

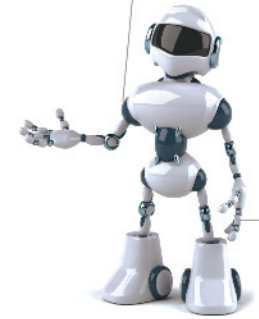


# Hi-FLEXi

Inverter-Driven Multi-Split  
Central Air Conditioning Heat  
Pump System



Hisense



## Hi-FLEXi M

Hisense Hi-Flexi Series stems from Hisense high-quality and high-grade intelligent Commercial Central Air Conditioning. It relies on Hisense high technical platform of inverter-driven central air conditioning and has a brand gene of high-tech and high-quality from the date of birth which perfectly implements Hisense's value concept—"create perfect, service society"

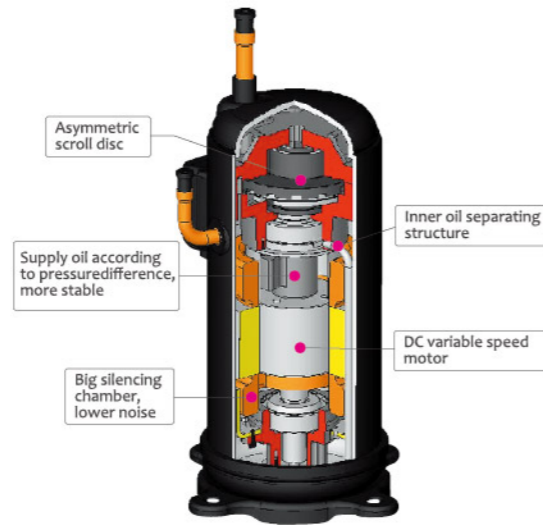
Hisense Inverter-driven Central Air Conditioning Hi-Flexi M Series standing on the high level of multi-split technology adopts high efficient high pressure chamber compressor and leading inverter control technology, which further improves the system performance and energy efficiency. The modular combination method realizes the system capacity of 8~48HP in a 2HP increment by combining 5 base units from 8HP to 16HP. Such a strong lineup provides better air conditioning solution for work, leisure and living space.



# High Efficient High Pressure Scroll Compressor

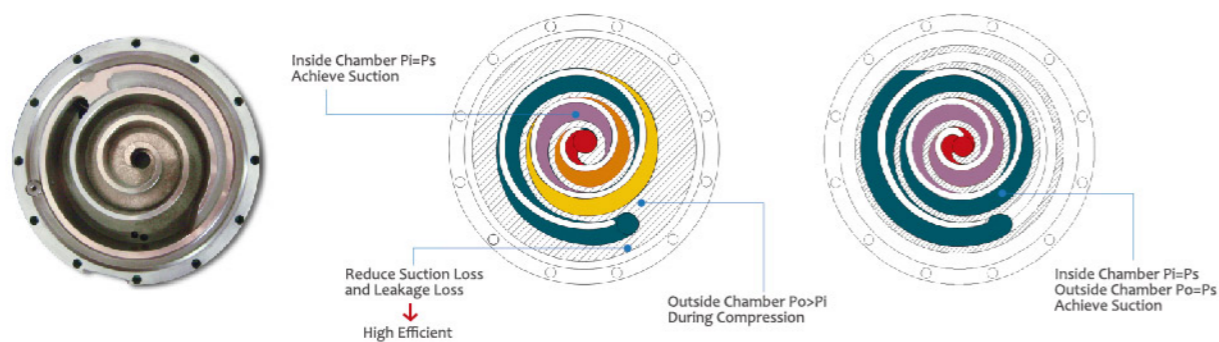
## New Scroll Compressor

Hi-Flexi adopts large capacity high-pressure chamber scroll compressor with an interior oil separating section, which maintains most of lubricating oil in compressor by the use of the interior oil mist separator and oil-returning pipe design. Only much less oil is discharged from compressor along with refrigerant, which avoids cooling capacity decrease due to redundant oil in refrigeration cycle, further improves efficiency.



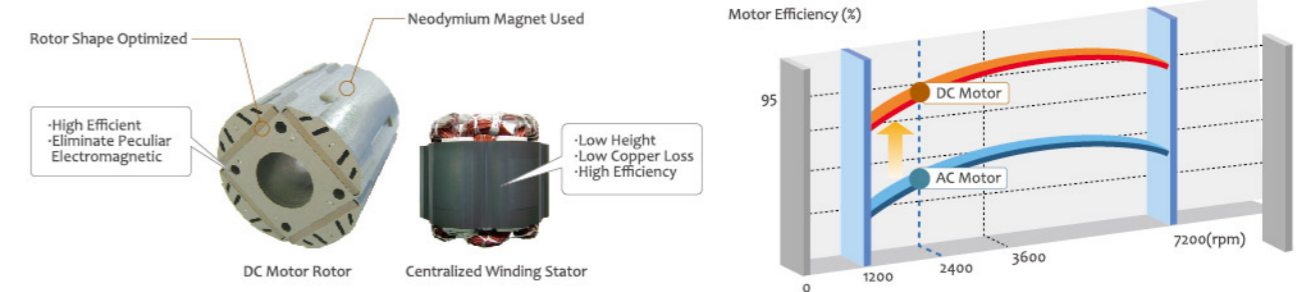
## Exclusive Asymmetric Scroll Technology

The asymmetric scroll structure of compressor effectively helps reduce the refrigerant gas leakage loss in the process of suction and compression, enhances operating efficiency and reliability.



## DC Inverter-driven Compressor Motor

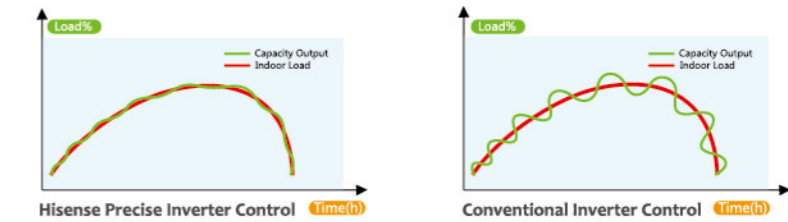
By the use of DC motor, the performance is improved at around 20~40Hz where the operation time of the inverter compressor is longest. Meanwhile, the rotor of compressor's motor is divided into two parts to suppress electromagnetic interference (EMI) which achieves low noise.



# DC Inverter-Driven Technique

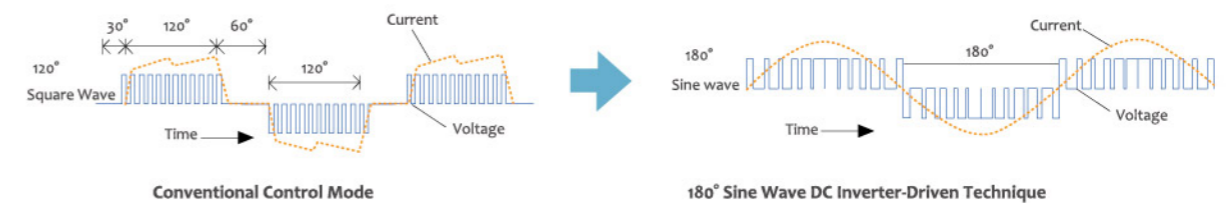
## Precise Room Temperature Control

The operating speed of DC motor in compressor can be adjusted continuously and freely relating to the variability of system capacity. This technique integrated with auto-adaptive control technique automatically adjusts capacity output according to actual air conditioning load in order to achieve a smoother curve of temperature fluctuation to satisfy higher requirements of coziness.



## 180° Sine Wave DC Inverter-Driven Technique

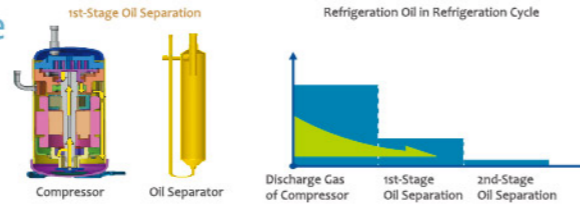
The application of advanced sensorless three phase vectoring control technique on permanent magnetism synchronous motor ensures the output current of DIP-IPM DC inverter to be a smooth sine wave curve, and accordingly enables motor to operate smoothly with efficiency dramatically increased. At the same time, both harmonic current and electromagnetic noise are suppressed.



## Oil Control Technique, Improve the Reliability

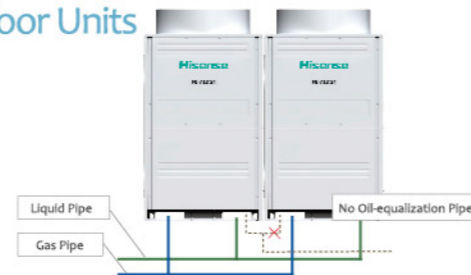
### High Efficient Oil Separating Technique

The system can operate safely and reliably by the use of interior oil-separating section and exterior oil separator. Much less oil enters refrigerating circulation, accordingly enough oil can be guaranteed for lubricating compressor.



### Oil-equalization Control Technology Between Outdoor Units

Synthetic application of scroll compressor with internal oil separating function, efficient external oil separator, accumulator, and intelligent oil level control technology regulates the oil level within the appropriate limits, ensures oil balance between outdoor units, and guarantees system stability and reliability.



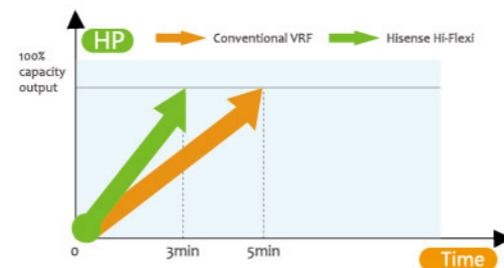
### Oil Return Control

Oil return operation conducted according to the operation frequency and operation time of compressor effectively avoids the oil retention in indoor heat exchanger and outdoor heat exchanger and reduces the compressor failure due to inadequate refrigeration oil. After oil return control, system returns to previous operation automatically.

## Intelligent Defrosting, Rapid Heating

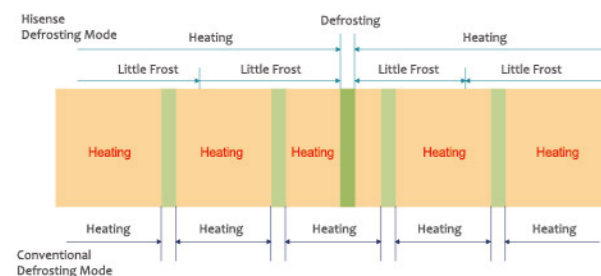
### Rapid Heating Start-up

Combining the soft start of DC inverter compressor and rapid start of fixed speed compressor, the system can achieve 100% heating capacity output instantly and quickly meet the air-conditioning demand. (Taking 460.6kbtu/h as an example)



### Intelligent Defrosting Mode

Frosting doesn't occur frequently and the short defrosting time ensures heating effect in winter.



- Outdoor unit adopts the outdoor temperature sensor and heat exchanger temperature sensor, and precisely calculates the defrosting time.
- Through the adjustment of outdoor fan, electronic expansion valve and compressor frequency, defrosting frequency and defrosting time can be largely reduced.

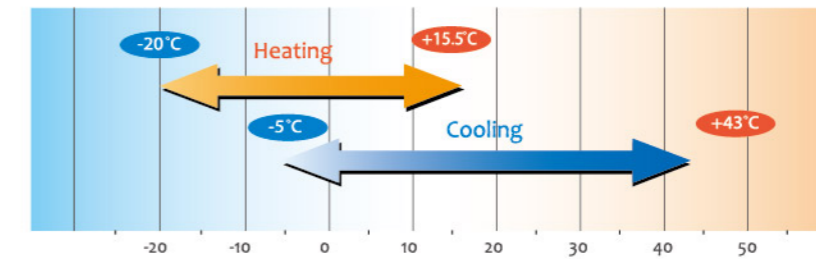
## Rotational Operation to Distribute Load of Outdoor Units

Regulating the operation time of each outdoor unit leads to load reduction on compressors. Therefore, outdoor unit endurance is improved.



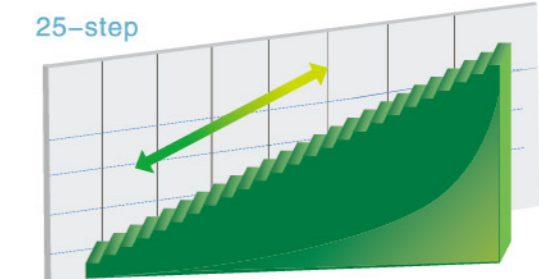
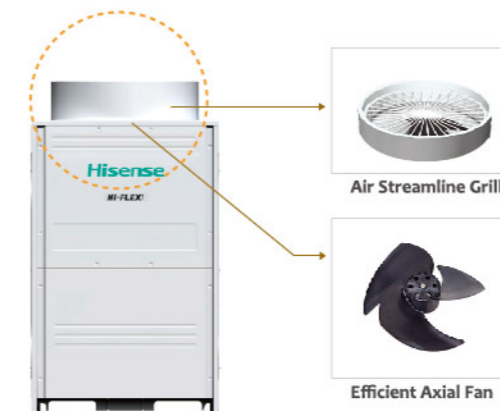
## Wide Working Range

Hi-Flexi M Series can handle a wide range of outside air conditions, thus extending the flexibility of installation space and climatic environment.



## 25-Step Fan Speed Control

The DC variable-speed motor is adopted in outdoor unit, which results in efficiency promotion and power input reduction. The outdoor fan speed can be adjusted by 25 steps.

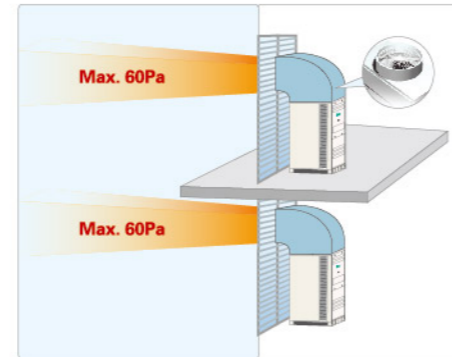


- The stability of discharge pressure and suction pressure of compressor is assured
- The stability of flow (capacity) dynamic allocation of indoor unit is assured
- Quick response of control system is improved, accordingly the system stability, durability and reliability are assured

## Wide Range of External Static Pressure of Outdoor Units

High efficient axial fan designed with computer fluid analysis, finite element method and aerodynamic simulation analysis owns optimized inlet and outlet angle, as well as a special flared outlet design, which results in higher external static pressure allowance, better air exhaust and sound air circulation.

- High Efficient Fan Reduces Motor Power Consumption
- Top Class External Static Pressure: 60Pa

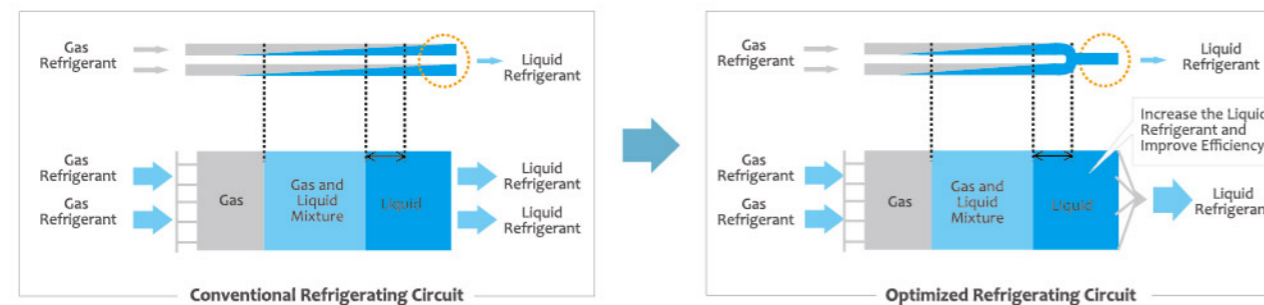


## New Efficient Heat Exchanger

New efficient heat exchanger adopts  $\Phi 7.0$  inner grooved copper pipes with high thermal conductivity and new Step Fin, which leads to air flow resistance reduction, even and full heat exchange and heat transfer improvement. Furthermore, the amount of frost on heat exchanger decreases in winter, which improves heating effect.

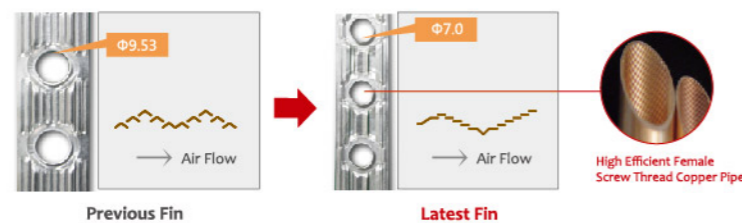
### Optimized Refrigerant Circuit Design

The specially designed refrigerant flow circuit optimizes the efficiency of heat exchanger.



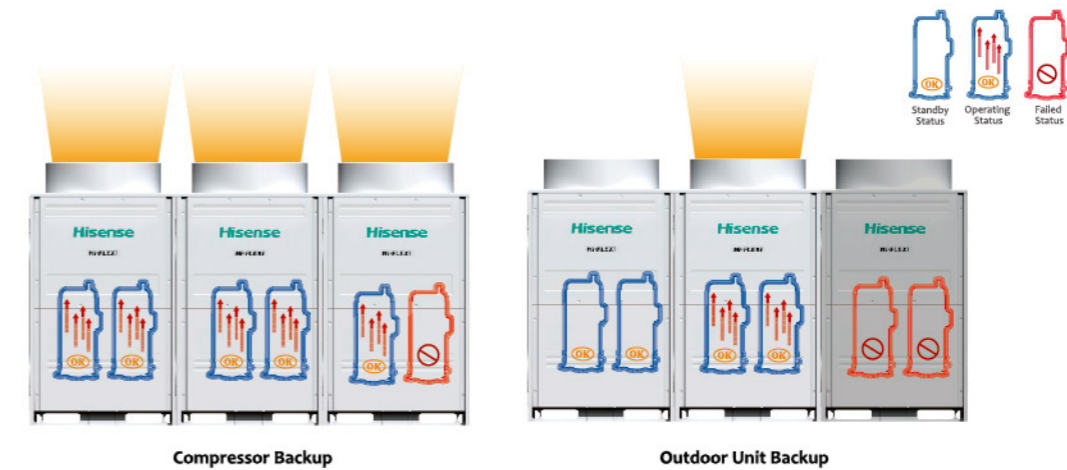
### Newly Developed Fin with Efficient Heat Transfer

New fin and copper pipe contribute to promote heat transfer efficiency



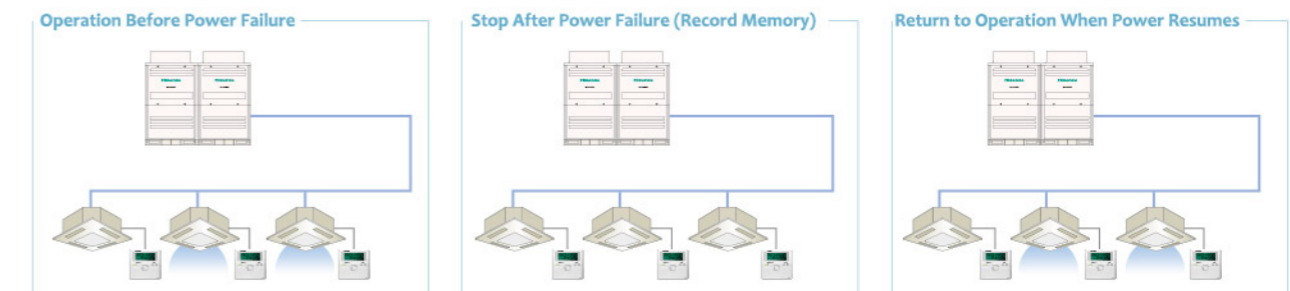
## Double Back-up Operation Function, Double Service Guarantee

The back-up operation function that prevents the system from coming to a complete stop can be fulfilled in two ways.  
1.As one of outdoor units breaks down, the rest of outdoor units in the same refrigerant system can turn to operate urgently (more than 154kBTu/h system practicable).  
2.As one compressor is failed, the other compressor in the same outdoor unit can be set to emergency operation mode.



## Automatic Reset Function

The operating data can be recorded automatically as power failure occurs. When the power supply is restored, the system can fulfill automatic start-up (manual operation allowed), the previous operation mode can be renewed without being reset, which brings more intelligent and considerate service to users.



## Flexible Design and Installation, optimized Combination

Hi-Flexi fully takes actual installation conditions into consideration. Modular combination not only makes design and installation work more flexible, but also facilitates the transportation and decreases the land occupation. Adhere to the concept of "all for customers", Hisense incorporates utilization of space and air conditioning load effect into product design basing on Long refrigerating piping design, flexible match of indoor units and outdoor units and the ways of air supply.

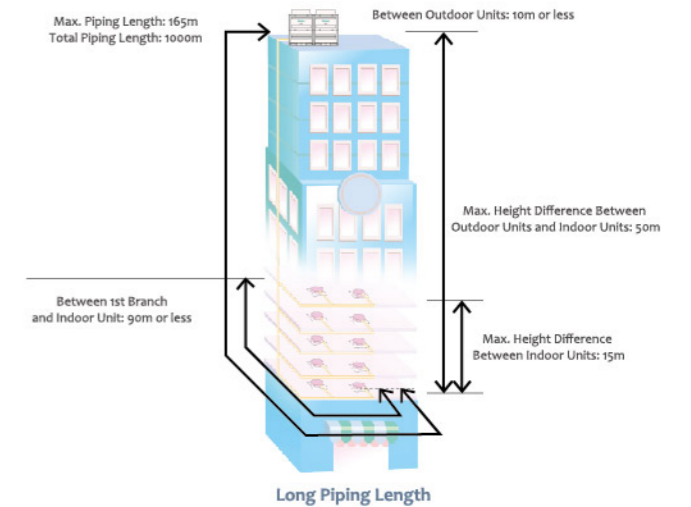
## More Flexible Refrigerant Piping Work

Actual piping length: **165m**

Height difference between the highest and lowest indoor units: **15m**

Height difference between outdoor and indoor units: **50m**  
(when outdoor units are higher than indoor units)

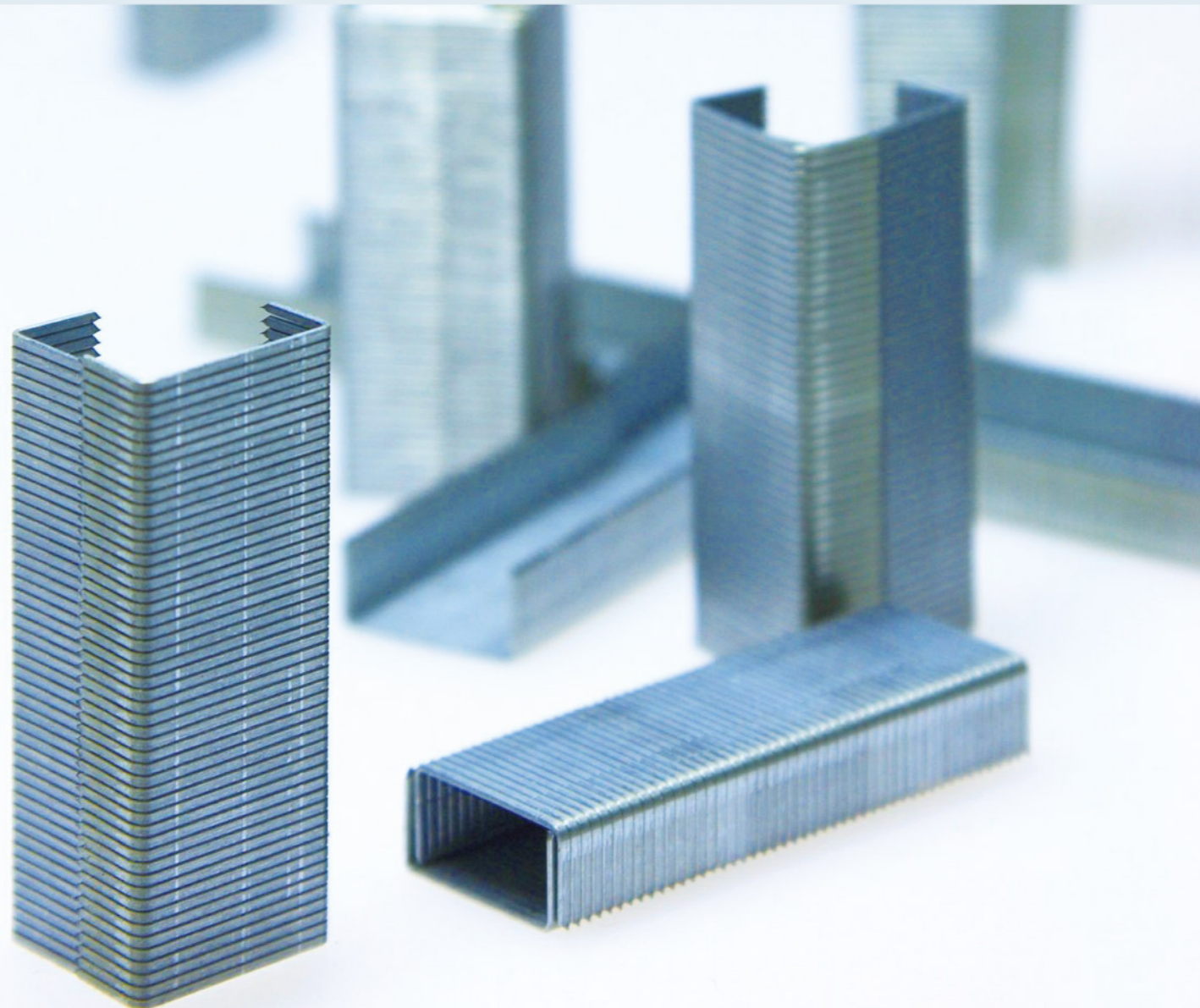
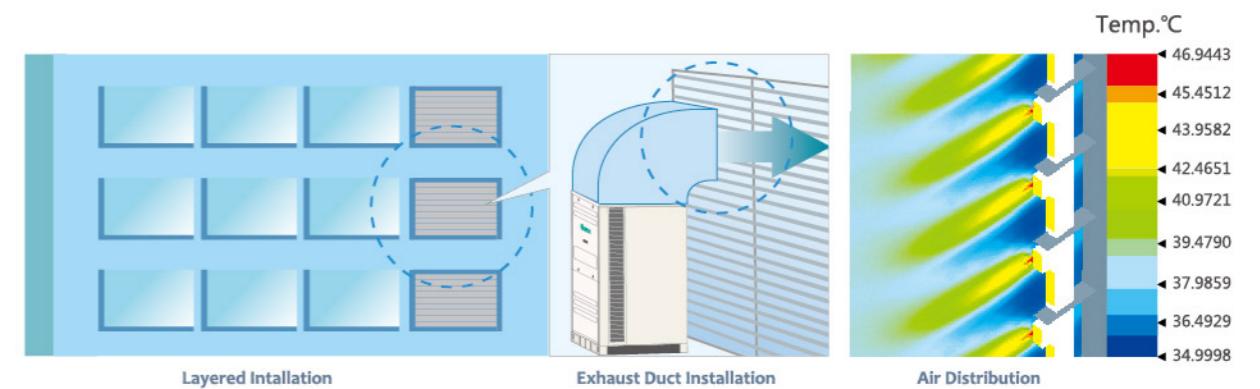
Height difference between outdoor and indoor units: **40m**  
(when outdoor units are lower than indoor units)



## Layered Placement for High-Rise Building

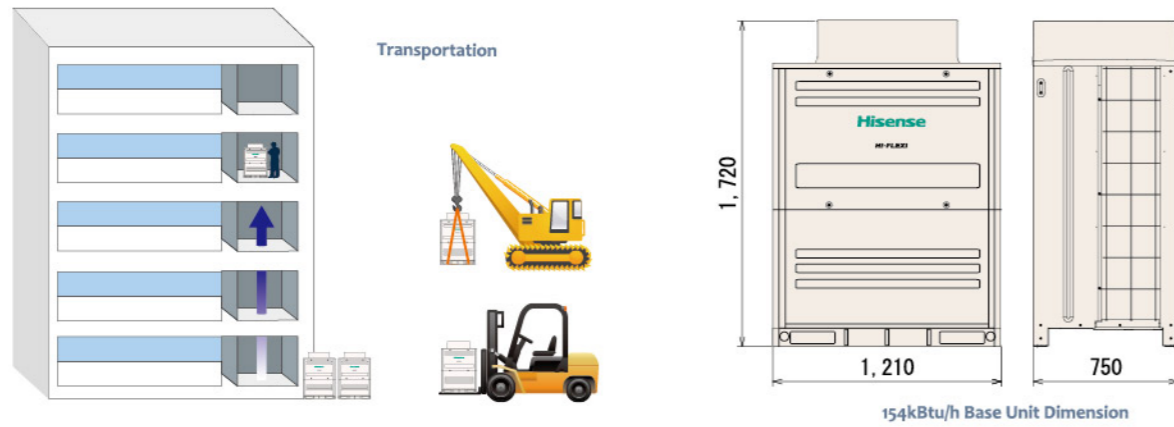
### Indoor Unit Noise Control

Outdoor fan motor can provide a higher external static pressure and a long distance air supply, which prevents air return from short-cut in an effective way, then ensures a sound ventilation and heat transfer. The installation of exhaust duct enables layered placement of outdoor units.



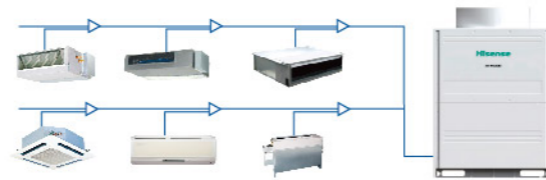
## Compact and Lightweight Design, Save Space

The elevator can be used to uplift the base unit (Max.154kBTu/h) separately. Easy and flexible transportation and installation are further enhanced by adopting the outdoor unit's lightweight and compact design.



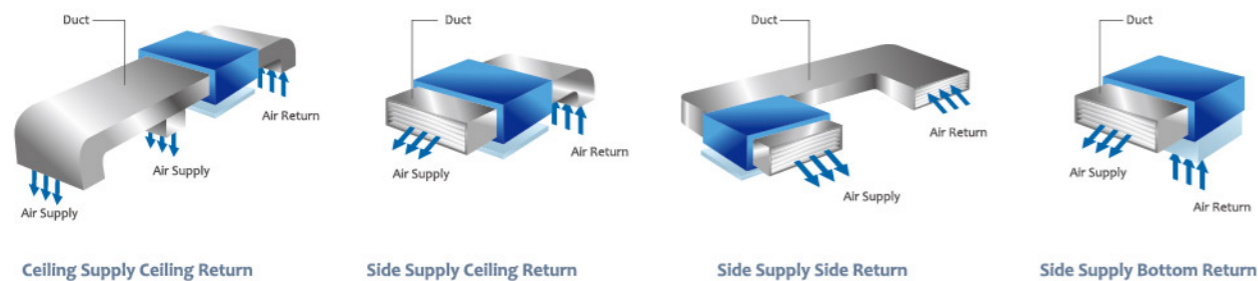
## Various Model Types Easily Match Different Spatial Layout

Wide capacity range of outdoor units enables free model combination according to the actual situation of building. There are 7 types of indoor units for selection. Planner can choose appropriate type and capacity of indoor units according to interior decoration and functions.



## Flexible Ways of Air Supply and Air Return

Different duct types can be chosen to suit different construction structure and interior decoration, which meets various personalized requirement of customers.



## High Intelligent and Humanized Control System

(Hi-Flexi M、R Series)

The development of technology makes people's life easier. Hisense inverter-driven central air conditioning creates a humanized system and realizes more convenient operation with intelligent central control system.



## Various Controllers

### Remote Control Switch

- Cooling/Heating/Dry/Fan/Auto
- High/Medium/Low/Swing Louver
- Set Temperature/ Timer
- Filter Clean
- Check
- Alarm Code Display
- Ventilation Increase



### Wireless Remote Control Switch

- Cooling/Heating/Dry/Fan/Auto
- High/Medium/Low
- Swing Louver
- Set Temperature
- Timer
- Filter Clean



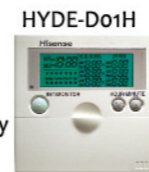
### Central Station

- Cooling/Heating/Dry/Fan/Auto
- High/Medium/Low
- Swing Louver
- Set Temperature
- Operation monitoring
- Wireless Controller Disable
- Alarm Code Display
- Max. 160 Indoor Units Control
- Indoor Unit Selection

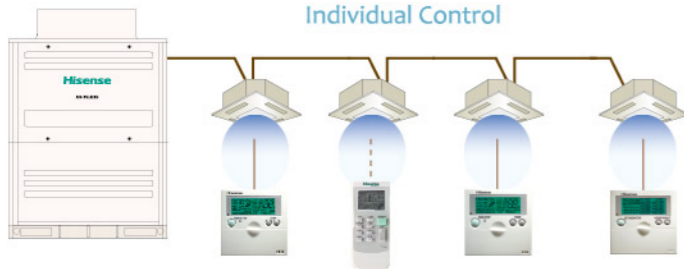


### 7-Day Timer

- Time Setting
- Holiday Setting
- 3 time period setting on weekday
- Two Modes of Timetable



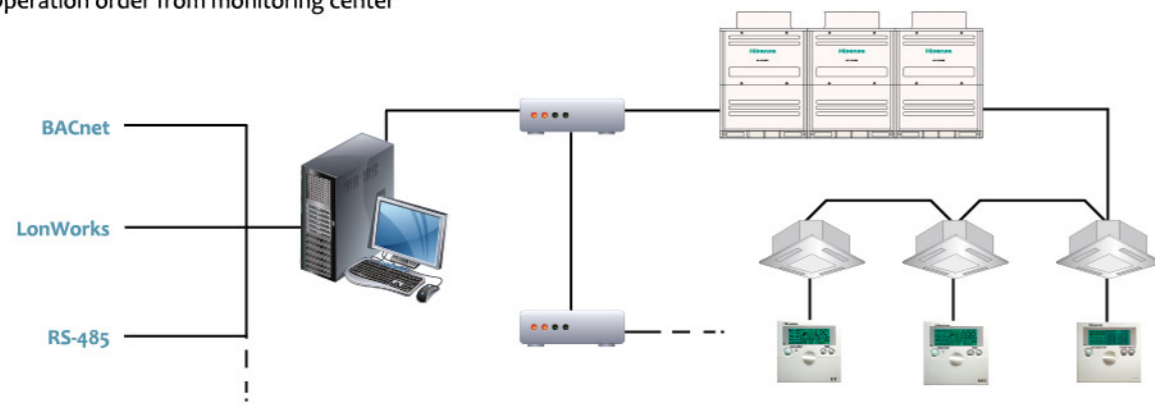
### Individual Control



## Building Management System

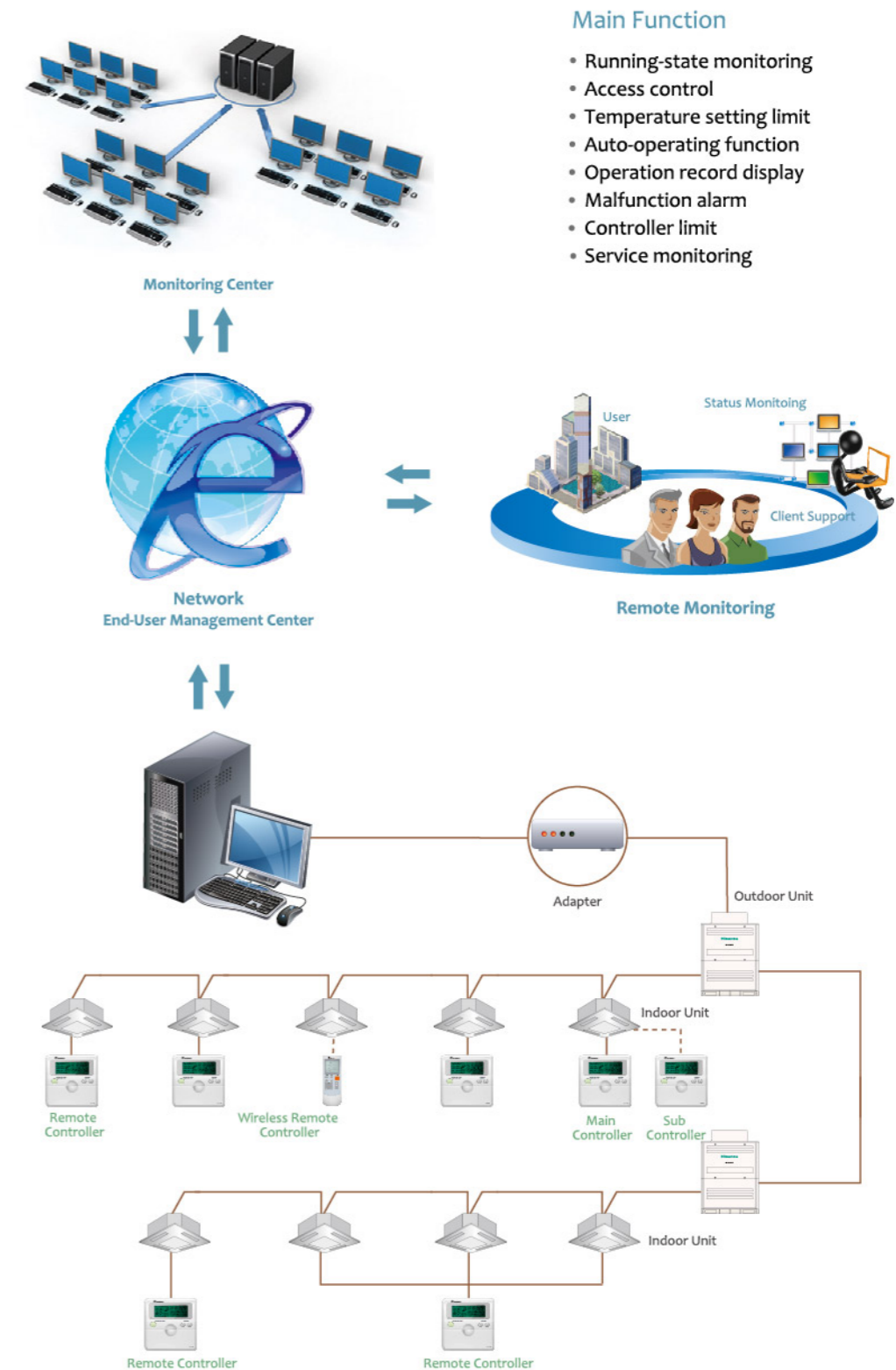
Compatible to multiple communication protocol of Lonworks, BACnet, RS-485 etc. Connectible to BMS or Smart Home System.

- Real-time operation status monitoring for inquiry
- Operation order from monitoring center



## H-NET Management System

H-NET air conditioning management system connects indoor units and computer through net adapter and BUS connection, which can monitor and control utmost 1024 outdoor units and 2560 indoor units and realize easy operation.

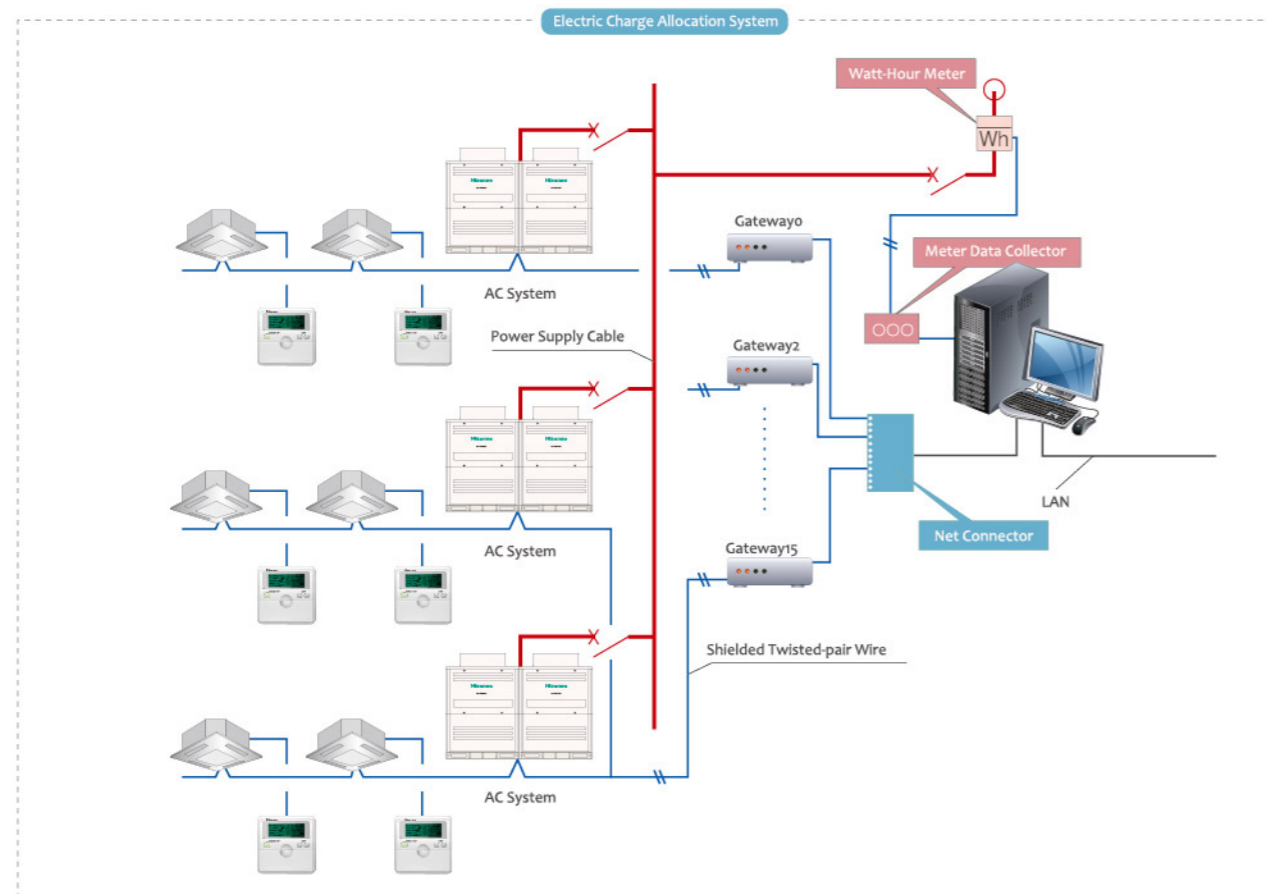


## Air-conditioning Electric Charge Allocation System

Hisense electric charge allocation system consists of meter reading system and air conditioning management system. In accordance with the operation time and capacity output of indoor and outdoor units, the opening degree of EEV, the electric charge allocation software allocates the total power consumption to each indoor unit.

### Main Features

- Accurate and timely electricity calculation
- User's electricity bill reading by the hour
- Electric charge allocation according to multi-rate of peak-vally period of time



All the indoor units and outdoor units connected with one adapter comprise one communication BUS system .  
 Max.64 outdoor units and 160 indoor units can be connected to a BUS system.  
 Max.16 adapters can be controlled by one computer.  
 Max.2560 indoor units and 1024 outdoor units are under control.






## Hi-Flexi Hisense, Hi Quality!

Hisense Hi-Flexi M series inverter-driven central air conditioning integrates Hisense superb product quality -- "Hisense Hi Quality", high energy efficiency, high technology, high flexible installation and perfect after-sale service, which strives to provide high level and high quality environment experience for customers. Precise temperature control, even air supply, more comfort and fresh air take care of every corner of space.





# Outdoor Units Parameter

Outdoor Units													
Item	HP		8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP
Model Power Supply	AC3Φ 380-415V/50Hz		AVWT-86U6SR	AVWT-96U6SR	AVWT-114U6SR	AVWT-136U6SS	AVWT-154U6SS	AVWT-182U6SZ	AVWT-190U6SZ	AVWT-210U6SZ	AVWT-232U6SZ	AVWT-250U6SZ	AVWT-272U6SZ
	AC1Φ 380V/60Hz		AVWT-86U7SR	AVWT-96U7SR	AVWT-114U7SR	AVWT-136U7SS	AVWT-154U7SS	AVWT-182U7SZ	AVWT-190U7SZ	AVWT-210U7SZ	AVWT-232U7SZ	AVWT-250U7SZ	AVWT-272U7SZ
Combination								AVWT-86U* + AVWT-96U*	AVWT-96U* + AVWT-96U*	AVWT-86U* + AVWT-136U*	AVWT-96U* + AVWT-136U*	AVWT-114U* + AVWT-136U*	AVWT-136U* + AVWT-136U*
Cooling Operation	Rated Capacity	kW	25.2	28.0	33.5	40.0	45.0	53.2	56.0	61.5	68.0	73.0	78.5
		kBtu/h	86.0	95.5	114.3	136.5	153.5	181.5	191.5	209.8	232.0	249.1	267.8
Heating Operation	Rated Capacity	kW	27.0	31.5	37.5	45.0	50.0	58.5	63.0	69.0	76.5	81.5	87.5
		kBtu/h	92.1	107.5	128.0	153.5	170.6	199.6	215.0	235.4	261.0	278.1	298.6
Air Flow Rate		m <sup>3</sup> /h	9300	10200	10500	11700	11700	19500	20400	21000	21900	22200	23400
Outer Dimension(H×W×D)		mm	1720×950×750	1720×950×750	1720×950×750	1720×1210×750	1720×1210×750	1720×(950+950)×750	1720×(950+950)×750	1720×(950+1210)×750	1720×(950+1210)×750	1720×(950+1210)×750	1720×(1210+1210)×750
Net Weight		kg	208	210	212	295	310	208+210	210+210	208+295	210+295	212+295	295+295
Compressor Quantity			1	1	1	2	2	2	2	3	3	3	4
Condenser Fan Quantity			1	1	1	1	1	2	2	2	2	2	2
Cabinet Color			Ivory white					Ivory white					
Gas Line		mm	Φ19.05	Φ22.2	Φ25.4	Φ25.4	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ31.75	Φ31.75
Liquid Line		mm	Φ9.53	Φ9.53	Φ12.7	Φ12.7	Φ12.7	Φ15.88	Φ15.88	Φ15.88	Φ15.88	Φ19.05	Φ19.05
Refrigerant Piping			Flare-nut Connection(With Flare Nuts)					Flare-nut Connection(With Flare Nuts)					
Height Difference	Between Outdoor and Indoor Units	m	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)
	Between Indoor Units	m	15	15	15	15	15	15	15	15	15	15	15
Noise		dB(A)	58	58	60	60	62	61	61	62	62	63	63
Operation Range	Cooling	℃ DB	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43
	Heating	℃ WB	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5

NOTES:

1.The nominal cooling capacity and heating capacity are based on following conditions:

**Cooling Operation Conditions**  
 Indoor Air Inlet Temperature: 27℃ DB(80°F DB), 19.0℃ WB(66.2°F WB)  
 Outdoor Air Inlet Temperature: 35℃ DB(95°F DB)  
 Piping Length: 7.5 Meters Piping Lift: 0 Meter





**Heating Operation Conditions**  
 Indoor Air Inlet Temperature: 20℃ DB(68°F DB),  
 Outdoor Air Inlet Temperature: 7℃ DB(45°F DB), 6℃ WB(43°F WB)

2.The sound pressure is based on the following conditions.1 Meter from the unit service cover surface, and 1.5 Meter from floor level. The above data is based on the cooling mode. In case of heating mode, the sound pressure level increases by approximately 1~2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3.Except for the specified combination in the table, there is no other combination of the base unit.

4.The width of outer dimension, It is the value when each distance between the base outdoor units is specified to 20mm.

# Outdoor Units Parameter

Outdoor Units													
Item			30HP	32HP	34HP	36HP	38HP	40HP	42HP	44HP	46HP	48HP	
Model Power Supply	AC3Φ 380-415V/50Hz		AVWT-290U6SZ	AVWT-307U6SZ	AVWT-328U6SZ	AVWT-345U6SZ	AVWT-365U6SZ	AVWT-386U6SZ	AVWT-402U6SZ	AVWT-426U6SZ	AVWT-444U6SZ	AVWT-460U6SZ	
	AC1Φ 380V/60Hz		AVWT-290U7SZ	AVWT-307U7SZ	AVWT-328U7SZ	AVWT-345U7SZ	AVWT-365U7SZ	AVWT-386U7SZ	AVWT-402U7SZ	AVWT-426U7SZ	AVWT-444U7SZ	AVWT-460U7SZ	
Combination			AVWT-136U* + AVWT-154U*	AVWT-154U* + AVWT-154U*	AVWT-86U* + AVWT-96U* + AVWT-154U*	AVWT-96U* + AVWT-96U* + AVWT-154U*	AVWT-114U* + AVWT-114U* + AVWT-136U*	AVWT-114U* + AVWT-114U* + AVWT-154U*	AVWT-114U* + AVWT-136U* + AVWT-154U*	AVWT-114U* + AVWT-154U* + AVWT-154U*	AVWT-136U* + AVWT-154U* + AVWT-154U*	AVWT-154U* + AVWT-154U* + AVWT-154U*	
Cooling Operation	Rated Capacity	kW	85.0	90.0	96.0	101.0	106.5	113.0	118.0	123.5	130.0	135.0	
		kBtu/h	290.0	307.1	327.6	344.6	363.4	385.6	402.6	421.4	443.6	460.6	
Heating Operation	Rated Capacity	kW	95.0	100.0	108.0	113.0	119.0	126.5	131.5	137.5	145.0	150.0	
		kBtu/h	324.1	341.2	368.5	385.6	406.0	431.6	448.7	469.2	494.7	511.8	
Air Flow Rate		m <sup>3</sup> /h	23400	23400	31200	32100	32700	32700	33900	33900	35100	35100	
Outer Dimension(H×W×D)		mm	1720×(1210+1210)×750	1720×(1210+1210)×750	1720×(950+950+1210)×750	1720×(950+950+1210)×750	1720×(950+950+1210)×750	1720×(950+950+1210)×750	1720×(950+1210+1210)×750	1720×(950+1210+1210)×750	1720×(1210+1210+1210)×750	1720×(1210+1210+1210)×750	
Net Weight		kg	295+310	310+310	208+210+310	210+210+310	212+212+295	212+212+310	212+295+310	212+310+310	295+310+310	310+310+310	
Compressor Quantity			4	4	4	4	4	4	5	5	6	6	
Condenser Fan Quantity			2	2	3	3	3	3	3	3	3	3	
Cabinet Color			Ivory white						Ivory white				
Gas Line		mm	Φ31.75	Φ31.75	Φ31.75	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	
Liquid Line		mm	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	
Refrigerant Piping			Flare-nut Connection(With Flare Nuts)						Flare-nut Connection(With Flare Nuts)				
Height Difference	Between Outdoor and Indoor Units	m	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	
	Between Indoor Units	m	15	15	15	15	15	15	15	15	15	15	
Noise		dB(A)	63	63	64	64	64	64	64	64	65	65	
Operation Range	Cooling	℃ DB	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	
	Heating	℃ WB	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	

NOTES:

1.The nominal cooling capacity and heating capacity are based on following conditions:

**Cooling Operation Conditions**  
 Indoor Air Inlet Temperature: 27℃ DB(80°F DB), 19.0℃ WB(66.2°F WB)  
 Outdoor Air Inlet Temperature: 35℃ DB(95°F DB)  
 Piping Length: 7.5 Meters Piping Lift: 0 Meter  
**Heating Operation Conditions**  
 Indoor Air Inlet Temperature: 20℃ DB(68°F DB),  
 Outdoor Air Inlet Temperature: 7℃ DB(45°F DB), 6℃ WB(43°F WB)

2.The sound pressure is based on the following conditions.1 Meter from the unit service cover surface, and 1.5 Meter from floor level. The above data is based on the cooling mode. In case of heating mode, the sound pressure level increases by approximately 1~2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3.Except for the specified combination in the table, there is no other combination of the base unit.

4.The width of outer dimension, it is the value when each distance between the base outdoor units is specified to 20mm.