

VRF INDOOR UNITS

Technical Catalog

*Technical Data
Intsallation*

SERIES

R32 Multi-Position Air Handler Unit Type



IMPORTANT NOTICE

- Cooper&Hunter pursues a policy of continuing improvement in design and performance of products. The right is therefore reserved to vary specifications without notice.
- Cooper&Hunter cannot anticipate every possible circumstance that might involve a potential hazard.
- This heat pump air conditioner is designed for standard air conditioning only. Do not use this heat pump air conditioner for other purposes such as drying clothes, refrigerating foods or for any other cooling or heating process.
- The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available: British Standard, BS4434 or Japan Standard, KHK0010.
- No part of this manual may be reproduced without written permission.
- Signal words (DANGER, WARNING and CAUTION) are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided below their respective signal words.

⚠ DANGER

: Immediate hazards which WILL result in severe personal injury or death.

⚠ WARNING

: Hazards or unsafe practices which COULD result in severe personal injury or death.

⚠ CAUTION

: Hazards or unsafe practices which COULD result in minor personal injury or product or property damage.

NOTE



: Useful information for operation and/or maintenance.

: FLAMMABLE MATERIAL

Explanation of symbols displayed on the indoor unit or outdoor unit. (Only when using R32)

	WARNING	This symbol show that appliance uses a flammable refrigerant (A2L). If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	CAUTION	This symbol shows that the Operation Manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the Installation Manual.
	CAUTION	This symbol shows that there is information included in the Operation Manual and/or Installation Manual.

- It is assumed that this heat pump air conditioner will be operated and serviced by English speaking people. If this is not the case, safety, caution and operating signs in native language should be added.
- If you have any questions, please contact the distributor or dealer of Hisense.
- This manual gives a common description and information for this heat pump air conditioner which you operate as well as for other models.
- Refer to the manual of outdoor unit for temperature operation range.

This manual should be considered as a permanent part of the air conditioning equipment and should remain with the air conditioning equipment.

IMPORTANT NOTICE



Correct Disposal of this product

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

CHECKING PRODUCT RECEIVED

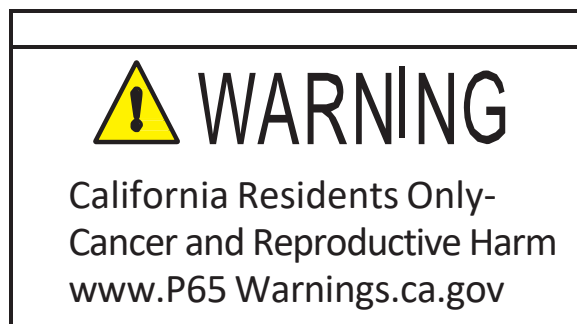
- Upon receiving this product, inspect it for any shipping damage.
Claim for damage, either apparent or concealed, should be filed immediately with the shipping company.
- Check the model number, electrical characteristics (power supply, voltage and frequency) and accessories to determine if they are correct.

The standard usage of the unit shall be explained in these instructions.

Therefore, the use of the unit other than those given in these instructions is not recommended.

Please contact your local agent as the occasion arises.

Cooper&Hunter's liability shall not cover defects arising from the alteration performed by a customer without Cooper&Hunter's consent in a written form.



Safety Summary

DANGER

- Do not pour water into the indoor or outdoor unit. These products are equipped with electrical parts. Otherwise, it will cause a serious electric shock.
- Do not touch or adjust safety devices inside the indoor or outdoor units. Otherwise, it may cause a serious accident.
- Do not open the service cover or access the indoor or outdoor units without turning OFF the main power supply.

WARNING

- Refrigerant leakage can cause difficulty with breathing due to insufficient air. If leakage occurs, turn OFF the main switch, put out fire at once and contact with your service contractor.
- Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately 3.3ft.(1m) from the system.
- If earth leakage breaker (ELB) or fuse is frequently activated, stop the system and contact your service contractor.
- Do not disconnect the pipe connection after checking the leak otherwise it may cause refrigerant leakage.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that the R32 refrigerant does not contain an odour.
- Do not disconnect the pipe connection after checking the leak otherwise it may cause refrigerant leakage.

CAUTION

- **Installation (Space)**

That the installation of pipe-work shall be kept to a minimum.

That pipe-work shall be protected from physical damage and shall not be installed in an unventilated space.

That compliance with national gas regulations shall be observed.

That mechanical connections shall be accessible for maintenance purposes.

In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.

When disposing of the product is used, be based on national regulations, properly processed.

An unventilated area where the appliance using flammable refrigerants is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard

–The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation

–The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).

Other potential continuously operating sources known to cause ignition of the refrigerant used.

The appliance shall be stored so as to prevent mechanical damage from occurring.

- **Servicing**

Service personnel

Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification

Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

Servicing shall be performed only as recommended by the manufacturer.

Checks to the area

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the precautions in 2-2 to 2-10 shall be complied with prior to conducting work on the system.

Work procedure

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.

General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.

Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of fire extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand.

Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.

No ignition sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any source of ignition in such a manner that it may lead to the risk of fire or explosion.

All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space.

Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.

A degree of ventilation shall continue during the period that the work is carried out.

The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification.

At all times the manufacturer's maintenance and service guidelines shall be followed.

If in doubt consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using flammable refrigerants

- The charge size is in accordance with the room size within which the refrigerant containing parts are installed.
- The ventilation machinery and outlets are operating adequately and are not obstructed.
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.

Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.

Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.

If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.

If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used.

This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include.

- That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking.
- That there no live electrical components and wiring are exposed while charging, recovering or purging the system.
- That there is continuity of earth bonding.

Repairs to sealed components

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc.

If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected

This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc

Ensure that apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres

Replacement parts shall be in accordance with the manufacturer's specifications

Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere.

The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer.

Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects

The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of flammable refrigerant

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.

A halide torch (or any other detector using a naked flame) shall not be used.

Leak detection methods

Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)

Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.

Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, isolated (by means of shut off valves) in a part of the system remote from the leak.

Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

Repairs to sealed components

Removal and evacuation

When breaking into the refrigerant circuit to make repairs or for any other purpose conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration

The following procedure shall be adhered to:

- remove refrigerant
- purge the circuit with inert gas
- evacuate
- purge again with inert gas
- open the circuit by cutting or brazing

The refrigerant charge shall be recovered into the correct recovery cylinders.

The system shall be "flushed" with OFN to render the unit safe.

This process may need to be repeated several times.

Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.

This process shall be repeated until no refrigerant is within the system.

When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

This operation is absolutely vital if brazing operations on the pipe work are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment.
- Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept upright.–
- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigeration system.

Prior to recharging the system it shall be pressure tested with OFN.

The system shall be leak tested on completion of charging but prior to commissioning.

A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details.

It is recommended good practice that all refrigerants are recovered safely.

Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant.

It is essential that electrical power is available before the task is commenced.

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.

-
- d) Pump down refrigerant system, if possible.
 - e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
 - f) Make sure that cylinder is situated on the scales before recovery takes place.
 - g) Start the recovery machine and operate in accordance with manufacturer's instructions.
 - h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
 - i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
 - j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off
 - k) Recovered refrigerant shall not be charged into an other refrigeration system unless it has been cleaned and checked.

Labeling

Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant.

The label shall be dated and signed.

Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed.

Ensure that the correct number of cylinders for holding the total system charge are available.

All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of refrigerant).

Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order.

Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants.

In addition, a set of calibrated weighing scales shall be available and in good working order.

Hoses shall be complete with leak-free disconnect couplings and in good condition.

Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant

Waste Transfer Note arranged.

Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.

The evacuation process shall be carried out prior to returning the compressor to the suppliers.

Only electric heating to the compressor body shall be employed to accelerate this process.

When oil is drained from a system, it shall be carried out safely.

1. System Introduction

VRF Series

Cooper&Hunter proudly introduces the New Indoor Units, the highly-efficient and reliable air conditioning system. Recently, increased numbers of buildings are requiring "Intelligent" facilities - communication networks, office automation, including a comfortable environment. Particularly, comfortable space is required all the day through the year in office buildings.

This multi-split system air conditioner, can meet these requirements. The proven combination of the scroll compressor and the inverter provides the best air conditioning for small/medium office buildings.

Uses of the HFC Series New R32 Refrigerant

Cooper&Hunter has developed and introduced the new indoor units to meet the global needs to help protect the Earth's environment by using non-ozone depleting refrigerant, R32 as Cooper&Hunter's standard series.

Various Indoor Units and Combinations

The line-up of new series indoor units has been extended up to 52 indoor units in 6 types to meet various building requirements. (05 through 96 kBtu/h).

Series	Nominal Capacity (kBtu/h)																				
	05	07	09	12	15	17	18	19	22	24	27	28	30	36	38	42	48	54	60	76	96
Ceiling Ducted Type		○	○	○	○			○		○			○		○		○	○		○	○
Low-Height Ceiling Ducted Type	○	○	○	○	○			○		○											
4-Way Cassette Type			○	○	○			○		○			○		○		○	○			
Mini 4-Way Cassette Type	○	○	○	○	○	○		○													
Wall Mounted Type		○	○	○	○			○		○		○									
Multi-position Air Handler Unit			○	○			○			○			○	○		○	○	○	○		

○ : Available

Multi-position Air Handler Unit

2. Multi-position Air Handler Unit (MPAHU)

2.1 General Data

Indoor unit			Multi-Position Air Handler Unit Type					
Ton			0.75	1	1.5	2	2.5	
Model			CHV- RS09MPAHU	CHV- RS12MPAHU	CHV- RS18MPAHU	CHV- RS24MPAHU	CHV- RS30MPAHU	
Power Supply			AC 1Φ, 208/230V, 60Hz					
Capacity	Cooling	kW	2.8	3.5	5.3	7	8.8	
		Btu/h	9000	12000	18000	24000	30000	
	Heating	kW	3.1	4	5.9	7.9	10	
		Btu/h	10000	14000	20000	27000	34000	
Power Input	Cooling	W	51	51	65	65	290.5	
	Heating	W	48	48	97.5	97.5	225	
Sound Pressure Level		dB(A)	41/39/37/36/34/33	41/39/37/36/34/33	42/41/38/37/36/34	42/41/38/37/36/34	54/52/50/49/47/45	
MCA		A	2.35	5.94	5.94	5.94	5.94	
MOP		A	15	15	15	15	15	
Airflow Rate		m³/min	11.7/11.3/10.5/10/9/8.7			17.1/16.3/15.4/14.5/13.7/12.8		31.9/30.6/28.4 /26.0/23.8/21.6
		CFM	417/402/375/354/333/310			611/580/550/518/488/457		1139/1091/1013 /928/849/770
External Static Pressure		Pa	50/60/70/80/90/100/110/120/130/140/150/160/170/180/190/200					
		in.W.G	0.20/0.24/0.28/0.32/0.36/0.40/0.44/0.48/0.52/0.56/0.60/0.64/0.68/0.72/0.76/0.80					
Refrigerant		-	R32(Nitrogen-Charged for Corrosion-Resistance)					
Piping	Connection Type	-	Flare-nut Connection(with Flare Nuts)					
	Liquid	in. (mm)	Ø1/4(6.35)	Ø3/8(9.53)	Ø3/8(9.53)	Ø3/8(9.53)	Ø3/8(9.53)	
	Gas	in. (mm)	Ø1/2(12.7)	Ø5/8 (15.88)	Ø5/8 (15.88)	Ø5/8 (15.88)	Ø5/8 (15.88)	
	Condensate Drain	in.	NPT3/4					
Weight	Net Weight	kg	52	52	64	64	67	
		lbs.	114.6	114.6	140.8	140.8	147.4	
	Gross Weight	kg	71	71	85	85	87	
		lbs.	157	157	187	187	191.4	
Dimensions	External (H*W*D)	mm	915×445×533			1170×500×554		
		in.	35-15/64×17-23/32×21-1/16			46×19-5/8×21-3/4		
	Packaging (H*W*D)	mm	1060×600×673			1315×600×673		
		in.	41-47/64×23-5/8×26-1/2			51-49/64×23-5/8×26-1/2		

NOTES:

- The nominal cooling capacity is the combined capacity of the COOPER&HUNTER standard split system.
Cooling Operation Conditions
Indoor Air Inlet Temperature: 80°F DB (27°C DB)
66°F WB (19°C WB)

Outdoor Air Inlet Temperature: 95°F DB (35°C DB)
Heating Operation Conditions
Indoor Air Inlet Temperature: 68°F DB (20°C DB)
Outdoor Air Inlet Temperature: 44°F DB (7°C DB)
42°F WB (6°C WB)
Piping Length: 24.6ft. (7.5m) Piping Lift: 0ft. (0m)
- The sound pressure level is based on following conditions.
3.3ft.(1.0m) away from the unit, 3.3ft.(1.0m) high, take the average sound pressure of four surfaces of unit.
With discharge duct 3.3ft.(1.0m).
The above data were measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.
- The above air flow rate and noise level are tested with AC 230V power supply and without filter.

Multi-position Air Handler Unit

Indoor unit			Multi-Position Air Handler Unit Type				
Ton			3	3.5	4	4.5	5
Model			CHV- RS36MPAHU	CHV- RS42MPAHU	CHV- RS48MPAHU	CHV- RS54MPAHU	CHV- RS60MPAHU
Power Supply			AC 1Φ, 208/230V, 60Hz				
Capacity	Cooling	kW	10.6	12.3	14.1	15.8	17.6
		Btu/h	36000	42000	48000	54000	60000
	Heating	kW	11.7	13.5	15.8	17.6	19.4
		Btu/h	40000	46000	54000	60000	66000
Power Input	Cooling	W	290.5	290.5	244	415	614
	Heating	W	225	280	258	342.5	570
Sound Pressure Level		dB(A)	54/52/50/49/47/45	54/52/50/49/47/45	50/48/45/43/40/37	54/48/46/44/42/40	58/56/55/54/52/50
MCA		A	5.94	5.94	7.81	7.81	7.81
MOP		A	15	15	15	15	15
Airflow Rate		m ³ /min	31.9/30.6/28.4/26.0/23.8/21.6		36.8/33.8/30.84 /27.9/25.0/22	46.9/42.9/39/ 35/31/26.8	55.4/52.3/49.4 /46.9/44.4/41.1
		CFM	1139/1091/1013/928/849/770		1314/1208/1100/ 996/891/785	1673/1533/1319 /1250/1105/957	1977/1891/1765 /1675/1587/1468
External Static Pressure		Pa	50/60/70/80/90/100/110/120/130/140/150/160/170/180/190/200				
		in.W.G	0.20/0.24/0.28/0.32/0.36/0.40/0.44/0.48/0.52/0.56/0.60/0.64/0.68/0.72/0.76/0.80				
Refrigerant		-	R32(Nitrogen-Charged for Corrosion-Resistance)				
Piping	Connection Type	-	Flare-nut Connection(with Flare Nuts)				
	Liquid	in. (mm)	Ø3/8(9.53)	Ø3/8(9.53)	Ø3/8(9.53)	Ø3/8(9.53)	Ø3/8(9.53)
	Gas	in. (mm)	Ø5/8 (15.88)	Ø5/8 (15.88)	Ø5/8 (15.88)	Ø5/8 (15.88)	Ø5/8 (15.88)
	Condensate Drain	in.	NPT3/4				
Weight	Net Weight	kg	67	67	94	94	94
		lbs.	147.4	147.4	206.8	206.8	206.8
	Gross Weight	kg	87	87	118	118	118
		lbs.	191.4	191.4	259.6	259.6	259.6
Dimensions	External (H*W*D)	mm	1170×500×554		1370×560×614		
		in.	46×19-5/8×21-3/4		53-7/8×22×24-1/8		
	Packaging (H*W*D)	mm	1315×600×673		1520×614×732		
		in.	51-49/64×23-5/8×26-1/2		59-27/32×24-11/64×28-13/16		

NOTES:

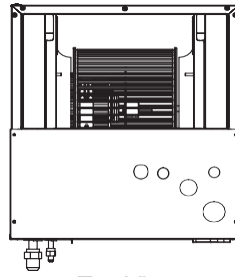
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Piping Length: 24.6ft. (7.5m) Piping Lift: 0 Meter
- The sound pressure level is based on following conditions.
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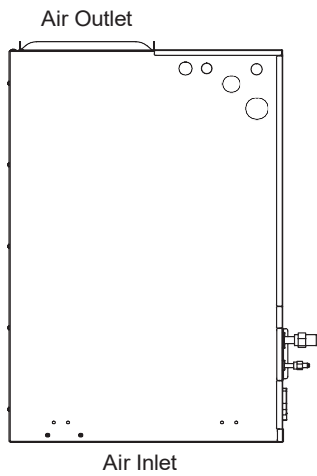
2.3 Dimensional Data

Models: RS09~12MPAHU

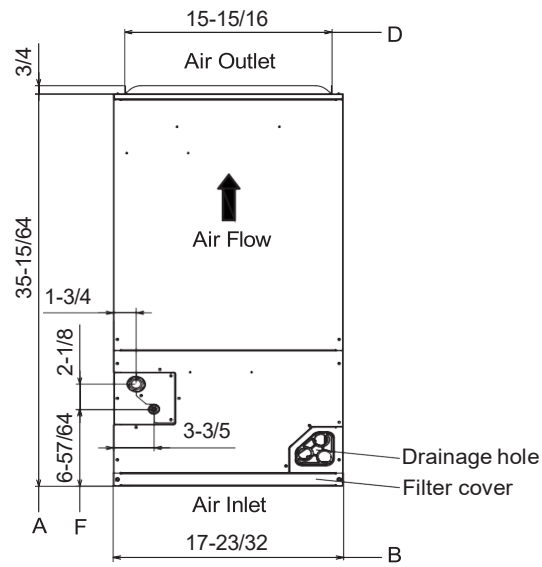
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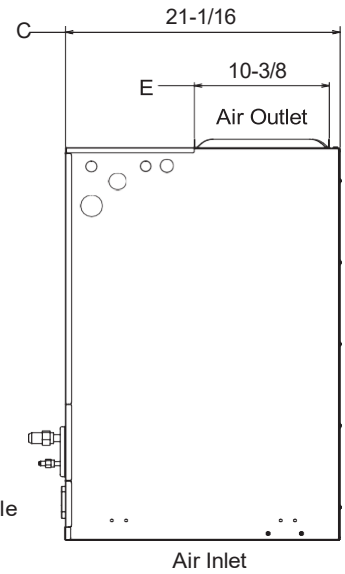
Top View



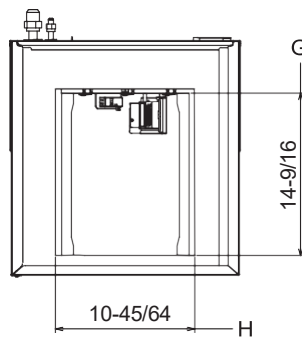
Side View



Front View



Side View



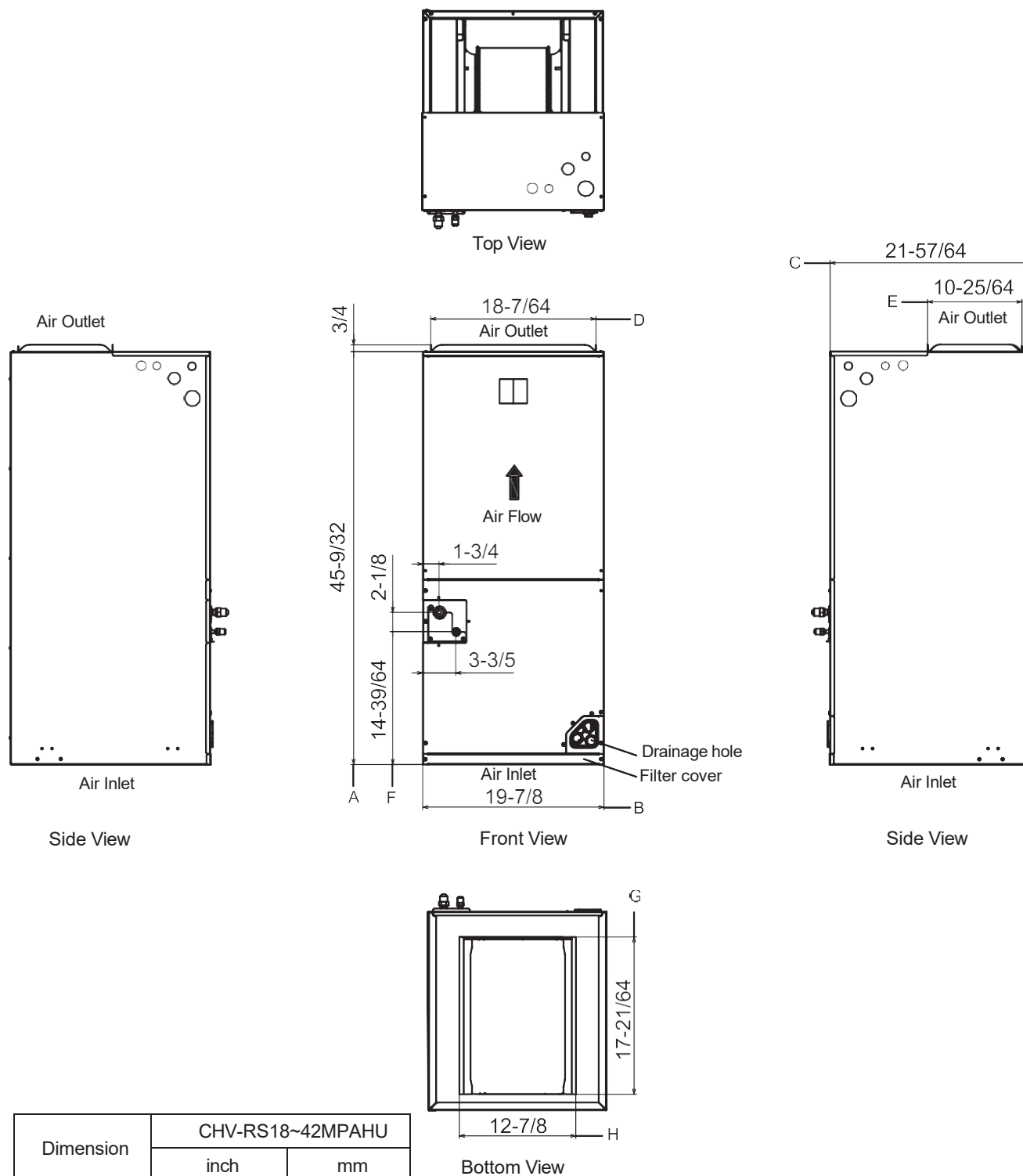
Bottom View

Dimension	CHV-RS09~12MPAHU	
	inch	mm
A	35-15/64	895
B	17-23/32	450
C	21-1/16	535
D	15-15/16	405
E	10-3/8	264
F	6-57/64	175
G	14-9/16	370
H	10-45/64	272

Multi-position Air Handler Unit

Models: RS18~42MPAHU

unit: in.



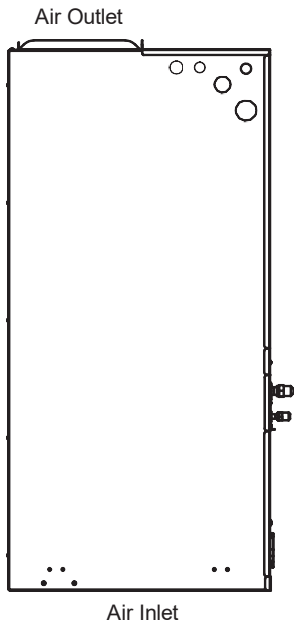
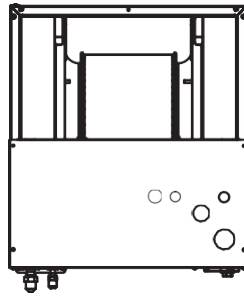
Dimension	CHV-RS18~42MPAHU	
	inch	mm
A	45-9/32	1150
B	19-7/8	505
C	21-57/64	556
D	18-7/64	460
E	10-25/64	264
F	14-39/64	371
G	17-21/64	440
H	12-7/8	327

Multi-position Air Handler Unit

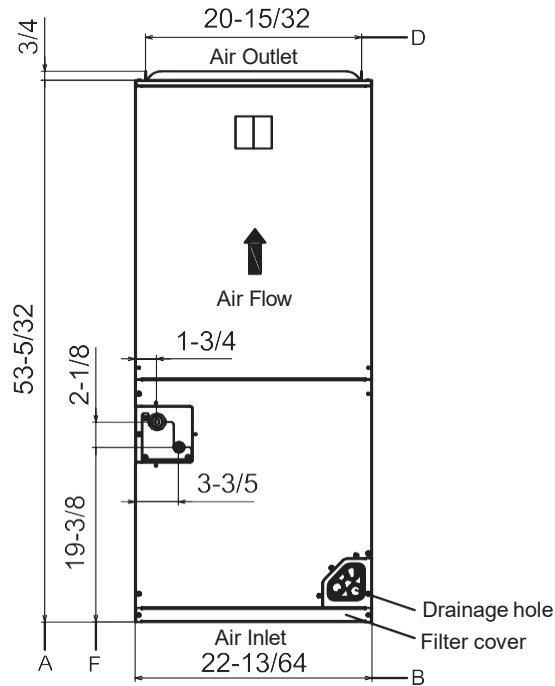
Models: RS48~60MPAHU

unit: in.

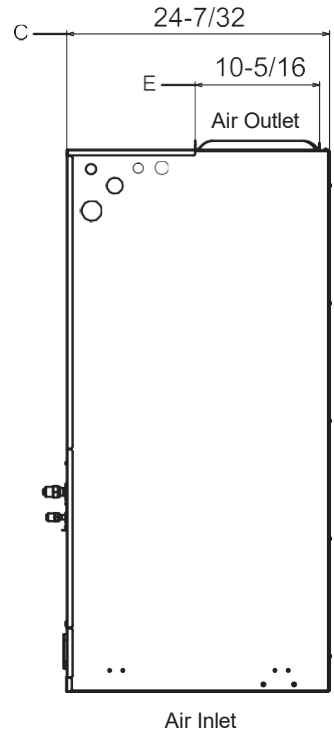
Top View



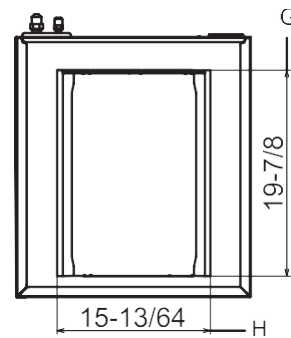
Side View



Front View



Side View



Bottom View

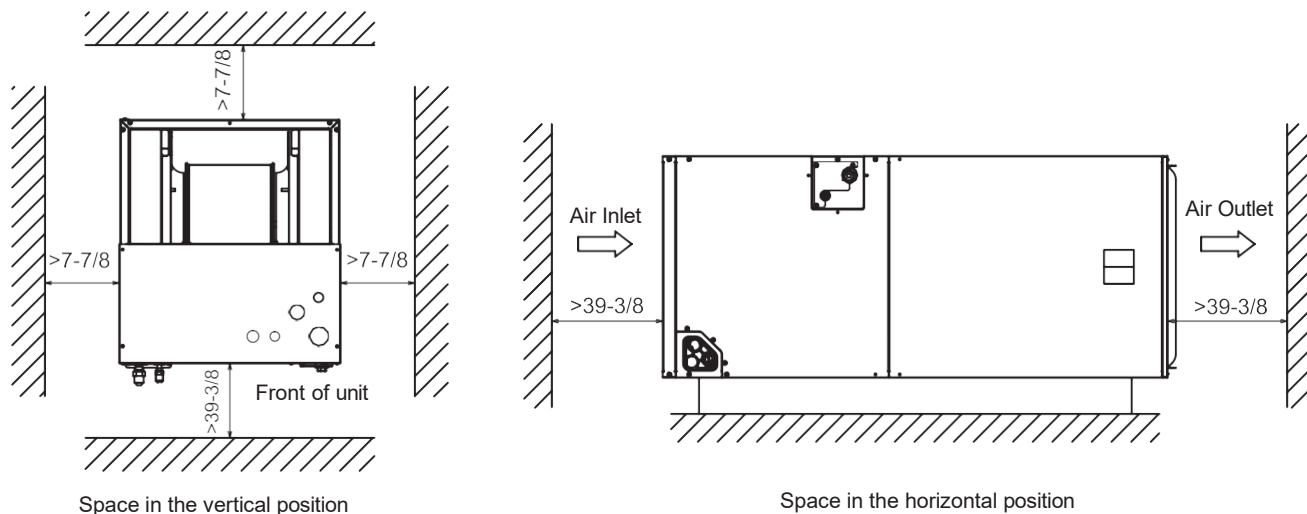
Dimension	CHV-RS48~60MPAHU	
	inch	mm
A	53-5/32	1350
B	22-13/64	564
C	24-7/32	615
D	20-15/32	520
E	10-5/16	262
F	19-3/8	492
G	19-7/8	505
H	15-13/64	386

Multi-position Air Handler Unit

2.4 Selection Data

- Operation Space

unit: in.



- Sensible Heat Factor (SHF)

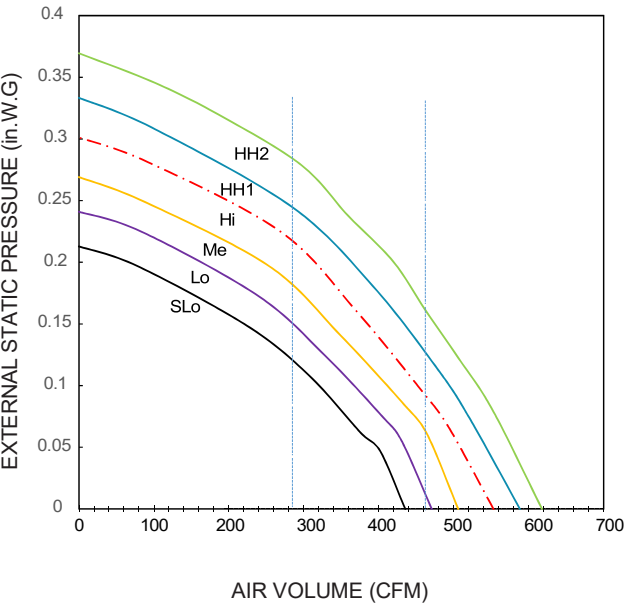
The sensible heat factor of indoor units at each fan speed is given in the table below.

Indoor Unit Model	SHF					
	HH2	HH1	Hi	Me	Lo	Slo
CHV-RS09MPAHU	0.7	0.68	0.66	0.65	0.64	0.63
CHV-RS12MPAHU	0.7	0.68	0.66	0.65	0.64	0.63
CHV-RS18MPAHU	0.7	0.68	0.66	0.65	0.64	0.63
CHV-RS24MPAHU	0.7	0.68	0.66	0.65	0.64	0.63
CHV-RS30MPAHU	0.75	0.73	0.71	0.7	0.69	0.68
CHV-RS36MPAHU	0.75	0.73	0.71	0.7	0.69	0.68
CHV-RS42MPAHU	0.75	0.73	0.71	0.7	0.69	0.68
CHV-RS48MPAHU	0.75	0.73	0.71	0.7	0.69	0.68
CHV-RS54MPAHU	0.75	0.73	0.71	0.7	0.69	0.68
CHV-RS60MPAHU	0.75	0.73	0.71	0.7	0.69	0.68

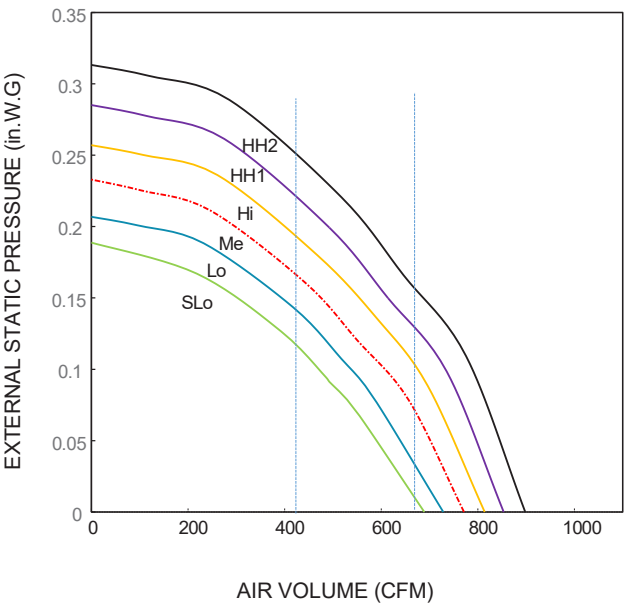
Multi-position Air Handler Unit

Fan Performance

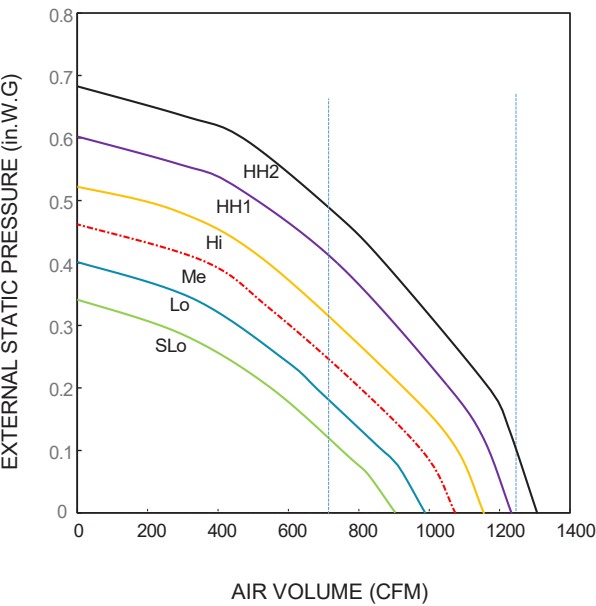
CHV-RS09~12MPAHU



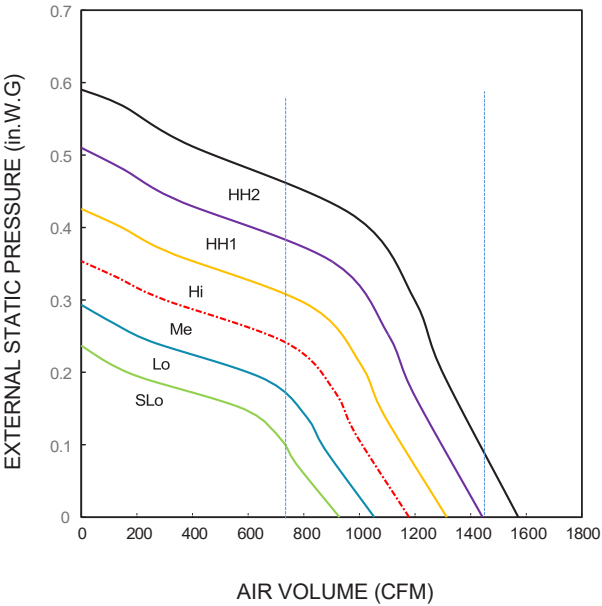
CHV-RS18~24MPAHU



CHV-RS30~42MPAHU

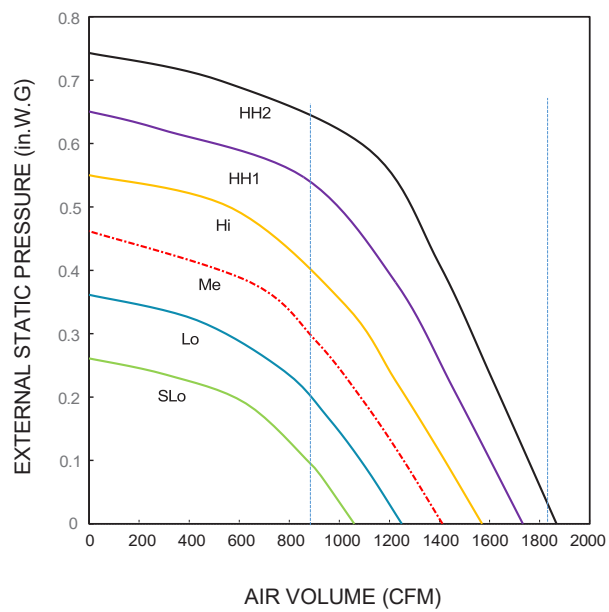


CHV-RS48MPAHU

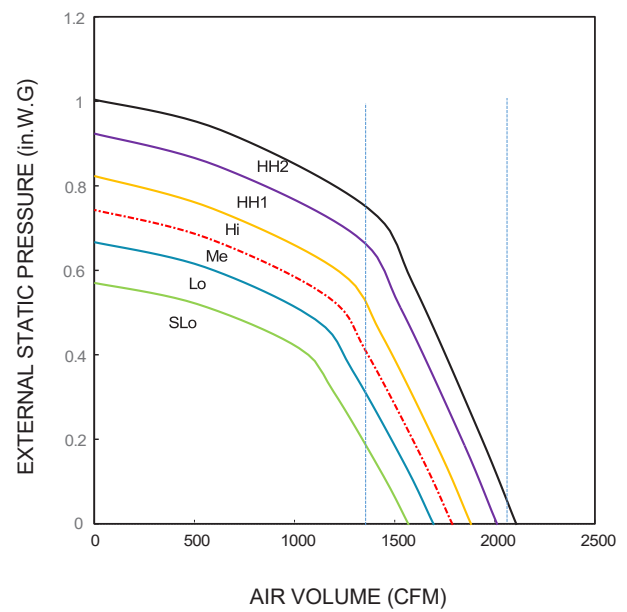


Multi-position Air Handler Unit

CHV-RS54MPAHU



CHV-RS60MPAHU

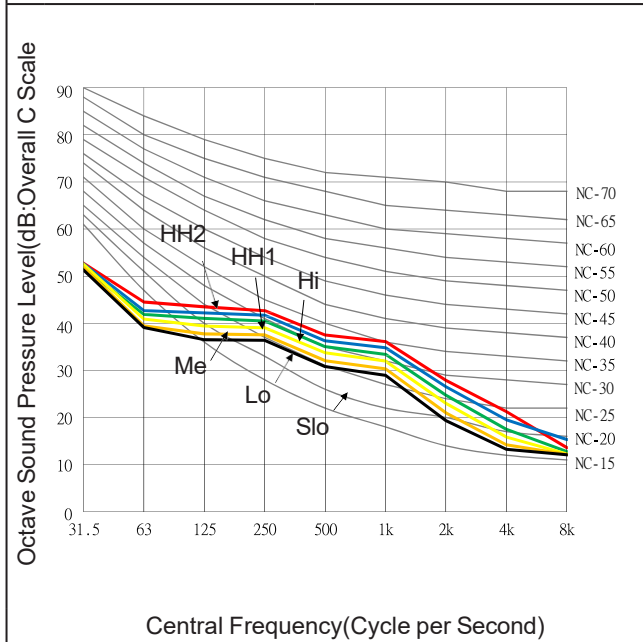


Multi-position Air Handler Unit

Sound Data

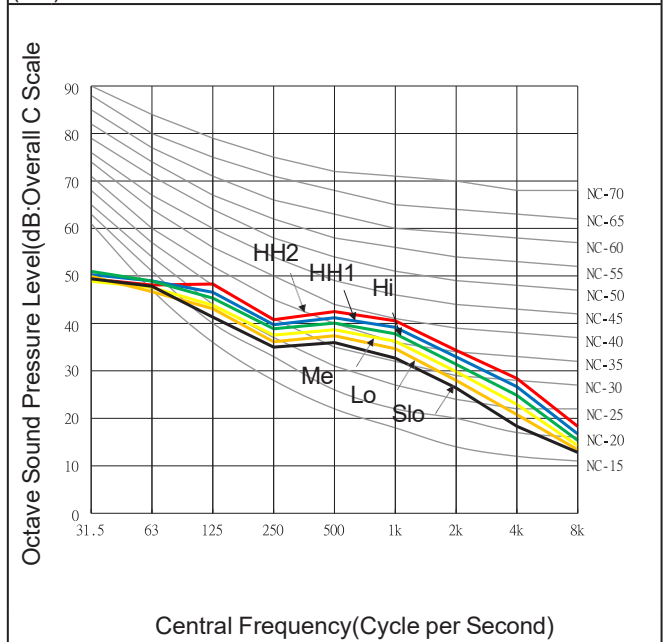
Model: CHV-RS09~12MPAHU Power Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and



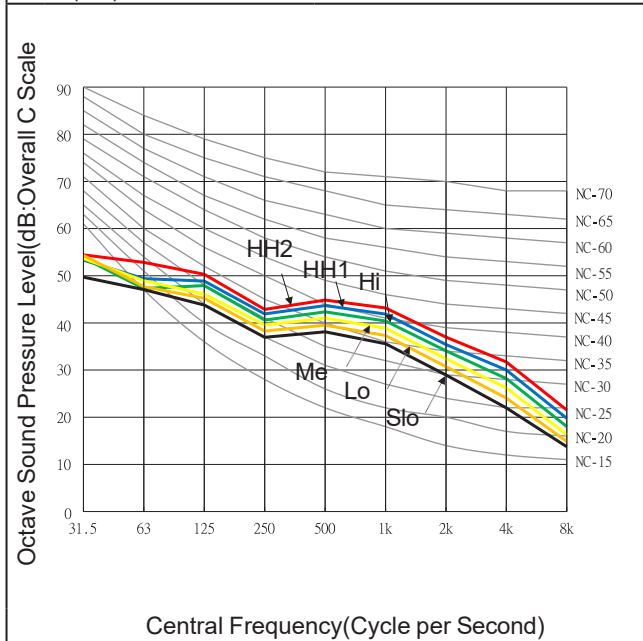
Model: CHV-RS18~24MPAHU

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level



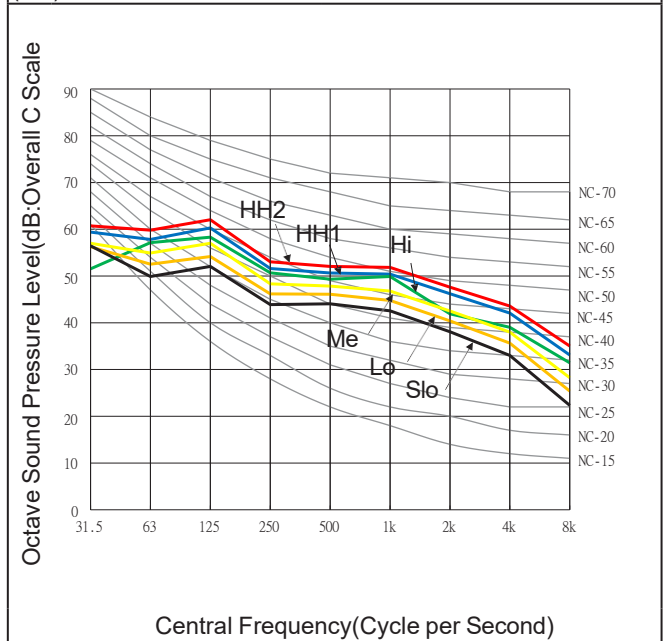
Model: CHV-RS30MPAHUPower Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level



Model:CHV-RS36~42MPAHUPower Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level

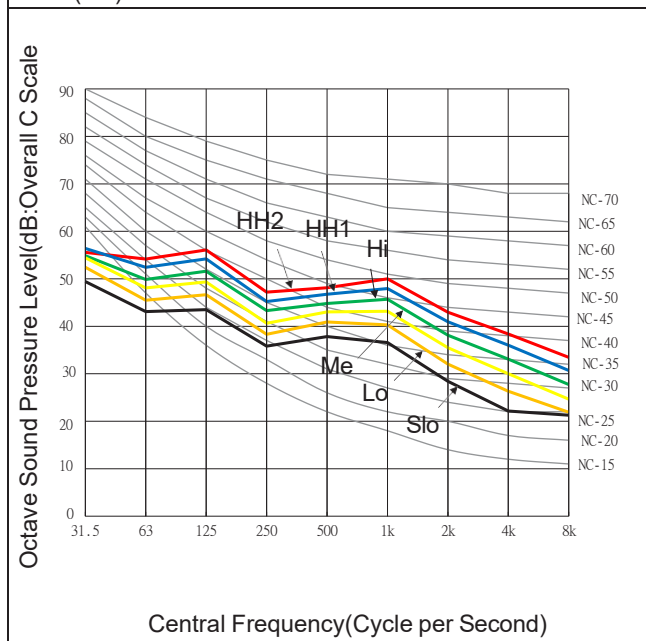


Multi-position Air Handler Unit

Sound Data

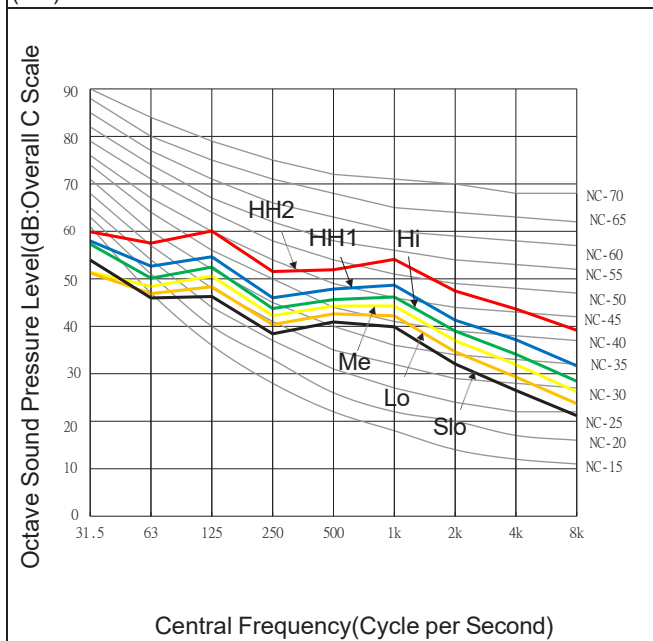
Model:CHV-RS48MPAHU Power Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level



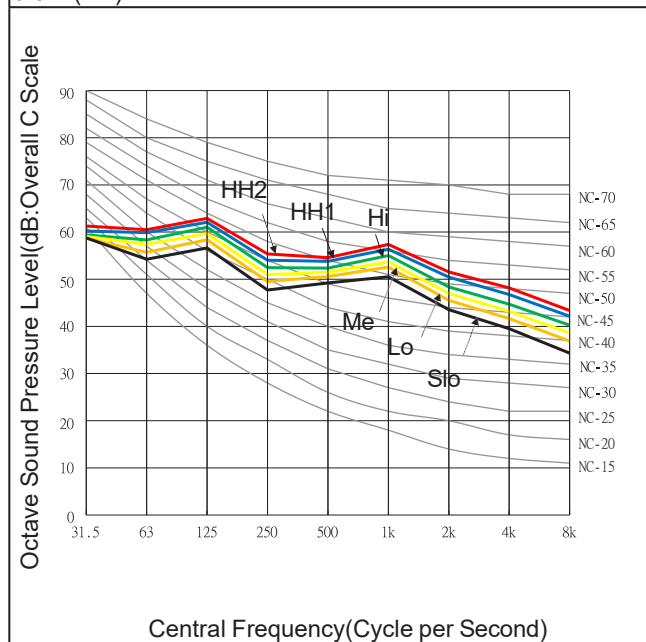
Model: CHV-RS54MPAHU Power Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level



Model: CHV-RS60MPAHU Power Supply: 208-230V/60Hz

Measurement point: 3.3ft.(1.0m) away from the unit and 3.3ft. (1m) from floor level



Multi-position Air Handler Unit

2.5 Component Data

Indoor Heat Exchanger and Fan

Model		CHV-RS09MPAHU	CHV-RS12MPAHU	CHV-RS18MPAHU	CHV-RS24MPAHU	CHV-RS30MPAHU
Heat Exchanger Type	-	Multi-Pass Cross Finned Tube				
Tube Material		Copper Tube				
Outer Diameter	in.	9/32	9/32	9/32	9/32	9/32
	mm	7.0	7.0	7.0	7.0	7.0
Rows	-	3	3	2	2	3
Fin Material		Aluminum				
Pitch	in.	1/16	1/16	1/16	1/16	1/16
	mm	1.6	1.6	1.6	1.6	1.6
Maximum Operating Pressure	psi (MPa)	624 (4.30)	624 (4.30)	624 (4.30)	624 (4.30)	624 (4.30)
Total Face Area	m ²	0.08	0.08	0.18	0.18	0.18
Number of Coil/Unit	-	2	2	2	2	2
Indoor Fan		Multi-Blade Centrifugal Fan				
Number/Unit	-	1	1	1	1	1
Outer Diameter	in.	10-3/4	10-3/4	10-3/4	10-3/4	10-3/4
	mm	273	273	273	273	273
Revolution(208V)	rpm	630/600/570/ 540/510/480	630/600/570/ 540/510/480	590/563/536/ 509/482/455	590/563/536/ 509/482/455	856/804/748/ 700/648/596
Nominal Air Flow	cfm	417/402/375/ 354/333/310	417/402/375/ 354/333/310	611/580/550/ 518/488/457	611/580/550/ 518/488/457	1139/1091/1013/ 928/849/770
	m ³ /h	700/675/630/ 595/560/520	700/675/630/ 595/560/520	1026/975/924/ 871/820/767	1026/975/924/ 871/820/767	1914/1833/1702/ 1559/1427/1294
Indoor Fan Motor		DC Motor				
Starting Method	-	Direct Start				
Nominal Output *	W	375	375	375	375	375
Quantity	-	1	1	1	1	1
Insulation Class	-	B	B	B	B	B

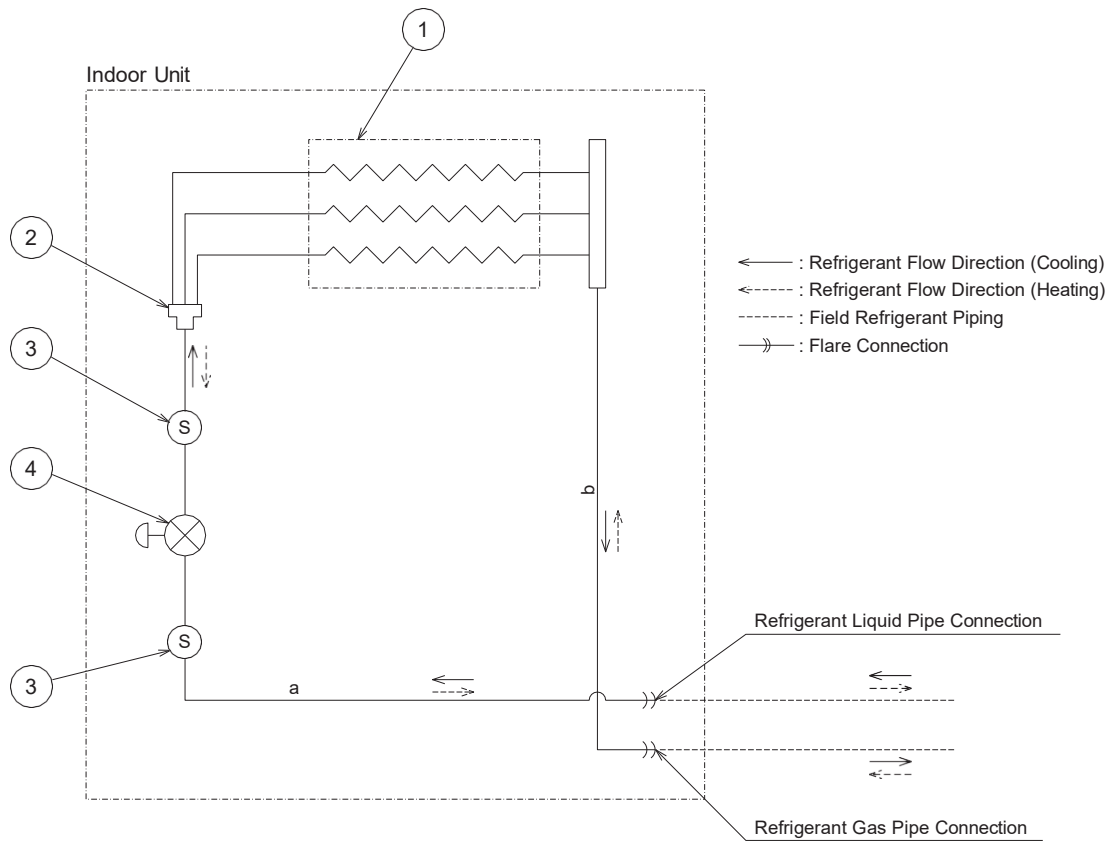
* This power is the motor nameplate rated power

Model		CHV-RS36MPAHU	CHV-RS42MPAHU	CHV-RS48MPAHU	CHV-RS54MPAHU	CHV-RS60MPAHU
Heat Exchanger Type	-	Multi-Pass Cross Finned Tube				
Tube Material		Copper Tube				
Outer Diameter	in.	9/32	9/32	9/32	9/32	9/32
	mm	7.0	7.0	7.0	7.0	7.0
Rows	-	3	3	3	3	3
Fin Material		Aluminum				
Pitch	in.	1/16	1/16	1/16	1/16	1/16
	mm	1.6	1.6	1.6	1.6	1.6
Maximum Operating Pressure	psi (MPa)	624 (4.30)	624 (4.30)	624 (4.30)	624 (4.30)	624 (4.30)
Total Face Area	m ²	0.18	0.18	0.27	0.27	0.27
Number of Coil/Unit	-	2	2	2	2	2
Indoor Fan		Multi-Blade Centrifugal Fan				
Number/Unit	-	1	1	1	1	1
Outer Diameter	in.	10-3/4	10-3/4	10-3/4	10-3/4	10-3/4
	mm	273	273	273	273	273
Revolution(208V)	rpm	856/804/748/ 700/648/596	856/804/748/ 700/648/596	792/732/686/ 616/558/500	925/851/777/ 703/629/555	1067/1016/966/ 915/865/815
Nominal Air Flow	cfm	1139/1091/1013/ 928/849/770	1139/1091/1013/ 928/849/770	1314/1208/1100/ 996/891/785	1673/1533/1391/ 1250/1105/957	1977/1891/1765/ 1675/1587/1468
	m ³ /h	1914/1833/1702/ 1559/1427/1294	1914/1833/1702/ 1559/1427/1294	2208/2030/1848/ 1673/1497/1320	2811/2575/2337/ 2100/1856/1607	3322/3177/2965/ 2814/2666/2466
Indoor Fan Motor		DC Motor				
Starting Method	-	Direct Start				
Nominal Output *	W	375	375	750	750	750
Quantity	-	1	1	1	1	1
Insulation Class	-	B	B	B	B	B

2.6 Control System

Refrigerant Cycle

Model: CHV-RS09~60MPAHU



Mark	Part Name
1	Heat Exchanger
2	Distributor
3	Strainer
4	Micro-Computer Control Expansion Valve

Multi-position Air Handler Unit

2.7 Electrical Data

Indoor Unit

Model		Unit Main Power			Applicable Voltage		Indoor Fan Motor	
		VOL	PH	HZ	Maximum	Minimum	RNC	IPT
Multi-Position Air Handler Unit Type	CHV-RS09MPAHU	208/230	1	60	253	187	3.80	0.314
	CHV-RS12MPAHU						3.80	0.314
	CHV-RS18MPAHU						3.80	0.314
	CHV-RS24MPAHU						3.80	0.314
	CHV-RS30MPAHU						3.80	0.314
	CHV-RS36MPAHU						3.80	0.314
	CHV-RS42MPAHU						3.80	0.314
	CHV-RS48MPAHU						5.00	0.535
	CHV-RS54MPAHU						5.00	0.535
	CHV-RS60MPAHU						5.00	0.535

VOL: Rated Unit Power Supply Voltage (Plated)(V)

PH: Phase (Φ)

HZ: Frequency (Hz)

RNC: Running Current (A)

IPT: Input (kW)

Safety and Control Device Setting

Model		CHV-RS09~42MPAHU	CHV-RS48~60MPAHU
For Control Circuit Fuse Capacity	A	10	5
Freeze Protection Thermostat	Cut-Out °F(°C)	32(0)	
	Cut-In °F(°C)	58(14)	
Set Temperature Difference	°F(°C)	36(2)	

2.8 Electrical Wiring Diagram

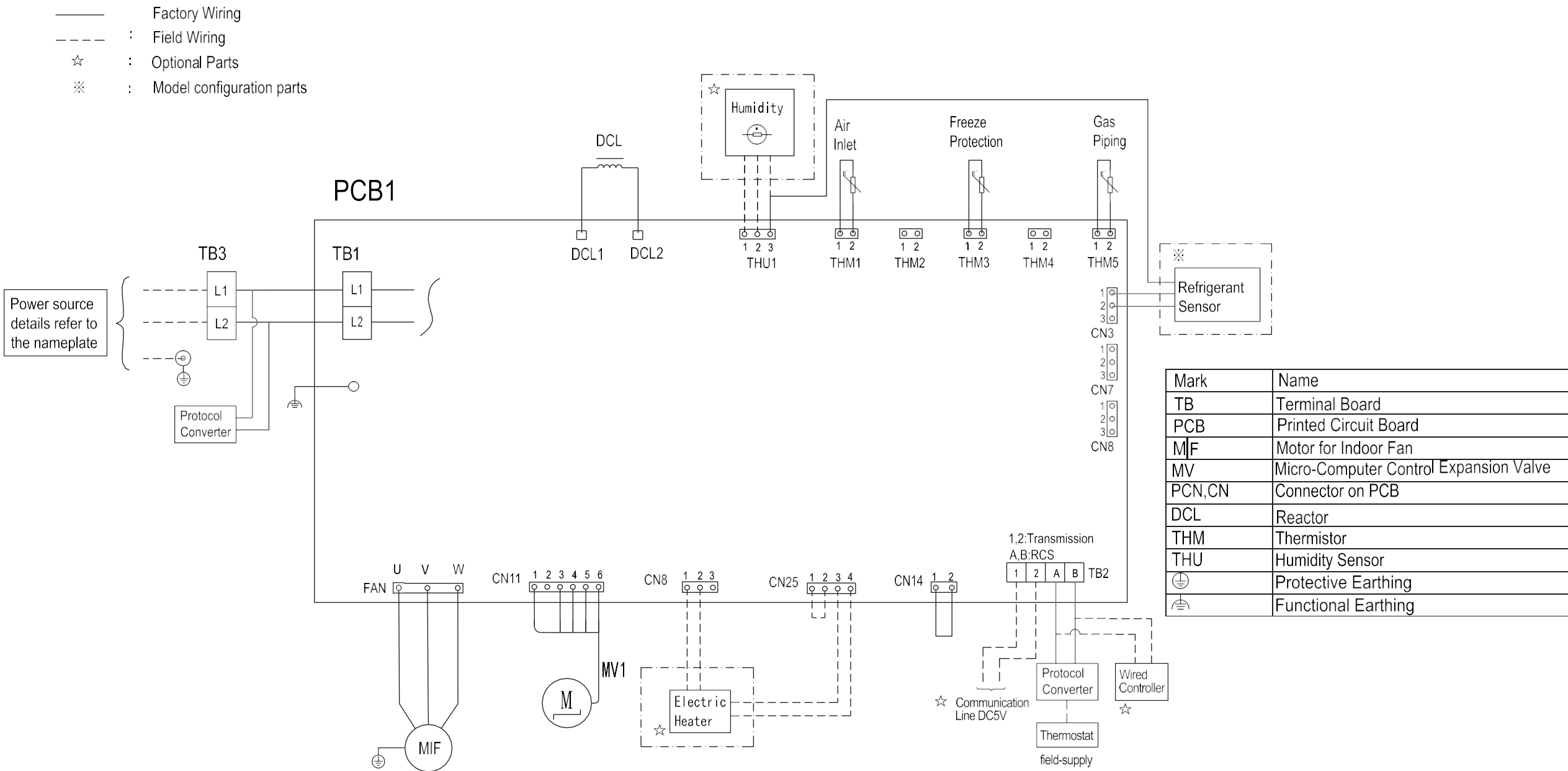
Model: CHV-RS09~42MPAHU

ELECTRICAL WIRING DIAGRAM

**WARNING**



Before inspecting the electrical parts set the Operation Switch to OFF, and cut OFF the power supply.
Warning: Do not power on and carry out maintenance unless the unit has been powered off for at least 10 minutes.



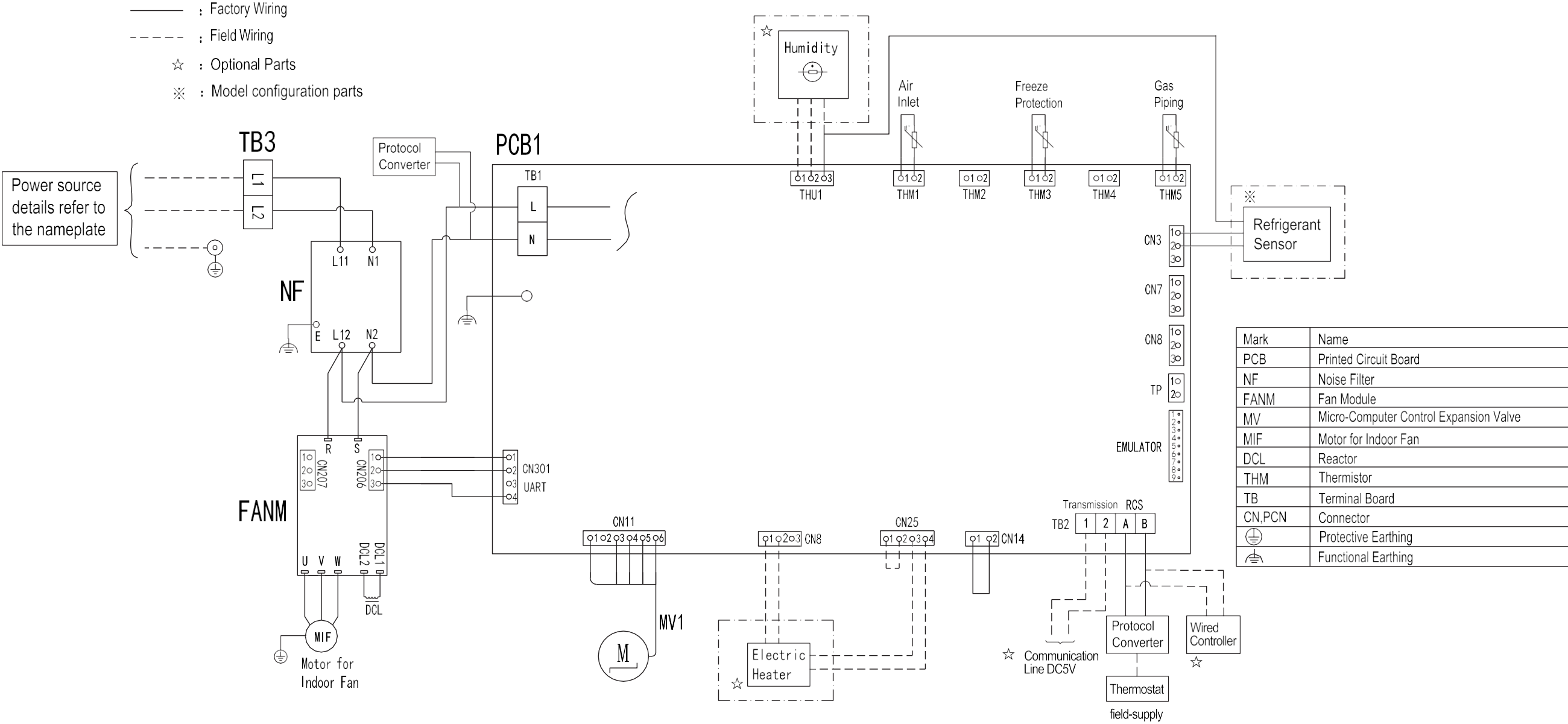
Note:
1. All the field wiring and equipment
must comply with local codes.

ELECTRICAL WIRING DIAGRAM

 **WARNING**



Before inspecting the electrical parts set the Operation Switch to OFF, and cut OFF the power supply.
Warning: Do not power on and carry out maintenance unless the unit has been powered off for at least 10 minutes.



Note:

1. All the field wiring and equipment must comply with local codes.