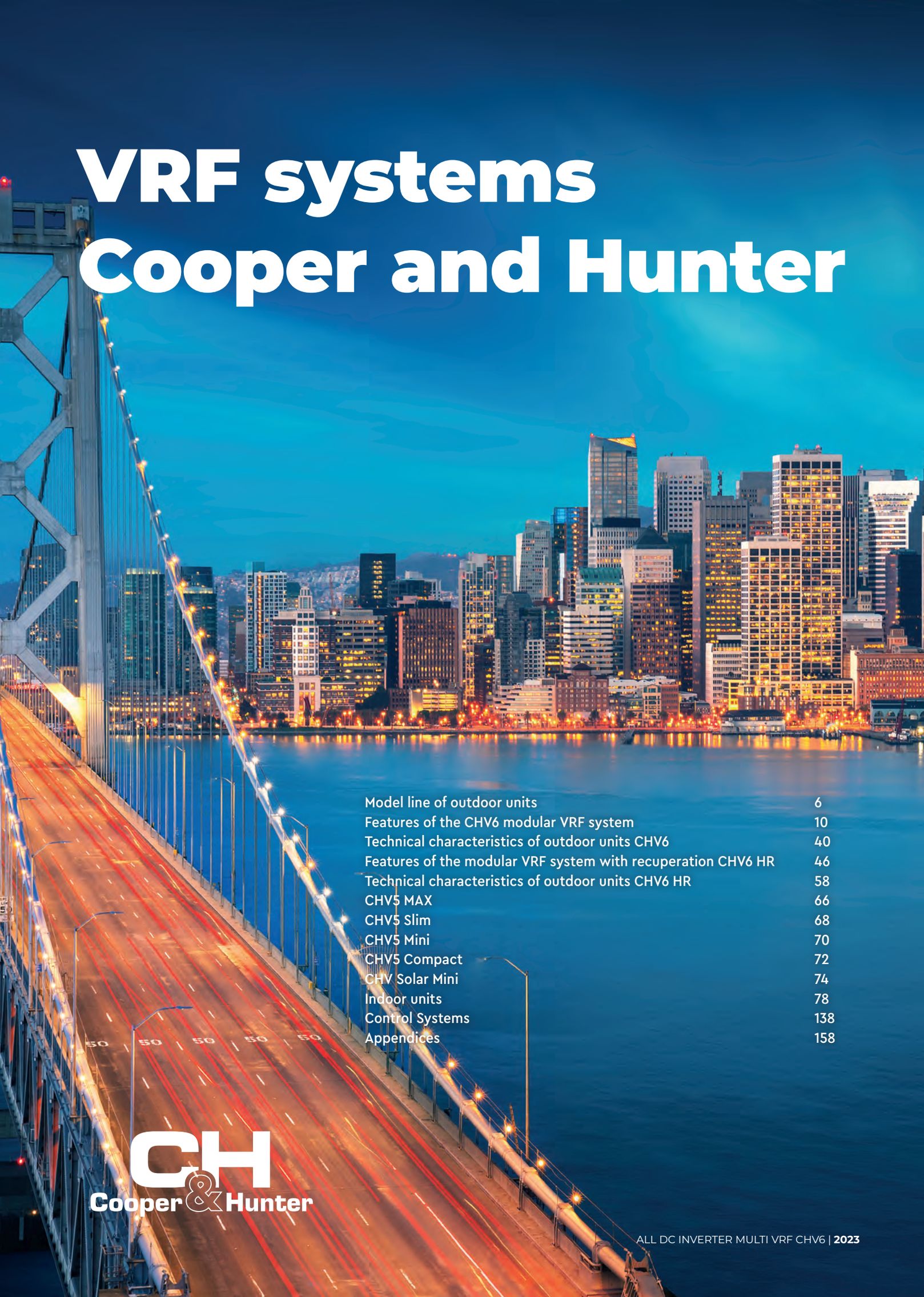
Cooper & Hunter

CHV6

ALL DC INVERTER MULTI VRF

VRF systems Cooper and Hunter



Cooper & Hunter

The VRF system (Variable Refrigerant Flow) is an advanced solution in the field of air conditioning, which is characterized by high efficiency, flexibility and a wide range of applications, while providing heating, cooling of rooms and preparation of hot water.

One of the main advantages of VRF systems is the ability to individually control the temperature and air flow in each zone or room. This allows you to create an optimal microclimate for each room separately, taking into account the requirements and needs of users.

VRF systems are characterized by high energy efficiency, which helps reduce energy consumption and lower heating and cooling costs. Thanks to the inverter compressor technology, the system automatically adjusts the speed of the compressor according to the needs of the room, which helps save energy.

In addition, VRF systems are very flexible and easy to install. Outdoor units can be placed at a great distance from indoor units, which allows effective air conditioning for large rooms or buildings with complex layouts.

The field of application of VRF systems is very wide. They are ideal for hotels, banks, administrative buildings, warehouses, industrial and commercial premises, cafes, restaurants and any other commercial facilities. In addition, they are an excellent option for air conditioning in residential high-rise and country houses of various sizes.

A multi-zone VRF system allows simultaneous control of different air conditioning zones within the same system. This means that you can independently control the temperature and air conditioning mode in different rooms or zones, ensuring comfort for each user.

The VRF system can be combined with additional functions such as ventilation, purification, humidification, dehumidification, which improves indoor air quality and creates a healthy and comfortable environment for living or working.

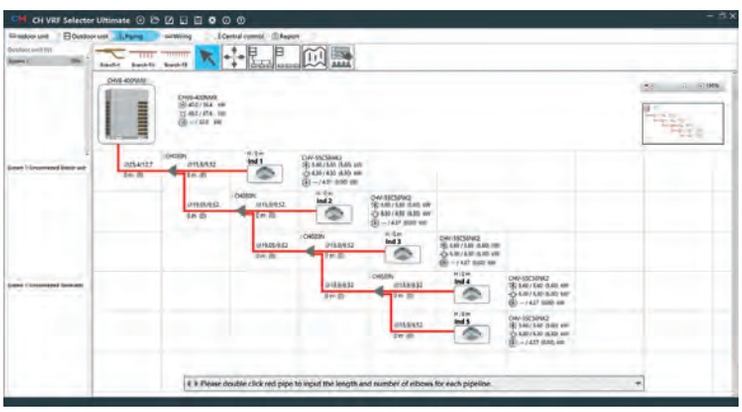
Due to their advantages, VRF systems are becoming more and more popular in the field of construction. They make it possible to provide effective and intelligent air conditioning, reduce electricity consumption and create a comfortable environment in the rooms.

Innovative software products

VRF SELECTOR

Calculation software is an important tool for selling VRF systems. Cooper and Hunter provides easy-to-use equipment selection and calculation software that increases the competitiveness of CHV products in various markets.

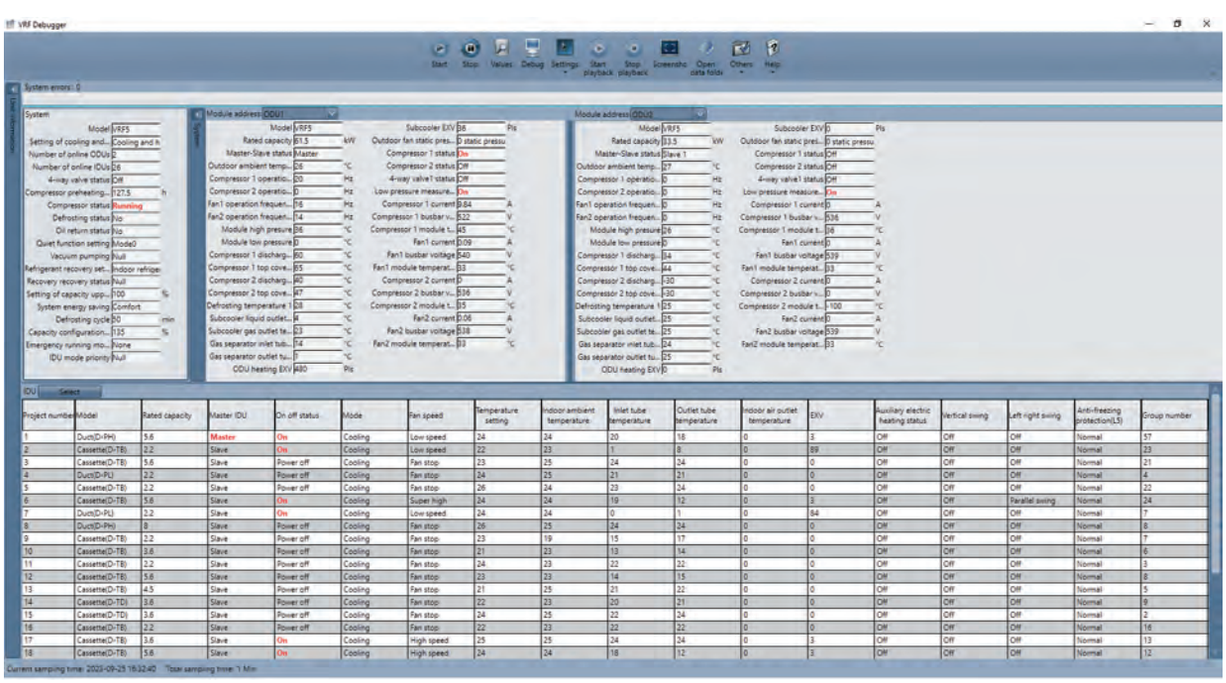
The software selects indoor and outdoor units according to the specified parameters and taking into account additional selection factors such as ambient temperature, equivalent length of pipelines, defrosting, apparent heat, etc., automatically calculates pipelines, issues connection diagrams, compiles reports with detailed characteristics of the equipment used, forms specifications of equipment and pipelines. This significantly increases the efficiency of work of designers and sales managers.



PLEASE DOWNLOAD VRF SELECTOR FROM HTTP://TINYURL.COM/YC55AHWN OR BY SCANNING QR-CODE

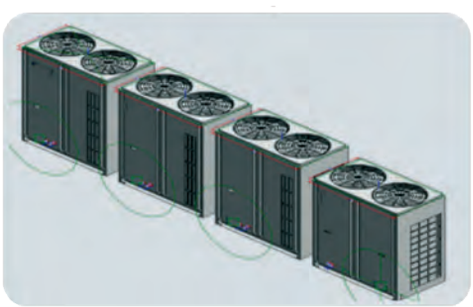
VRF DEBUGGER

The CHV equipment setup and diagnostics program allows you to receive sensor readings, parameters of indoor and outdoor units, control individual or groups of indoor units for quick search and solution of problems in the operation of air conditioning systems.



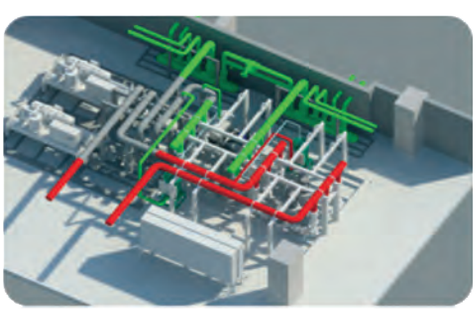
BIM

Cooper and Hunter provides technical support for building information modeling in the design of heating, ventilation and air conditioning (HVAC) systems for BIM-Revit software products.
At the moment, technical support is working with the implementation of HVAC system modeling, provision of information on unit data, HVAC system informatization, electromechanical system informatization, and system operation modeling in BIM-Revit. We can provide a range of technical support services for customers in terms of visualization, improvement and rationalization of the HVAC system, to improve the efficiency of design, construction and cost savings.

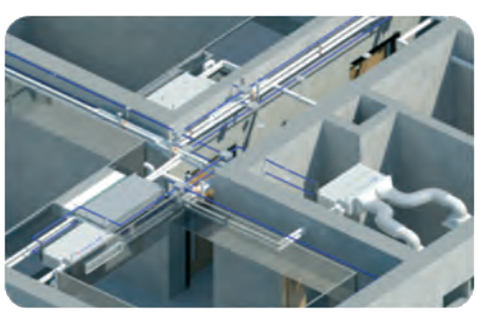


BIM model

Outdoor units render



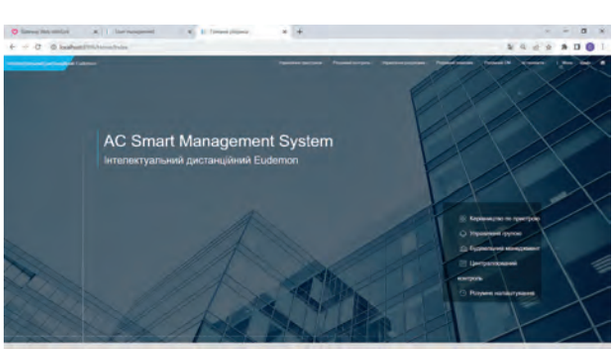
Working drawings



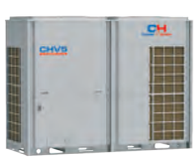
Visualisation

EUDEMON

A program for remote control, monitoring and accounting of distributed electricity consumption of air conditioning systems based on CHV equipment. Cooper and Hunter offers a ready-made software solution to meet the needs of both end users and construction services. The software complex has a convenient interface and intuitive settings.



Model line of outdoor units **CHV**

Series	Certificate	Modularity	Appearance	Capacity, HP																
				3	3,5	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32
CHV6	EUROVENT CERTIFIED PERFORMANCE CE	Yes							●	●	●	●	●	●	●	●		●	●	●	●
CHV6 HR	EUROVENT CERTIFIED PERFORMANCE CE	Yes							●	●	●	●	●	●	●	●	●	●	●	●	●
CHV5 Max	CE CB	No																	●		●
CHV5 Slim	EUROVENT CERTIFIED PERFORMANCE CE	No							●	●	●										
CHV5 Mini	EUROVENT CERTIFIED PERFORMANCE CE	No				●	●	●													
CHV5 Compact	EUROVENT CERTIFIED PERFORMANCE CE	No				●	●														
CHV Solar Mini	EUROVENT CERTIFIED PERFORMANCE CE	No				●	●	●													
				8	10	12	14	16	22,4	28	33,5	40	45	50,4	56	61,5	68	73,5	78,5	83,9	89,5
				Capacity, kW																	

Eurovent certification is not available for the following outdoor units CHV5 MAX: CHV-5S785MX, CHV-5S900MX.

● — one unit

● — a system consisting of several modules

Notes. The CHV6 modular system can be ordered in a special reinforced anti-corrosion version.

Capacity, HP																															
34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
95	101,5	106,4	111,9	117,5	123	129,5	136	139,9	145,5	151	156,5	162,3	167,9	173,4	179	184,5	191	197,5	204	206,9	212,9	219	224,5	229,5	235	241,4	247	252,5	259	265,5	272

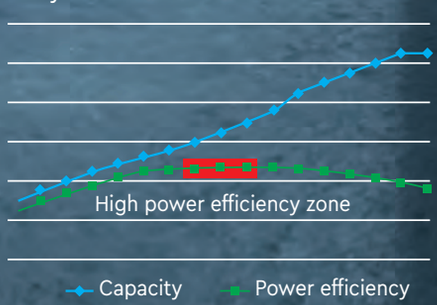
Capacity, kW

Series	Description	Labeling
CHV6	Classic VRF	CHV6-___NMX
CHV6 P	Classic VRF with enhanced anticorrosive execution	CHV6-P___NMX
CHV6 HR	VRF with heat recuperation	CHV6-H___NMX
CHV5 Max	Non modular type VRF (two models)	CHV-5S___MX
CHV5 Slim	VRF Slim	CHV-5S___SNMX2
CHV5 Mini	VRF Mini	CHV-5S__NK(M)2
CHV5 Compact	VRF Compact	CHV-5S__NK1
CHV Solar Mini	VRF photovoltaic	CHV-PV__NK

NEW MODULES CONTROL LOGIC

CHV6 uses a highly efficient modular system control method to distribute performance between units according to internal load needs while maintaining high equipment life and ensuring maximum energy efficiency.

The best energy efficiency is achieved with an optimal ratio of the characteristics of the compressor with the internal and external heat exchanger. Therefore, depending on the load, optimal groups of compressors are determined, which will contribute to the operation of the system in the plane of the greatest energy efficiency.

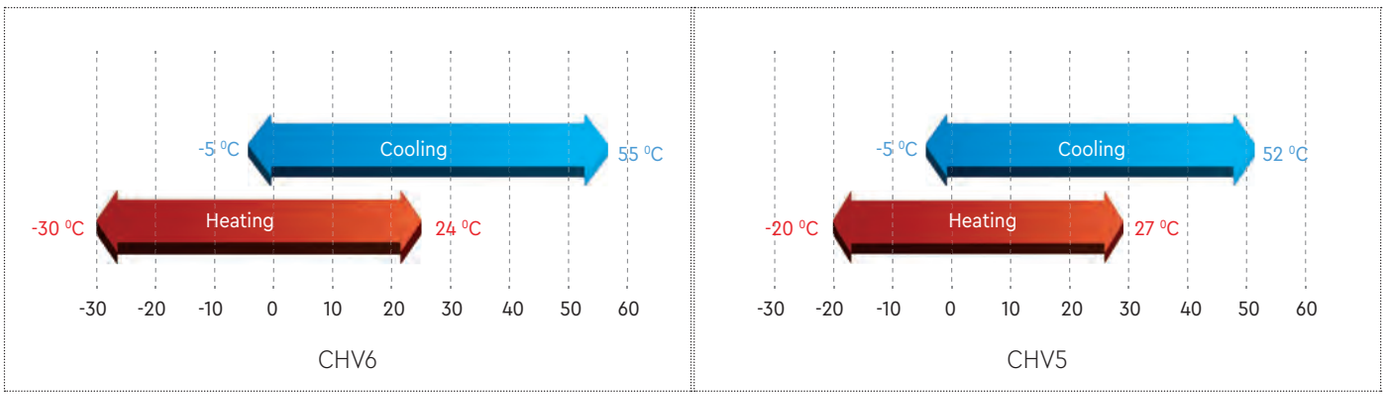


High efficiency and energy saving

It uses a high-efficiency inverter compressor with enhanced vapor injection (EVI), a high-efficiency DC motor and a new way of controlling the combined modules, which significantly increases the efficiency of the air conditioning system in cooling and heating mode.

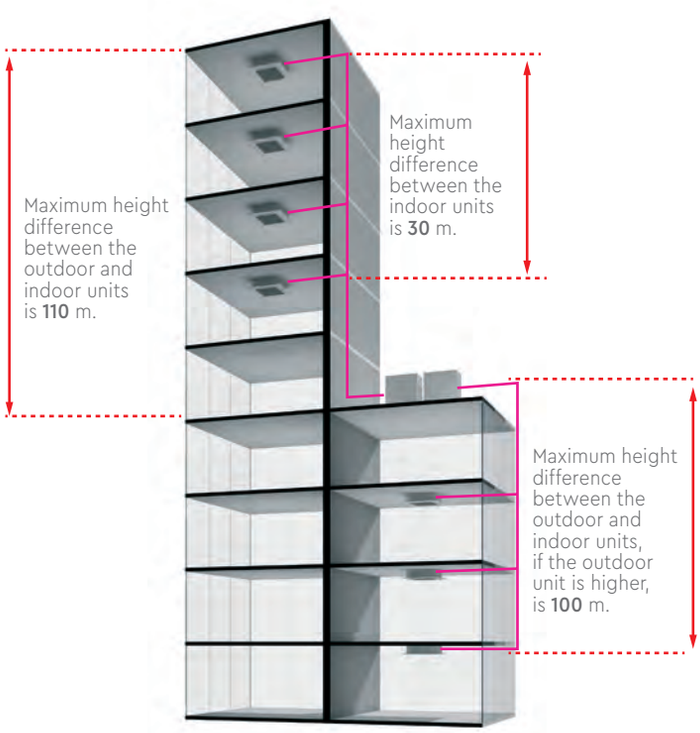
Wide range of operation

CHV6 reliably work in the range of -30 °C to +55 °C, providing comfortable cooling and heating.



VERY LONG PIPELINES

CHV6 implements technologies that affect the increase in line length and improve energy efficiency: high pressure drop control, indoor unit pressure drop identification, enhanced pressure adjustment, pipe length self-adjustment, and refrigerant deep subcooling.



The maximum actual length from the outdoor unit to the farthest indoor unit is 200 m, and the maximum equivalent length is 240 m, the total maximum pipe length is 1000 m.

The maximum length from the first branch to the farthest indoor unit is 120 m* (up to 40 m under normal conditions).

The maximum height difference between the outdoor and indoor units is 110 m, provided that the outdoor unit is lower than the indoor ones, and 100 m if the outdoor unit is higher*.

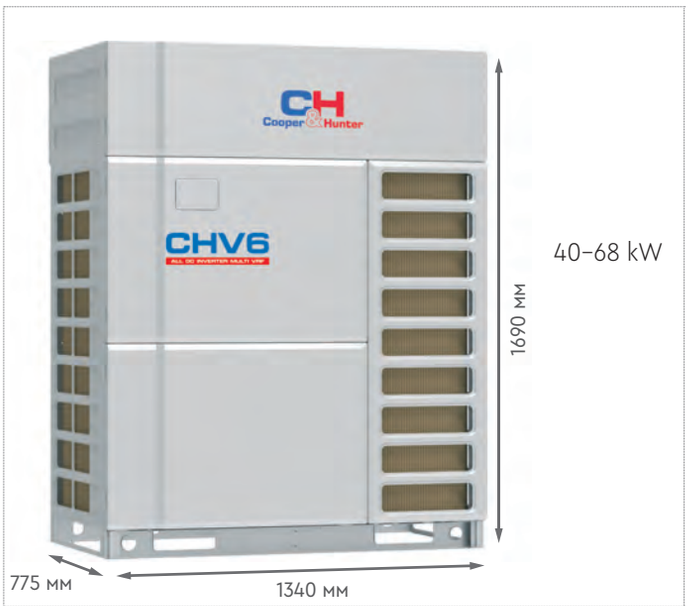
The maximum difference between the indoor units is 30 m.

* Note. Under the relevant conditions specified in the technical documentation.
IDU – indoor unit
ODU – outdoor unit

		CHV5	CHV6
Total pipe length		1000	1000
The pipe length from the ODU to the farthest IDU	**Physical**	165	200
	Equivalent	190	240
The equivalent length from the first branch to the farthest IDU		90	120
The length difference between the distances from the first branch to the farthest IDU and from the first branch to the nearest IDU		40	40
Height difference between ODU and IDU	**ODU is higher**	90	100
	ODU is lower	90	110
Height difference between IDUs		30	30

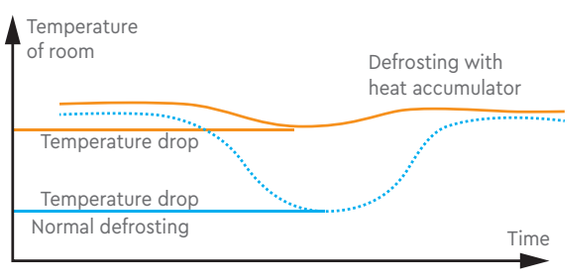
COMPACT SIZE

The series includes outdoor units with performance from 22.4 to 68 kW. Compact dimensions allow the use of ordinary freight elevators for lifting blocks on the roof, reducing installation costs.

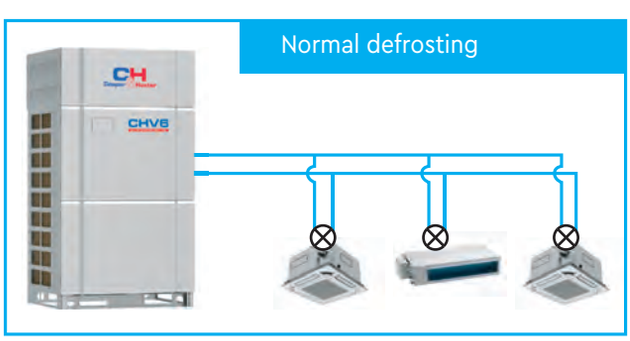


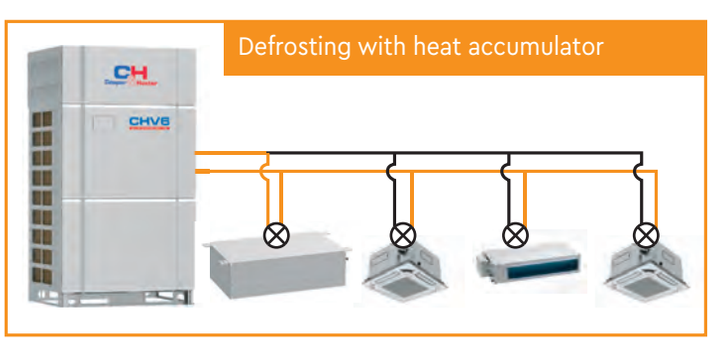
HEAT ACCUMULATION MODULE FOR DEFROSTING THE OUTDOOR UNIT WITHOUT LOSS OF ROOM COMFORT

The CHV6-SM180NK heat storage module can be used in the CHV6 system. The heat storage module provides defrosting with a minimal decrease in temperature in the room and shortens its duration. The heat storage module cannot be used alone, but can be used with VRF units as an additional part. The number of heat storage modules is selected according to the power of the outdoor unit and should be within 90 %~150 %.



The heat accumulator absorbs heat in the heating mode and gives off heat during defrosting





New **EVI** compressor

A new compressor with vapor injection has been developed specifically for VRF multi-zone systems, which provides better capacity and energy efficiency. Cooling capacity is increased by 10 %, and heating capacity at low temperature is increased by 30 %.

IMPROVEMENT OF COMPRESSOR CHAMBER DESIGN

A new asymmetric casing is used, and therefore the efficiency of the compressor is improved by reducing leakage and reducing suction superheat.

TECHNOLOGY OF DYNAMIC OIL BALANCING

Advanced oil balancing technology with high reliability and flexible design without installation restrictions, which can realize the parallel connection of compressors with different performance and rotation speed.

OIL PUMP FILTER

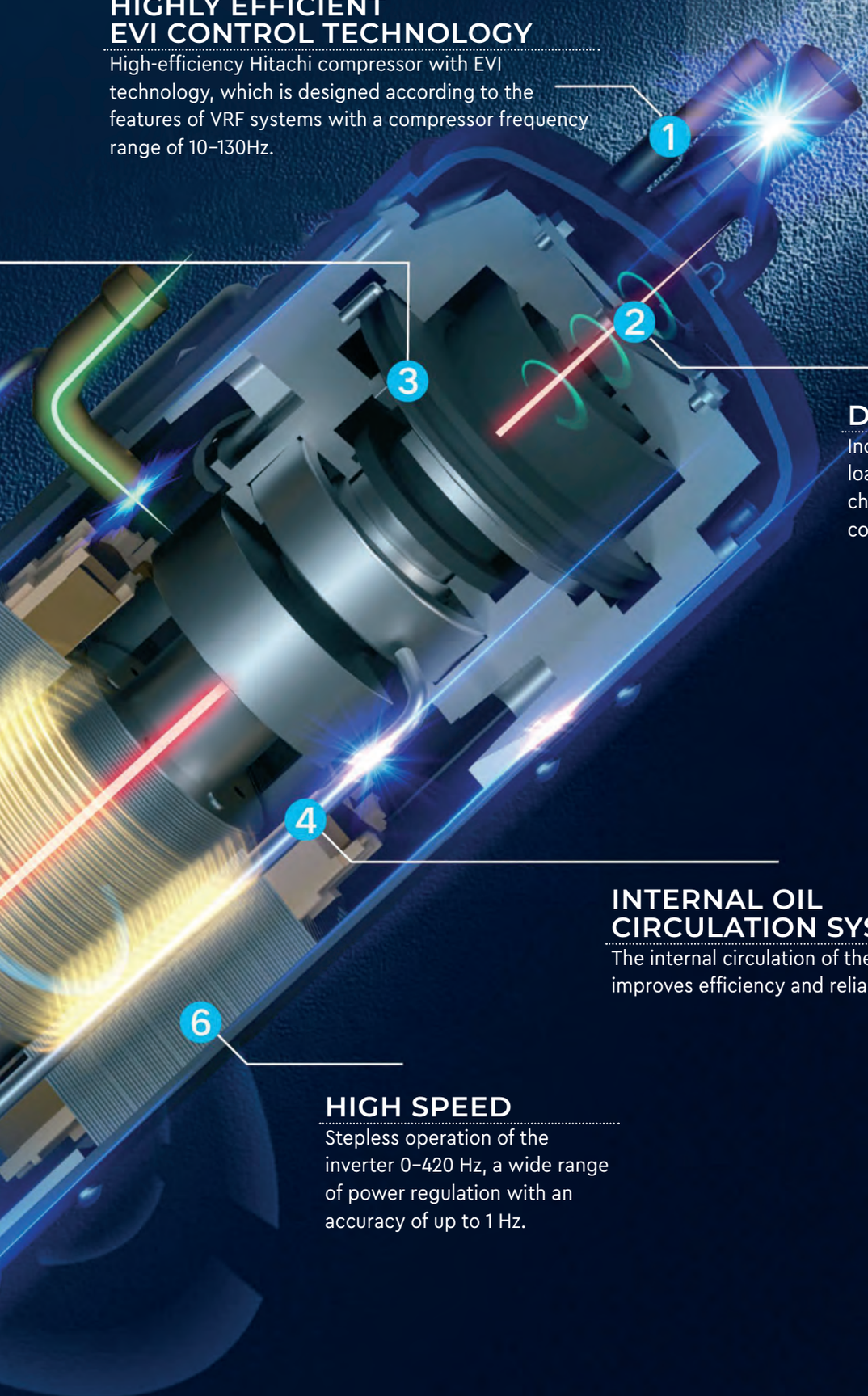
Filters impurities in order to ensure the purity of the oil supplied to the compressor.

GEAR VOLUME PUMP

It ensures the required level of lubrication when changing the speed and increases the reliability of the compressor.

HIGHLY EFFICIENT EVI CONTROL TECHNOLOGY

High-efficiency Hitachi compressor with EVI technology, which is designed according to the features of VRF systems with a compressor frequency range of 10–130Hz.



DISCHARGE VALVE

Increasing energy efficiency at partial load, adapting to conditions of changing pressure ratios, increasing compressor performance.

INTERNAL OIL CIRCULATION SYSTEM

The internal circulation of the oil reduces heat loss, improves efficiency and reliability.

HIGH SPEED

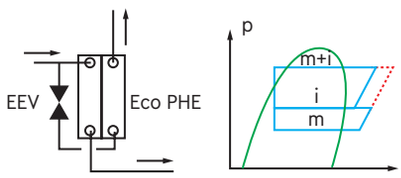
Stepless operation of the inverter 0–420 Hz, a wide range of power regulation with an accuracy of up to 1 Hz.

Highly effective performance management technology

HIGH EFFICIENCY COMPRESSOR

The highly efficient compressor is designed according to the features of the VRF unit. A wide adjustment range of 10–130Hz* allows you to get the required performance while taking into account the highest energy efficiency.

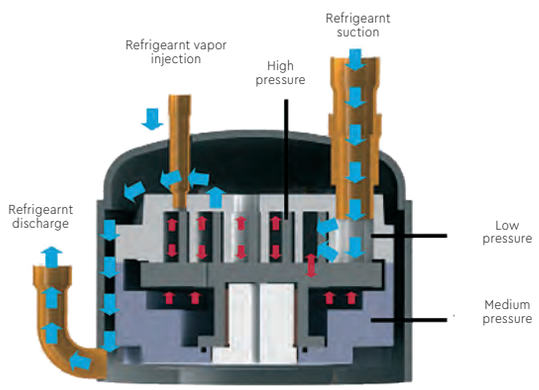
* depends on the performance of the outdoor unit



HIGH EFFICIENCY SPIRAL INVERTER DC COMPRESSOR WITH EVI TECHNOLOGY

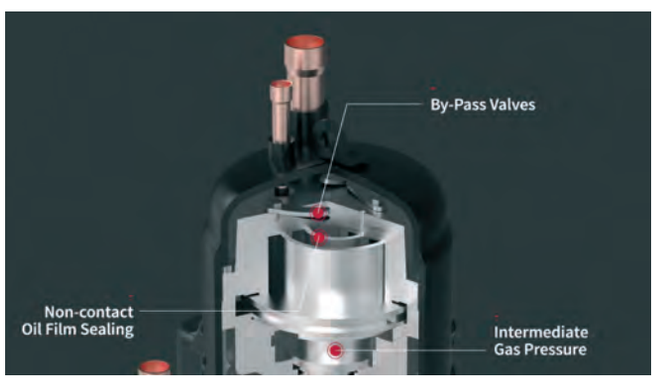
1. Enhanced vapor injection (EVI)

Increasing the power of the system, expanding the working range, accelerating the heating speed.



2. Safety valve

Improves efficiency at partial load, adapts to compression ratio, improves performance.



3. Improved design of the compressor chamber

The new asymmetric pressure chamber reduces pumping losses and prevents overheating of the gas on suction into the compressor.

4. Internal circulation of oil

The internal circulation of the oil reduces heat loss, increases efficiency and reliability.

5. Dynamic balancing of oil

The patented oil balance technology, reliable and flexible, has no mounting restrictions and can be used in parallel with compressors of different displacements and rotation speeds.

6. High speed

Stepless operation, compressor frequency adjustment range 10–130Hz*. Accuracy of inverter control within 1 Hz.

* depends on the performance of the outdoor unit

7. Oil pump filter

Oil purity is ensured.

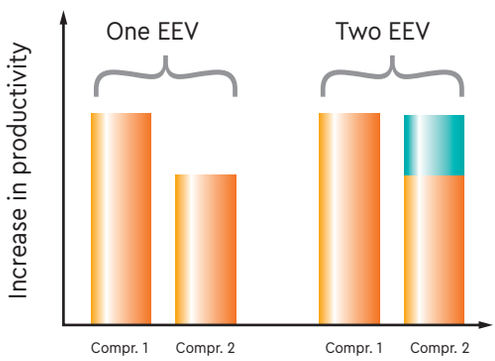
8. Oil pump

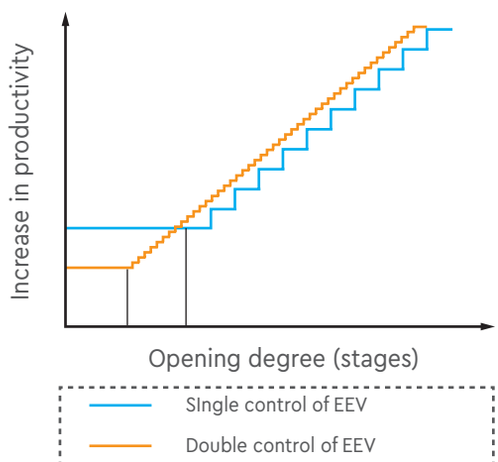
The necessary supply of oil with a variable speed is provided, the reliability of the compressor increases.

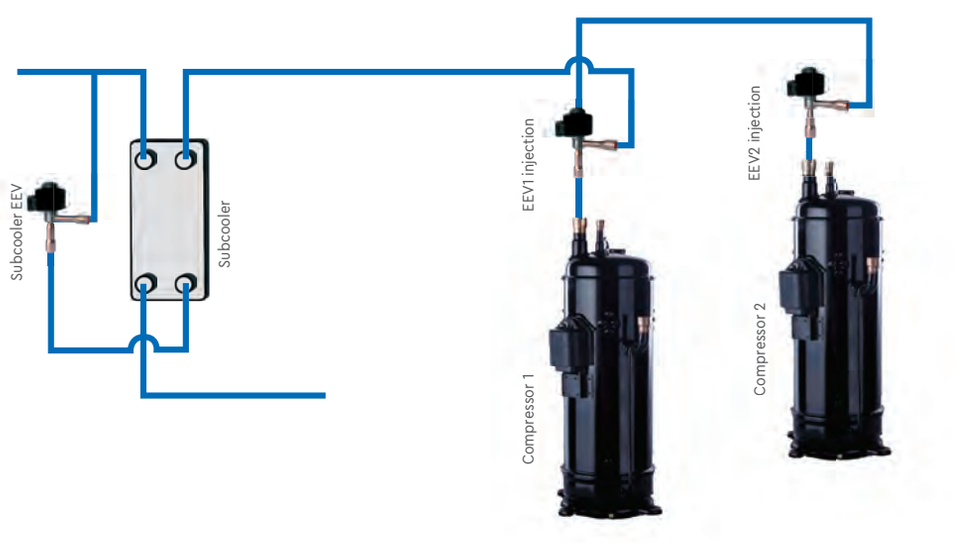
Different levels of EEV regulation

EEV OF ENHANCED VAPOR INJECTION

- 480 adjustment steps – more stable and wider adjustment range;
- In a two-compressor system, double regulation allows you to flexibly adjust the amount of refrigerant injection between compressors to maximize productivity;
- Plate-type economizer – high efficiency of heat exchange.

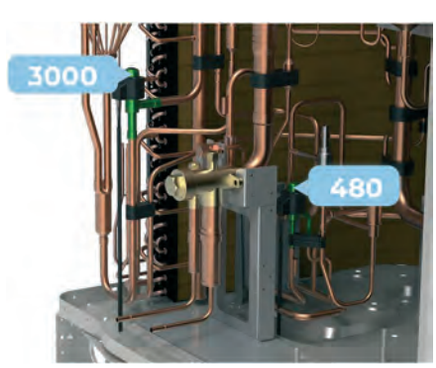






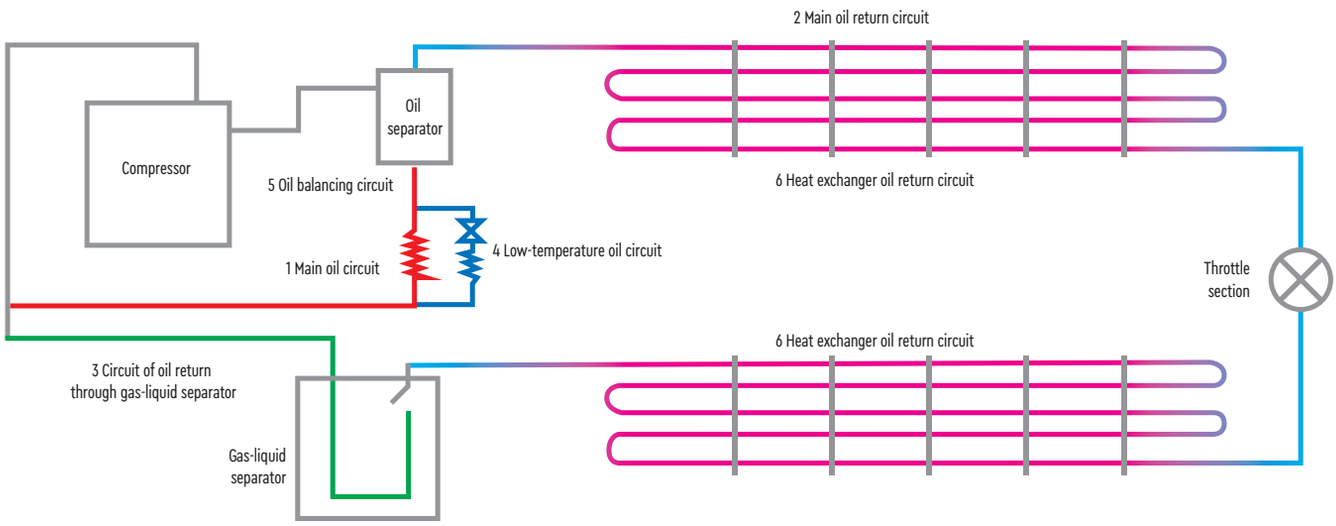
OUTDOOR UNIT MAIN EEV AND SUBCOOLER EEV

For the accuracy of EEV adjustment in the heating mode, the number of adjustment steps was increased to 3000, while the CHV5 has 480 steps. The EEV on the subcooler line remained at 480 steps.



Precise oil control for stable compressor operation

OIL RETURN CONTROL TECHNOLOGY



CONTROL OF SEVERAL OIL CIRCUITS

Six oil circuits ensure a gradual and reliable return of oil to the compressor.

OIL BALANCE CONTROL IN MODULAR CONFIGURATION WITHOUT EQUALIZING OIL PIPING

Thanks to the advanced oil balancing control method, oil piping between the outdoor units is not required. Oil distribution between outdoor units is carried out automatically based on data collection and calculation of actual performance, taking into account the limit values of the parameters of each unit.

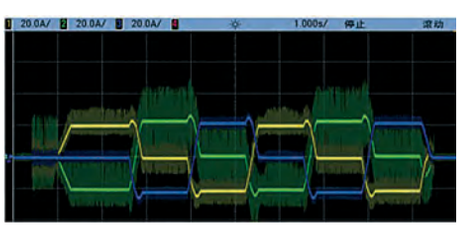
Patent No. 201510307364.9 «Method of oil balancing control of the air conditioning system»

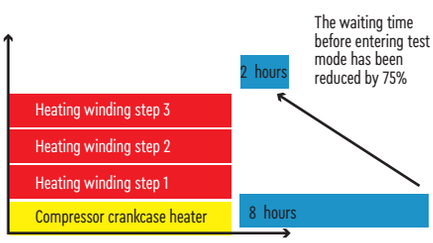
CONTROL OF EXCESS OIL DISCHARGE FROM THE COMPRESSOR

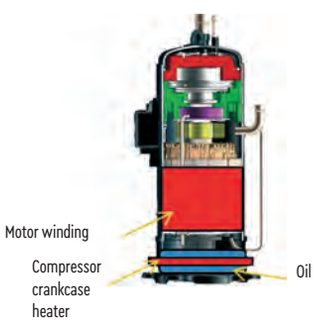
When the performance of the air conditioning system is low, the compressor will begin to actively increase the frequency to direct excess oil to the separator and ensure effective cooling of the compressor motor.

DOUBLE OIL HEATING TECHNOLOGY

In the standby mode, the compressor winding and the external electric heating belt (hereafter the compressor crankcase heater) can independently or simultaneously control the heating of the oil to evaporate the liquid refrigerant from it. Regulation of the heating power of the motor winding ensures a quick and safe start in various environmental conditions, and the preheating time is reduced from eight hours to two.

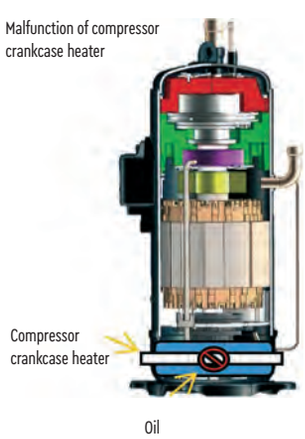


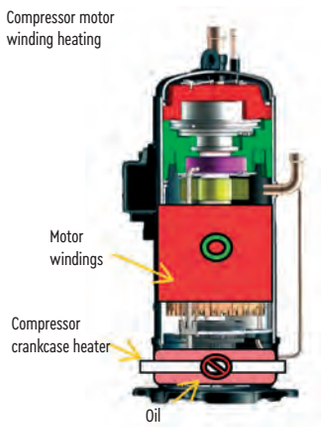




RESERVE HEATING

Even if the external heating cable of the CHV6 unit is faulty, due to the heating of the motor winding, satisfactory heating of the compressor can be ensured, which ensures its safe operation.
Compressors for traditional VRF systems typically only have external electric heating control. In the event of a malfunction of the electric heating, the probability of damage to the compressor increases significantly.





Effective heat exchanger

G-SHAPED HEAT EXCHANGER

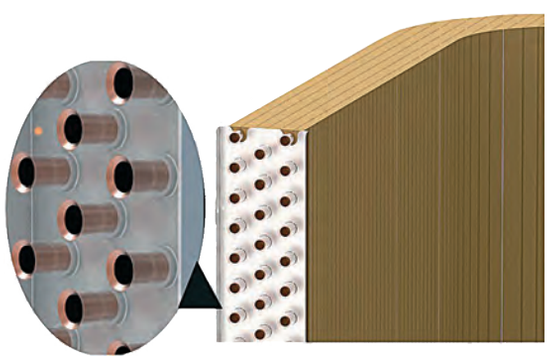
The heat exchanger of the outdoor unit in the shape of the letter G (four-sided) has a larger area and increased heat exchange efficiency compared to the classic three-sided heat exchanger.

Note. It is used in models from 40 kW.

DESIGN OF THE HEAT EXCHANGER

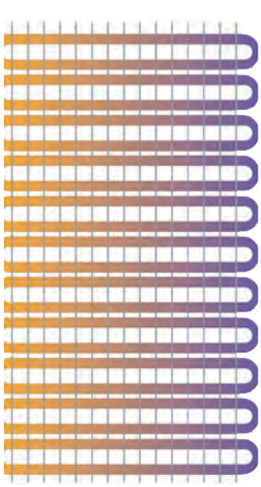
Refrigerant pipe with a diameter of 7 mm with a three-row design allows to reduce the resistance of the refrigerant flow inside the pipe and effectively increase the heat exchange area in order to optimize and increase the efficiency of heat exchange.

Note: The evenness depends on the size of the block.

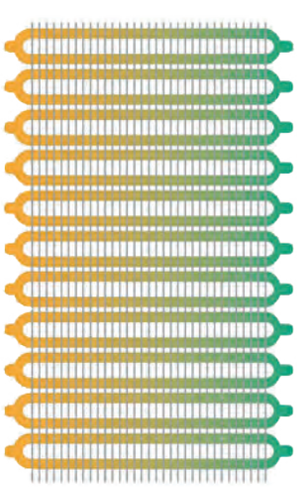


HEAT EXCHANGER FINS

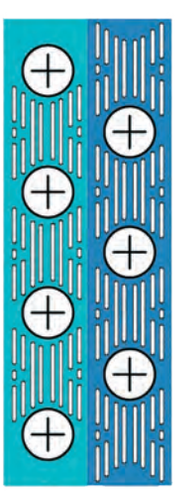
Corrugated fins with a smaller pitch are used to improve the heat exchange efficiency, this increases the effective heat exchange area between the refrigerant and the air and helps to improve the heat exchange efficiency. Reducing the distance between the ribs increases corrosion resistance. The hydrophilic coating of the corrugated fins ensures the smooth drainage of melt water, facilitating the process of defrosting the outdoor unit.



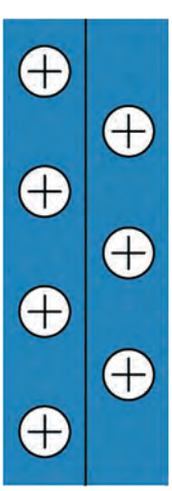
CHV5



CHV6

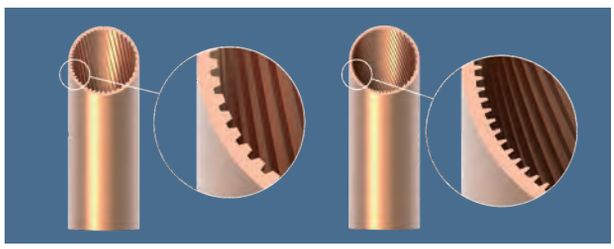


CHV5



CHV6

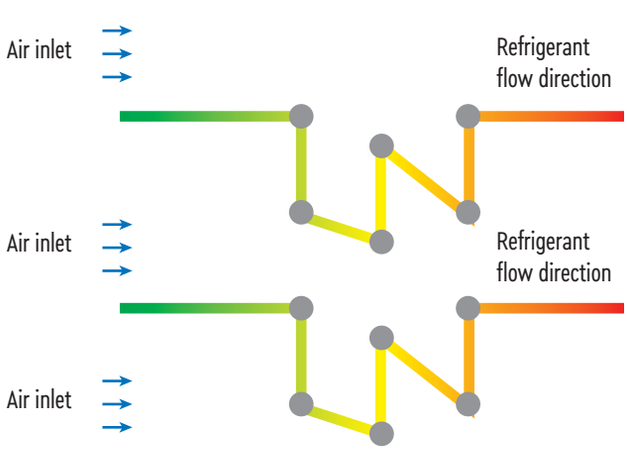
HEAT EXCHANGER PIPES

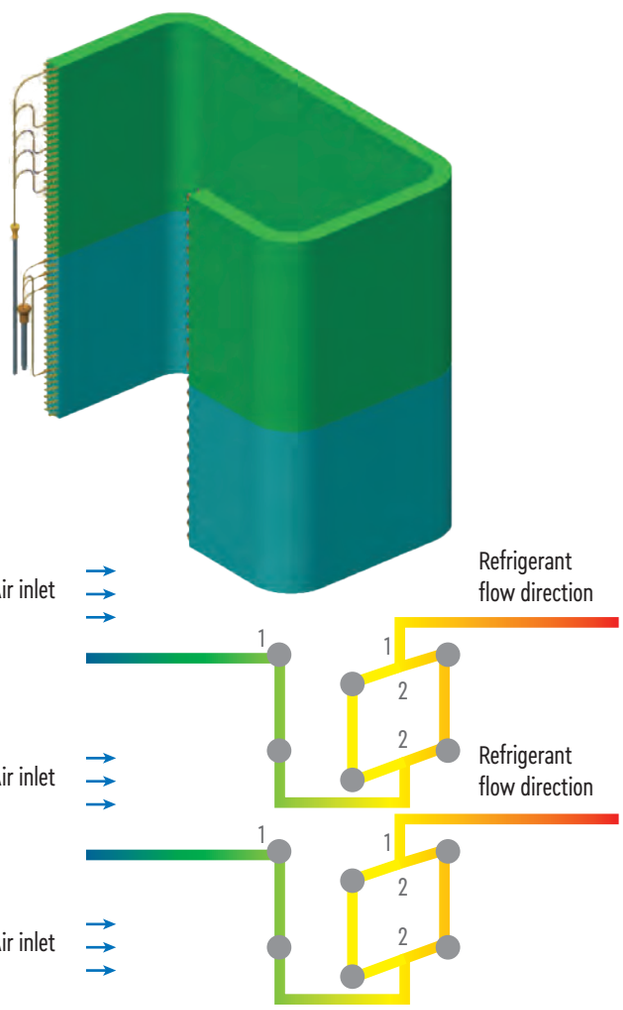


The tubes of the heat exchanger have internal helical fins to increase the contact area and optimize the turbulent state of the refrigerant flow, which has a positive effect on increasing the heat exchange efficiency.

TWO-ZONE HEAT EXCHANGER

The heat exchanger is divided into two separate parts according to the air flow field. The upper and lower levels have separate distributors (spiders). The sectional execution of the heat exchanger allows to optimize its operation in conditions of variable wind field and to maintain a stable temperature of the heat exchanger, ensuring optimal efficiency of its operation. This solution increases the efficiency of heat exchange by 8 %.



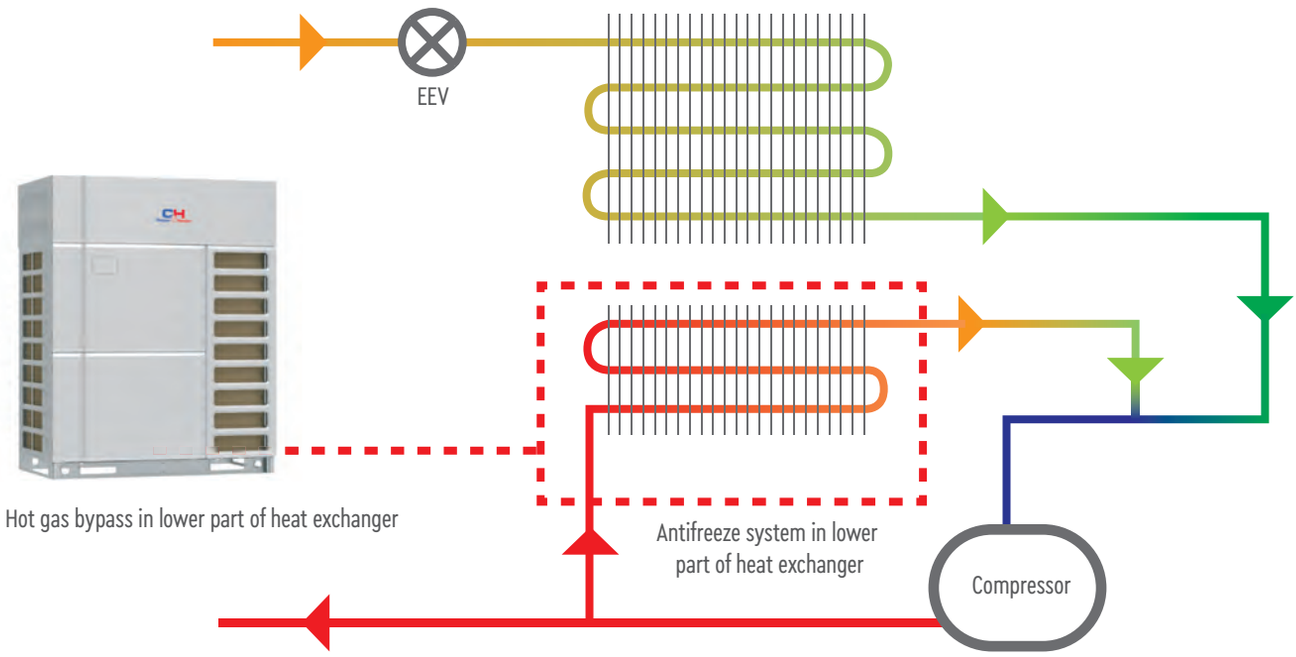


NEW SUBCOOLER WITH VARIABLE DEGREE OF SUBCOOLING

Thanks to the new enlarged plate heat exchanger, the degree of subcooling can reach 35 °C.
It should be noted that a fixed degree of subcooling cannot be adapted to a variable load, and if the system has excessive subcooling, the performance of the unit decreases, and the superheat temperature of the gas to be supplied to the compressor becomes insufficient, which negatively affects the reliability of the compressor.

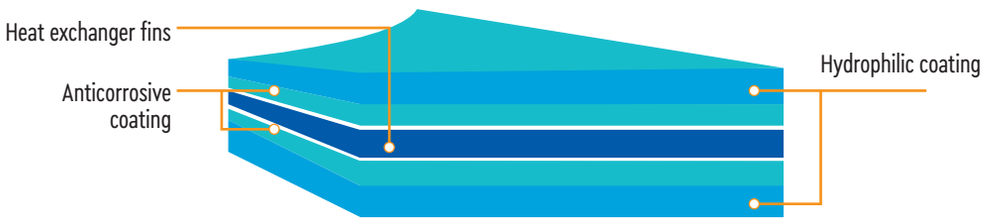
PROTECTION AGAINST FREEZING AT LOW TEMPERATURES

In the lower part of the heat exchanger, a hot gas bypass is provided, which is designed for efficient removal of melted water and prevents the lower part of the unit from freezing at low outside air temperatures.



HEAT EXCHANGER FINS WITH DOUBLE COATING

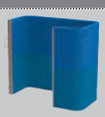
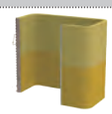
The fins of the heat exchanger have a double coating. Hydrophilic coating that repels moisture and helps to quickly remove melted water in the process of defrosting the outdoor unit. Anti-corrosion coating* protects the material from the destructive action of active substances found in humid air, rainwater and snow, extending the service life and efficiency of the equipment.



The structure of the fins of the double-coated heat exchanger

* Golden Fin anti-corrosion coating is used as standard in CHV systems. For regions with close proximity to the sea or ocean, external units with Black Fin coating are available to order.

RESISTANCE OF THE PROTECTIVE COATING

	Color	Coating thickness Hydrophilic + Anticorrosive	Neutral salt fog	Acidic salt fog
	Blue	0.8 mm-1.4 mm	500 hours	—
	Golden	1.4 mm-1.9 mm	1500 hours	—
	Black	2.2 mm-2.7 mm	1500 hours	200 hours

NEW FORM OF THE FAN:

INCREASED AIR PRODUCTIVITY AND REDUCED NOISE LEVEL

The S-shaped back-bent blades effectively increases the working surface of the fan, which increases the level of productivity. Thanks to the aerodynamic shape of the blades, a turbulent vortex does not form at the edge of the blades and the noise level of the fan is reduced.

A new type of confusor and grille
Working cross-section of the air outlet increased by 7.8 %.

DUST CLEANING FUNCTION

This function is activated on the main outdoor unit. The fans of the outdoor units switch to reverse mode, creating a reverse air flow, which contributes to better cleaning of the heat exchanger of the outdoor unit from dust.

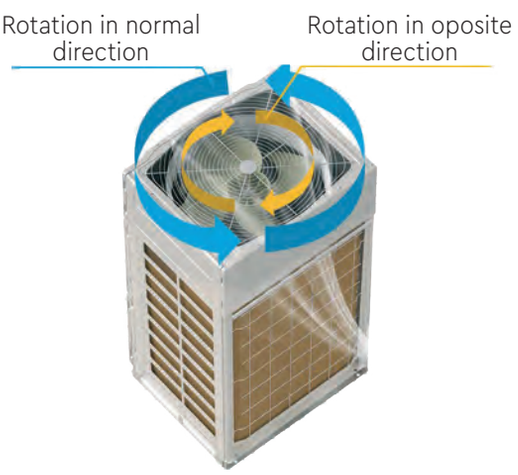
Normal operating state

Dust cleaning

* This function should be configured

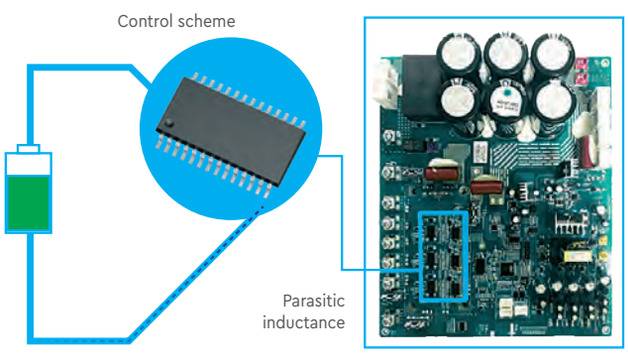
ANTI-WIND FUNCTION

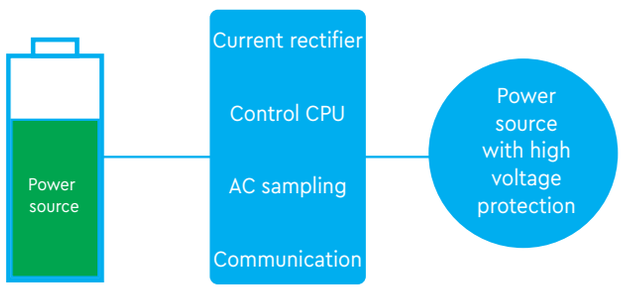
Before turning on the unit, if the fan rotates in the opposite direction due to the wind, the electronics of the device will stop the fan and then perform a soft start without overloading the motor.



TECHNOLOGY OF PROTECTION AGAINST HIGH VOLTAGE JUMPS

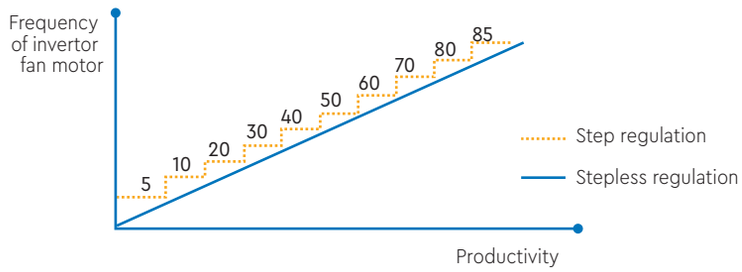
As the compressor performance increases, the current consumption and parasitic inductance of the wires increases, which leads to the creation of electromagnetic interference and reduces the reliability of the equipment. Thanks to the use of galvanically decoupled high-voltage switches in the power supply unit, electromagnetic isolation of the compressor control outputs is achieved, which allows you to avoid mutual interference. The protection circuit is synchronously isolated, and the circuit settings allow suppressing the peak values of transient currents. Industrial-level performance and high-performance drive significantly increase the safety and reliability of the equipment.





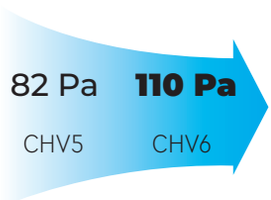
BRUSHLESS DC INVERTER FAN MOTOR

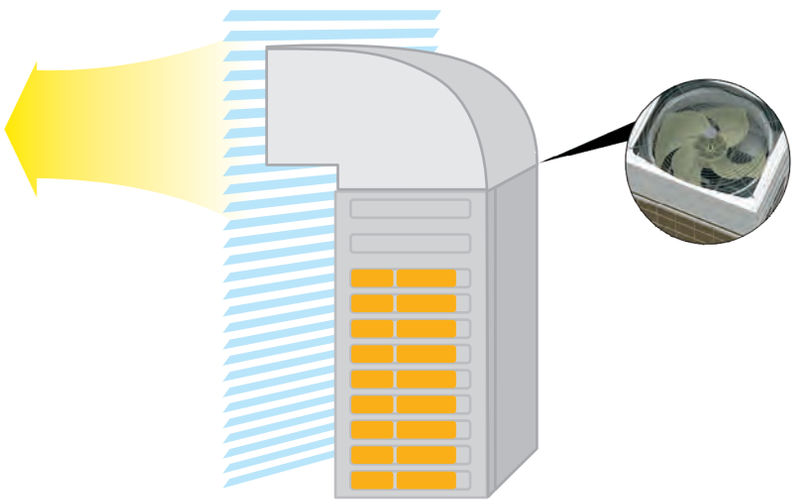
Smooth adjustment of the rotation speed is carried out in the range of 5–90 Hz. Compared to traditional inverter motors, brushless motors are more efficient, provide lower noise, vibration and stable operation.



OUTDOOR UNIT FAN HIGH STATIC PRESSURE

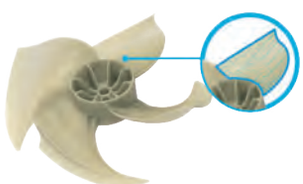
Thanks to the improvement of the design of the fan blades, the improved aerodynamic characteristics of the baffle and the new highly efficient motor, the static pressure of the fan can be increased to 110Pa.

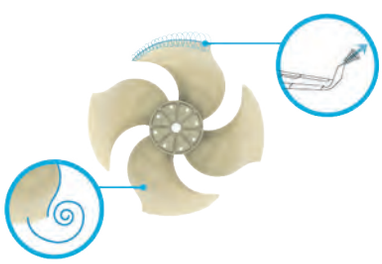


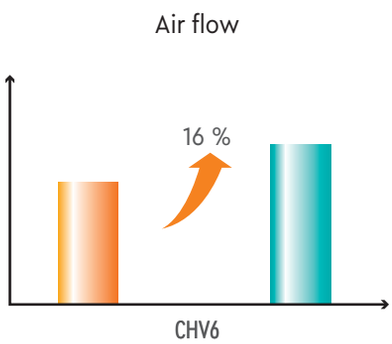


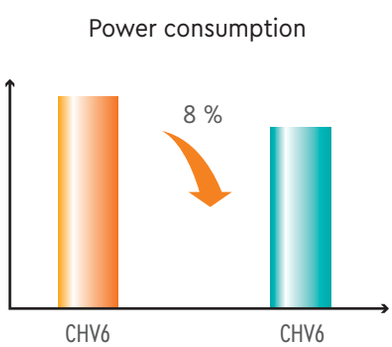
OPTIMIZED DESIGN OF FAN BLADES

The S-shaped back-bent blades effectively increase the working surface of the fan, which increases the level of productivity. Thanks to the aerodynamic shape of the blades, a turbulent vortex does not form at the edge of the blades and the noise level of the fan is reduced.









New design of compartment for electrical components

INTEGRATED CONTROL BOARD

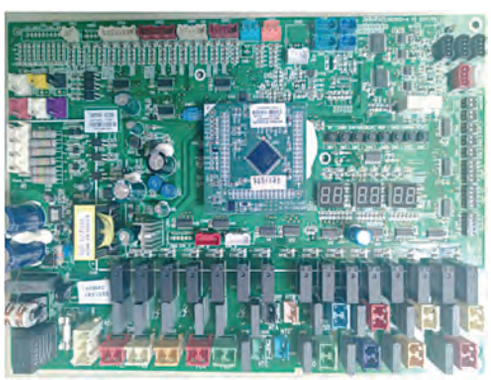
Thanks to the new arrangement of electronic elements on the printed circuit board and the use of a built-in microprocessor, the size of the board has decreased by 40 %.

High reliability

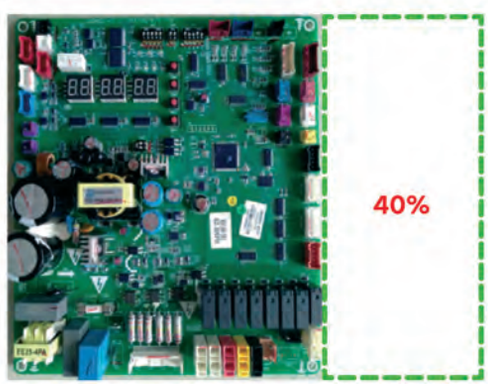
The additional reliability of the equipment is due to the following elements of protection against: overvoltage, incorrect phasing sequence, electrical overloads, voltage surges, static electricity, etc. The improvement of the design on the side of protection against moisture, dust and corrosion has also increased the stability and reliability of operation.

Advanced production and quality control technologies

The controller board undergoes a series of quality inspection tests such as SMT processing, AOI optical inspection, ICT online inspection, FCI functional test, DCT vibration and load testing. The production process with step-by-step quality control ensures that the control board can withstand high temperature and high humidity, exposure to abrasive materials, drops, and other aggressive conditions and situations.



CHV5

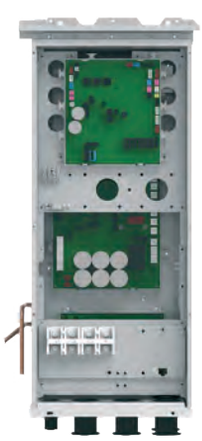


CHV6

CHASSIS WITH PASSIVE AND ACTIVE COOLING OF ELECTRONICS

The main body of the electric box is made of 6063T5 aluminum alloy with high thermal conductivity (the heat dissipation is 4.5 times greater than that of ordinary steel plates). The integrated design reduces the overall size of the electrical box by 35 %. The design has become more convenient for installation and maintenance.

CHV5



CHV6
(aluminum alloy)

A radiator with a circulating refrigerant is installed to improve heat removal from the elements of the inverter boards and the power supply unit. During the development of the design, modeling of the distribution of heat flows was used, which allowed to optimize the location of the inverter components to decrease temperature of the electrical box by around 8 °C.

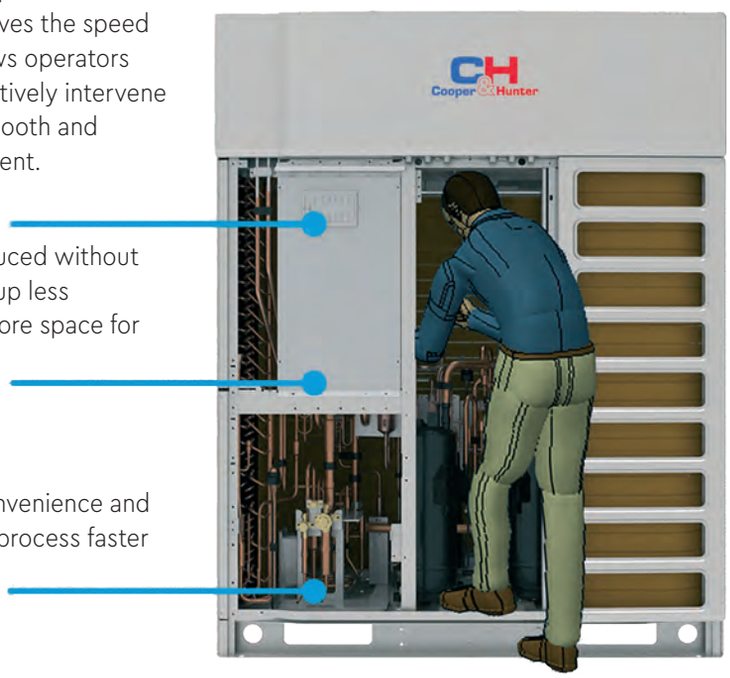
MODELING OF SERVICE ERGONOMICS

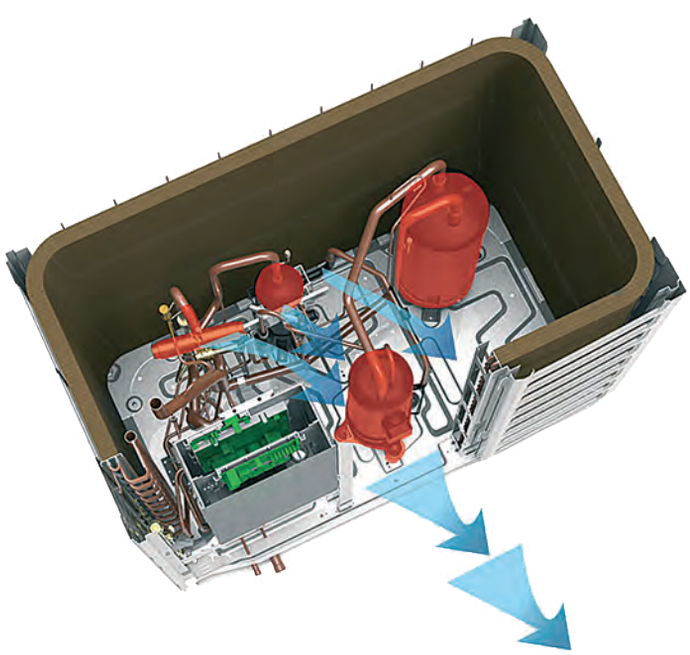
The integrated electronic control system of the CHV6 has a built-in reserved area for maintenance, which contributes to increasing the efficiency of maintenance.
Having a dedicated service space makes it easier to access essential controls such as electronic boards, sensors and other components. This allows you to promptly intervene in the system, correct possible malfunctions and ensure its reliable and efficient operation.
The reserved service area in the CHV6 control system is an important feature that helps reduce system downtime for maintenance and improve overall performance.

The commissioning window simplifies the maintenance process and improves the speed of response to problems. It allows operators and technical personnel to effectively intervene in the system, which ensures smooth and reliable operation of the equipment.

Miniaturization of components means that their size is reduced without loss of functionality. Thanks to this, the components take up less space in the electronic control system, which opens up more space for convenient access during maintenance.

The frontal design of the valve assembly facilitates the convenience and efficiency of pipeline installation, makes the maintenance process faster and ensures the reliability of the system.





This design provides a large space for convenient maintenance.

This means that the device has enough space to provide comfortable access for technical personnel to components, connections or elements that require maintenance.

More space for maintenance makes it easier to carry out repair, planning or debugging work. Technical personnel can move freely and work in the middle of the system, having enough space to perform the necessary actions.

Multi-level **anti-corrosion protection**

Technologies for protecting the components of the outdoor unit ensure reliable operation in an air environment close to the sea coast.

1. **Improvement of the design of the compressor chamber**
   A new asymmetric casing is used, and therefore the efficiency of the compressor is improved by reducing leakage and reducing suction superheat.

2. **Casing metal is powder coated, weather resistant with enhanced corrosion protection.**
   Withstands up to 1000 hours under conditions of effect of neutral salt aerosol.

3. **The surface of the controller is covered with a special protective material that has high protection against moisture, dust and corrosion.**

4. **The grille of the outdoor unit has a phosphate coating.**

5. **The outer side of the case has zinc-nickel alloy fasteners (for better protection against corrosion).**

6. **The anti-corrosion motor has a stainless steel shaft and IP55 housing coating.**

7. **To protect the external insulating material of the heat exchanger, stainless steel and electrophoretic coating are used.**

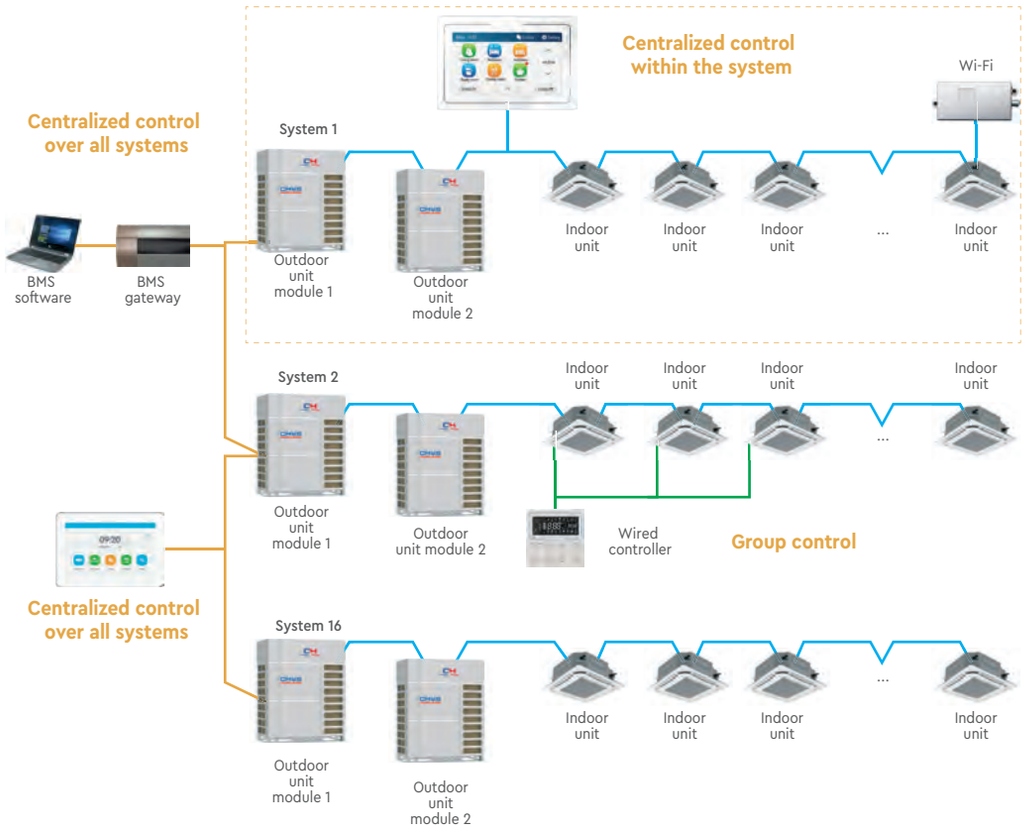
8. **The surface of the fan baffle is covered with powder paint and phosphate coating.**

Special anti-corrosion execution of the **CHV6** modular series

Communication technology

CAN+

STRATIFIED INNOVATIVE CAN+ STRUCTURE WITH MULTIPLE MASTER NETWORKS



Given that the use of air conditioning systems requires multiple levels of control and expansion capabilities, a Stratification CAN+ structure with multiple core networks is implemented. This makes it possible to increase the number of units in one system by 56 % and significantly reduce the reaction time of centralized control.

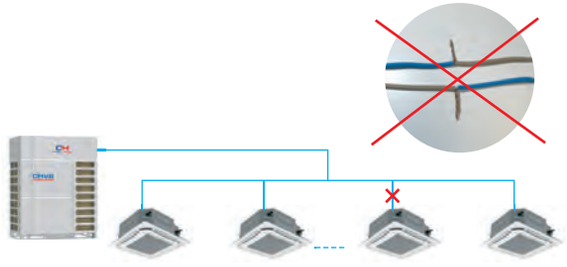
COMMUNICATION PROTOCOL CAN+

The CAN+ standardized communication protocol is a two-level network, universality, direct data transfer, function code, network address, data field, and the core of basic concepts, which is constantly evolving to realize real-time evaluation, classification, and data transmission, meeting the requirements of design changes and expansion of air conditioning systems.

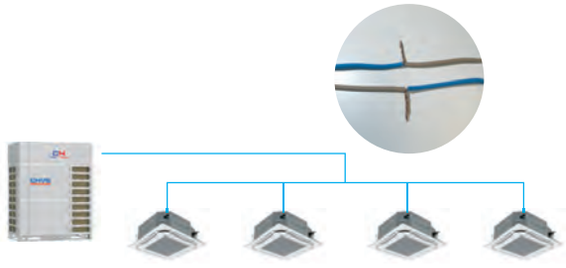
FIRST NON-POLAR COMMUNICATION CHIP CAN+

The self-adaptive CAN+ network technology in one chip combines automatic non-polarity technology and automatic equipment address allocation technology in the whole network, which can realize the network connection for hundreds of VRF systems equipment within 10 seconds, and the added units can be activated instantly after they are added to the system, which greatly improves network speed and scalability.

CAN communication technology allows the system to work correctly regardless of the polarity of the wires.



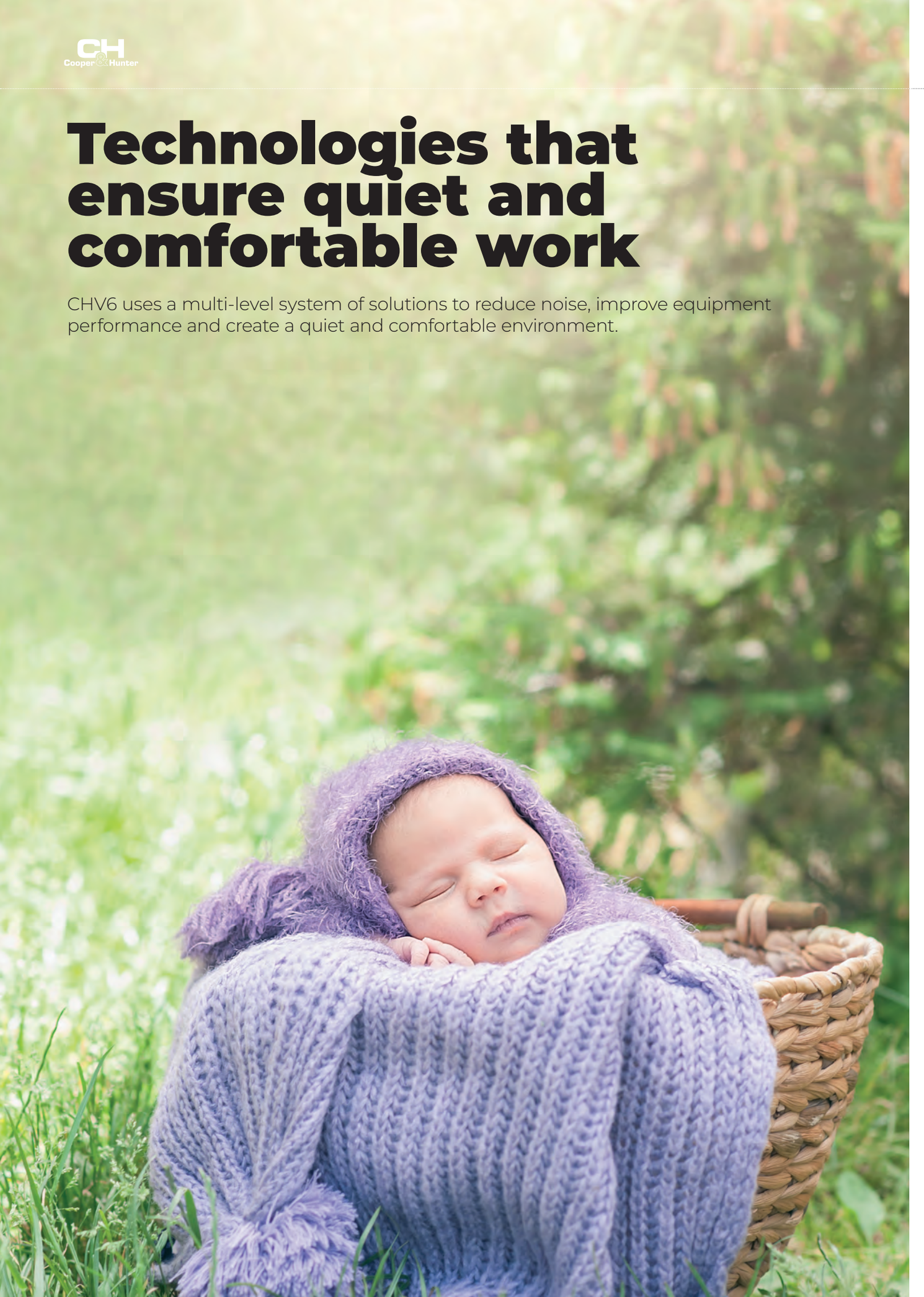
Company A



CHV5 and CHV6

Technologies that ensure quiet and comfortable work

CHV6 uses a multi-level system of solutions to reduce noise, improve equipment performance and create a quiet and comfortable environment.

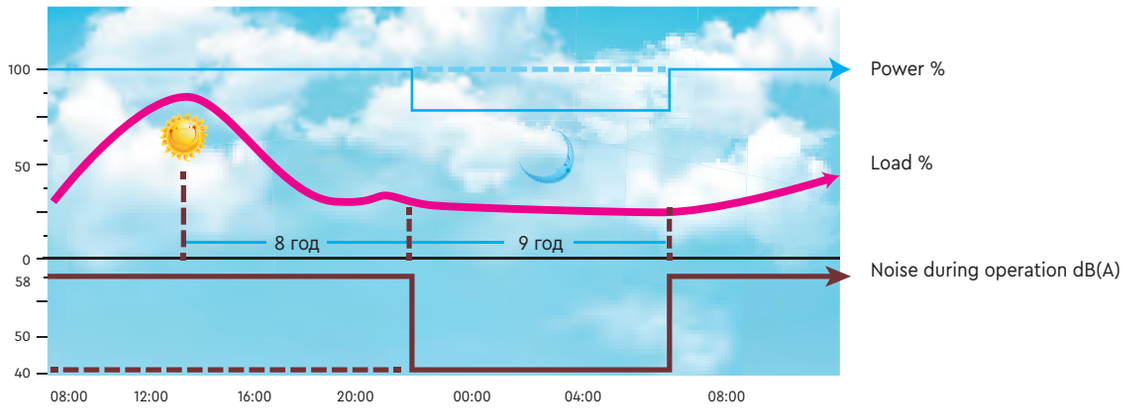


Noise reduction technologies

SILENT MODES

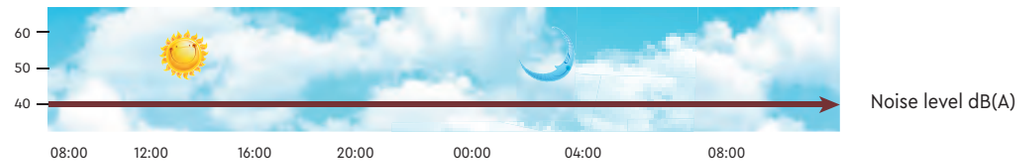
Night silent mode

The system detects the highest outside temperature during the day and automatically switches to silent mode at night. There are 9 quiet modes available that can be set according to your actual needs.
For example, the unit can automatically switch to night mode after 8 hours of operation and return to normal operation after 9 hours.



Mandatory silent mode

If the outdoor unit is installed in an environment with high noise level requirements, it must operate silently both day and night. In this case, three must-quiet settings can be selected to ensure that the unit operates in a low-noise mode at all times, with a noise value of no more than 40dB(A).



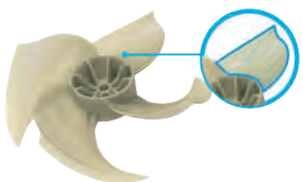
Intelligent silent mode

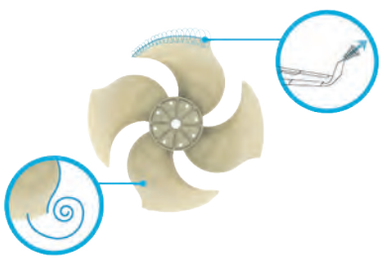
The system can automatically determine the output power of the system in the next 24 hours to achieve automatic quiet operation.

Professional noise reduction technologies

1. OPTIMIZED DESIGN OF FAN BLADES

The S-shaped back-bent blades effectively increases the working surface of the fan, which increases the level of productivity. Thanks to the aerodynamic shape of the blades, a turbulent vortex does not form at the edge of the blades and the noise level of the fan is reduced.



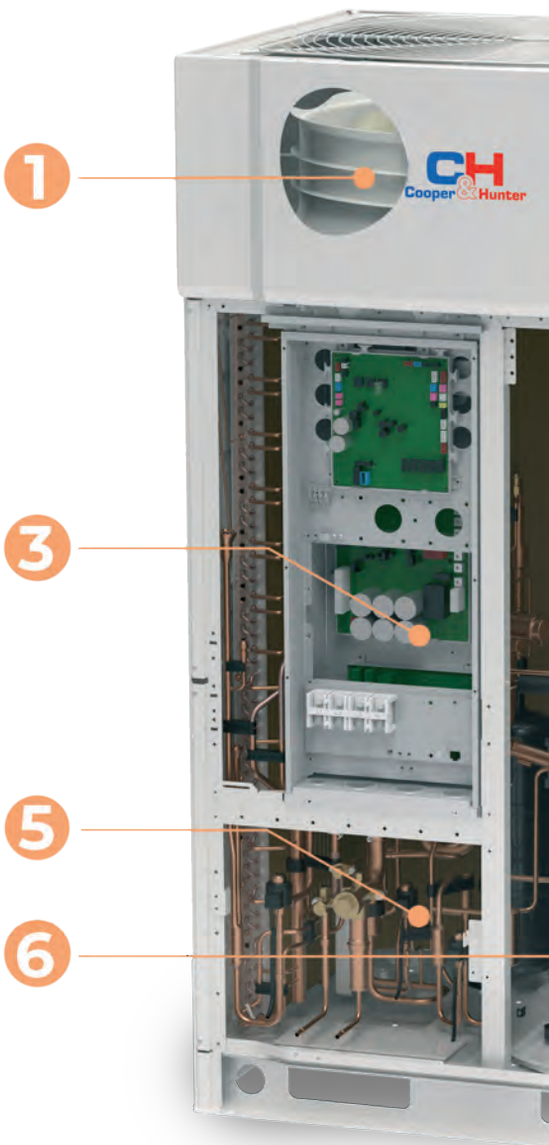


3. INTELLIGENT ELECTROMAGNETIC NOISE CONVERTER

The IGBT uses voltage and carrier frequency switching technology to actively reduce electromagnetic noise.

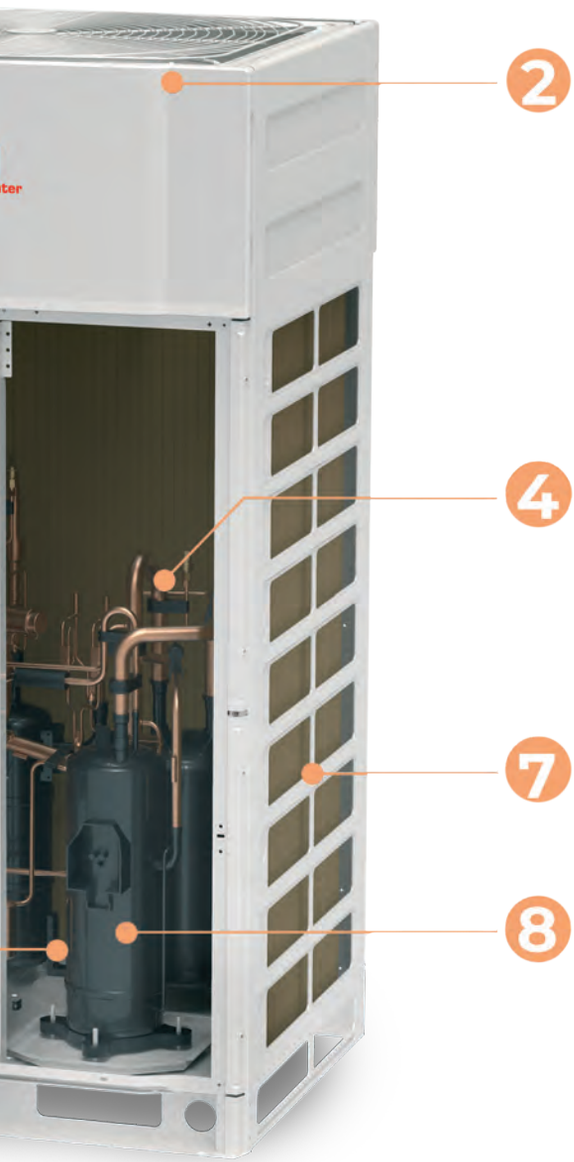
5. SILENT THROTTLE COMPONENT

The EPB has an improved design, which ensures a reduction in the noise level when throttling the distributed refrigerant flow.



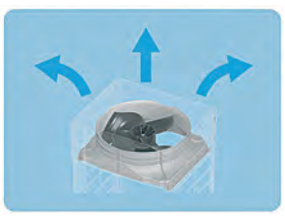
6. NOISE ABSORBER OF A NEW TYPE

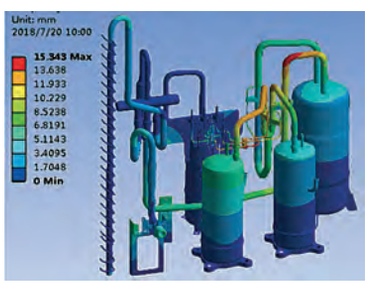
The noise absorber of a new type is designed taking into account the density of the sound field and the pulsation characteristics of the block is installed in the vapor injection line.



2. NEW GRILLE WITH REDUCED RESISTANCE AND INTERNAL CONFUSOR

The confusor is placed inside, which reduces the noise level of the air flow at the exit from the unit.



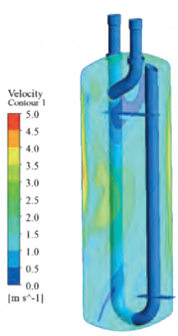


4. DESIGN OF CONNECTING PIPELINES

To reduce the transmission of vibration through the pipes, a computer simulation of the structure was carried out using the ANSYS software.

7. NEW GAS-LIQUID SEPARATOR

The new design of the enlarged high-performance separator with optimal shapes and angles of the inlet and outlet internal nozzles contributes to the reduction of hydraulic noise.



8. IMPROVED COMPRESSOR SOUND INSULATION

The use of new sound-absorbing and sound-insulating materials in the new compressor casing made it possible to reduce the noise level by 5dB.

New sound-insulating casing of the compressor

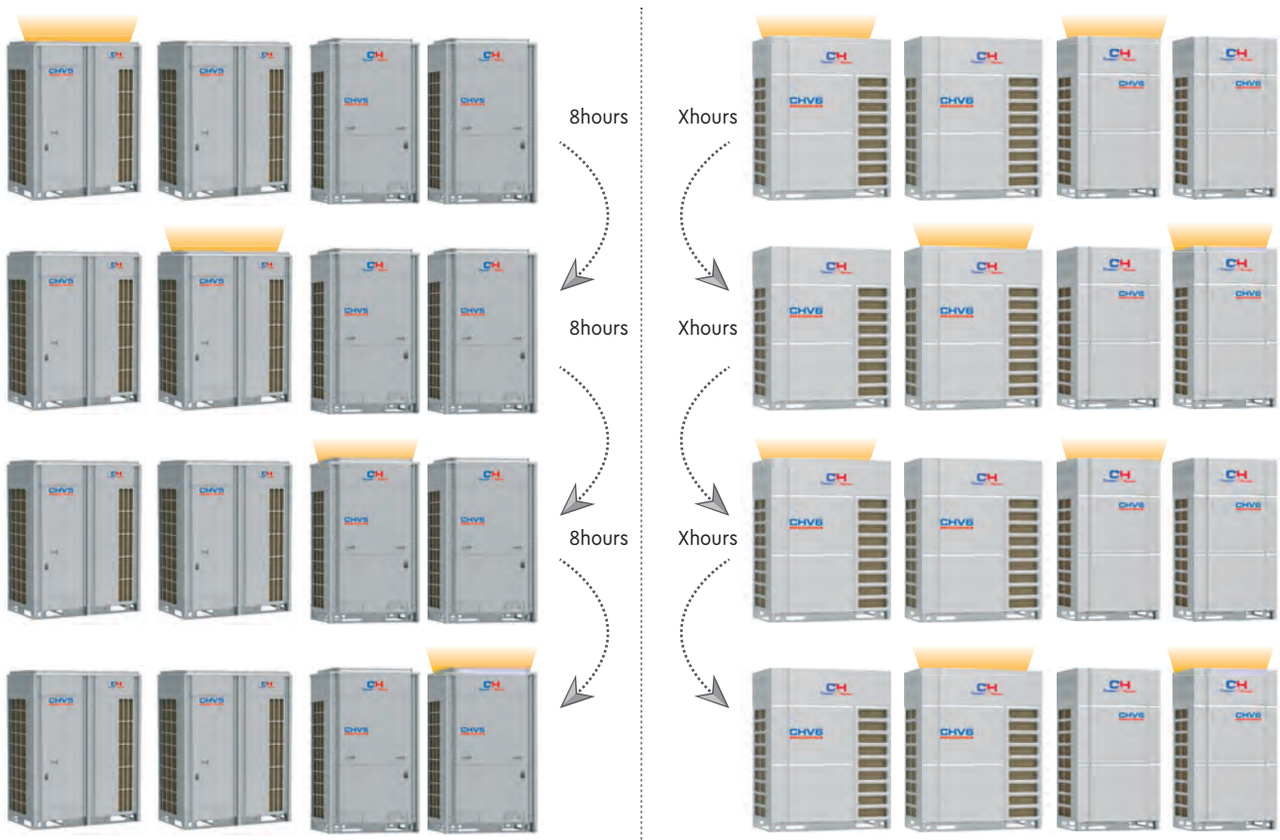
Additional metal casing in models up to 45 kW

ROTATION WITH VARIABLE CYCLE DURATION

CHV6 systems implement a new modular control method with variable duration of work cycles. It is based on the analysis of suction and discharge pressure, temperature, operating current, data of protection systems, duration of operation to achieve an optimally balanced resource of equipment production to extend the service life of the system. The performance of indoor and outdoor units is determined automatically and adjusted in real time according to system operating conditions.

Normal rotation
CHV5

Rotation with variable duration
CHV6



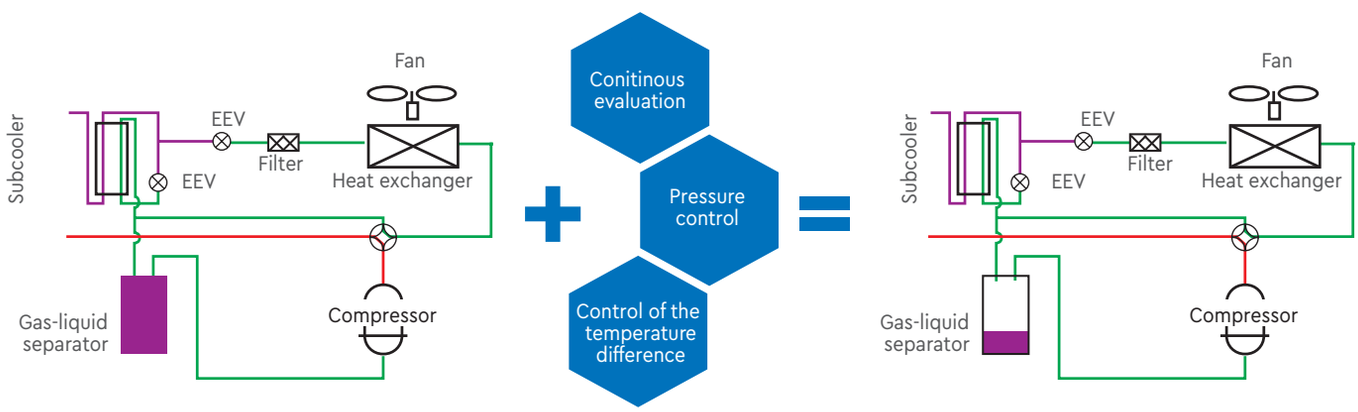
X – Cycle duration

ROTATION OF COMPRESSORS

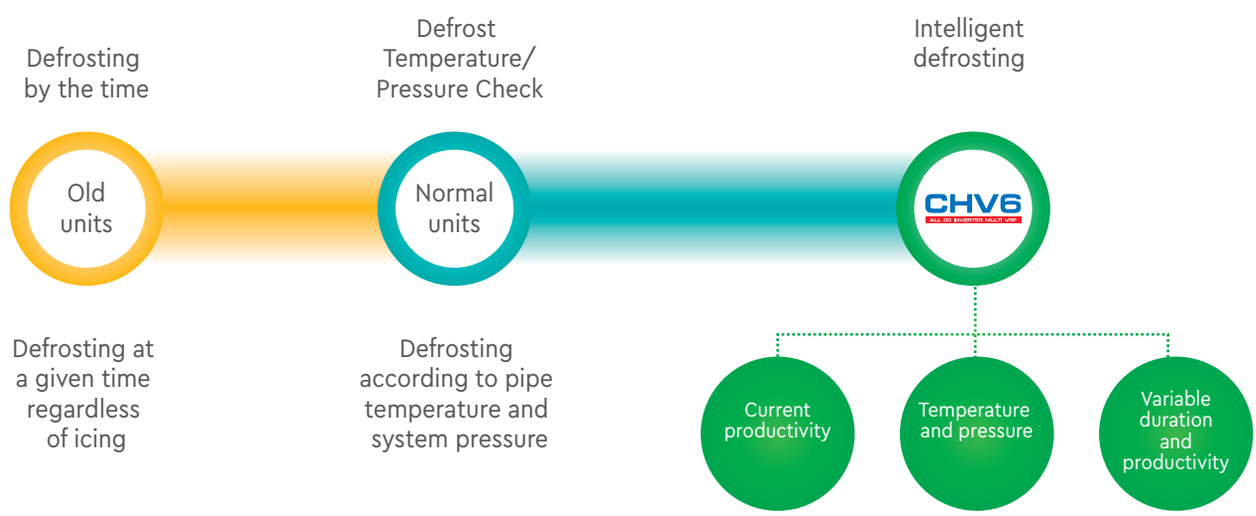
When managing the system, the total service life of the modular units is taken into account. If there is more than one compressor in the outdoor unit, they will work alternately to balance the lifetime of each compressor.

INTELLIGENT CONTROL OF THE REFRIGERANT CIRCUIT

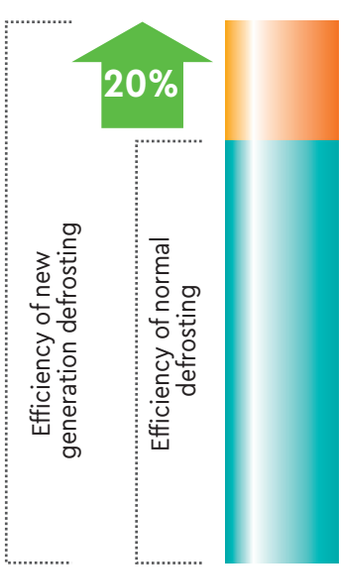
Based on parameters such as pressure, temperature, etc., the system assesses whether there is enough refrigerant circulating in the circuit and, if necessary, automatically redistributes the refrigerant. This technology provides a 15 % increase in heat output during start-up.



IMPROVEMENT OF DEFROSTING TECHNOLOGY

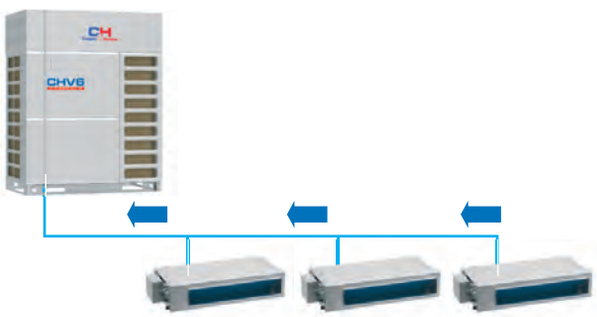


Defrost speed is closely related to the output power of the compressor. A conventional multi-zone system in the process of defrosting limits the performance of the compressor, which leads to an increase in the duration of defrosting or various undesirable phenomena.
CHV6 outdoor units automatically adjust performance during defrosting according to system parameters determined in real time, thus ensuring reliable and fast defrosting.



NEW GENERATION OF AUTOMATIC REFRIGERANT EVACUATION

The function of collecting the refrigerant in the indoor units in the event of a malfunction of the outdoor unit, or in the outdoor unit in the event of a malfunction of the indoor units, saves refrigerant and significantly reduces the time and costs of after-sales service.

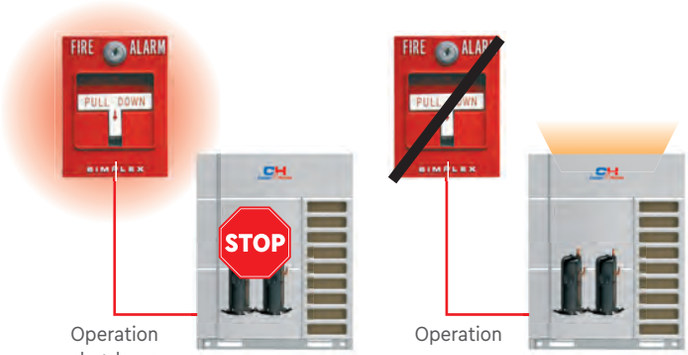


Evacuation of refrigerant in outdoor unit

Evacuation of refrigerant in indoor units

EMERGENCY SHUTDOWN FUNCTION

Directly in the outdoor unit there is a contact for immediate shutdown of the equipment upon a fire alarm signal.



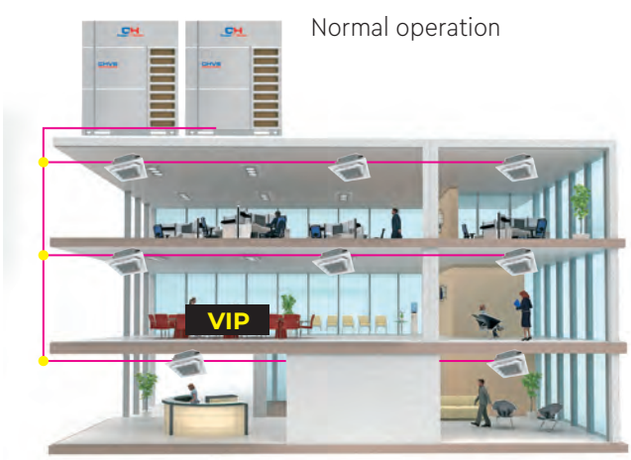
Operation shutdown

Operation

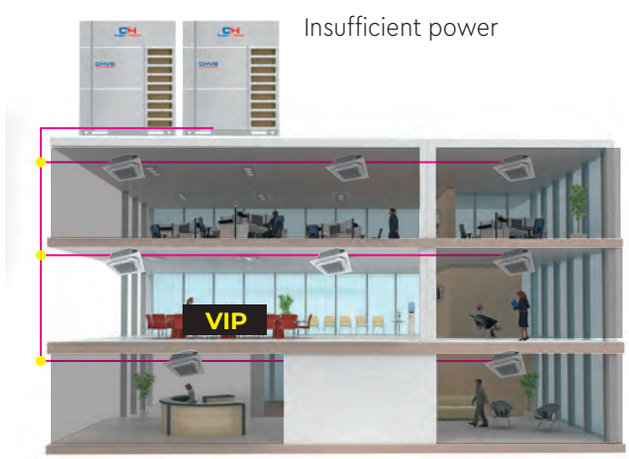
FUNCTION VIP

This function allows you to ensure the operation of the air conditioning system when there is insufficient input power from the power grid or when using electric generators. Indoor units designated as air conditioning systems for VIP rooms have priority over others, therefore, first of all, the outdoor unit will provide air conditioning in VIP rooms.

Normal operation



Insufficient power



Emergency operation mode

In the event of a malfunction, the multi-zone air conditioning system can operate in emergency mode.

EMERGENCY OPERATION OF OUTDOOR UNITS

One CHV6 system can include up to 4 outdoor units. In the event of an error on one of the outdoor units, the others may work in emergency mode.

Malfunction

BACK-UP FAN FUNCTION

If there are two fans in the outdoor unit and one of them fails, the system can operate on one fan in emergency mode.

COMPRESSOR FAILURE FUNCTION

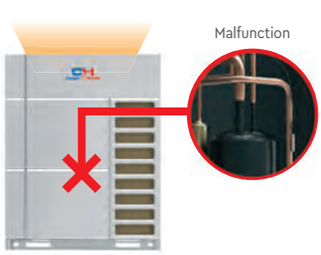
If there are two compressors in the outdoor unit and one of them fails, the system can operate on one compressor in emergency mode.


Failure

SENSOR FAILURE FUNCTION

In case of an error of one of the sensors, the system can continue to work in emergency mode.

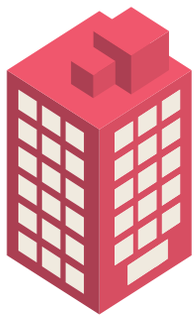
* Only for some temperature sensors



Special features for hotels

SEASONAL SETTINGS

To prevent conflict between different operation modes (heat/cool), the operation mode can be forcibly assigned from the remote control panel or from the outdoor unit panel.

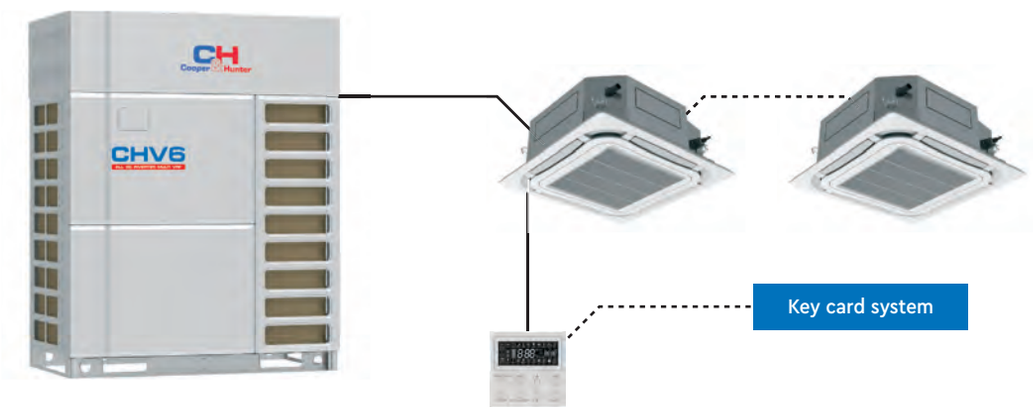


Cooling mode is disabled in winter

Heating mode is disabled in summer

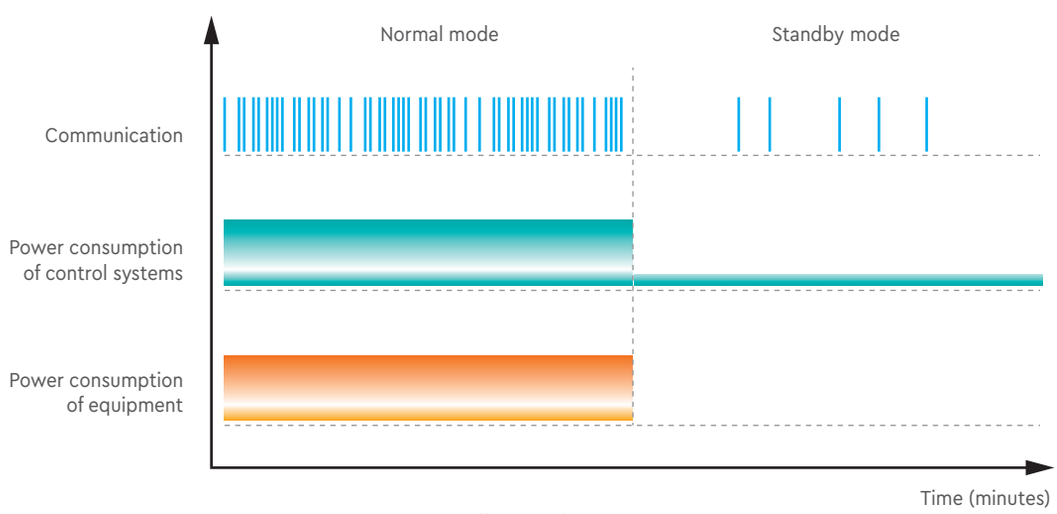
USING THE KEY CARD

If the system is equipped with a key-card unit, then to turn on the air conditioner, you need to insert the card into a special slot. If the card is removed from the slot, the air conditioner will turn off, and the system will remember the status and set settings. After returning the card to the slot, the air conditioner will resume operation according to the specified settings. More detailed information is provided in the Remote Control Systems catalog section.



STANDBY MODE

By turning off the power of the functional module and reducing the communication frequency, the device can remain in standby mode with low power consumption of up to 3W.



Consumption in standby mode CHV5 – 40W vs CHV6 – 3W

SNOW PROTECTION FUNCTION

To prevent the impact of snow accumulated on the top of the outdoor unit, the device automatically turns on the fan and blows the snow off the surface.

TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV6

Model			CHV6-224NMX	CHV6-280NMX	CHV6-335NMX	CHV6-400NMX	CHV6-450NMX
Cooling capacity		HP	8	10	12	14	16
Cooling capacity		kW	22.4	28	33.5	40	45
Heating capacity		kW	22.4	28	33.5	40	45
SEER	Duct IDU	-	7.1	6.66	6.31	6.75	6.24
	Cassette IDU	-	7.8	6.33	6.58	6.74	6.41
SCOP	Duct IDU	-	4.62	4.8	4.4	4.8	4.84
	Cassette IDU	-	4.5	4.75	4.66	4.44	4.44
Power supply		V/Ph/Hz	380-415V / 3Ph / 50Hz				
Max. power consumption		kW	12.87	13.15	13.5	18.18	18.74
Max. current consumption		A	23	23.5	24.1	32.5	35.5
Fuse current		A	25	25	25	40	40
Maximum number of indoor units			13	16	19	23	26
Compressor type			EVI Inverter scroll				
Quantity of compressors		pcs	1				
Refrigerant charge volume		kg	5.5	5.5	7.5	7.5	7.5
Sound pressure level (1 m, cooling)		dB(A)	56	57	59	59	60
Sound power level (cooling)	Duct IDU	dB(A)	80	84	86	90	93
	Cassette IDU	dB(A)	82	86	86	88	93
Pipe diameter	Liquid line	mm	Ø 9.52	Ø 9.52	Ø 12.7	Ø 12.7	Ø 12.7
	Gas	mm	Ø 19.05	Ø 22.2	Ø 25.4	Ø 25.4	Ø 28.6
Dimensions (W×D×H)	Unit	mm	930×775×1690			1340×775×1690	
	Package	mm	1000×830×1855			1400×830×1855	
Net/Gross weight		kg	220/230		240/250	300/315	

Model			CHV6-504NMX	CHV6-560NMX	CHV6-615NMX
Cooling capacity		HP	18	20	22
Cooling capacity		kW	50.4	52	52
Heating capacity		kW	50.4	56	56
SEER	Duct IDU	-	6.12	5.97	6.02
	Cassette IDU	-	6.44	5.67	5.75
SCOP	Duct IDU	-	4.19	4.1	4.1
	Cassette IDU	-	3.71	3.71	3.71
Power supply		V/Ph/Hz	380-415V / 3Ph / 50Hz		
Consumption	Cooling	kW	12.3	13.8	16.2
	Heating	kW	12.9	13.1	16.9
Max. power consumption		kW	26.3	26.85	27.41
Max. current consumption		A	47	48	49
Fuse current		A	50	50	50
Maximum number of indoor units			29	33	36
Compressor type			EVI Inverter scroll		
Quantity of compressors		pcs	2		
Refrigerant charge volume		kg	8.3	8.3	8.3
Sound pressure level (1 m. cooling)		dB(A)	61	62	63
Sound power level (cooling)	Duct IDU	dB(A)	93	93	93
	Cassette IDU	dB(A)	88	94	94
Pipe diameter	Liquid line	mm	Ø 15.9	Ø 15.9	Ø 15.9
	Gas	mm	Ø 28.6	Ø 28.6	Ø 28.6
Dimensions (W×D×H)	Unit	mm	1340×775×1690		
	Package	mm	1400×830×1855		
Net/Gross weight		kg	350/365		355/370

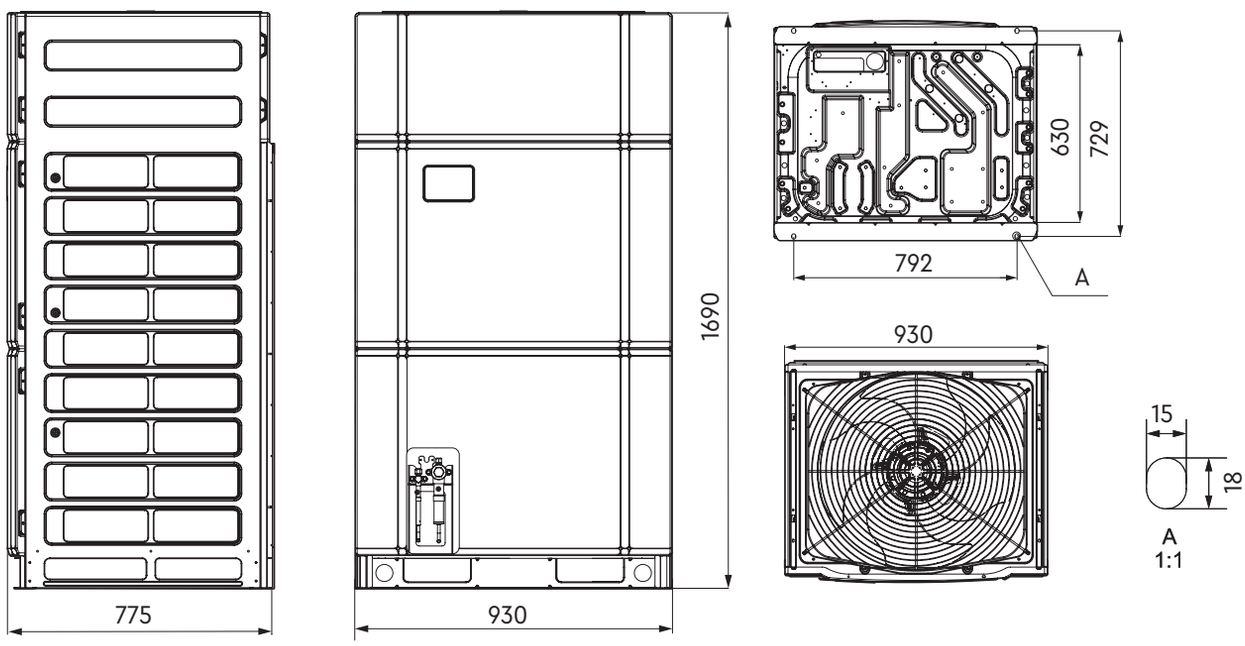
OPTIMUM COMBINATIONS OF MODULAR OUTDOOR UNITS CHV6

	CHV6-224NMX	CHV6-280NMX	CHV6-335NMX	CHV6-400NMX	CHV6-450NMX	CHV6-504NMX	CHV6-560NMX	CHV6-615NMX
CHV6-224NMX	●							
CHV6-280NMX		●						
CHV6-335NMX			●					
CHV6-400NMX				●				
CHV6-450NMX					●			
CHV6-504NMX						●		
CHV6-560NMX							●	
CHV6-615NMX								●
CHV6-680NMX		●		●				
CHV6-730NMX		●			●			
CHV6-784NMX		●				●		
CHV6-840NMX		●					●	
CHV6-895NMX		●						●
CHV6-950NMX			●					●
CHV6-1015NMX				●				●
CHV6-1065NMX					●			●
CHV6-1119NMX						●		●
CHV6-1175NMX							●	●
CHV6-1230NMX								● ●
CHV6-1290NMX		●			●		●	
CHV6-1345NMX		●			●			●
CHV6-1400NMX			●		●			●
CHV6-1455NMX		●					●	●
CHV6-1510NMX		●						● ●
CHV6-1565NMX			●					● ●
CHV6-1630NMX				●				● ●
CHV6-1680NMX					●			● ●
CHV6-1734NMX						●		● ●
CHV6-1790NMX							●	● ●
CHV6-1845NMX								● ● ●
CHV6-1905NMX		●			●		●	●
CHV6-1959NMX		●				●	●	●
CHV6-2015NMX		●					● ●	●
CHV6-2070NMX		●					●	● ●
CHV6-2125NMX		●						● ● ●
CHV6-2180NMX			●					● ● ●
CHV6-2245NMX				●				● ● ●
CHV6-2295NMX					●			● ● ●
CHV6-2349NMX						●		● ● ●
CHV6-2405NMX							●	● ● ●
CHV6-2460NMX								● ● ● ●

OVERALL DIMENSIONS

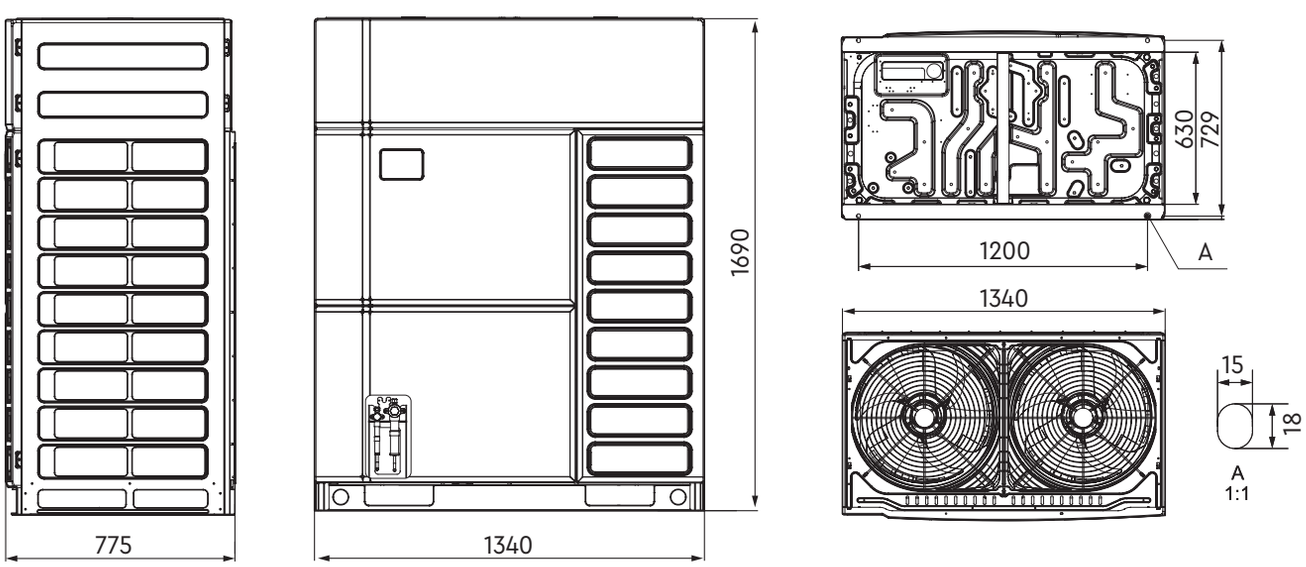
Overall dimensions and installation holes dimension
CHV6-224NMX, CHV6-280NMX, CHV6-335NMX

Units: mm



Overall dimensions and installation holes dimension
CHV6-400NMX, CHV6-450NMX, CHV6-504NMX, CHV6-560NMX, CHV6-615NMX

Units: mm



ELECTRICAL PARAMETERS OF OUTDOOR UNITS CHV6

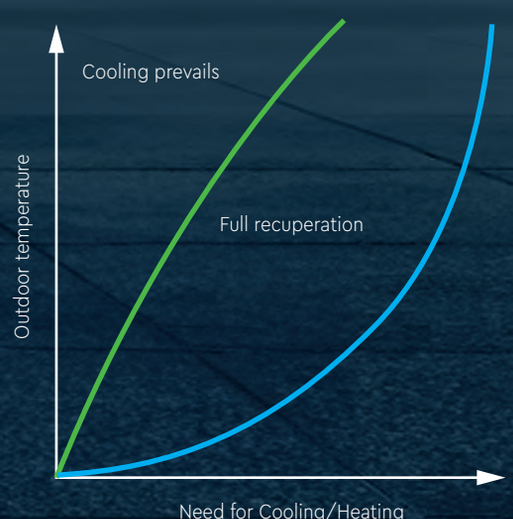
Model	Module combinations	Automatic switch (A) for each module	Minimum cross-sectional area of the power cable (section mm² × number of wires)
CHV6-224NMX	-	25	2.5×5
CHV6-280NMX	-	25	2.5×5
CHV6-335NMX	-	25	4.0×5
CHV6-400NMX	-	40	6.0×5
CHV6-450NMX	-	40	6.0×5
CHV6-504NMX	-	50	10.0×5
CHV6-560NMX	-	50	10.0×5
CHV6-615NMX	-	50	10.0×5
CHV6-680NMX	280+400	25+40	2.5×5+6.0×5
CHV6-730NMX	280+450	25+40	2.5×5+6.0×5
CHV6-784NMX	280+504	25+50	2.5×5+10.0×5
CHV6-840NMX	280+560	25+50	2.5×5+10.0×5
CHV6-895NMX	280+615	25+50	2.5×5+10.0×5
CHV6-950NMX	335+615	25+50	4.0×5+10.0×5
CHV6-1015NMX	400+615	40+50	6.0×5+10.0×5
CHV6-1065NMX	450+615	40+50	6.0×5+10.0×5
CHV6-1119NMX	504+615	50+50	10.0×5+10.0×5
CHV6-1175NMX	560+615	50+50	10.0×5+10.0×5
CHV6-1230NMX	615+615	50+50	10.0×5+10.0×5
CHV6-1290NMX	280+450+560	25+40+50	2.5×5+6.0×5+10.0×5
CHV6-1345NMX	280+450+615	25+40+50	2.5×5+6.0×5+10.0×5
CHV6-1400NMX	335+450+615	25+40+50	4.0×5+6.0×5+10.0×5
CHV6-1455NMX	280+560+615	25+50+50	2.5×5+10.0×5+10.0×5
CHV6-1510NMX	280+615+615	25+50+50	2.5×5+10.0×5+10.0×5
CHV6-1565NMX	335+615+615	25+50+50	4.0×5+10.0×5+10.0×5
CHV6-1630NMX	400+615+615	40+50+50	6.0×5+10.0×5+10.0×5
CHV6-1680NMX	450+615+615	40+50+50	6.0×5+10.0×5+10.0×5
CHV6-1734NMX	504+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-1790NMX	560+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-1845NMX	615+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-1905NMX	280+450+560+615	25+40+50+50	2.5×5+6.0×5+10.0×5+10.0×5
CHV6-1959NMX	280+504+560+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-2015NMX	280+560+560+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-2070NMX	280+560+615+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-2125NMX	280+615+615+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-2180NMX	335+615+615+615	25+50+50+50	4.0×5+10.0×5+10.0×5+10.0×5
CHV6-2245NMX	400+615+615+615	40+50+50+50	6.0×5+10.0×5+10.0×5+10.0×5
CHV6-2295NMX	450+615+615+615	40+50+50+50	6.0×5+10.0×5+10.0×5+10.0×5
CHV6-2349NMX	504+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5
CHV6-2405NMX	560+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5
CHV6-2460NMX	615+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5

Wide range of operation

CHV6 HR has similar innovations as the classic CHV6. Next, only the key additional features related to the features of the recovery VRF systems of the 6th generation are presented.

INTELLIGENT HEAT RECOVERY MANAGEMENT TECHNOLOGY

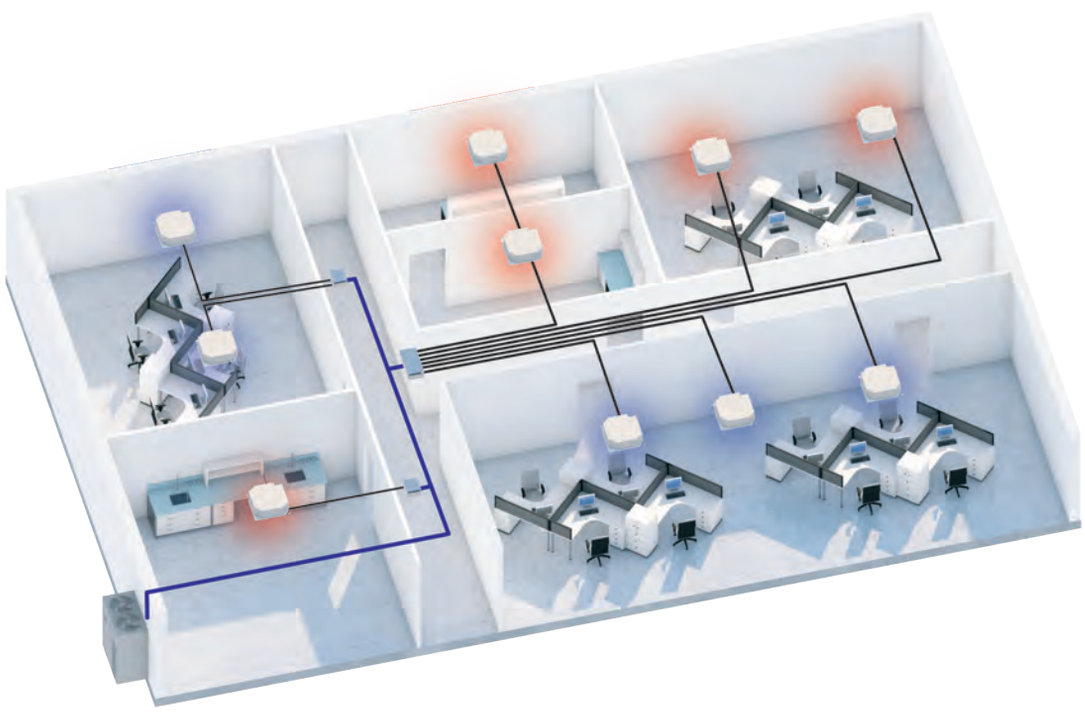
In the heat recovery mode, according to the operating conditions and load, the CHV6 HR can independently change the operating modes: Predominant cooling, Full heat recovery and Predominant heating. At high outside air temperature, the operation of indoor units in cooling mode will have priority, i.e. an advantage; with low – priority for heating. This approach simultaneously increases energy efficiency and user comfort.



Why should you choose a **VRF heat recovery system?**

NEED FOR SIMULTANEOUS COOLING AND HEATING

In large public facilities, there may be different requirements for cooling and heating the premises, for example, a large dining room or restaurant in an office center requires cooling, and office premises require heating. The heat recovery system allows cooling and heating simultaneously in any zones of the same system.



ENERGY SAVING

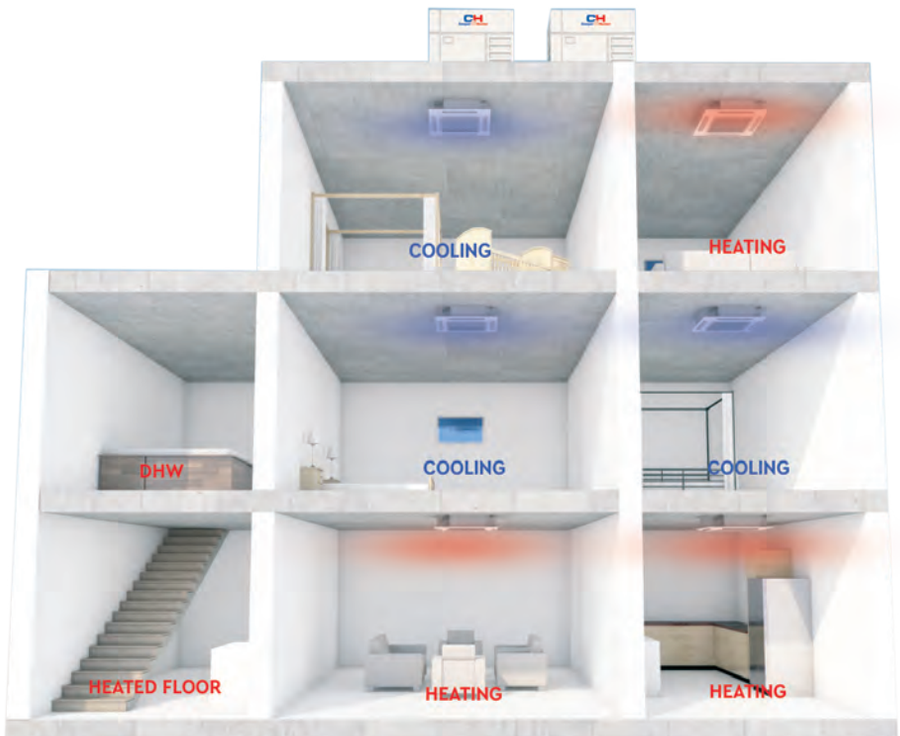
The heat recovery system has several modes of operation, including cooling, heating and general heat recovery. In heat recovery mode, the system will transfer heat to areas that need heating, absorbing heat in areas that need to be cooled, directly reducing the output power of the outdoor unit and greatly improving the energy saving effect. In the mode of full heat recovery, the system achieves optimal energy saving indicators, and the energy efficiency of the system will be 3–4 times higher compared to normal operating modes.

FLEXIBILITY

The heat recovery system is designed to have all the advantages of a heat pump and automatically adapts to changes in the surrounding and indoor environment to meet the needs of users in real time.

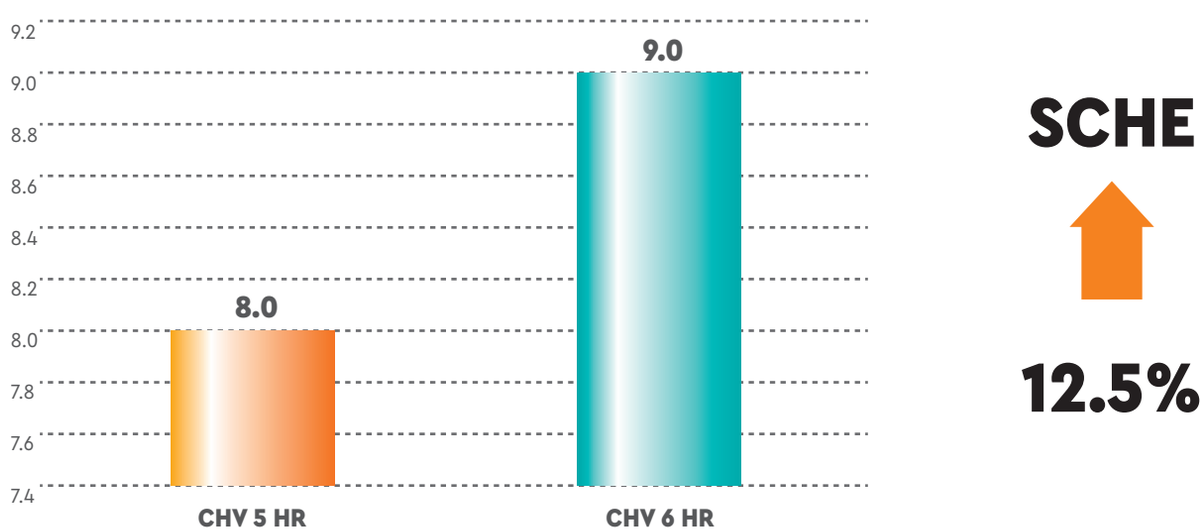
SEVERAL FUNCTIONS IN ONE SYSTEM

CHV6 HR can perform air cooling, air heating and water heating at the same time, meeting the different needs of customers in air conditioning, hot water and floor heating. This is a completely comprehensive solution for customers.



HIGH ENERGY EFFICIENCY - SCHE UP TO 9.0

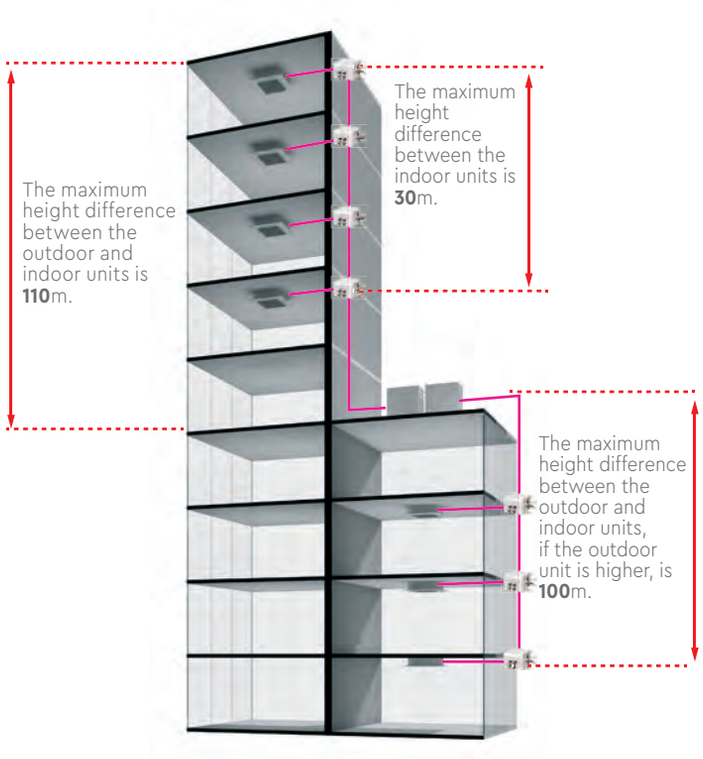
The CHV6 HR uses energy-saving heat recovery technology, a high-efficiency inverter EVI DC compressor and a high-efficiency DC motor. In the state of heat recovery, the comprehensive energy efficiency (SCHE*) can be 9.0 kW/kW.



*SCHE (simultaneous cooling and heating efficiency): the ratio of the total power of the system (heating and cooling power) to the effective power when operating in heat recovery mode.

LARGE LENGTH OF PIPELINES

CHV6 HR implements technologies that affect the length of the pipeline and improve energy efficiency: high pressure drop control, indoor unit pressure drop identification, enhanced pressure adjustment, self-adjustment of pipe length and deep refrigerant subcooling.



The maximum actual length from the outdoor unit to the farthest indoor unit is 200 m, and the maximum equivalent length is 240 m, the total maximum pipe length is 1000 m.
The maximum length from the first branch to the farthest indoor unit is 120 m* (up to 40 m under normal conditions).
The maximum height difference between the outdoor and indoor units is 110 m, provided that the outdoor unit is lower than the inner ones, and 100 m if the outdoor unit is higher*. The maximum difference between the indoor units is 30 m.

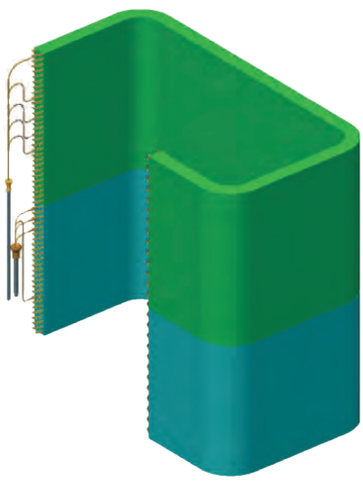
* Note. Under the relevant conditions specified in the technical documentation.

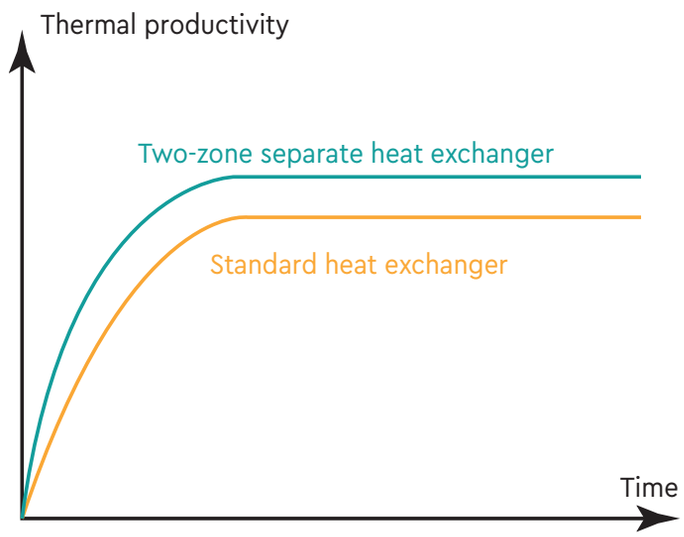
Maximum lengths of pipelines and height differences between units, m		
Total pipe length		1000
Pipe length from the ODU to the farthest IDU	**Physical**	200
	Equivalent	240
Equivalent length from the first branch to the farthest IDU		120*
Difference in lengths between the distances from the first branch to the farthest IDU and from the first branch to the nearest IDU		40
Height difference between ODU and IDU	**ODU is higher**	100
	ODU is lower	110
Height difference between IDUs		30
Length between mode exchange box and IDU		20
Length between ODU and hydrobox		100
Length between mode exchange box and hydrobox		10
Length between the first refnet and the hydrobox		40
Height difference between IDU and hydrobox		40

* The maximum length from the first refnet to the farthest indoor unit under normal conditions is 40 m, but it can be increased to 120 m if a number of requirements specified in the technical documentation are met.

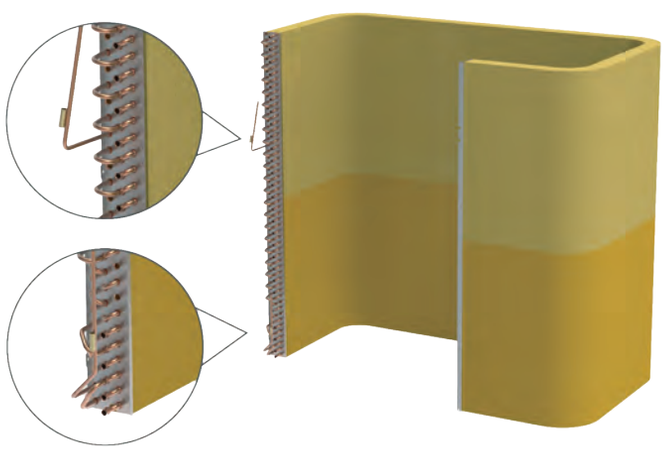
TWO-ZONE HEAT EXCHANGER

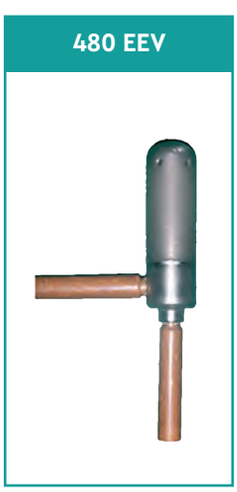
Depending on the wind field, the heat exchanger has a sectional design for flow paths. The top and bottom heat exchangers are designed with independent EEV control to achieve a more rational flow distribution that optimizes heat exchange efficiency.
The heat exchanger is divided into two separate parts according to the air flow field. The upper and lower levels have separate distributors (spiders). The sectional execution of the heat exchanger allows to optimize its operation in conditions of variable wind field and to maintain a stable temperature of the heat exchanger, ensuring optimal efficiency of its operation. This decision increases the efficiency of heat exchange by 8 %.

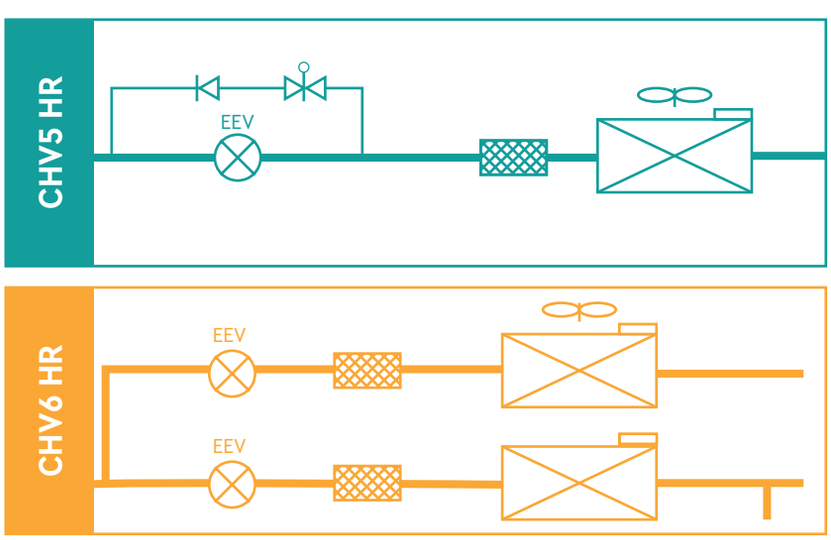




The upper and lower heat exchangers are monitored independently of each other using two temperature sensors. These sensors determine the degree of icing on the heat exchangers at different levels, which allows for complete defrosting of the heat exchanger surface. Control of the defrosting process by two temperature sensors allows you to effectively detect the heating of the heat exchangers and start the defrosting process as soon as the ice thickness reaches a certain level. Such control allows for reliable and efficient functioning of the heat exchange system, keeping its efficiency at an optimal level.

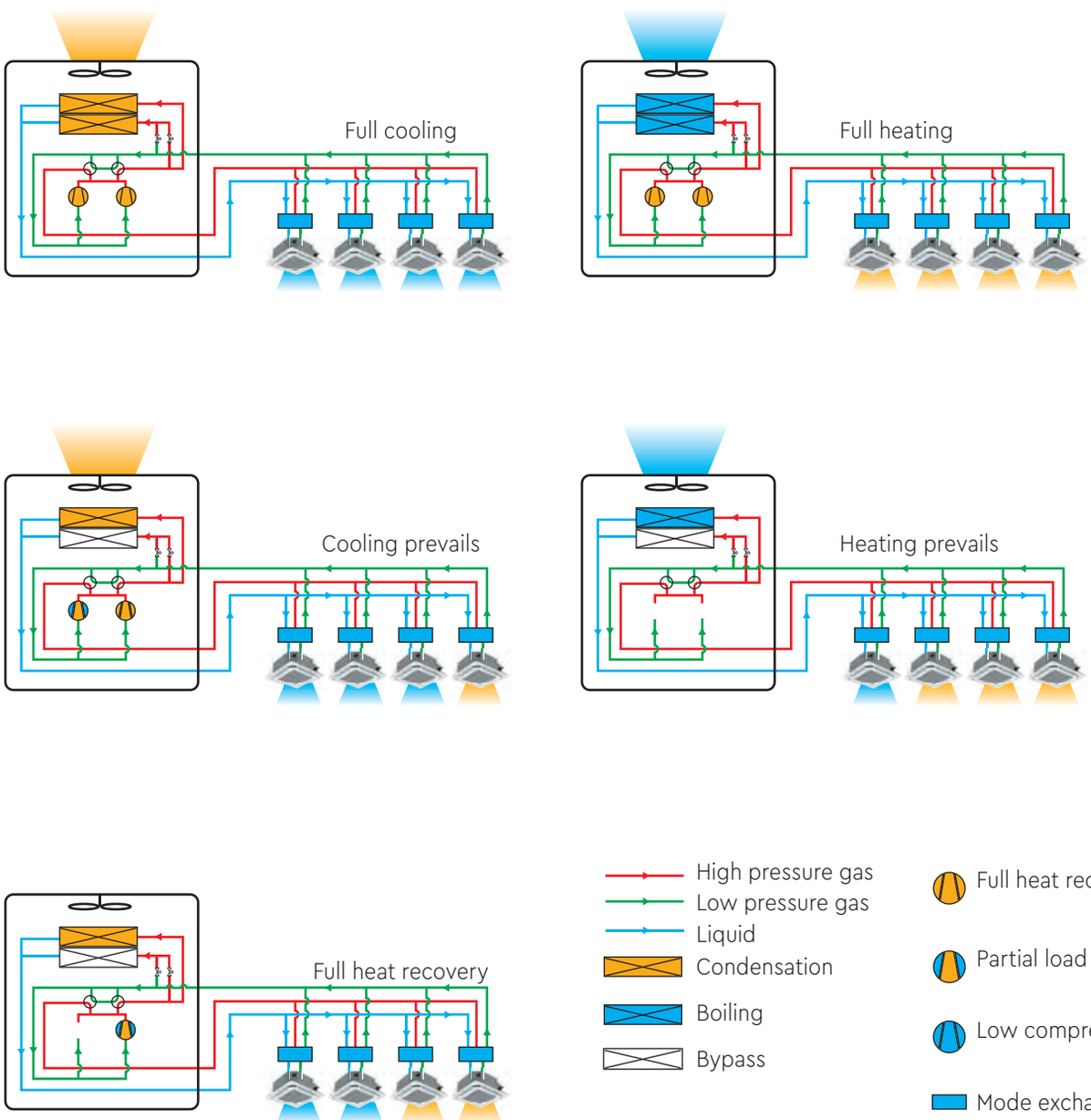






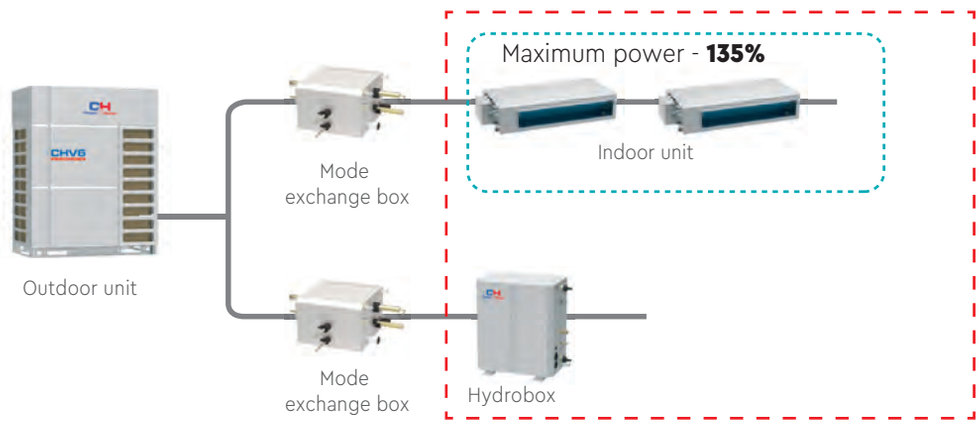
High **energy efficiency**

The CHV6 HR heat recovery system has the following main operating modes: cooling, heating and heat recovery. In the full recovery mode, the system takes heat from rooms that need cooling and transfers it to rooms that need heating.



HIGH OVERLOAD COEFFICIENT OF THE OUTDOOR UNIT

Traditionally, to determine the power of the otdoor unit, the hydrobox is included in the total power at the same time as the indoorunits. In the CHV6 HR, the hydrobox is not counted as an indoor unit, for example, two 16 kW hydroboxes or one 30 kW hydrobox and indoor units with a total power of up to 30.2 kW (135 %) can be installed on a 22.4 kW outdoor unit. This principle of system construction is based on the fact that in summer users need air conditioners for cooling and hot water for bathing, and in winter cooling is replaced by heating, and therefore, regardless of the season, the hydrobox works only in heating mode. Therefore, CHV6 HR has its own characteristics, as it uses a new method of power distribution in different modes, and the hydrobox can independently calculate the overload factor.

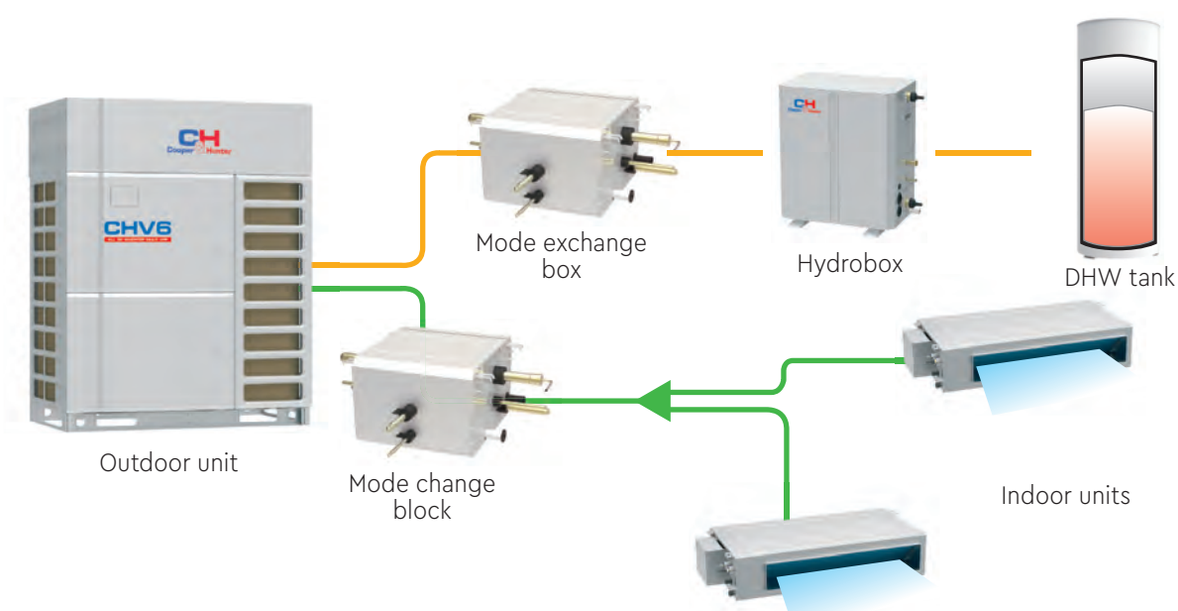


The overload of the outdoor unit can be more than **135%**

Note: If the indoor units and hydrobox are simultaneously operating in heating mode, this may affect performance.

AUTOMATIC HEAT RECOVERY FUNCTION IN COOLING MODE

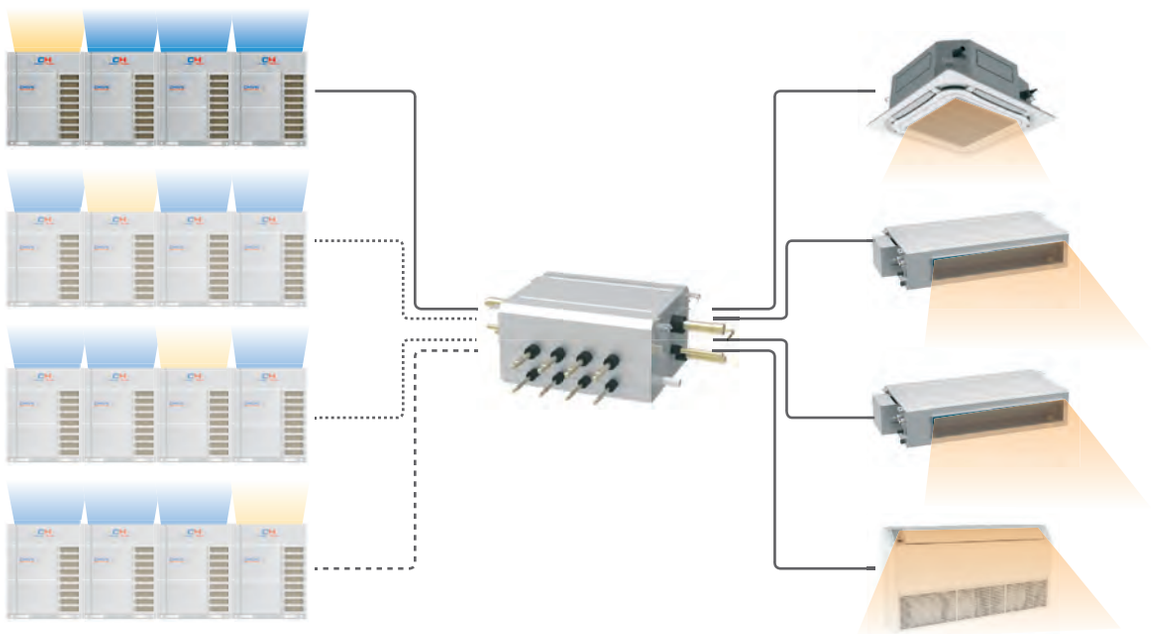
In the summer, when the unit is in cooling mode, even if the hydrobox is turned off, it can still keep the water in the DHW tank warm, instead of releasing heat into the atmosphere. So, in summer you can enjoy not only cool air, but also free hot water.



Note: This default feature is part of the factory settings. It can be turned off.

CONTINUOUS HEATING

CHV6 HR in modular design is a continuous heating system. Different modules can be defrosted in turn to reduce temperature fluctuations in the room, which will further improve the level of comfort.



Outdoor units are defrosted in turn

Indoor units continue heating

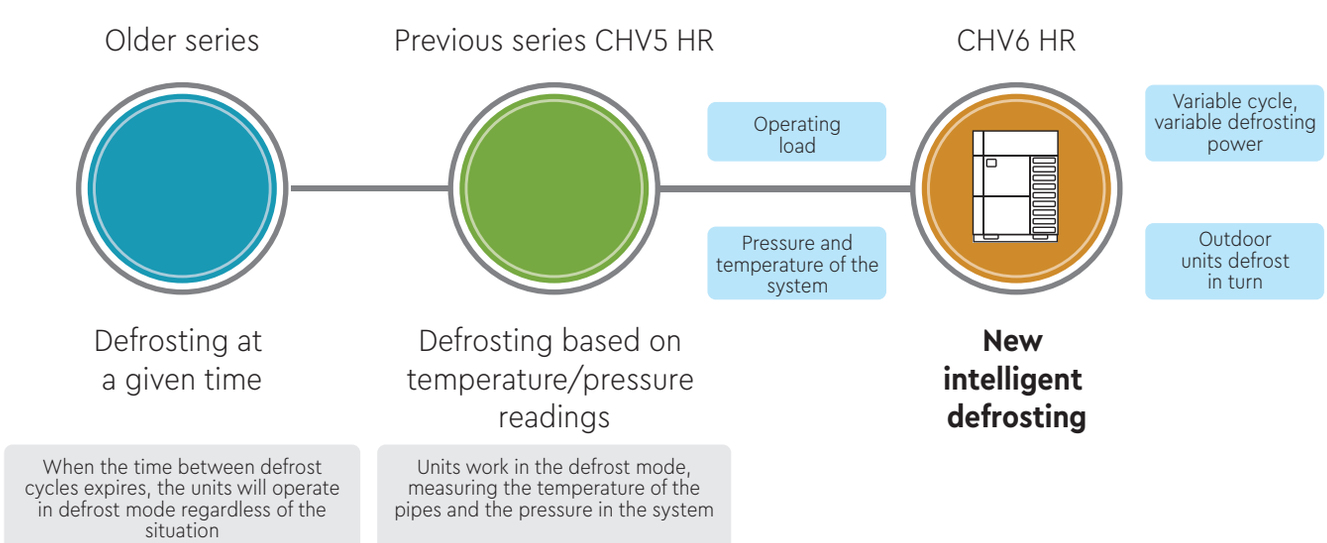
*Applies to some models in the line.

**This feature must be configured on site. If this function is working, continuous heating will be activated at a certain ambient temperature.

MULTI-LEVEL INTELLECTUAL DEFROSTING

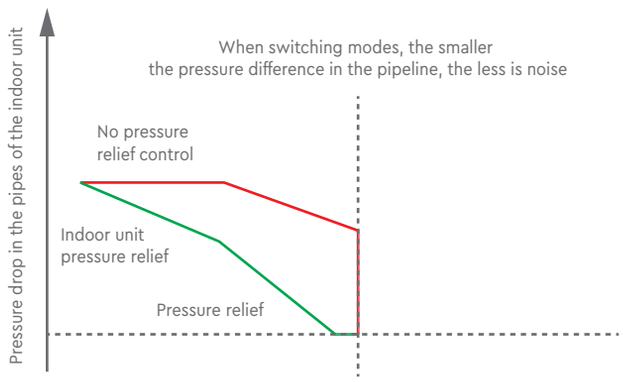
CHV6 HR is equipped with a multi-level defrosting system. The system uses a temperature difference and load level control method to achieve efficient and fast defrosting. Under certain conditions, the outdoor units may defrost in turn, allowing the indoor units to continue heating.

Development of defrosting technologies



NEW TECHNOLOGICAL SOLUTIONS FOR NOISE REDUCTION

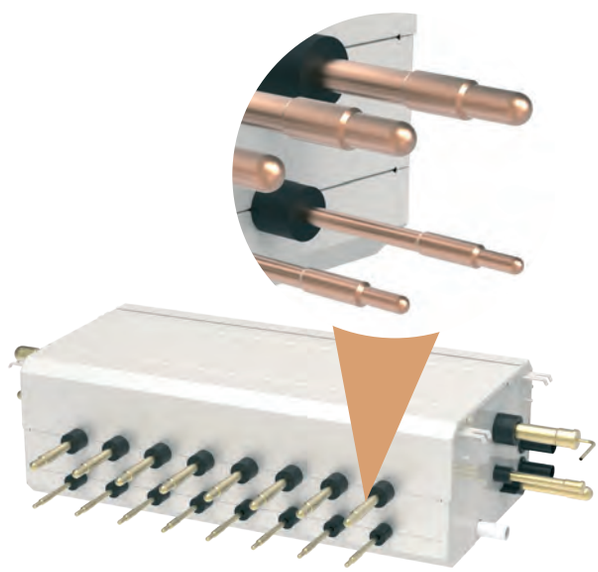
The noise generated in the mode change unit is mostly caused by the large pressure difference between the indoor unit piping and the outdoor unit piping especially during mode switching. The new generation mode change box uses pre-relief pressure control technology. By combining indoor unit and bypass pressure pre-relief control, indoor unit piping pressure can be quickly balanced during mode switching. This allows you to avoid the noise caused by the pressure difference when switching the mode.



INTEGRAL CONSTRUCTION OF THE CONNECTING PIPE

The connecting pipe of the mode change unit has several diameters, as implemented for the branch, which makes installation much easier. Due to the variability of diameters, various pipe connection options become available.
This, in turn, allows for a more flexible approach to the installation of systems, gives greater freedom of choice when choosing pipe diameters, and speeds up the implementation of installation in case of changes in pipe diameters.
IMPORTANT! Mode change blocks for CHV5 and CHV6 versions are not compatible.

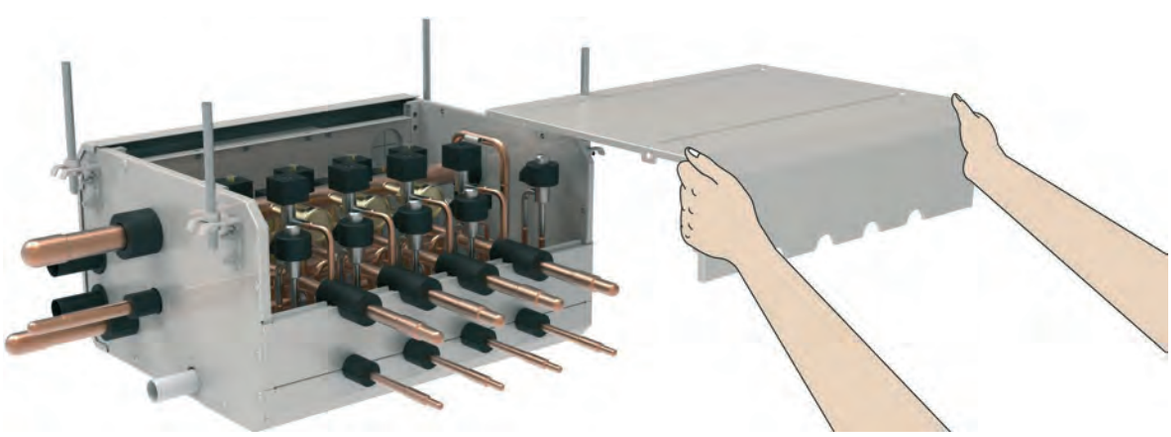
CHV5 HR



CHV6 HR

CONVENIENT DESIGN FOR SERVICE

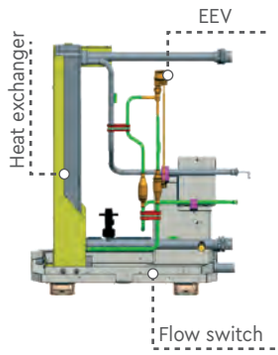
The L-shaped top cover provides better access for inspection and maintenance of pipes and valves.



HYDROBOX

Model range of hydroboxes

There are two power options of 16 and 30 kW. In order to increase the total power, a larger number of hydroboxes can be used.

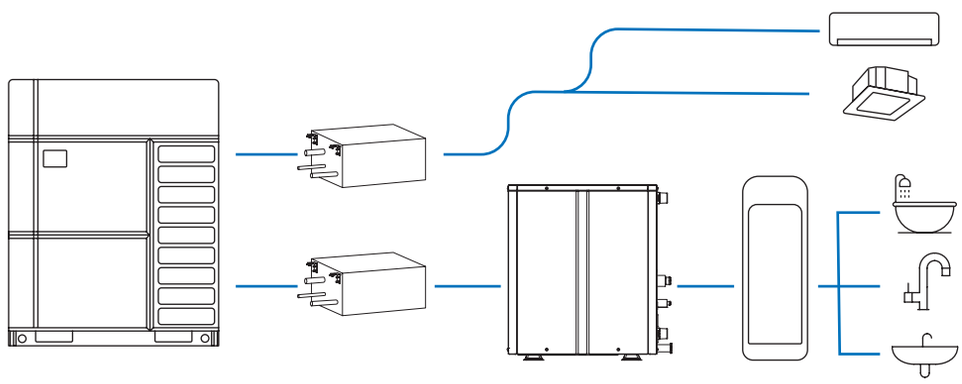


Circulation pump and expansion tank are missing

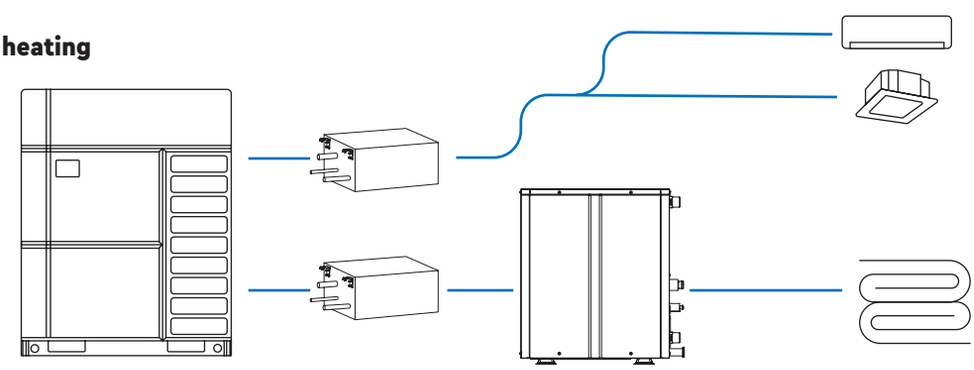
FUNCTIONS OF HEATING AND DHW

Hydrobox can be connected to hot water tank and floor heating. It is equipped with a new generation wired controller, with which you can adjust the function of DHW and floor heating.

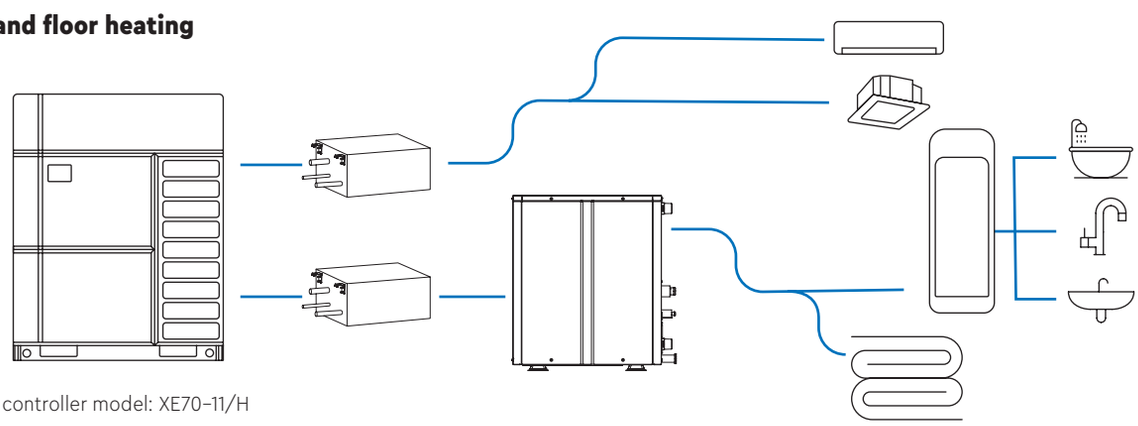
DHW



Floor heating



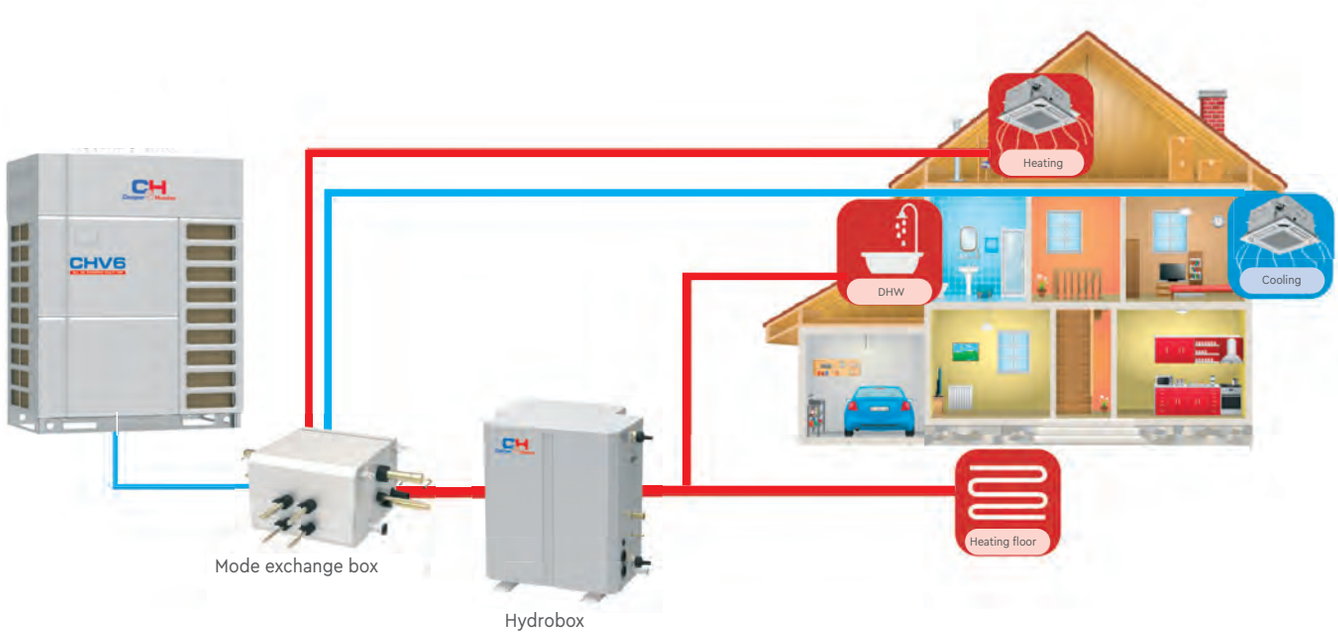
DHW and floor heating



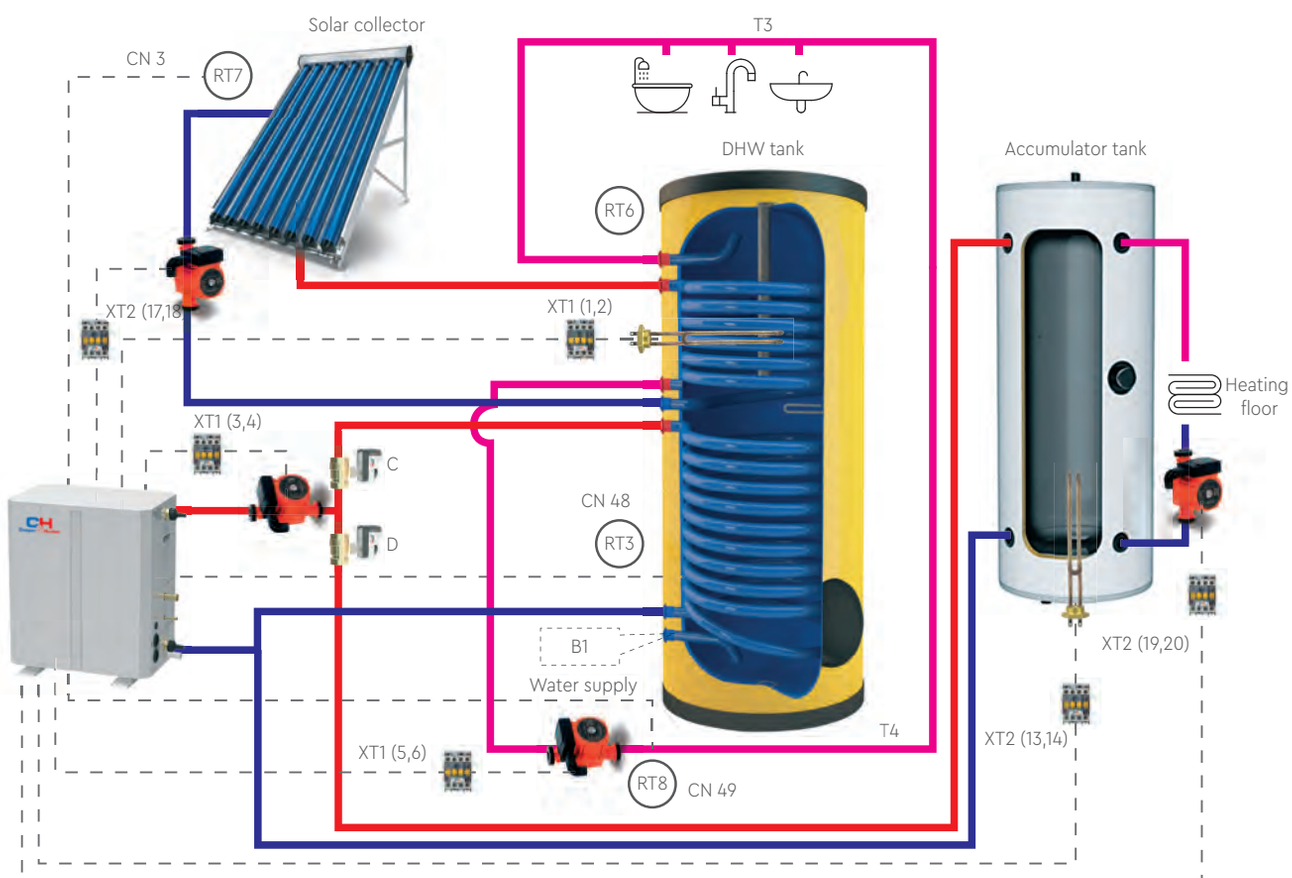
*Note: Wired controller model: XE70-11/H

AIR-WATER HEAT PUMP (CHV5 HOME SERIES REPLACEMENT)

CHV6 HR allows you to connect hydroboxes to provide water heating and water heating for DHW needs. The system can work simultaneously for cooling and heating, cool down with air conditioners in the summer and get free hot water thanks to recovery.



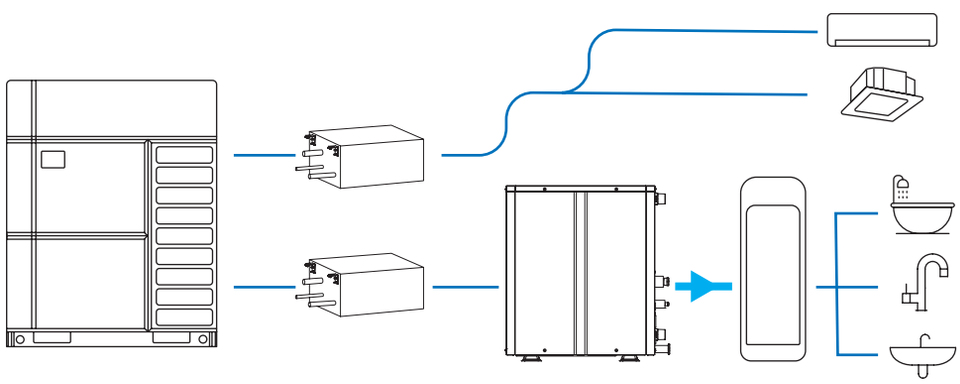
ELEMENTS OF EXTERNAL HYDROBOX CONTROL



INTELLIGENT PROTECTION AGAINST HYDROBOX FREEZING

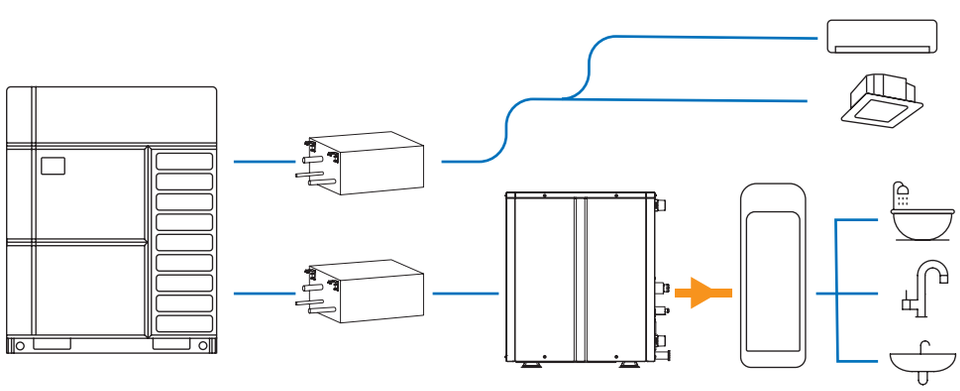
When the hydrobox is stopped and the water temperature is below 0 degrees, the plate heat exchanger can freeze and lose its tightness, which will affect the safety of the entire system. The CHV6 HR uses intelligent step-by-step anti-freeze protection, according to the actual condition, taking into account the operating time and water temperature.

Without protection against freezing



When the temperature is below 0 degrees, if there is no frost protection, the pipe can easily crack, resulting in equipment failure.

With protection against freezing



When the temperature is below 0 degrees, the frost protection ensures stable operation.

NEW TYPE WIRED CONTROLLER IN STANDARD PACKAGE

This is a brand new touch wired controller. The display is more visually rich and informative, and the touch buttons perform many functions. The presence of a weekly timer provides additional opportunities in automatic system management.

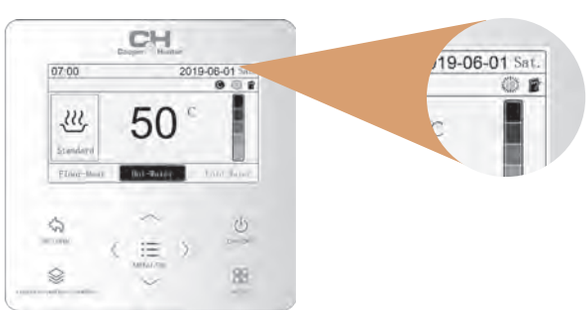
HIGH TEMPERATURE STERILIZATION FUNCTION

When the function is activated, the water in the DHW tank can be heated up to 70 degrees. At this temperature, most of the bacteria entering the tank from the water supply system die.

*Note. This function is possible with the use of an external heating element in the domestic hot water tank.

«SUNFLOWER» FUNCTION

The new Sunflower feature's algorithm can automatically track and collect daytime temperature data on an hourly basis to predict periods of high temperature and heat water accordingly. This increases the energy efficiency of the system.

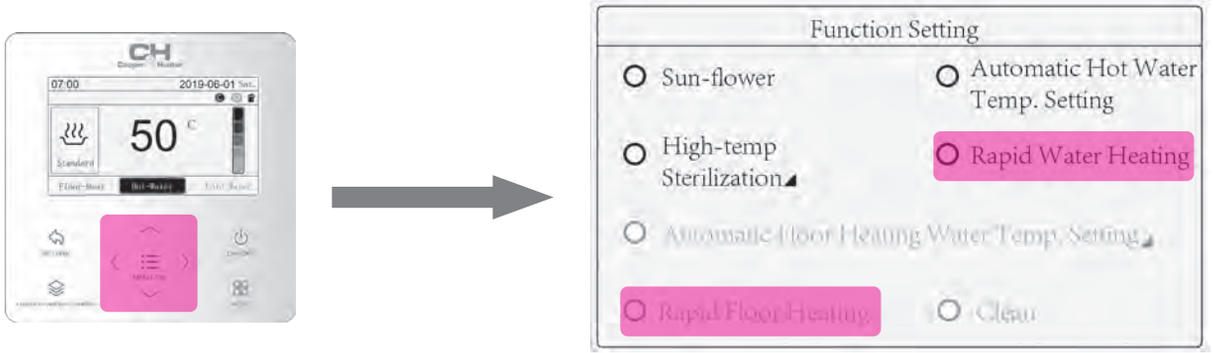


SOLAR ENERGY FUNCTION

The hydrobox controls the solar circulation pump and includes a temperature sensor for the solar system, as well as two DHW water temperature sensors, top and bottom. The solar system pump is controlled according to the external temperature and the temperature of the domestic hot water tank.

FAST HEATING FUNCTION

When installing heating elements on the heating and hot water side, you can activate electric heating to speed up the heating process.



TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV6 HR

Model			CHV6-H224NMX	CHV6-H280NMX	CHV6-H335NMX	CHV6-H400NMX
Cooling capacity		HP	8	10	12	14
Cooling capacity		kW	22.4	28	33.5	40
Heating capacity		kW	22.4	28	33.5	40
SEER	Duct IDU		7.0	6.76	6.61	6.97
	Cassette IDU		7.25	6.49	6.73	6.25
SCOP	Duct IDU		4.32	4.58	4.74	4.44
	Cassette IDU		4.3	4.44	4.37	4.44
Power supply		V/Ph/Hz	380–415V / 3Ph / 50Hz			
Max. power consumption		kW	12.87	13.15	13.5	21
Max. current consumption		A	23	23.5	24.1	37.5
Fuse current		A	25	25	25	40
Maximum number of indoor units			13	16	19	23
Compressor type			EVI Inverter scroll			
Quantity of compressors		pcs	1			
Refrigerant charge volume		kg	8.2	8.5	9.6	11.1
Sound pressure level (1 m. cooling)		dB(A)	56	57	59	59
Sound power level (cooling)	Duct IDU	dB(A)	80	82	84	91
	Cassette IDU	dB(A)	80	84	86	87
Pipe diameter	Liquid line	mm	Ø9.52	Ø9.52	Ø12.7	Ø12.7
	Low pressure gas	mm	Ø19.05	Ø22.2	Ø25.4	Ø25.4
	High pressure gas	mm	Ø15.9	Ø19.05	Ø19.05	Ø22.2
Dimensions (W×D×H)	Unit	mm	930×775×1690			1340×775×1690
	Package	mm	1000×830×1855			1400x830x1855
Net/Gross weight		kg	243/253		256/266	325/340

Model			CHV6-H450NMX	CHV6-H504NMX	CHV6-H560NMX	CHV6-H615NMX
Cooling capacity		HP	16	18	20	22
Cooling capacity		kW	45	50.4	52	52
Heating capacity		kW	45	50.4	56	56
SEER	Duct IDU		6.53	6.54	6.38	6.32
	Cassette IDU		6.22	6.78	6.42	6.36
SCOP	Duct IDU		4.42	4.25	4.15	4.15
	Cassette IDU		4.51	4.34	4.34	4.34
Power supply		V/Ph/Hz	380–415V / 3Ph / 50Hz			
Max. power consumption		kW	22	26.3	26.85	27.41
Max. current consumption		A	39.3	47	48	49
Fuse current		A	40	50	50	50
Maximum number of indoor units			26	29	33	36
Compressor type			EVI Inverter scroll			
Quantity of compressors		pcs	1	2		
Refrigerant charge volume		kg	11.6	12.8	12.8	13.3
Sound pressure level (1 m, cooling)		dB(A)	63	63	63	64
Sound power level (cooling)	Duct IDU	dB(A)	91	88	88	88
	Cassette IDU	dB(A)	94	87	89	89
Pipe diameter	Liquid line	mm	Ø12.7	Ø15.9	Ø15.9	Ø15.9
	Low pressure gas	mm	Ø28.6	Ø28.6	Ø28.6	Ø28.6
	High pressure gas	mm	Ø22.2	Ø25.4	Ø25.4	Ø25.4
Dimensions (W×D×H)	Unit	mm	1340×775×1690			
	Package	mm	1400x830x1855			
Net/Gross weight		kg	325/340	385/400		

OPTIMAL COMBINATIONS OF MODULAR OUTDOOR UNITS CHV6 HR

	CHV6-H224NMX	CHV6-H280NMX	CHV6-H335NMX	CHV6-H400NMX	CHV6-H450NMX	CHV6-H504NMX	CHV6-H560NMX	CHV6-H615NMX
CHV6-H224NMX	●							
CHV6-H280NMX		●						
CHV6-H335NMX			●					
CHV6-H400NMX				●				
CHV6-H450NMX					●			
CHV6-H504NMX						●		
CHV6-H560NMX							●	
CHV6-H615NMX								●
CHV6-H680NMX		●		●				
CHV6-H730NMX		●			●			
CHV6-H784NMX		●				●		
CHV6-H840NMX		●					●	
CHV6-H895NMX		●						●
CHV6-H950NMX			●					●
CHV6-H1015NMX				●				●
CHV6-H1065NMX					●			●
CHV6-H1119NMX						●		●
CHV6-H1175NMX							●	●
CHV6-H1230NMX								● ●
CHV6-H1290NMX		●			●		●	
CHV6-H1345NMX		●			●			●
CHV6-H1400NMX			●		●			●
CHV6-H1455NMX		●					●	●
CHV6-H1510NMX		●						● ●
CHV6-H1565NMX			●					● ●
CHV6-H1630NMX				●				● ●
CHV6-H1680NMX					●			● ●
CHV6-H1734NMX						●		● ●
CHV6-H1790NMX							●	● ●
CHV6-H1845NMX								● ● ●
CHV6-H1905NMX		●			●		●	●
CHV6-H1959NMX		●				●	●	●
CHV6-H2015NMX		●					● ●	●
CHV6-H2070NMX		●					●	● ●
CHV6-H2125NMX		●						● ● ●
CHV6-H2180NMX			●					● ● ●
CHV6-H2245NMX				●				● ● ●
CHV6-H2295NMX					●			● ● ●
CHV6-H2349NMX						●		● ● ●
CHV6-H2405NMX							●	● ● ●
CHV6-H2460NMX								● ● ● ●

Model range of **CHV6 HR** mode matching units

Model	Appearance	Model	Appearance
HR6B1NK		HR6BS4NK	
HR6BS2NK		HR6BS8NK	

TECHNICAL CHARACTERISTICS

Model				HR6B1NK	HR6BS2NK	HR6BS4NK	HR6BS8NK
Quantity of branches			pcs	1	2	4	8
Maximum number of connected indoor units		For single branch	pcs	8			
		Overall	pcs	8	16	32	64
Maximum cooling capacity of connected indoor units		For single branch	kW	16			
		Overall	kW	16	28	45	85
Power supply			V/Ph/Hz	220–240V / 1Ph / 50Hz			
Pipe diameter	To outdoor unit	Liquid line	mm	Ø 9.52		Ø 12.7	Ø 15.9
		High pressure gas	mm	Ø 19.05		Ø 22.2	Ø 22.2
		Low pressure gas	mm	Ø 22.2		Ø 28.6	Ø 28.6
	To indoor units	Liquid line	mm	Ø 6.35/9.52		Ø 6.35/9.52	Ø 6.35/9.52
		Gas	mm	Ø 12.7/15.9		Ø 12.7/15.9	Ø 12.7/15.9
Dimensions (W×D×H)			mm	340×388×250		460×388×250	784×388×250
Net weight			kg	12	14.5	20.6	33
Gross weight			kg	17.5	20.5	27	42

CHV6 HR hydrobox model range

Model	Appearance
HB6-16NK	
HB6-30NK	

TECHNICAL CHARACTERISTICS

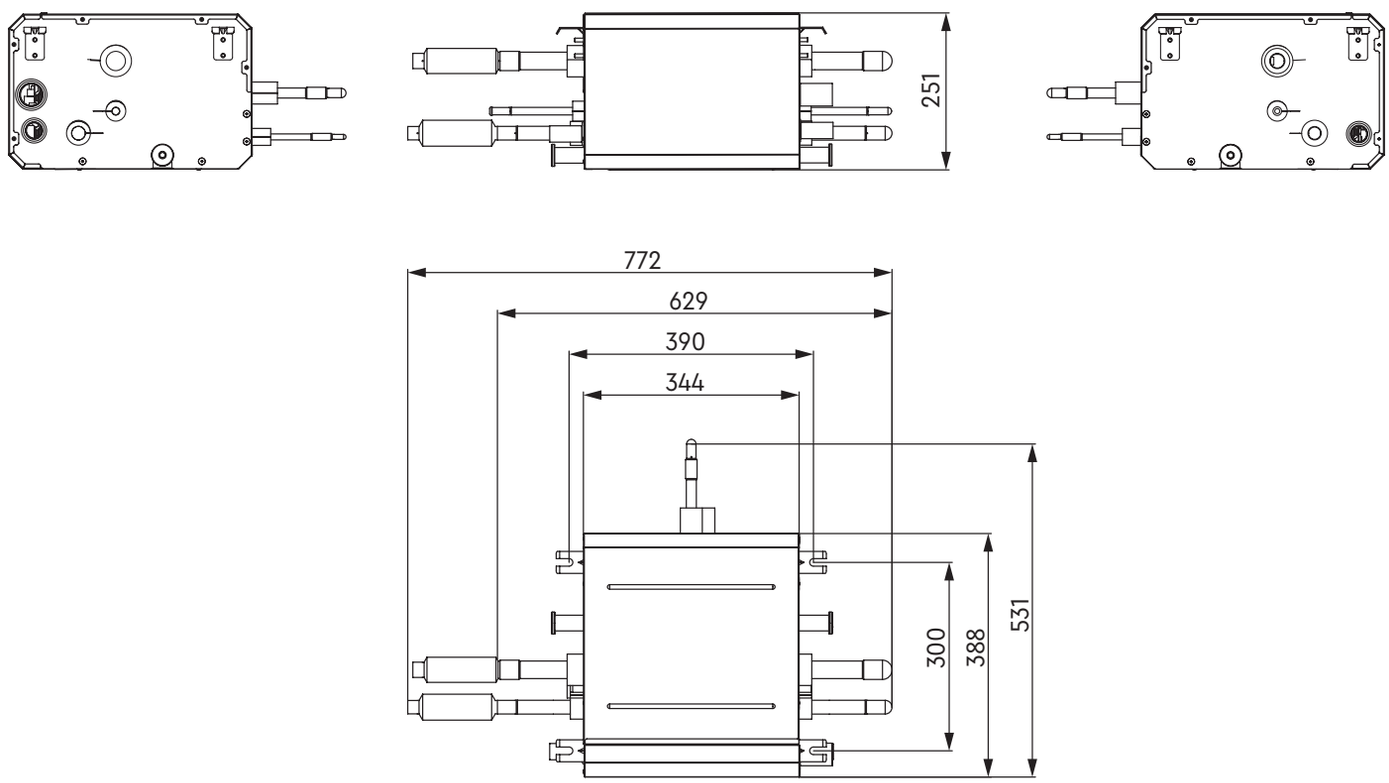
Model			HB6-16NK	HB6-30NK
DHV heating capacity range		kW	4.5 (3.6~16)	4.5 (3.6~30)
DHV temperature range		℃	55 (35~55)	
Heating capacity		kW	16	30
Heating temperature range		℃	45 (25~45)	
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz	
Automatic switch		A	6	
Minimum cross-sectional area of the power cable (cross-section mm² × number of cores)		-	1.5x3	
Heat exchanger	Type	-	Plate	
	Quantity	-	1	
	Water flow	L/min	46	86
	Pressure drop	kPa	27.5	38.5
Water inlet/outlet connection pipe		mm	1″	
Pipe diameter	Liquid line	mm	Ø 9.52	
	Gas	mm	Ø 15.9	Ø 22.2
Dimensions (W×D×H)		mm	515×330×606	
Net weight		kg	36	40
Gross weight		kg	42.5	47

OVERALL DIMENSIONS OF MODE ADJUSTMENT BLOCKS CHV6 HR

Overall dimensions and installation holes dimension

HR6B1NK

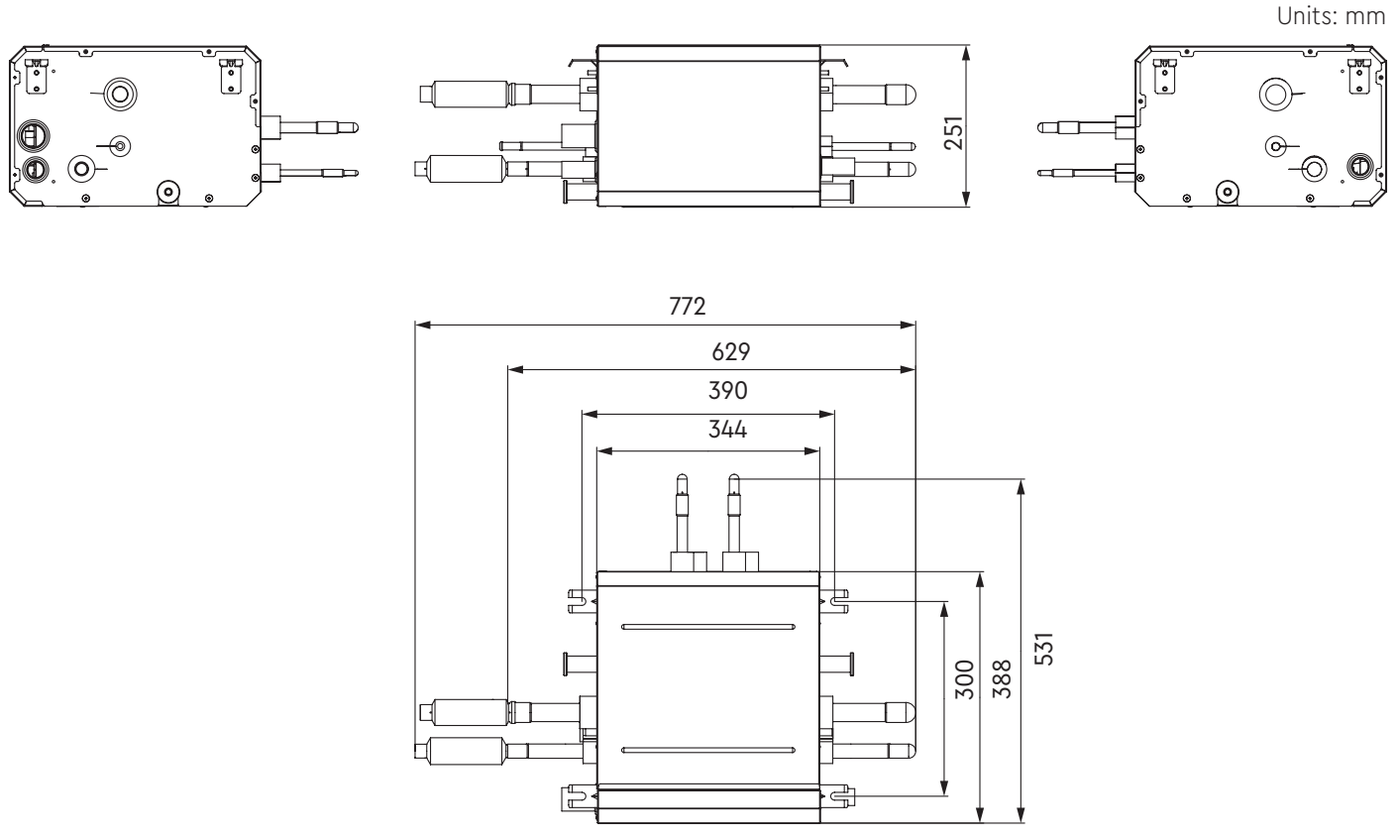
Units: mm



Overall dimensions and installation holes dimension

HR6BS2NK

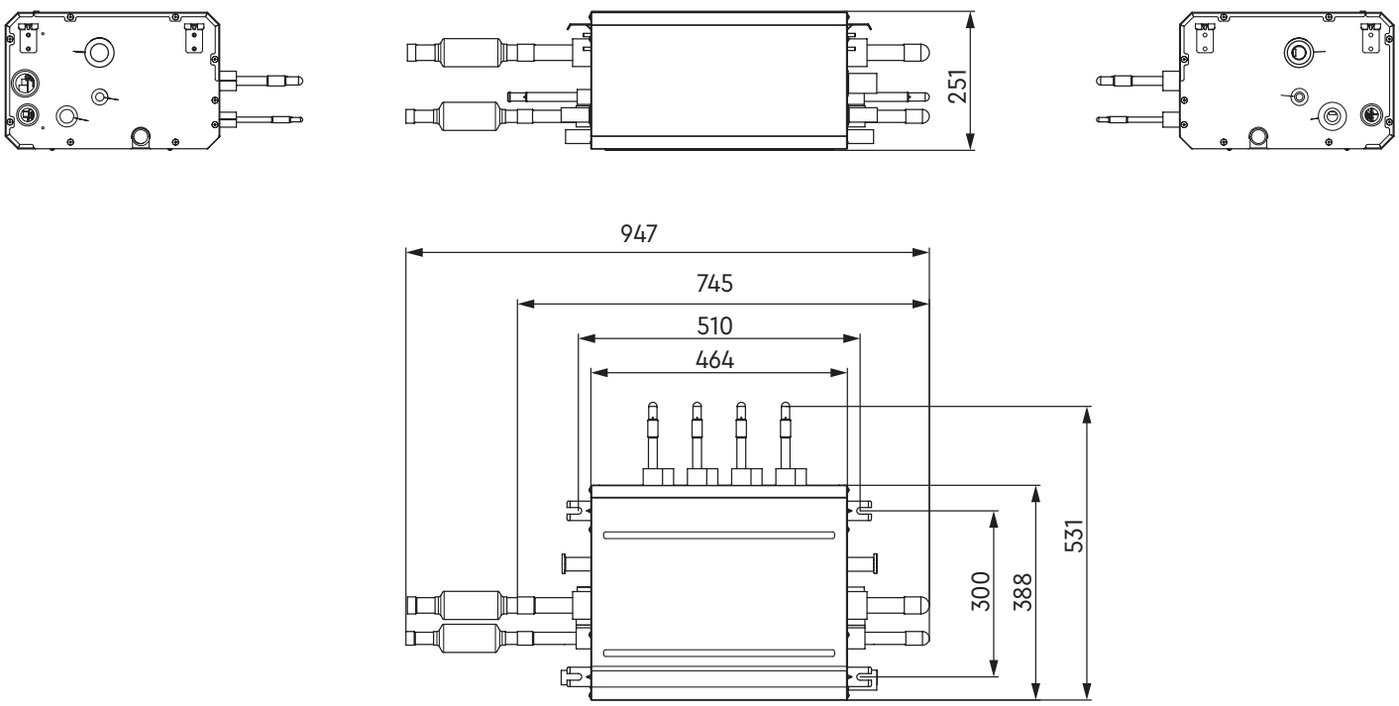
Units: mm



Overall dimensions and installation holes dimension

HR6BS4NK

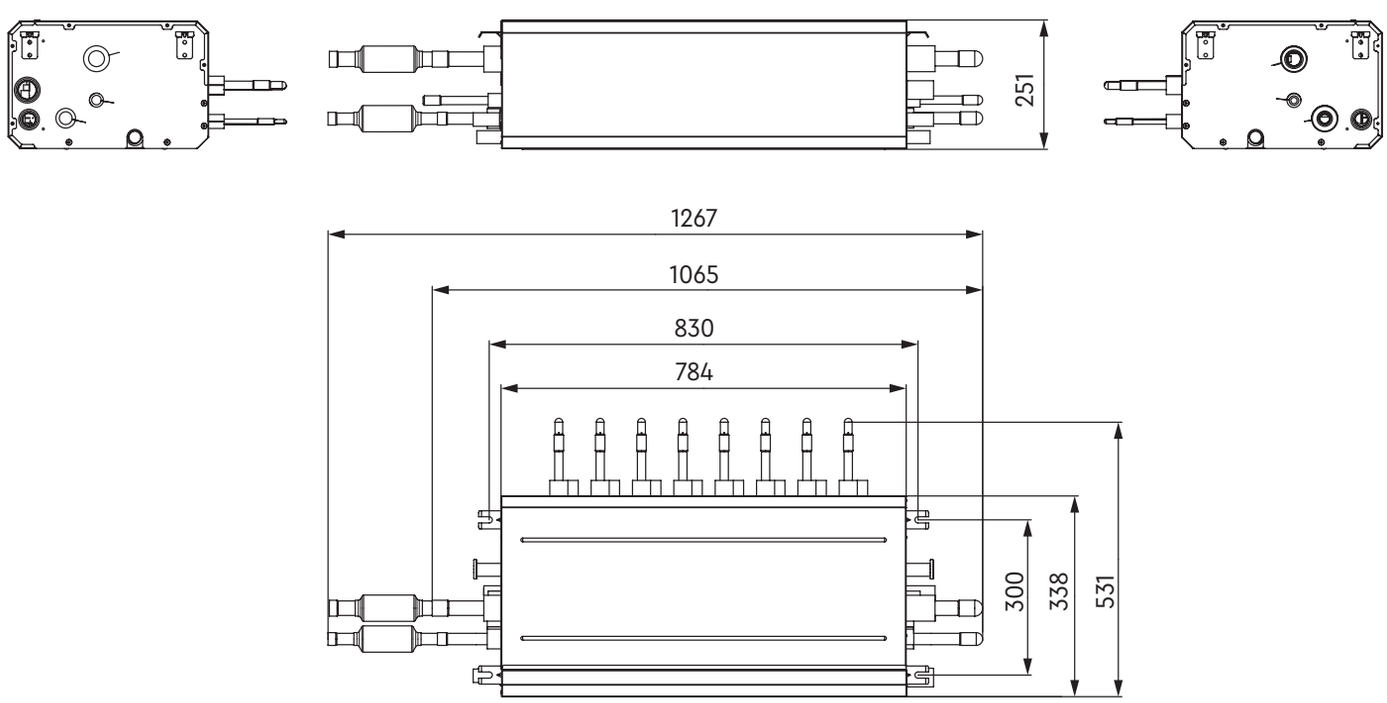
Units: mm



Overall dimensions and installation holes dimension

HR6BS8NK

Units: mm

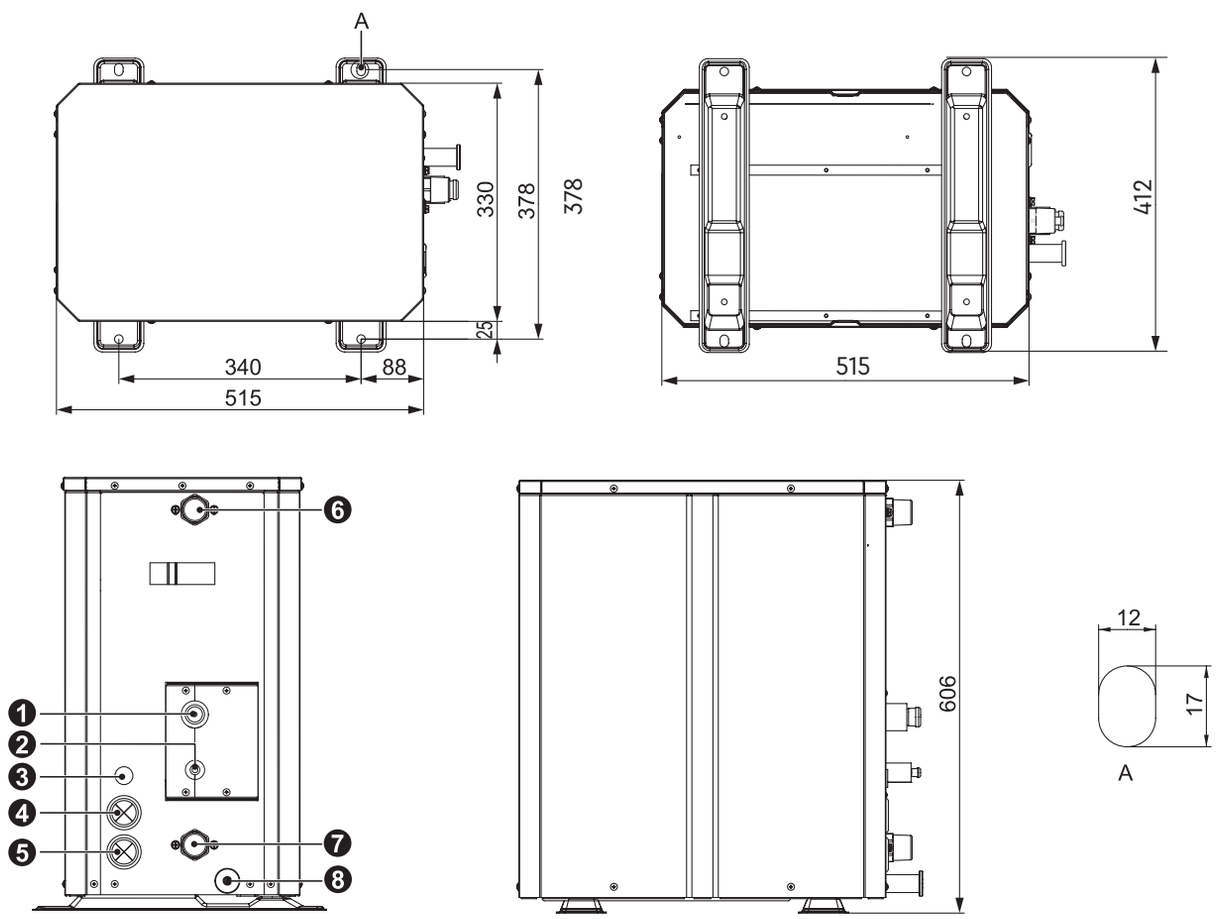


OVERALL DIMENSIONS OF HYDROBOXES CHV6 HR

Overall dimensions and installation holes dimension

HB6-16NK, HB6-30NK

Units: mm



1 – gas pipe
2 – liquid pipe
3, 4, 5 – holes for electrical and signal wires
6 – water outlet
7 – water inlet
8 – drainage

ELECTRICAL PARAMETERS OF OUTDOOR UNITS CHV6 HR

Model	Module combinations	Automatic switch (A) for each module	Minimum cross-sectional area of the power cable (section mm² × number of wires)
CHV6-H224NMX	-	25	2.5×5
CHV6-H280NMX	-	25	2.5×5
CHV6-H335NMX	-	25	4.0×5
CHV6-H400NMX	-	40	6.0×5
CHV6-H450NMX	-	40	6.0×5
CHV6-H504NMX	-	50	10.0×5
CHV6-H560NMX	-	50	10.0×5
CHV6-H615NMX	-	50	10.0×5
CHV6-H680NMX	280+400	25+40	2.5×5+6.0×5
CHV6-H730NMX	280+450	25+40	2.5×5+6.0×5
CHV6-H784NMX	280+504	25+50	2.5×5+10.0×5
CHV6-H840NMX	280+560	25+50	2.5×5+10.0×5
CHV6-H895NMX	280+615	25+50	2.5×5+10.0×5
CHV6-H950NMX	335+615	25+50	4.0×5+10.0×5
CHV6-H1015NMX	400+615	40+50	6.0×5+10.0×5
CHV6-H1065NMX	450+615	40+50	6.0×5+10.0×5
CHV6-H1119NMX	504+615	50+50	10.0×5+10.0×5
CHV6-H1175NMX	560+615	50+50	10.0×5+10.0×5
CHV6-H1230NMX	615+615	50+50	10.0×5+10.0×5
CHV6-H1290NMX	280+450+560	25+40+50	2.5×5+6.0×5+10.0×5
CHV6-H1345NMX	280+450+615	25+40+50	2.5×5+6.0×5+10.0×5
CHV6-H1400NMX	335+450+615	25+40+50	4.0×5+6.0×5+10.0×5
CHV6-H1455NMX	280+560+615	25+50+50	2.5×5+10.0×5+10.0×5
CHV6-H1510NMX	280+615+615	25+50+50	2.5×5+10.0×5+10.0×5
CHV6-H1565NMX	335+615+615	25+50+50	4.0×5+10.0×5+10.0×5
CHV6-H1630NMX	400+615+615	40+50+50	6.0×5+10.0×5+10.0×5
CHV6-H1680NMX	450+615+615	40+50+50	6.0×5+10.0×5+10.0×5
CHV6-H1734NMX	504+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-H1790NMX	560+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-H1845NMX	615+615+615	50+50+50	10.0×5+10.0×5+10.0×5
CHV6-H1905NMX	280+450+560+615	25+40+50+50	2.5×5+6.0×5+10.0×5+10.0×5
CHV6-H1959NMX	280+504+560+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-H2015NMX	280+560+560+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-H2070NMX	280+560+615+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-H2125NMX	280+615+615+615	25+50+50+50	2.5×5+10.0×5+10.0×5+10.0×5
CHV6-H2180NMX	335+615+615+615	25+50+50+50	4.0×5+10.0×5+10.0×5+10.0×5
CHV6-H2245NMX	400+615+615+615	40+50+50+50	6.0×5+10.0×5+10.0×5+10.0×5
CHV6-H2295NMX	450+615+615+615	40+50+50+50	6.0×5+10.0×5+10.0×5+10.0×5
CHV6-H2349NMX	504+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5
CHV6-H2405NMX	560+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5
CHV6-H2460NMX	615+615+615+615	50+50+50+50	10.0×5+10.0×5+10.0×5+10.0×5

CHV5 Max

CHV5 Max is the 5th generation of high performance non-modular VRF systems.

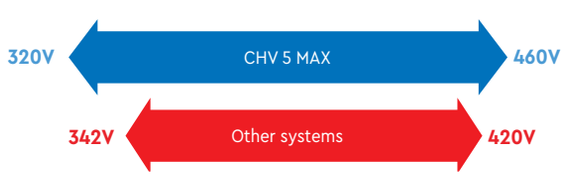
This line is represented by two models with a cooling capacity of 78.5 kW (28 HP) and 90 kW (32 HP). Thanks to its compact size and two high-performance inverter-controlled compressors, the CHV5 Mach confidently occupies the niche of low-cost, high-performance VRF systems.

A wide range of operation in cooling and heating mode, inverter DC motor control, subcooling control technology, intelligent defrost control, energy-saving modes and all other technological and functional solutions of the CHV5 modular series, which allows CHV5 Mach to be widely used in small and medium-sized office buildings, commercial centers and other public buildings.

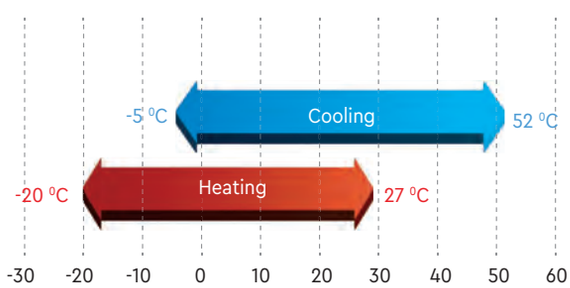
Maximum lengths of pipelines and height differences between units, m CHV5 Max		
Total pipe length		500
Pipe length from the ODU to the farthest IDU	**Physical**	165
	Equivalent	190
Equivalent length from the first branch to the farthest IDU		90
Difference in lengths between the distances from the first branvh to the farthest IDU and from the first branch to the nearest IDU		40
Height difference between ODU and IDU	**ODU is higher**	90
	ODU is lower	90
Height difference between IDUs		30

WIDE RANGE OF VOLTAGE AND WORKING MODES

The operating voltage range of the CHV5 system has been extended to 320–460V, which exceeds the national standard of 342–420V. This system will continue to operate normally even in places with unstable voltage.



The operating temperature of the outside air is extended to -5 °C ... 52 °C in the cooling mode and -20 °C ... 24 °C in the heating mode.



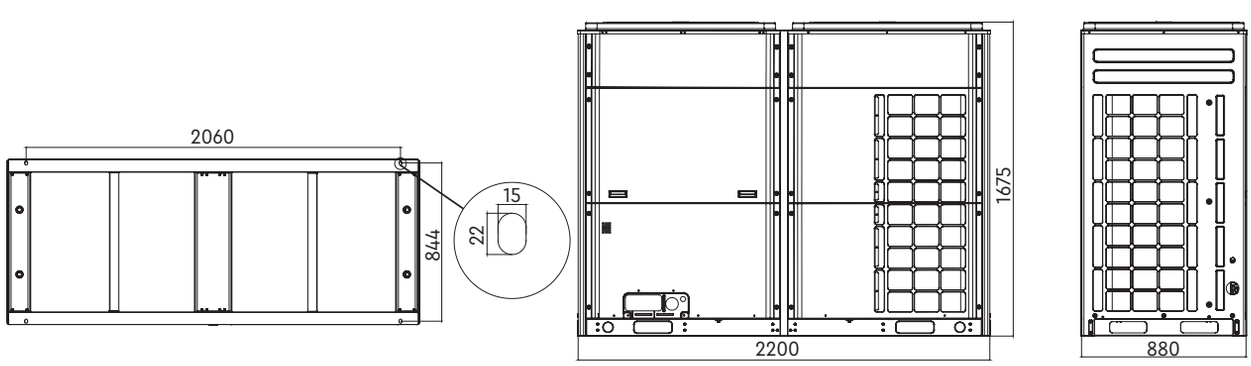
TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV5 MAX

Model			CHV-5S785MX	CHV-5S900MX
Cooling capacity		HP	28	32
Cooling capacity		kW	78.50	90.00
Heating capacity		kW	87.50	100.00
Air flow rate		m^3/h	26000	28000
Maximum static pressure of the fan		Pa	82	
Sound pressure (1 m, cooling)		dB(A)	65	
Power supply		V/Ph/Hz	380–415V / 3Ph / 50Hz	
Consumption	Cooling	kW	23.4	26.9
	Heating	kW	23	26
Current	Cooling	A	41.8	48.1
	Heating	A	41.1	46.5
Rated power		kW	31	40.00
Rated current		A	55.4	71.5
Automatic switch		A	63	80
Minimum cross-sectional area of the power cable (cross-section mm^2 × number of cores)		—	25×5	25×5
Compressor type		—	Inverter Scroll	
Quantity of compressors		pcs	2	
Refrigerant charge volume		kg	18.9	24
Maximum number of indoor units		pcs	46	53
Pipe diameter	Liquid line	mm	19.05	
	Gas	mm	31,8	
Dimensions (W×D×H)	Unit	mm	2000x880x1675	
	Package	mm	2267x952x1867	
Net/Gross weight		kg	500/535	535/565

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension
CHV-5S785MX, CHV-5S900MX

Units: mm



CHV5 Slim

Advanced DC inverter control technology increases the efficiency of the compressor

ALL DC inverter compressors and high-efficiency compression chambers are designed to reduce superheated refrigerant losses and increase the compression ratio of the main refrigerant flow. Compared to a low-pressure chamber, the compression ratio increases. The highly efficient permanent magnet synchronous motor is designed to improve performance compared to conventional inverter compressors.

Refrigerant cooling of boards

Refrigerant cooling of boards is used, which allows you to effectively and quickly reduce thermal radiation to 65 °C.

Traditional cooling of board

Refrigerant cooling of board

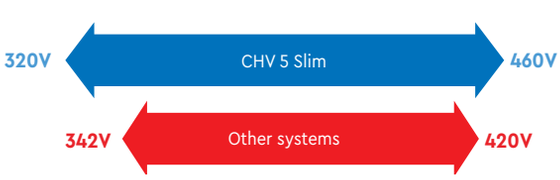
Increased refrigerant line for more flexible use

With the help of supercooling control technology obtained by the action of the subcooler, the CHV5 Slim indoor and outdoor unit can reliably work with a longer refrigerant line.

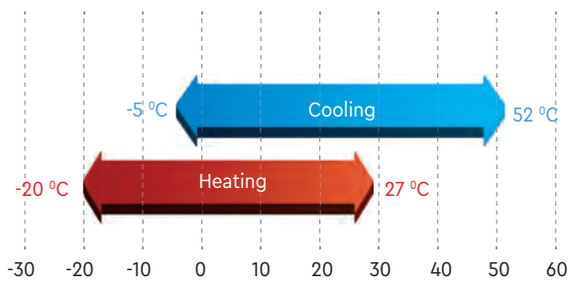
Maximum lengths of pipelines and height differences between units, m		
Total pipe length		300
Pipe length from the ODU to the farthest IDU	Physical	120
	Equivalent	150
The equivalent length from the first branch to the farthest IDU		40
Height difference between ODU and IDU	ODU is higher	50
	ODU is lower	40
Height difference between IDUs		15

A wide range of voltage and operating modes

The operating voltage range of the CHV 5 Slim system has been extended to 320–460 V, which exceeds the national standard of 342–420 V. This system will continue to work normally even in places with unstable voltage.



The operating temperature of the outside air is extended to -5 °C ... 52 °C in the cooling mode and -20 °C ... 24 °C in the heating mode.



TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV5 SLIM

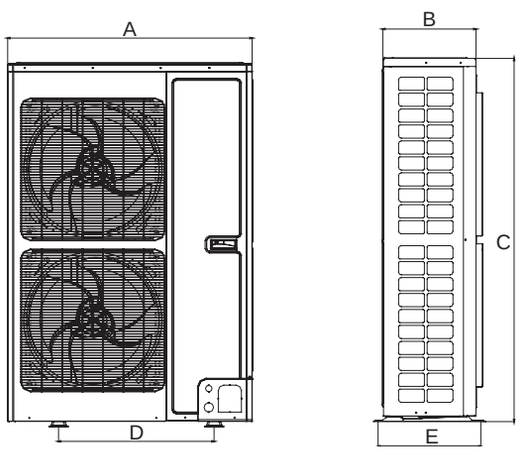
Model			CHV-5S224SNMX2	CHV-5S280SNMX2	CHV-5S335SNMX2
Cooling capacity		kW	22.4	28	33.5
Heating capacity		kW	22.4	28	33.5
Air flow rate		m^3/h	8000	11000	11000
Sound power level		dB(A)	78	80	81
Power supply		V/Ph/Hz	380–415V / 3Ph / 50Hz		
SEER	Duct IDU		6.85	6.36	7.16
	Cassette IDU		6.82	6.28	6.29
SCOP	Duct IDU		4.27	4.68	4.69
	Cassette IDU		4.31	4.53	4.16
Power consumption max.		kW	9.6	12.5	13.7
Max. power consumption		A	17.2	22.4	24.5
Automatic switch		A	20	25	32
Minimum cross-sectional area of the power cable (cross-section mm^2 × number of cores)			2.5×5	2.5×5	2.5×5
Compressor type		-	Rotary	Rotary	Rotary
Quantity of compressors		pcs	1		
Outdoor air temperature range	Cooling	°C	-5~52		
	Heating	°C	-20~27		
Refrigerant charge		-	R410A		
Refrigerant charge volume		kg	5.5	7.1	8
Maximum number of indoor units		pcs	13	17	20
Pipe diameter	Liquid line	mm	Ø9.52	Ø9.52	Ø12.7
	Gas	mm	Ø19.05	Ø22.0	Ø25.4
Dimensions (W×D×H)	Unit	mm	940x350x1430	940x486x1615	940x486x1615
	Package	mm	1038x433x1580	1038x477x1765	1038x477x1765
Net/Gross weight		kg	133/144	166/183	177/194

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

CHV-5S224SNMX2, CHV-5S280SNMX2, CHV-5S335SNMX2

Units: mm



	A	B	C	D	E
CHV-5S224SNMX2 CHV-5S280SNMX2 CHV-5S335SNMX2	940	320	1430	632	350

CHV5 Mini

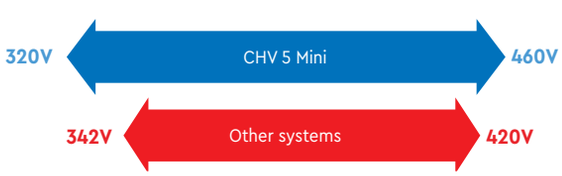
CHV5 Mini is the 5th generation of low productivity non-modular VRF systems.
This line is produced in single-phase and three-phase versions and has the following model series: 12kW (4HP), 14kW (5HP) and 16kW (6HP).
Implemented technological solutions:

- ALL DC inverter compressors;
- Technology of maximum torque adjustment with minimum current voltage;
- Low-frequency torque control technology;
- Stepless inverter DC fan motor;
- Highly effective digital power factor correction;
- Low level of acoustic parameters of the outdoor unit;
- Improved intelligent defrosting mode;
- Non-commutative oil return technology during heating;
- Technology of starting a closed loop;
- Improved high-frequency transformer, with more stable voltage;
- Less weight and dimensions compared to a conventional VRF system of the same capacity.

Maximum lengths of pipelines and height differences between units, m		
Outdoor unit index		120–160
Total pipe length		300
Pipe length from the ODU to the farthest IDU	**Physical**	120
	Equivalent	150
The equivalent length from the first branch to the farthest IDU		40
Height difference between ODU and IDU	**ODU is higher**	50
	ODU is lower	40
Height difference between IDUs		15

A wide range of voltage and operating modes

The operating voltage range of the CHV5 system has been extended to 320–460V, which exceeds the national standard of 342–420V. This system will continue to operate normally even in places with unstable voltage.



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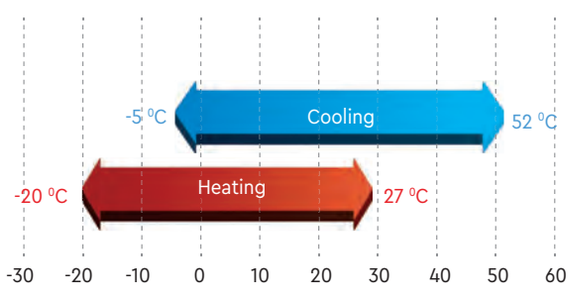


TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV5 MINI

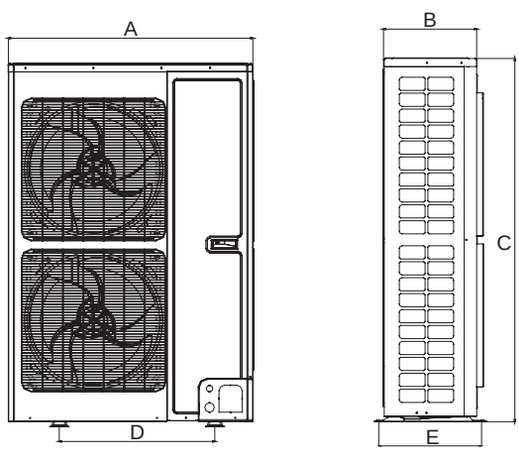
Model			CHV-5S120NK2	CHV-5S140NK2	CHV-5S160NK2	CHV-5S120NM2	CHV-5S140NM2	CHV-5S160NM2
Cooling capacity		kW	12.1	14	16	12.1	14	16
Heating capacity		kW	12.1	14	16	12.1	14	16
Air flow rate		m³/h	6000	6300	6600	6000	6300	6600
Sound power level		dB(A)	74	75	76	74	75	76
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			380-415V / 3Ph / 50Hz		
SEER	Cassette IDU		6.7	6.88	6.96	6.7	6.88	6.96
	Duct IDU		6.7	6.79	6.55	6.7	6.79	6.55
SCOP	Cassette IDU		3.97	4.24	4.04	3.97	4.24	4.04
	Duct IDU		3.93	4.24	4.06	3.93	4.24	4.06
Max. power consumption		kW	5.7	6.3	6.8	6.2	6.7	7.02
Max. current consumption		A	28.8	31.8	34.3	11.1	12	12.5
Automatic switch		A	32	40		16		
Minimum cross-sectional area of the power cable (cross-section mm² × number of cores)		-	3x4	3x6		5x1.5		
Compressor type		-	Inverter Rotary					
Quantity of compressors		pcs.	1					
Outdoor air temperature range	Cooling	°C	-5~52					
	Heating	°C	-20~27					
Refrigerant type		-	R410A					
Refrigerant charge volume		kg	3.3			3.3		
Maximum number of indoor units		pcs.	7	8	9	7	8	9
Pipe diameter	Liquid line	mm	Ø 9.52			Ø 9.52		
	Gas	mm	Ø 15.9		Ø 19.05	Ø 15.9		Ø 19.05
Dimensions (W×D×H)	Unit	mm	900x378x1345					
	Package	mm	998x458x1515					
Net/Gross weight		kg	112/123			122/133		

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

CHV-5S120NK2, CHV-5S140NK2, CHV-5S160NK2, CHV-5S120NM2, CHV-5S140NM2, CHV-5S160NM2

Units: mm



	A	B	C	D	E
CHV-5S120NK2 CHV-5S140NK2 CHV-5S160NK2 CHV-5S120NM2 CHV-5S140NM2 CHV-5S160NM2	900	340	1345	572	378

CHV5 Compact

Advanced DC inverter control technology increases the efficiency of the compressor

ALL DC inverter compressors and highly efficient compression chambers are designed to reduce the loss of superheated refrigerant and increase the compression ratio of the main refrigerant flow. Compared to a low-pressure chamber, the compression ratio increases. The highly efficient permanent magnet synchronous motor is designed to improve performance compared to conventional inverter compressors.

Maximum lengths of pipelines and height differences between units, m

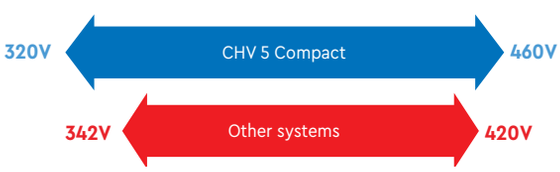
		Compact	
Outdoor unit index		120	140
Total pipe length		250	300
Pipe length from the ODU to the farthest IDU	Physical	100	120
	Equivalent	120	150
The equivalent length from the first branch to the farthest IDU		40	40
Height difference between ODU and IDU	ODU is higher	30	50
	ODU is lower	30	40
Height difference between IDUs		10	15

Comparison of CHV5 Compact with a household multi-split system for 12 kW

Model		CHML-U42RK5	CHV-5S120NK1
Cooling capacity	kW	2.6–12.0	1.2–12.1
Cooling capacity	kW	2.6–14.5	1.3–13.0
EER/COP	kW/kW	3.7/4.1	3.5/4.8
Sound pressure level	dB(A)	60	57
Maximal number of indoor units (IDU)	in	5	6
Maximum pipe length from IDU to ODU	m	25	120
Total pipe length	m	75	250
Height difference between IDUs	m	7,5	30
Unit dimensions (WxDxH)	mm	1087x440x1103	980x360x790

A wide range of voltage and operating modes

The operating voltage range of the CHV5 system has been extended to 320–460V, which exceeds the national standard of 342–420V. This system will continue to operate normally even in places with unstable voltage.



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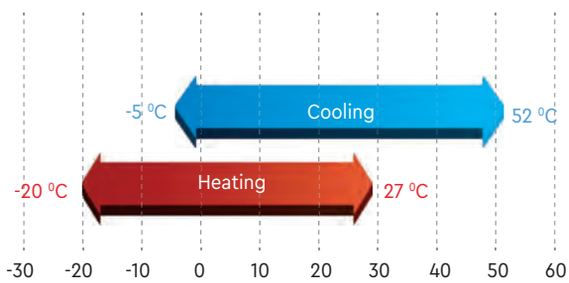


TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV5 COMPACT

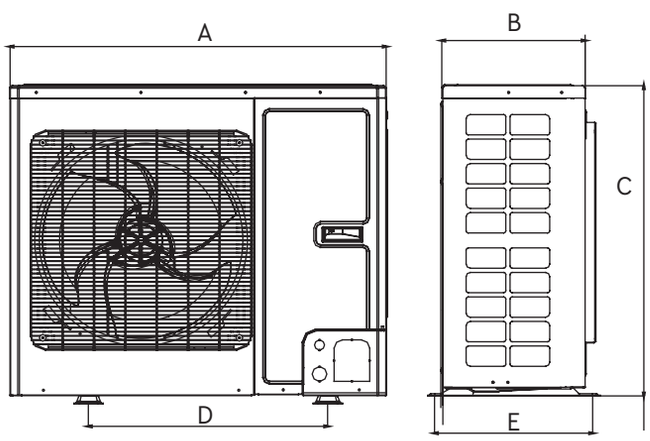
Model			CHV-5S120NK1	CHV-5S140NK1
Cooling capacity		kW	12.1	14.1
Heating capacity		kW	12.1	14.1
Air flow rate		m³/h	4400	6300
Sound power level		dB(A)	75	77
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz	
SEER	Cassette IDU		6.11	5.85
	Duct IDU		5.89	5.73
SCOP	Cassette IDU		3.87	3.74
	Duct IDU		3.99	3.86
Max. power consumption		kW	4.5	6.3
Max. current consumption		A	24	31.8
Automatic switch		A	25	40
Minimum cross-sectional area of the power cable (cross-section mm² × number of cores)		-	3x2.5	3x6
Compressor type		-	Inverter Rotary	
Quantity of compressors		pcs	1	
Outdoor air temperature range	Cooling	°C	-5~52	
	Heating	°C	-20~27	
Refrigerant type		-	R410A	
Refrigerant charge volume		kg	2	5
Maximum number of indoor units		pcs	6	8
Pipe diameter	Liquid line	mm	Ø 9.52	
	Gas	mm	Ø 15.9	
Dimensions (W×D×H)	Unit	mm	980x395x790	940x486x820
	Package	mm	1097x477x937	1023x563x973
Net/Gross weight		kg	85/95	110/120

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

CHV-5S120NK1, CHV-5S140NK1

Units: mm



	A	B	C	D	E
CHV-5S120NK1	980	360	790	650	395
CHV-5S140NK1	940	460	820	610	486

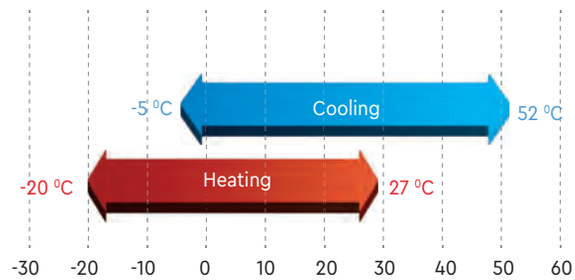
Energy efficiency technologies & environmental protection

Photovoltaic power generation system is the power generation element in Photovoltaic Direct-driven Inverter Multi VRF System. The clean energy provided by this power generation system will supply power to the main unit and deliver residual power to the grid through converter.

CHV Solar Mini

- By adopting advanced photovoltaic direct-driven technology, the system can achieve power generation by utilizing solar power while consuming electricity and ensure utilization of photovoltaic power in priority;
- Compared with traditional photovoltaic system, energy wastage during multiple commutation of alternating current and direct current is eliminated, with energy efficiency improved by 6 % – 8 % and photovoltaic utilization ratio up to 99 %;
- Besides, the innovative MPPT (Maximum Power Point Tracking) technology can track and control the maximum power point status of photovoltaic power generation, so as to achieve maximum utilization of photovoltaic power.

The operating temperature of the outside air is extended to - 5 °C ... 52 °C in the cooling mode and - 20 °C ... 24 °C in the heating mode.

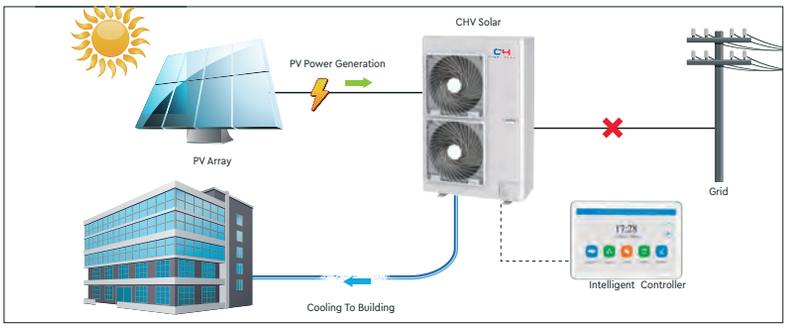


TECHNICAL CHARACTERISTICS OF OUTDOOR UNITS CHV SOLAR MINI

Model			CHV-PV120NK	CHV-PV140NK	CHV-PV160NK
Cooling capacity		HP	4	5	6
Cooling capacity		kW	12.1	14	16
Max. heating capacity		kW	14	16	18
SEER	Duct IDU	kW/kW	6.59	6.55	6.51
	Cassette IDU	kW/kW	6.65	6.64	6.52
SCOP	Duct IDU	kW/kW	3.94	4.22	4.38
	Cassette IDU	kW/kW	3.82	3.77	4.01
Max. power input		kW	5.9	6.5	7
Max. current input		A	29.8	32.8	35.5
Max. connected IDU			7	8	9
Circulating air volume		m^3/h	3300	3850	4400
Sound power level		dB(A)	75	75	77
Refrigerant charge volume		kg	R410A/3.3		
Energy efficiency level		Level	1	1	1
Compressor			QXFS-F428Zx050E		
PV input voltage range		V	120–400		
Isc PV		A	15/15		
Max. continuous input current		A	12.5/12.5		
Max. PV input power		kW	3 kW*2		
MPPT voltage range		V	100–360		
Rated AC voltage			220–240Vac/50Hz/1Ph		
Operating voltage range			180–260Vac		
Operating frequency range		Hz	47–52		
Power factor (full load)			0.99		
Unit Dimensions (WxDxH)		mm	900×340×1345		
Package Dimensions (WxDxH)		mm	998×458×1500		
Suitable climite			T1		
Connection pipe	Gas	mm	Ø 15.9		
	Liquid	mm	Ø 9.52		
	Connection Method		Bell mouth connection		
Net weight		kg	124		
Gross weight		kg	135		

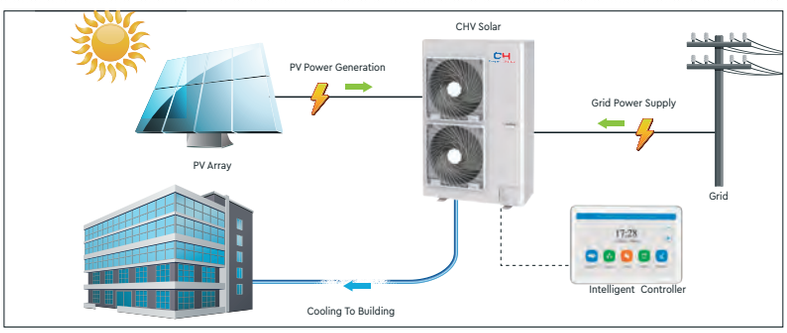
PHOTOVOLTAIC AIR CONDITIONING MODE

When photovoltaic generated power is equal to the air conditioner consumption demand, the air conditioner consumes photovoltaic power only.



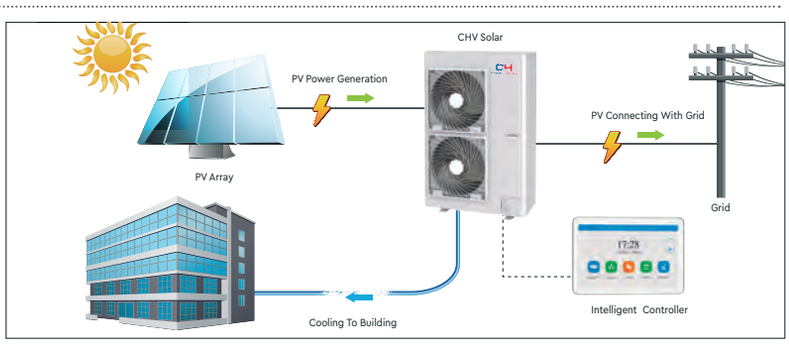
PHOTOVOLTAIC AIR CONDITIONING & POWER CONSUMPTION MODE

When photovoltaic generated power is less than the air conditioner consumption demand, air conditioner will draw power from the grid in addition to the photovoltaic power generation system.



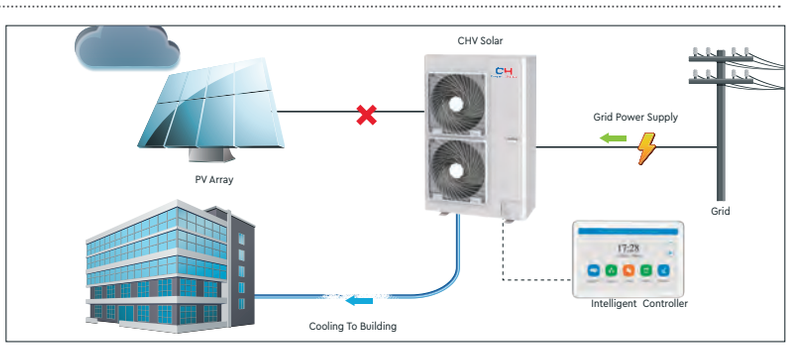
PHOTOVOLTAIC AIR CONDITIONING & POWER GENERATION MODE

When photovoltaic generated power is more than air conditioner consumption demand, photovoltaic power will give priority to the air conditioner, and then the residual power will be sent to the grid.



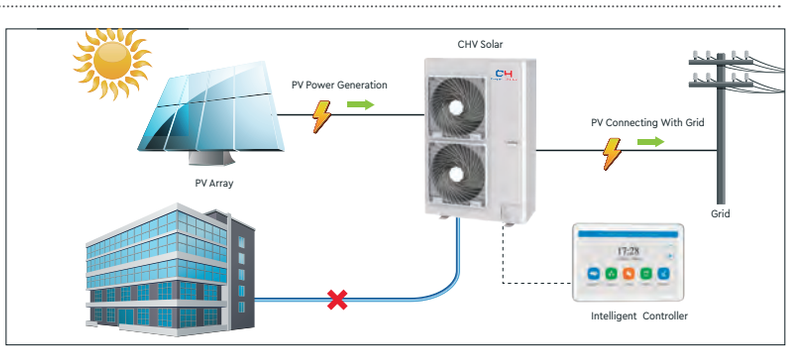
AIR CONDITIONING MODE

When photovoltaic power generation system doesn't work, the system is powered by commercial power. In this case, the system equals to an inverter VRF system.



PHOTOVOLTAIC POWER GENERATION MODE

When the air conditioner stops operation, the power generated by the photovoltaic power generation system is sent to the grid. In this case, the system equals to a power station.



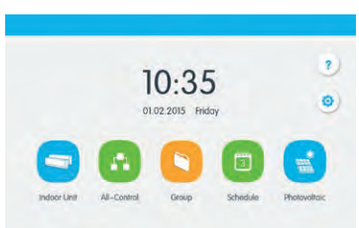
INTELLIGENT MANAGEMENT SYSTEM

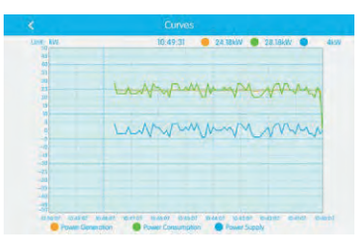
The centralized controller for power generation and consumption management is the brain of Photovoltaic Direct-driven Inverter Multi VRF System. It adopts the perfect combination of multi VRF intelligent network system and power generation and consumption management system based on CAN communication technology, so as to achieve intelligent management of multi VRF system.

CE55-24 F(C)

Centralized Controller for Power Generation and Consumption Management: One Screen for Convenient Operation

Centralized controller for power generation and consumption management combines photovoltaic power generation, unit power consumption and grid power supply for power management with centralized control of unit, achieving intelligent management of multi VRF system. Photovoltaic parameter inquiry and real-time display of power generation and consumption data are available. You can see photovoltaic power generation, unit power consumption, monthly electricity consumption and yearly electricity consumption. Power curve of the system is shown in real time and updated dynamically.



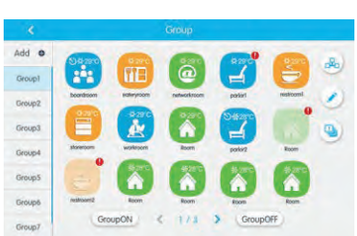


Reliable Multi VRF Intelligent Network System Based on CAN Bus Technology

The multi VRF intelligent network system adopts Cooper and Hunter patented multi VRF CAN non-polar bus communication technology, which features high stability, convenient networking and high communication efficiency.

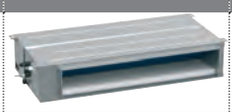
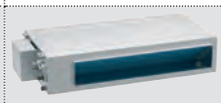
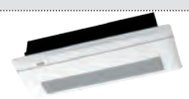
Intelligent Management of Air Conditioning System for Centralized Management and Convenience

Centralized controller for power generation and consumption management provides intelligent control management of the air conditioner of photovoltaic multi VRF system, with complete functions and convenient operation.



Indoor units CHV

Model range of indoor units

Type		Labeling		15	18	22	25	28	32	36
Duct	low pressure	CHV-5SD_NK3			○	●	○	●	○	●
	high pressure	CHV-5SDVH_NK2				●	○	●	○	●
	high productivity	CHV-5SDH_NK								
	fresh air processing	CHV-5SA_								
Cassette	single flow	CHV-5SCW_NK				●		●		●
	two-flow	CHV-5SCT_NK						○		○
	with circular distribution	CHV-5SC_NK2				○		●		●
	compact with circular distribution	CHV-5SCC_NK2		○	○	●		●		●
Wall-mounted		CHV-5SW_NK2		●	●	●		●		●
Floor-ceiling		CHV-5SF_NK2						●		●
Console		CHV-5SK_NK				●		●		●
Columned		CHV-5SFS_NK								
Hidden installation		CHV-5SFC_NK				○		○		○
AHU kit*		CHV-AK_NK3								●

* Note. Table shows only the model range, the AHU kit has a performance switch, extending the power range of each model.

● – warehouse position

○ – to order

	40	45	50	56	63	71	80	90	100	112	125	140	160	180	224	250	280	450	560
	○	●	○	●	○	●	○												
	○	●	○	●	●	●	●	●	●	○	●	●	●	○					
															○		○		
											○	○			○	○	○	○	
		●	●	○															
		○	○	○	○	○	○	○	○	○	○	○	○						
		●	○	●	●	●	●	●	●	○	●	●	●						
		●	○	●															
		●	○	●	●	●	●	●	●										
			●	○	●	●		●		●	●	●	●						
		●	●																
									○			○							
		○		○	○	○													
						●						●					●		●

DUCT TYPE INDOOR UNITS

Low pressure duct type indoor unit

- Performance range 1.8–8 kW.
- External static pressure can reach 30 Pa.
- Drainage pump as standard equipment with a lifting height of up to 1.2 m.
- The height of the block is 200 mm.

High pressure duct type indoor unit

- Performance range 2.2 – 18 kW.
- External static pressure can reach 200 Pa, depends on the model.
- Drainage pump as standard equipment with a lifting height of up to 1.2 m.
- Additional electrostatic fiber filter PM 2.5.
- Static pressure has 9 levels of adjustment, which is convenient for engineering applications.

High performance indoor unit

- Productivity range 22.4, 28 kW.
- DC inverter technology.
- Direct evaporative cooling.
- External static pressure can reach 200 Pa.

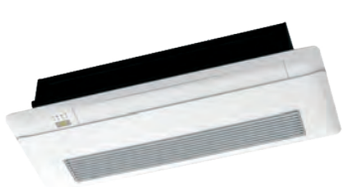
Internal fresh air processing unit

- Performance range 12.5–45 kW.
- DC inverter technology.
- Direct evaporative cooling.
- Air conditioning and ventilation – two in one.

CASSETTE TYPE INDOOR UNITS

Single-flow cassette unit

- Performance range 2.2 – 5.6 kW.
- Ultra-thin body of 178 mm.
- Removable grill with durable filter.
- Standard equipment drainage pump with a lifting height of 1.2 m.
- Optimal for rooms with a height of up to 3.5 m.



Two-flow cassette unit

- Performance range 2.8 – 16 kW.
- Suitable for narrow spaces.
- Standard equipment drainage pump with a lifting height of 1.2 m.
- Optimal panel design.

Internal cassette unit with circular air distribution

- Performance range 2.2 – 16 kW.
- 360 degree air supply.
- Drainage pump as standard equipment with a lifting height of up to 1.2 m.

Compact cassette indoor unit with circular air distribution

- Performance range 1.5–5.6 kW.
- Independent control of oscillations of blinds.
- 360 degree air supply.
- Silent DC drain pump.
- DC fan motor design for increased energy efficiency.
- Completely new fan impeller design that reduces noise during operation.
- Compact design for easier installation.

WALL TYPE INDOOR UNIT

- Performance range 1.5 – 10 kW.
- Highly efficient and energy-saving DC motor.
- Durable and washable filter, removable panel.
- Wall mounting, beautiful panel, even air flow and two-way air supply up and down.

INDOOR UNIT OF FLOOR-CEILING TYPE

- Performance range 2.8 – 16 kW.
- Universal installation – on the floor or ceiling.
- Mixing of fresh air is possible.

CONSOLE TYPE INDOOR UNIT

- Performance range 2.2 – 5 kW.
- Uniform distribution of temperature, high level of comfort.
- The unit has a switch to change the direction of air supply only up or up and down (volumetric air supply).

COLUMN TYPE INDOOR UNIT

- Performance range 10 – 14 kW.
- Oscillations of blinds up and down, long length of supply air stream.
- Durable and washable filter, replaceable panel.
- Thanks to the I-feel function, the unit can determine the temperature on the spot using the temperature sensor in the infrared remote control, thus increasing the comfort of the air environment (YAP1F remote controller is required).

HIDDEN MOUNT INDOOR UNIT

- Performance range 2.2 – 7.1 kW.
- Ultra-thin body of the device, only 200 mm thick.
- Different degrees of static pressure for regulation; the highest static pressure can reach 60 Pa.
- Flexible installation, variable design of support legs for different heights, two options for air intake – from below or from the side.

AHU KIT

(kit for connecting to ventilation units with a direct cooling heat exchanger)

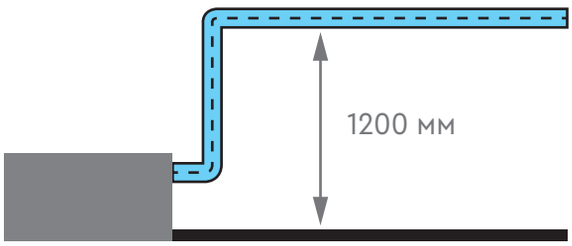
- Performance range 2.8–252 kW.
- A ready-to-use kit consisting of a control unit, an EEV valve, a control panel and temperature sensors.
- The ability to connect to a third-party controller through analog and discrete inputs/outputs.

Low pressure duct type indoor unit

The low static pressure duct type indoor unit uses a DC motor, multi-stage regulation of air flow and static pressure, and has flexible and convenient installation. All this meets the requirements for various construction objects, such as hotels, office buildings, shopping centers, apartments, cottages, etc.

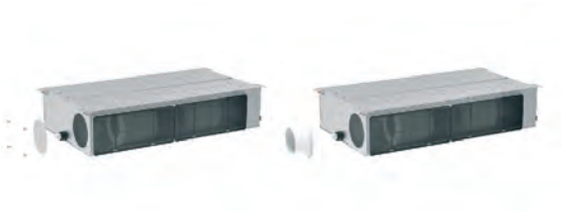
Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.



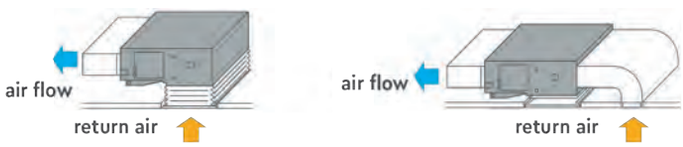
Fresh air supply function

An air duct can be connected to the unit to supply fresh air to the room.



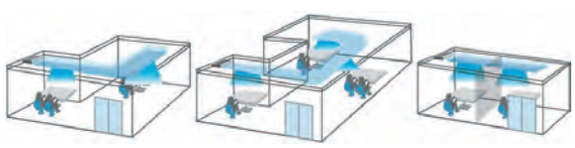
Flexible installation

According to the location of the unit, you can choose one of two options for air intake, from below or from the side.



Adjusting the pressure of the fan

The highest static pressure can be up to 30 Pa. From the control panel, you can change the static pressure of the fan according to the characteristics of the air duct network. 5 levels of external static pressure adjustment are available.



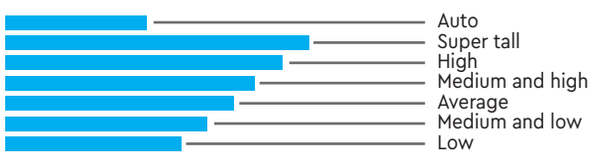
Wide range of air flow adjustment

The DC motor has 7 levels of air flow regulation. Also, the unit can reduce the noise level, set the automatic quiet mode of the indoor unit through the wired controller, and also turn on the automatic quiet mode according to the room temperature. The unit's motor can be set to maximum power for rapid cooling/heating and reaching the required temperature.

DC motor, low noise

The brushless DC motor provides smooth speed control and can set an automatic quiet mode via a wired controller to reduce noise.

7 air supply modes



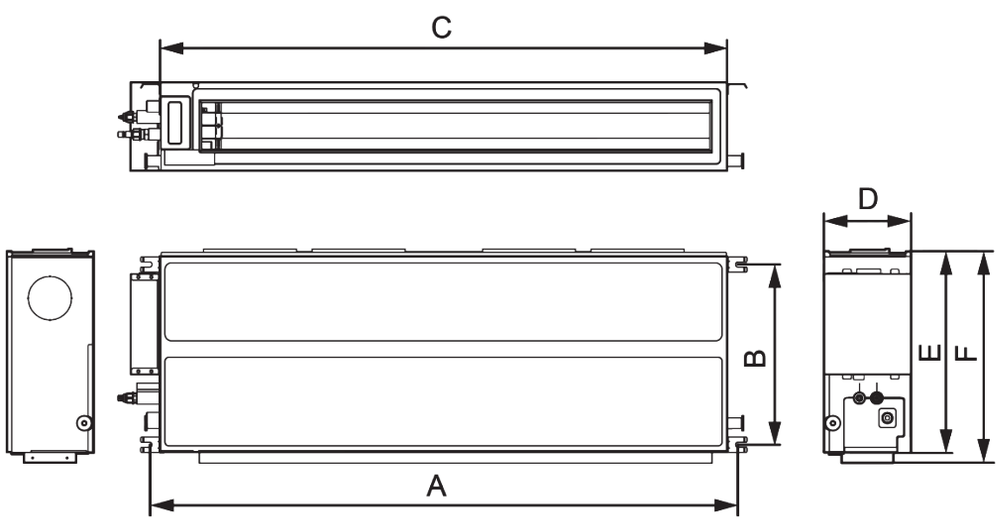
TECHNICAL CHARACTERISTICS

Model			CHV-5SD18NK3	CHV-5SD22NK3	CHV-5SD25NK3	CHV-5SD28NK3
Cooling capacity		kW	1.8	2.2	2.5	2.8
Heating capacity		kW	2.2	2.5	2.8	3.2
Air flow rate		m^3/h	450/350/200	450/350/200	450/350/200	450/350/200
Nominal fan pressure		Pa	15			
Fan pressure range		Pa	0–30			
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz			
Power consumption		W	28	28	28	28
Rated current		A	0.2	0.2	0.2	0.2
Fuse current		A	6			
Sound pressure level		dB(A)	30/25/22	30/25/22	30/25/22	30/25/22
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	9.52	9.52
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	710x462x200	710x462x200	710x462x200	710x462x200
Package dimensions (DxWxH)		mm	1005x565x260	1005x565x260	1005x565x260	1005x565x260
Net/Gross weight		kg	18.5/23.5	18.5/23.5	18.5/23.5	18.5/23.5

Model			CHV-5SD32NK3	CHV-5SD36NK3	CHV-5SD40NK3	CHV-5SD45NK3
Cooling capacity		kW	3.2	3.6	4	4.5
Heating capacity		kW	3.6	4	4.5	5
Air flow rate		m^3/h	550/400/300	550/400/300	750/550/400	750/550/400
Nominal fan pressure		Pa	15			
Fan pressure range		Pa	0–30			
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz			
Power consumption		W	37	37	40	40
Rated current		A	0.3	0.3	0.3	0.3
Fuse current		A	6			
Sound pressure level		dB(A)	31/27/25	31/27/25	33/29/27	33/29/27
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35
	Gas	mm	12.7	12.7	12.7	12.7
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	710x462x200	710x462x200	1010x462x200	1010x462x200
Package dimensions (DxWxH)		mm	1005x565x260	1005x565x260	1305x565x260	1305x565x260
Net/Gross weight		kg	19/24	19/24	24/30	24/30

Model			CHV-5SD50NK3	CHV-5SD56NK3	CHV-5SD63NK3	CHV-5SD71NK3	CHV-5SD80NK3
Cooling capacity		kW	5	5.6	6.3	7.1	8
Heating capacity		kW	5.6	6.3	7.1	8	9
Air flow rate		m³/h	750/550/400	850/700/550	850/700/550	1100/850/650	1250/1100/900
Nominal fan pressure		Pa	15				
Fan pressure range		Pa	0–30				
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz				
Power consumption		W	40	55	55	55	55
Rated current		A	0.3	0.4	0.4	0.5	0.5
Fuse current		A	6				
Sound pressure level		dB(A)	33/29/27	35/31/29	35/31/29	37/32/30	40/35/31
Pipe diameter	Liquid line	mm	6.35	9.52	9.52	9.52	9.52
	Gas	mm	12.7	15.9	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5				
Unit dimensions (DxWxH)		mm	1010x462x200	1010x462x200	1010x462x200	1310x462x200	1310x462x200
Package dimensions (DxWxH)		mm	1305x565x260	1305x565x260	1305x565x260	1605x565x260	1605x565x260
Net/Gross weight		kg	24/30	25/31	25/31	31/37.5	

OVERALL DIMENSIONS



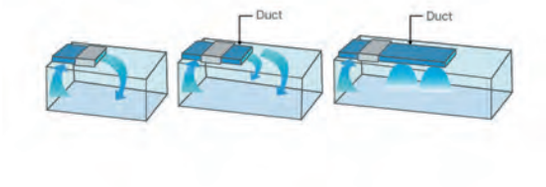
Model	A	B	C	D	E	F
CHV-5SD18~36NK3	760	415	710	200	462	486
CHV-5SD40~63NK3	1060		1010			
CHV-5SD71~80NK3	1360		1310			

Overall dimensions and installation holes dimension

Units: mm

High static pressure duct type indoor unit

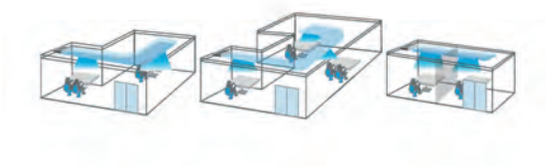
High static pressure channel-type unit with large air flow, a wide range of static pressure adjustment up to 200 Pa. It is used for duct networks where it is necessary to supply air over long distances, such as hotels, office buildings, shopping centers, industrial premises.



Adjusting the pressure of the fan

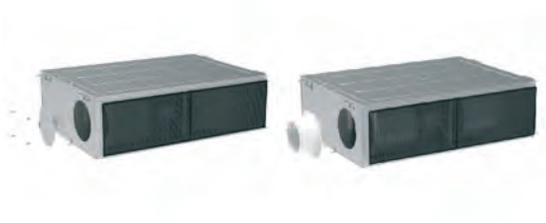
From the control panel, you can change the static pressure of the fan according to the characteristics of the air duct network. 9 levels of external static pressure adjustment are available.
The highest static pressure can reach 200Pa.*

* Note. Depends on the model.



Air supply over long distances

Support of long-distance air supply for servicing large rooms and meeting requirements for complex room planning.

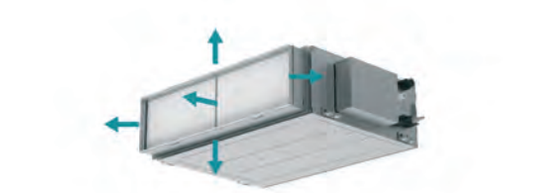


Fresh air supply function

An air duct can be connected to the unit for supplying fresh air.

Highly efficient filtration

An additional optional high-efficiency filter can provide filtration from fine PM2.5 particles, increasing the sanitary and hygienic condition of the indoor air environment.

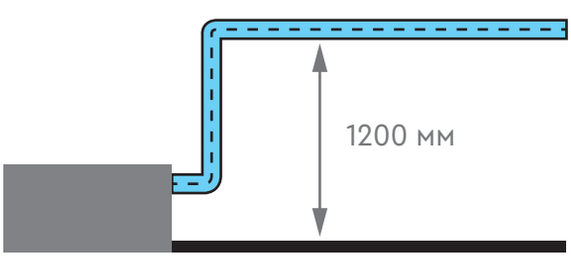


New design of filter attachment

The filter can be removed/placed in 5 different directions. The arrow in the figure shows the possible directions for removing the filter.

Convenient maintenance of the electrical part

The design of the external hanging electrical box makes maintenance more convenient.



Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.

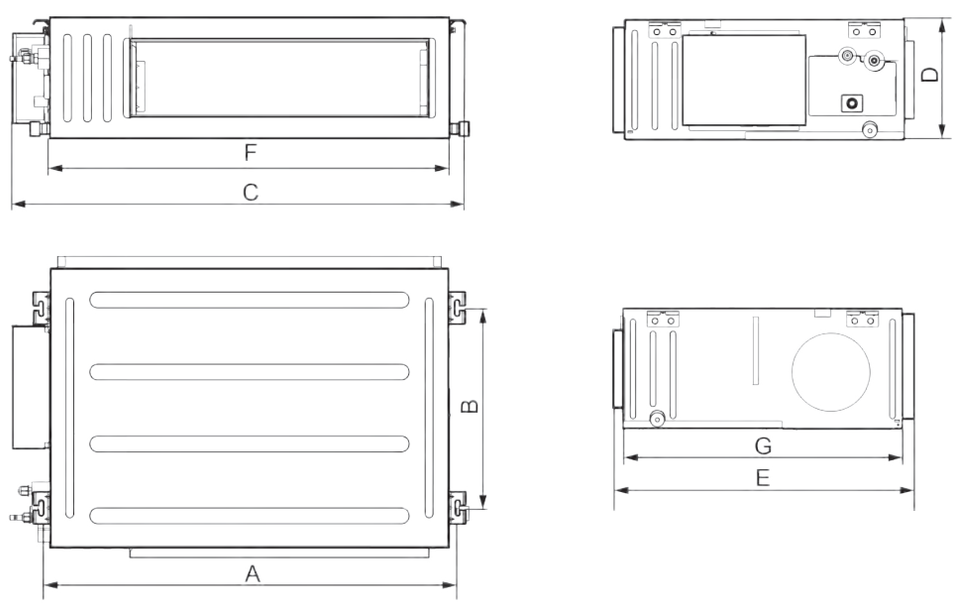
TECHNICAL CHARACTERISTICS

Model			CHV-5S DVH22NK2	CHV-5S DVH25NK2	CHV-5S DVH28NK2	CHV-5S DVH32NK2	CHV-5S DVH36NK2	CHV-5S DVH40NK2	CHV-5S DVH45NK2
Cooling capacity		kW	2.2	2.5	2.8	3.2	3.6	4	4.5
Heating capacity		kW	2.5	2.8	3.2	3.6	4	4.5	5
Air flow rate		m^3/h	550/480/400	550/480/400	550/480/400	600/500/420	600/500/420	850/700/600	850/700/600
Nominal fan pressure		Pa	50						
Fan pressure range		Pa	0–80						
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz						
Power consumption		W	50	50	50	50	50	100	100
Rated current		A	0.4	0.4	0.4	0.4	0.4	0.8	0.8
Fuse current		A	6	6	6	6	6	6	6
Sound pressure level		dB(A)	35/31/29	35/31/29	35/31/29	36/33/30	36/33/30	40/36/32	40/36/32
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	9.52	12.7	12.7	12.7	12.7
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5						
Unit dimensions (DxWxH)		mm	700×700×300						
Package dimension (DxWxH)		mm	894×805×345						
Net/Gross weight		kg	30.5/36					31.5/37	

Model			CHV-5S DVH50NK2	CHV-5S DVH56NK2	CHV-5S DVH63NK2	CHV-5S DVH71NK2	CHV-5S DVH80NK2	CHV-5S DVH90NK2
Cooling capacity		kW	5	5.6	6.3	7.1	8	9
Heating capacity		kW	5.6	6.3	7.1	8	9	10
Air flow rate		m^3/h	850/700/600	1000/800/700	1000/800/700	1250/1050/950	1250/1050/950	1800/1450/1250
Nominal fan pressure		Pa	50	90				
Fan pressure range		Pa	0–80	0–200				
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz					
Power consumption		W	100	105	105	110	110	170
Rated current		A	0.8	0.8	0.8	0.9	0.9	1.4
Fuse current		A	6	6	6	6	6	6
Sound pressure level		dB(A)	40/36/32	40/36/32	40/36/32	40/36/32	40/36/32	42/38/34
Pipe diameter	Liquid line	mm	6.35	9.52	9.52	9.52	9.52	9.52
	Gas	mm	12.7	15.9	15.9	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5					
Unit dimensions (DxWxH)		mm	700×700×300	1000×700×300				1400×700×300
Package dimensions (DxWxH)		mm	894×805×345	1202×810×345				1598×810×350
Net/Gross weight		kg	31.5/37	40.5/46.5		41/47		54/61

Model			CHV-5S DVH100NK2	CHV-5S DVH112NK2	CHV-5S DVH125NK2	CHV-5S DVH140NK2	CHV-5S DVH160NK2	CHV-5S DVH180NK2
Cooling capacity		kW	10	11.2	12.5	14	16	18
Heating capacity		kW	11.2	12.5	14	16	18	20
Air flow rate		m³/h	1800/1450/1250	2000/1600/1400	2000/1600/1400	2350/1900/1650	2500/2000/1750	3000/2600/2000
Nominal fan pressure		Pa	90					90
Fan pressure range		Pa	0–200					0–170
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz					
Power consumption		W	170	170	170	240	240	350
Rated current		A	1.4	1.4	1.4	1.8	1.8	2
Fuse current		A	6	6	6	6	6	6
Sound pressure level		dB(A)	42/38/34	43/39/36	44/40/37	44/41/38	45/43/40	49/47/44
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9	19.05	19.05
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5					
Unit dimensions (DxWxH)		mm	1400×700×300					
Package dimensions (DxWxH)		mm	1598×810×350					
Net/Gross weight		kg	54/61			54.5/61.5		58/67

OVERALL DIMENSIONS



Model	A	B	C	D	E	F	G
CHV-5SDVH22~50NK2	740	500	830	300	754	700	700
CHV-5SDVH56~80NK2	1040		1130			1000	
CHV-5SDVH90~160NK2	1440		1540			1400	
CHV-5SDVH180NK2	1440		1580				

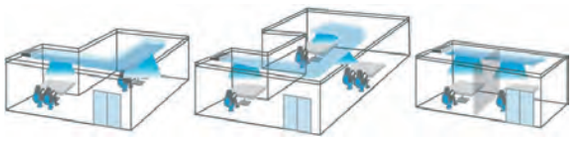
Overall dimensions and installation holes dimension

Units: mm

High performance indoor unit

Adjusting the pressure of the fan

The highest static pressure can be up to 30 Pa. From the control panel, you can change the static pressure of the fan according to the characteristics of the air duct network.
5 levels of external static pressure adjustment are available.



DC motor, low noise

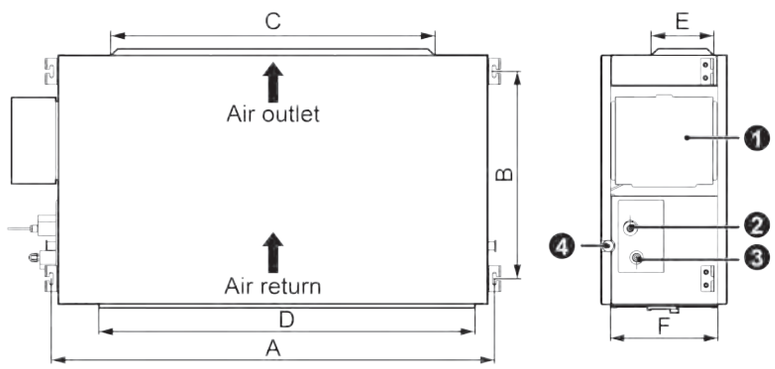
The brushless DC motor provides smooth speed control and can set an automatic quiet mode via a wired controller to reduce noise.

TECHNICAL CHARACTERISTICS

Model			CHV-5SDH224NK	CHV-5SDH280NK
Cooling capacity		kW	22.4	28.0
Heating capacity		kW	25.0	31.0
Air flow rate		m^3/h	4000/3600/3200	4400/4000/3600
Settled fan pressure		Pa	100	
Fan pressure range		Pa	50–200	
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz	
Power consumption		W	800	900
Rated current		A	3.7	4.1
Fuse current		A	10	16
Sound pressure level		dB(A)	54/52/49	55/52/50
Pipe diameter	Liquid line	mm	9.52	
	Gas	mm	19.05	22.2
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5	
Unit dimensions (DxWxH)		mm	791x1483x385	870x1686x450
Package dimensions (DxWxH)		mm	880x1575x385	985x1785x450
Net/Gross weight		kg	82/104	105/140

OVERALL DIMENSIONS

1. Electric box
2. Gas pipe
3. Liquid pipe
4. Drainage pipe joint



Model	A	B	C	D	E	F
CHV-5SDH224NK	1353	632	992	1150	192	327
CHV-5SDH280NK	1563	707	992	1350	192	402

Overall dimensions and installation holes dimension

Units: mm

Fresh air processing indoor unit

Air flow: 1000–4000 m³/h

Technology of inverter control of a DC motor

Thanks to the inverter technology, a constant air temperature can be maintained with lower electricity consumption.

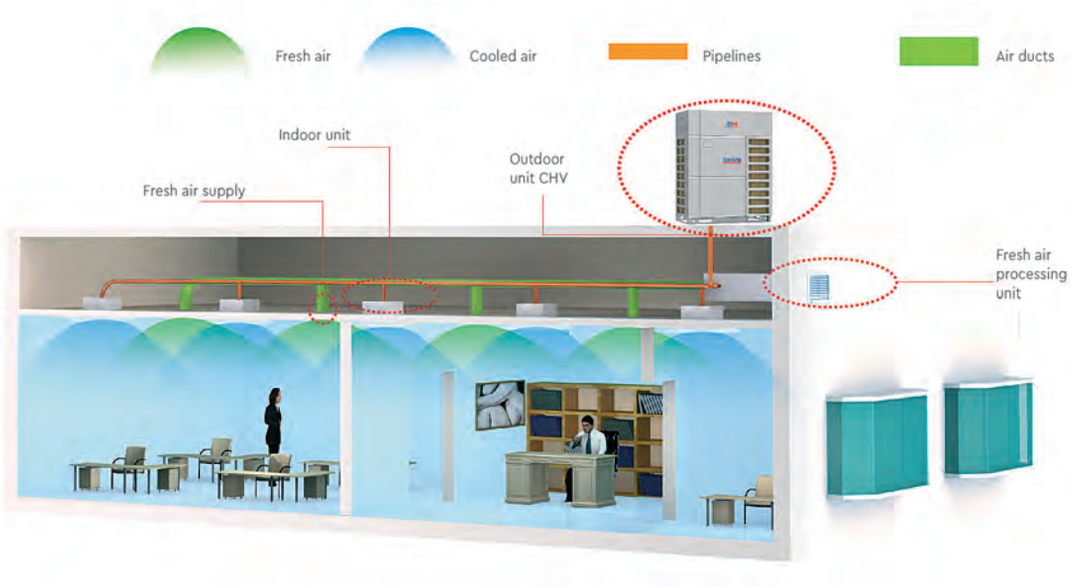
Air conditioning and ventilation

One system – two functions, at the same time sanitary requirements for air quality and room temperature and humidity are provided.

Compactness

A fresh air handling unit takes up less space than separate ventilation and air conditioning systems, and in addition, ducting costs can be reduced.

Fresh air handling units can be used simultaneously with other types of CHV indoor units



TECHNICAL CHARACTERISTICS

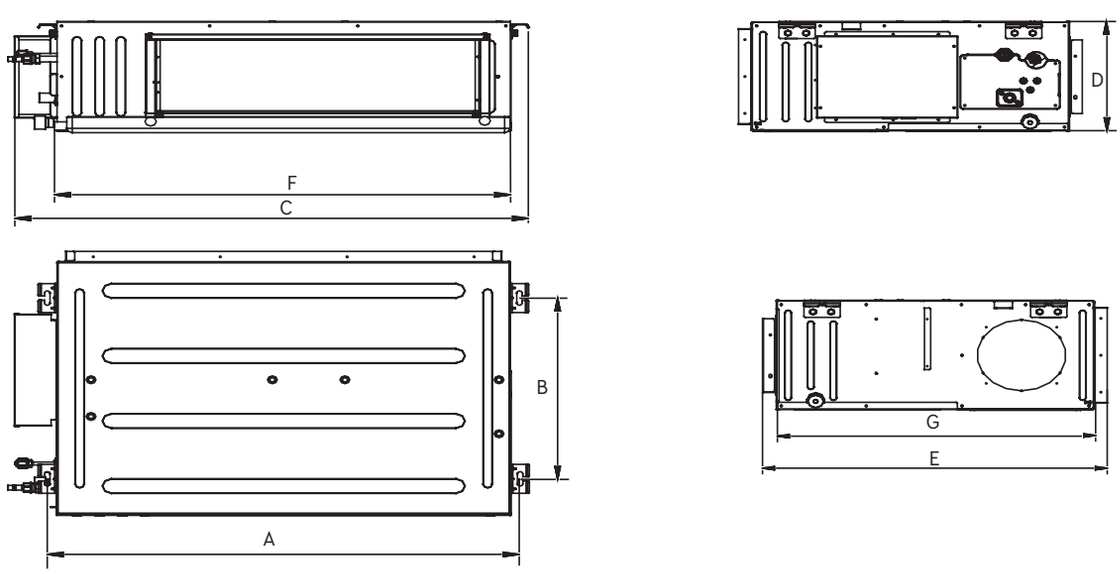
Model			CHV-5SA125NK	CHV-5SA140NK	CHV-5SA224NK	CHV-5SA250NK	CHV-5SA280NK	CHV-5SA450NM
Cooling capacity		kW	12.5	14	22.4	25	28	45
Heating capacity		kW	8.5	10	16	18	20	32
Power consumption		W	350		760	860		1240
Fuse current		A	6		10			10
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz					380-415V / 3Ph / 50Hz
Air flow rate		m^3/h	1200		2000	2500	2500	4000
Nominal fan pressure		Pa	150			200		200
Fan pressure range		Pa	50-200			50-300		-
Sound pressure level		dB(A)	40-50		45-54	47-54	47-54	58
Pipe diameter	Liquid line	mm			9.52			12.7
	Gas	mm	15.9	15.9	19.05	22.2	22.2	28.6
	Drain (Diameter X pipe wall's thickness	mm	25x2.5					
Unit dimensions (DxWxH)		mm	1530x754x300		1483x791x385			1750x1193x650
Package dimensions (LxWxH)		mm	1598x810x350		1575x880x385			1890x1460x835
Unit's weight net/ gross		kg	54/61		82/104			208/266

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

CHV-5SA125NK, CHV-5SA140NK

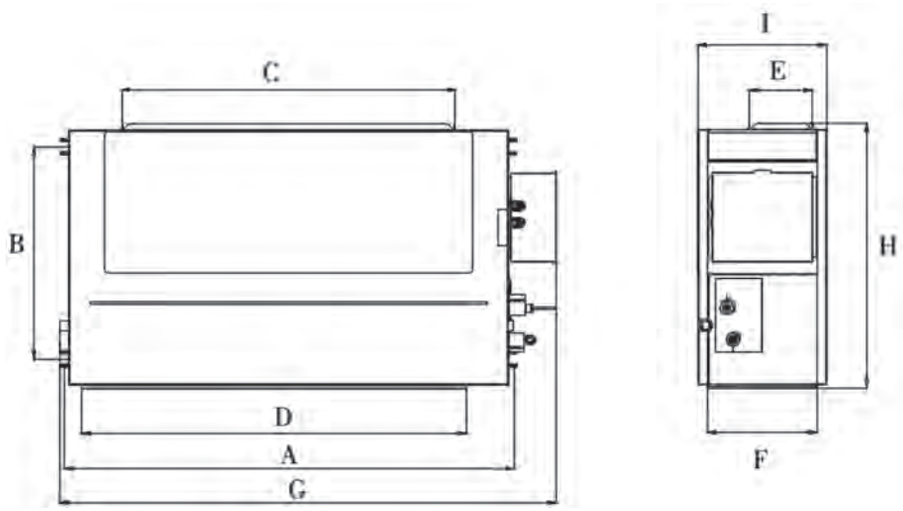
Units: mm



Model	A	B	C	D	E	F	G
CHV-5SA125NK	1440	500	1530	300	754	1400	700
CHV-5SA140NK	1440	500	1530	300	754	1400	700

Overall dimensions and installation holes dimension
CHV-5SA224NK, CHV-5SA250NK, CHV-5SA280NK

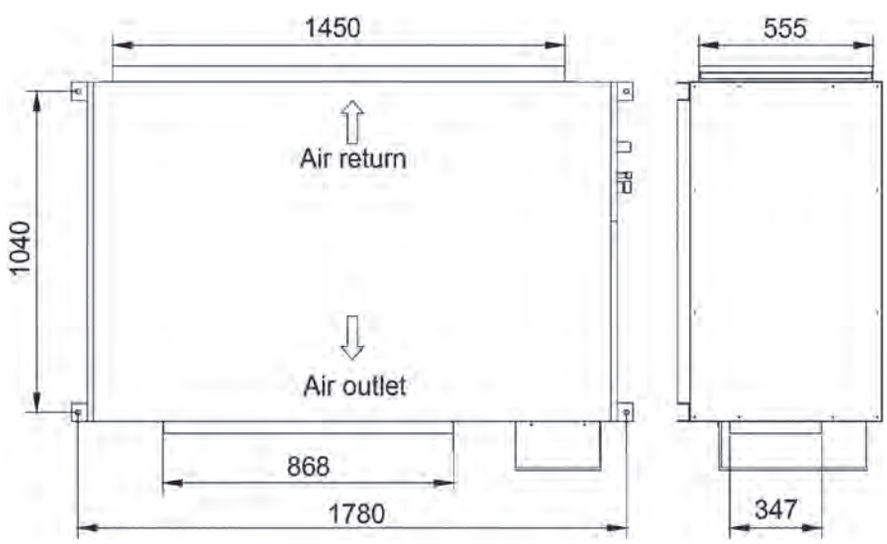
Units: mm



Model	A	B	C	D	E	F	G	H	I
CHV-5SA224NK	1353	632	992	1150	192	327	1483	791	385
CHV-5SA250NK	1353	632	992	1150	192	327	1483	791	385
CHV-5SA280NK	1353	632	992	1150	192	327	1483	791	385

Overall dimensions and installation holes dimension
CHV-5SA224NK, CHV-5SA250NK, CHV-5SA280NK

Units: mm

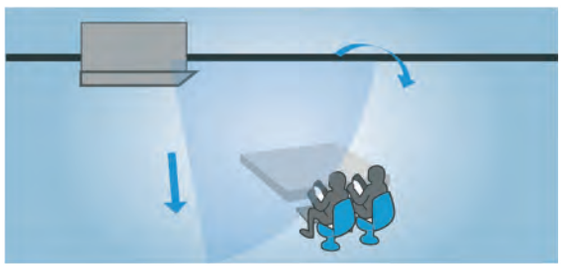


Single-flow cassette-type indoor unit

The cassette unit with one-way air distribution and ultra-slim and compact body requires less space for installation, meeting the air supply requirements in narrow and long rooms. These units can be used in hotels, small offices and other small spaces.

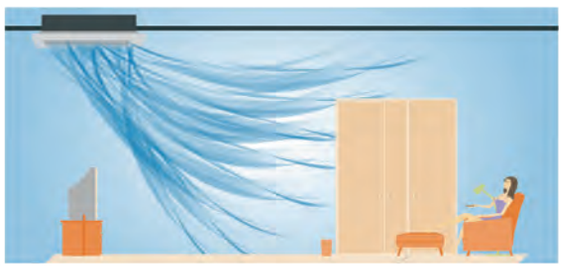
Wide air supply angle

Angles of rotation in the horizontal plane can be up to 75 degrees, covering a wide area of the room to provide a comfortable environment.

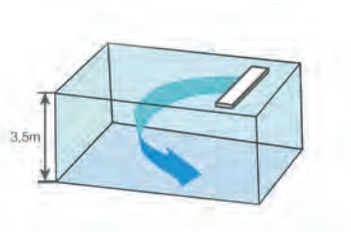


Even distribution of temperature and a high level of comfort

The temperature field is distributed evenly, heating the entire room and significantly improving user comfort.



It can be installed on a ceiling up to 3.5 meters high

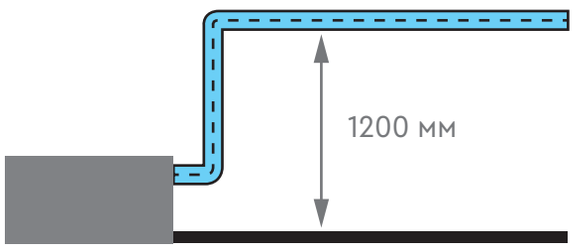


Ultra-thin design

The thickness of the main body is only 178 mm, which allows the unit to be used in limited hidden space.

Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.



Auto-drying function of the evaporator

After the cooling mode is stopped, the fan will run for a while to dry the condensation on the surface of the evaporator and keep the inside of the unit dry and prevent the formation of a favorable environment for bacteria and mold.

Solutions against pollution

By adjusting the angle of the air deflector, you can avoid impact on the ceiling near the air outlet.

TECHNICAL CHARACTERISTICS

Model			CHV-5SCW22NK	CHV-5SCW28NK	CHV-5SCW36NK	CHV-5SCW45NK
Cooling capacity		kW	2.2	2.8	3.6	4.5
Heating capacity		kW	2.5	3.2	4	5
Air flow rate		m³/h	600/500/450	600/500/450	600/500/450	830/600/500
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	30	30	30	45
Rated current		A	0.2	0.2	0.2	0.3
Fuse current		A	6			
Sound pressure level		dB(A)	36/32/28	36/32/28	36/32/28	40/35/30
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	12.7	12.7
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	1150x385x178			
Package dimensions (LxWxH)		mm	1304x498x295			
Unit's weight net/gross		kg	20/27			21/28.5
Decorative panel			TD01			
Panel dimensions (LxWxH)		mm	1200x460x55			
Package dimensions (LxWxH)		mm	1262x533x106			
Panel weight net/gross		kg	4.2/6			

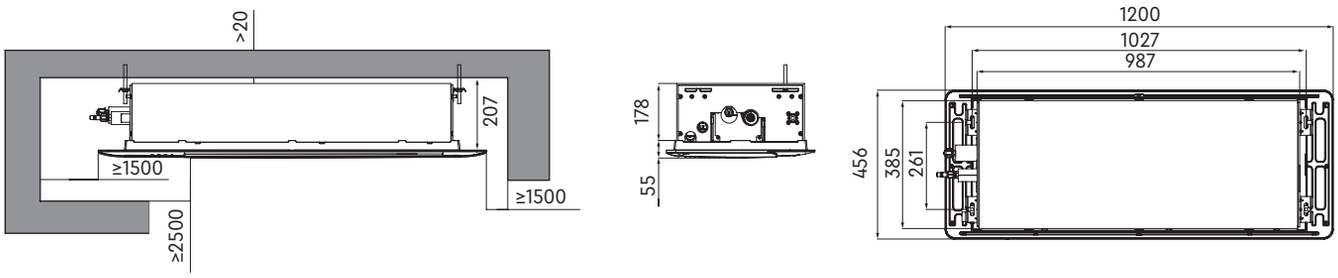
Model			CHV-5SCW50NK	CHV-5SCW56NK	CHV-5SCW63NK	CHV-5SCW71NK	CHV-5SCW80NK
Cooling capacity		kW	5	5.6	6.3	7.1	8
Heating capacity		kW	5.6	5.6	7.1	8	9
Air flow rate		m³/h	830/600/500	890/667/564	880/680/600	1000/680/600	1000/680/600
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	45	45	57	83	83
Rated current		A	0.3	0.3	0.55	0.86	0.86
Fuse current		A	6				
Sound pressure level		dB(A)	40/35/30	41/38/35	42/39/36	44/39/36	44/39/36
Pipe diameter	Liquid line	mm	6.35	9.52			
	Gas	mm	12.7	15.9			
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5				
Unit dimensions (DxWxH)		mm	1150x385x178		1346x470x200		
Package dimensions (LxWxH)		mm	1304x498x295		1435x545x240		
Unit's weight net/gross		kg	21/28.5		26/31.5		
Decorative panel			TD01		TD03		
Panel dimensions (LxWxH)		mm	1200x460x55		1350x555x64		
Package dimensions (LxWxH)		mm	1262x533x106		1440x645x140		
Panel weight net/gross		kg	4.2/6		7.8/13.5		

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

CHV-5SCW22NK, CHV-5SCW288NK, CHV-5SCW36NK, CHV-5SCW45NK, CHV-5SCW50NK, CHV-5SCW56NK

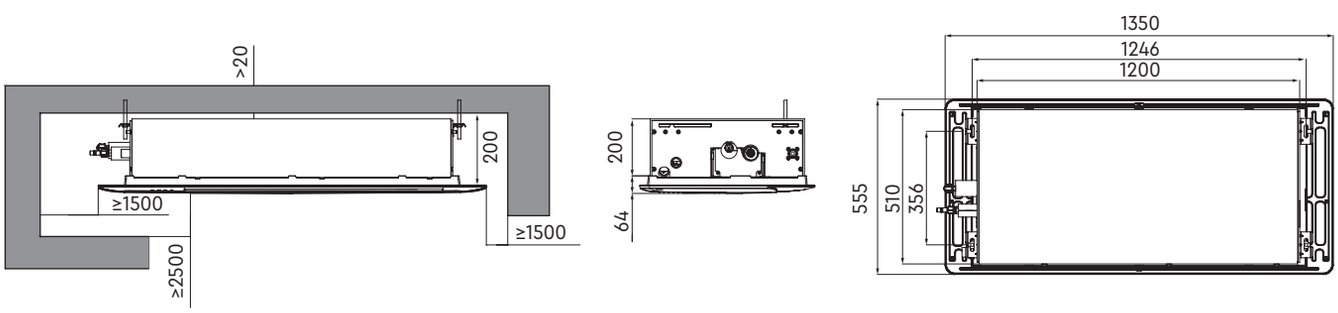
Units: mm



Overall dimensions and installation holes dimension

CHV-5SCW63NK, CHV-5SCW71NK, CHV-5SCW80NK

Units: mm

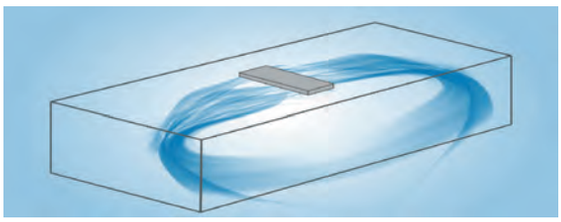


Two-way indoor unit of the cassette type

Cassette indoor units with two-way air distribution use a high-efficiency brushless DC motor and a stylish appearance with an air intake in the center of the unit, meeting the air supply requirements of narrow and long rooms. They can be widely used in hotels and office buildings, shopping centers, apartments, cottages, etc.

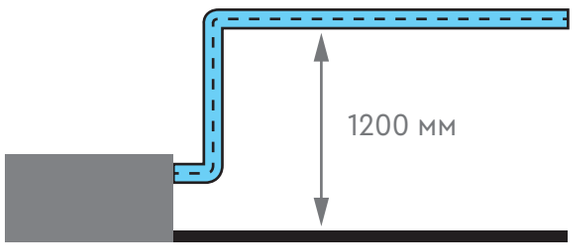
Two-way air supply

Two-way supply air distribution increases the distance to solve the problem of air supply in narrow and long rooms.



Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.



New smooth lines of the body design

The new generation of two-stream cassette units has a completely new design of the front panel, which makes them visually more aesthetic and allows them to fit perfectly into the interior.

New fan blade design to reduce noise

Thanks to the use of a DC motor and a new design of fan blades with an increased diameter and low rotation frequency, it is possible to achieve optimal air flow, its uniform supply and a lower noise level, creating a quiet and comfortable environment.

Independent control of each louver

The unit has two air deflectors that can be independently controlled to adjust the air flow direction. They can create different combinations of air rotation angles to avoid the direct impact of the air flow on people.

* This function should be used with a wired controller (XE702-33/H).

Compact unit design

The new generation of two-stream cassette units has a very thin body (280 mm), which is 11.1 % thinner than the previous generation. Thus, the device requires less space for installation.

Automatic control of louvers

The front panel has an arched design for the ends of the air deflectors. Using structural modeling analysis, the best air supply angle was modeled. In cooling mode, the device can supply air horizontally to avoid cold air hitting people directly. To increase comfort in the heating mode, the device can supply air vertically.

TECHNICAL CHARACTERISTICS

Model			CHV-5SCT28NK2	CHV-5SCT36NK2	CHV-5SCT45NK2	CHV-5SCT50NK2	CHV-5SCT56NK2
Cooling capacity		kW	2.8	3.6	4.5	5	5.6
Heating capacity		kW	3.2	4	5	5.6	6.3
Air flow rate		m³/h	671/616/513	671/616/513	715/616/513	715/616/513	764/609/676
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	20	20	30	30	30
Rated current		A	0.25	0.25	0.3	0.3	0.3
Fuse current		A	6				
Sound pressure level		dB(A)	35/32/29	35/32/29	35/32/29	35/32/29	39/36/33
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35	9.52
	Gas	mm	9.52	12.7	12.7	12.7	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5				
Unit dimensions (DxWxH)		mm	929×630×280				
Package dimensions (LxWxH)		mm	1030x737x350				
Unit's weight net/gross		kg	25.5/33				
Decorative panel			TE03				
Panel dimensions (LxWxH)		mm	1100x710x28				
Package dimensions (LxWxH)		mm	1227x840x115				
Panel weight net/gross		kg	6/10.5				

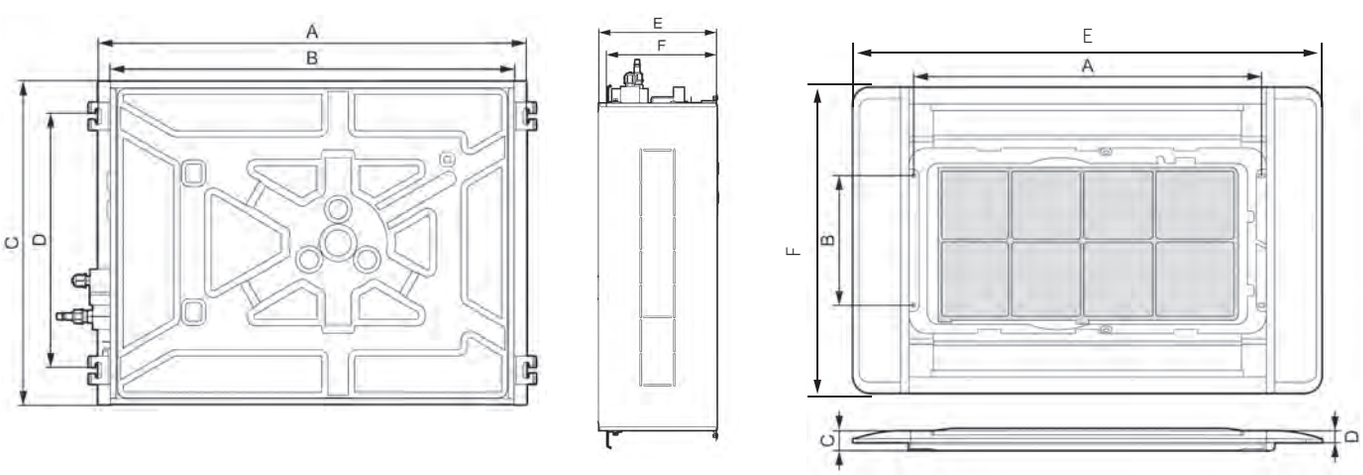
Model			CHV-5SCT63NK2	CHV-5SCT71NK2	CHV-5SCT80NK2	CHV-5SCT90NK2	CHV-5SCT100NK2
Cooling capacity		kW	6.3	7.1	8	9	10
Heating capacity		kW	7.1	8	9	10	11.2
Air flow rate		m³/h	764/609/676	816/745/660	816/745/660	1470/1310/1275	1470/1310/1275
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	30	55	55	90	90
Rated current		A	0.3	0.49	0.49	0.62	0.62
Fuse current		A	6				
Sound pressure level		dB(A)	39/36/33	39/36/33	39/36/33	41/39/37	41/39/37
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5				
Unit dimensions (DxWxH)		mm	929×630×280			1491×630×280	
Package dimensions (LxWxH)		mm	1030x737x350			1588x737x350	
Unit's weight net/gross		kg	25.5/33			40.5/50.5	
Decorative panel			TE03			TE04	
Panel dimensions (LxWxH)		mm	1100x710x28			1660×710×28	
Package dimensions (LxWxH)		mm	1227x840x115			1787×840×115	
Panel weight net/gross		kg	6/10.5			9.5/15.5	

Model			CHV-5SCT112NK2	CHV-5SCT125NK2	CHV-5SCT140NK2	CHV-5SCT160NK2
Cooling capacity		kW	11.2	12.5	14	16
Heating capacity		kW	12.5	14	16	18
Air flow rate		m³/h	1470/1310/1275	1565/1400/1275	1565/1400/1275	1755/1565/1275
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	90	100	100	110
Rated current		A	0.62	0.69	0.69	0.75
Fuse current		A	6			
Sound pressure level		dB(A)	41/39/37	43/41/39	43/41/39	46/43/40
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	19.05
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	1491×630×280			
Package dimensions (LxWxH)		mm	1588x737x350			
Unit's weight net/gross		kg	40.5/50.5			
Decorative panel			TE04			
Panel dimensions (LxWxH)		mm	1660×710×28			
Package dimensions (LxWxH)		mm	1787×840×115			
Panel weight net/gross		kg	9.5/15.5			

OVERALL DIMENSIONS

Overall dimensions and installation holes dimension

Units: mm



Model	A	B	C	D	E	F
CHV-5SCT28~80NK2	834	790	630	495	280	261
CHV-5SCT90~160NK2	1394	1350	630	495	280	261

Model panel	A	B	C	D	E	F
TE03	813	300	46	28	1100	710
TE04	1374	300	46	28	1660	710

Cassette indoor unit with circular air distribution

The cassette unit with circular air distribution is suitable for various places such as hotels, office buildings, shopping malls. Due to the circular distribution of air, a more uniform temperature of the room is achieved, therefore, comfort increases..

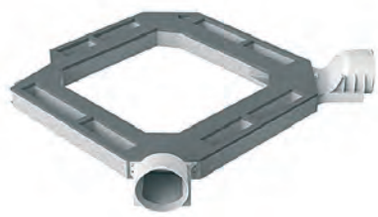
Spatial identification of the temperature field

Intelligent control from a human presence sensor and high-temperature field recognition accuracy help avoid cold drafts. When the system detects that there is no one in the room, it will automatically adjust the set temperature; if there is no one in the room for a long time, the unit will turn off.

Circular air distribution

A wide range of air flow, more uniform temperature distribution and greater comfort.

The additional fresh air supply kit can effectively mix 8~10 % fresh air and improve indoor comfort

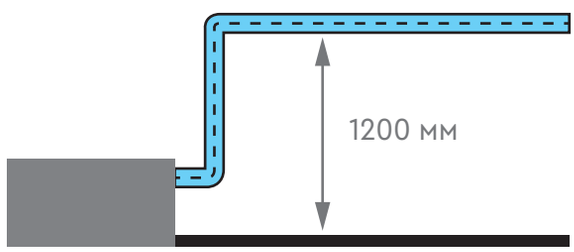


Independent control of oscillations of louvers

The four air louvres can be controlled independently of each other, and by setting the direction of the air on all sides, there will be no direct entry of air into the working area.

Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.



An optional panel with a built-in lifting and lowering mechanism allows you to quickly clean the filter and grid

*This accessory is optional and must be ordered separately.

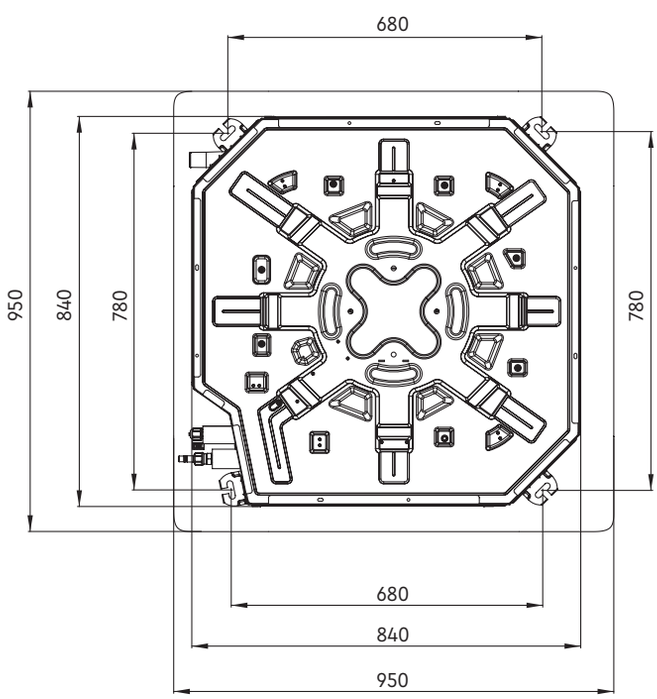
TECHNICAL CHARACTERISTICS

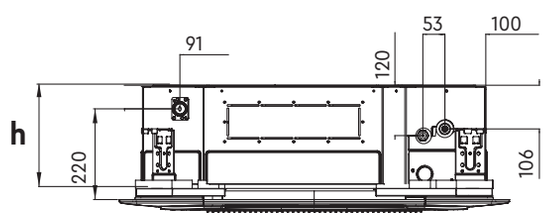
Model			CHV-5SC22NK2	CHV-5SC28NK2	CHV-5SC36NK2	CHV-5SC45NK2	CHV-5SC50NK2
Cooling capacity		kW	2.2	2.8	3.6	4.5	5
Heating capacity		kW	2.5	3.2	4	5	5.6
Air flow rate		m³/h	800/700/600	800/700/600	800/700/600	800/700/600	900/800/700
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz				
Power consumption		W	26	26	26	26	28
Rated current		A	0.2	0.2	0.2	0.2	0.2
Fuse current		A	6				
Sound pressure level		dB(A)	33/30/28	33/30/28	33/30/28	34/30/28	35/32/39
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	12.7	12.7	12.7
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5	25x2.5	25x2.5	25x2.5	25x2.5
Unit dimensions (DxWxH)		mm	840x840x240				
Package dimensions (LxWxH)		mm	960x960x310				
Unit's weight net/gross		kg	27/35	27/35	27/35	27/35	28/36
Decorative panel			TF06				
Panel dimensions (LxWxH)		mm	950x950x65				
Package dimensions (LxWxH)		mm	1030x1017x95				
Panel weight net/gross		kg	6/9.5				

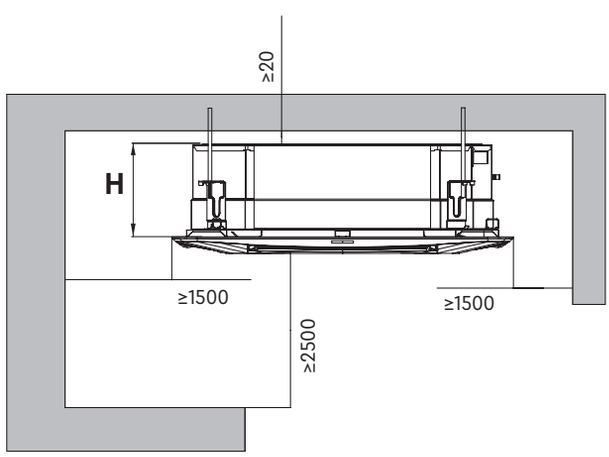
Model			CHV-5SC56NK2	CHV-5SC63NK2	CHV-5SC71NK2	CHV-5SC80NK2	CHV-5SC90NK2
Cooling capacity		kW	5.6	6.3	7.1	8	9
Heating capacity		kW	6.3	7.1	8	9	10
Air flow rate		m³/h	950/850/750	1150/950/850	1150/950/850	1250/1000/900	1250/1000/900
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz				
Power consumption		W	35	60	60	85	85
Rated current		A	0.2	0.4	0.4	0.4	0.4
Fuse current		A	6				
Sound pressure level		dB(A)	37/33/30	37/34/31	37/34/31	39/37/34	39/37/34
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5	25x2.5	25x2.5	25x2.5	25x2.5
Unit dimensions (DxWxH)		mm	840x840x240				
Package dimensions (LxWxH)		mm	960x960x310				
Unit's weight net/gross		kg	28/36	28/36	28/36	29/37	29/37
Decorative panel			TF06				
Panel dimensions (LxWxH)		mm	950x950x65				
Package dimensions (LxWxH)		mm	1030x1017x95				
Panel weight net/gross		kg	6/9.5				

Model			CHV-5SC100NK2	CHV-5SC112NK2	CHV-5SC125NK2	CHV-5SC140NK2	CHV-5SC160NK2
Cooling capacity		kW	10	11.2	12.5	14	16
Heating capacity		kW	11.2	12.5	14	16	18
Air flow rate		m³/h	1250/1000/900	1650/1300/1100	1650/1300/1100	1650/1300/1100	2000/1800/1430
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	85	115	115	115	170
Rated current		A	0.4	0.6	0.6	0.6	1.2
Fuse current		A	6				
Sound pressure level		dB(A)	39/37/34	43/41/39	43/41/39	43/41/39	51/48/42
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9	19.05
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5				
Unit dimensions (DxWxH)		mm	840x840x240	840x840x290			
Package dimensions (LxWxH)		mm	960x960x310	960x960x364			
Unit's weight net/gross		kg	29/37	33/42	33/42	33/42	36/44
Decorative panel			TF06				
Panel dimensions (LxWxH)		mm	950x950x65				
Package dimensions (LxWxH)		mm	1030x1017x95				
Panel weight net/gross		kg	6/9.5				

OVERALL DIMENSIONS







Model	H	h
CHV-5SC22~100NK2	280	240
CHV-5SC112~160NK2	330	290

Overall dimensions and installation holes dimension

Units: mm

Compact cassette indoor unit with circular air distribution

A new panel with 8 diffusers creates a circular flow of incoming air around the unit, providing a more even distribution of air and temperature field in the room. It can be widely used in hotels, restaurants, offices, conference halls and other places.

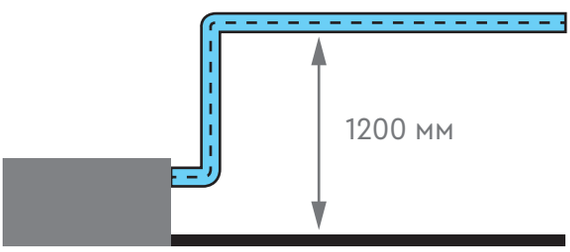
360 Circular air distribution

The newly developed circular air outlet has a wide range of air supply, forms a more uniform air flow and temperature distribution, providing a more comfortable environment for the user.

Independent control of each louver

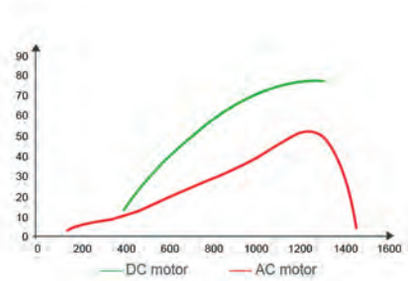
Four main louvers can be controlled independently of each other to adjust the direction of air supply. They can create different combinations of air rotation angles to avoid the direct impact of the air flow on people.

* This function must be used with the XE70-33/H wired controller.



Standard equipment drainage pump

The pressure of the pump for condensate removal can be up to 1200 mm, and the height of the vertical installation of the unit can be flexibly adjusted depending on the installation requirements.



DC fan motor

The fan is equipped with a highly efficient DC motor for smooth speed control. Compared with a conventional AC motor, this motor can reduce electricity consumption by 30 %.

New channels and vanes to reduce noise

The internal channels and blades have a new design, which allows to reduce the noise during operation with the same air flow.

Compact design

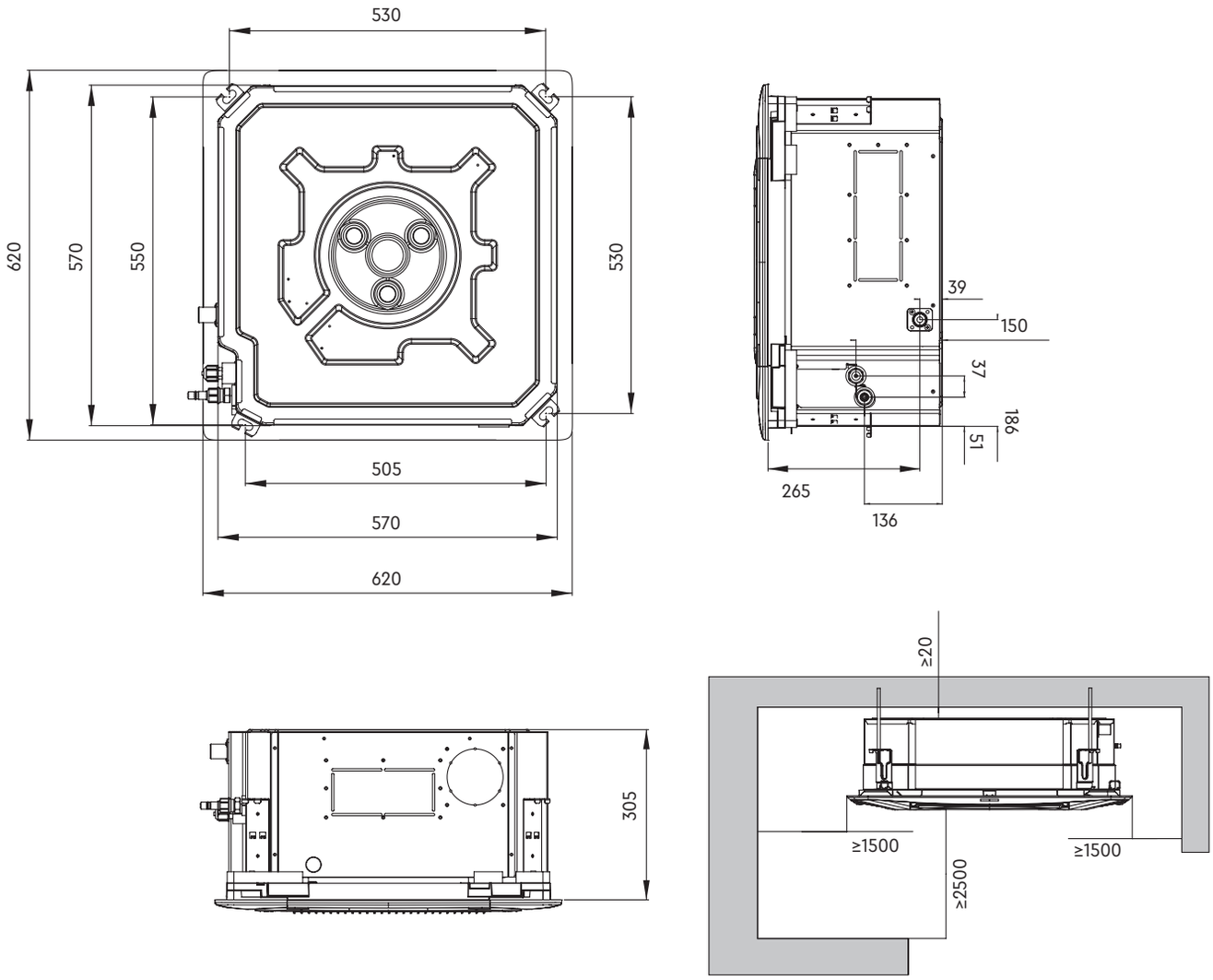
Thanks to a more compact, (reduced) case than the previous generation, the unit has advantages when installed in limited hidden space.

TECHNICAL CHARACTERISTICS

Model			CHV-5SCC15NK2	CHV-5SCC18NK2	CHV-5SCC22NK2	CHV-5SCC28NK2
Cooling capacity		kW	1.5	1.8	2.2	2.80
Heating capacity		kW	1.8	2.2	2.5	3.20
Air flow rate		m^3/h	460/420/370	460/420/370	500/460/370	570/480/420
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	30	30	30	30
Rated current		A	0.15	0.15	0.15	0.15
Fuse current		A	6			
Sound pressure level		dB(A)	33/30/25	33/30/25	36/31/25	36/33/28
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	9.52	9.52
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	570x570x265			
Package dimensions (LxWxH)		mm	695x650x280			
Unit's weight net/gross		kg	17.5/22.5			
Decorative panel			TF05			
Panel dimensions (LxWxH)		mm	620x620x47.5			
Package dimensions (LxWxH)		mm	698x698x110			
Panel weight net/gross		kg	3/4.5			

Model			CHV-5SCC36NK2	CHV-5SCC45NK2	CHV-5SCC50NK2	CHV-5SCC56NK2
Cooling capacity		kW	3.60	4.50	5.00	5.6
Heating capacity		kW	4.00	5.00	5.60	6.3
Air flow rate		m^3/h	620/550/480	730/650/560	730/650/560	730/650/560
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	30	45	45	45
Rated current		A	0.15	0.23	0.23	0.23
Fuse current		A	6			
Sound pressure level		dB(A)	39/37/35	43/41/39	43/41/39	43/41/39
Pipe diameter	Liquid line	mm	6.35	6.35	9.52	9.52
	Gas	mm	12.7	12.7	12.7	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	570x570x265			
Package dimensions (LxWxH)		mm	695x650x280			
Unit's weight net/gross		kg	17.5/22.5			
Decorative panel			TF05			
Panel dimensions (LxWxH)		mm	620x620x47.5			
Package dimensions (LxWxH)		mm	698x698x110			
Panel weight net/gross		kg	3/4.5			

OVERALL DIMENSIONS



Overall dimensions and installation holes dimension

Units: mm

Wall-mounted indoor unit

The unit is equipped with a high-efficiency DC motor, has a stylish design, an easy-to-disassemble panel with a convenient design for cleaning, uniform distribution of air flow and a wide range of air flow rates. This unit is widely used in various places such as houses, hotels, apartments, offices and meeting rooms.

Comfortable air supply

The air flow can be evenly distributed in all corners of the room, adjusting the direction both in the vertical plane and in the horizontal plane.

Even distribution of temperature and a high level of comfort

The temperature field is evenly distributed, and the flow of warm air reaches the floor directly, heating the entire room, which significantly increases user comfort.

Filter that can be washed with water

A durable filter that can be easily removed and cleaned to extend its service life.

Low noise level

High-efficiency cross-flow fan blades are used, the noise from the unit is significantly reduced.

Quick-removal panel

The indoor unit panel can be easily removed and installed, which simplifies maintenance and cleaning.

Powerful and fast

Thanks to the application of intelligent temperature control technology with the function of turbo cooling/heating, you can quickly reach the desired temperature in the room.

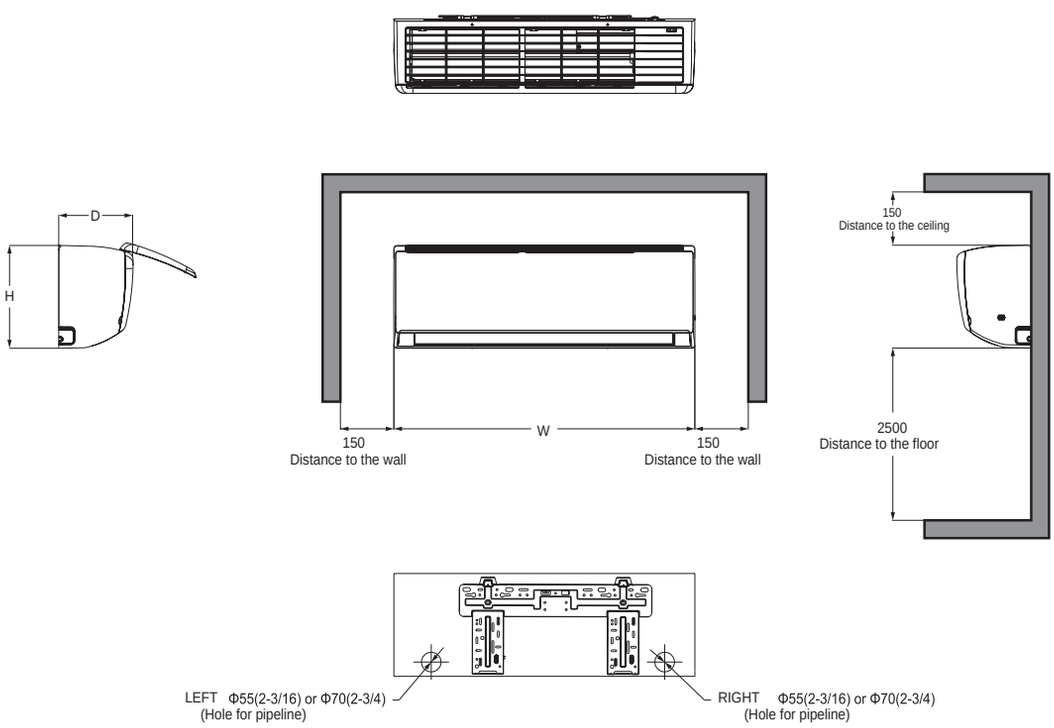
TECHNICAL CHARACTERISTICS

Model			CHV-5SW15NK2	CHV-5SW18NK2	CHV-5SW22NK2	CHV-5SW28NK2	CHV-5SW36NK2
Cooling capacity		kW	1.5	1.8	2.2	2.8	3.6
Heating capacity		kW	1.8	2.2	2.5	3.2	4
Air flow rate		m³/h	500/440/300	500/440/300	500/440/300	500/440/300	630/460/320
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	20	20	20	20	25
Rated current		A	0.1	0.1	0.1	0.1	0.12
Fuse current		A	6				
Sound pressure level		dB(A)	35/33/30	35/33/30	35/33/30	35/33/30	38/35/31
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	9.52	9.52	12.7
	Drain (Diameter X pipe wall's thickness)	mm	20x1.5				
Unit dimensions (DxWxH)		mm	845x209x289				
Package dimensions (LxWxH)		mm	973x278x364				
Net/Gross weight		kg	10.5/12.5				

Model			CHV- 5SW45NK2	CHV-5SW50NK2	CHV-5SW56NK2	CHV-5SW63NK2
Cooling capacity		kW	4.5	5	5.6	6.3
Heating capacity		kW	5	5.6	6.3	7
Air flow rate		m³/h	850/580/500	850/580/500	1100/850/650	1100/850/650
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	35	35	50	50
Rated current		A	0.17	0.17	0.24	0.24
Fuse current		A	6			
Sound pressure level		dB(A)	43/40/37	43/40/37	43/41/37	43/41/37
Pipe diameter	Liquid line	mm	6.35	6.35	9.52	9.52
	Gas	mm	12.7	12.7	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	20x1.5			
Unit dimensions (DxWxH)		mm	970x224x300		1078x246x325	
Package dimensions (LxWxH)		mm	1093x305x380		1200x335x410	
Net/Gross weight		kg	12.5/15.5		16/19	

Model			CHV-5SW71NK2	CHV-5SW80NK2	CHV-5SW90NK2	CHV-5S W100NK2
Cooling capacity		kW	7.1	8	9	9.5
Heating capacity		kW	7.5	9	10	10.5
Air flow rate		m^3/h	1200/850/650	1550/1050/800	1550/1050/800	1650/1100/900
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz			
Power consumption		W	65	80	80	100
Rated current		A	0.31	0.41	0.41	0.41
Fuse current		A	6			
Sound pressure level		dB(A)	44/41/37	49/46/40	49/46/40	52/48/40
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	20x1.5			
Unit dimensions (DxWxH)		mm	1078x246x325	1350x258x326		
Package dimensions (LxWxH)		mm	1200x335x410	1493x354x418		
Net/Gross weight		kg	16/19	18.5/23.5		

OVERALL DIMENSIONS



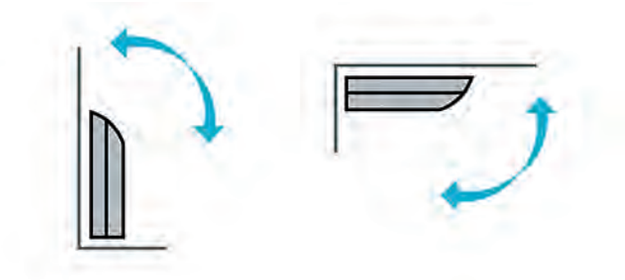
Model	W	H	D
CHV-5SW15NK2, CHV-5SW18NK2 CHV-5SW22NK2, CHV-5SW28NK2, CHV-5SW36NK2	845	289	209
CHV-5SW45NK2, CHV-5SW50NK2	970	300	224
CHV-5SW56NK2,CHV-5SW63NK2, CHV-5SW71NK2	1078	325	246
CHV-5SW80NK2, CHV-5SW90NK2, CHV-5SW100NK2	1350	326	258

Overall dimensions and installation holes dimension

Units: mm

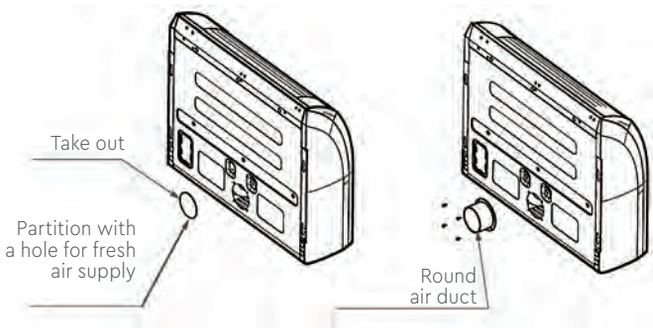
Floor-ceiling type indoor unit

The indoor unit of the floor-ceiling type has two installation methods: on the floor and on the ceiling. It can be widely used in hotels, office buildings, shopping centers, apartments, cottages, etc.



Flexible installation

The device can be mounted on the floor (vertical) or ceiling (horizontal); the flexible and convenient installation method can give customers more options and makes this indoor unit versatile.

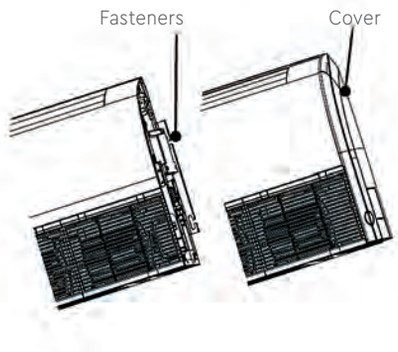


Fresh air supply function

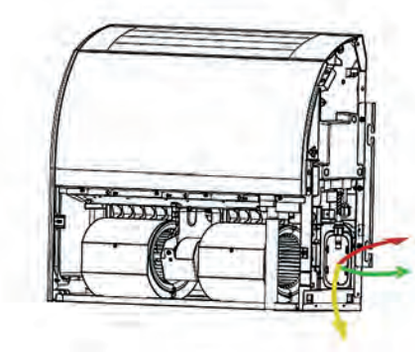
An air duct can be connected to the unit for supplying fresh air.

Easy installation

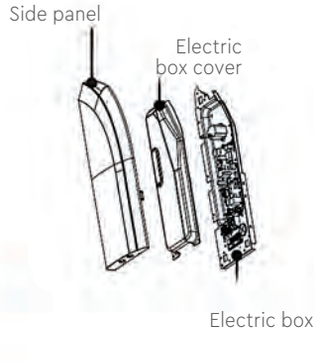
Adjust the angle of the air outlet to prevent the ceiling from affecting the air distribution.



1) Design with hidden fasteners



2) Connection of connecting pipelines from different directions.



3) Hidden side electrical box design. Cables can be connected by removing only the side cover.

Silent design

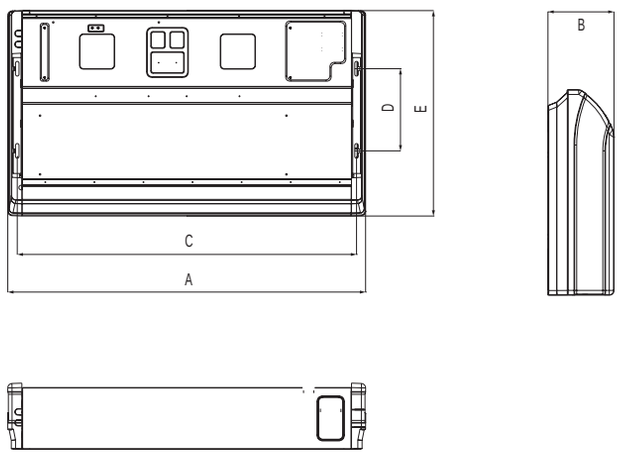
The new design of the fan blade to reduce the noise level, combined with the DC motor and improved sound insulation, allows you to achieve optimal air flow, its uniform supply and lower noise level, creating a quiet and comfortable environment.

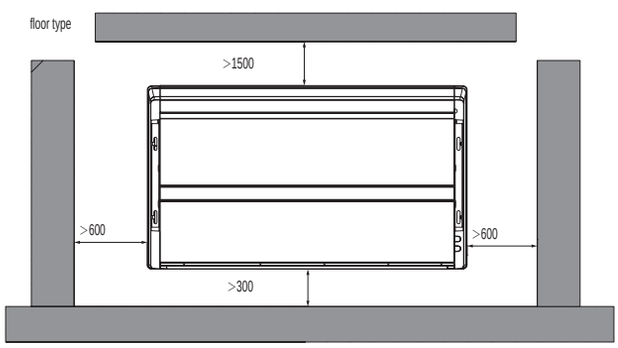
TECHNICAL CHARACTERISTICS

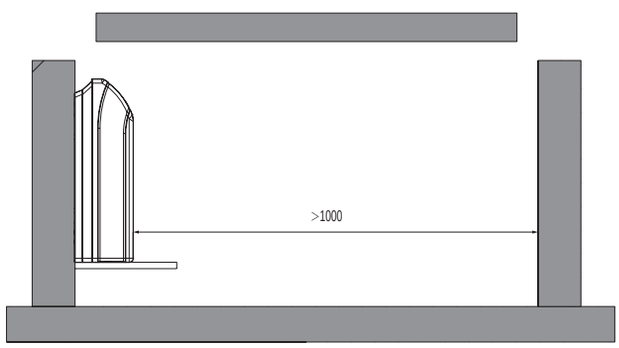
Model			CHV-5SF28NK2	CHV-5SF36NK2	CHV-5SF50NK2	CHV-5SF56NK2	CHV-5SF63NK2
Cooling capacity		kW	2.8	3.6	5	5.6	6.3
Heating capacity		kW	3.2	4	5.6	6.3	7.1
Air flow rate		m³/h	600/500/450	600/500/450	750/650/600	750/650/600	1350/1200/1050
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	35	35	55	55	80
Rated current		A	0.2	0.2	0.3	0.3	0.4
Fuse current		A	6				
Sound pressure level		dB(A)	36/32/29	36/32/29	42/39/36	42/39/36	44/41/38
Pipe diameter	Liquid line	mm	6.35	6.35	6.35	9.52	9.52
	Gas	mm	9.52	12.7	12.7	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	17x1.75				
Unit dimensions (DxWxH)		mm	870x665x235				1200x665x235
Package dimensions (LxWxH)		mm	970x767x285				1300x767x285
Unit's weight net/ gross		kg	24/29	24/29	25/30	25/30	32/38

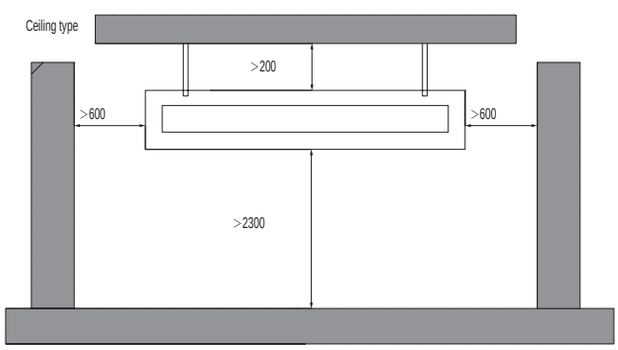
Model			CHV-5SF71NK2	CHV-5SF90NK2	CHV-5SF112NK2	CHV-5SF125NK2	CHV-5SF140NK2	CHV-5SF160NK2
Cooling capacity		kW	7.1	9	11.2	12.5	14	16
Heating capacity		kW	8	10	12.5	14	16	18
Air flow rate		m³/h	1350/1200/1050	1550/1400/1250	1800/1600/1400	1800/1600/1400	2000/1750/1600	2150/1850/1650
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz					
Power consumption		W	80	120	120	120	150	175
Rated current		A	0.4	0.7	0.7	0.7	0.8	0.9
Fuse current		A						
Sound pressure level		dB(A)	44/41/38	47/44/41	47/44/42	47/44/42	49/45/43	52/48/45
Pipe diameter	Liquid line	mm	9.52	9.52	9.52	9.52	9.52	9.52
	Gas	mm	15.9	15.9	15.9	15.9	15.9	19.05
	Drain (Diameter X pipe wall's thickness)	mm	17x1.75					
Unit dimensions (DxWxH)		mm	1200x665x235		1570x665x235			
Package dimensions (LxWxH)		mm	1300x767x285		1666x767x285			
Unit's weight net/ gross		kg	32/38	33/39	41/48	41/48	43/50	43/50

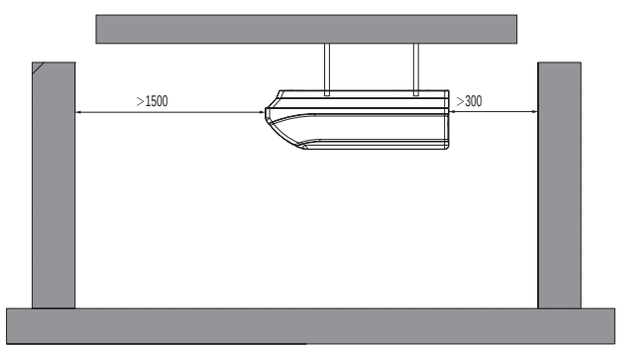
OVERALL DIMENSIONS











Model	A	B	C	D	E
CHV-5SF28NK2 CHV-5SF36NK2 CHV-5SF50NK2 CHV-5SF56NK2	870	235	812	280	665
CHV-5SF63NK2 CHV-5SF71NK2 CHV-5SF90NK2	1200		1142		
CHV-5SF112NK2 CHV-5SF125NK2 CHV-5SF140NK2 CHV-5SF160NK2	1570		1512		

Overall dimensions and installation holes dimension

Units: mm

Console-type indoor unit

The console-type indoor unit is easy to mount and has two air supply modes. It can be widely used in cottages, offices, meeting rooms, etc., providing a comfortable environment for users.

New fan blade design to reduce noise

Thanks to the use of a direct current motor and a new design of fan blades with an increased diameter and low rotation frequency, it is possible to achieve optimal air flow, its uniform supply and a lower noise level, creating a quiet and comfortable environment.

Even distribution of temperature and a high level of comfort

The temperature field is evenly distributed, and the flow of warm air reaches the floor directly, heating the entire room, which significantly increases user comfort.

Quick-removal panel

The indoor unit panel can be easily removed and installed, which simplifies maintenance and cleaning.

Powerful and fast

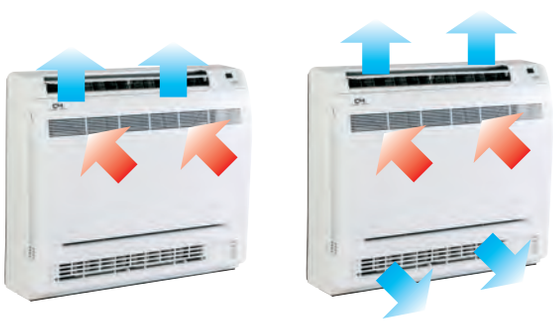
Thanks to the application of intelligent temperature control technology with the function of turbo cooling/heating, you can quickly reach the desired temperature in the room.

Filter that can be washed with water

A durable filter that can be easily removed and cleaned to extend its service life.

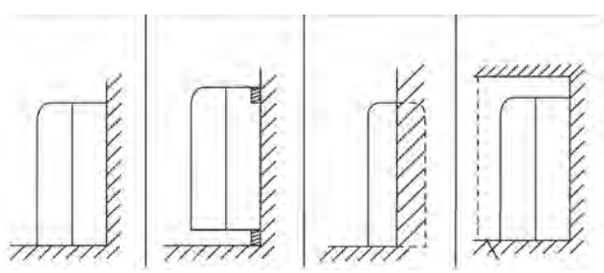
Two modes of air supply

The unit has a switch to change the direction of air supply only up or up and down (volumetric air supply).



Easy installation

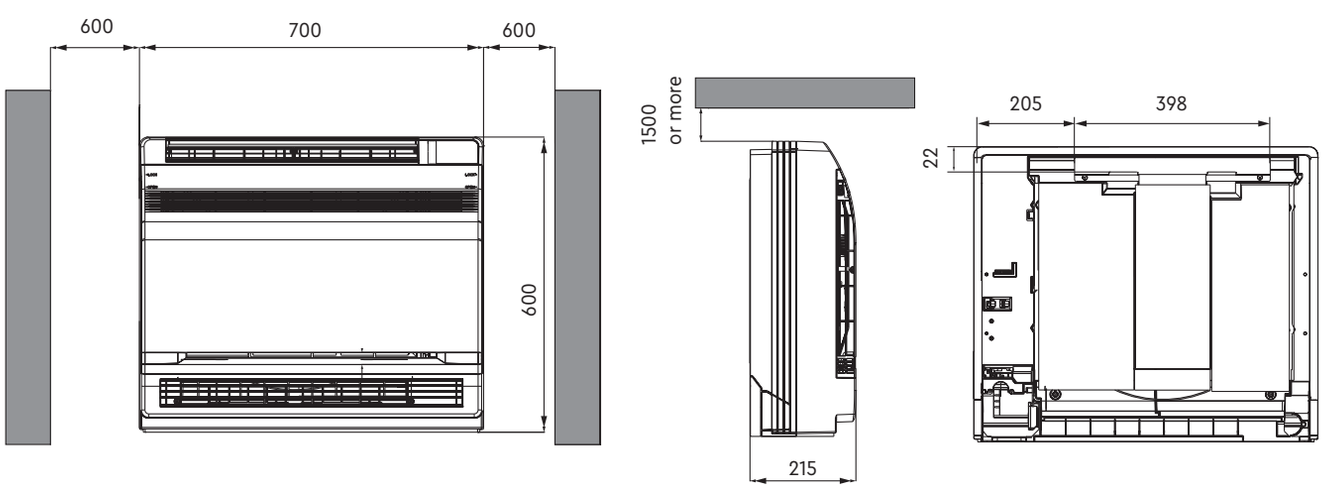
The unit can be installed directly on the floor or on the wall.



TECHNICAL CHARACTERISTICS

Model			CHV-5SK22NK	CHV-5SK28NK	CHV-5SK36NK	CHV-5SK45NK	CHV-5SK50NK
Cooling capacity		kW	2.2	2.8	3.6	4.5	5
Heating capacity		kW	2.5	3.2	4	5	5.5
Air flow rate		m^3/h	400/320/270		480/400/310	680/600/500	
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz				
Power consumption		W	15		20	40	
Rated current		A	0.17		0.25	0.4	
Fuse current		A	6				
Sound pressure level		dB(A)	38/33/27		40/37/32	46/43/39	
Pipe diameter	Liquid line	mm	6.35				
	Gas	mm	9.52		12.7		
	Drain (Diameter X pipe wall's thickness)	mm	28x1				
Unit dimensions (DxWxH)		mm	700x215x600				
Package dimensions (LxWxH)		mm	785x280x762				
Net/Gross weight		kg	16/19				

OVERALL DIMENSIONS



Overall dimensions and installation holes dimension

Units: mm

Filter that can be washed with water

New fan blade design to reduce noise

Easy installation

Quick-removal panel

Column type indoor unit

With its large cooling capacity and compact vertical design, it is widely used in homes, hotels, restaurants, chain stores, offices and meeting rooms.

Comfortable air supply

The air flow can be evenly distributed in all corners of the room, adjusting the direction both in the vertical plane and in the horizontal plane.

Filter that can be washed with water

A durable filter that can be easily removed and cleaned to extend its service life.

Silent design

Thanks to the use of highly efficient centrifugal fan blades, the noise level of the indoor unit has been significantly reduced.

Powerful and fast

Thanks to the application of intelligent temperature control technology with the function of turbo cooling/heating, you can quickly reach the desired temperature in the room.

Function «I-Feel»

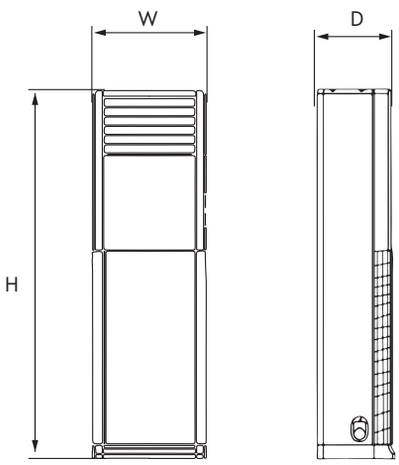
Once the user enables this feature, the device can detect the temperature at the location of the remote and manage performance by receiving data from the remote controller in real time.

*Works with remote controller YAP1F

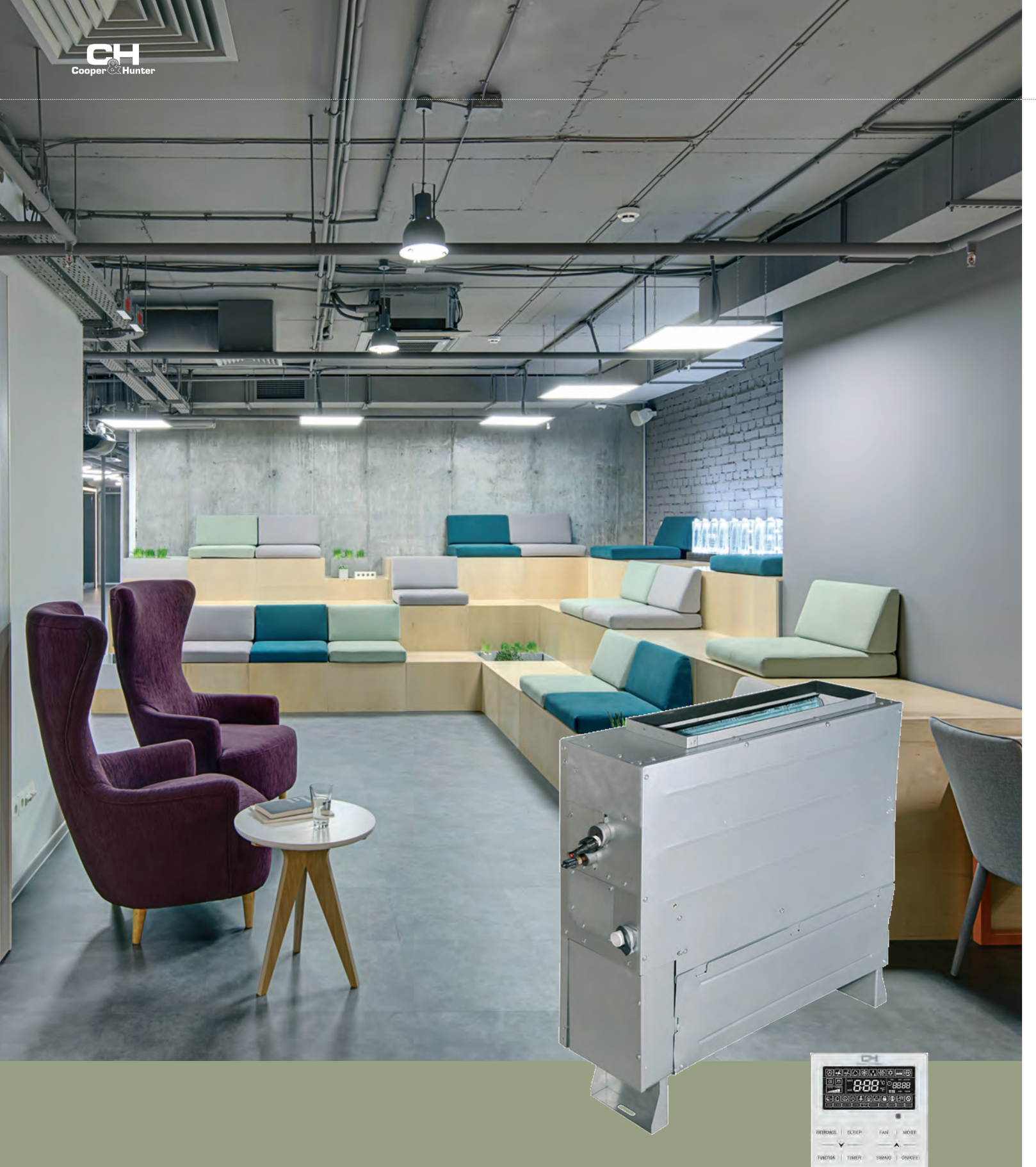
TECHNICAL CHARACTERISTICS

Model			CHV-5SFS100NK	CHV-5SFS140NK
Cooling capacity		kW	10	14
Heating capacity		kW	11	15
Power consumption		W	200	
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz	
Fuse current		A	6	
Air flow rate		m^3/h	1850/1600/1400	
Sound pressure level		dB(A)	50/48/46	
Pipe diameter	Liquid line	mm	9.52	
	Gas	mm	15.9	
	Drain (Diameter X pipe wall's thickness)	mm	31x4.5	
Overall dimensions of unit (LxWxH) without package		mm	580x400x1870	
Overall dimensions of unit (LxWxH) in package		mm	735x530x2080	
Net/Gross weight		kg	54/74	57/77

OVERALL DIMENSIONS



Model	H	W	D
CHV-5SFS100NK CHV-5SFS140NK	1870	580	400



Indoor unit for hidden installation

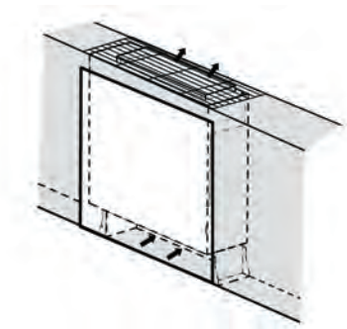
This unit is designed for concealed installation on the floor or wall. Having small overall dimensions, it is easy to hide in the interior. This unit can be widely used in hotels, schools, cottages, offices and meeting rooms, providing a comfortable environment for users.

DC motor, low noise

The brushless DC motor provides smooth speed control and can set an automatic quiet mode via a wired controller to reduce noise.

Compactness

The thickness of the unit body is only 200 mm, requiring less space for installation.



Adjusting the pressure of the fan

From the control panel, you can change the static pressure of the fan according to the characteristics of the air duct network. The maximum static pressure can reach 60 Pa.

Flexible installation

The removable front panel allows you to change the air intake from the bottom or the side.
The height of the legs can be chosen according to the height of the installation space and design solutions.

Convenient design for maintenance

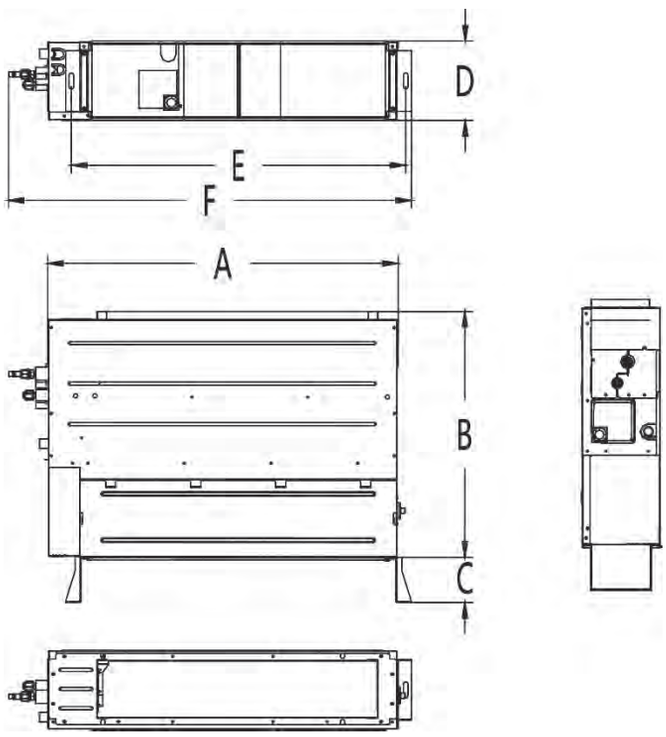
Only one opening in the decorative wall is required to access all the components of the unit.

TECHNICAL CHARACTERISTICS

Model			CHV-5SFC22NK	CHV-5SFC28NK	CHV-5SFC36NK
Cooling capacity		kW	2.2	2.8	3.6
Heating capacity		kW	2.5	3.2	4
Air flow rate		m³/h	450/350/250	450/350/250	550/450/350
Nominal fan pressure		Pa	10		
Fan pressure range		Pa	0–40		
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz		
Power consumption		W	35	35	43
Rated current		A	0.2	0.2	0.3
Fuse current		A	6		
Sound pressure level		dB(A)	30/28/25	30/28/25	33/31/28
Pipe diameter	Liquid line	mm	6.35	6.35	6.35
	Gas	mm	9.52	9.52	12.7
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5		
Unit dimensions (DxWxH)		mm	700x200x615		
Package dimensions (LxWxH)		mm	890x290x740		
Net/Gross weight		kg	23/30		

Model			CHV-5SFC45NK	CHV-5SFC56NK	CHV-5SFC63NK	CHV-5SFC71NK
Cooling capacity		kW	4.5	5.6	6.3	7.1
Heating capacity		kW	5	6.3	7.1	8
Air flow rate		m³/h	650/500/400	900/750/600	900/750/600	1100/900/700
Nominal fan pressure		Pa	15			
Fan pressure range		Pa	0–60			
Power supply		V/Ph/Hz	220–240V / 1Ph / 50Hz			
Power consumption		W	45	80	80	90
Rated current		A	0.3	0.43	0.43	0.48
Fuse current		A	6			
Sound pressure level		dB(A)	33/31/28	35/33/30	35/33/30	37/35/33
Pipe diameter	Liquid line	mm	6.35	9.52	9.52	9.52
	Gas	mm	12.7	15.9	15.9	15.9
	Drain (Diameter X pipe wall's thickness)	mm	25x2.5			
Unit dimensions (DxWxH)		mm	900x200x615	1100x200x615		
Package dimensions (LxWxH)		mm	1120x290x740	1320x290x740		
Net/Gross weight		kg	27/36	32/41		

OVERALL DIMENSIONS



Model	A	B	C	D	E	F
CHV-5SFC22~36NK	700	615	120	200	665.5	837
CHV-5SFC45NK	900	615	120	200	865.5	1045
CHV-5SFC56~71NK	1100	615	120	200	1065.5	1236

Overall dimensions and installation holes dimension

Units: mm

AHU kit

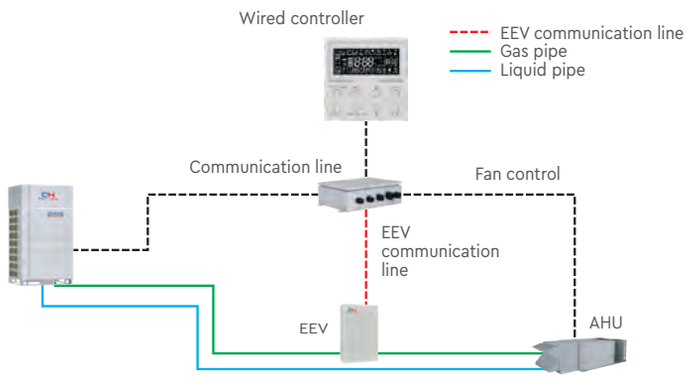
A kit for connecting ventilation units with direct cooling heat exchangers to external CHV units.

Connection

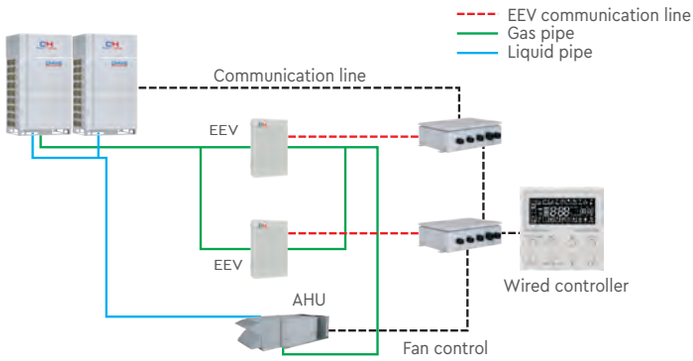
The AHU kit allows you to connect a ventilation unit with a direct cooling heat exchanger to the outdoor unit of the VRF system. There are three types of connections:

One-to-one

The AHU kit with the supply unit can be connected to the outdoor unit of the VRF system in a one-to-one manner. The total power of the AHU set should be between 50 % and 110 % of the power of the outdoor unit.



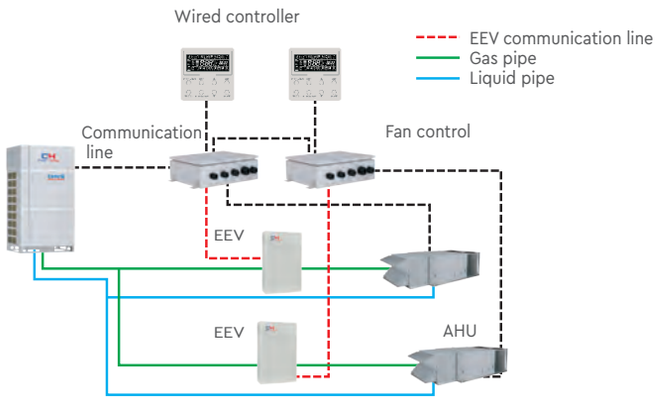
One-to-one connection, one AHU kit AHU kit 7.1 kW<= Qx <=84kW



One-to-one connection, few AHU kits for maximal power 84kW< Qx <=252kW

One-to-many

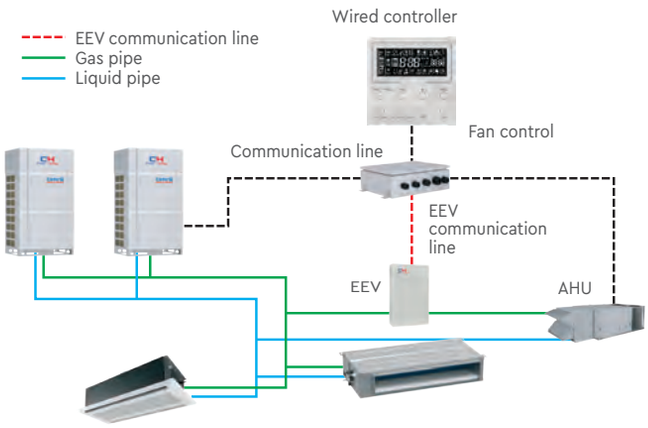
Several ventilation systems with AHU kits can be connected to one outdoor unit of the VRF system. The total power of the AHU set should be between 50 % and 110 % of the power of the outdoor unit. (Let's take one outdoor unit for two supply units as an example)



One-to-many connection, one AHU kit 2.8kW<= Qx <=84kW

Mixed connection

AHU sets can be connected to one VRF system in combination with normal VRF indoor units. The total power of the AHU set and the indoor units should be between 50 % and 110 % of the outdoor unit power, and the total power of the AHU set cannot exceed 30 % of the outdoor unit power.



Mixed connection, one AHU kit 2.8kW<= Qx <=28kW

*Units with performance in the range of 2.8–28kW can be connected to one system;
Units with a capacity in the range of 22.4–84 kW can be connected to one system.

For example, you cannot connect units with a capacity of 84 kW and 14 kW to the same air conditioning system.

Set

1. EEV unit
2. Control unit
3. Wired controller
4. Temperature sensors – for liquid and gas pipes (for refrigerant), for air before and after the heat exchanger.

The control system is mounted indoors, and the EEV can be installed indoors or outdoors.

Wide range of performance

Various combinations of models are possible, which can expand the power range.

Third party controller

It is allowed to connect third-party controllers with basic control functions: on/off, change of operating modes (cooling, heating, ventilation), temperature adjustment.

TECHNICAL CHARACTERISTICS

Model				CHV-AK036NK3		CHV-AK071NK3			CHV-AK140NK3		
Power index according to factory settings				36		71			140		
Cooling capacity according to factory settings			kW	3.6		7.1			14		
Heating capacity according to factory settings			kW	4		8			16		
Power index				28	36	45	56	71	90	112	140
Cooling capacity			kW	2.8	3.6	4.5	5.6	7.1	9	11.2	14
Heating capacity			kW	3.2	4	5	6.3	8	10	12.5	16
Power consumption			W	8		8			8		
Power supply			V/Ph/Hz	220–240V / 1Ph / 50Hz							
Pipe connection diameters	AHU kit		mm	6.35	6.35	9.52	9.52	9.52	9.52	9.52	9.52
	Air processing unit heat exchanger	Liquid	mm	6.35	6.35	6.35	9.52	9.52	9.52	9.52	9.52
		Gas	mm	9.52	12.7	12.7	15.9	15.9	15.9	15.9	15.9
	Connection method			Soldering							
Overall dimensions (LxWxH)	EEV node		mm	203x326x85		203x326x85			203x326x85		
	Control unit		mm	334x284x111		334x284x111			334x284x111		
Package dimensions (LxWxH)			mm	539x461x247		539x461x247			539x461x247		
Net weight			kg	10		10.5			10.5		

Model				CHV-AK280NK3					CHV-AK560NK3		
Power index according to factory settings				280					560		
Cooling capacity according to factory settings			kW	28					56		
Heating capacity according to factory settings			kW	31.5					63		
Power index				224	280	335	400	450	504	560	840
Cooling capacity			kW	22.4	28	33.5	40	45	50.4	56	84
Heating capacity			kW	25	31.5	37.5	45	50	56.5	63	94.5
Power consumption			W	8					8		
Power supply			V/Ph/Hz	220–240V / 1Ph / 50Hz							
Pipe connection diameters	AHU kit		mm	9.52	9.52	9.52	9.52	9.52	15.9	15.9	15.9
	Air processing unit heat exchanger	Liquid	mm	9.52	9.52	12.7	12.7	12.7	15.9	15.9	19.05
		Gas	mm	19.05	22.2	25.4	25.4	28.6	28.6	28.6	31.8
	Connection method			Soldering							
Overall dimensions (LxWxH)	EEV node		mm	203x326x85					246x500x120		
	Control unit		mm	334x284x111					334x284x111		
Package dimensions (LxWxH)			mm	539x461x247					759x645x180		
Net weight			kg	10					12.5		

SELECTION OF AHU KIT FOR THE AIR PREPARATION UNIT

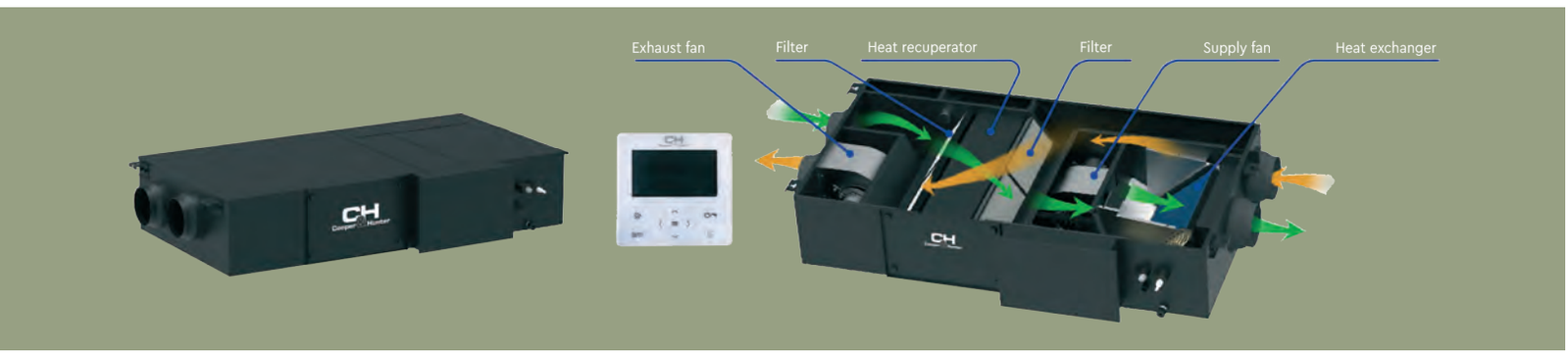
Model	Cooling capacity kW	DIP cap. Perfromance switch	Allowable volume of the heat exchanger, L		Allowable heat exchanger capacity, kW				Allowable air flow through the heat exchanger, m³/h	
					Cooling		Heating			
			Min	Max	Min	Max	Min	Max	Min	Max
CHV-AK036NK3	2.8	28	0.67	0.75	2.5	2.8	2.8	3.2	375	532
	3.6	36	0.75	0.96	2.8	3.6	3.2	4	420	684
CHV-AK071NK3	4.5	45	0.96	1.2	3.6	4.5	4	5	540	855
	5.6	56	1.2	1.5	4.5	5.6	5	6.3	675	1064
	7.1	71	1.5	1.9	5.6	7.1	6.3	8	840	1349
CHV-AK140NK3	9	90	1.9	2.4	7.1	9	8	10	1065	1710
	11.2	112	2.4	2.99	9	11.2	10	12.5	1350	2128
	14	140	2.99	3.74	11.2	14	12.5	16	1680	2660
CHV-AK280NK3	22.4	224	3.74	5.98	14	22.4	16	25	2100	4256
	28	280	5.98	7.48	22.4	28	25	31.5	3360	5320
	33.5	335	7.48	8.94	28	33.5	31.5	37.5	4200	6365
	40	400	8.94	10.68	33.5	40	37.5	45	5025	7600
	45	450	10.68	12.02	40	45	45	50	6000	8550
CHV-AK560NK3	50.4	504	12.02	13.46	45	50.4	50	56.5	6750	9576
	56	560	13.46	14.95	50.4	56	56.5	63	7560	10640
	84	840	14.95	22.43	56	84	63	94.5	8400	15960
CHV-AK560NK3+ CHV-AK140NK3	98	840+140	24.3	26.17	84	98	94.5	110.5	12600	18620
CHV-AK560NK3+ CHV-AK280NK3	112	840+280	26.17	29.9	98	112	110.5	126	14700	21280
CHV-AK560NK3+ CHV-AK560NK3	140	840+560	29.9	37.38	112	140	126	157.5	16800	26600
	168	840+840	37.38	44.86	140	168	157.5	189	21000	31920
CHV-AK560NK3+ CHV-AK560NK3+ CHV-AK140NK3	182	840+840+140	44.86	48.59	168	182	189	204.5	25200	34580
CHV-AK560NK3+ CHV-AK560NK3+ CHV-AK280NK3	196	840+840+280	48.59	52.33	182	196	204.5	220.5	27300	37240
CHV-AK560NK3+ CHV-AK560NK3+ CHV-AK560NK3	224	840+840+560	52.33	59.81	196	224	220.5	252	29400	42560
	252	840+840+840	59.81	67.28	224	272	252	306	33600	51680

Capacity is determined under the following conditions:
Cooling: Saturated evaporation temperature = 6 °C, superheat (SH) = 5 °C.
Return air temperature: 27 °C (DB)/19 °C (WB).
Heating: saturated condensing temperature = 46°C, subcooling (SC) = 3°C.
Return air temperature: 20°C (DB).

Requirements for the heat exchanger:
The heat exchanger of the air handling unit is designed for R410A, the working pressure of which is 4.3 MPa. The number of heat exchanger rows is no more than 4 rows.
The diameter of the copper pipe of the heat exchanger is not more than 12.7 mm, 9.52 mm is recommended.
Temperature range at the air inlet to the heat exchanger: cooling: 16 ~ 35 °C, heating: 10 ~ 27 °C.

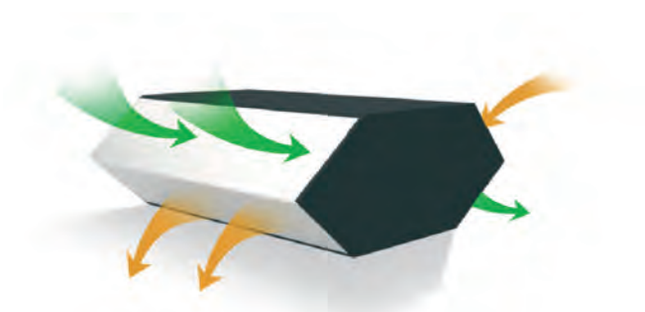
ERV + Direct Evaporation Heat Exchanger (DX)

This series is supply-exhaust units with recuperation and a direct cooling section. These units are used in conjunction with outdoor CHV units.



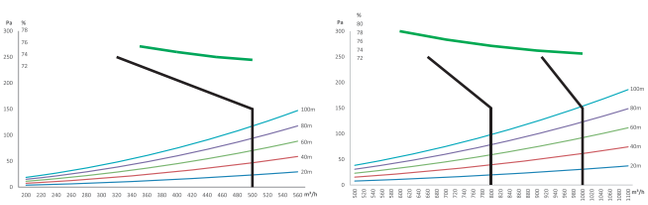
Highly efficient countercurrent enthalpy recuperator

Enthalpy recuperators transfer not only apparent, but also hidden heat of vaporization from the exhaust air to the supply air, increasing the efficiency of the installation and return moisture in the form of vapor in the cold period of the year.



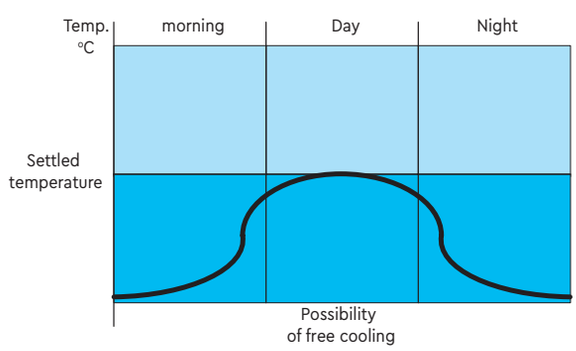
Constant air flow

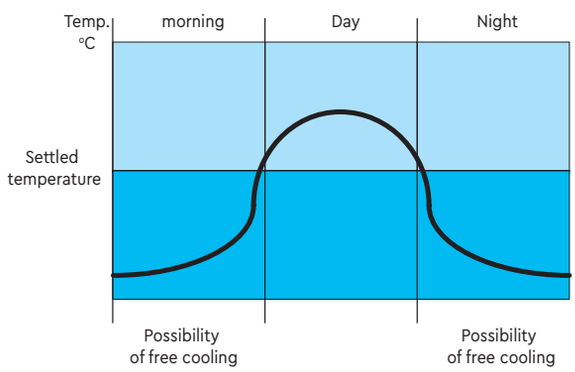
The units use the technology of constant air flow control, which allows you to maintain the air flow within a certain resistance of the air duct network.



Free cooling

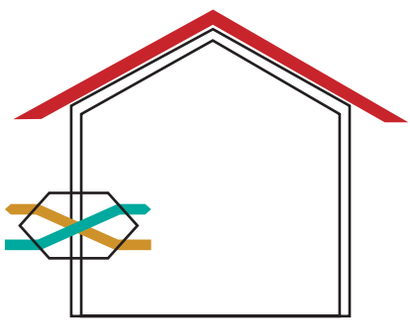
When the outside temperature is lower than the set temperature, the units can automatically supply fresh air to cool the room. Free cooling can always be used in the transition season. With a large temperature difference in summer between day and night, you can also activate the free cooling mode to lower the room temperature.





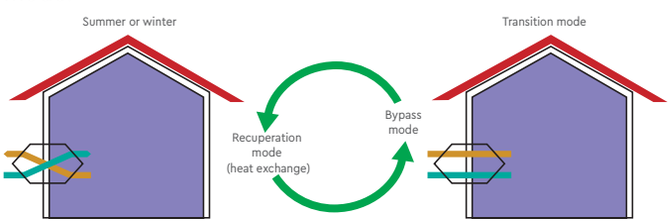
Three modes of ventilation

Creation of excess pressure: the flow of supply air exceeds the flow of exhaust air, creating a slight excess pressure in the room to prevent the flow of air from adjacent rooms or the environment;
Creation of rarefaction: the exhaust air flow exceeds the supply air flow, creating a rarefaction to prevent air flow into adjacent rooms;
Balanced ventilation: supply and exhaust air flows are the same (default).



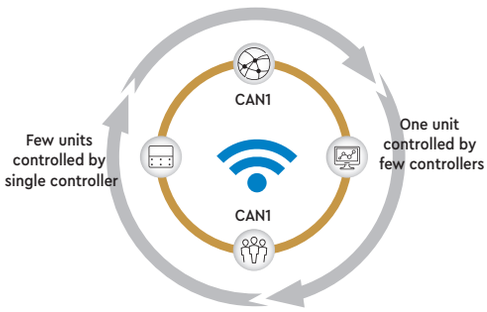
Three modes of operation

Full heat exchange mode: heat exchange takes place between exhaust and supply air for effective energy recovery.
Bypass mode: supply-exhaust ventilation without heat exchange.
Air removal mode: the unit works only in exhaust ventilation mode.



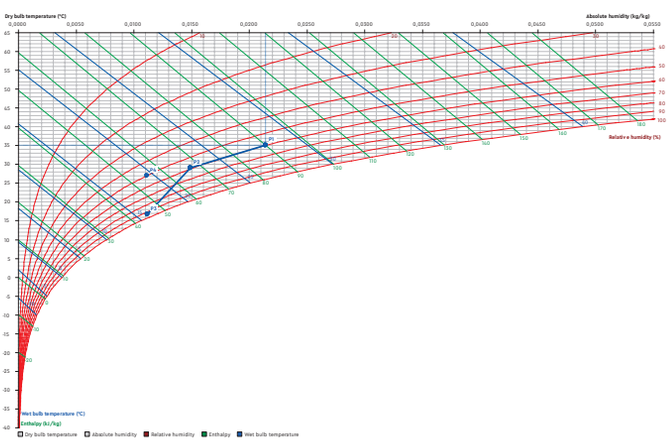
Shared management

The ERV DX unit can be connected to CHV indoor units of other types on the same CAN and HBS network for group control.



Cooling and heating functions

The units have cooling and heating functions, just like conventional air conditioners.
For example: under external conditions of 35 °C (RH 60 %), and internal conditions of 27 °C (RH 50 %) with equal flow of supply and exhaust air, the air passes through the recuperator and is cooled to a temperature of approximately 29 °C, then cooled and dried on the heat exchanger to reach the appropriate temperature before entering the room.



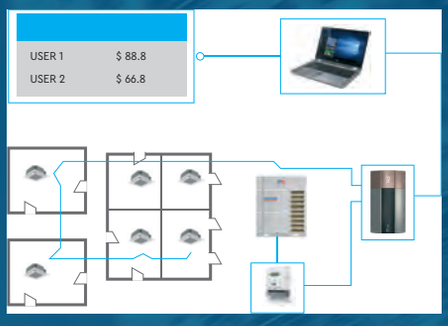
			CHV-5SHRV5PNK	CHV-5SHRV8PNK	CHV-5SHRV10PNK
Cooling capacity		kW	8.5	12	14.5
Heating capacity		kW	4	10.6	12
Air flow range		m³/h	500/400/300	800/600/400	1000/800/600
Fan rated pressure		Pa	150		
Thermal efficiency		%	73	74	73
Power supply		V/Ph/Hz	220-240V / 1Ph / 50Hz		
Power consumption		W	270	440	640
Rated current		A	1.65	2.73	3.86
Fuse current		A	6		
Sound pressure level		dB(A)	41/37/32	46/38/33	49/44/37
Pipe diameter	Liquid line	mm	6.35	9.52	
	Gas	mm	12.7	15.9	
	Drain (Diameter X pipe wall's thickness)	mm	25.4x2.5		
Unit dimensions (DxWxH)		mm	1700×880×340	1800×1185×390	
Package dimensions (LxWxH)		mm	1988×1138×535	2110×1440×567	
Net/Gross weight		kg	120/175	158/225	

Key card

Central controller

Control system

PC control and calculation of consumed electricity



Functions and characteristics of central controllers

Name	CE52-24/F(C)	CE54-24/F(C)
Maximum number of controlled indoor units	255	32
Maximum number of controlled systems	16	
Screen size	7 inches	4.3 inches
Screen resolution	1280x800	480x272
Touch mode	Capacitive	
Power source	100–240 V AC	
Dimensions (WxHxD) (mm)	186x128x11	128x86x11
On/off settings	●	●
Mode settings	●	●
Temperature settings	●	●
Fan speed settings	7 fan speeds	
Louver settings	●	●
Screen block	●	●
Outdoor air temperature display	●	●
Dimensionality of temperature °C/°F	●	●
Transition to summer time	●	○
Clock display	●	●
Authority management	●	●
Group control	●	●
Schedule management	●	●
Special schedule	●	○
Emergency stop	●	○
Parameters view	●	●
Engineering settings	●	●
Fault log	●	●
Sorting of indoor units	●	○
Name and icon settings	●	●
Work time	●	○
Data export	Supports TF cards	○
Available languages	• English • Simplified Chinese • Traditional Chinese • German • Spanish • French • Portuguese • Turkish • Russian • Italian • Dutch	• English • Simplified Chinese • Traditional Chinese • German
Available units	• VRF indoor units • DHW • Heating floor • fresh air units	• VRF indoor units

Notes: ● – settings are allowable; ○ – settings are not available

Central controller CE52-24/F(C)

- Elegant and fashionable appearance;
- Colorful LCD display, clear and colorful screen;
- 7-inch capacitive touch screen for convenient control;
- 255 units can be controlled centrally;
- Ability to connect indoor and outdoor units to a network;
- Autonomous power supply in a wide voltage range of 100 - 240 V;
- The wall-mounted controller has a protrusion thickness of only 11 mm;
- It has the functions of setting up the device, viewing parameters, recording faults and controlling access;
- Single unit, group and all IDU lock function (function lock on/off, mode, temperature setting, etc.), remote control as desired; Provides naming of indoor units, selection of icons and personalized setting of the centralized controller (background setting, backlight, etc.).
- Has various functions: centralized control (control of all indoor units), group control (support grouping by own criteria), schedule control (multiple schedule settings, support special schedule settings such as holidays) and single indoor unit control (on/off, mode, set temp., fan speed, silent mode , blind control, etc.).

Central controller CE54-24/F(C)

- Colorful LCD display;
- Elegant and fashionable appearance;
- 4.3-inch capacitive touch screen for convenient control;
- Support for a maximum of 32 indoor units;
- The network of indoor and outdoor units can have a flexible and simple connection;
- The wall-mounted controller has a protrusion thickness of only 11 mm;
- Autonomous power supply in a wide voltage range of 100 - 240 V;
- Support for names and selection of icons for indoor units, implementing individual management;
- Lock function of individual unit, group and all IDUs (function lock on/off, mode, temperature setting, etc.);
- With the function of engineering settings, parameter view, fault view and authority management. Easy to debug and maintain;
- With single indoor unit control (including common and advanced functions), group indoor unit control (including common functions and advanced functions), group control (support grouping by own criteria), single indoor unit and timer functions for groups (common function: on/off, mode, temperature, fan, rock, etc.; advanced functions: save, sleep mode, human absence, silence, turbo, etc.).

Name	Wired controller					
	XE7A-24/H	XE7A-24/HC	XE70-33/H	XK46	XK55	XK79
Dimensions (mm)	112x112				102×86	86×86
Appearance						
Built-in installation (requires a hole in the wall)	o	o	o	o	●	●
Backlight	●	●	●	●	●	●
One controller for many units / Group control (one controller can control up to 16 indoor units)	●	●	●	●	●	●
One unit for multiple controllers / auxiliary controller (one indoor unit can be controlled by two controllers)	●	●	●	●	●	●
Modes	automatic, cooling, drying, ventilation, heating, floor heating, 3D heating, room heating					
Fan speed	7 speeds: auto, low, medium-low, medium, medium-high, high, turbo					
Clock and it's settings	●	●	●	●	●	●
Countdown timer	●	●	●	●	●	●
Timer	●	●	●	●	●	●
Weekly timer	o	o	●	o	●	o
Child lock (button lock)	●	●	●	●	●	●
Swing up/down	●	●	●	●	●	●
Swing left/right	●	●	●	●	●	●
Sleep mode	●	●	●	●	●	●
Filter cleaning indicator	●	●	●	●	●	●
Memory mode	●	●	●	●	●	●
X-Fan	●	●	●	●	●	●
Silent mode	●	●	●	●	●	●
Function +8 °C (next heating)	●	●	●	●	●	o
Low temperature drying	●	●	●	●	●	o
Key card	o	o	o	o	o	●
Unit parameter view	●	●	●	●	●	o
Unit parameter setting	●	●	●	●	●	o
Fault log	●	●	●	●	●	o
Autorun (recovery after power off)	●	●	●	●	●	●
Room temperature request	●	●	●	●	●	o
I-Feel	o	o	o	o	o	o
Reset settings	●	●	o	●	●	o
Independent control of louvers for cassette units	o	o	o	o	o	o
Wi-Fi	o	●	o	o	o	o
Temperature control with an accuracy of 0.5 °C	●	●	o	o	o	o

Note: • – means that the setting is available; o – means that the setting is unavailable.

Wired controllers XE7A-24/H and XE7A-24/HC

- Large screen, moisture-resistant flat body, simple design for flexible installation;
- LCD display with backlight and touch buttons;
- Clock can be displayed and configured, with 24-hour timer on/off function (countdown and clock timer);
- 7 fan speeds, blind adjustment up, down, left and right;
- Operating modes: automatic, cooling, drying, ventilation, floor heating, 3D heating;
- Functions: sleep mode, silent/automatic silent mode, energy saving, X-fan, +8 °C function (alternate heating), low temperature drying, filter cleaning reminder, automatic cleaning, etc.;
- Engineering parameters can be viewed and adjusted;
- The hidden signal receiving panel works with an infrared remote control;
- Setting the temperature with an accuracy of 0.5 degrees;
- One controller can control up to 16 indoor units;
- It is possible to install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller;
- Wi-Fi function and remote control app: After connecting to the network, the user can remotely control the devices through the smartphone app. (This function is only available in XE7A-24/HC).

Wired controller XE70–33/H

- Elegant and concise appearance;
- LCD display with backlight and touch buttons;
- Accurate determination of ambient temperature;
- With the functions of viewing and setting system parameters;
- 7 fan speeds, blind adjustment up, down, left and right;
- Compatibility with indoor VRF units and fresh air processing unit;
- With after-sales service hotline and phone number recording functions;
- Using the weekly timer function, you can set several periods, set the operating mode, temperature and fan speed;
- One controller can control up to 16 indoor units; It is possible to install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller;
- Features include sleep mode, silent/auto silent mode, energy saving, X-fan, +8 °C function (alternate heating), low temperature dehumidification, filter cleaning reminder, automatic cleaning, etc..

Wired controller XK46

- LCD display with touch buttons;
- The clock has a 24-hour timer on/off setting (countdown and clock timer);
- 7 fan speeds, blind adjustment up, down, left and right;
- Operating modes: automatic, cooling, drying, ventilation, warm floor, 3D heating;
- Functions: sleep mode, silent/automatic silent mode, energy saving, X-fan, +8 °C function (alternate heating), low temperature drying, filter cleaning reminder, automatic cleaning, etc.;
- Engineering parameters can be viewed and adjusted;
- The hidden signal receiving panel works with an infrared remote controller;
- One controller can control up to 16 indoor units;
- It is possible to install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller;

Wired controller XK55

- Color LCD display with touch buttons;
- The clock has a weekly timer;
- 7 fan speeds, blind adjustment up, down, left and right;
- Operating modes: automatic, cooling, drying, ventilation, warm floor, 3D heating;
- Each function is configurable on a separate menu page with an intuitive interface: sleep mode, silent/automatic silent mode, energy saving, X-fan, +8 °C function (alternate heating), low temperature dehumidification, filter cleaning reminder, automatic cleaning, etc.;
- Engineering parameters can be viewed and adjusted;
- The hidden signal receiving panel works with an infrared remote controller;
- One controller can control up to 16 indoor units;
- It is possible to install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller;
- Brightness and backlight settings.

Wired controller XK79

- Simplified functions and mechanical buttons for convenient control;
- Backlit display for ease of use and information reading;
- Various operating modes, including automatic mode, cooling, dehumidification, air circulation and heating;
- Possibility of connecting the main and additional wired control panel for greater convenience;
- The function of simultaneous control of several indoor units;
- Ambient temperature measurement and the ability to receive signals from an infrared remote controller;
- Ability to view and configure project parameters;
- 7 levels of fan rotation speed and the ability to specify the direction of movement of the blinds up or down;
- The possibility of connecting the access control system through the hotel key card.

Name	Remote controller		Infrared signal receiving panel	Communication controller
	YAP1F	YAP1F7	JS13	LE60-24/H1
Dimensions (mm)	164x52		86x86	93x93
Appearance				
Built-in installation (requires a hole in the wall)	o	o	●	o
Backlight	o	o	●	●
One controller for many units / Group control (one controller can control up to 16 indoor units)	o	o	●	●
One unit for multiple controllers / auxiliary controller (one indoor unit can be controlled by two controllers)	o	o	●	●
Modes	automatic, cooling, drying, ventilation, heating		o	o
Fan speed	7 speeds: automatic, low, medium-low, medium, medium-high, high, turbo		o	o
Clock and its settings	●	●	o	o
Countdown timer	o	o	o	o
Timer	●	●	o	o
Weekly timer	o	o	o	o
Child lock (button lock)	●	●	o	o
Swing up/down	●	●	o	o
Swing right/left	●	●	o	o
Sleep mode	●	●	o	o
Filter cleaning indicator	o	●	o	o
Memory mode	o	o	o	o
X-Fan	●	●	o	o
Silent mode	o	●	o	o
Function +8 °C (next heating)	●	●	o	o
Low temperature drying	o	●	o	o
Key card	o	o	o	●
Unit parameters overview	o	o	o	o
Unit parameters setting	o	o	o	o
Fault log	o	o	●	o
Autorun (recovery after power off)	o	o	●	●
Room temperature request	o	o	o	o
I-Feel	●	●	o	o
Reset settings	o	o	o	o
Independent control of louvers for cassette units	o	o	o	o
Wi-Fi	o	o	o	o
Temperature control with an accuracy of 0.5 °C	o	o	o	o

Note: ● – means that the setting is available; o – means that the setting is unavailable.

Infrared remote controller YAP1F

- Changing auto, cooling, drying, ventilation and heating modes;
- 7 fan speeds;
- Louvers direction control up/down, left/right;
- Available child lock functions, cold plasma (Health), fresh air, turbo mode, sleep mode, screen backlight, +8 °C function (alternate heating), I-Feel (adjustment by the temperature of the sensor in the remote control) and timer;
- Displays the clock, indoor and outdoor air temperature on the screen.

Infrared remote controller YAP1F7

- Changing auto, cooling, drying, ventilation and heating modes;
- 7 fan speeds;
- Louvers direction control up/down, left/right;
- Available child lock functions, cold plasma (Health), fresh air, turbo mode, sleep mode, screen backlight, +8 °C function (alternate heating), I-Feel (adjustment by the temperature of the sensor in the remote control) and timer;
- Displays the clock, indoor and outdoor air temperature on the screen.

Has the following additional functions to YAP1F:

- Silent mode;
- Low-temperature drying;
- Availability of an indication of the need for service;
- Wi-Fi connection/reset.

Infrared signal reception panel JS13

- Infrared signal receiving panel works with infrared remote controller;
- Laconic appearance;
- Precise control of the set temperature with an accuracy of up to 0.5 °C (remote controls with a temperature adjustment accuracy of 0.5 °C are required);
- One controller can control up to 16 indoor units;
- You can install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller.

Communication controller LE60-24/H1

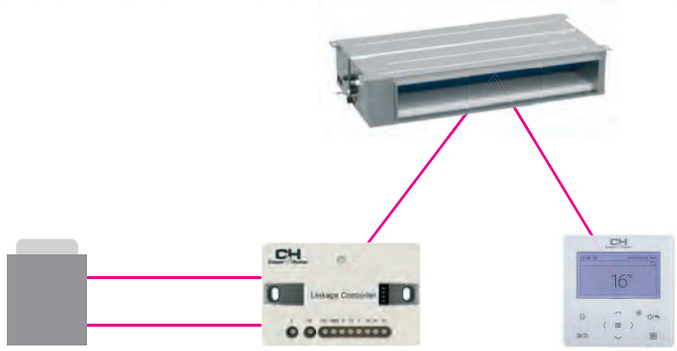
- LE60-24/H1 is usually used with wired controllers as an adapter for connecting to a key-card (roomcard) system;

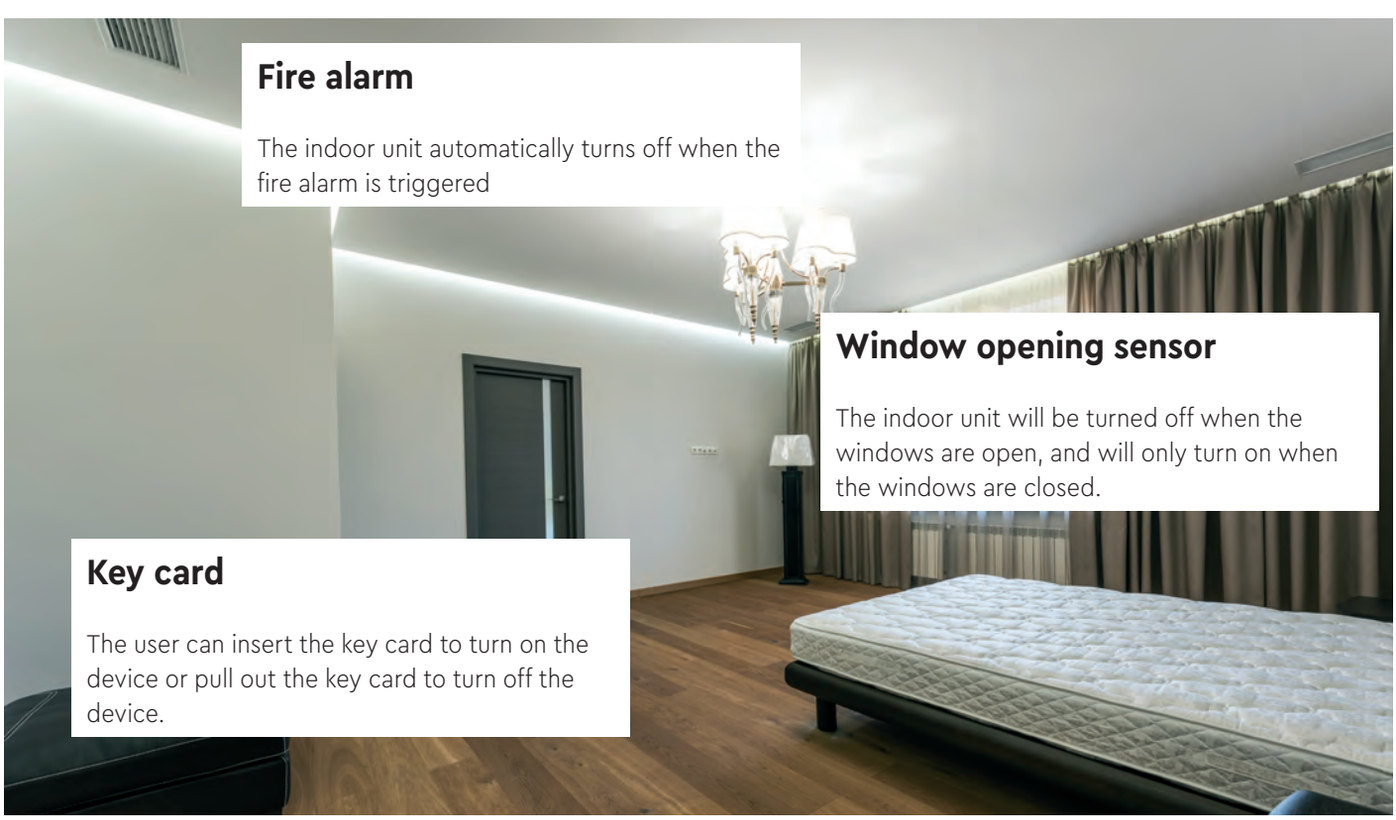
It has the following features:

- Hidden installation;
- Works with two types of key card interface power supply: AC 100-240V ~ 50/60Hz or DC5-24V;
- Two groups of dry contacts that can be used to turn off the indoor units in case of a fire alarm and turn on/off when the window is opened/closed;
- One controller can control up to 16 indoor units;
- It is possible to install two controllers on one or more indoor units (up to 16 units), by assigning the status of the master and slave controller.

Key card function

The key-card interface is often used in hotel complexes to save electricity and improve security by automatically turning off electricity consumers after the customer leaves their room. To implement the key card function, the LE60-24/H1 communication module is required, and it is installed on each indoor unit where such a function is required.
In addition, the communication controller provides two groups of dry contacts that can be used to turn indoor units on/off with signals such as fire alarm and window closing/opening.

Model	
Appearance	
Electrical connection diagram	
	Note: Different models of wired controller are used to connect indoor units independently for operation.
Access control interface	
Dry contact interface	2 groups
Dimensions (HxWxD)(mm)	63 × 94.5 × 29
Power supply	18 V DC (power supply from the indoor unit)
Application range	All VRF series



Fire alarm

The indoor unit automatically turns off when the fire alarm is triggered

Window opening sensor

The indoor unit will be turned off when the windows are open, and will only turn on when the windows are closed.

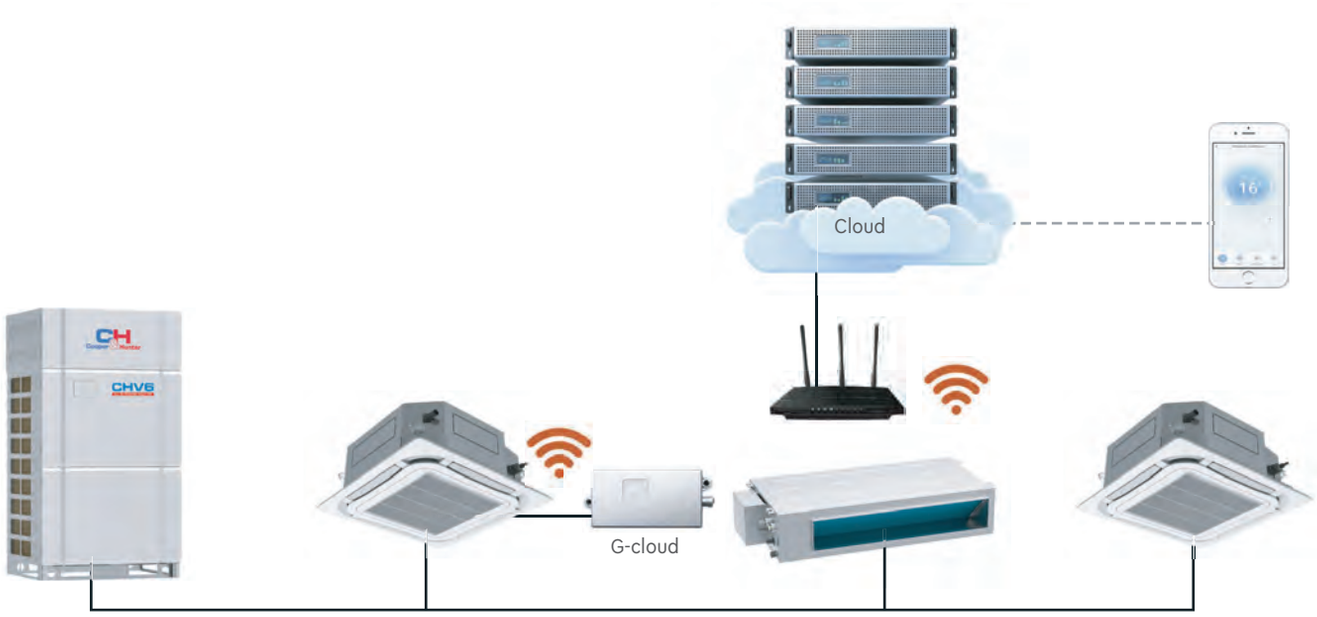
Key card

The user can insert the key card to turn on the device or pull out the key card to turn off the device.

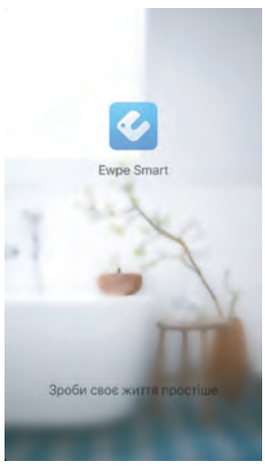
G-cloud (Wi-Fi control)

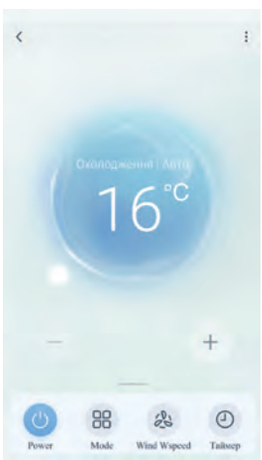
G-cloud is a compact Wi-Fi controller ME31-00/C3 that allows you to control any VRF indoor unit from a mobile smartphone or tablet via an iOS and Android app. Download the «EWPE SMART» application, complete the registration, connect G-cloud to the Wi-Fi network, following the prompts of the application, and control the air conditioners at any time and from any place. One VRF system requires only one G-cloud module.

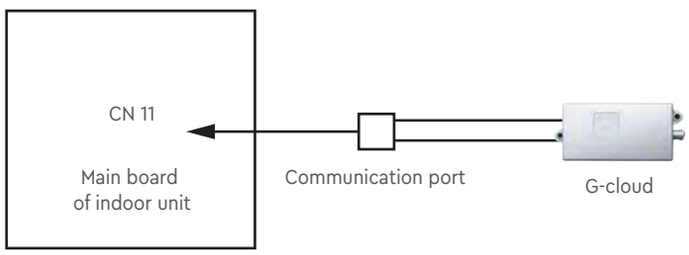
- Simple control of on/off, operating modes and temperature settings.
- Ventilation, dehumidification, sleep mode and energy saving functions can be adjusted.
- 10 preset scenarios are available, there is a weekly timer.
- 8-stage fan speed control (quiet, automatic, low, medium-low, medium, medium-high, high, turbo).

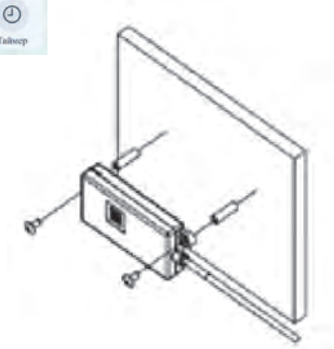


One G-cloud module can control up to 80 indoor units within one system.







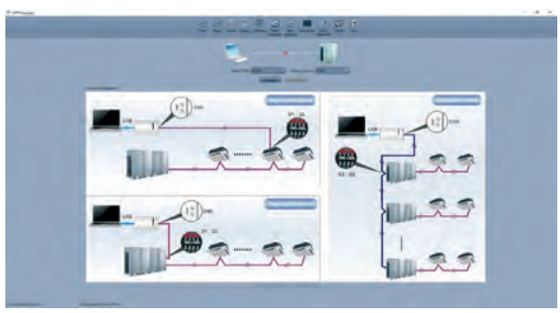


Intelligent software for diagnostic controllers

For CHV systems, software is available that simplifies setup, operation, provides diagnostic data on the operation of the equipment, and has control functions.

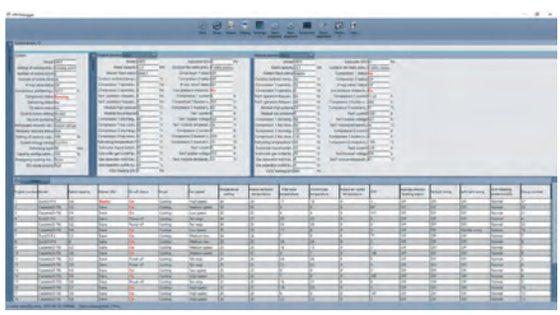
Monitoring functions

- Full control of the state of operation of all indoor and outdoor units of the system;
- Displaying comments on parameters when hovering over them;
- Connected and working devices are displayed in the form of a diagram;
- Displaying information about the air conditioner in separated regions;
- Each display area can be moved or hidden;
- Display parameters in real time.



Control functions

- Comprehensive management of indoor and outdoor units, water tank, hydrobox;
- Real-time display of the current state of all system parameters;
- Both individual and group management are available.



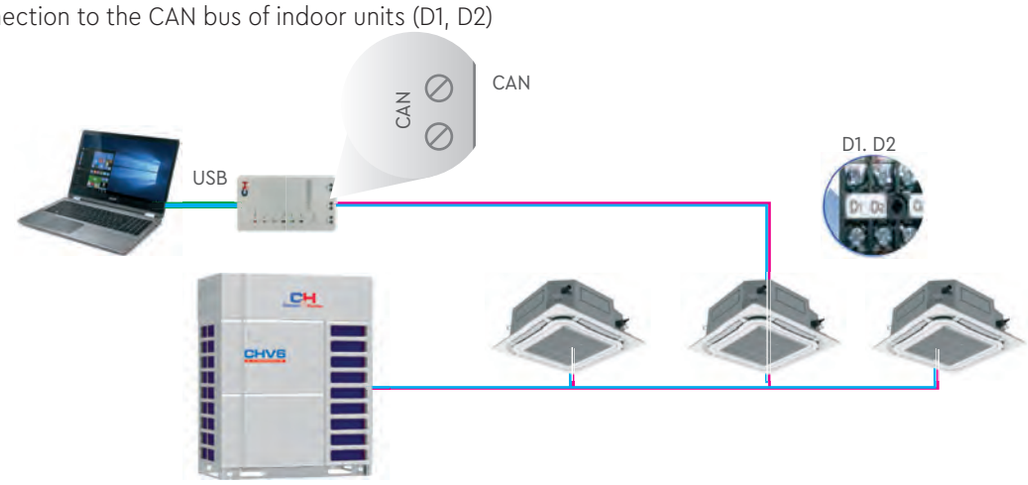
Address debugging functions

- Automatic address debugging in one click;
- Address debugging is organized step-by-step from left to right;
- Manual intervention is available and some debugging steps can be skipped;
- Green icons will be displayed for items that are completing debugging; red icons will be displayed for items that have debugging errors; light yellow icons display debugging information.

Controller connection diagrams

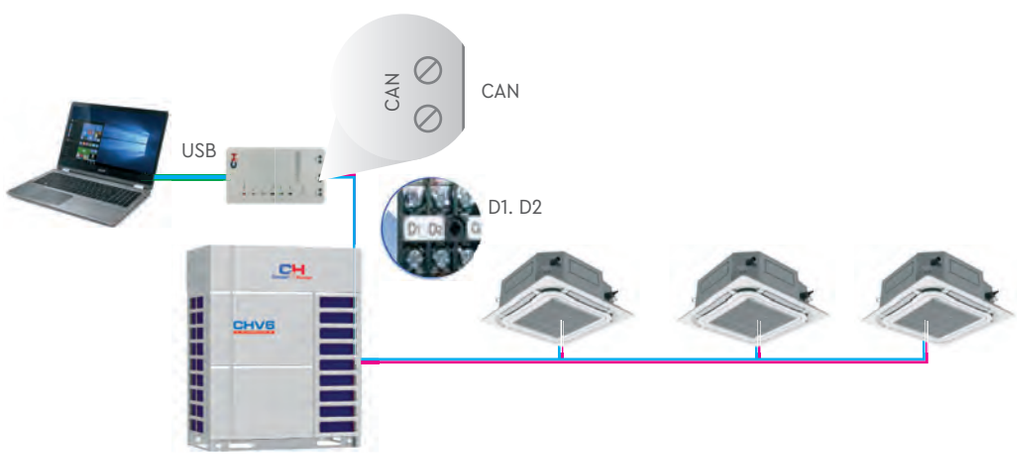
One system

Connection to the CAN bus of indoor units (D1, D2)



One system

Connection to the CAN bus of indoor units (D1, D2)

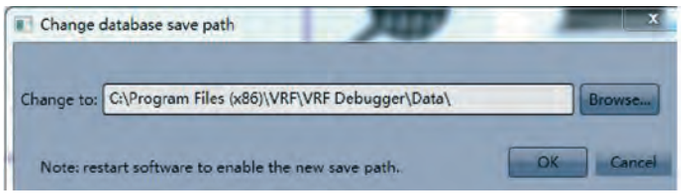


Several systems

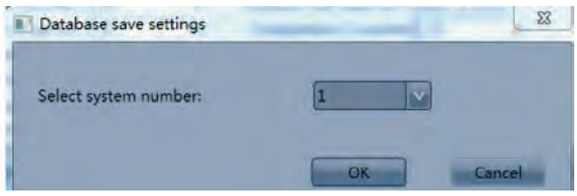
Connection to the CAN bus of outdoor units (G1, G2)

Automatic data saving

- The converter, during the entire time of connection to the computer and the CHV system, automatically records the parameters of the system. Change the data saving folder on the computer disk, download and view data in a convenient video format.



Step 1: Change the database save path



Step 2: Configuration of database retention

Diagnostic controller ME40-00/B (USB Data Converter)

The user can use the USB data converter to convert the CAN/HBS/RS485 data into USB data, initiating the exchange of information between the computer and the air conditioning equipment.

Power indicator

Data acquisition indicator

Data transfer indicator

RS485 connection indicator

CAN bus connection indicator

HBS bus connection indicator (H1H2 remote control bus)

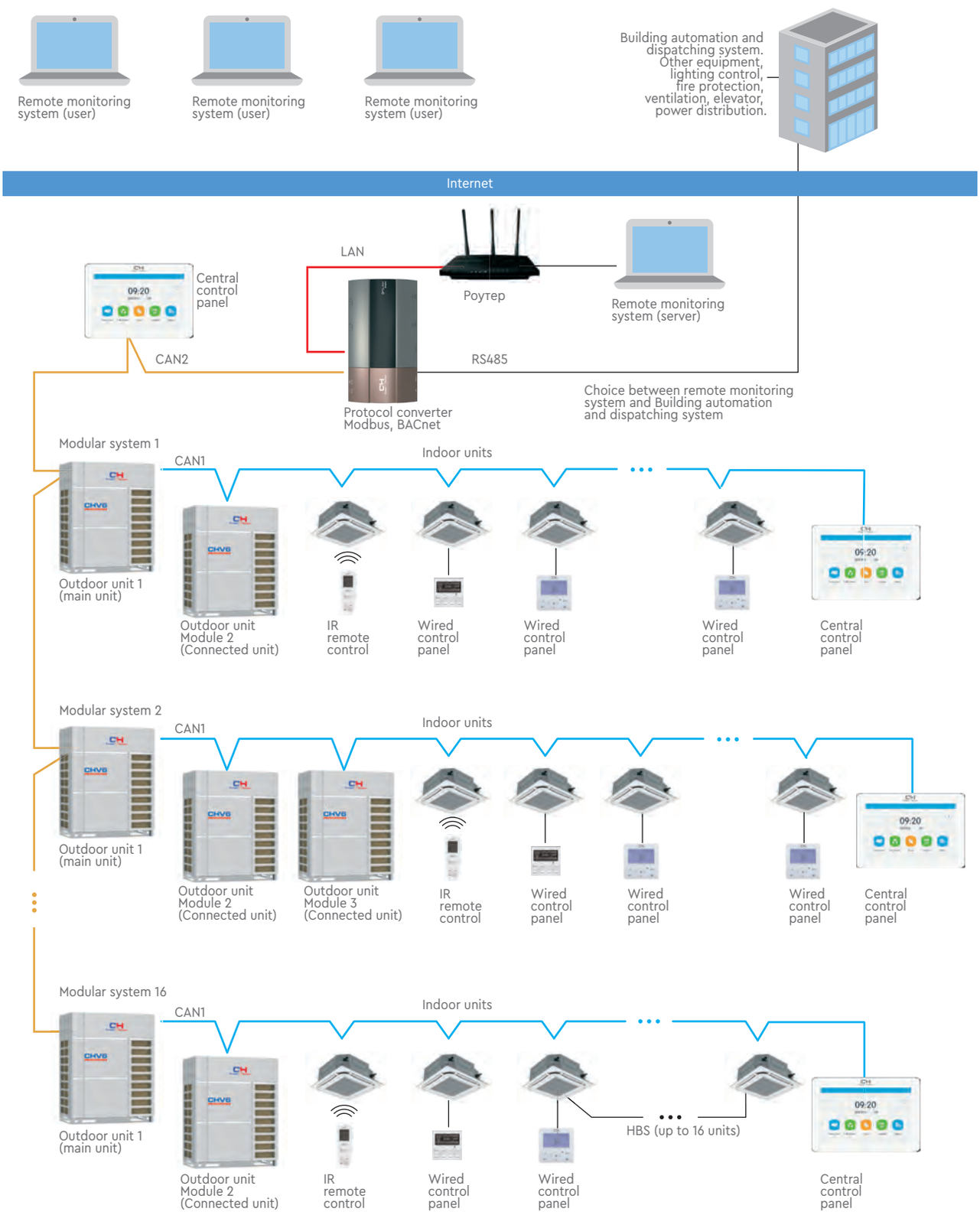
SET button – switching the selection of the data transmission bus

Diagnostic panel CE42-24/F(C) (debugger)

- 4 GB built-in memory;
- 4.3-inch colorful touch LCD screen;
- Simulation of indoor and outdoor units;
- Full system debugging function;
- Updating the program of the outdoor unit, updating the program of the indoor unit;
- Communication data can be stored and exported by connecting to a PC;
- The function of viewing the status of the system, outdoor unit, indoor unit;
- Single interface compatible with CAN and RS485 communication, which can automatically detect the communication type.

Parallel remote control system

To meet the CHV6 user's requirements as much as possible, C&H presents an intelligent parallel remote control system. The system can control both a single room and the whole house at the same time.



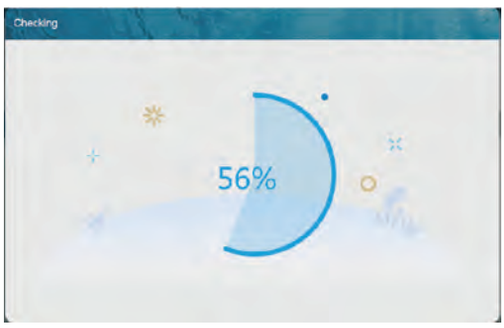
Smart assistant

Universal debugging

Support for automatic adjustment during commissioning.

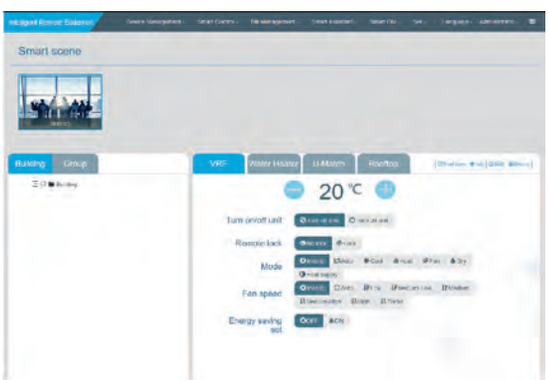
Intelligent self-diagnosis

Information about the state of the equipment can be obtained at any time, and the user can independently monitor the state of the device.



Smart scenarios

The user can preset a set of parameters according to their needs, and then switch between these sets with a single key, without having to configure the parameters individually each time.

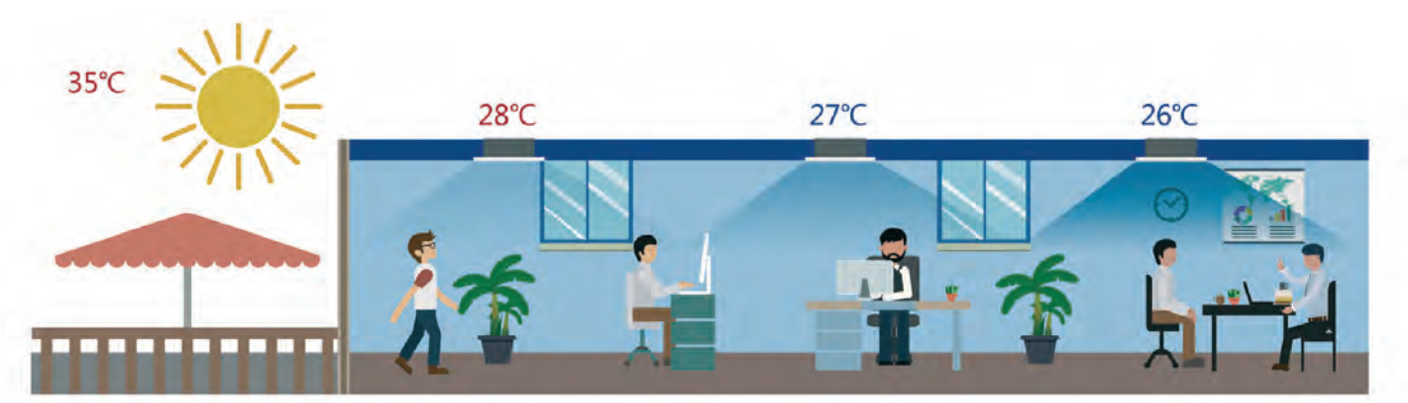


Smooth start

When using centralized control, the system will start the indoor units one by one to reduce the load on the electrical network.

Temperature field

Implement a step temperature zone, regulate it, and prevent sudden cooling or heating of the room.

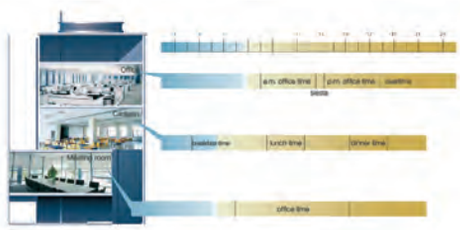


Separate settings for VIPs

The possibility of selecting a separate group of blocks in the system for individual customization to meet the needs of VIPs.

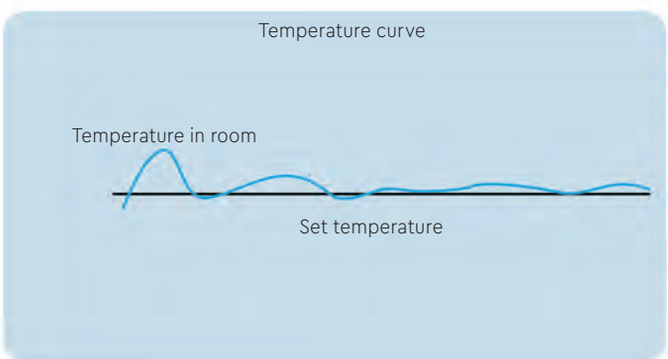
Schedule management

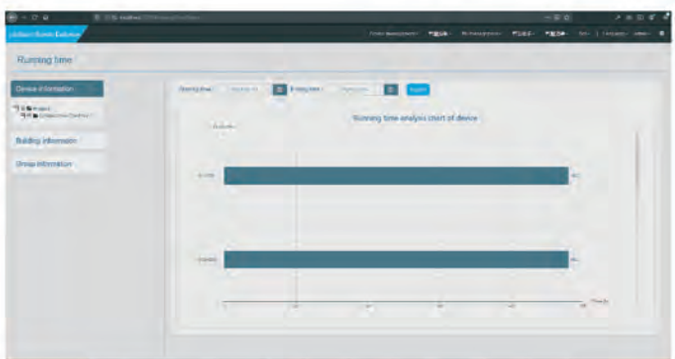
Set schedules for different rooms and different equipment, automatically execute pre-set commands and reduce time lost due to repetitive operations.



Personal assistant

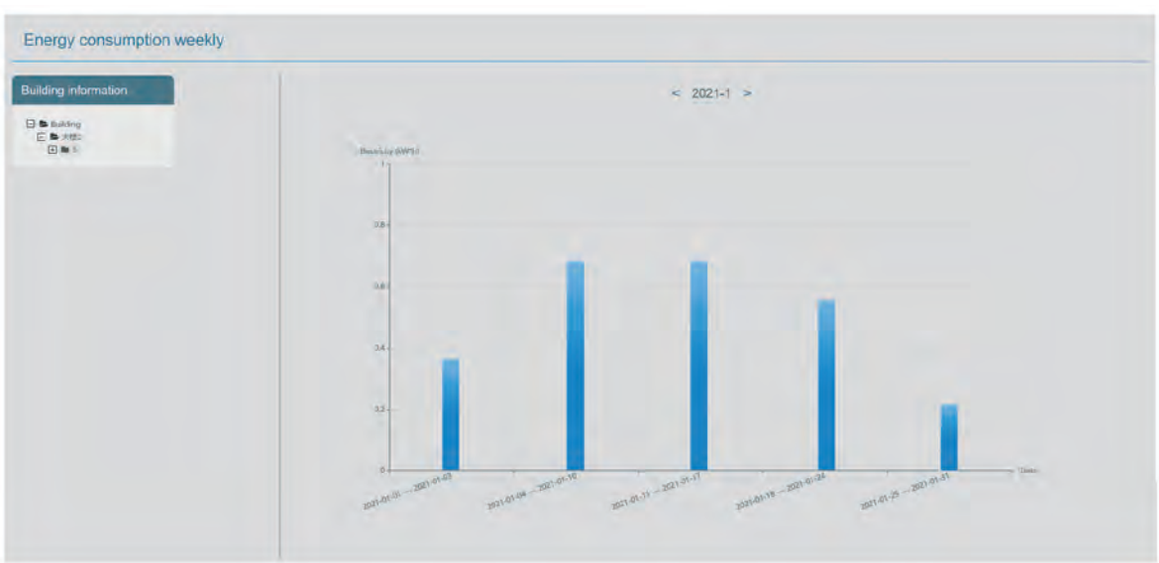
Perform statistical analysis of operating time, set temperature, room temperature and receive information about the actual condition of the equipment in real time.





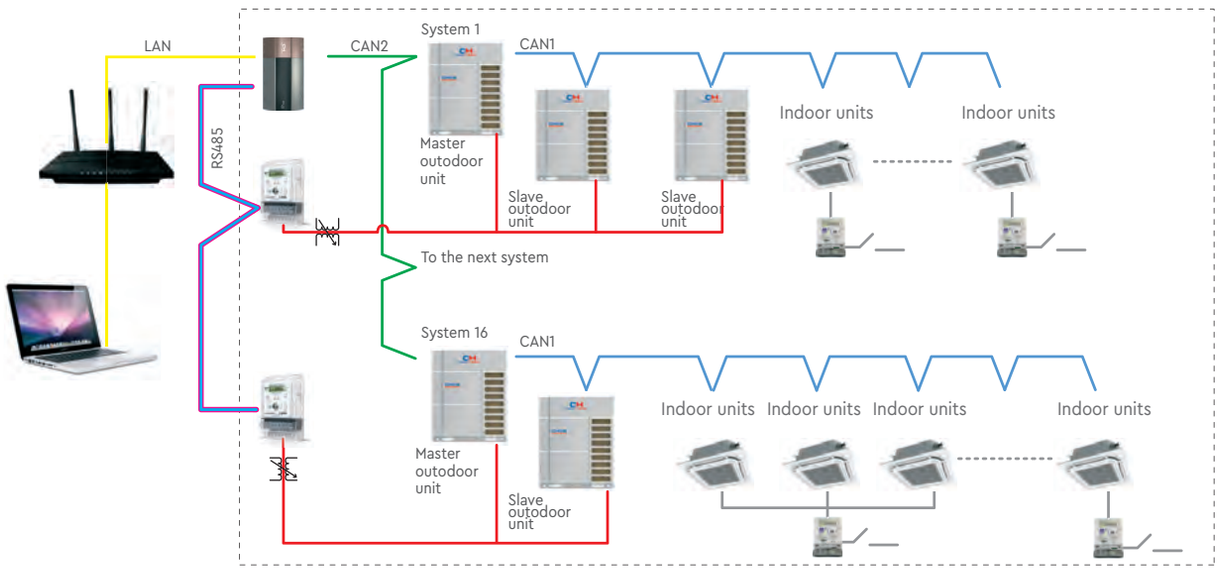
Weekly energy consumption report

Electricity consumption statistics are reported to the owner every week and every month. In the program, you can use a convenient display of the amount of electricity consumption in the form of a color chart. Note. This function works only in combination with the Intelligent Billing System gateway.



Calculation of consumed electrical energy (Intelligent Billing)

Intelligent Billing is a convenient solution for calculating energy consumption and paying bills specifically for multi-zone CHV systems. A unique calculation method allows you to get more accurate results, based on measuring the heat or cooling capacity of each unit, thus forming a share in the total amount of electricity consumption. The energy consumption accounting system can be widely used in shopping centers, apartment buildings, cottage towns or other commercial and residential facilities of different sizes and purposes.

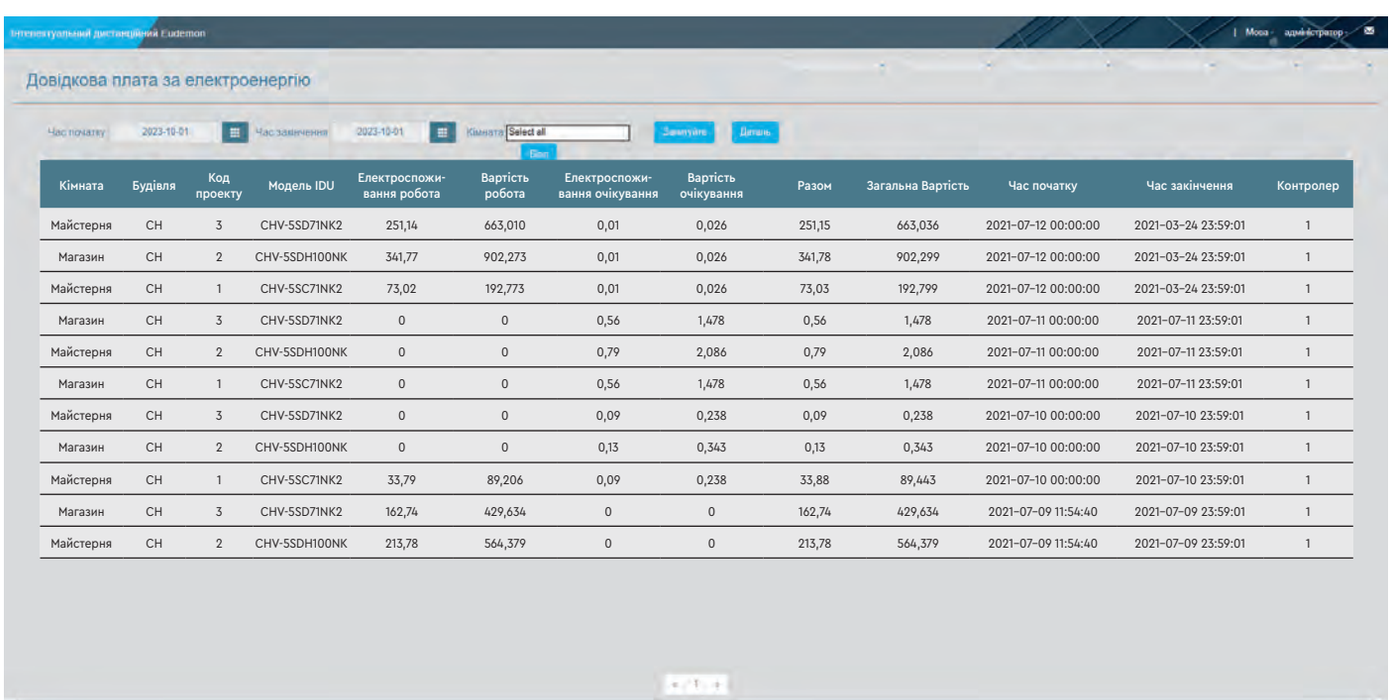


Smart computing

Power consumption is calculated automatically according to on/off time, operation mode, set temperature, indoor air temperature, outdoor temperature, etc.

Creating accounts

The system provides various forms of invoice export. Create, track and send air conditioning bills to tenants or users.



Довідкова плата за електроенергію

Кімната	Будівля	Код проекту	Модель IDU	Електроспожи-вання робота	Вартість робота	Електроспожи-вання очікування	Вартість очікування	Разом	Загальна Вартість	Час початку	Час закінчення	Контролер
Майстерня	CH	3	CHV-5SD71NK2	251,14	663,010	0,01	0,026	251,15	663,036	2021-07-12 00:00:00	2021-03-24 23:59:01	1
Магазин	CH	2	CHV-5SDH100NK	341,77	902,273	0,01	0,026	341,78	902,299	2021-07-12 00:00:00	2021-03-24 23:59:01	1
Майстерня	CH	1	CHV-5SC71NK2	73,02	192,773	0,01	0,026	73,03	192,799	2021-07-12 00:00:00	2021-03-24 23:59:01	1
Магазин	CH	3	CHV-5SD71NK2	0	0	0,56	1,478	0,56	1,478	2021-07-11 00:00:00	2021-07-11 23:59:01	1
Майстерня	CH	2	CHV-5SDH100NK	0	0	0,79	2,086	0,79	2,086	2021-07-11 00:00:00	2021-07-11 23:59:01	1
Магазин	CH	1	CHV-5SC71NK2	0	0	0,56	1,478	0,56	1,478	2021-07-11 00:00:00	2021-07-11 23:59:01	1
Майстерня	CH	3	CHV-5SD71NK2	0	0	0,09	0,238	0,09	0,238	2021-07-10 00:00:00	2021-07-10 23:59:01	1
Магазин	CH	2	CHV-5SDH100NK	0	0	0,13	0,343	0,13	0,343	2021-07-10 00:00:00	2021-07-10 23:59:01	1
Майстерня	CH	1	CHV-5SC71NK2	33,79	89,206	0,09	0,238	33,88	89,443	2021-07-10 00:00:00	2021-07-10 23:59:01	1
Магазин	CH	3	CHV-5SD71NK2	162,74	429,634	0	0	162,74	429,634	2021-07-09 11:54:40	2021-07-09 23:59:01	1
Майстерня	CH	2	CHV-5SDH100NK	213,78	564,379	0	0	213,78	564,379	2021-07-09 11:54:40	2021-07-09 23:59:01	1

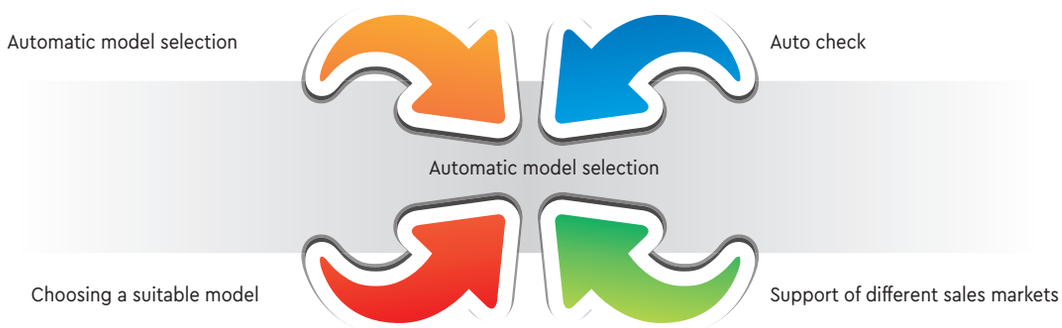
	Modbus & BacNet Gateway	Intelligent Billing Gateway	Modbus (mini)	H2M Gateway	S2S KNX Gateway
Model	ME30-24/D1(BM)	ME20-24/D1(T)	ME30-24/E6(M)	ME31-33/EH1(M)	ME30-24F1(K)
Appearance					
Dimensions	229x119x61	229x119x61	114x55x20	114x55x20	92×73×62
Power source	24DC	24DC	12DC	–	–
Bus	CAN1(D1D2), CAN2(G1G2)	CAN2(G1G2)	CAN1(D1D2), CAN2(G1G2)	HBS (H1H2)	HBS (H1H2)
Protocol	Modbus RTU, Modbus TCP, BACnet	-	Modbus RTU	Modbus RTU	KNX
Availability of Ethernet	yes	yes	–	–	–
Addressing	WEB page	WEB page	DIP	DIP	–
Number of units	16 systems that including up to 255 indoor units	16 systems that including up to 255 indoor units	16 systems that including up to 128 indoor units	up to 16 indoor units that belonging to one system	gateway is connected to each indoor unit
C&H software	-	FE30-24/DF(B)	–	–	–
Application	Used in large construction, such as office buildings, shopping malls, hospitals and other public buildings for centralized control of air conditioners and integration into the overall BMS system.	It is used for accounting of electricity consumption at facilities with different owners, tenants, individual customers, for the purpose of accounting and billing for electricity consumed by air conditioning systems.	It is used for small and medium-sized public and administrative buildings, cottages, apartment buildings. Can be connected to a common BMS system. Since there are no additional interfaces, it has the most attractive price.	Mostly used in hotel complexes. Connects directly to a hotel room controller or smart home system.	Mostly used in hotel complexes. Connects directly to a hotel room controller or smart home system.

Calculation program CHV – **VRF Selector Ultimate**

Software for selecting multi-zone systems with variable refrigerant consumption is a computer program that is constantly being improved and updated with the appearance of new series of models, for automatic selection and calculation of equipment for sale or project development.

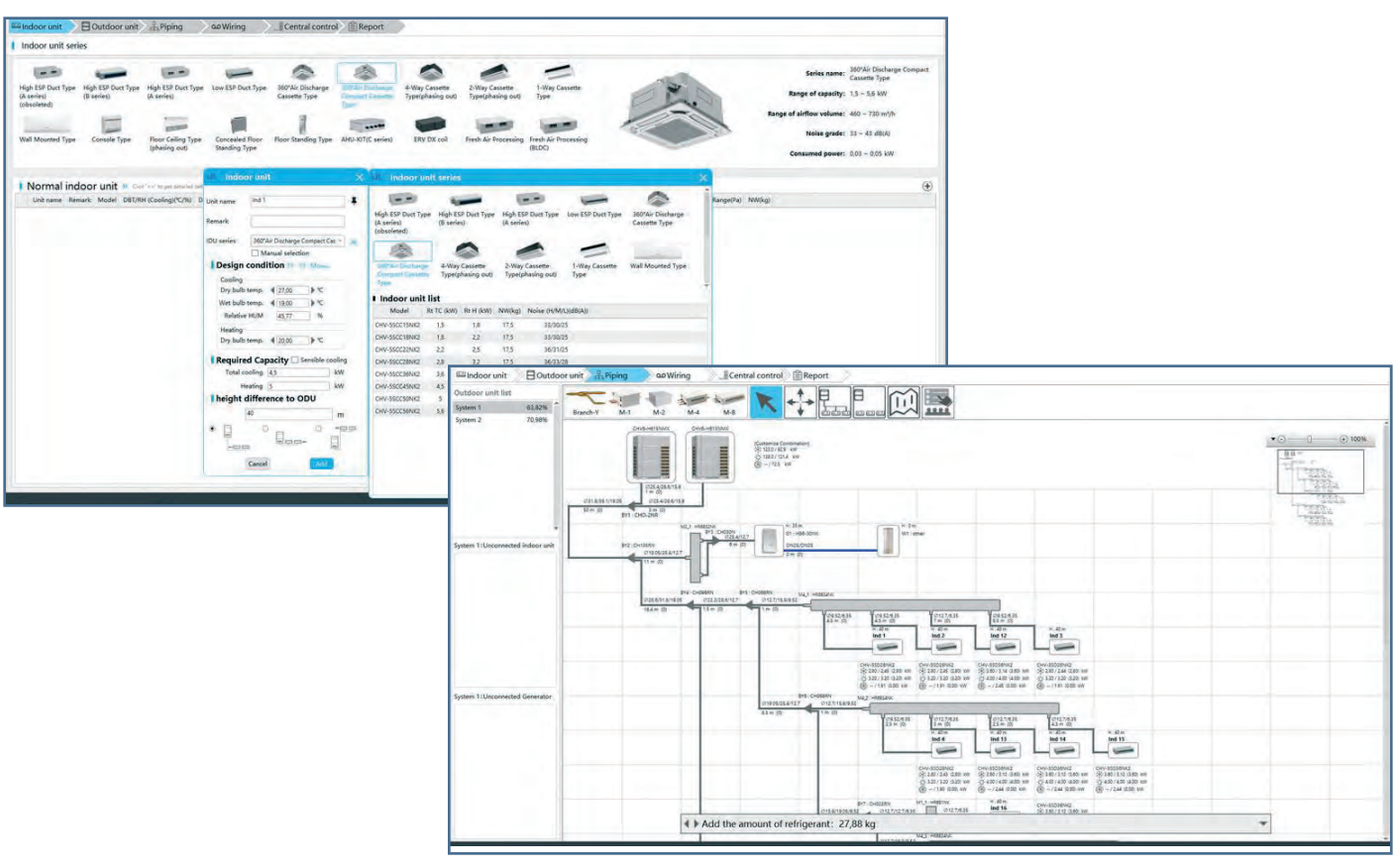
Automatic selection of equipment models

When choosing an indoor unit, you can use the automatic selection function by entering the required heating or cooling capacity, total or apparent, and the type of indoor unit.
The program allows you to change the parameters of indoor and outdoor air, on some series to set the static pressure of the fan, take into account corrections for the length and height of pipelines, take into account the defrost factor and the load of the outdoor unit, etc.



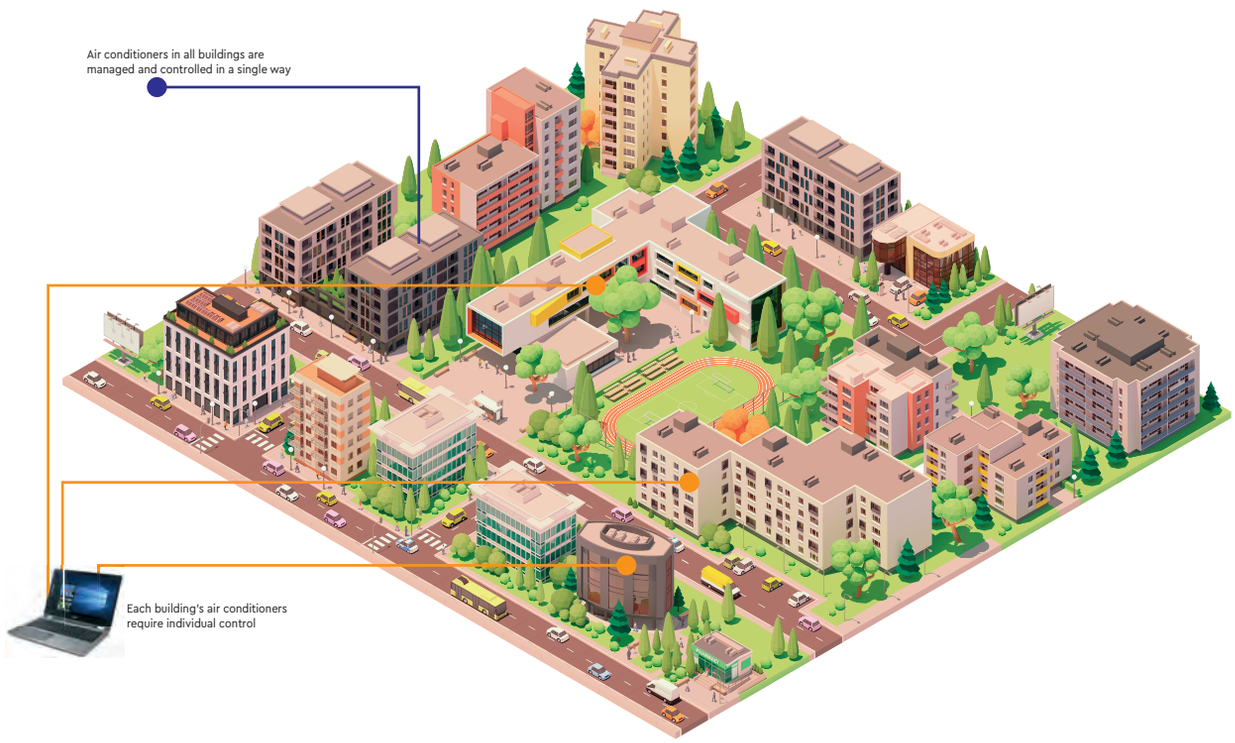
Quick model selection

The program allows you to select equipment models manually, fixing some or all models that are not subject to change after automatic system calculation.



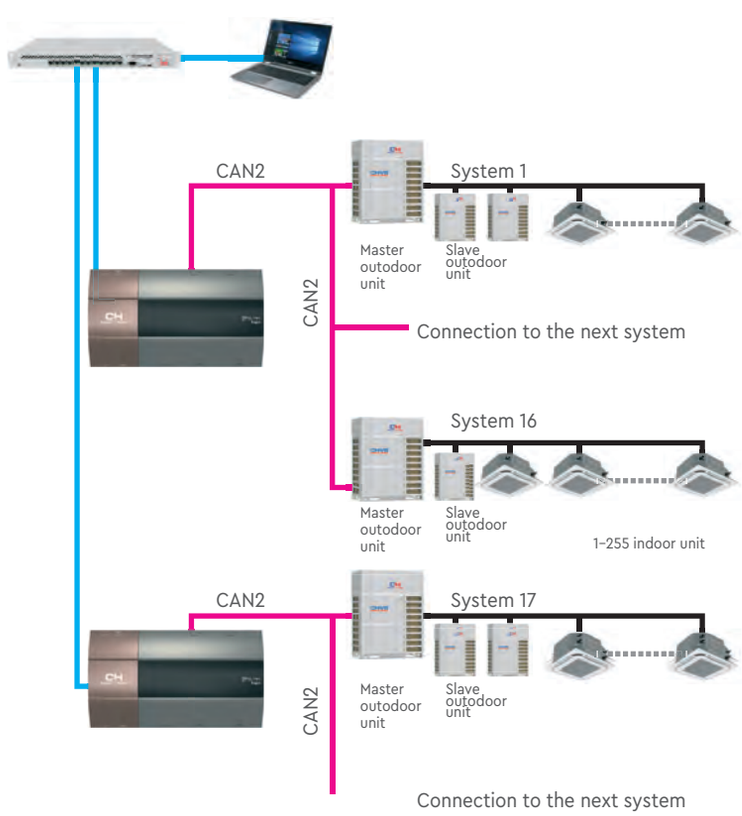
Monitoring software
Eudemon FE30-24/DF(B)

Eudemon software provides intelligent operation and maintenance services, remote monitoring of equipment based on a cloud platform.

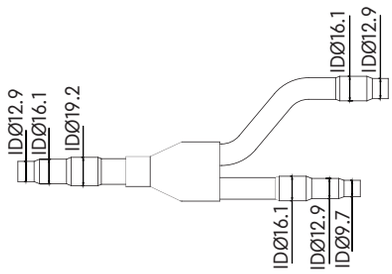
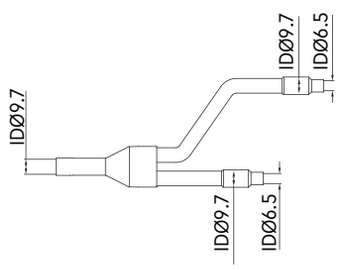
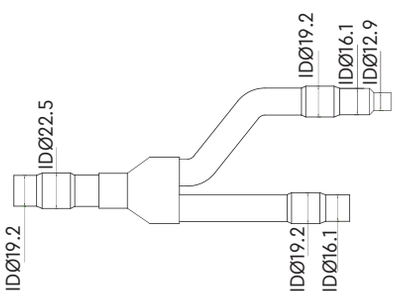
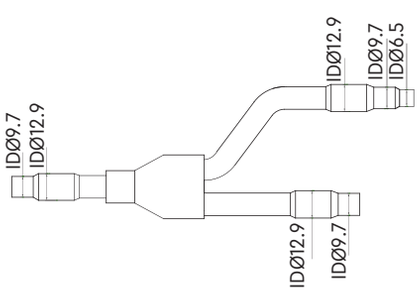
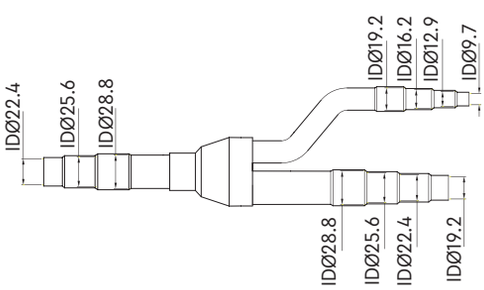
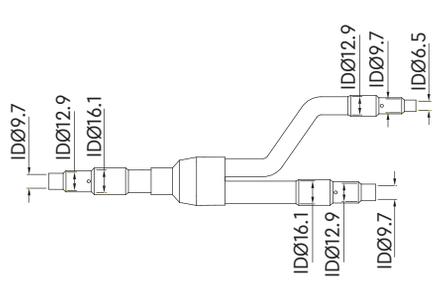
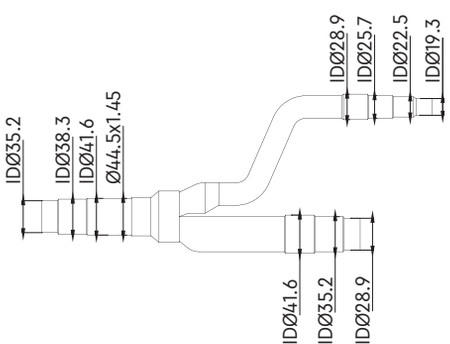
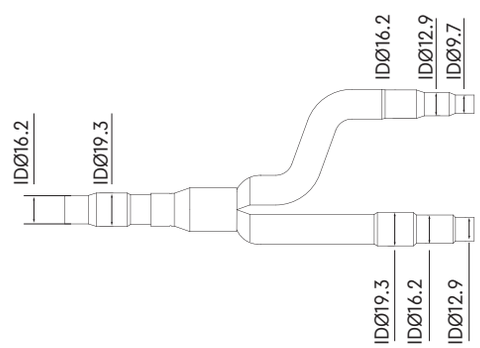
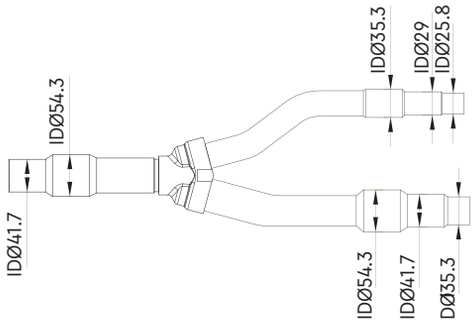
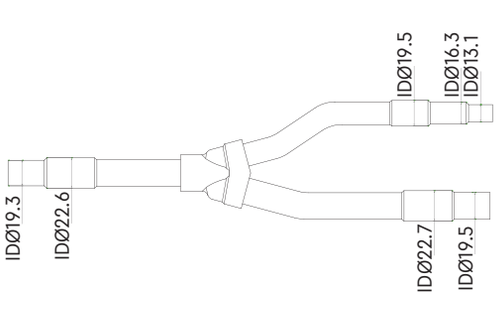


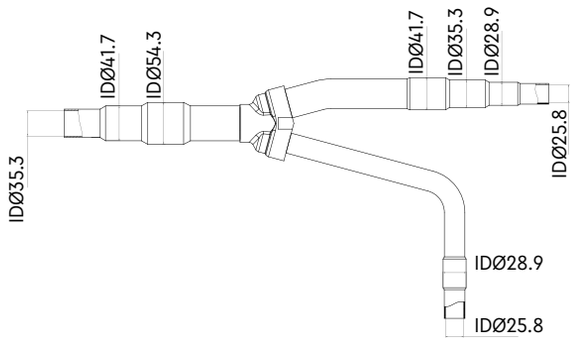
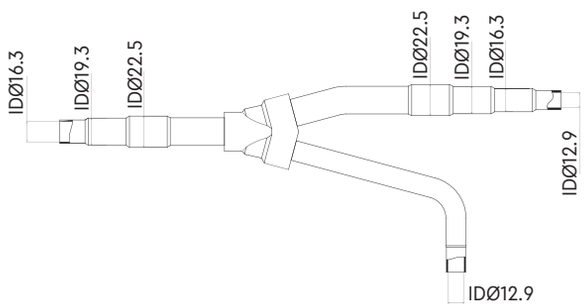
Eudemon uses the world's leading CAN+ communication technology for VRF units, combined with distributed processing methods, which guarantees high operation speed, is easily expandable if necessary, and has simple network connection, and can meet the air conditioning monitoring requirements of most projects.

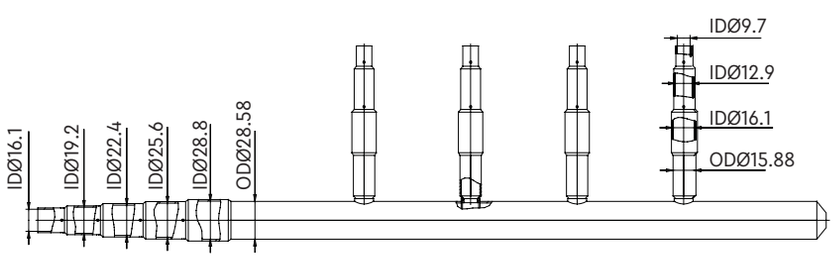
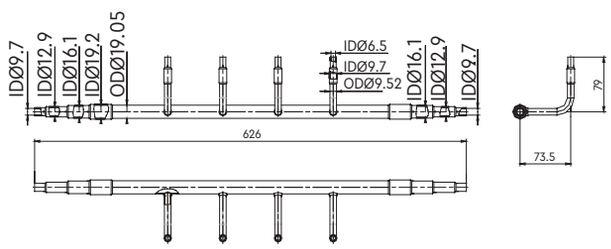
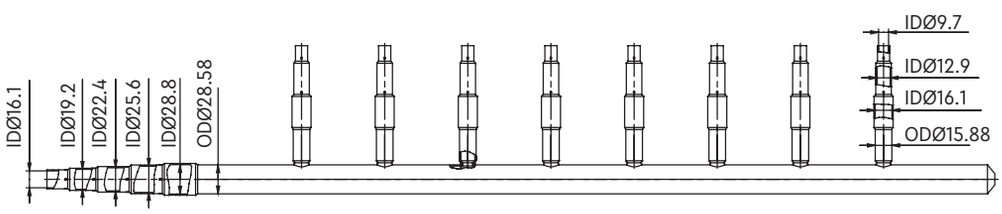
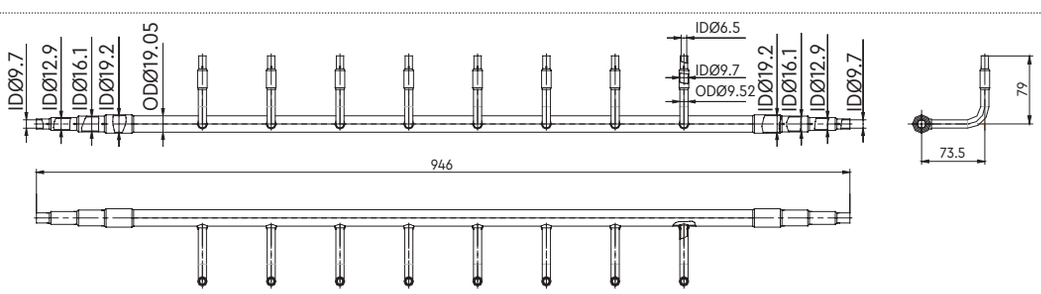
The composition of the system:
(1) **Computer**
Install monitoring software.
(2) **Controller**
Connect the device to establish a connection between the device and the computer.
(3) **Router (switch)**
Network equipment.

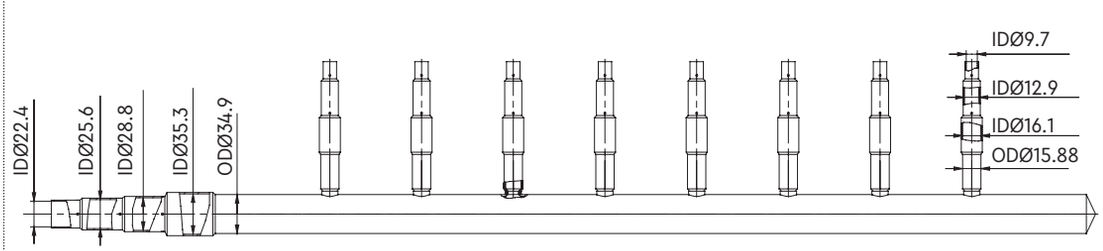
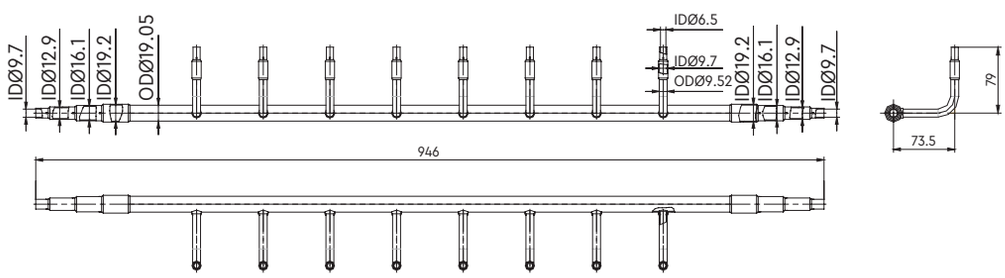


Notes:
(1) One controller can connect 16 systems or 255 indoor units.
(2) The communication bus between the systems is the CAN2 bus.

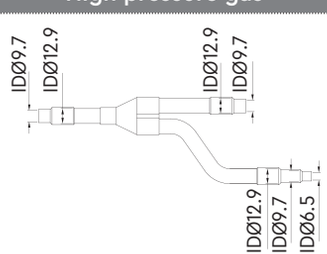
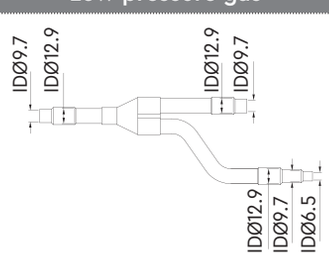
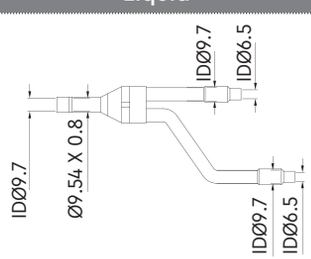
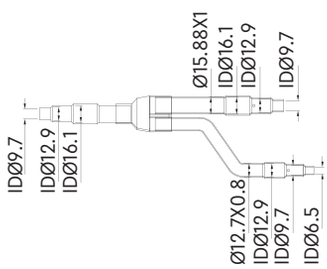
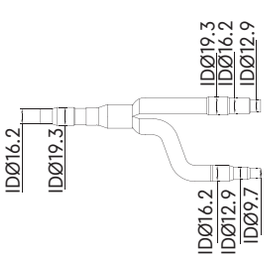
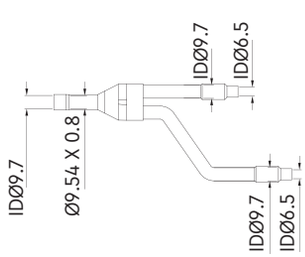
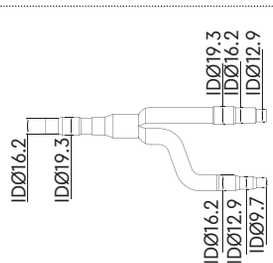
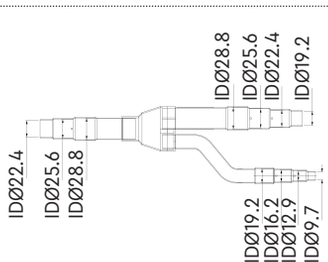
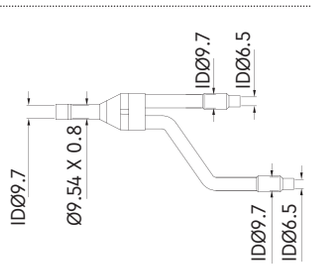
Model	Total productivity X (kW)	For indoor units	
		Appearance	
		Gas	Liquid
CH020N	X<20		
CH030N	20≤X≤30		
CH070N	30<X≤70		
CH270N	135<X≤135		
CH270N	135<X		

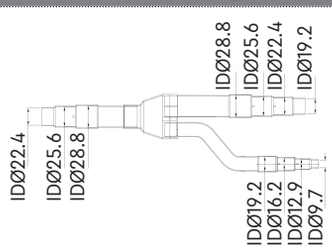
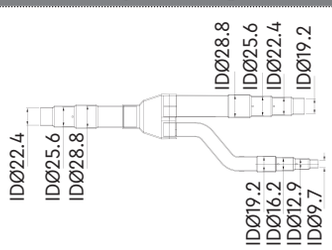
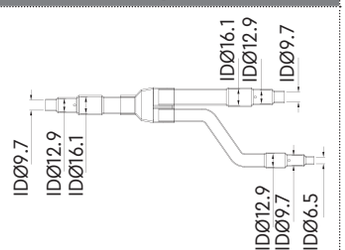
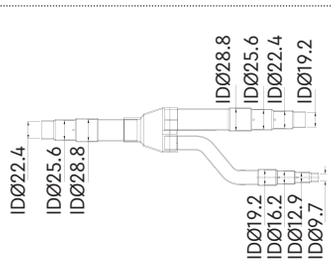
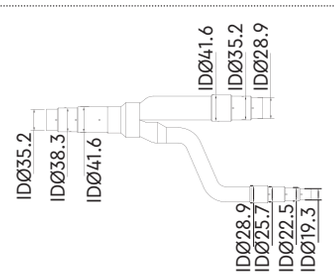
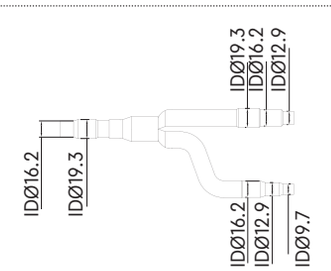
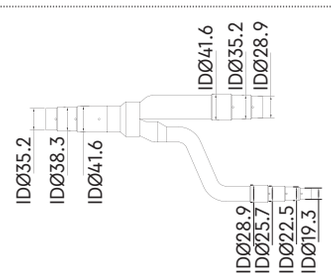
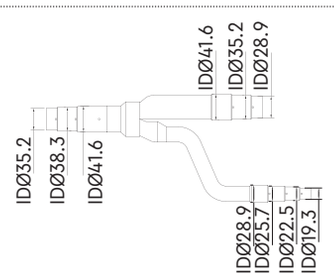
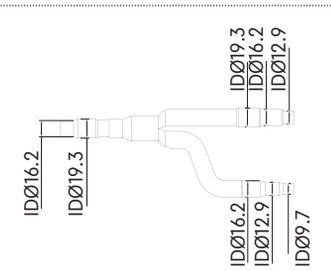
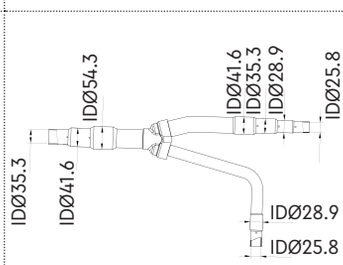
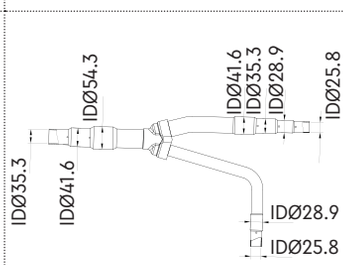
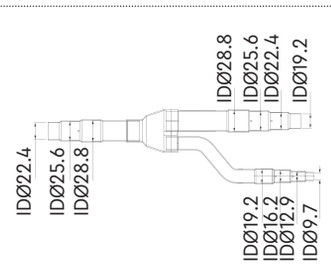
Model	For outdoor units	
	Appearance	
	Gas	Liquid
CHO-1N		

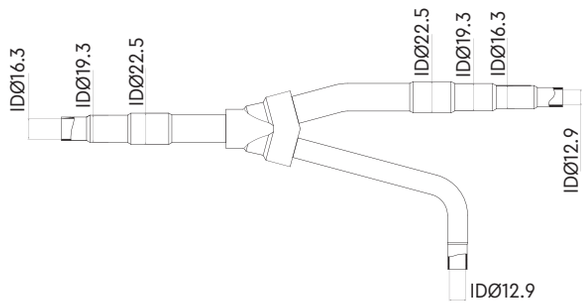
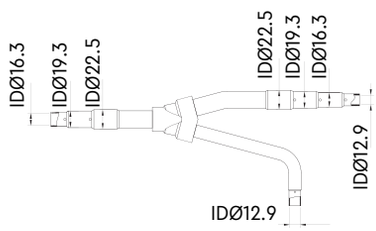
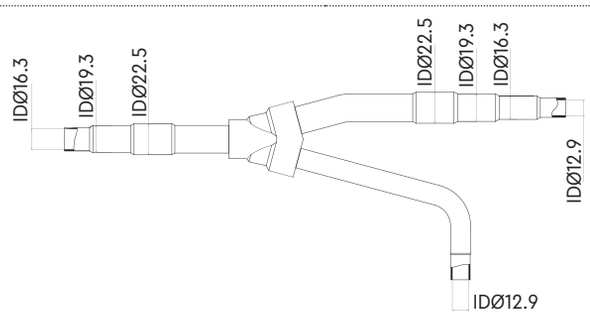
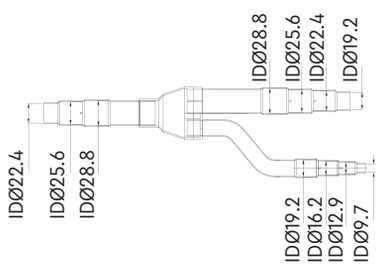
Model	Pipe	For indoor units Appearance
CHT040N	Gas	
	Liquid	
CHT068N	Gas	
	Liquid	

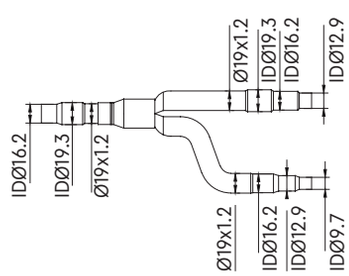
For indoor units		
Model	Pipe	Appearance
CHT224N	Gas	
	Liquid	

Total nominal productivity of indoor units X (kW)	Size of the connection pipe in the direction of the outdoor unit (mm)		Model
	Gas	Liquid	
X ≤ 40	≤ Ø 25.4	≤ Ø 12.7	CHT040N
40 < X ≤ 68	≤ Ø 28.6	≤ Ø 15.9	CHT068N
68 < X	≥ Ø 31.8	≥ Ø 19.05	CHT224N

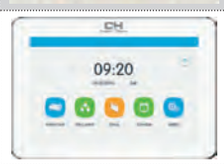
For indoor units				
Model	Total productivity X (kW)	Appearance		
		High pressure gas	Low pressure gas	Liquid
CH005RN	X ≤ 5			
CH022RN	5 < X ≤ 22.4			
CH030RN	22.4 < X ≤ 28.0			

Model	Total productivity X (kW)	For indoor units		
		Appearance		
		High pressure gas	Low pressure gas	Liquid
CH068RN	**28 < X ≤ 68**			
CH096RN	**68 < X ≤ 96**			
CH135RN	**96 < X ≤ 135**			
CH243RN	**135 < X**			

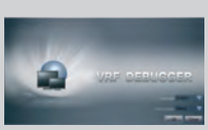
For outdoor units CHV HR				
Model	Total productivity X (kW)	External appearance		
		High pressure gas	Low pressure gas	Liquid
CH0-1RN	X ≤ 96			
CH0-2RN	96 < X			

FOR AHU KIT	
Model	Liquid
CH112N	

Accessories

Group	Name	Labeling	Appearance	Warehouse	Page
Remotes and controllers	Infrared remote controller	YAP1F		●	143
	Standard wired controller	XK46		●	140
	Standard new generation wired controller	XE7A-24/H		●	139
	Touch control panel with color screen	XK55		●	
	Simplified remote controller with the function of connecting to a key card	XK79		●	
	Wired remote for ERV and advanced functions for cassette units (control of individual blinds)	XE70-33/H		○	
	Hydrobox wired controller	XE70-11/H		○	-
	Communication controller (connection to the key card)	LE60-24/H1		○	144–146
Central Controllers	Central controller	CE52-24/F(C)		●	138–139
	Central controller	CE54-24/F(C)		●	138–139
Infrared signal receiving panel		JS13		○	144–145

Note:
● – warehouse position
○ – to order

System for accounting for consumed electricity, remote control via a PC	Intelligent remote eudemon – a program for centralized management and accounting of consumed electricity	FE30-24/DF(B)		●	159
	Gateway of Billing System for accounting of consumed electricity	ME20-24/D1(T)		●	155
Converters for converting CAN bus signals into industrial protocols	Universal gateway BMS (Modbus RTU, Modbus TCP, BACnet)	ME30-24/D1(BM)		●	155
	Gateway Mini Modbus RTU	ME30-24/E6(M)		●	
	Module KNX	ME30-24/F1(K)		●	
	RTU module for IDU	ME31-33/EH1(M)		○	
Wi-Fi control via the Ewpe Smart app (iOS, Android)	Module Wi-Fi	ME31-00/C3		●	
Diagnostic converters	Diagnostic converter	ME40-00/B		○	150
	Diagnostic panel	CE42-24/F(C)		●	150
	Diagnostic panel	DE43-00/EF(CM)		○	
	Diagnostic program for PC (debugger)	DE40-33/A(C)		●	
RS232-RS422 to RS485 converter	Optoelectronic isolated converter	GD02		○	-
Modbus bus amplifier if the number of gateways exceeds 30 or the communication distance exceeds 800m	Optoelectronic isolated signal amplifier	RS485-W		○	-