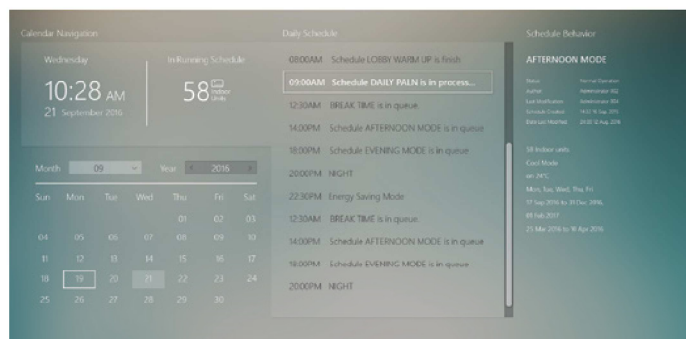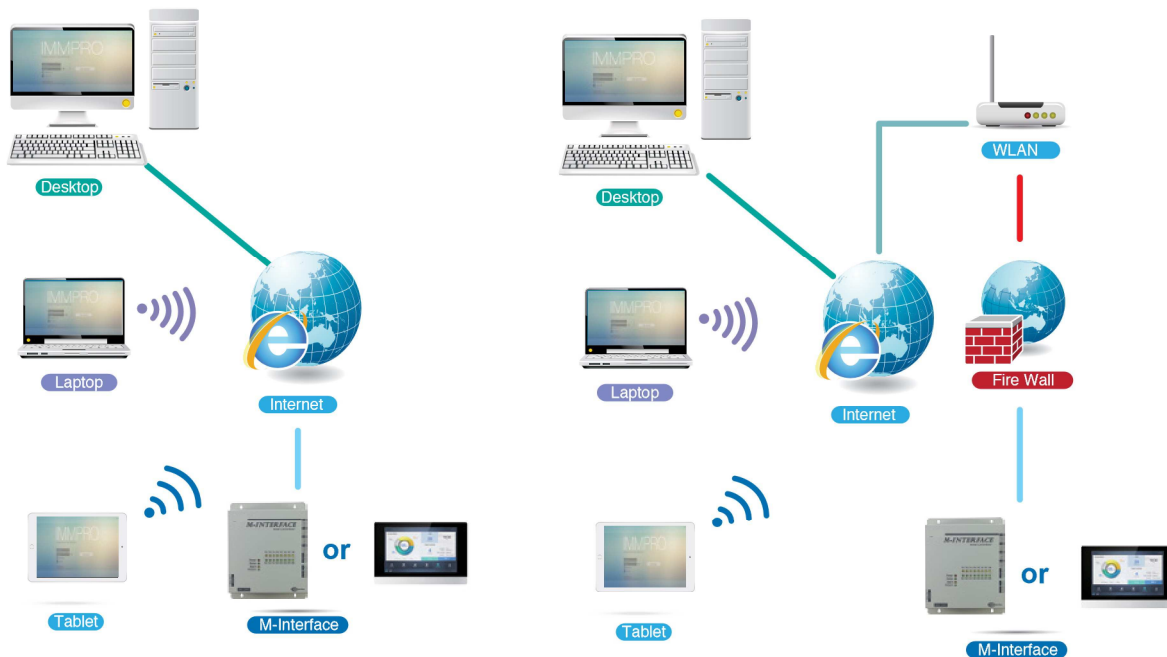
# Xpress Installation

With the Xpress Installation wizard, IMMPRO can be installed quickly and easily without requiring support from a technical support engineer.
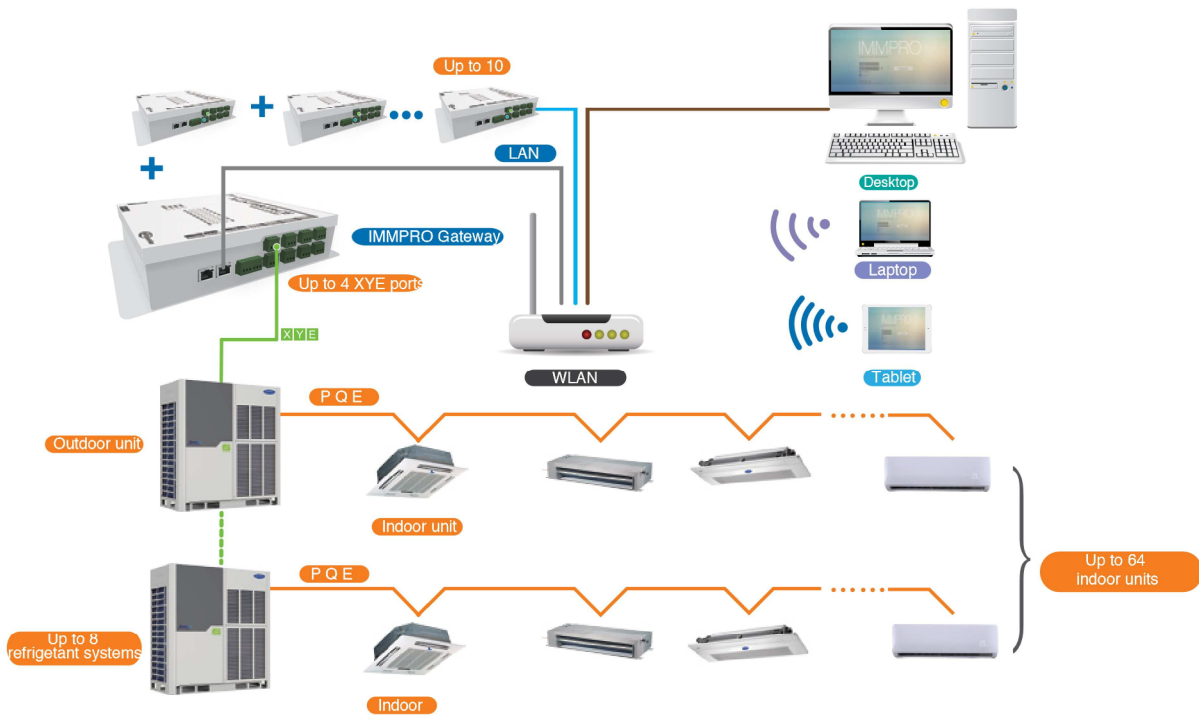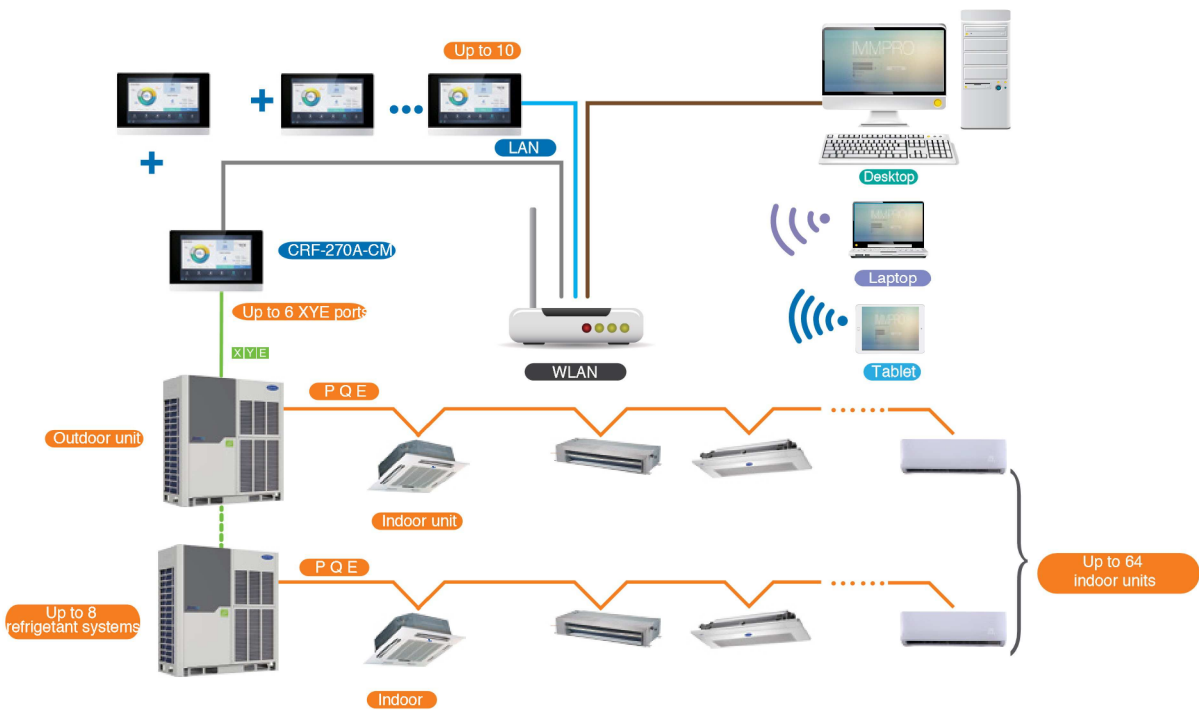


# Network Flexibility



**LAN access**                    **Remote VPN access**

**Up to 10**
LAN
IMMPRO Gateway
Up to 4 XYE ports
X Y E
Desktop
Laptop
Tablet
WLAN
P Q E
Outdoor unit
Indoor unit
Up to 8 refrigetant systems
P Q E
Indoor
Up to 64 indoor units

**4GNS-20-CM**



**Up to 10**
LAN
CRF-270A-CM
Up to 6 XYE ports
X Y E
Desktop
Laptop
Tablet
WLAN
P Q E
Outdoor unit
Indoor unit
Up to 8 refrigetant systems
P Q E
Indoor
Up to 64 indoor units

**CRF-270A-CM**

# BMS Gateway

Monitoring and control of Carrier's VRF air conditioners can be integrated into building management systems, enabling air conditioning to be monitored alongside lighting, power, fire, access and security systems. Carrier's gateway devices provide full compatibility with the leading BMS protocols: BACnet, LonWorks and Modbus.