



All DC Inverter V4+S

TWO PIPE HEAT PUMP VRF

Contents

01 / Product range

02 / Features

03 / Control device



01 PRODUCT RANGE

- Outdoor unit range
- Indoor unit range



V4+S Outdoor Product—Combination type

8,10HP

12,14,16HP

18 HP

72 HP



- 6 basic module : 8,10,12,14,16,18HP.
- 2HP capacity increments, Free combination, Max. 72HP
- 380-415V~ 3ph~50/60Hz;220V~3ph~60Hz

V4+S Outdoor Product Range

Flexible outdoor unit combination

The modular design offers more flexibility on Outdoor unit choosing

8,10HP



12,14,16HP



18HP



20~36HP



34~54HP



56~72HP



V4+S Indoor Product Range



Four-way Cassette
(2.8~14KW)



Ceiling and floor
(3.6~16KW)



Wall-mounted S
(1.5~5.6KW)



Wall-mounted R
(7.1~9.0KW)



High Static Pressure duct
(7.1~45KW)



Compact Cassette(1.5~4.5KW)



Fresh Air Processing Duct
(12.5~28KW)



One-way cassette
(1.8~7.1KW)



A5 duct
(2.2~14KW)



Low Static Pressure duct(1.8~7.1KW)



Wall-mounted M
(2.2~8.0KW)



Two-way cassette
(2.2~7.1KW)



V4+S Indoor Product Range

R410A



- ◆ Exposed & concealed
- ◆ 14 types & more than 100 models



02 FEATURES

- **Excellent performance**
- **High reliability**
- **Comfortable environment**
- **Easy installation and maintenance**
- **Designer benefit**



02 FEATURES

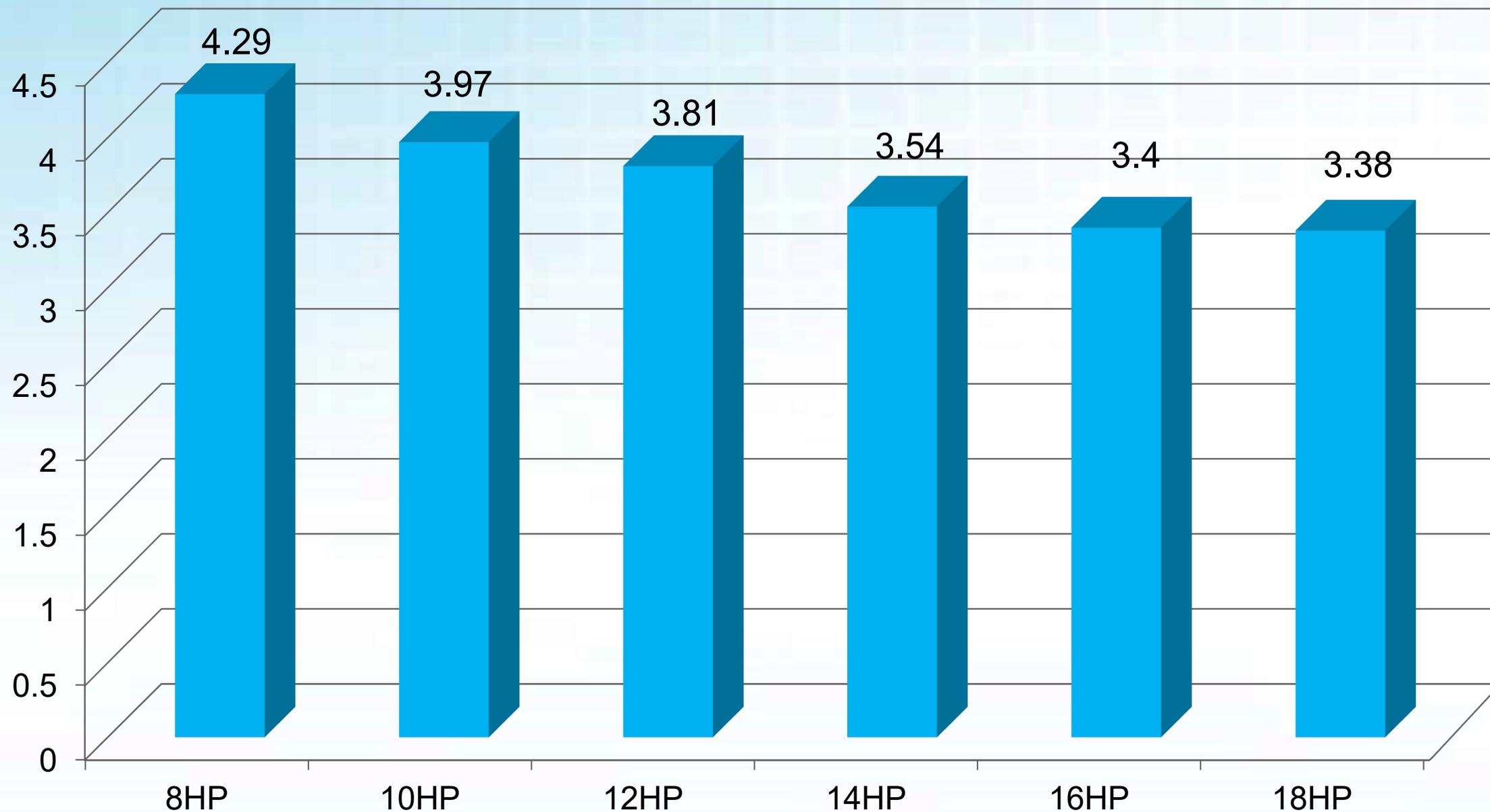
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Excellent Performance

High cooling and heating efficiency

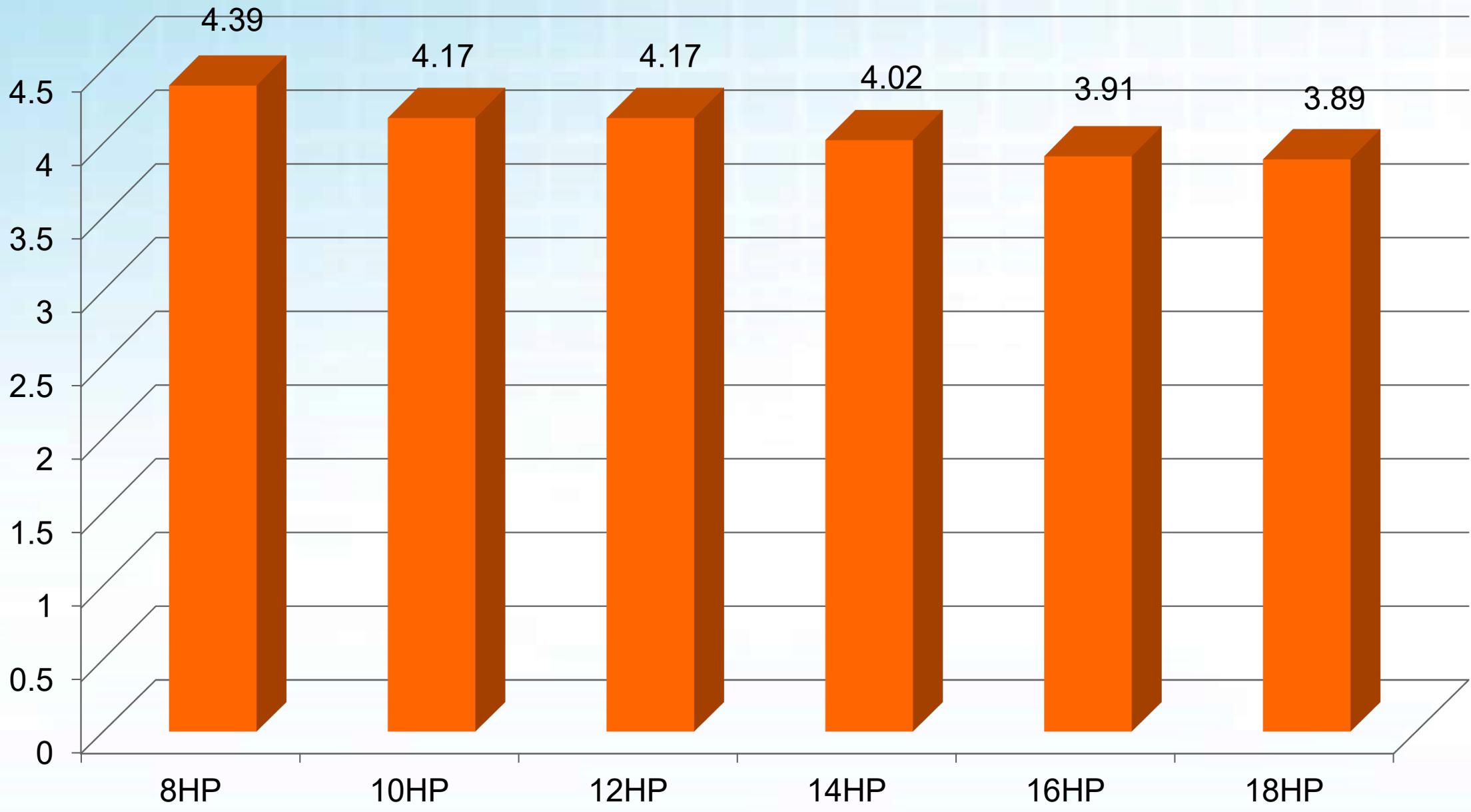
- EER UP TO **4.29** (8HP)
- AVERAGE EER UP TO **3.73**



Excellent Performance

High cooling and heating efficiency

- COP UP TO 4.39 (8HP)
- AVERAGE COP UP TO 4.09



Excellent Performance

Top IPLV value

- IPLV (cooling) (Integrated Part Load Value) UP TO 5.8 (18HP)
- AVERAGE IPLV UP TO 5.6



Excellent Performance



New shape fan blade with new outlet grille

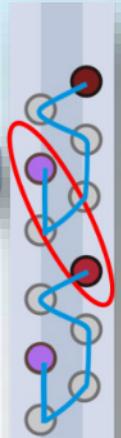


DC fan motor, low noise, low consumption



180° sine-wave DC inverter control

37.1°C



12° C sub-cooling design (δ structure), high efficiency heat-exchanger.



All DC Inverter Compressor contribute to higher IPLV greatly.



Excellent Performance

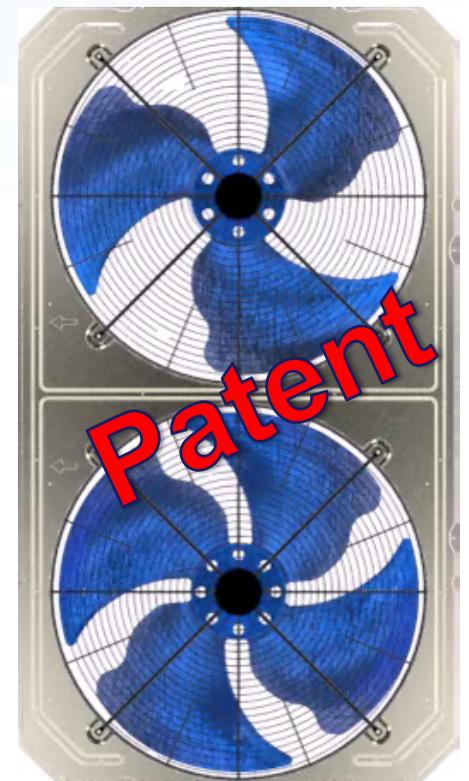
Optimize fan design, strengthen heat exchange

- Optimize fan blade shape with new air outlet grille enhanced air flow volume which makes fan performance greatly improved without increased noise.



Newly designed fan outlet grille
Newly designed air guard

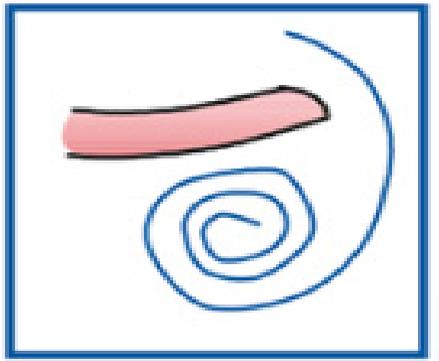
- enhance the airflow, reduce noise



3 blades + 4 blades



Newly designed fan impeller



Conventional fan impeller

- Reduce the resonance noise



- Obviously reduces the air current loss

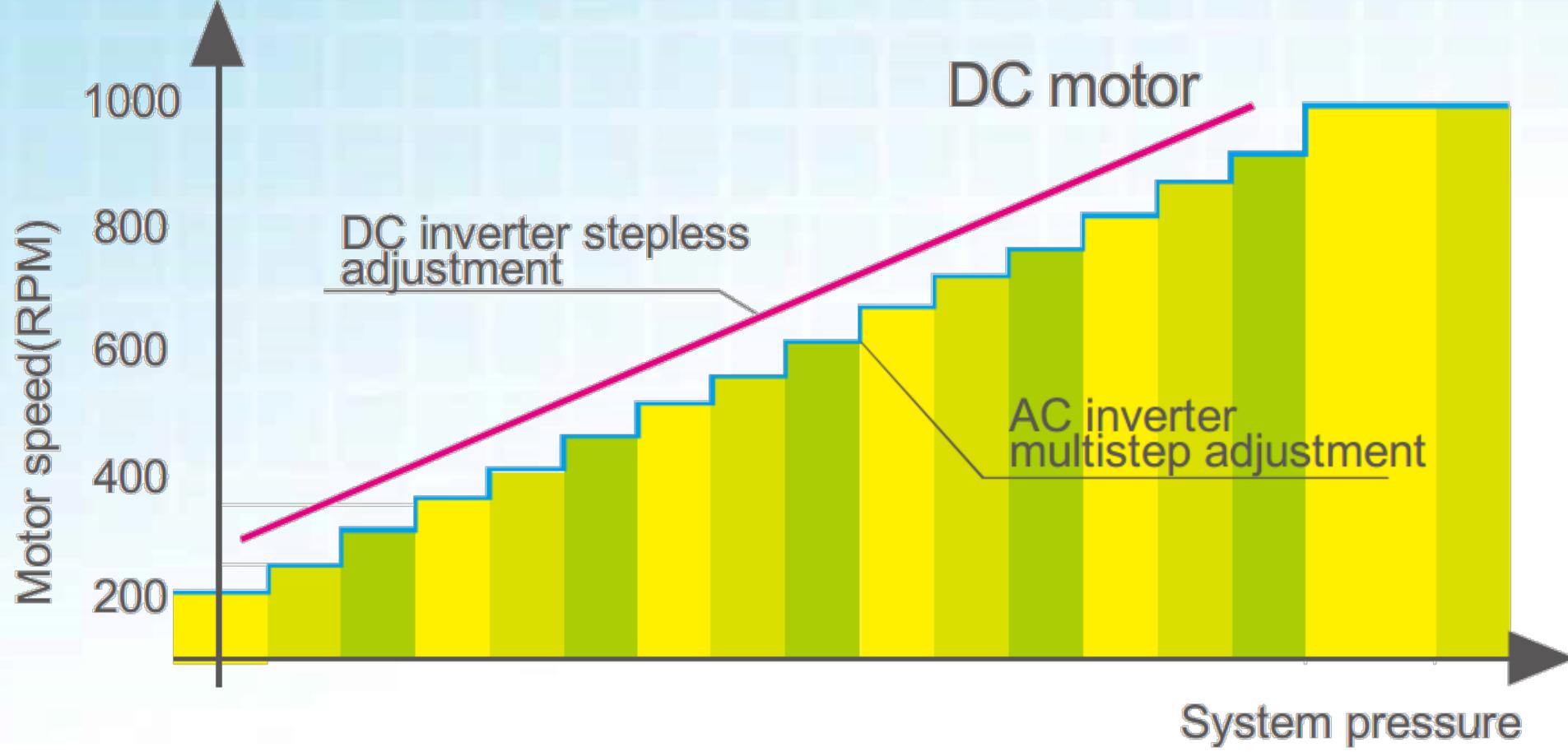
Excellent Performance

High Efficiency DC Fan motor

Adopt the advanced DC fan motor



Pressure sensor

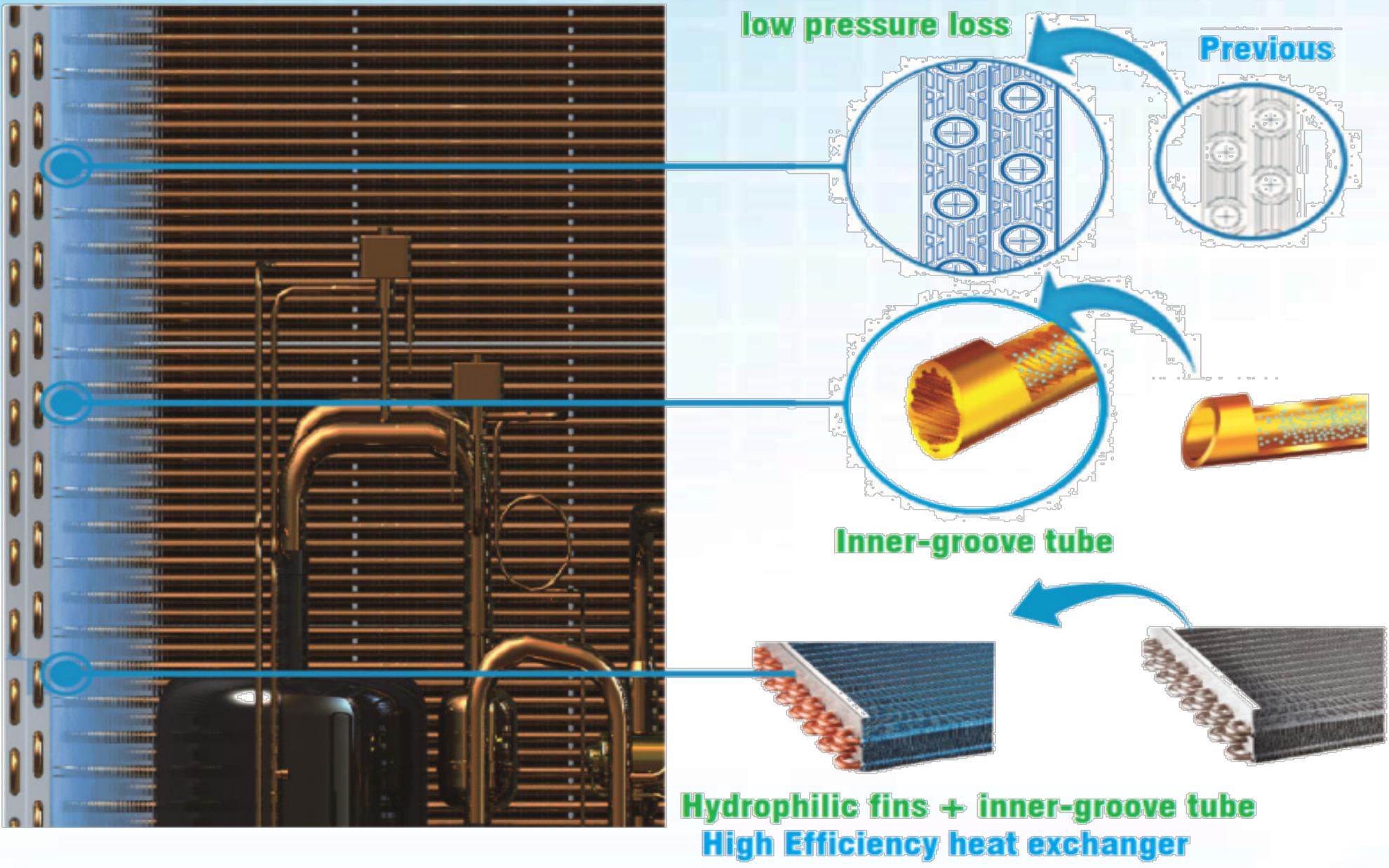


According to the running load and system pressure, the system controls the speed of DC fan to achieve the minimum energy consumption and best performance.



Excellent Performance

High Efficiency Heat exchanger

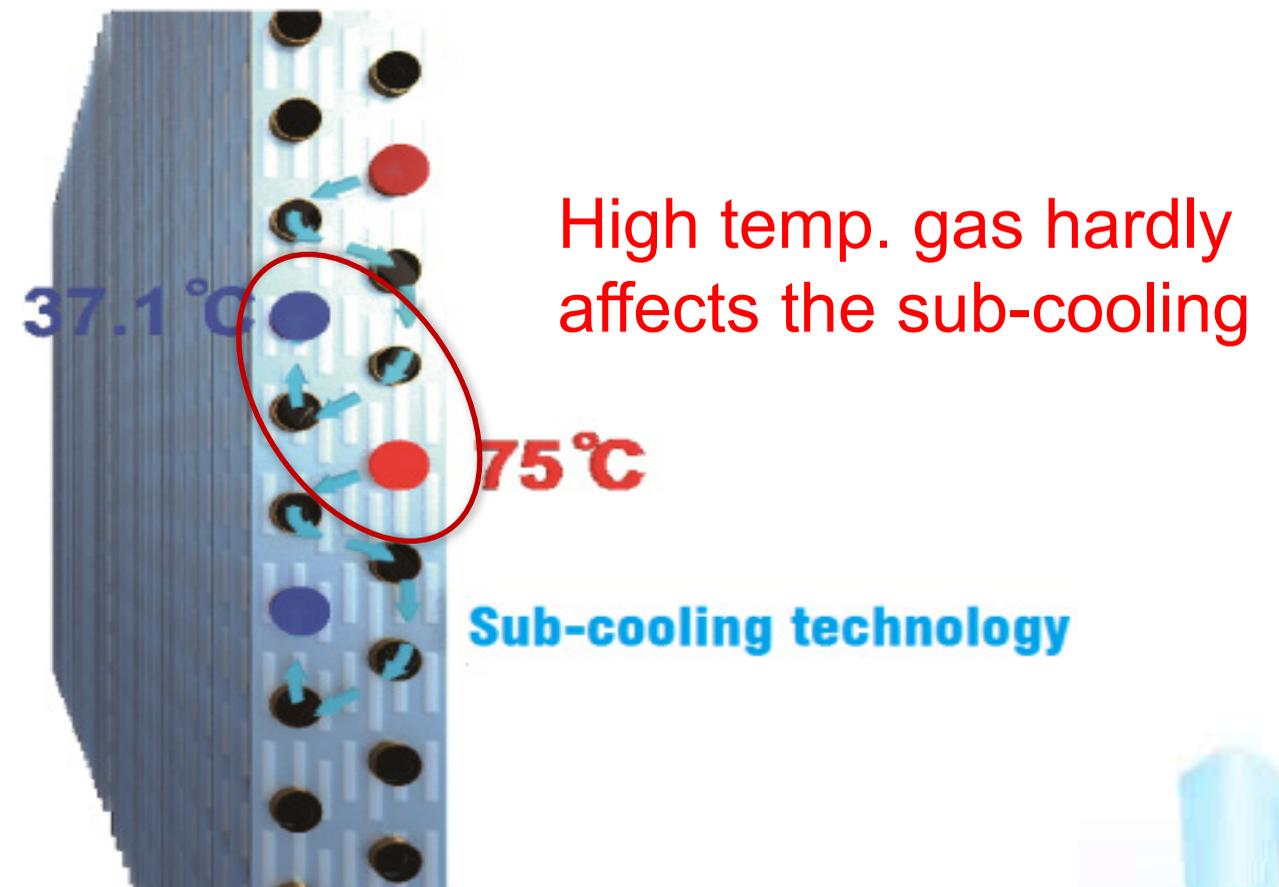
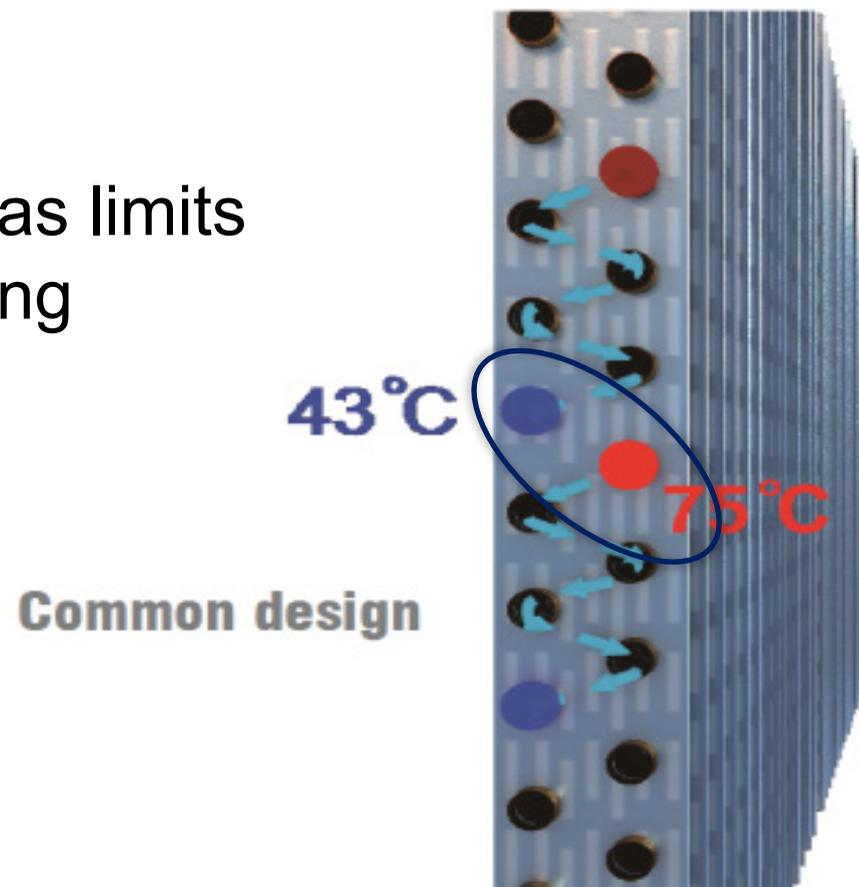


Excellent Performance

' δ ' structure sub-cooling design

- Brand newly designed heat exchanger, 11.2 degree C efficient sub-cooling make possible longer piping length.
- To increase the proportion of liquid-state refrigerant, hence to reduce the pressure drop, and enhance the heat-exchange efficiency.

High temp. gas limits the sub-cooling



2. Key technologies

2.2 High efficiency compressor— World leading DC inverter scroll compressor

- Cutting-edge DC inverter high pressure scroll compressor, stable, reliable and efficient.
- High pressure chamber, refrigerant being compressed directly and more efficiently.
- Advanced permanent magnet DC motor.



Powerful Neodymium



Variable reluctance
Neodymium



Traditional
Carbonate magnet



Less Moving Parts



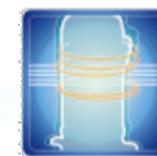
Less Leakage



Precision Work



High Efficiency



Light Vibration



Long Life

Excellent Performance

High Efficiency DC inverter compressor



New structure enhances the mid-frequency performance

Specially designed scroll profile for R410A

More compact, weight reduced by 50%

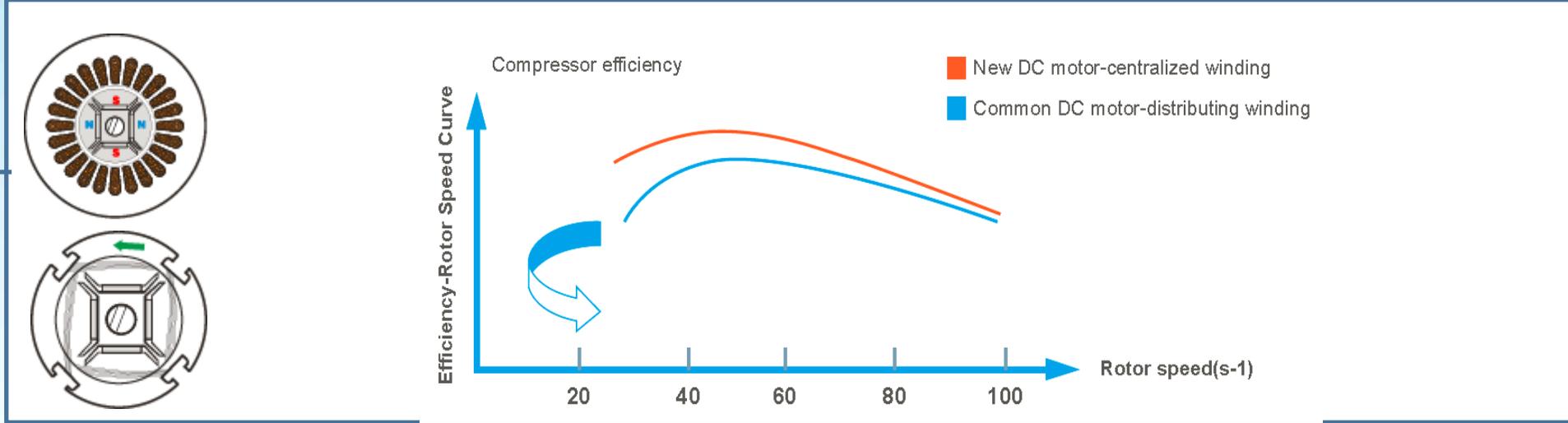
Advanced permanent magnet DC motor improves low frequency band performance

- High pressure chamber, more compact structure
- Refrigerant be compressed directly, more efficiency
- Preheating the oil make wider operation temp. range

Excellent Performance

High Efficiency DC inverter compressor

- 20~200Hz wide operation range
- Powerful magnets provide high torque and efficiency



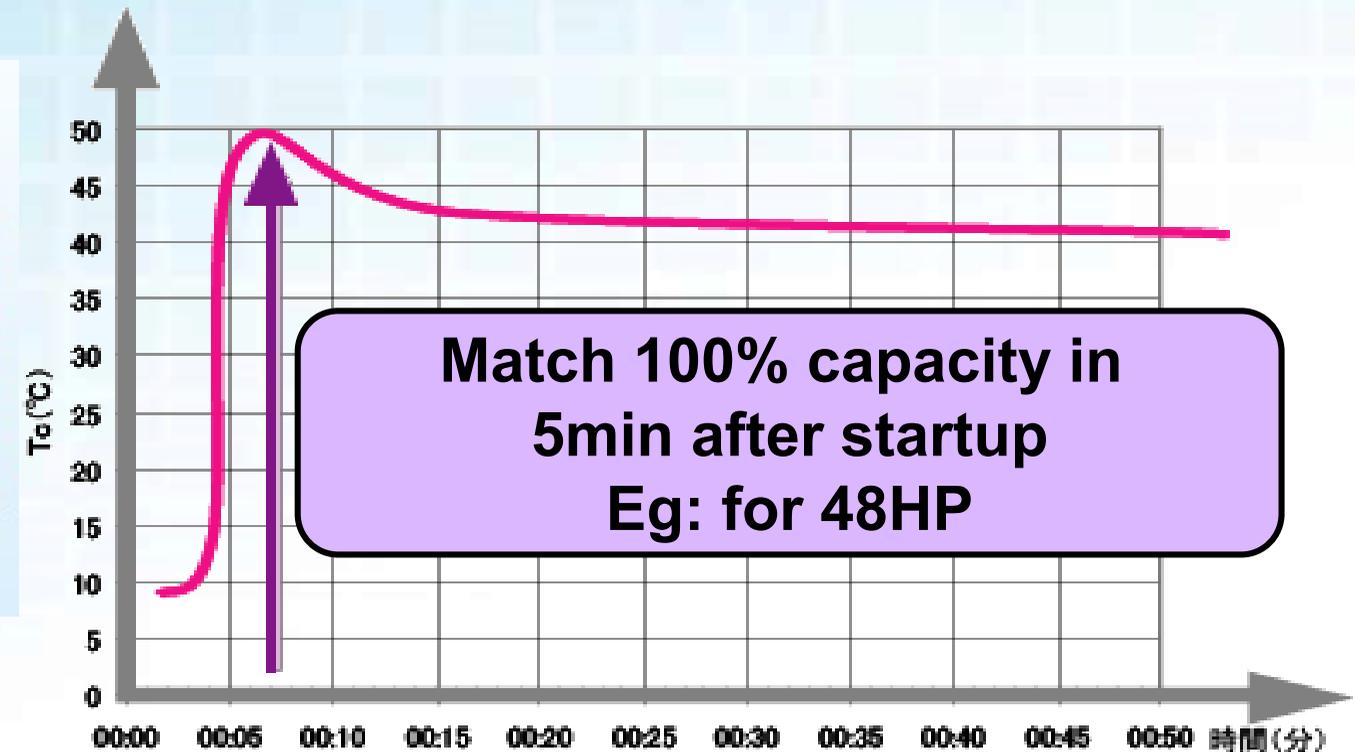
Smooth 180° sine wave DC Inverter



Excellent Performance

High Efficiency DC inverter compressor

Capacity Improving Technology



DC Inverter compressor

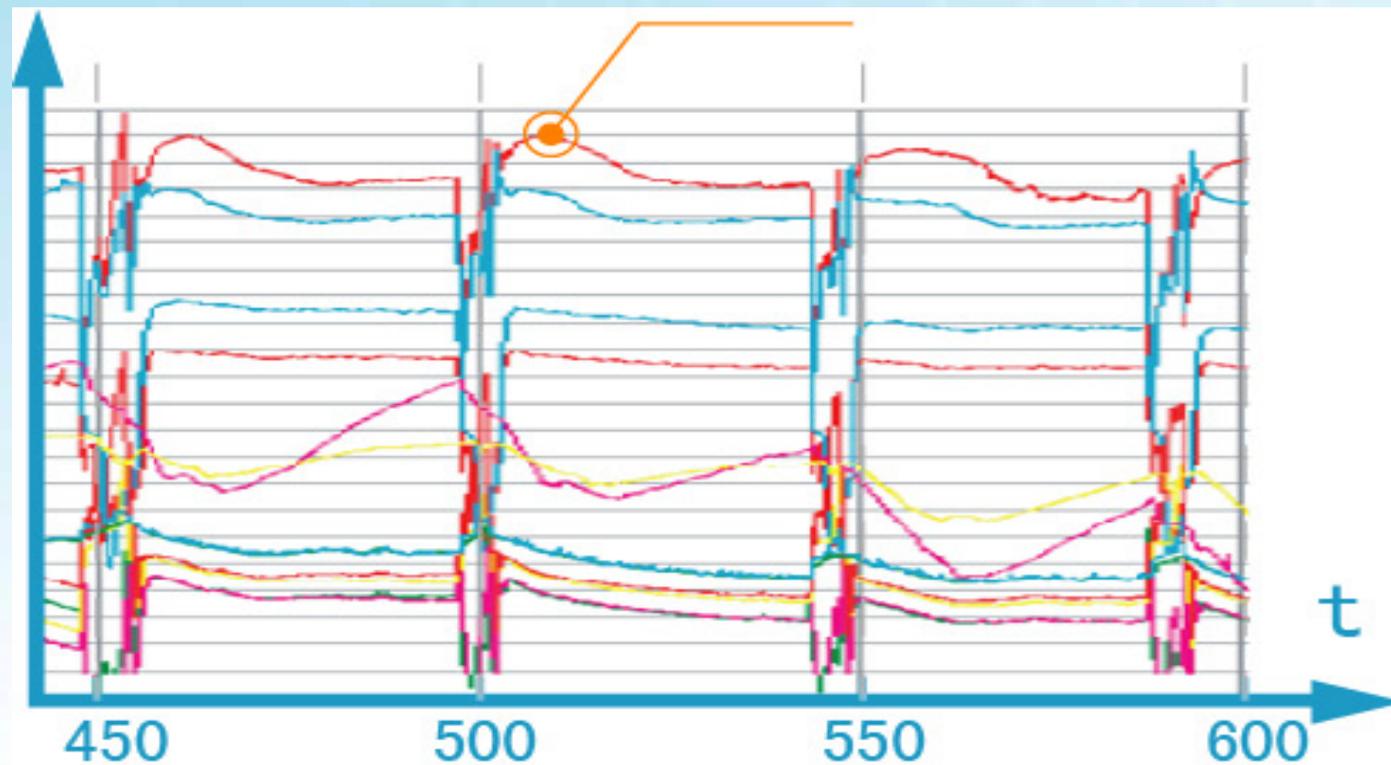
- ◆ Soft startup, reduce the interference to the electronic meshwork
- ◆ Running to high frequency fast after startup

Excellent Performance

Intelligent Defrosting program

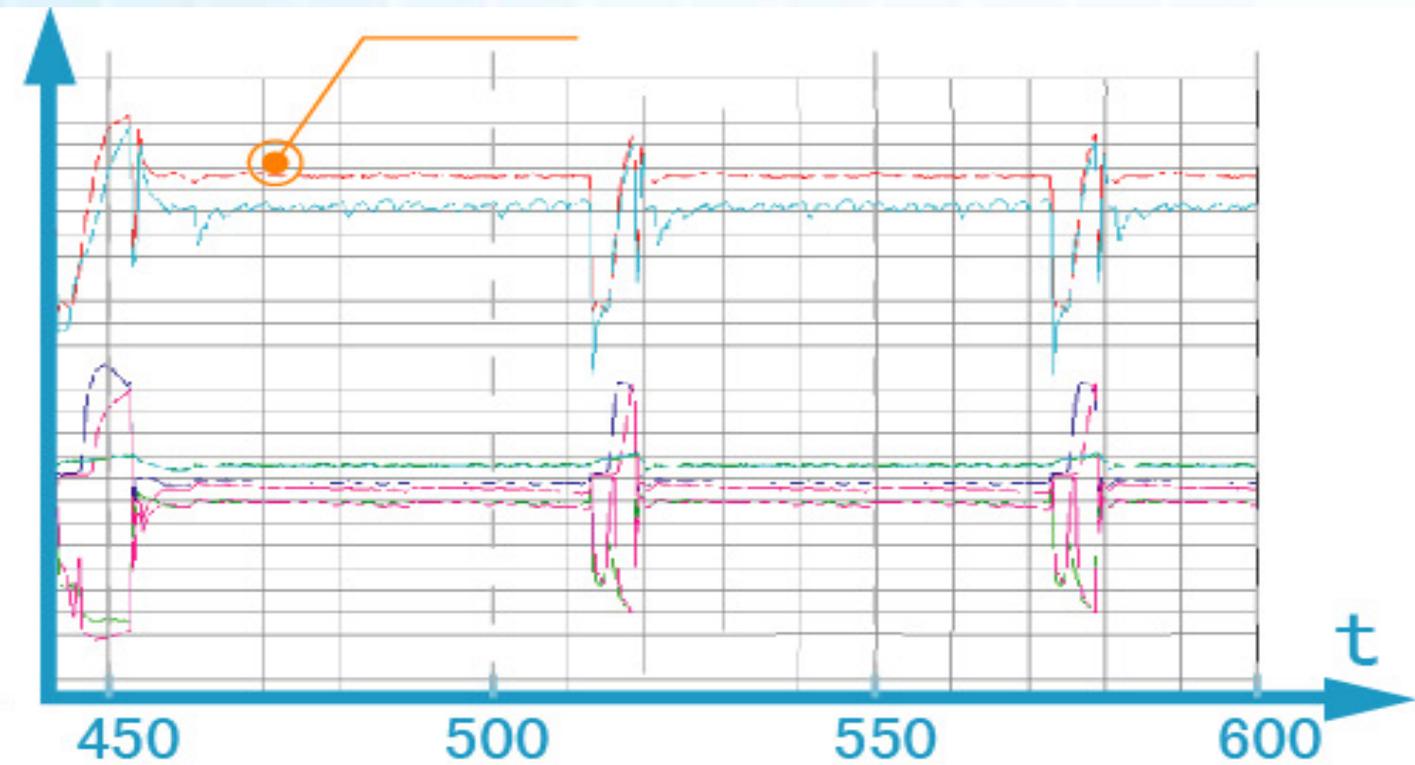
Common defrost

Heating for 50min,defrosting for 10min



Intelligent defrost

Heating for 85min,defrosting for 4min

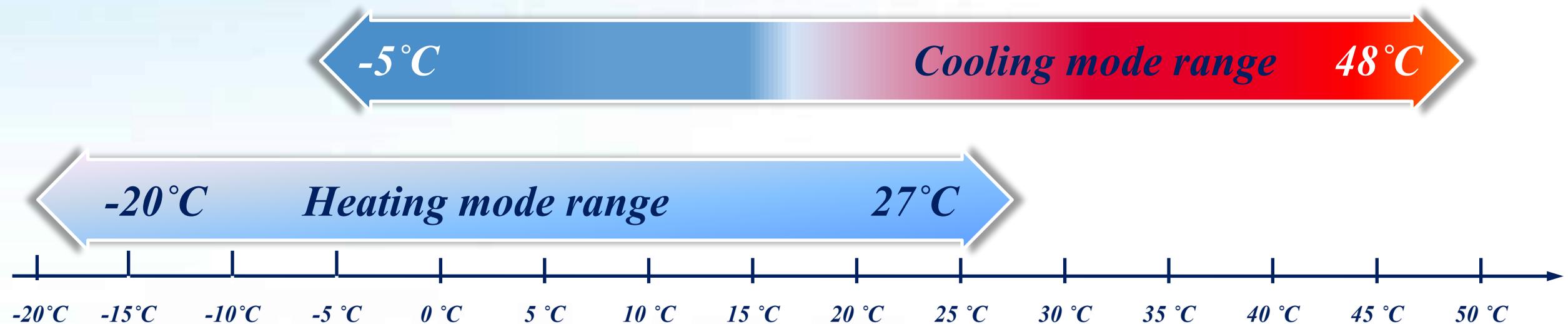


Judge defrost or not reasonably according to the temp. of ambient and heat exchanger, extend the heating time, improve the heating capacity

Excellent Performance

Wide operation temp. range

- No matter if in extremely cold winter when outdoor temperature drops to as low as -20°C in heating mode,
- Or in hot summer when temperature rises up to 48°C in cooling mode, the V4+ S series will retain stable operation.



02 FEATURES

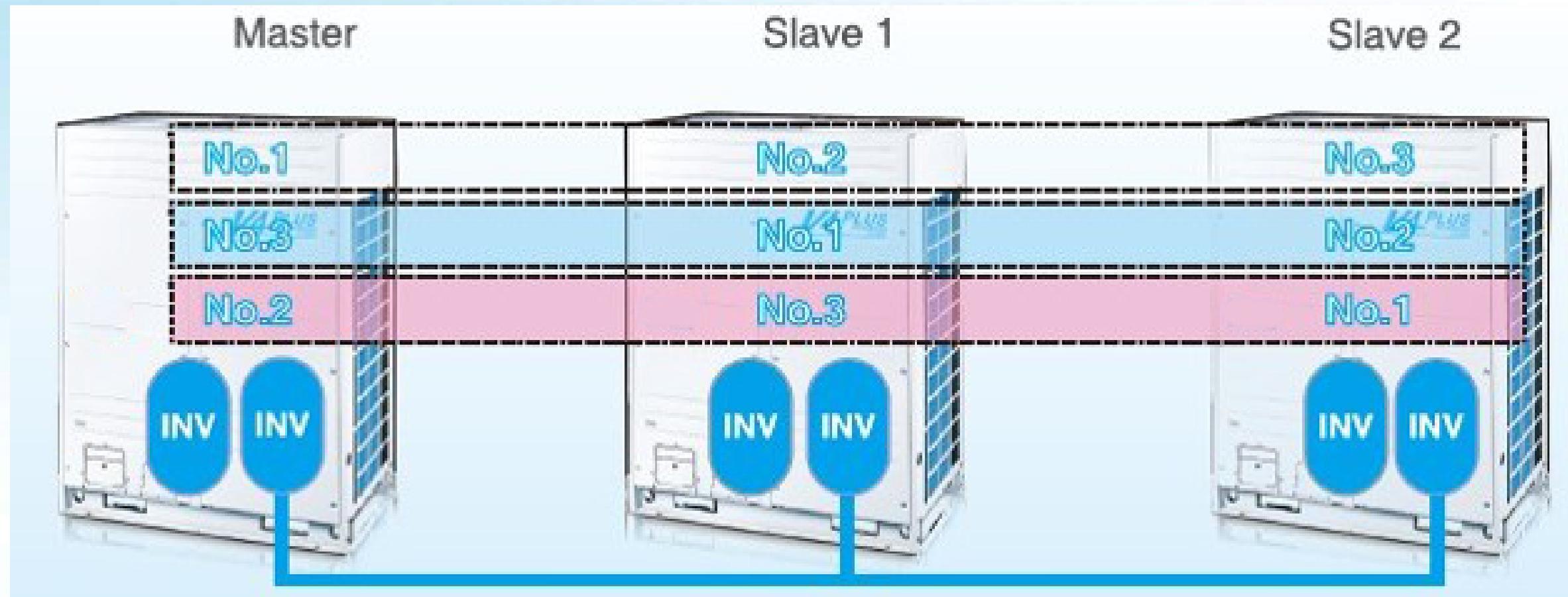
- Excellent performance
- **High reliability**
- Comfortable environment
- Easy installation and maintenance
- Designer benefit



High Reliability

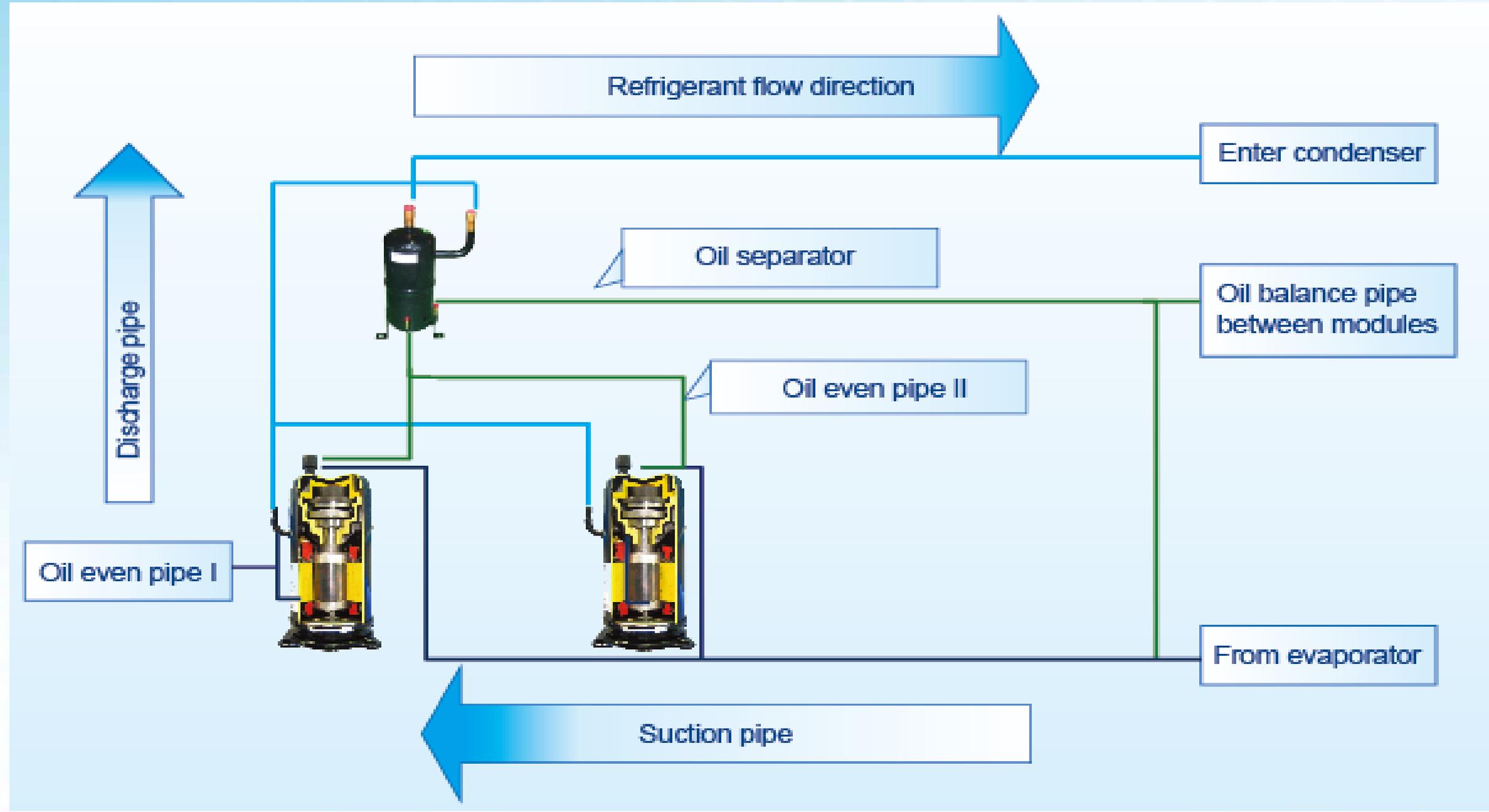
Cycle operation of outdoor units

- In one combination, any of the outdoor unit can run as the master outdoor unit to equalize their running time, so it can extend the system lifespan.



High Reliability

High efficiency oil balance technology



High Reliability

Intelligence oil return program



Oil return program will start after system has been running for 8 hours added up. The program will last for 3 minutes.

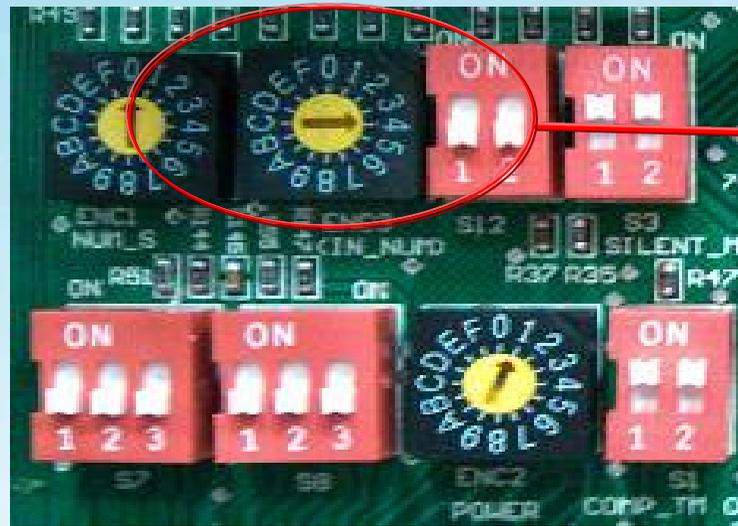
During oil return program, indoor unit which is in standby mode, indoor fan will not run.

Cooling mode	Heating mode
<ul style="list-style-type: none">✓ Indoor unit in cooling mode or fan only mode: indoor fan keeps running;✓ Indoor unit in standby mode: indoor fan will not run.	<ul style="list-style-type: none">✓ Indoor unit in heating mode: indoor fan is controlled by anti-cold air function;✓ Indoor unit in standby mode: indoor fan will not run.

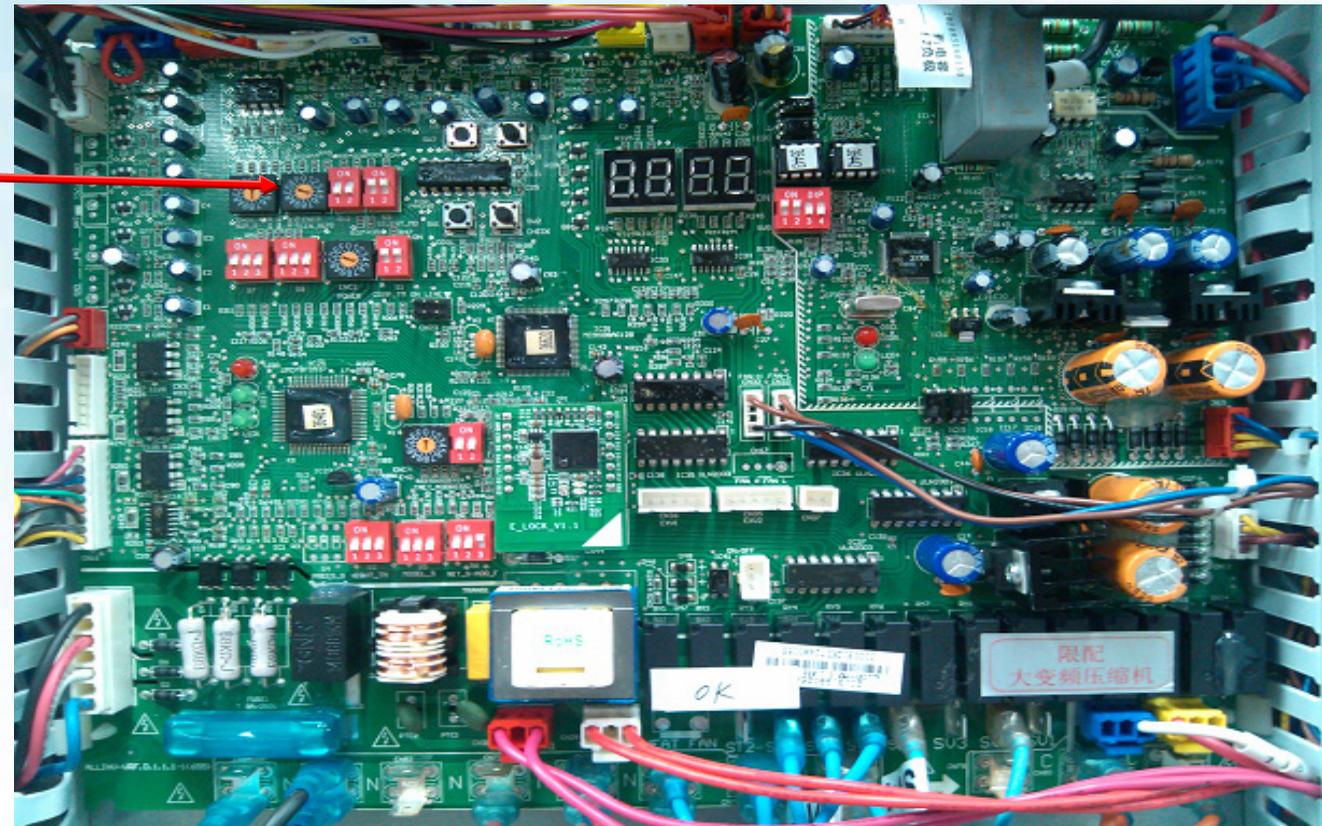


High Reliability

Indoor units num. switch



Add Indoor units num. switch, the number must be set accord with fact



If part of indoor units in one system power down when the unit is running , the outdoor units will stop and show fault code “H7”

Reliably avoid liquid hammer

02 FEATURES

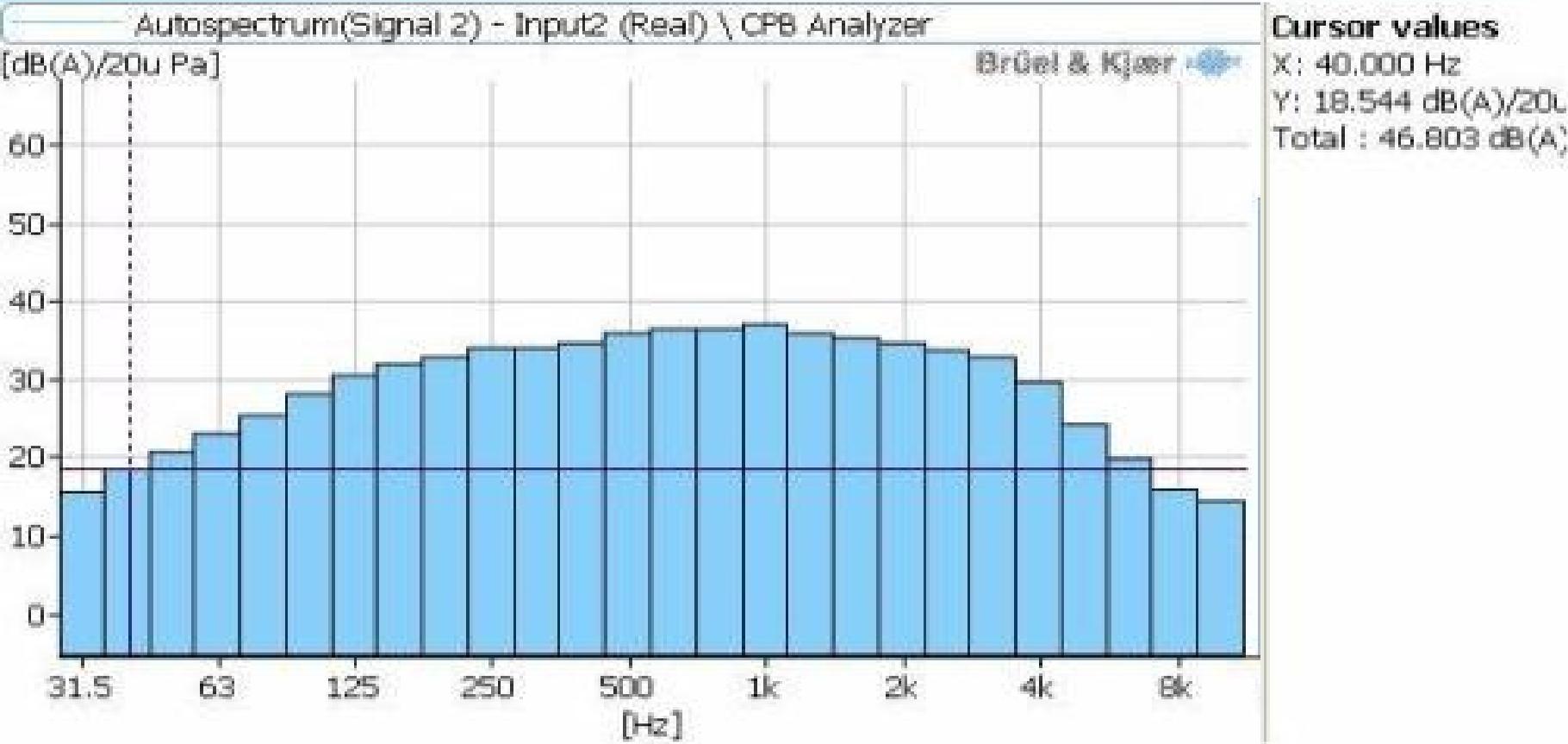
- Excellent performance
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Comfortable Environment

Night silent operation mode

Lowest noise down to **46.8dB**



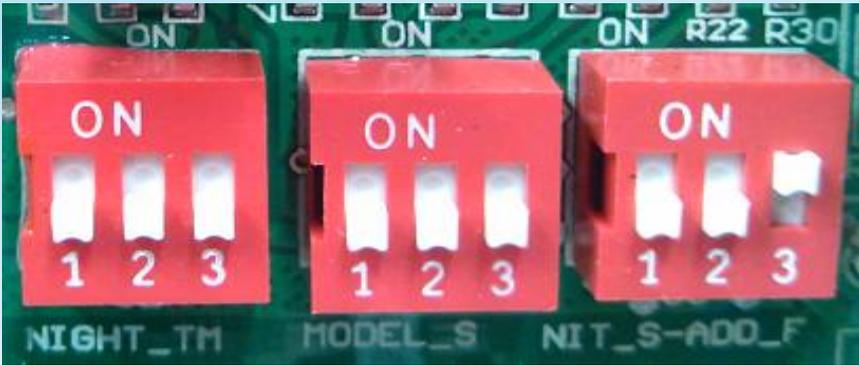
Above testing data from the noise lab.



Comfortable Environment

Silent operation selection

Function switch



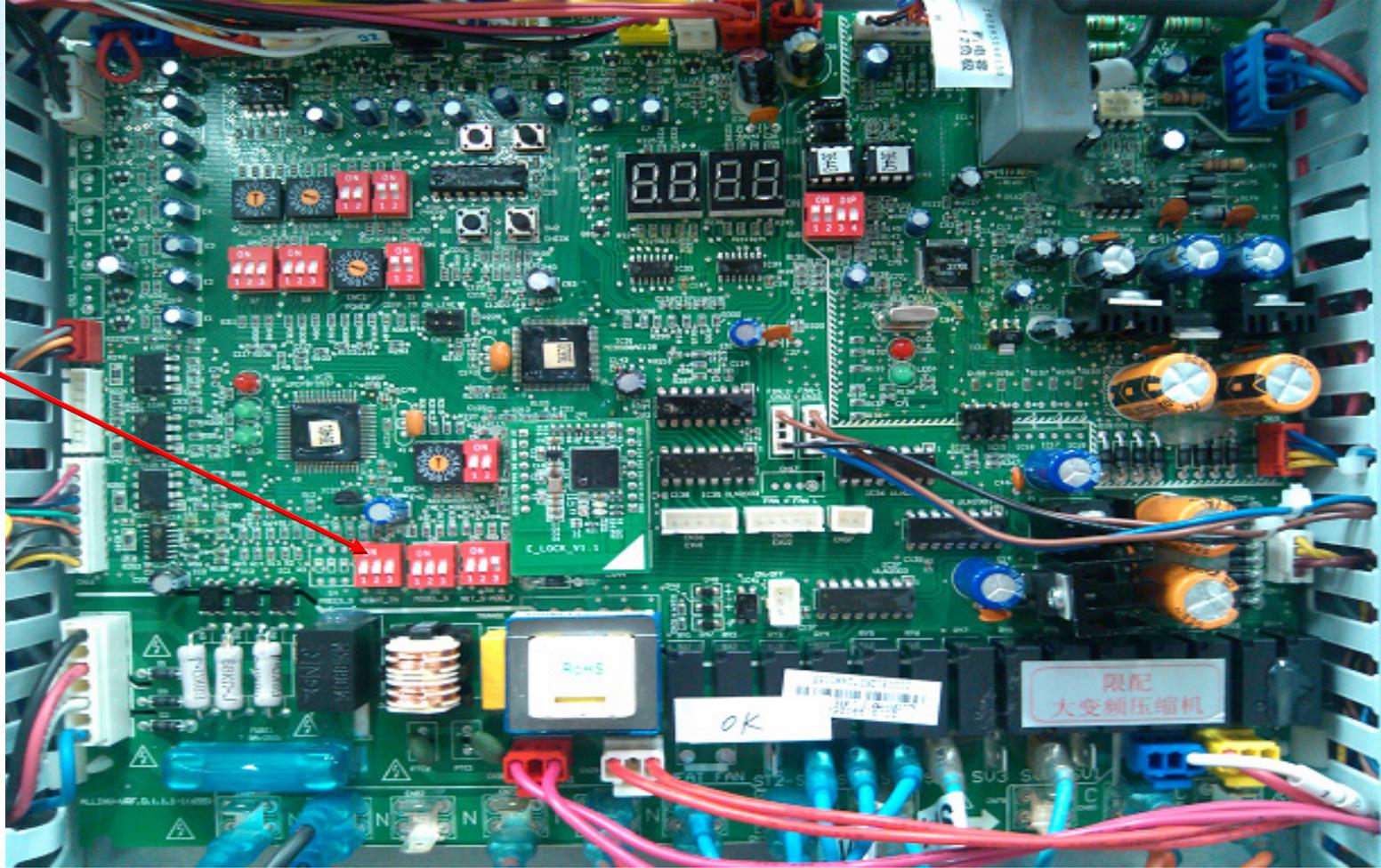
S2

S5

S6

The Switch Number	Function Description
S2	Silent Operation time
S6	Night noise control mode and automatic search address choice

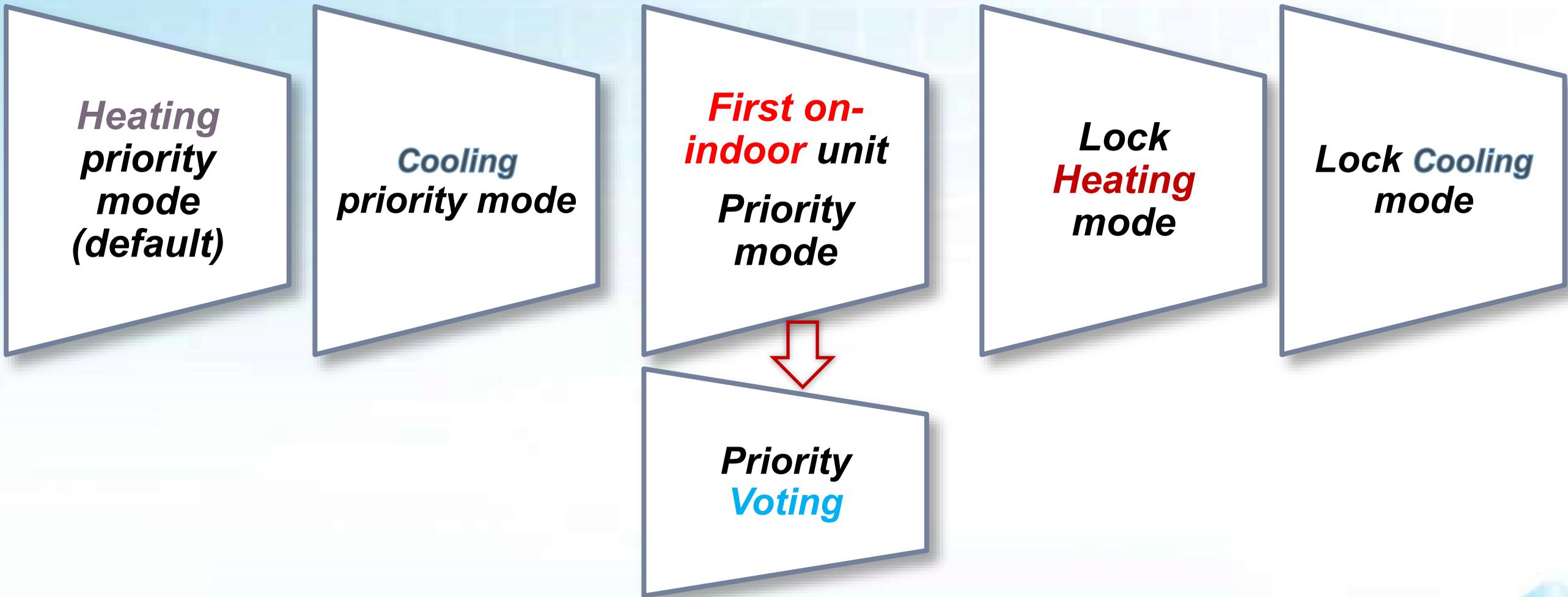
Outdoor unit PCB



Comfortable Environment

Various mode selection

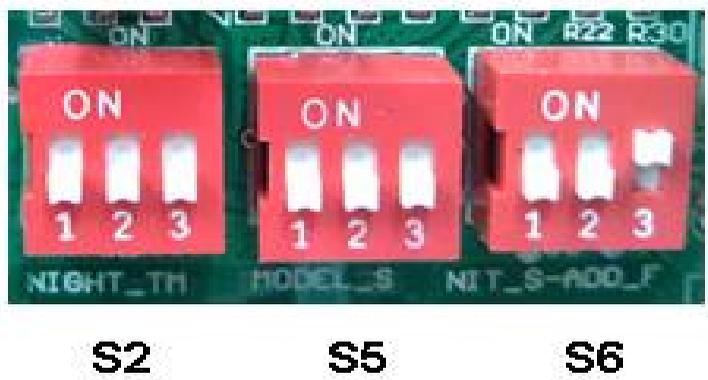
Various mode selection, provide convenience to match the customer needs.

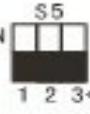
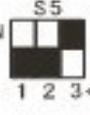
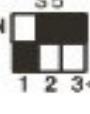


Comfortable Environment

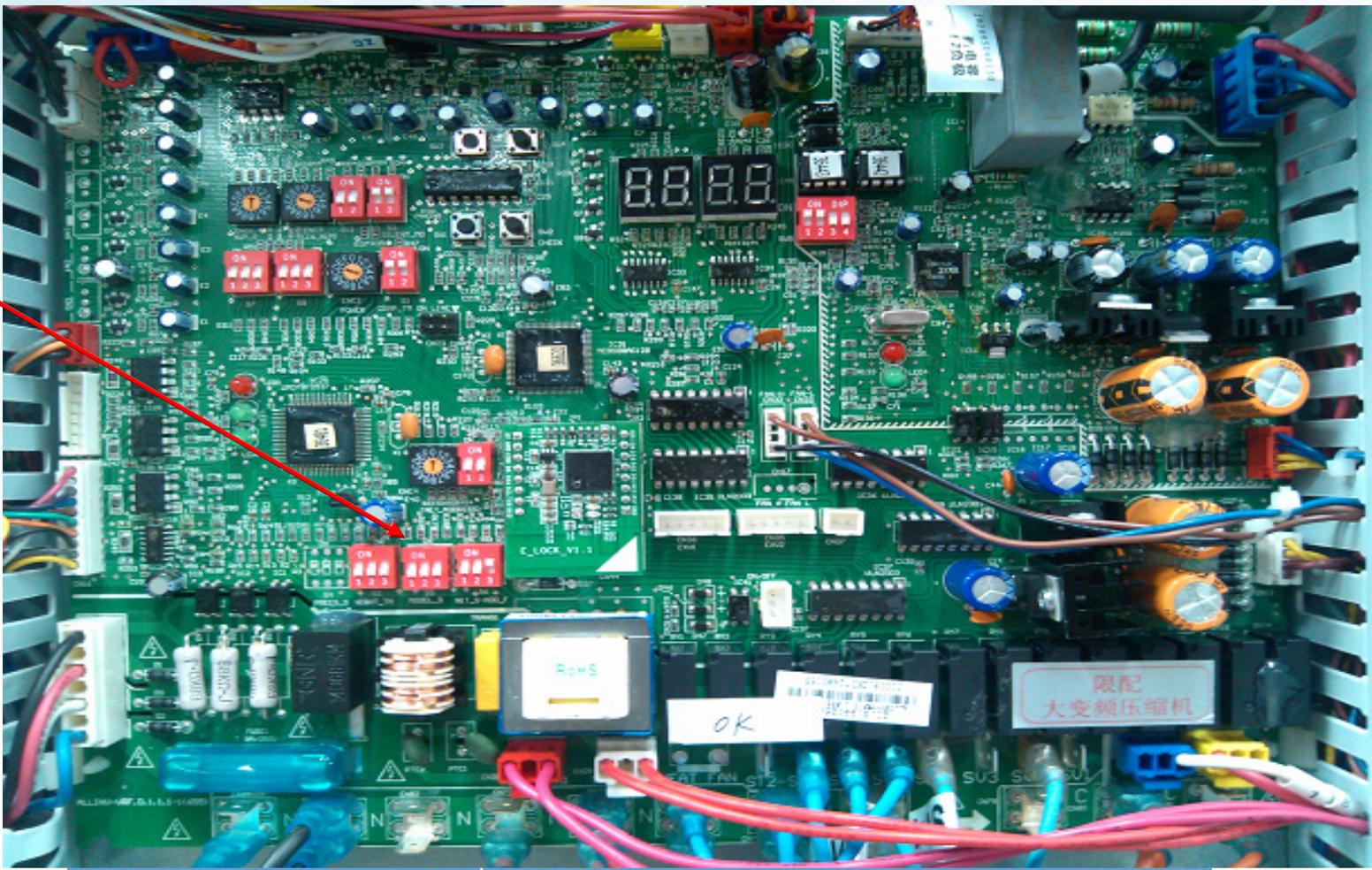
Various mode selection

Function Switch



S5	
ON 	Heating priority mode (default)
ON 	Cooling priority mode
ON 	First priority running mode is 63# unit; Second priority running mode is larger capacity requirement.
ON 	Only respond to heating mode
ON 	Only respond to cooling mode

Outdoor PCB



S5 Mode priority selection

Remark: just available for master outdoor unit.



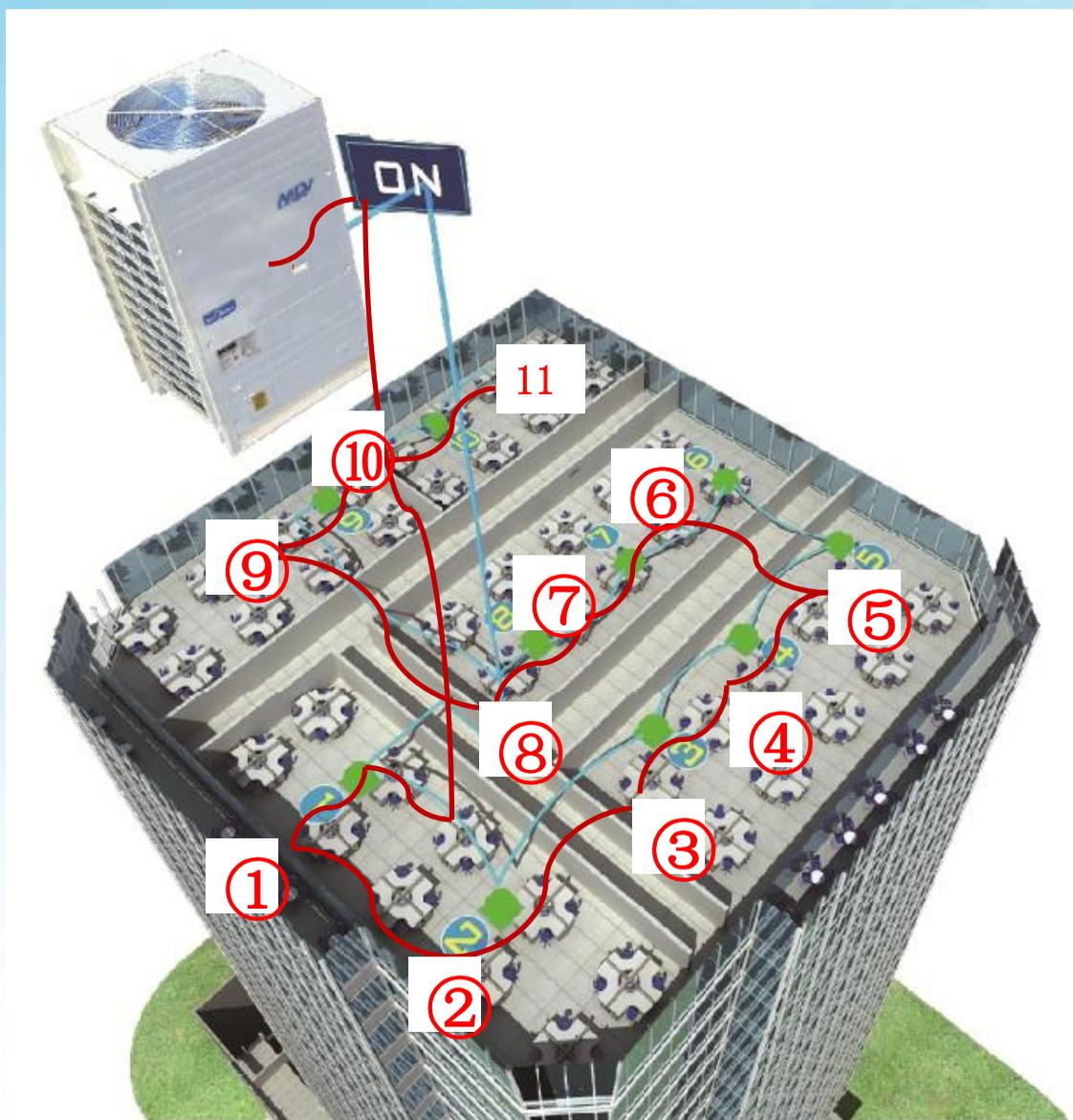
02 FEATURES

- Excellent performance
- High reliability
- Comfortable environment
- **Easy installation and maintenance**
- Designer benefit

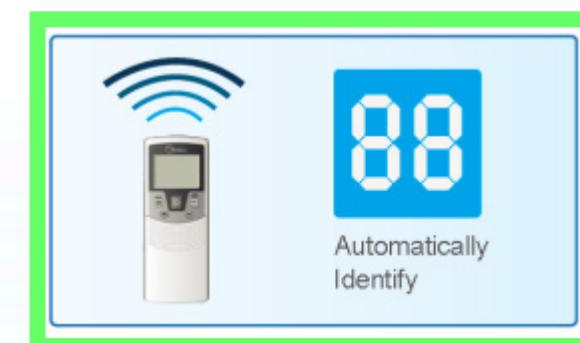


Easy installation and maintenance

Indoor unit auto addressing



- Automatic address setting.
- Max. 64 indoor units can be connected and identified.
- Not necessary to set the address by DIP switch
- Wireless remote controller can enquire and modify each indoor unit's address.



Easy installation and maintenance

Simple communication wire

- Only one group of communication wire of PQE, achieved both of communication for indoor & outdoor unit and network.
- Central controller can connect from **Outdoor side** or indoor side at will.



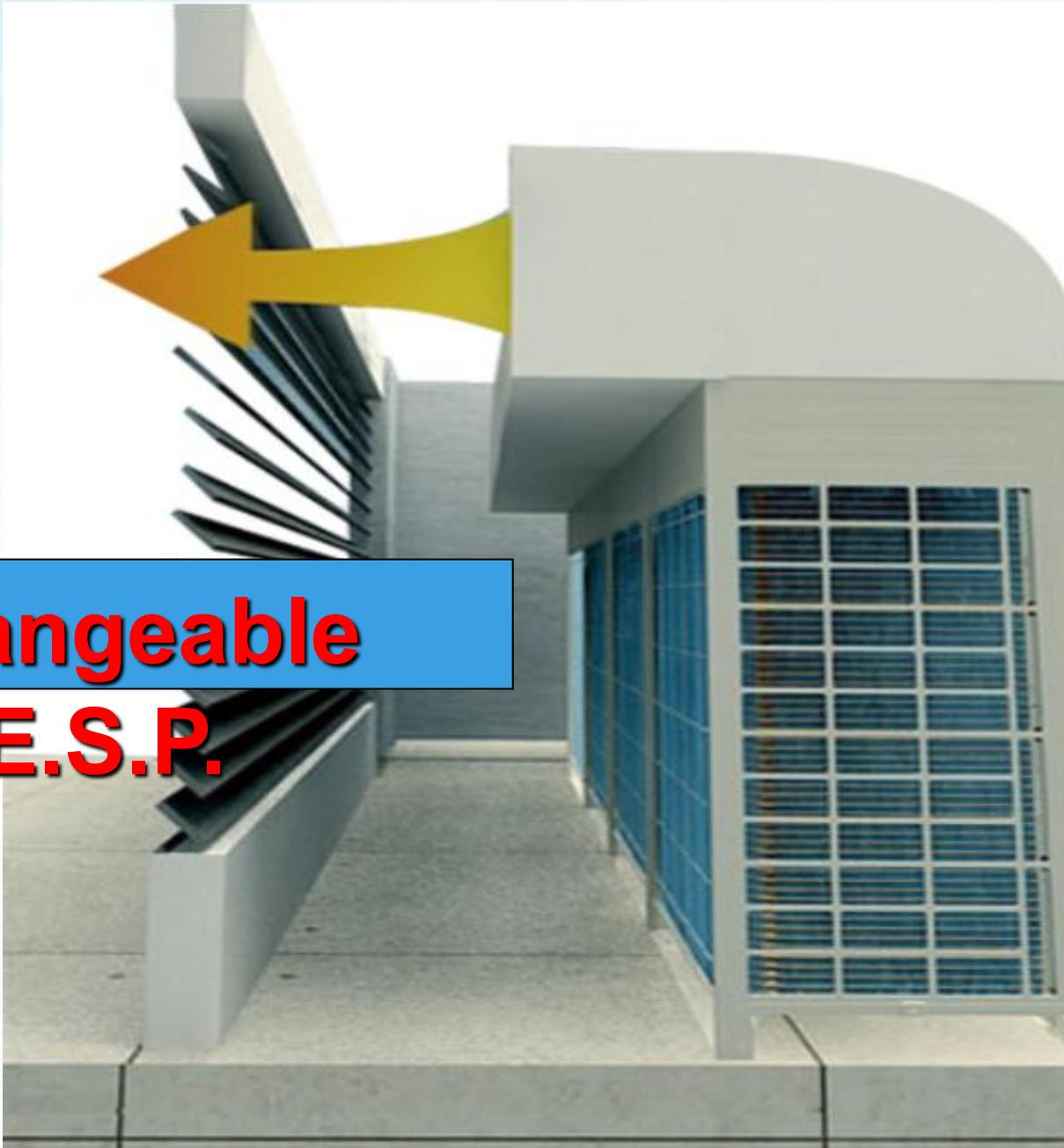
Easy installation and maintenance

Changeable static pressure of outdoor fan

➤ The static pressure of outdoor fan is changeable, it is very suitable for floor by floor installation.

Optional Pa	
0-20Pa	Default
20-40Pa	Customized

Changeable E.S.P.



*12HP model can be customized to 60Pa



Easy installation and maintenance

- Check window is very useful in many situations without taking off the whole control box panel.



1 Error Check

2 Test running

3 Fix address setting

4 Maintenance

Easy installation and maintenance

MCAC outdoor unit monitor software

outdoor unit diagnosis software

System Set Outdoor unit Help

+ V4+ System diagram

+ Run Information V4+

Indoor unit qty..... -- Fan status..... --
 Running mode..... -- Master unit/slave unit..... --
 Variable compressor frequency..... --
 Running ability of outdoor unit..... --

+ Error code table V4+

● E0 Outdoor unit communication malfunction	● H0 IR341 and 780034 communication failure
● E1 Phase sequence error or owe phase	● H1 Chips 0537 and 0034 communication failure
● E2 Indoor&outdoor unit communication malfunction	● H2 Outdoor unit quantity decreased malfunction
● E3 Reservation	● H3 Outdoor unit quantity increased malfunction
● E4 Ambient temperature pipe TS error	● P0 Inverter top temp. protection
● E5 Reservation	● P1 H-volt disch prot.
● E6 Reservation	● P2 L-volt disch prot.
● E7 Reservation	● P3 Inverter OCP
● E8 Outdoor unit address error	● P4 Over disch. temp. prot.
● E9 Voltage malfunction	● P5 High pipe temp. prot.
● EE Reservation	● P6 Module protection
● EF Others malfunction	● P7 Fix frequency 1 OCP

+ V4+ Outdoor unit



● P8 Fix frequency 2 OCP
 ● P9 DC fan motor Modular protection
 ● PA Defrost protection
 ● PB Reservation
 ● PC Reservation
 ● PD Oil return
 ● PE Average oil/Pre-heating
 ● PF Others protection

COM state:no open Current Machine:V4+ 2011-03-23 17:53:10 1.2.24.1



02 FEATURES

- Excellent performance
- High reliability
- Comfortable environment
- Easy installation and maintenance
- **Designer Benefit**



Indoor Unit

R410A



14 Types
More than
100 models

- Max. 64 indoor units can be connected with the outdoor units in one system.
- Allow Connectivity Ratio between 50% and 130% of the combined indoor units capacities.

Flexible to select

Flexible outdoor unit combination

- The modular design offers more flexibility on Outdoor unit choosing

8,10HP



12,14,16HP



18HP



20,22,24,26,28,30,32,34,36HP



34,36,38,40,42,44,46,48,50,52,54HP



56,58,60,62,64,66,68,70,72HP



Flexible & Stylish Design

- **50%~ 130% connectivity ratio is possible.**
- **VRF Indoor units are available in a wide range of styles to fit any interior design.**
- **With indoor unit choices including cassettes that mount flush to the ceiling, ducted units that hide completely concealed in the ceiling, and wall mounted units that fit into any décor, Midea VRF system offers aesthetically pleasing design.**



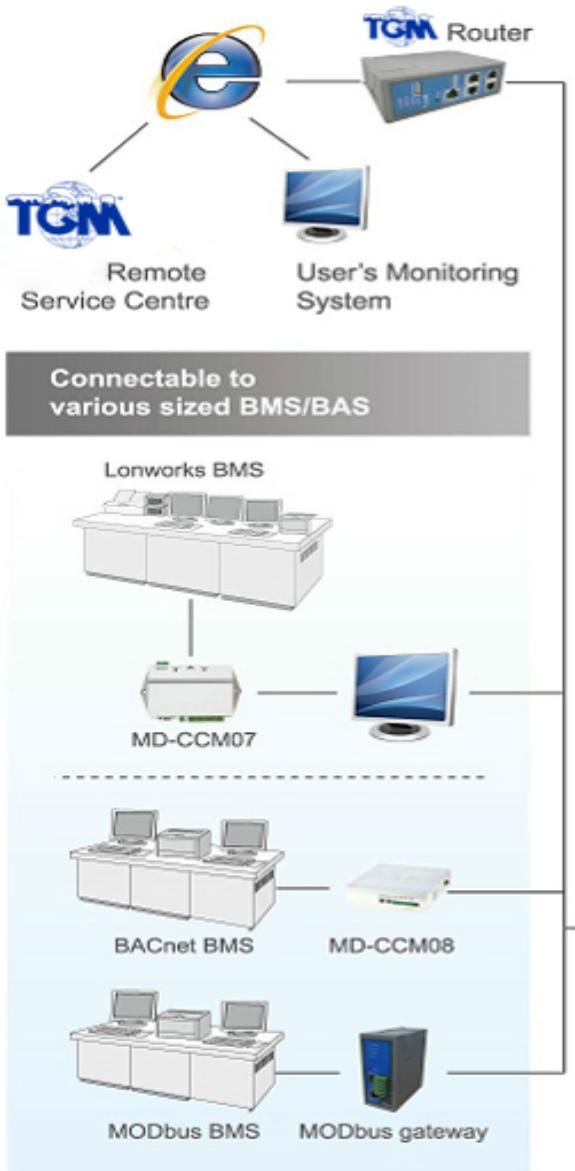
03 CONTROL DEVICE

- Individual Controller
- Centralized Controller
- Network Control
- Accessories
- Applications



Comprehensive control solutions

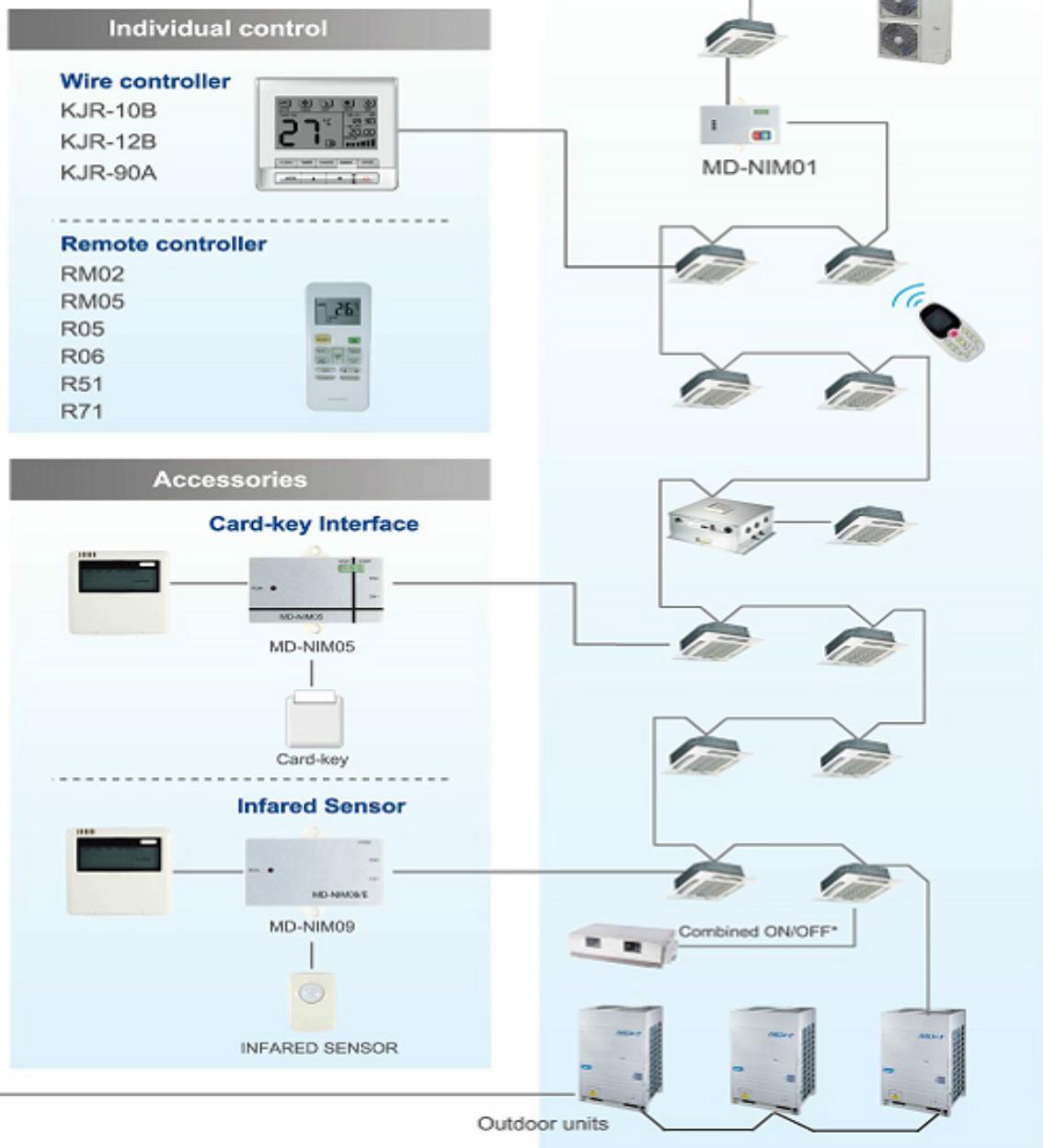
BMS CONTROL



CENTRAL CONTROL



INDIVIDUAL CONTROL



Individual Controller

RM02/E



RM05



R51/E



R06/E



KJR-90A/90A1



KJR-10B/KJR-12B



KJR-29B



Available for all the indoor units



Centralized Controller

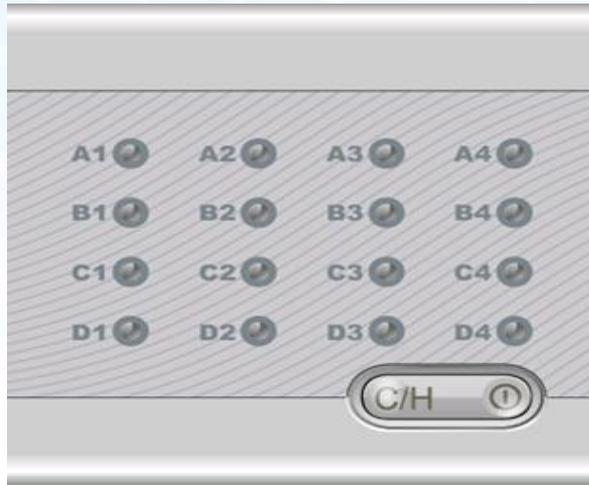
CCM03



CCM09



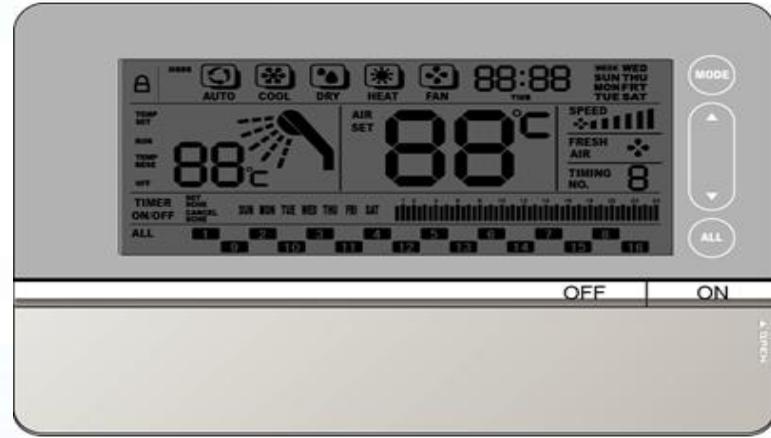
KJR-90B



CCM30



KJRF-180A



CCM02



Available for all the indoor units

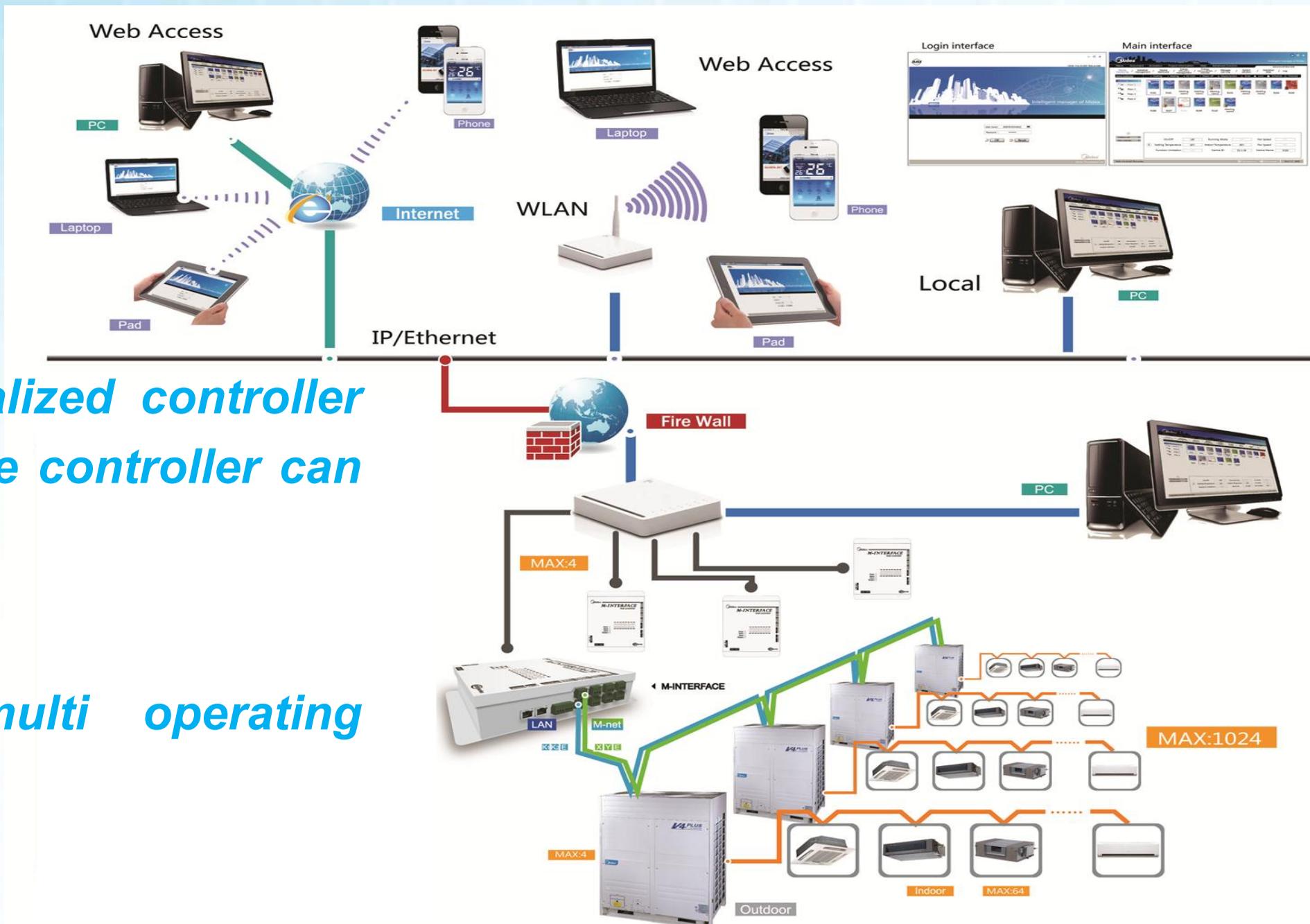
Network monitoring

4th generation network Monitoring system —IMM

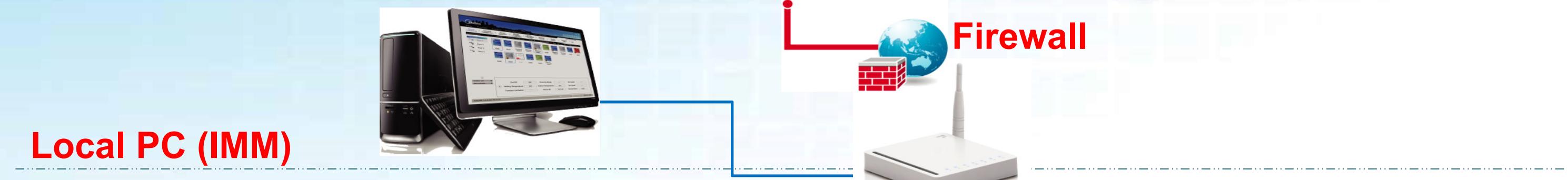
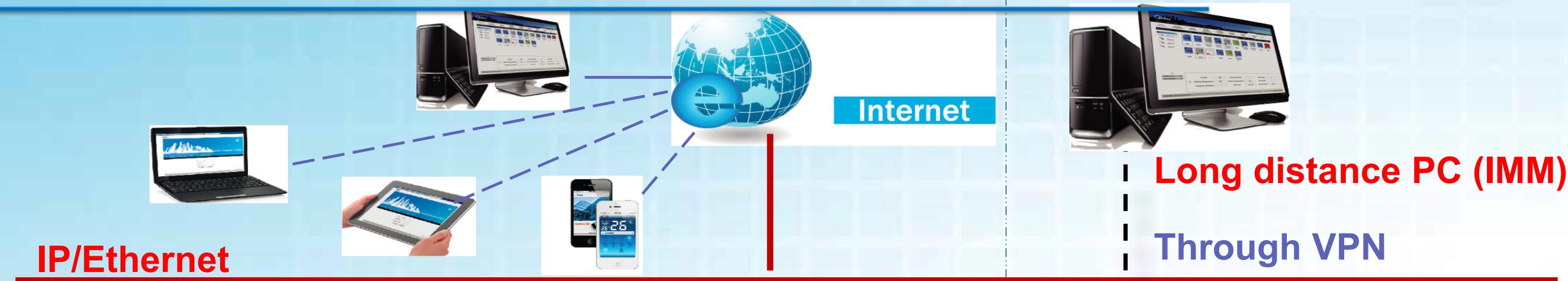


Feature

- AC Control via Internet
- Max.16 Ethernet centralized controller can be connected , and one controller can control 4 systems
- Web monitoring
- Multi-language and multi operating system



Network monitoring



BMS Gateway



➤ **BACnet Gateway**
CCM08



➤ **LonWorks Gateway**
LonGW64/E



➤ **Modbus Gateway**
CCM-18

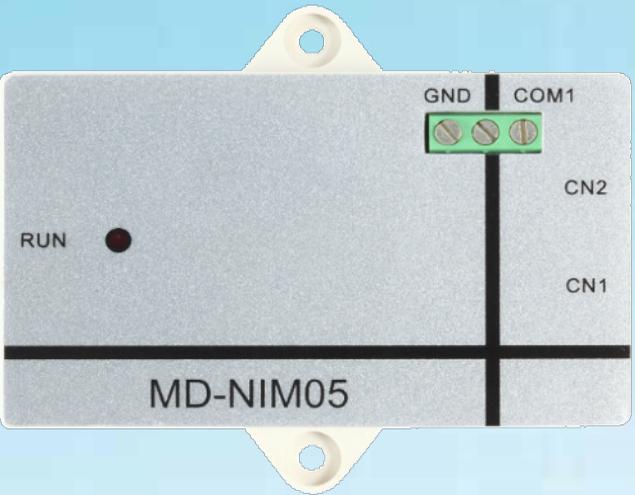


MD-KNX-01
MD-NIM09

Compatible BMS



Accessories



➤ Hotel inserting card module
MD-NIM05



➤ New hotel inserting card module
MD-NIM05B



➤ Infrared sensor controller
MD-NIM09



➤ DX AHU connection kit
AHUKZ-01B
AHUKZ-02B
AHUKZ-03B



➤ Digital power meter
DTS634/DTS636



THANK YOU FOR YOUR ATTENTION
AND PARTICIPATION

THANK YOU

