

A5VR ECO-PLUS SERIES

A5VR080DR • A5VR100DR • A5VR120DR •
A5VR140DR • A5VR160DR • A5VR180DR •
A5VR200DR • A5VR220DR • A5VR240DR •
A5VR260DR • A5VR280DR • A5VR300DR •
A5VR320DR • A5VR340DR • A5VR360DR •
A5VR380DR • A5VR400DR • A5VR420DR •
A5VR440DR • A5VR460DR • A5VR480DR •
A5VR500DR • A5VR520DR • A5VR540DR



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A5VR240DR • A5VR260DR • A5VR280DR • A5VR300DR •
A5VR320DR • A5VR340DR • A5VR360DR • A5VR380DR •
A5VR400DR • A5VR420DR • A5VR440DR • A5VR460DR •
A5VR480DR • A5VR500DR • A5VR520DR • A5VR540DR

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* All specifications stated in this technical manual are for Cooling Only unit.
Please contact us for more information about Heat Pump unit.



DISCLAIMER

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CAUTION

HIGH VOLTAGE
is used in the operation of this equipment.

DEATH OR SERIOUS INJURY
may result if personnel fail to observe safety precautions.

Work on electronic equipment should not be undertaken unless the individual(s) have been trained in the proper maintenance of equipment and is(are) familiar with its potential hazards.

Shut off the power supply to equipment before beginning work and follow lockout procedures. When working inside equipment with power off, take special care to discharge every capacitor likely to hold dangerous potential.

Be careful not to contact high voltage connections when installing or operating this equipment.

LOW VOLTAGE

DO NOT be misled by the term "low voltage"
Voltages as low as 50 volts may cause death.

NOMENCLATURE

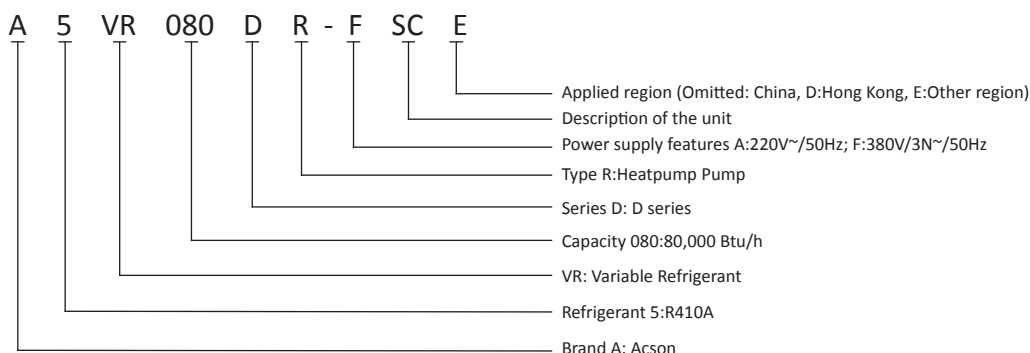
Acson Ecoplus Series units are most suitable for commercial building, office room, hotel, which includes the outdoor units and multi-indoor units. The advantage of this product range is unique outdoor units with inverter and fixed compressor. To meet different requirements, there are many indoor units to be chosen: ceiling concealed, ceiling cassette indoors units, wall mounted, ducted blower, ceiling mounted and fresh air ducted blower;

Outdoor Units: A5VR-DR Series

Product range: A5VR080DR, A5VR100DR, A5VR120DR, A5VR140DR, A5VR160DR, A5VR180DR, A5VR200DR, A5VR220DR, A5VR240DR, A5VR260DR, A5VR280DR, A5VR300DR, A5VR320DR, A5VR340DR, A5VR360DR, A5VR380DR, A5VR400DR, A5VR420DR, A5VR440DR, A5VR460DR, A5VR480DR, A5VR500DR, A5VR520DR, A5VR540DR

Feature: The outdoor units are compact, and elegant design with low noise; the compressor is with advanced technology of inverter, can meet the stageless energy level adjustment from 50% to 130%;

Nomenclature

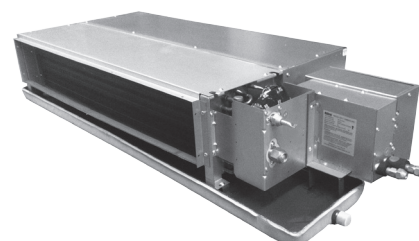
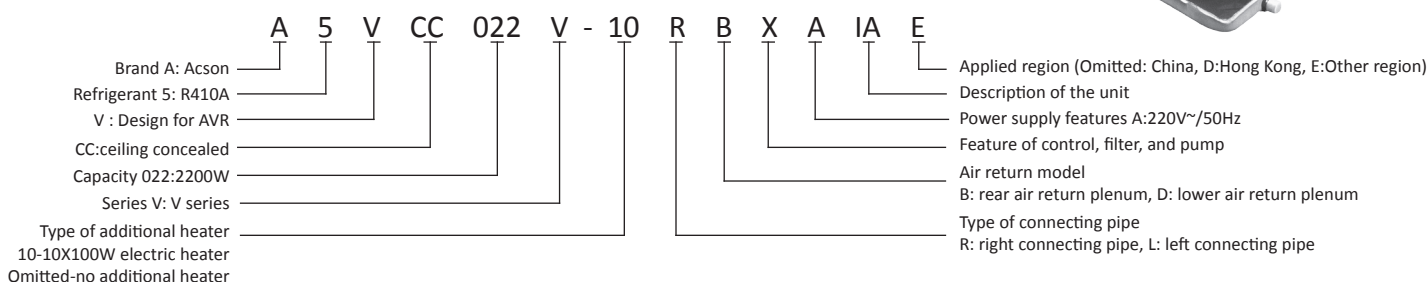


Ceiling Concealed Indoor Units: A5VCC-V Series

Product Range: A5VCC022V, A5VCC025V, A5VCC028V, A5VCC032V, A5VCC036V, A5VCC040V, A5VCC045V, A5VCC050V, A5VCC056V, A5VCC063V, A5VCC071V, A5VCC080V, A5VCC090V, A5VCC100V, A5VCC112V, A5VCC125V, A5VCC140V, A5VCC160V

Feature: Concealed type, space saving, ESP is multiple;

Nomenclature

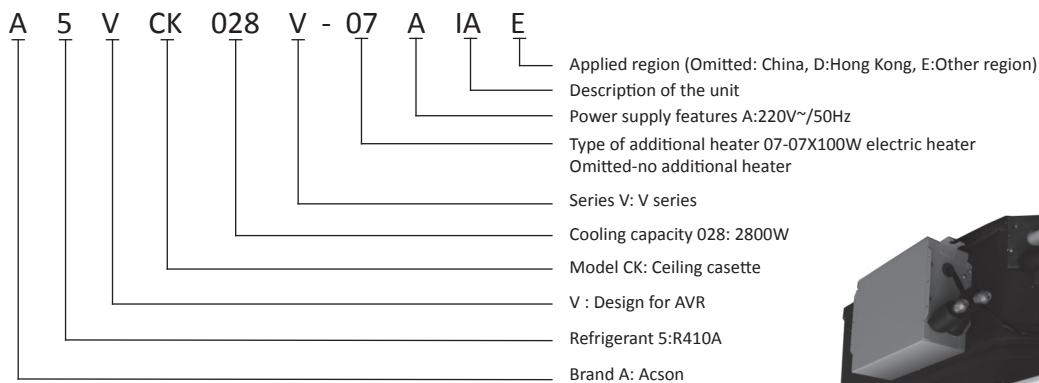


Ceiling Cassette Indoor Units: A5VCK-V Series

Product Range: A5VCK028V, A5VCK032V, A5VCK036V, A5VCK040V, A5VCK045V, A5VCK050V, A5VCK056V, A5VCK063V, A5VCK071V, A5VCK080V, A5VCK090V, A5VCK100V, A5VCK112V, A5VCK125V, A5VCK140V

Feature: 4 ways air supply evenly, streamlined design, in-build high efficiency filter;

Nomenclature

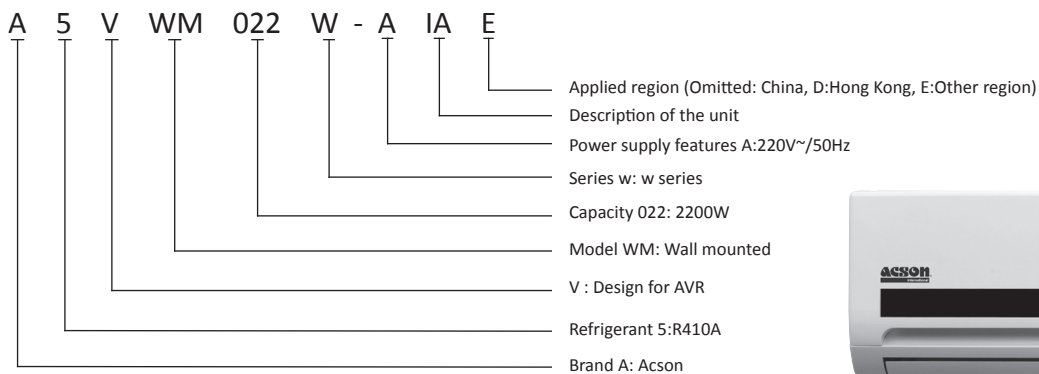


Wall Mounted Indoor Units: A5VWM-W Series

Product Range: A5VWM022W, A5VWM028W, A5VWM036W, A5VWM045W, A5VWM056W, A5VWM071W

Feature: elegant design, friendly installation, In-build high efficiency and mould proof filter, easy to detach and clean.

Nomenclature



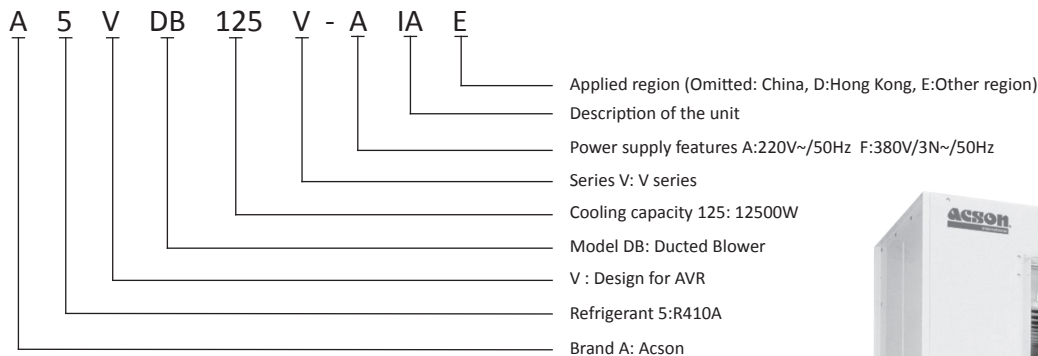
Ducted Blower Indoors Units: A5VDB-V Series

Product Range: A5VDB125V, A5VDB140V, A5VDB224V, A5VDB280V

Feature:

Installed above ceiling with air supply duct working, meet the requirement for long distance air supply;

Nomenclature

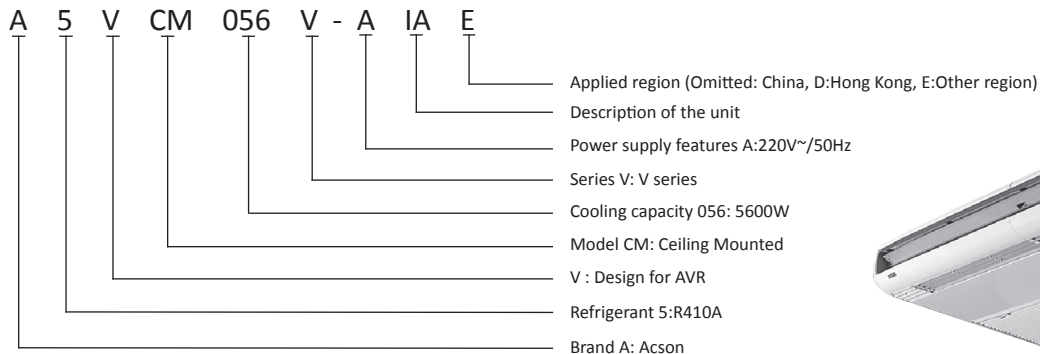


Ceiling Mounted Indoor Units: A5VCM-V Series

Product Range: A5VCM056V, A5VCM071V, A5VCM112V, A5VCM125V

Feature: elegant design, friendly installation;

Nomenclature

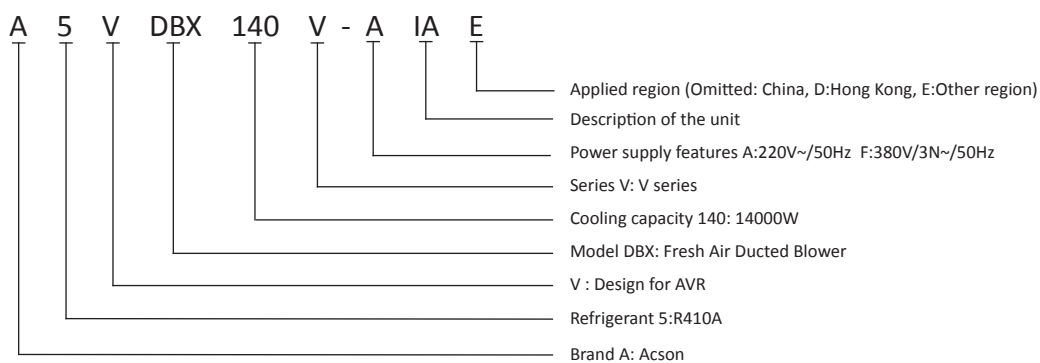


Fresh Air Ducted Blower Indoor Units: A5VDBX-V Series

Product Range: A5VDBX140V, A5VDBX224V, A5VDBX280V, A5VDBX335V, A5VDBX450V, A5VDBX560V, A5VDBX580V

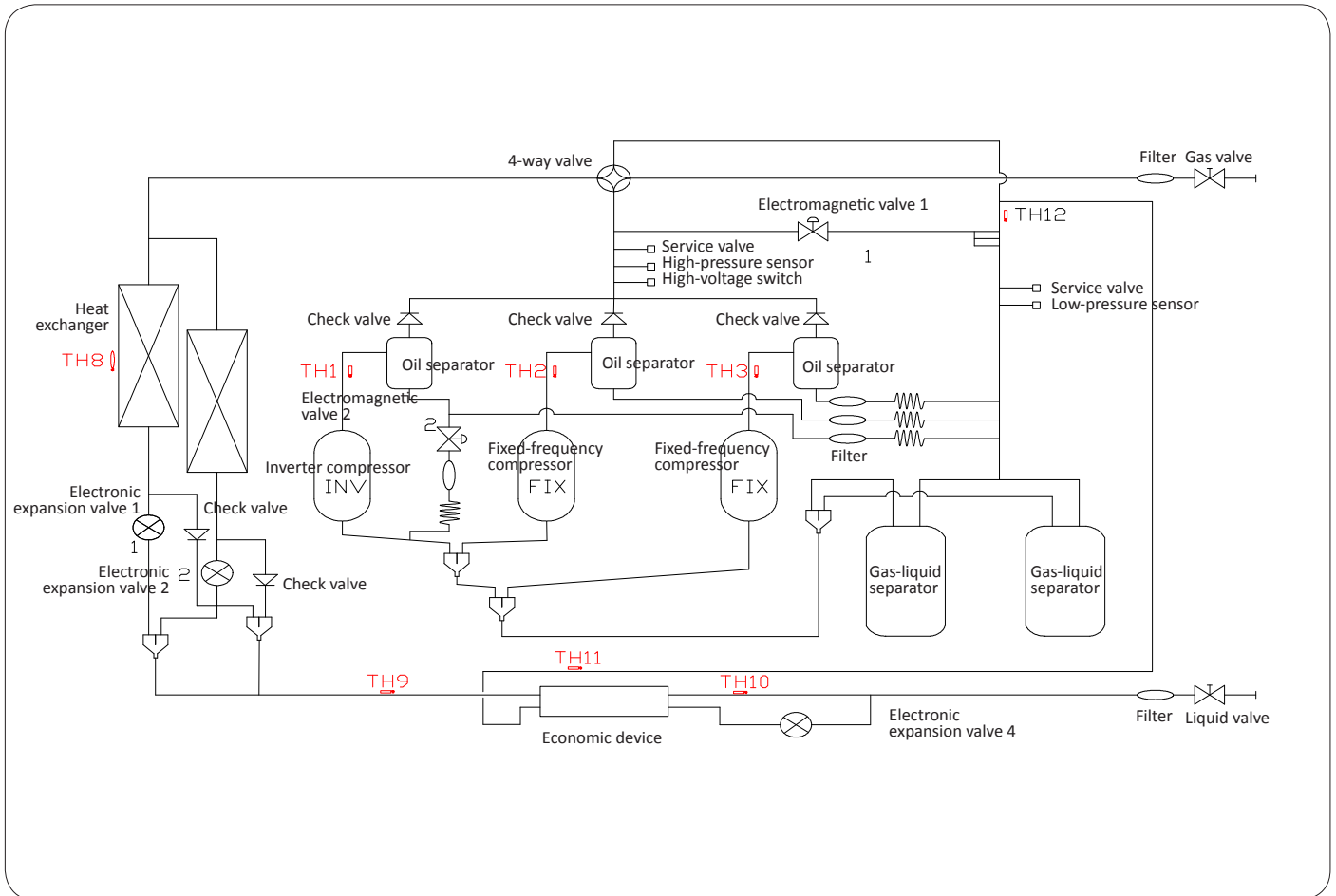
Feature: Improve indoor air quality constantly by Introducing 100% outdoor fresh air

Nomenclature



APPLICATION INFORMATION

2.1 Refrigerant Circuit Diagram

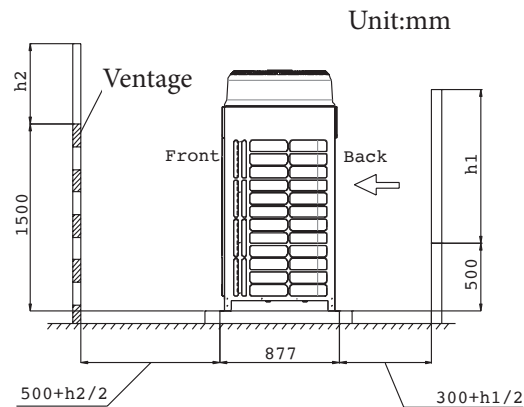


Circulatory system of refrigeration and heating systems

2.2 Installation Guideline (Outdoor Clearance)

2.2.1 Space for installation of outdoor units

One single outdoor unit can be installed in one place, multiple outdoor units can be installed in one large place in order, refer to the followings:



- The required installation space shown in the figure above takes the presumption that a unit provides refrigeration at an outdoor temperature of 35°C. If the outdoor temperature exceeds 35°C, the heating load is higher, and all outdoor units will be running over capacity. The space needed will be larger than the one shown in the figure.
- If an outdoor unit has a wall in the front and back respectively, with the wall in the front not higher than 1500 mm and the back wall not higher than 500 mm. Please reserve at least 500 mm installation space in front and at least 300 mm at back.
- If an outdoor unit has a wall over 1500 mm in front, reserve at least $(500 + \frac{h_2}{2})$ mm installation space in front.
- If an outdoor unit has a wall over 500 mm the back (air suction side), reserve at least $(300 + \frac{h_1}{2})$ mm installation space in front.
- If the distance between the top of an outdoor unit and barrier is lesser than 1500 mm, please install an air deflector will be required on the air outlet side (plenum) to prevent return air short circuit.
- If a barrier exists over the top of an outdoor unit. It is required that the front, back, left, and right sides of the outdoor unit to be open in principle.

Obstacle exists at the both sides

a. Single unit installation

- Only an obstacle exists in the back (see Figure 1)
- Obstacles exists in the flank and the back (see Figure 2)

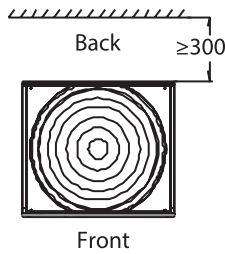


Figure 1

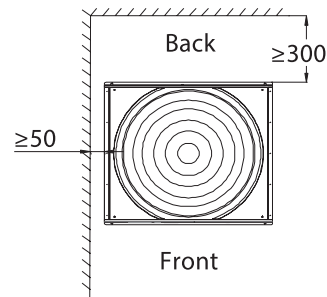


Figure 2

b. Group units installation (more than two units)

- Obstacles exists in the front and back (see Figure 3)
- Obstacles exists in the flank and back (see Figure 4)

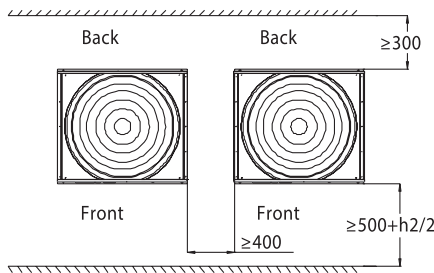


Figure 3

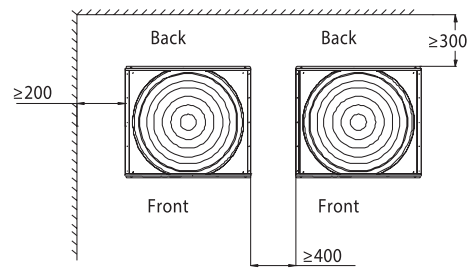


Figure 4

Obstacle exists at three sides

a. Single unit installation

- Obstacles exists in the front ,back and flank (see Figure 5)

b. Group units installation (more than two units)

- Obstacles exists in the front ,back ,and flank. The units is installed at the same direction (see Figure 6)
- Obstacles exists in the front ,back ,and flank. The units is installed at the opposite direction 1 (see Figure 7)

Obstacles exists in the front ,back ,and flank. The units is installed at the opposite direction 2 (see Figure 8)

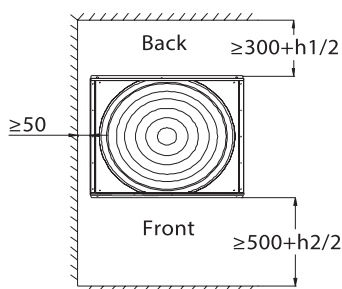
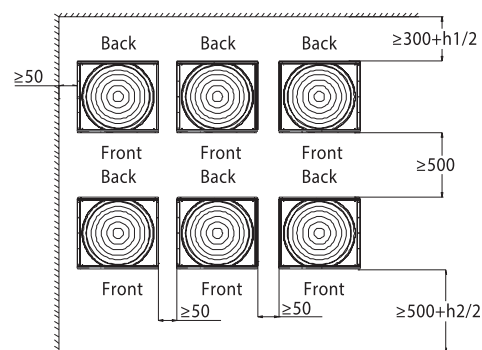
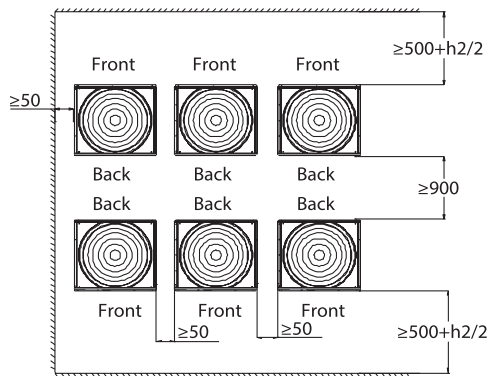


Figure 5



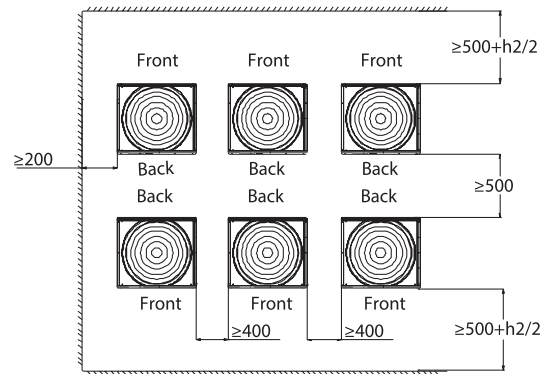
The same direction

Figure 6



The opposite direction 1

Figure 7



The opposite direction 2

Figure 8

Obstacle exists at four sides

a. Single unit installation

- Obstacles exists in the front ,back and flank (see Figure 9)

b. Group units installation (more than two units)

- Obstacles exists in the front ,back ,and flank. The units is installed at the same direction (see Figure 10)
- Obstacles exists in the front ,back ,and flank. The units is installed at the opposite direction 1 (see Figure 11)
- Obstacles exists in the front ,back ,and flank. The units is installed at the opposite direction 2 (see Figure 12)
- Obstacles exists in the front ,back ,and flank. The units is installed at the face-to-face direction (see Figure 13)

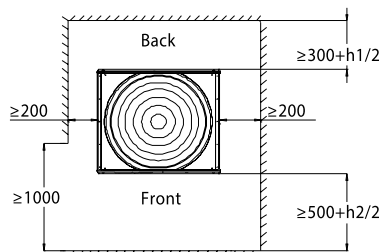
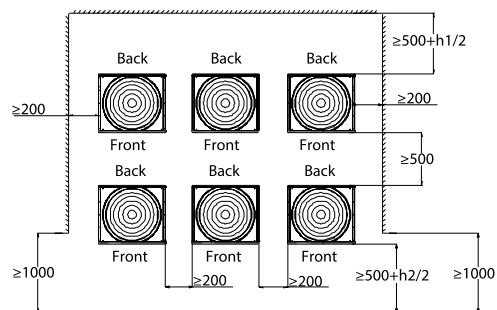
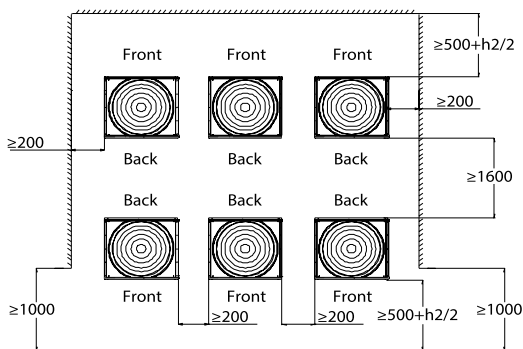


Figure 9



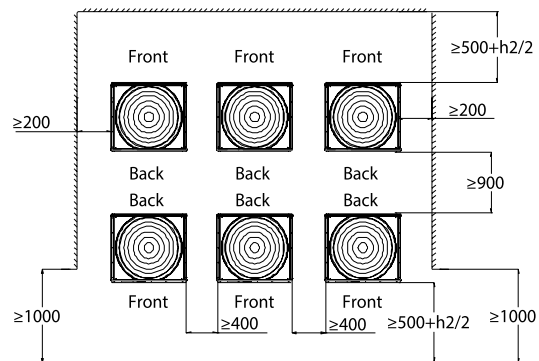
The same direction 2

Figure 10



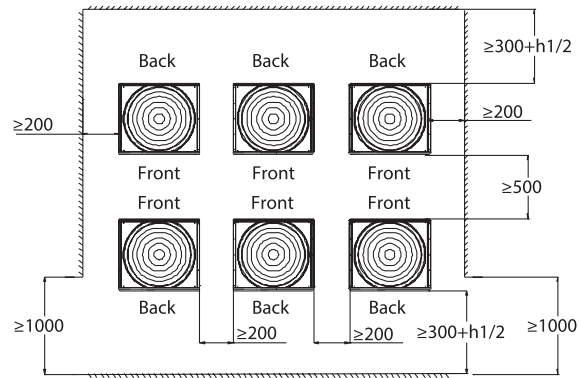
The opposite direction 1

Figure 11



The opposite direction 2

Figure 12

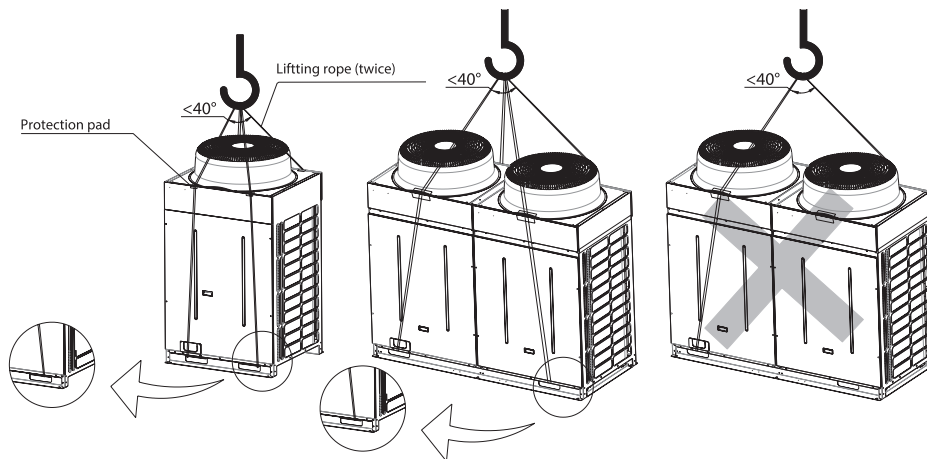


The face-to-face direction

Figure 13

2.2.2 Handling outdoor units

Please refer to the followings to conduct moving of units; use 4 supporting point to move units.



Note:

- Outdoor unit transportation shall be very careful;
- Use special rope to tie the units for transportation;
- Do not touch the fins of units to avoid hurt of hand;
- Keep the plastic bag from away the child;
- Please select the appropriate ropes according to the weight of units.

2.2 Installation Guideline (Cable size)

EcoPlus Outdoor Units

Model		A5VR 080DR	A5VR 100DR	A5VR 120DR	A5VR 140DR	A5VR 160DR	A5VR 180DR	A5VR 200DR	A5VR 220DR	A5VR 240DR
Power Supply		380V/3N~/50Hz								
Maximum Operating Current (A)		25.5	25.5	27.8	29.5	30.5	38	41.8	41.9	42.7
Cable	Intersection Surface(mm ²)	6	6	6	6	6	10	10	10	10
	Quantities	5								

Model		A5VR 260DR	A5VR 280DR	A5VR 300DR	A5VR 320DR	A5VR 340DR	A5VR 360DR	A5VR 380DR2	A5VR 380DR3	A5VR 400DR2	A5VR 400DR3
Combined units		120+140	120+160	160+140	160+160	160+180	180+180	160+220	120+ 120+140	160+240	160+ 120+120
Power Supply		380V/3N~/50Hz									
Maximum Operating Current (A)		27.8+29.5	27.8+30.5	30.5+29.5	30.5+30.5	30.5+38.0	38.0+38.0	30.5+41.9	27.8 + 27.8+29.5	30.5+42.7	30.5+ 27.8+27.8
Cable	Intersection Surface(mm ²)	6+6	6+6	6+6	6+6	6+10	10+10	6+10	6+6+6	6+10	6+6+6
	Quantities	5+5			5+5			5+5	5+5+5	5+5	5+5+5

Model		A5VR 420DR	A5VR 440DR	A5VR 460DR	A5VR 480DR	A5VR 500DR	A5VR 520DR	A5VR 540DR
Combined units		160+120+140	160+140+140	160+140+160	160+160+160	160+160+180	160+180+180	180+180+180
Power Supply		380V/3N~/50Hz						
Maximum Operating Current (A)		30.5+27.8 +29.5	30.5+29.5 +29.5	30.5+29.5 +30.5	30.5+30.5 +30.5	30.5+30.5 +38.0	30.5+38.0 +38.0	38.0+38.0 +38.0
Cable	Intersection Surface(mm ²)	6+6+6	6+6+6	6+6+6	6+6+6	6+6+10	6+10+10	10+10+10
	Quantities	5+5+5						

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card.
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
 - All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

Ceiling Concealed Indoor Units

Model		A5VCC 022V	A5VCC025V A5VCC028V	A5VCC032V A5VCC036V	A5VCC040V A5VCC045V	A5VCC050V A5VCC056V	A5VCC 063V	A5VCC 071V
Power Supply		220V~/50Hz						
Cable	Intersection Surface(mm ²)	Normal	1.5					
		Electrical heater	1.5			2.5		
	Quantities		3					

Model		A5VCC 080V	A5VCC 090V	A5VCC 100V	A5VCC 112V	A5VCC 125V	A5VCC 140V	A5VCC 160V
Power Supply		220V~/50Hz						
Cable	Intersection Surface(mm ²)	Normal	1.5					
		Electrical heater	2.5		4			
	Quantities		3					

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card.
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
 - All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

Ceiling Cassette Indoor Units

Model		A5VCK 028V	A5VCK 032V	A5VCK 036V	A5VCK 040V	A5VCK 045V	A5VCK 050V	A5VCK 056V	A5VCK 063V	A5VCK 071V
Power Supply		220V~/50Hz								
Cable	Intersection Surface(mm ²)	Normal	1.5							
		Electrical heater	2.5							
	Quantities		3							

Model		A5VCK080V	A5VCK090V	A5VCK100V	A5VCK112V	A5VCK125V	A5VCK140V
Power Supply		220V~/50Hz					
Cable	Intersection Surface(mm ²)	Normal	1.5				
		Electrical heater	4				
	Quantities		3				

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card.
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
 - All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

Ducted Blower Indoor Units

Model			A5VDB125V	A5VDB140V	A5VDB224V	A5VDB280V
Power Supply			220V~/50Hz		380V/3N~/50Hz	
Cable	Intersection Surface(mm ²)	Normal	1.5		2.5	TBA
	Quantities		3		5	TBA

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card;
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
- All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

Wall Mounted Indoor Units

Model		A5VWM022W	A5VWM028W	A5VWM036W	A5VWM045W	A5VWM056W	A5VWM071W
Power Supply		220V~/50Hz					
Cable	Intersection Surface(mm ²)	1.5					
	Quantities		3				

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card.
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
- All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

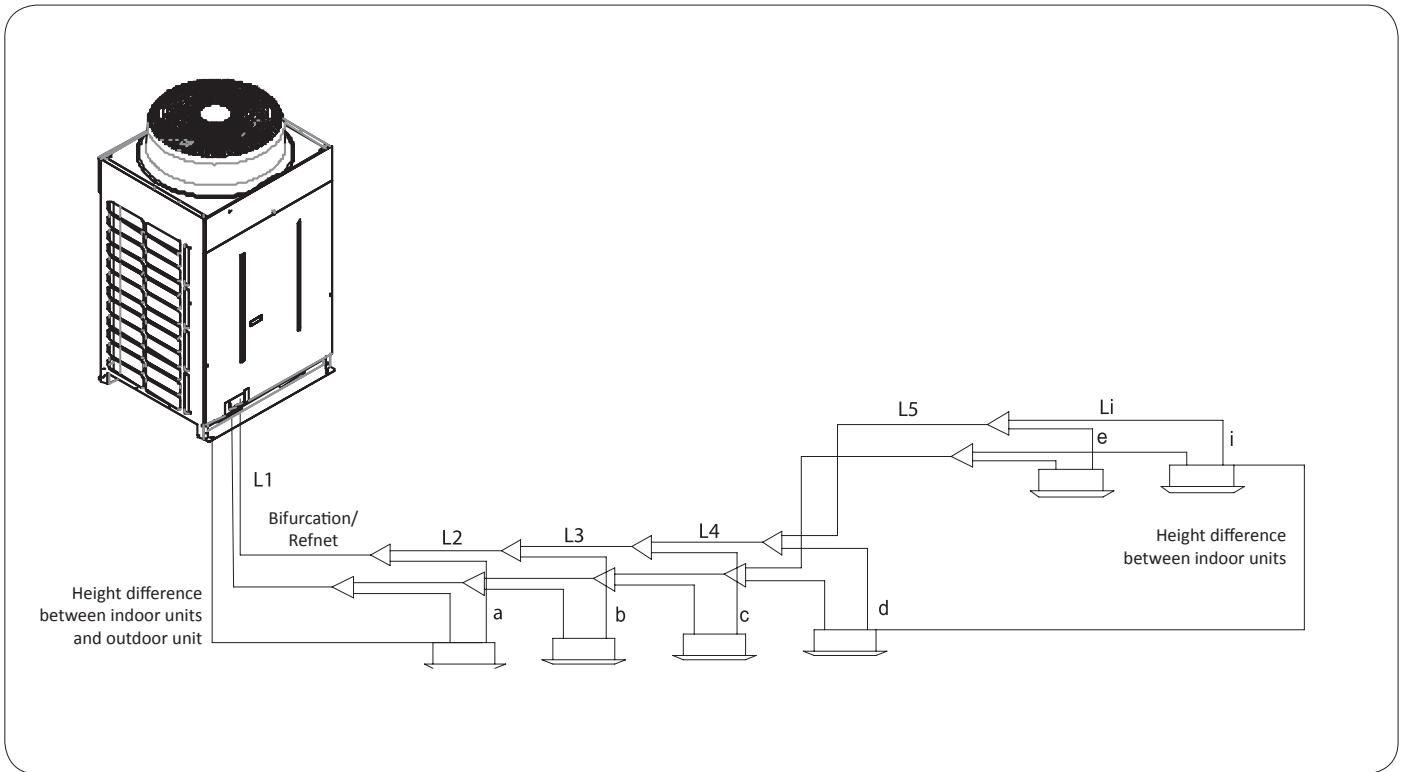
Ceiling Mounted

Model			A5VCM056V	A5VCM071V	A5VCM112V	A5VCM125V
Power Supply			220V~/50Hz			
Cable	Intersection Surface(mm ²)	Normal	1.5			
	Quantities		3			

- Note:**
- The lead-in position of power cable must be provided a short circuit device with a sufficient capacity. This device has a contact separation of 3 mm at least.
 - All cable shall be connected and fixed tightly, and connecting wires must be fixed on the line card.
 - All wires must not touch the refrigerant pipes and compressors, motors and other moving parts, and all the conducting wires must undergo safety measures to prevent water, dust, corrosion, vibration and rodents.
- All above intersection surface of power wires are minimum requirements. The actual specifications Influenced by radiation, temperature, length etc, please adjust it according to the related electric manual.

2.2 Installation Guideline (Refrigerant Piping)

Refrigerant piping length



				Pipe Parts	
Pipe Length	Total length	Equivalent length	A5VR080~540DR	≤1000m (500m)	$(L1+L2+...+Li+a+b+...+i)*2$
	Longest pipe length	Actual length	A5VR080~540DR	≤175m (150m)	L1+L2+... +Li+i
		Equivalent length	A5VR080~540DR	≤200m (170m)	
	Equivalent length from first bifurcation/refnet to furthest piping section		A5VR080~540DR	≤40m	L2+... +Li+i
Height difference	Maximum height difference between indoor units and outdoor unit		A5VR080~540DR	≤50m	-
	Maximum height difference between indoor units			≤15m	-

Note: Values in brackets are for A5VR080DR to A5VR240DR (CM series) models.

The 'equivalent length' is the conversion length including the elbow and other parts of the tube after loss of pressure. The formula is as follows:

Equivalent length = actual length of pipe + (number of elbows x equivalent length of various elbows)

The equivalent length of each bifurcation/refnet (branch) is 0.5m, whereas the equivalent length of the elbows is as shown in the table below:

Diameter	Equivalent length	Diameter	Equivalent length
	Elbow(m)		Elbow(m)
φ9.52	0.18	φ28.6	0.50
φ12.7	0.20	φ31.8	0.55
φ15.88	0.25	φ34.9	0.60
φ19.05	0.35	φ38.1	0.65
φ22.23	0.40	φ41.3	0.70
φ25.4	0.45		

Note:
The equivalent length of elbow in the table above aims to fulfil installation standards: the pipe bending radius of curvature is $R \geq 3.5D$ (D for the pipe diameter), about $\geq 3/4$ of the original diameter before the pipe bending deformation. If the elbow bending radius does not meet the above installation standards, the equivalent length is to be calculated separately (the smaller the bending radius, the longer the equivalent length).

When the equivalent length of all piping is equal to or more than 90 m, the diameter of the main pipe (from the outdoor unit to the first branch pipe) must be increased. For example, when the equivalent length of the 10 HP outdoor unit exceeds 90 m, the diameter of the main pipe should be changed from 22.23 mm to 25.4 mm. When the diameter of the main pipe is increased, the effective equivalent length must be recalculated. When calculating the extent of performance degradation due to the length of the pipe, the pipe length should be...

...calculated according to the effective equivalent length.

Effective equivalent length = equivalent length of main pipe x 0.5 + equivalent length after branching (when the diameter of the main pipe is increased)

The equivalent length of the first branch pipe to the furthest piping section is $\leq 40m$. However, when all following conditions have been satisfied, the allowable length can be extended to 90m.

	Requirements		Diagram
1	The diameter of the piping between the first and the last bifurcation/refnet (branch) assembly needs to be increased. (Please make necessary adjustments on-site) If the piping diameter is the same as that of the main piping, it does not need to be increased.	$L2+... +Li+i \leq 90m$ $L2, L3, \dots, Li$: the piping diameter must be increased	The piping dimensions are to be increased as shown below $\Phi 9.52 \rightarrow \Phi 12.7$ $\Phi 15.9 \rightarrow \Phi 19.1$ $\Phi 22.2 \rightarrow \Phi 25.4$ $\Phi 12.7 \rightarrow \Phi 15.9$ $\Phi 19.1 \rightarrow \Phi 22.2$ $\Phi 28.6 \rightarrow \Phi 31.8$ $\Phi 34.9 \rightarrow \Phi 38.1$
2	When calculating the total extension length, the actual length of the piping must be doubled. (Except for main piping and piping without diameter increment.)	$L1+L2 \times 2 + L3 \times 2 + \dots + Li \times 2 + a + b + c + \dots + i \leq 1000m$	
3	Indoor unit must be $\leq 40m$ from the nearest bifurcation/refnet component	$a, b, c, d, \dots, i \leq 40m$	
4	[Distance from outdoor unit to furthest indoor unit] and [Distance from outdoor unit to nearest indoor unit] $\leq 40m$	$(L1+L2+...+Li+i) - (L1+a) \leq 40m$	

Number of allowable indoor units

Outdoor unit model	No. maximum indoor units	Outdoor unit model	No. maximum indoor units	Outdoor unit model	No. maximum indoor units
A5VR080DR	13	A5VR260DR	32	A5VR440DR	48
A5VR100DR	16	A5VR280DR	32	A5VR460DR	52
A5VR120DR	16	A5VR300DR	36	A5VR480DR	52
A5VR140DR	20	A5VR320DR	36	A5VR500DR	54
A5VR160DR	20	A5VR340DR	40	A5VR520DR	54
A5VR180DR	24	A5VR360DR	40	A5VR540DR	56
A5VR200DR	24	A5VR380DR	44	-	-
A5VR220DR	28	A5VR400DR	44	-	-
A5VR240DR	28	A5VR420DR	48	-	-

Calculating the additional amount of refrigerant required

1. The copper pipe specifications and necessary refrigerant amount are as shown in the table below:

Pipe diameter	φ22.23	φ19.05	φ15.88	φ12.70	φ9.52	φ6.35
Additional R410A refrigerant needed	370g/m	260g/m	180g/m	120g/m	54g/m	22g/m

2. The additional amount of refrigerant charge needed can be calculated according to the length and thickness of the refrigerant pipes. The formula is as follows:

Additional refrigerant charge (g) = Total length of φ22.23 copper pipe (m) x 370g/m + Total length of φ19.05 copper pipe (m) x 260g/m + Total length of φ15.88 copper pipe (m) x 180g/m + Total length of φ12.70 copper pipe (m) x 120g/m + Total length of φ9.52 copper pipe (m) x 54g/m + Total length of φ6.35 copper pipe (m) x 22g/m

(3) If the denomination of the result is less than 0.1kg, carry it forward to the nearest 0.1kg; for example: If the result is 28.62kg, the final amount needed should be 28.7kg.

Note:

New fan units already come equipped with 10m main pipe's worth of refrigerant, so when calculating the refrigerant amount, reduce main pipe by 10m. The above formula is for reference purposes only; the actual amount needed can be adjusted on-site.

ENGINEERING & PHYSICAL DATA

EcoPlus Outdoor Unit

Model	A5VR 080DR	A5VR 100DR	A5VR 120DR	A5VR 140DR	A5VR 160DR	A5VR 180DR	A5VR 200DR	A5VR 220DR	A5VR 240DR
Cooling capacity(kW)	24.5	28	33.6	40	45	50.4	56	61.6	68
Heating capacity(kW)	27	31.5	37.8	44.2	50.6	56.9	63.2	69.5	75.8
Power	380V/3N~/50Hz								
Noise dB(A)	58	59	60	60	61	61	62	62	62
WxDxH(mm)	990*840*1515		990*840*1780	1350*840*1780			1990*840*1780		
Weight (kg)	181	182	213	290	314	320	448	473	480
Power consumption in cooling (kW)	6	7.36	8.84	10.52	12.5	14.7	15.2	16.62	20
Ampere in cooling (A)	12.2	14.3	15.4	18.3	21.8	26.4	27.5	30.4	35.2
Power consumption in heating (kW)	6.48	8	9.95	10.78	12.18	14.49	15.47	17.25	19.15
Ampere in heating (A)	13.4	15.5	17.2	19.6	21.3	26.7	28.2	31.4	34.1
Max.indoors-quantity	13	16	16	20	20	24	24	28	28
Refrigerant	R410A								
Connecting pipe	gas tube welding								
	liquid expanded copper tube								
LiquidΦ(mm(in))	9.52 (3/8")	12.7 (1/2")				15.88 (5/8")			
GasΦ(mm(in))	22.23 (7/8")			28.6 (9/8")					

Model	A5VR 260DR	A5VR 280DR	A5VR 300DR	A5VR 320DR	A5VR 340DR	A5VR 360DR	A5VR 380DR2	A5VR 400DR2
Combined units	12+14	12+16	16+14	16+16	16+18	18+18	16+22	16+24
Cooling capacity(kW)	73.6	78.6	85	90	95.4	100.8	106.6	113
Heating capacity(kW)	82	88.4	94.8	101.2	107.5	113.8	120.1	126.4&
Power	380V/3N~/50Hz							
Noise dB(A)	64	64	64	64	65	65	65	66
WxDxH(mm)	990*840*1780 & 1350*840*1780		1350*840*1780 & 1350*840*1780				1350*840*1780 & 1990*840*1780	
Weight (kg)	503	527	604	628	634	640	787	794
Power consumption in cooling (kW)	19.36	21.34	23.02	25	27.2	29.4	29.12	32.5
Ampere in cooling (A)	33.7	37.2	40.1	43.6	48.2	52.8	52.2	57
Power consumption in heating (kW)	20.73	22.13	22.96	24.36	26.67	28.98	29.43	31.33
Ampere in heating (A)	36.8	38.5	40.9	42.6	48	53.4	52.7	55.4
Max.indoors-quantity	32	32	36	36	40	40	44	44
Refrigerant	R410A							
Connecting pipe	gas tube welding							
	liquid tube welding							
LiquidΦ(mm(in))	19.05 (3/4")							
GasΦ(mm(in))	34.9 (1-3/8")						41.3 (1-5/8")	

EcoPlus Outdoor Unit

(cont.)

Model	A5VR 380DR3	A5VR 400DR3	A5VR 420DR	A5VR 440DR	A5VR 460DR	A5VR 480DR	A5VR 500DR	A5VR 520DR	A5VR 540DR
Combined units	12+12+14	16+12+12	16+12+14	16+14+14	16+14+16	16+16+16	16+16+18	16+18+18	18+18+18
Cooling capacity(kW)	107.2	112.2	132.6	139	145.4	151.8	158.1	164.4	151.2
Heating capacity(kW)	119.8	126.2	132.6	139	145.4	151.8	158.1	164.4	170.7
Power	380V/3N~/50Hz								
Noise dB(A)	65	66	66	66	67	67	67	67	67
W×D×H(mm)	990*840*1780&990*840*1780&1350*840*1780		1350*840*1780 &990*840*1780 &1350*840*1780	1350*840*1780&1350*840*1780&1350*840*1780					
Weight (kg)	716	740	817	894	918	942	948	954	960
Power consumption in cooling (kW)	28.2	30.18	31.86	33.54	35.52	37.5	39.7	41.9	44.1
Ampere in cooling (A)	49.1	52.6	55.5	58.4	61.9	65.4	70	74.6	79.2
Power consumption in heating (kW)	30.68	32.08	32.91	33.74	35.14	36.54	38.85	41.16	43.47
Ampere in heating (A)	54	55.7	58.1	60.5	62.2	63.9	69.3	74.7	80.1
Max.indoors-quantity	44	44	48	48	52	52	54	54	56
Refrigerant	R410A								
Connecting pipe	gas	tube welding							
	liquid	tube welding							
LiquidΦ(mm(in))	19.05 (3/4")								
GasΦ(mm(in))	41.3 (1-5/8")								

Note:

1. Cooling condition: Indoor D/W bulb Temp. 27°C/19°C, outdoor temperature: D/W bulb Temp.35°C/24°C;
2. Heating condition: Indoor D/W bulb Temp. 20°C/15°C, outdoor temperature: D/W bulb Temp.7°C/6°C;
3. The noise level is tested in the incomplete anechoic lab under the standard refrigeration condition and got from the value, that from a point is half of the unit height plus 1 meter in front of the unit. The real noise value in operation may be a little higher than the tested value due to the influence of the actual environment;
4. The width is just for the unit, not including the width of bottom edge.

Ceiling Cassette Indoor Units

Model		A5VCK 028V	A5VCK 032V	A5VCK 036V	A5VCK 040V	A5VCK 045V	A5VCK 050V	A5VCK 056V	A5VCK 063V	A5VCK 071V
Cooling capacity	W	2800	3200	3600	4000	4500	5000	5600	6300	7100
Heating capacity	W	3200	3600	4000	4500	5000	5600	6300	7100	8000
Power		220V~/50Hz								
Sound level dB(A)		30	31	34	39	40				
W×D×H(mm)		990*990*340								
Weight	kg	26	26	30	30	31				
Power consumption (W)		55	55	72	92	102				
Number of fan		1								
Air flow	H: m ³ /h	600	640	800	1000	1200				
Drain Φ(mm(in))		20.5(4/5")								
Protection		Anti-freezing , overheat								
Connecting pipe	gas	expanded copper tube								
	liquid	expanded copper tube								
LiquidΦ(mm(in))		6.35 (1/4")							9.52 (3/8")	
GasΦ(mm(in))		9.52 (3/8")	12.7 (4/8")				15.88 (5/8")			

Model		A5VCK 080V	A5VCK 090V	A5VCK 100V	A5VCK 112V	A5VCK 125V	A5VCK 140V
Cooling capacity	W	8000	9000	10000	11200	12500	14000
Heating capacity	W	9000	10000	11200	12500	14000	15700
Power		220V~/50Hz					
Sound level dB(A)		42	42	43	45	48	50
W×D×H(mm)		990*990*390					
Weight	kg	35	35	35	36	36	36
Power consumption (W)		142	142	144	155	171	204
Number of fan		1					
Air flow	H: m ³ /h	1300	1300	1360	1530	1600	1800
Drain Φ(mm(in))		20.5(4/5")					
Protection		Anti-freezing , overheat					
Connecting pipe	gas	expanded copper tube					
	liquid	expanded copper tube					
LiquidΦ(mm(in))		9.52 (3/8")					
GasΦ(mm(in))		15.88 (5/8")					

Wall Mounted Indoor Units

Model		A5VWM 022W	A5VWM 028W	A5VWM 036W	A5VWM 045W	A5VWM 056W	A5VWM 071W
Cooling capacity	W	2200	2800	3600	4500	5600	7100
Heating capacity	W	2500	3200	4000	5000	6200	7800
Power		220V~/50Hz					
Sound level dB(A)		35	35	37	40	43	46
WxDxH(mm)		990*205*282				1080*221*304	
Weight	kg	12	12	12	12	16	16
Power consumption (W)		33	33	34	34	35	55
Number of fan		1					
Air flow	H: m ³ /h	450	480	540	600	800	920
Drain Φ(mm(in))		20					
Protection		Anti-freezing , overload					
Connecting pipe	gas	expanded copper tube					
	liquid	expanded copper tube					
LiquidΦ(mm(in))		6.35 (1/4")					9.52 (3/8")
GasΦ(mm(in))		9.52 (3/8")		12.7 (1/2")			15.88 (5/8")

Note:

1. Cooling condition: Indoor D/W bulb Temp. 27/19°C, outdoor temperature: D/W bulb Temp.35/24°C;
2. Heating condition: Indoor D/W bulb Temp. 20/15°C, outdoor temperature: D/W bulb Temp.7/6°C;
3. Testing power supply: 220V~/50Hz.
4. The noise level value is got from the testing point -0.8 meter downwards and 1 meter in front of the unit in the incomplete anechoic lab.
In the actual operation. The noise level may be a little higher influenced by the environment.

Ducted Blower Indoor Units

Model		A5VDB125V	A5VDB140V	A5VDB224V
Cooling capacity	W	12500	14000	22400
Heating capacity	W	14000	16000	25000
Power		220V~/50Hz		380V/3N~/50Hz
Sound level dB(A)		46	50	54
WxDxH(mm)		1227*830*350	1427*830*350	1760*958*515
Weight	kg	60	69	131
Power consumption (W)		481	620	910
Current (A)		2.1	2.5	2.08
Number of fan		2		
Air flow	H: m ³ /h	2300	2750	4100
ESP (Pa)		100		200
Drain Φ(mm(in))		19.05 (3/4")		R1
Protection		Anti-freezing, overload		
Connecting Pipe	gas	expanded copper tube		
	liquid	expanded copper tube		
LiquidΦ(mm(in))		9.52 (3/8")		
GasΦ(mm(in))		15.88 (5/8")		22.23 (7/8")

- Note:**
1. Cooling condition: Indoor D/W bulb Temp. 27/19°C, outdoor temperature: D/W bulb Temp.35/24°C;
 2. Heating condition: Indoor D/W bulb Temp. 20/15°C, outdoor temperature: D/W bulb Temp.7/6°C;
 3. Testing power supply: 220V~/50Hz or 380V/3N~/50Hz.
 4. The noise level value is got from the testing point -1.4 meter under the unit in the incomplete anechoic lab.
In the actual operation, the noise level may be a little higher influenced by the environment.

Ceiling Mounted Indoor Units

Model		A5VCM056V	A5VCM071V	A5VCM112V	A5VCM125V
Cooling capacity	W	5600	7100	11200	12500
Heating capacity	W	6300	8000	12500	14000
Power		220V~/50Hz			
Sound level dB(A)		48	50	52	
W×D×H(mm)		1214*670*214	1214*670*249	1714*670*249	
Weight	kg	39	44	64	
	lb	86	97	141	
Power consumption (W)		81	116	161	
Current (A)		0.40	0.55	0.70	
Number of fan		2	3	4	
Air flow	H: m ³ /h	1100	1300	1850	
Drain Φ(mm(in))		20.5 (4/5")			
Protection		Anti-freezing, overload			
Connecting pipe	gas	expanded copper tube			
	liquid	expanded copper tube			
LiquidΦ(mm(in))		6.35(1/4")	9.52(3/8")		
GasΦ(mm(in))		12.7(1/2")	15.88(5/8")		
Model of AEX		AEX-18-2SAP-C	AEX-22-3SAP-C		

Note:

1. Cooling condition: Indoor D/W bulb Temp. 27/19°C, outdoor temperature: D/W bulb Temp. 35/24°C;
2. Heating condition: Indoor D/W bulb Temp. 20/15°C, outdoor temperature: D/W bulb Temp. 7/6°C;
Heating capacity in low ambient temp condition: outdoor temperature: Dry bulb Temp. -12°C;
3. Testing power supply: 220V~/50Hz.
4. The noise level value is got from the testing point -1 meter downwards and 1 meter in front of the unit in the incomplete anechoic lab.
In the actual operation, the noise level may be a little higher influenced by the environment.

Ceiling Concealed Indoor Units

Model	A5VCC 022V	A5VCC 025V	A5VCC 028V	A5VCC 032V	A5VCC 036V	A5VCC 040V	A5VCC 045V	A5VCC 050V	A5VCC 056V	
Cooling capacity (kW)	2200	2500	2800	3200	3600	4000	4500	5000	5600	
Heating capacity (kW)	2500	2800	3200	3600	4000	4500	5000	5600	6300	
Power	220V~/50Hz									
Sound level dB(A)	29	31		32		34		37		
W×D×H(mm)	900*599*199									
Weight (kg)	26	26		27		28		28		
Power input(W)	43	47		57		62		96		
Number of fan	2									
Air flow	H: m ³ /h		430	600		630		730		900
ESP(Pa)	10Pa ,(0/30Pa adjustable)									
Drain Φ(mm(in))	20.5(4/5")									
Protection	Anti-freezing, overload									
Pump head	700									
Connecting pipe	gas		expanded copper tube							
	liquid		expanded copper tube							
LiquidΦ(mm(in))	6.35 (1/4")									
GasΦ(mm(in))	9.52 (3/8")			12.7 (1/2")						

Model	A5VCC 063V	A5VCC 071V	A5VCC 080V	A5VCC 090V	A5VCC 100V	A5VCC 112V	A5VCC 125V	A5VCC 140V	A5VCC 160V	
Cooling capacity (kW)	6300	7100	8000	9000	10000	11200	12500	14000	16000	
Heating capacity (kW)	7100	8000	9000	10000	11200	12500	14000	16000	18000	
Power	220V~/50Hz									
Sound level dB(A)	37	40	43		46	47		49		
W×D×H(mm)	1100*599*199		1384*490*250		1734*490*250			1994*490*250		
Weight (kg)	33	33	30	41			47			
Power input(W)	98	138	157	210	246	276		377		
Number of fan	3		2		3			4		
Air flow	H: m ³ /h		1050	1200	1200	1400	1700	1900	1900	2500
ESP(Pa)	10Pa ,(0/30Pa adjustable)		30(15)		50(30)					
Drain Φ(mm(in))	20.5(4/5")		R3/4							
Protection	Anti-freezing, overload									
Pump head	700									
Connecting pipe	gas		expanded copper tube							
	liquid		expanded copper tube							
LiquidΦ(mm(in))	9.52 (3/8")									
GasΦ(mm(in))	15.88 (5/8")									

Fresh Air Ducted Blower Indoor Units

Model		A5VDBX140V		A5VDBX224V		A5VDBX280V		
One-to-One ODU		A5VR050DR		A5VR080DR		A5VR100DR		
Nominal Cooling Capacity	W	14000		22400		28000		
IDU air flow	m ³ /h	1100	1100	1680	1680	2100	2100	2100
External Static Pressure	Pa	150	200	150	220	150	220	300
Input Power	W	230	270	380	450	680	700	720
Noise	db(A)	44	46	47	48	51	51	51
Air Pipe Size	Φmm	15.88		22.23		22.23		
Liquid Pipe Size	Φmm	9.52		9.52		12.7		
Condensate Water Pipe Size	Φmm	25.4						
External Dimension (WxDxH)	mm	1040 x 1130 x 460		1380 x 1090 x 510		1380 x 1090 x 460		
Unit Weight	kg	62		100		104		
Power Supply		220-240V~/50Hz						

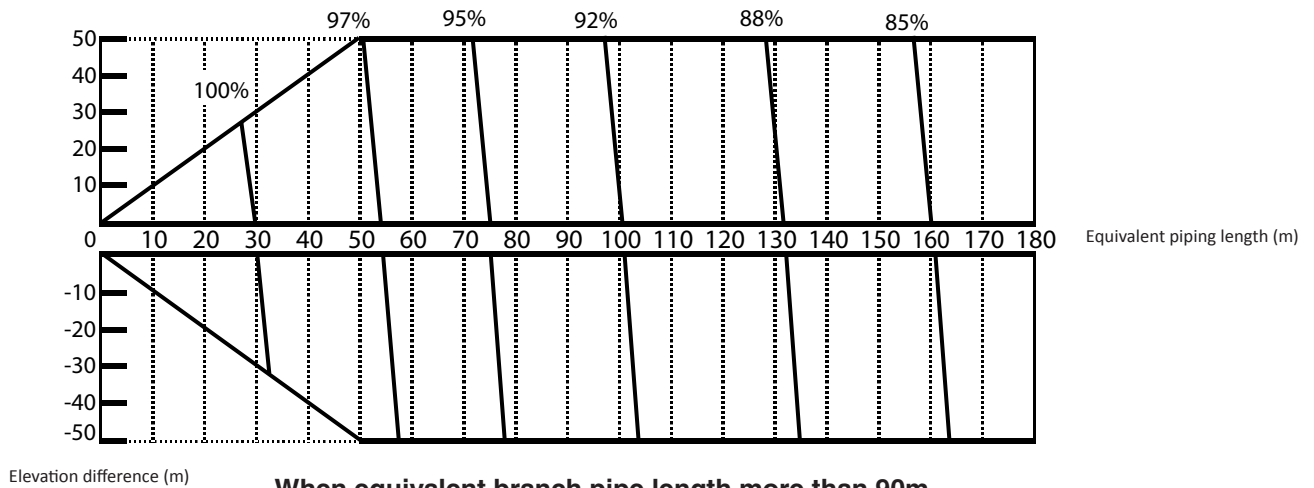
Model		A5VDBX335V			A5VDBX450V		A5VDBX224V		A5VDBX580V	
One-to-One ODU		A5VR120DR			A5VR160DR		A5VR180DR		A5VR200DR	
Nominal Cooling Capacity	W	35000			45000		56000		58000	
IDU air flow	m ³ /h	3000	3000	3000	4000	4000	5000	5000	6000	6000
External Static Pressure	Pa	150	200	300	200	300	200	300	200	300
Input Power	W	1050	1060	1150	820	1150	1200	1500	1500	1800
Noise	db(A)	55	55	55	55	58	58	59	59	59
Air Pipe Size	Φmm	22.23			28.6		28.6		28.6	
Liquid Pipe Size	Φmm	12.7			12.7		15.88		15.88	
Condensate Water Pipe Size	Φmm	25.4								
External Dimension (WxDxH)	mm	1380 x 1090 x 460			1580 x 1020 x 520		1580 x 1020 x 520		1580 x 1020 x 520	
Unit Weight	kg	120			150		150		150	
Power Supply		220-240V~/50Hz			380-415V/3N~/50Hz					

- Note:**
1. The cooling capacity is tested based on the condition where the outdoor dry/wet bulb temperature is 33°C/28°C (68%RH);
 2. The default set cooling temperature (air outlet temperature of the fresh air unit) for the system before delivery is 24°C ;
 3. The above fresh air units of large air flow can be used for one-to-one connection only, but do not apply to the one-to-many and mixed connection systems. The operating range of one-to-one connection is -5°C to 46°C .

PERFORMANCE DATA

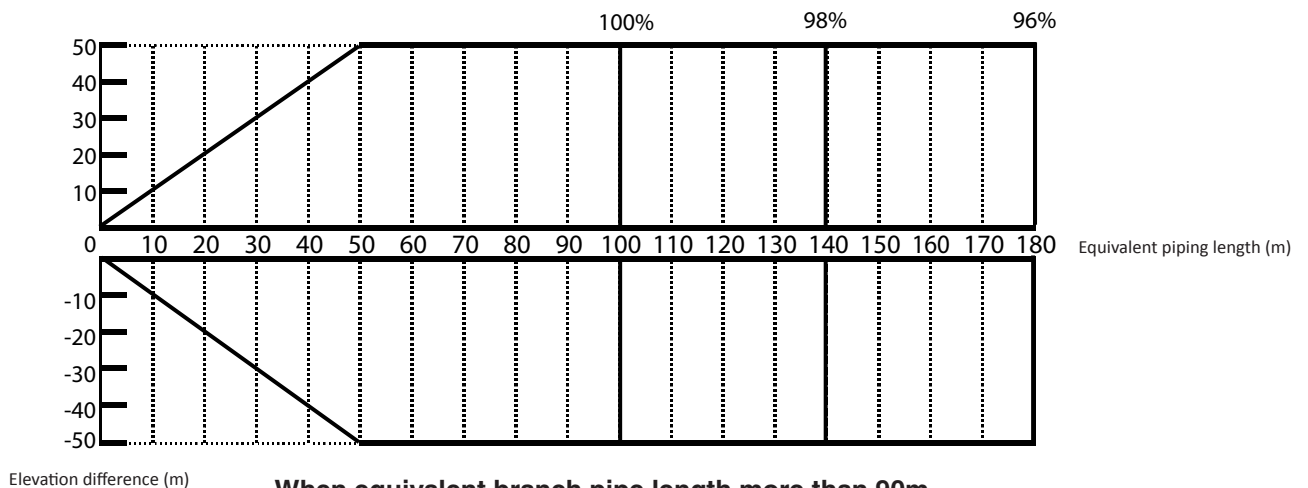
Capacity Drop Diagram

A5VR080/100/140/200DR Cooling Capacity Drop-Piping Diagram



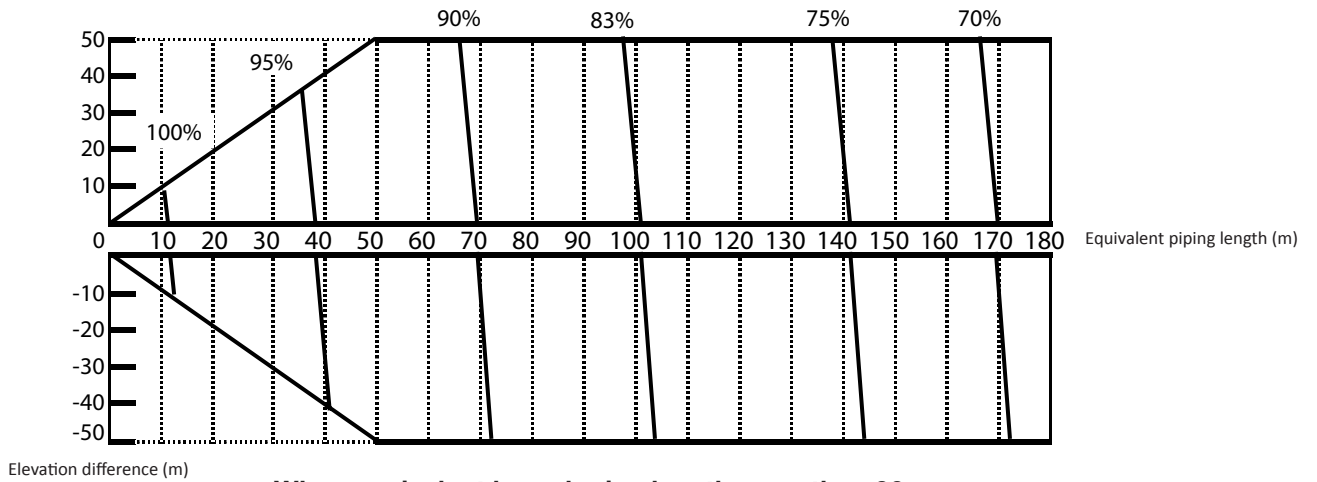
When equivalent branch pipe length more than 90m, bifurcation / refnet need to increase in diameter

A5VR080/100/140/200DR Heating Capacity Drop-Piping Diagram



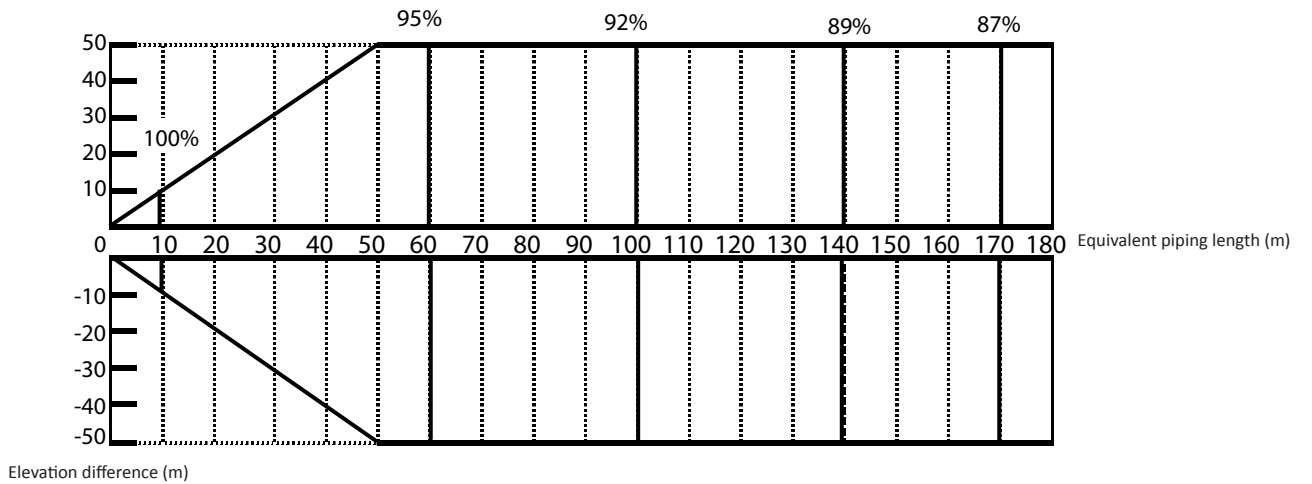
When equivalent branch pipe length more than 90m, bifurcation / refnet need to increase in diameter

A5VR120/240/280/320/380/400DR Cooling Capacity Drop-Piping Diagram

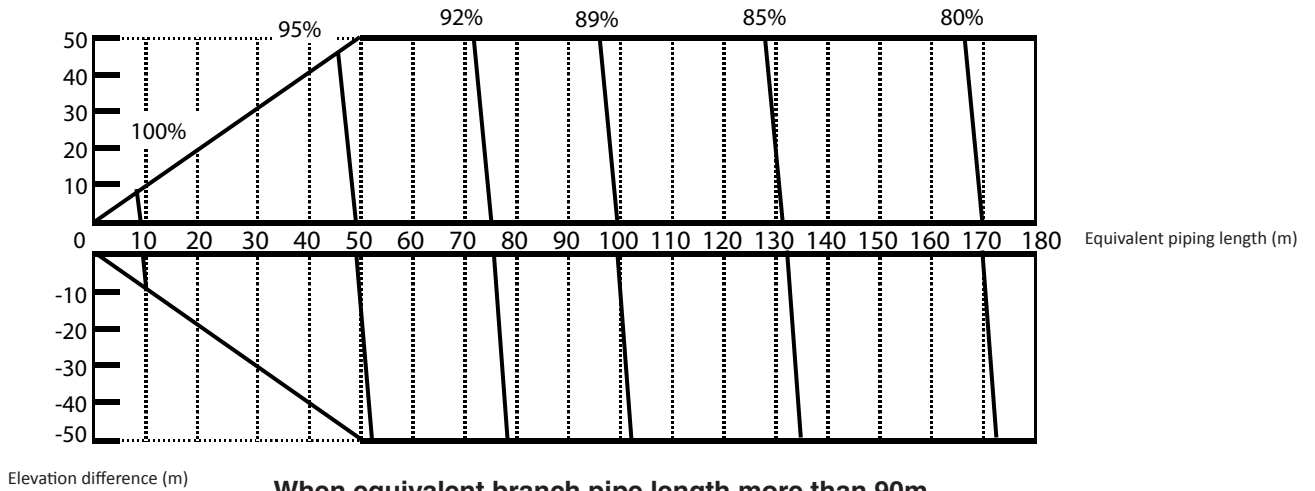


**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

A5VR120/240/280/320/380/400DR Heating Capacity Drop-Piping Diagram

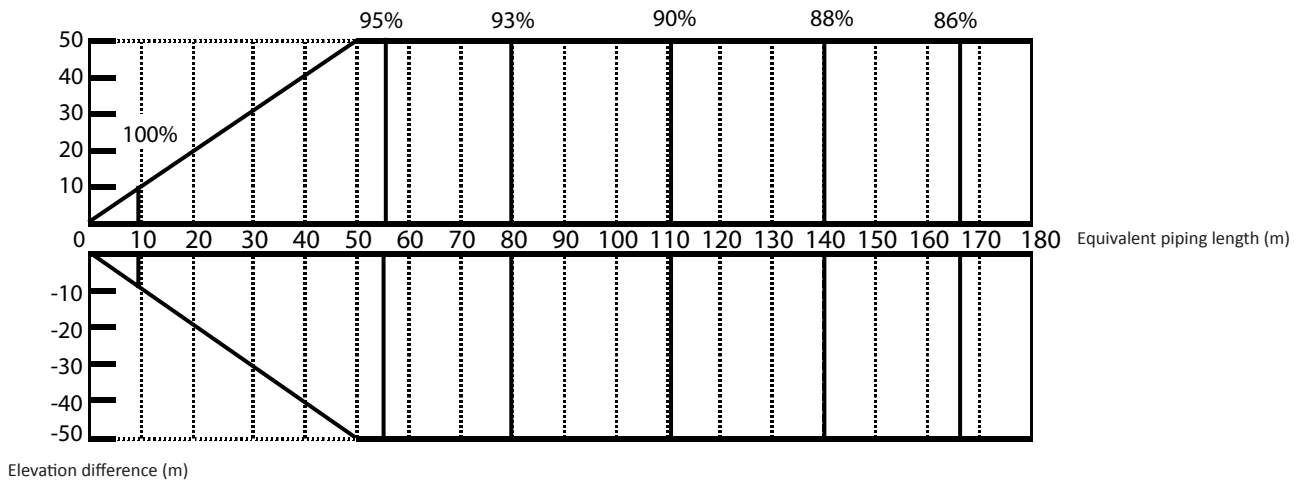


A5VR160/180DR Cooling Capacity Drop-Piping Diagram

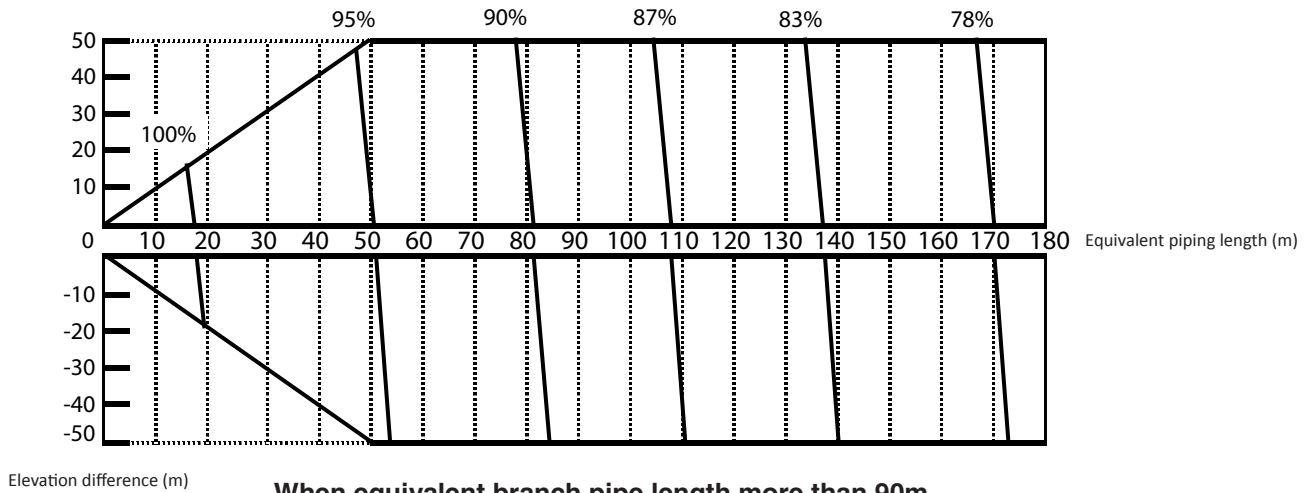


**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

A5VR160/180DR Heating Capacity Drop-Piping Diagram

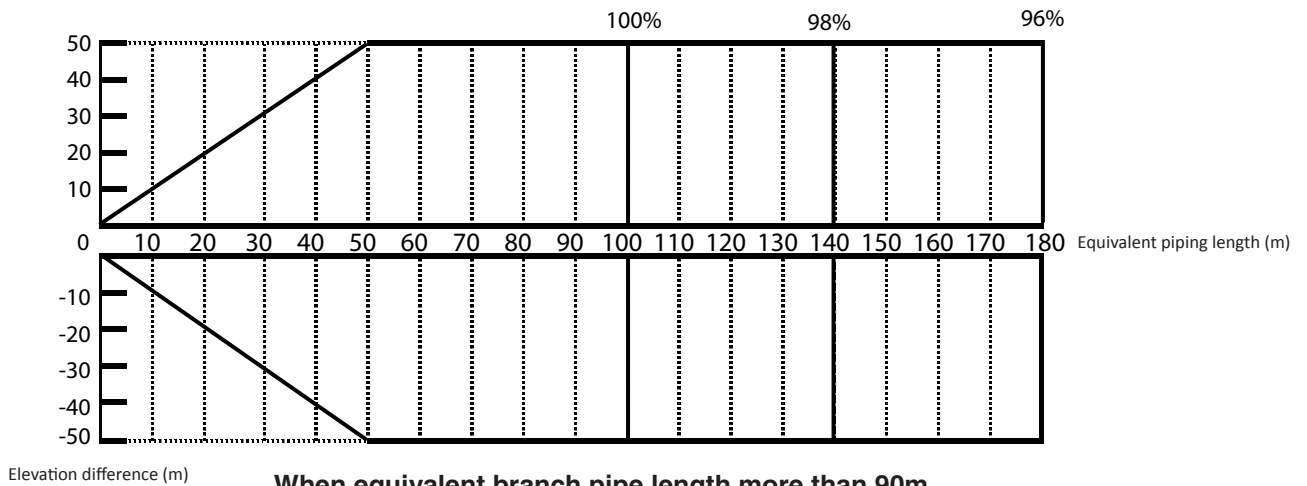


A5VR220/260/300/440DR Cooling Capacity Drop-Piping Diagram



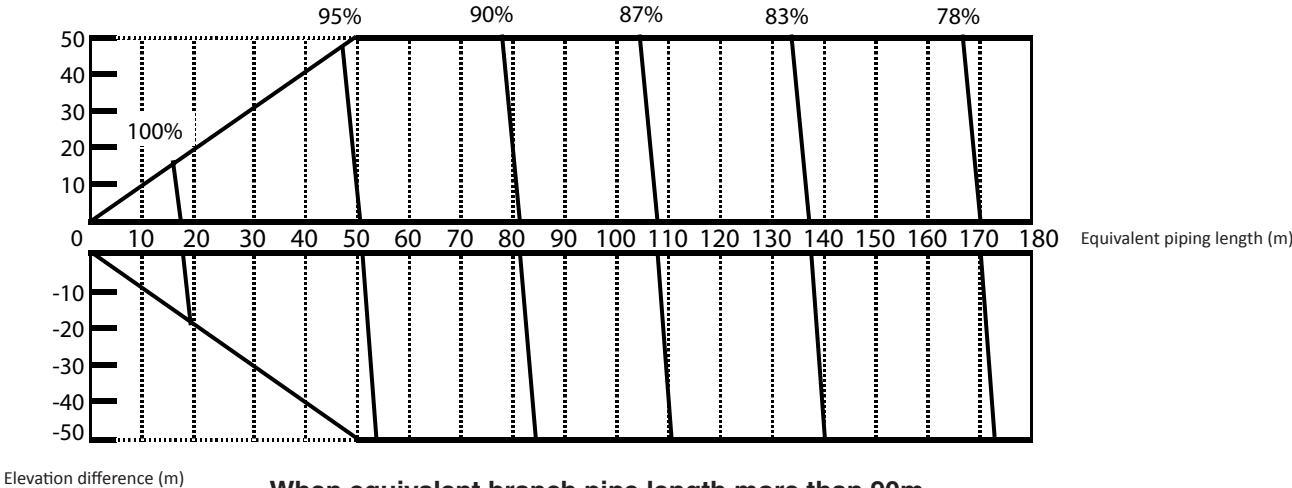
**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

A5VR220/260/300/440DR Heating Capacity Drop-Piping Diagram



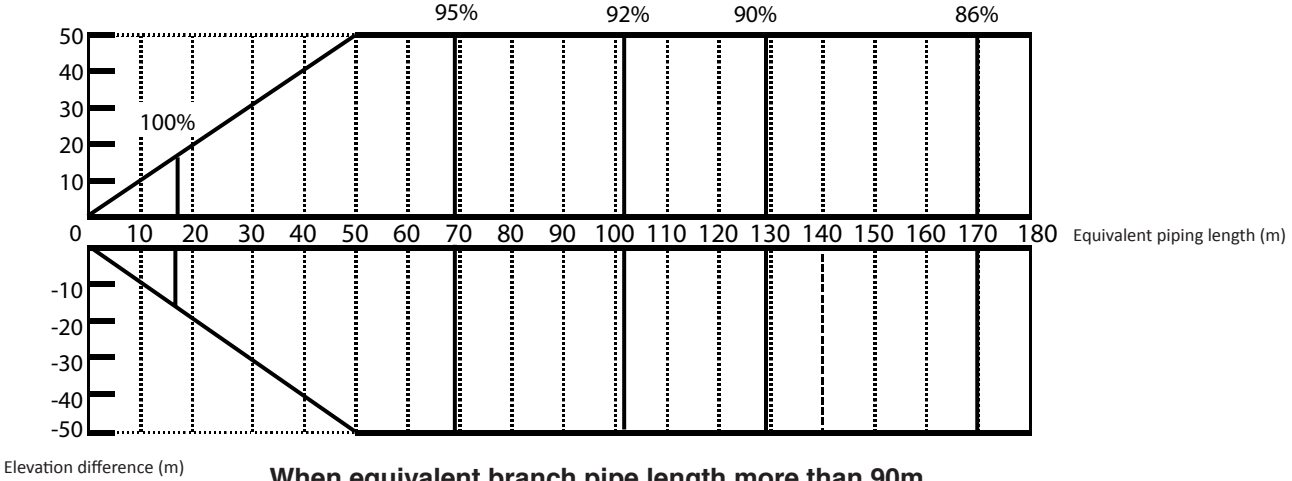
**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

A5VR420/460/480/500DR Cooling Capacity Drop-Piping Diagram



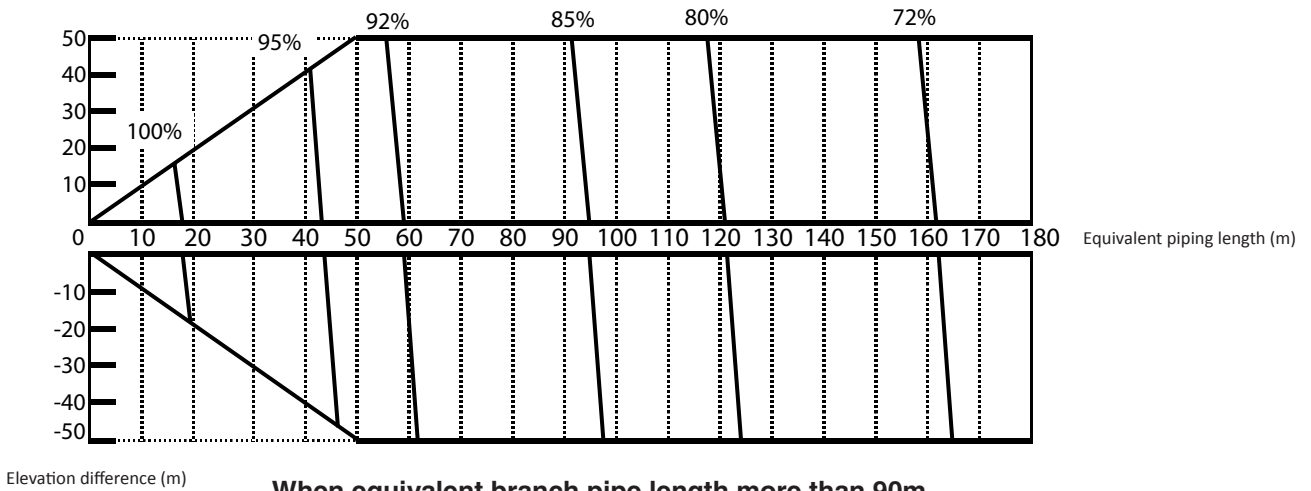
When equivalent branch pipe length more than 90m, bifurcation / refnet need to increase in diameter

A5VR420/460/480/500DR Heating Capacity Drop-Piping Diagram



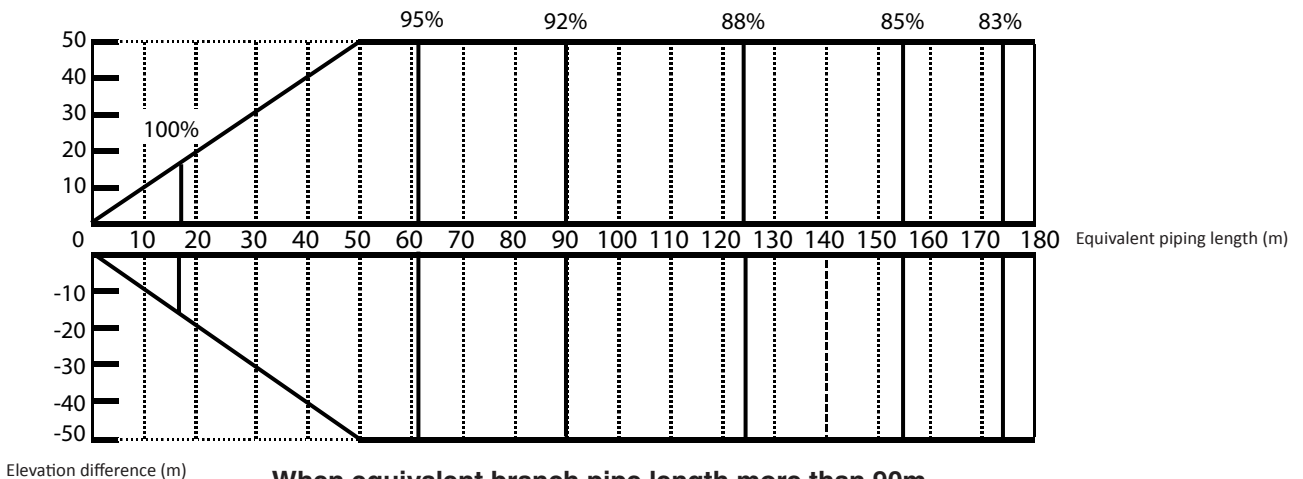
When equivalent branch pipe length more than 90m, bifurcation / refnet need to increase in diameter

A5VR340/360/520/540DR Cooling Capacity Drop-Piping Diagram



**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

A5VR340/360/520/540DR Heating Capacity Drop-Piping Diagram



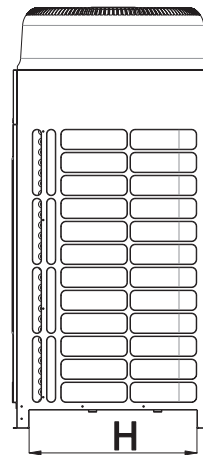
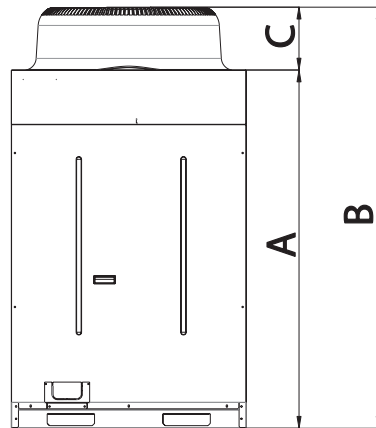
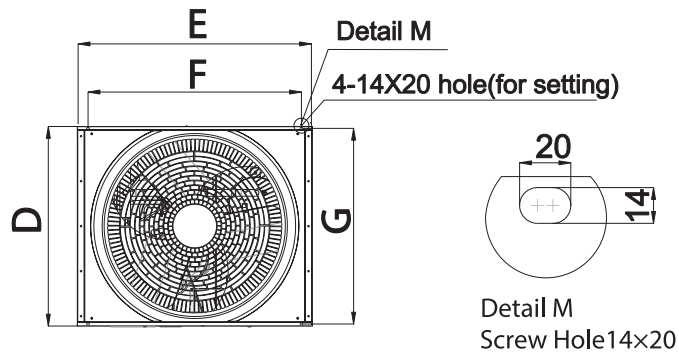
**When equivalent branch pipe length more than 90m,
bifurcation / refnet need to increase in diameter**

OUTLINE & DIMENSION

A5VR080/100/120DR

Unit:mm

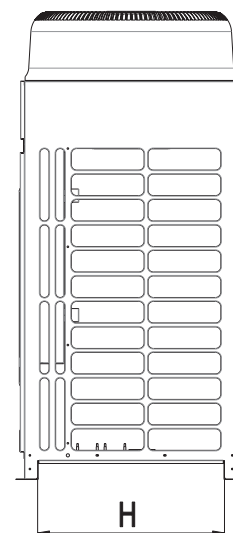
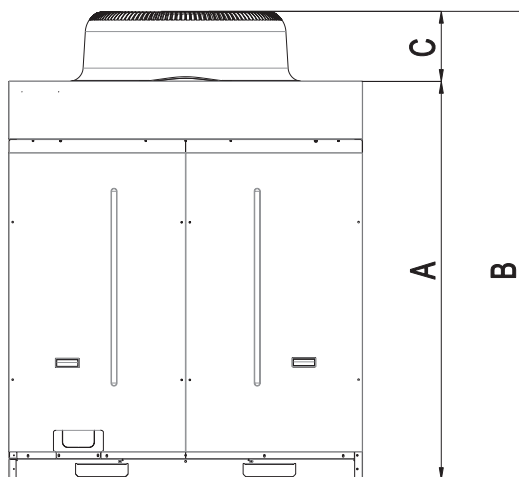
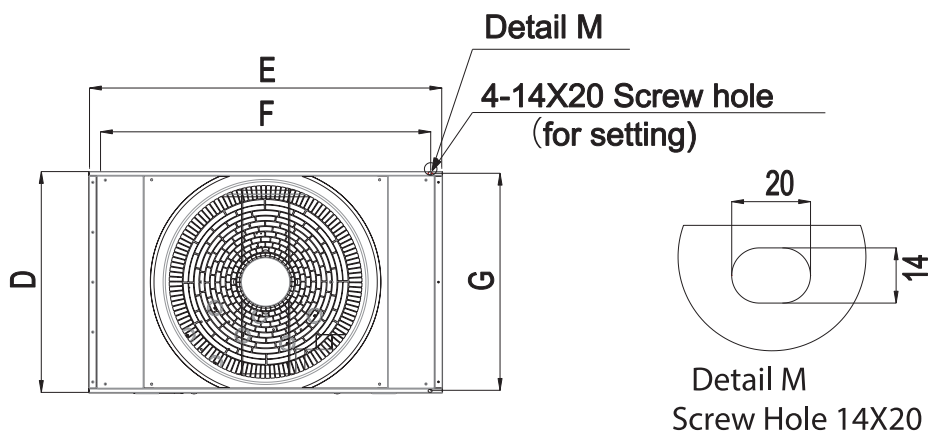
Model	A	B	C	D	E	F	G	H
A5VR080DR	1250	1515	265	840	990	900	787	707
A5VR100DR	1250	1515	265	840	990	900	787	707
A5VR120DR	1515	1780	265	840	990	900	787	707



A5VR140/160/180DR

Unit:mm

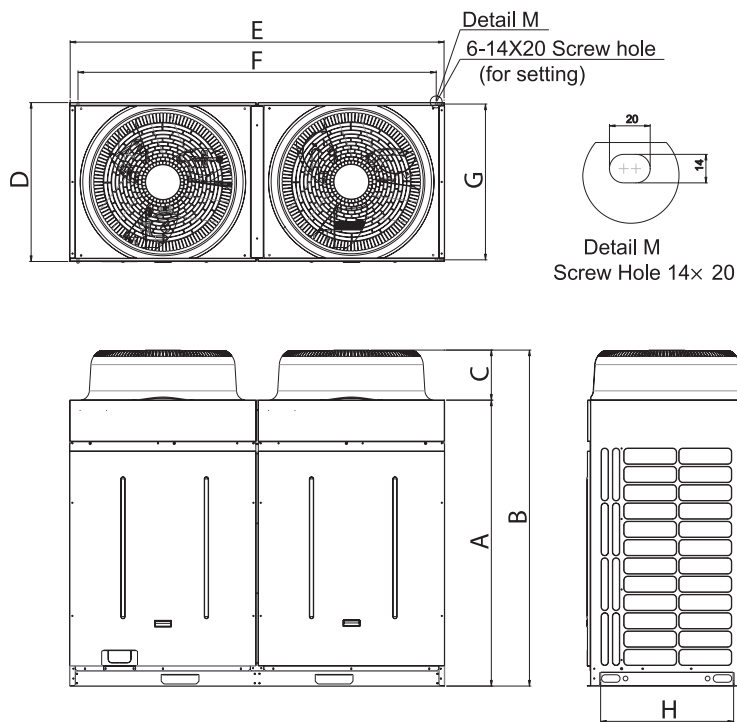
Model	A	B	C	D	E	F	G	H
A5VR140DR	1515	1780	265	840	1350	1260	787	707
A5VR160DR	1515	1780	265	840	1350	1260	787	707
A5VR180DR	1515	1780	265	840	1350	1260	787	707



A5VR200/220/240DR

Unit:mm

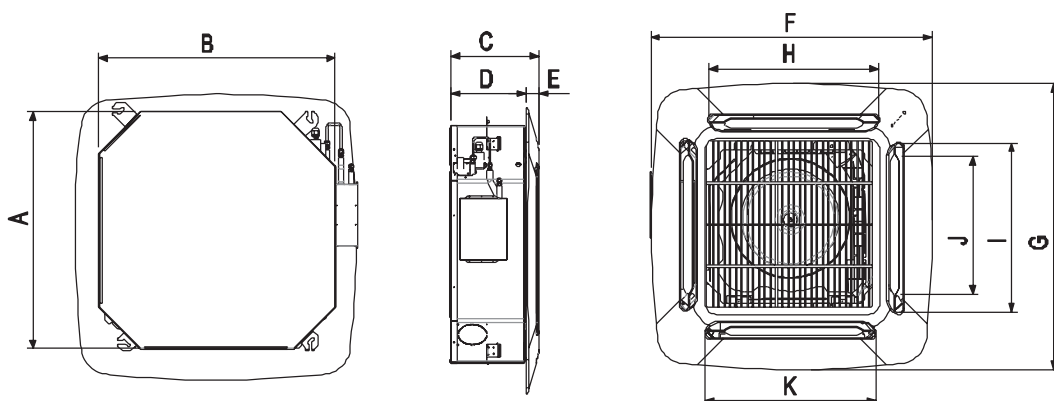
Model	A	B	C	D	E	F	G	H
A5VR200DR	1515	1780	265	840	1990	1900	787	707
A5VR220DR	1515	1780	265	840	1990	1900	787	707
A5VR240DR	1515	1780	265	840	1990	1900	787	707



A5VCK028/032/036/040/045/050/056/063/071/080/090/100/112/125/140V

Unit:mm

Model	A	B	C	D	E	F	G	H	I	J
A5VCK028/032/036/040/045/050/056/063/071V	820	820	340	265	75	990	990	627	627	607
A5VCK080/090/100/112/125/140V	820	820	390	315	75	990	990	627	627	607

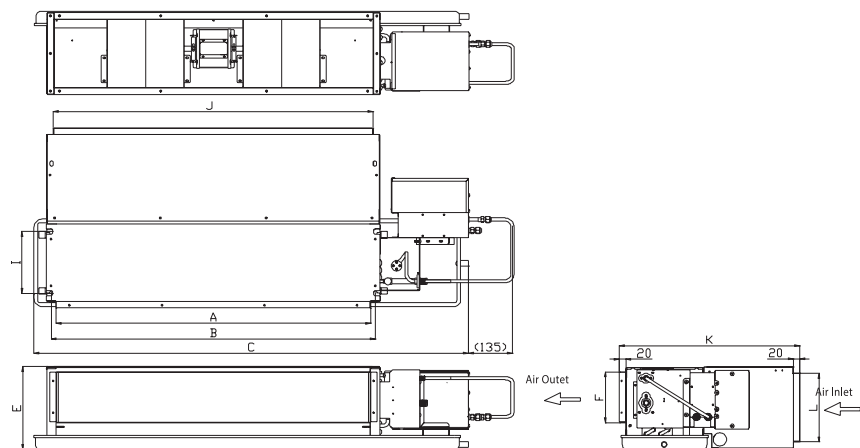


A5VCC080/090/100/112/125/140/160V (Standard Type)

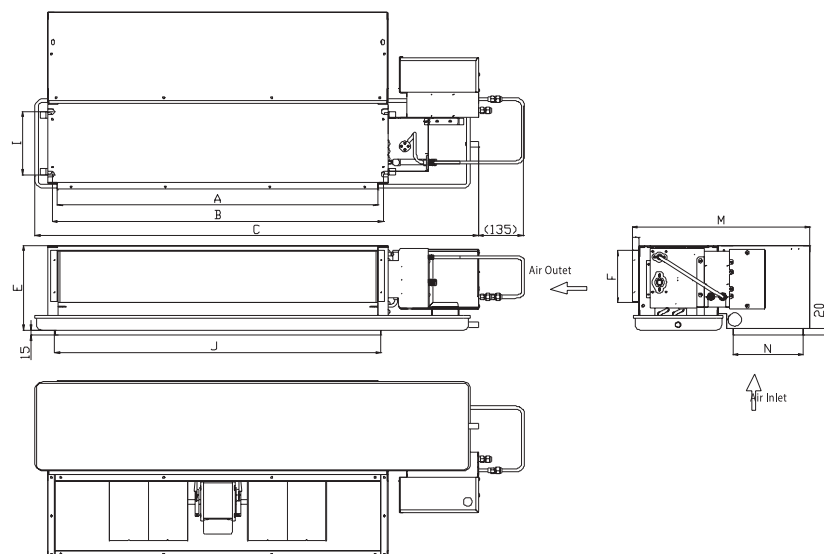
Unit:mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Fan Amount
A5VCC080V	950	981	1314	1005	250	151	490	246	187	964	550	208	530	208	2
A5VCC090/100 /112/125V	1300	1331	1664	1355	250	151	490	246	187	1314	550	208	530	208	3
A5VCC140/160V	1560	1591	1924	1615	250	151	490	246	187	1574	550	208	530	208	4

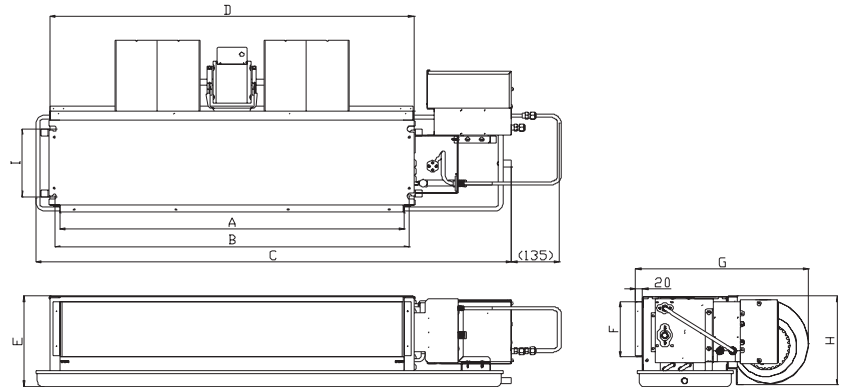
Back air return plenum:



Bottom air return plenum:



Free-stream air return plenum:



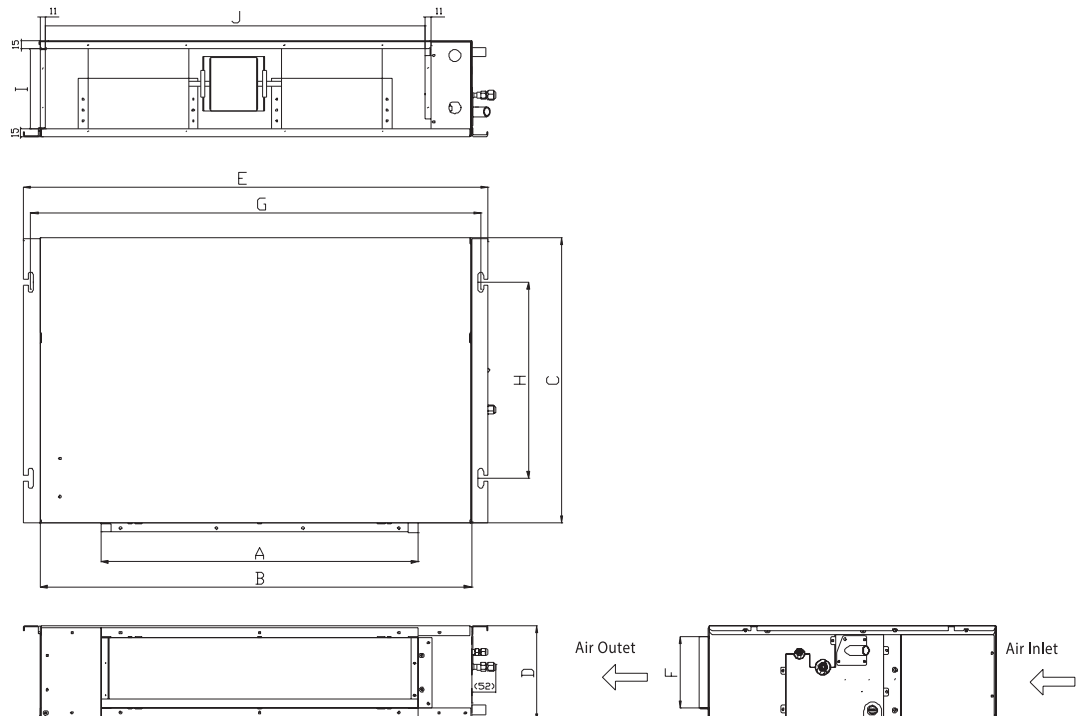
A5VCC022/025/028/032/036/040/045/050/056/063/071V (Ultra Thin)

Unit:mm

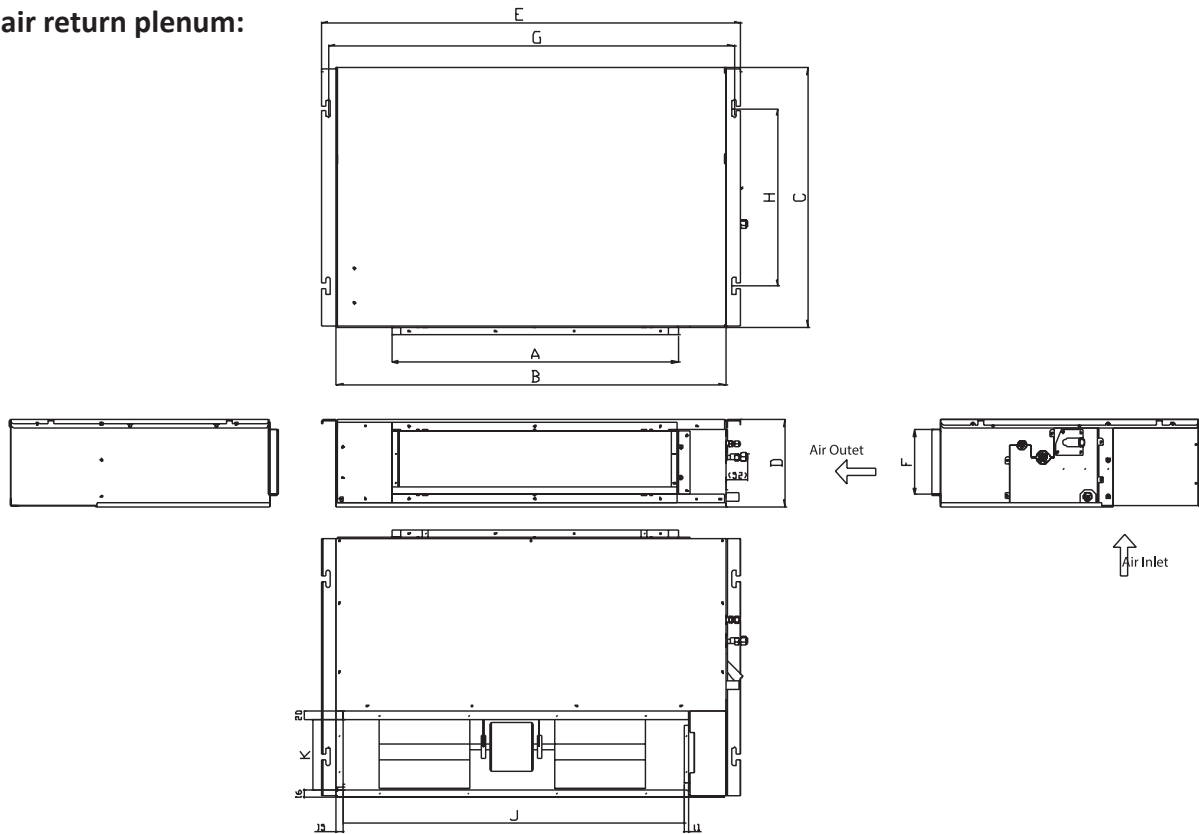
Model	A	B	C	D	E	F	G	H	I	J	K	Fan Amount
A5VCC022V	661	900	599	199	962	150	940	412	169	794	163	2
A5VCC025/028/032/036/V	763.5	900	599	199	962	150	940	412	169	794	163	2
A5VCC040/045/050/056V	780	900	599	199	962	150	940	412	169	794	163	2
A5VCC063/071V	963.5	1100	599	199	1162	150	1140	412	169	994	163	3

Note: return air inlet size is Inner-space size.

Back air return plenum:



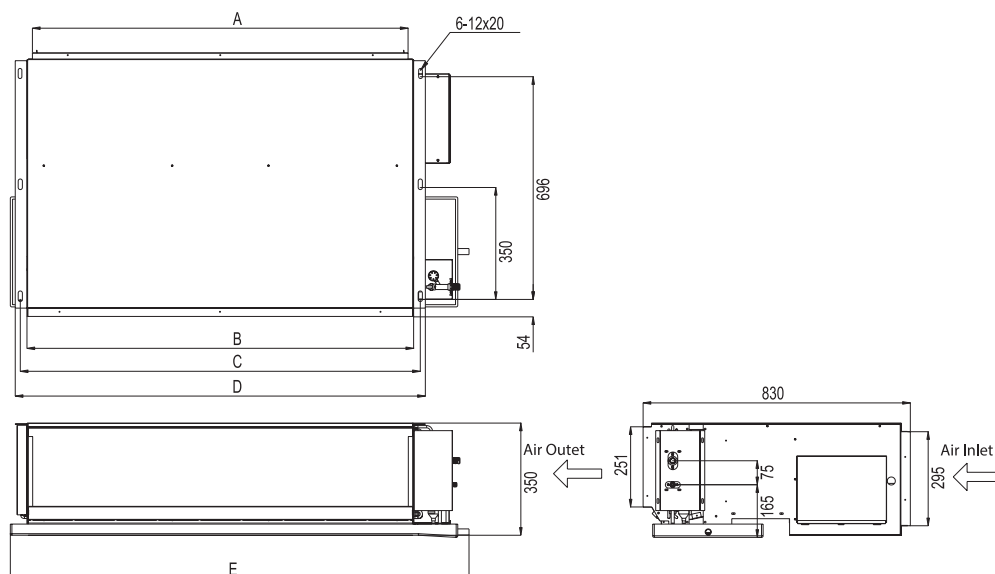
Bottom air return plenum:



A5VDB125/140V

Unit:mm

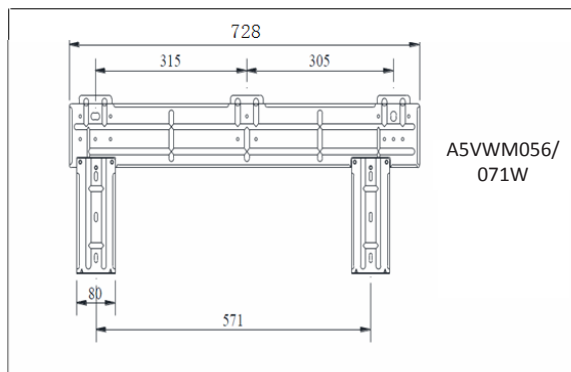
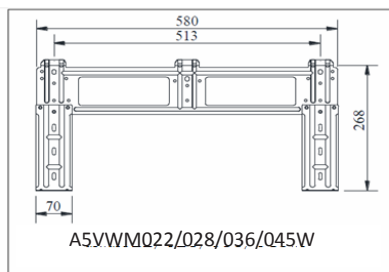
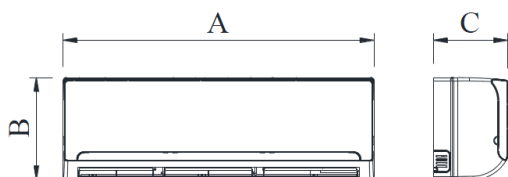
Model	A	B	C	D	E	Fan Amount
A5VDB125V	950	1004	1044	1078	1227	2
A5VDB140V	1150	1204	1244	1278	1427	2



A5VWM022/028/036/045/056/071W

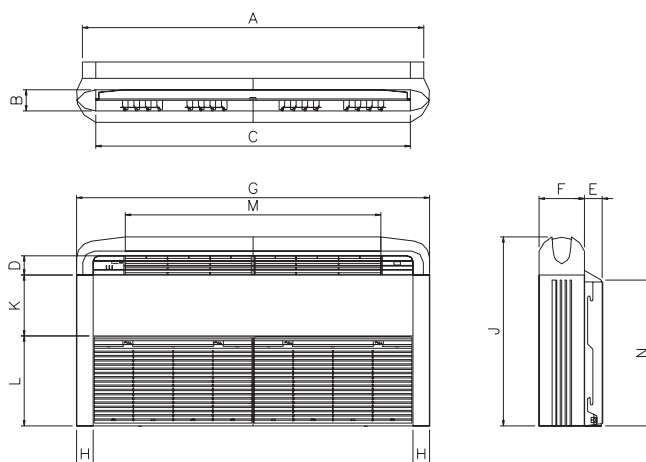
Unit:mm

Model	A	B	C
A5VWM022/028/036/045W	900	282	205
A5VWM056/071W	1080	304	221



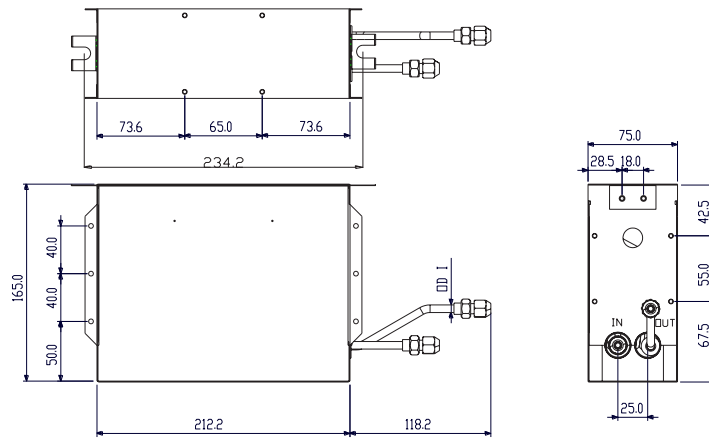
A5VCM056/071/112/125V

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
A5VCM056V	1174	75	1082	68	58	156	1214	57	670	216	319	879	517
A5VCM071V	1174	75	1082	68	93	156	1214	57	670	216	319	879	517
A5VCM112/125V	1674	75	1582	68	93	156	1714	57	670	216	319	1379	517

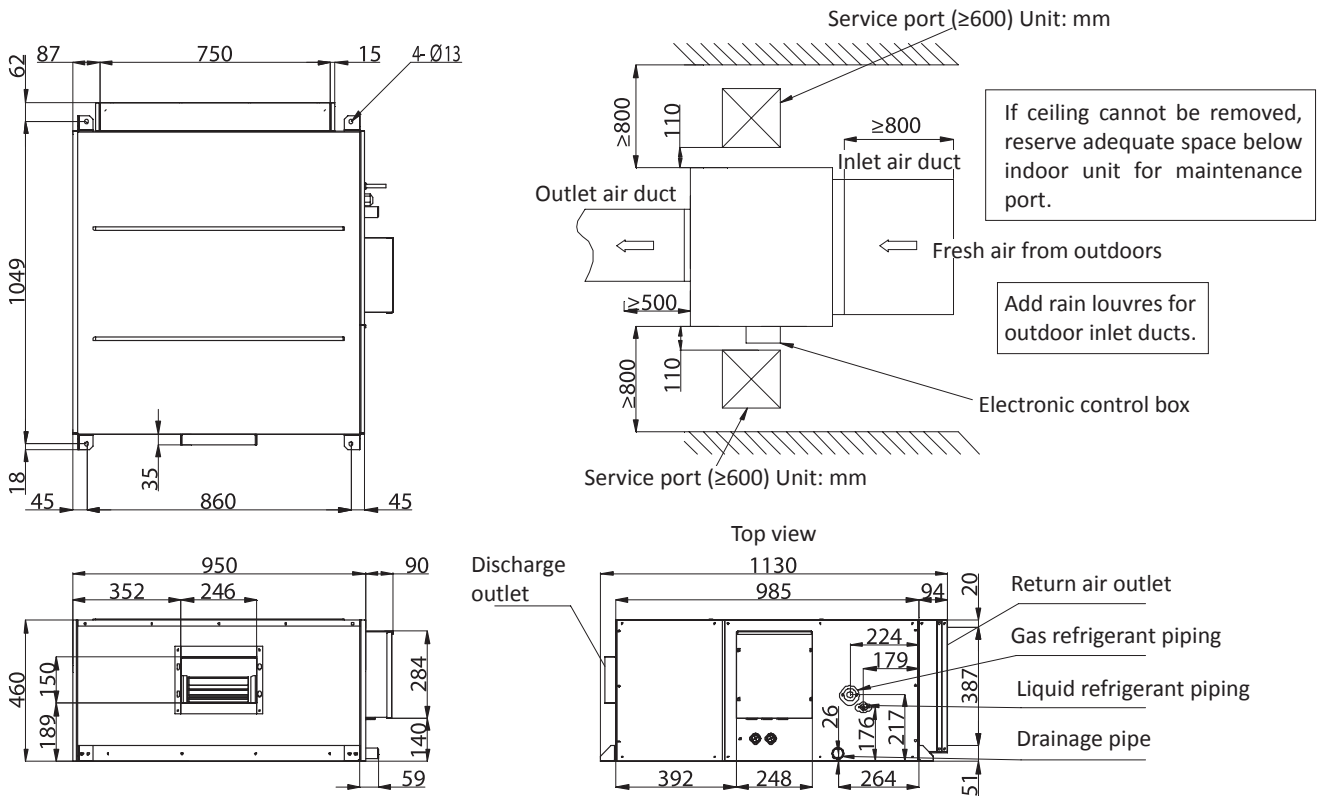


EXV Box of Indoor Units:

Model	AEX-15-2SAP-C/D	AEX-18-2SAP-C/D	AEX-22-3SAP-C/D	AEX-24-3SAP-C
OD I(mm(inch))	6.35 (1/4")		9.52 (3/8")	

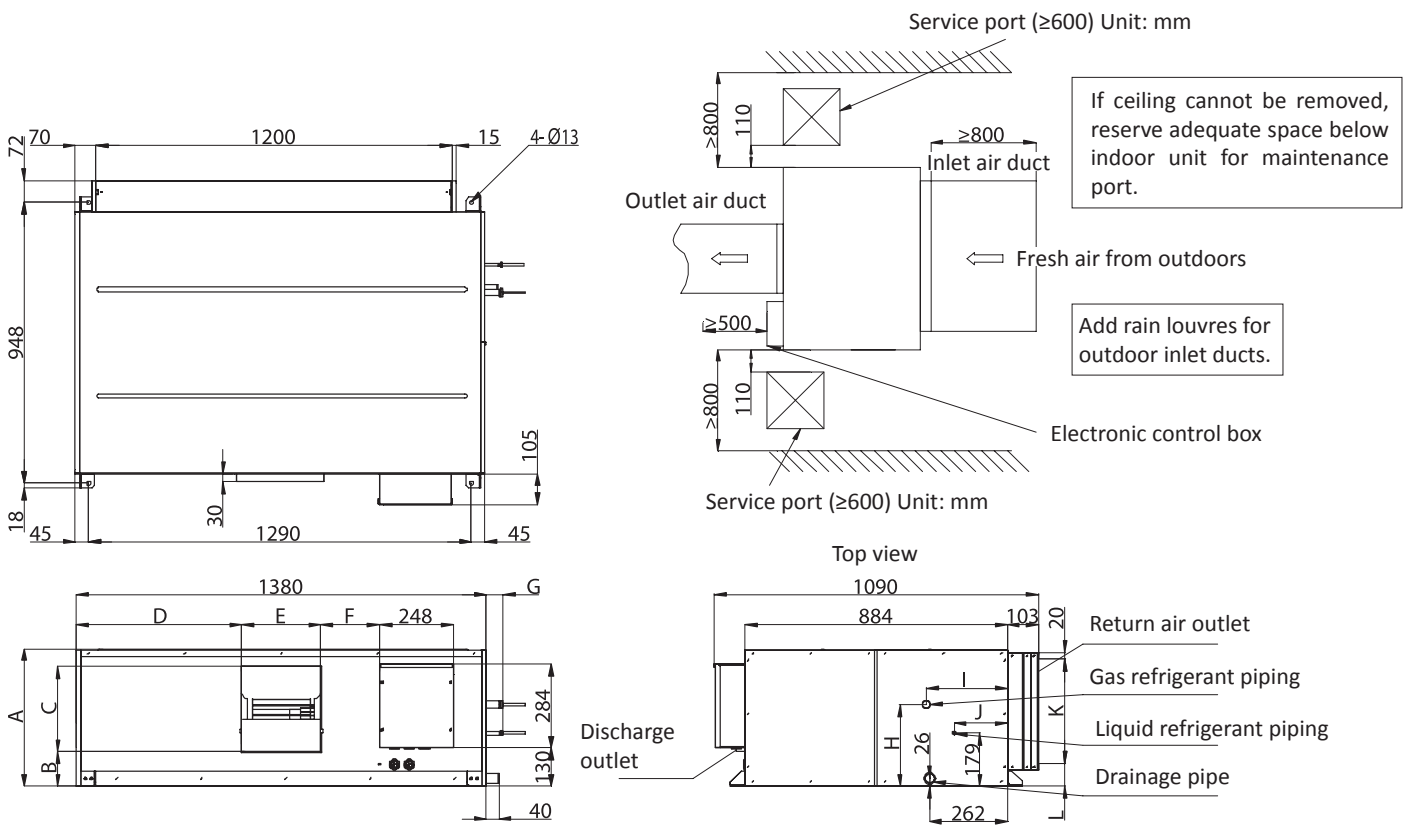


A5VDBX140V

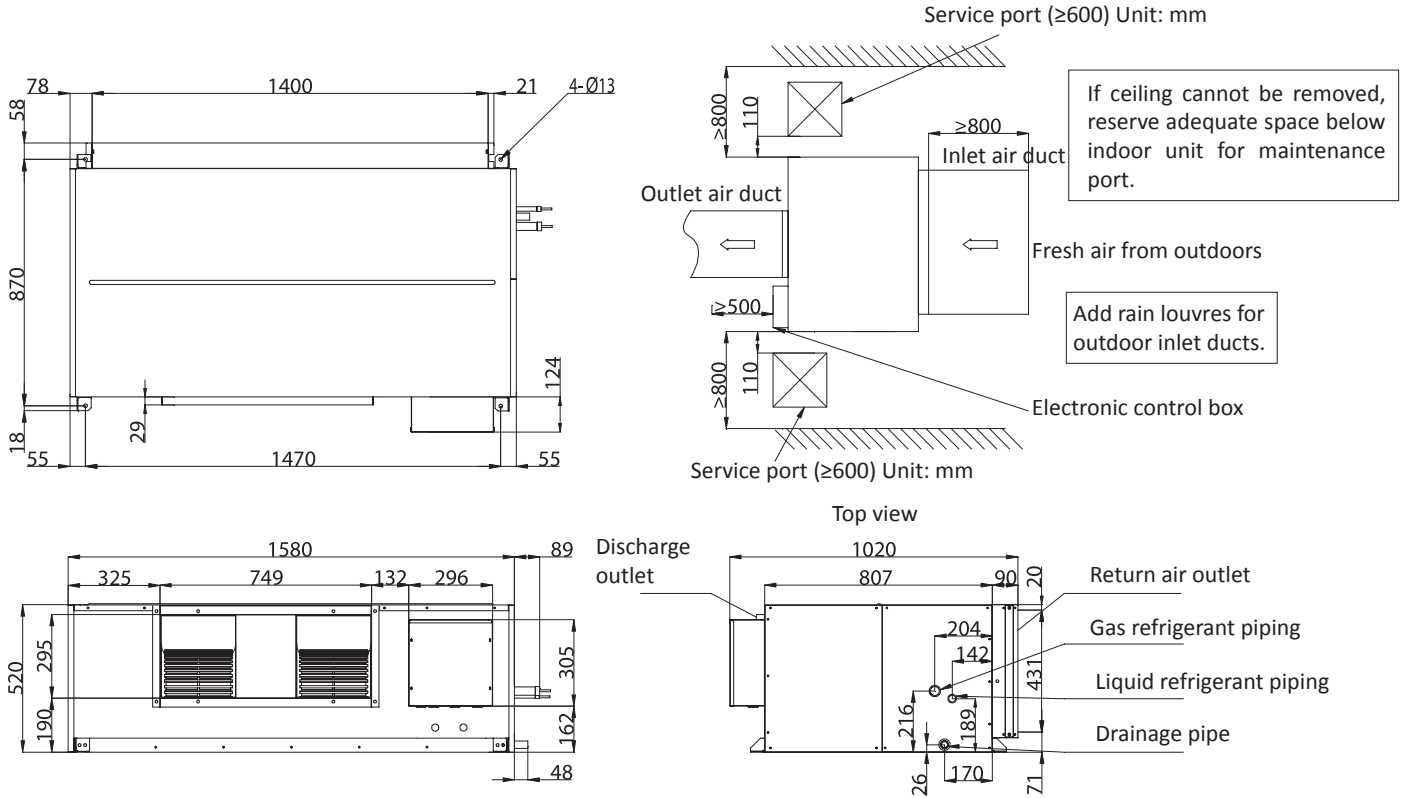


A5VDBX224/280/335V

Model	A	B	C	D	E	F	G	H	I	J	K	L
A5VDBX224V	510	189	150	542	296	184	56	275	273	179	402	75
A5VDBX280V	460	116	287	557	267	199	56	275	273	179	354	75
A5VDBX335V	460	116	287	557	267	199	98	226	225	211	369	70

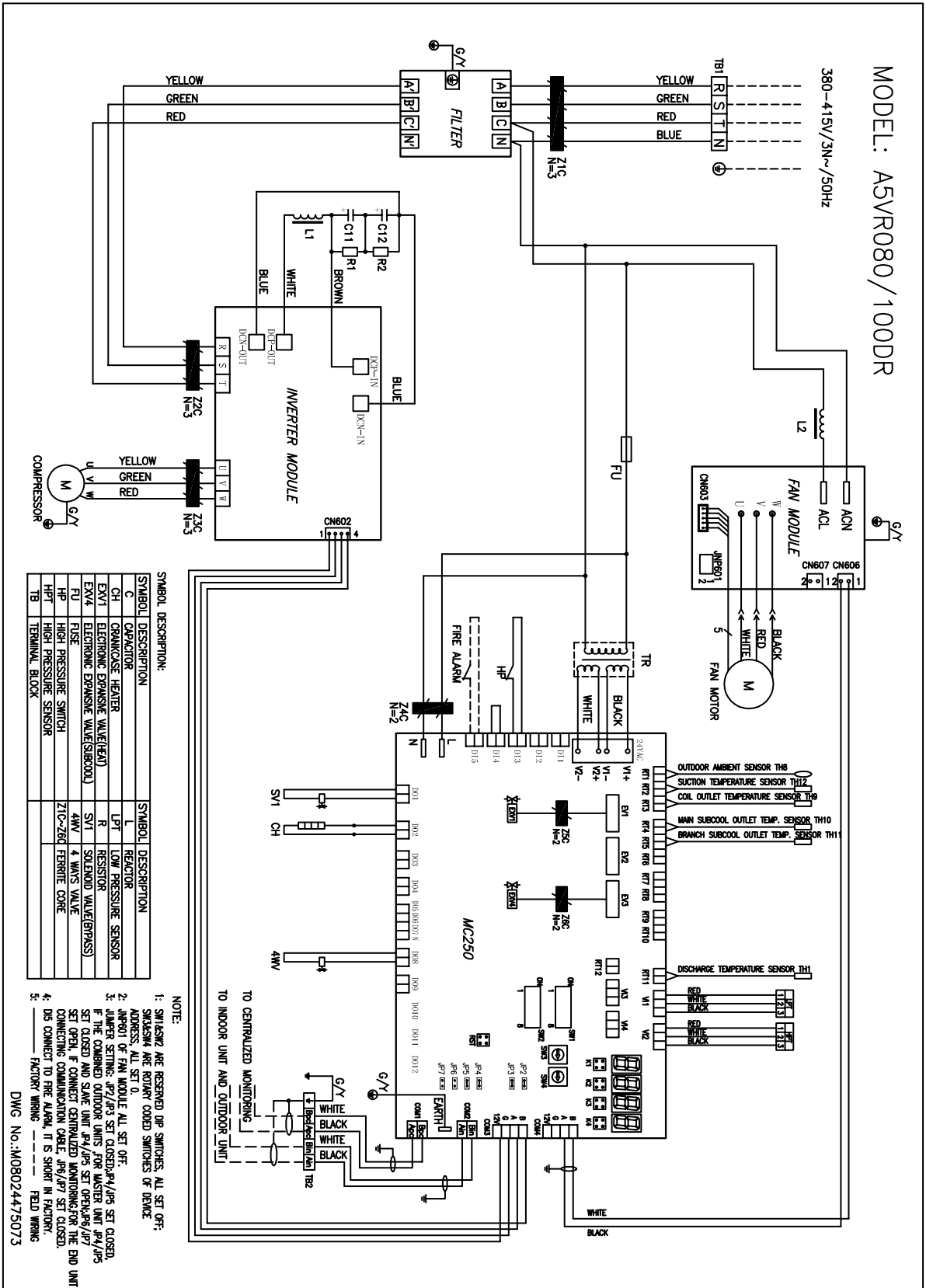


A5VDBX450/560/580V



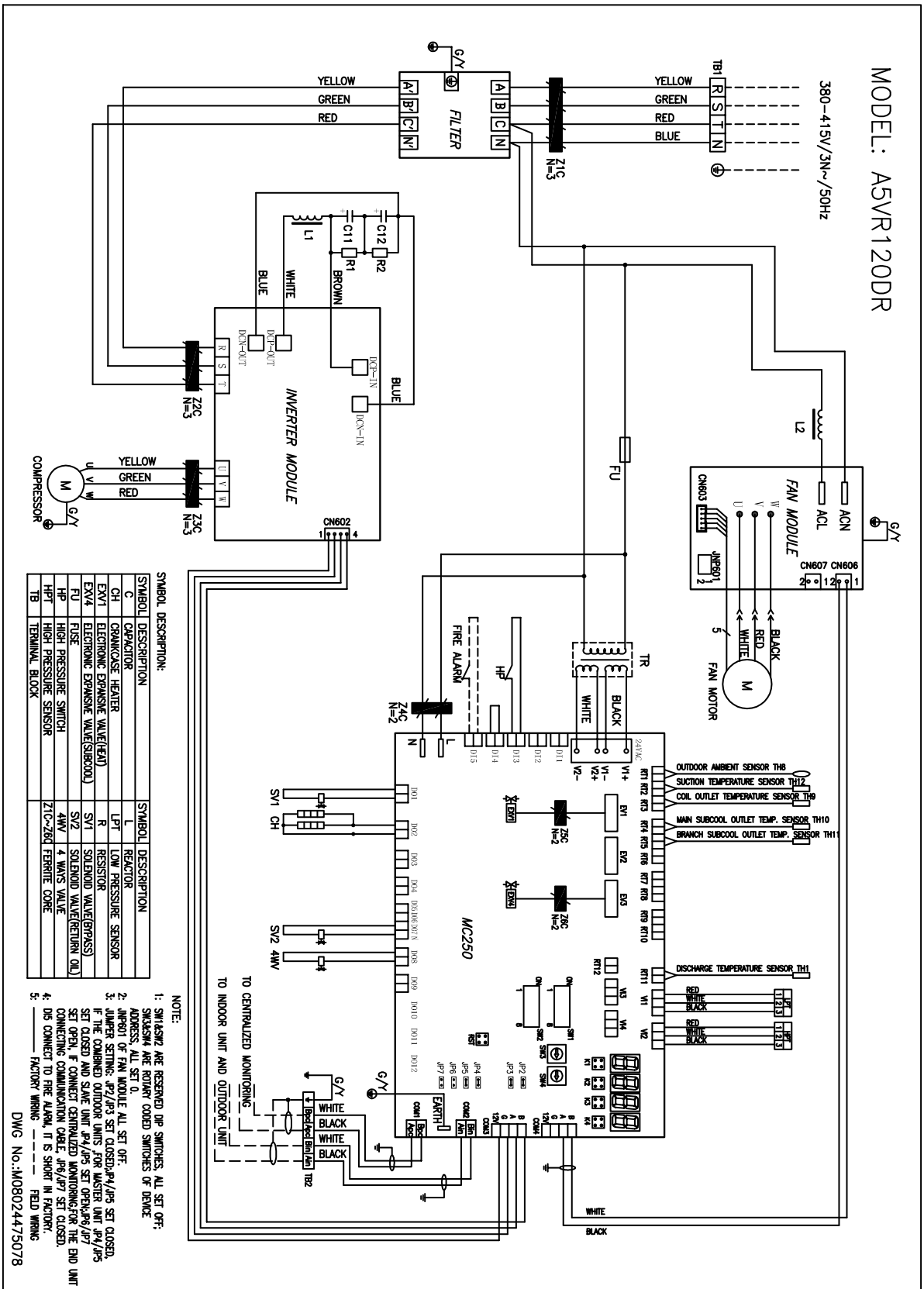
WIRING DIAGRAM

Electrical wiring diagram



MODEL: ASVR120DR

380-415V/3N~/50Hz



SYMBOL DESCRIPTION:

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
C	OPERATOR	L	REACTOR
CH	OVERCOURSE HEATER (WATER)	LPT	LOW PRESSURE SENSOR
EXV1	ELECTRONIC EXPANSIVE VALVE(HEAD)	R	RESISTOR
EXV4	ELECTRONIC EXPANSIVE VALVE(SUBCOOL)	SV1	SOLENOID VALVE(PRESS)
FU	FUSE	SV2	SOLENOID VALVE(REFILL OIL)
HP	HIGH PRESSURE SWITCH	4WV	4 WAYS VALVE
HPT	HIGH PRESSURE SENSOR	Z1C-Z6C	FERRITE CORE
TB	TERMINAL BLOCK		

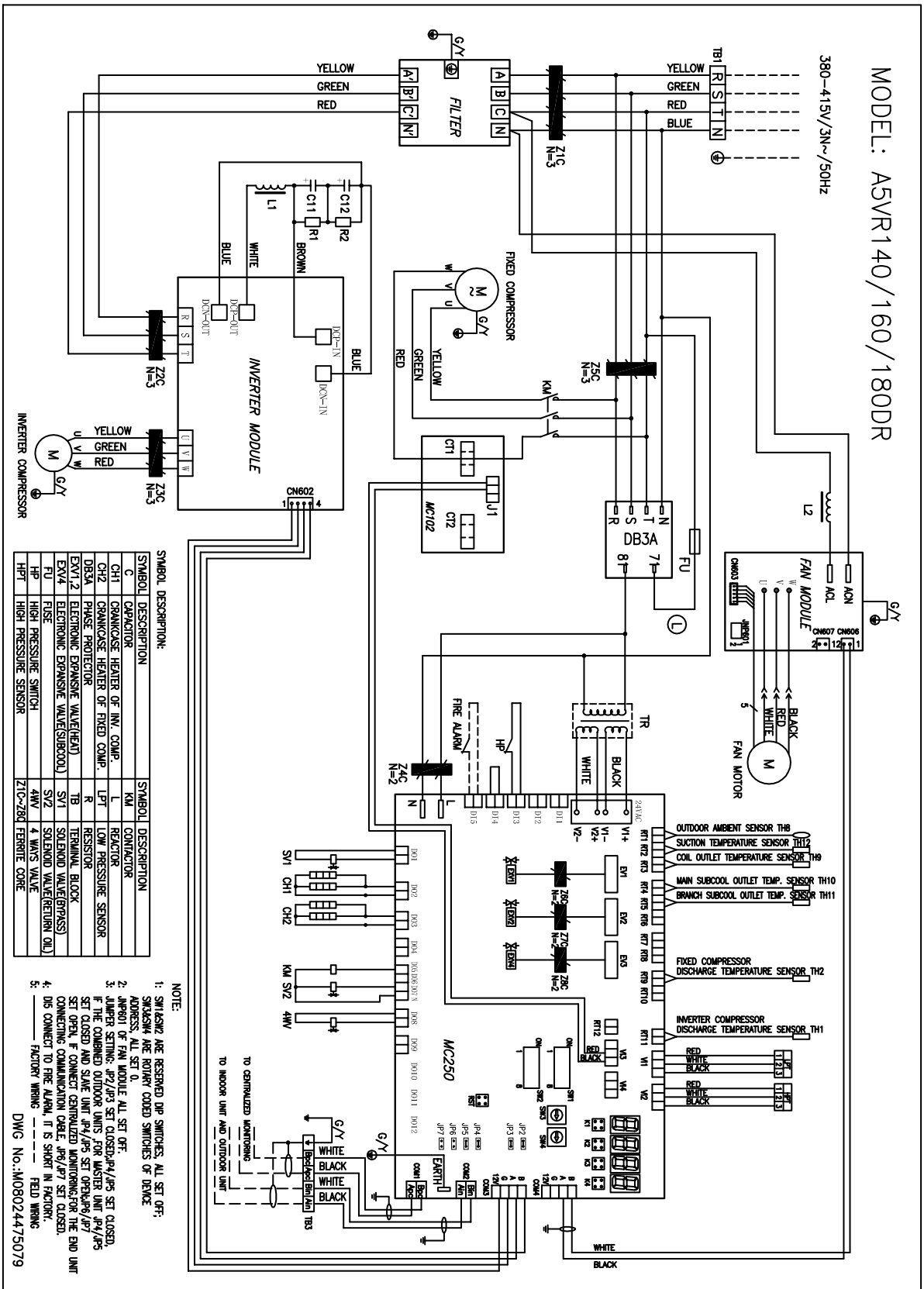
NOTE:

- SW1&SW2 ARE RESERVED DIP SWITCHES. ALL SET OFF: SW1&SW4 ARE ROTARY CODED SWITCHES OF DEVICE ADDRESS. ALL SET 0.
- JMP#01 OF FAN MODULE ALL SET OFF.
- JUMPER SETTING: JP2/JP3 SET CLOSED, JP4/JP5 SET CLOSED, IF THE COMBINED OUTDOOR UNITS FOR MASTER UNIT JP4/JP5 SET CLOSED AND SLAVE UNIT JP4/JP5 SET OPEN, JP6/JP7 SET OPEN, IF CONNECT CENTRALIZED MONITORING FOR THE IND UNIT CONNECTING COMMUNICATION CABLE, JP6/JP7 SET CLOSED.
- DN5 CONNECT TO FIRE ALARM, IT IS SHORT IN FACTORY.
- FACTORY WIRING: --- FIELD WIRING

DWG. No.:M08024475078

MODEL: ASVR140/160/180DR

380-415V/3N~/50Hz



SYMBOL DESCRIPTION:

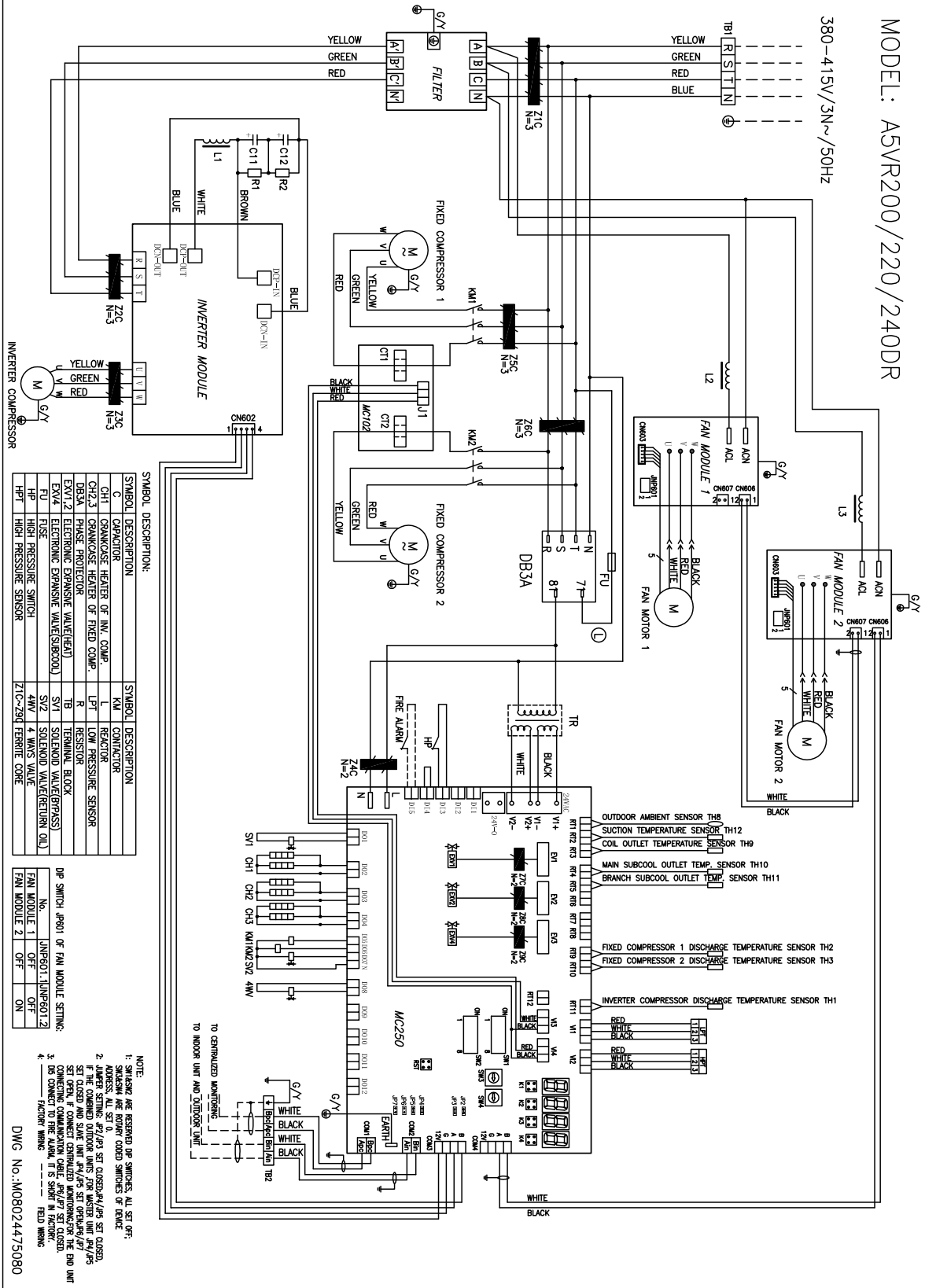
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
C	CONDENSER	CM	CONTRACTOR
CH1	ORANGE HEATER OF INV. COMP.	L	REACTOR
CH2	ORANGE HEATER OF FIXED COMP.	LPT	LOW PRESSURE SENSOR
DB3A	PHASE PROTECTOR	R	RESISTOR
EXV1.2	ELECTRONIC EXPANSIVE VALVE(HEAD)	TB	TERMINAL BLOCK
EXV4	ELECTRONIC EXPANSIVE VALVE(SUBCOOL)	SV1	SOLENOID VALVE(PRESS)
FU	FUSE	SV2	SOLENOID VALVE(RETURN OIL)
HP	HIGH PRESSURE SWITCH	4MV	4 WAYS VALVE
HPT	HIGH PRESSURE SENSOR	Z1C-Z3C	FERRITE CORE

- NOTE:
- 1: SWITCHES ARE RESERVED DIP SWITCHES. ALL SET OFF: SWITCHES ARE ROTARY CODED SWITCHES OF DEVICE ADDRESS. ALL SET 0.
 - 2: JUMPER OF FAN MODULE ALL SET OFF.
 - 3: JUMPER SETTINGS: JP2/JP3 SET CLOSED, JP4/JP5 SET CLOSED, IF THE COMBINED OUTDOOR UNITS FOR MASTER UNIT JP4/JP5 SET OPEN AND SLAVE UNIT JP4/JP5 SET OPEN, JP6/JP7 SET OPEN. IF CONNECT CENTRALIZED MONITORING FOR THE END UNIT CONNECTING COMMUNICATION CABLE, JP6/JP7 SET CLOSED.
 - 4: DIS CONNECT TO THE ALARM, IT IS SHORT IN FACTORY.
 - 5: FACTORY WIRING --- FIELD WIRING

DWG No.:M08024475079

MODEL: ASVR200/220/240DR

380-415V/3N~/50HZ



SERVICE & MAINTENANCE



Warning

Before maintenance service, please shut off the power supply and stop indoor and outdoor units

Indoor Unit Maintenance

Part	Maintenance Checking step	Times/month (Recommend)
Air filter	<ol style="list-style-type: none"> 1. Open the grille 2. Take out the air filter 3. Use brush to clean the air filter with below 40°C water 4. After drying, the filter shall be loaded back in. <p>Note: Do not use detergents such as gasoline, dehydrating, benzene substances or other chemicals.</p>	1
Front Panel	<ol style="list-style-type: none"> 1. Get rid of the dust and dirt by using cloth and detergent , clean the panel. <p>Note: Do not use detergents such as gasoline, dehydrating, benzene substances or other chemicals. Otherwise it will cause the plastic surface deformation.</p>	1
Drain Pan and hose	<ol style="list-style-type: none"> 1. Check the drain pan and hose are clean or not, if it is dirty, clean it ; 2. Check there is no barrier for the condensing water flow out; 3. Pay attention to dustproof anti-blocking when the pump is connected, and it needs cleaning on time to keep smooth flow. 	3
Evaporator	<ol style="list-style-type: none"> 1. Clean the dirt of fins; 2. Clean any barrier for indoor air flow. 	1
Electrical Part	<ol style="list-style-type: none"> 1. Check the running ampere and voltage is normal or not; 2. Check the electrical connection is fixed or loose. 	12

Indoor Unit Maintenance

Part	Maintenance Checking step	Times/month (Recommend)
Outdoor fan	Check the noise level	1
Outdoor condenser	<ol style="list-style-type: none"> 1. Clean the dirt of fins 2. Remove any barrier which inhibit the air flow 	1
Compressor	Check whether compressor running with noise and vibrations	1
Electrical Part	<ol style="list-style-type: none"> 1. Check the whether running ampere and voltage is normal 2. Check the electrical connection is fixed or loose 3. Check the controller in normal working conditions 	1

Note:

1. Do not sprinkle water or use combustible sprays, to avoid fault, leakage of power and fire;
2. Do not expose or broil the filter under the sun when cleaning, otherwise it will lead to deformation.

Status Display Of Digital Tubes

Four 8-section 4-bit digital tubes (red) are configured for the outdoor unit. In the normal running status, the digital tube displays the current running mode or status. Once any fault occurs, the fault code is displayed first. If multiple faults occur, they are displayed in turn. For the specific fault codes, see “Troubleshooting”.

Note: The digital tube will go out when you do not operate any button within 10 minutes. Normal display is return if any button is pressed. This restriction does not take effect when any fault occurs. The digital tube will display the fault continuously.

Meanings of displayed symbols on the digital tube

No	Icon	Content
1	<i>NULL</i>	NULL The outdoor unit is in the standby status.
2	<i>rEST</i>	REST: The outdoor unit is in the reset status.
3	<i>CSt</i>	CST: The outdoor unit is in the cooling start process.
4	<i>COOL</i>	COOL: The outdoor/indoor unit is in the cooling status.
5	<i>CSP</i>	CSP: The outdoor unit is in the cooling stop process.
6	<i>dSt</i>	DST: The outdoor unit is in the defrosting start status.
7	<i>dEF</i>	DEF: The outdoor/indoor unit is in the defrosting status.
8	<i>dSP</i>	DSP: The outdoor unit is in the defrosting stop status.
9	<i>HSt</i>	HST: The outdoor unit is in the heating startup process.
10	<i>HEAt</i>	HEAT: The outdoor/indoor unit is in the heating status.
11	<i>HSP</i>	HSP: The outdoor unit is in the heating stop process.
12	<i>tEST</i>	TEST: Hardware testing mode.
13	<i>Erro</i>	ERRO: Common error of the outdoor unit.
14	<i>OPEN</i>	OPEN: Fully open the electronic expansion valve by force.
15	<i>ErSE</i>	Outdoor unit DIP setting error/model setting error.
16	<i>PARA</i>	PARA: button setting parameter menu.
17	<i>boot</i>	BOOT: prompt in software upgrade.

18	dEb	dEb: button debugging parameter menu.
19	SPEC	SPEC: special button function menu.
20	NOAE	NOAE: night noises reduction function.
21	FAC	FAC: Restore factory settings.
22	bAUD	BAUD:Set communication speed of units and PC.
23	PrEH	PreH: The compressor pre-heating status.
24	CFEE	CFEE: Set the function of household billing.
25	IGNO	IGNO: Leave alone the very unavailable unit.
26	FSPD	FSPD: Choose proper fan gear table (15/30).
27	StPr	STPR: Set static pressure.
28	HSrC	HSRC: Set heat-pump or cool-only.
29	FrAL	FRAL: Whether the fire alarm is enabled.
30	FrEP	F RTP: Select the type of antifreeze.
31	rEFC	REFC: Into the cold media charging mode.
32	CrEF	CREF: Calculate the K value of refrigerant coefficient.
33	UrEF	UREF: Refrigerant filling and frequency conversion speed limit.
34	EFAN	EFAN:The fan of outdoor unit is regulated when the indoor units is in the stop status.

Basic Character Legends for Reference

Icon	Content	Icon	Content	Icon	Content
0	0/O	8	8	H	H
1	1	9	9	L	L
2	2	A	A	N	N
3	3	b	B	P	P
4	4	C	C	r	R
5	5/S	d	D	t	T
6	6	E	E	U	U
7	7	F	F	y	Y

TROUBLESHOOTING

If the following unit malfunction occurred, please follow the below simple checking step to fix :

Symptom	Analyses	Solution
Compressor stop and fan work normally	Indoor temperature is higher (heating) or lower (cooling) than setting temperature	Re – set up the temperature
	When heating and defrost mode, indoor unit is just running	Wait for 10minutes
Units do not work	Power is not on	Check and connect the power
	Set up the re-start function	Wait or cancel timer On
	Fuse broken in main power supply	Replace the fuse
Cooling or heating not enough or too much	Air filter too dirty	Clean or replace the filter
	Barrier at return air	Remove the barrier
Remote controller unreadable	Low battery	Replace the battery
	Wrong installation of battery	Install properly
Condensing water in front panel	Humidity too high	Dehumidify
	Setting temperature too low	Set up the higher indoor temperature

- If user unable to fix the problem, please contact the local service agent for assistance, meanwhile record the malfunction code by wired controller and indication light of units self-checking function. Following is the malfunction code could display in the wired controller. Indication light twinkle related to the code of malfunction.
- When a wired controller is used for control, it displays fault codes. The following table provides fault codes on the wired controller and lamp panel. When the PC software is used to monitor operating of the inverter air conditioner unit, the PC directly displays these fault causes. These codes make maintenance rather convenient, saving both time and expense. In addition, faults of the outdoor unit are also displayed on the digital tube of the outdoor unit control board. When characters in the table are displayed on the digital tube, see Basic Character Legends for Reference. (pg. 46)










No	Fault Code	Fault Description	Displayed Fault of Lamp Panel		
			HEAT	DRY/TIMER	SLEEP/FAN
Fault codes of the indoor unit part:					
1	N0	Coil inlet sensor malfunction	On	On	Blinking
2	N1	Coil middle sensor malfunction	On	On	Blinking
3	N2	Coil outlet sensor malfunction	On	On	Blinking
4	N3	Air return/room sensor malfunction	On	On	Blinking
5	N4	Condensate pump (water level switch) malfunction	Blinking	Blinking	On
6	N5	EEPROM storage malfunction of indoor unit	Blinking	On	On
7	N8	Indoor unit and outdoor unit communication malfunction	On	Blinking	On
8	N9	DIP malfunction	Blinking	On	On
9	NA	Block running malfunction of the indoor electric motor	Blinking	On	On
10	NC	The filter of the fresh air unit is blocked	On	On	Blinking
11	NE	The environment temperature exceeds fresh-air unit's allowable range	Off	Blinking	Blinking
Fault codes of the wired controller part:					
1	NB	Keypad malfunction of Wired controller	-	-	-
2	NF	Wired controller and indoor unit communication malfunction	-	-	-
3	N6	EEPROM storage malfunction of wired controller	-	-	-
4	N7	Wired controller temperature sensor malfunction	-	-	-
Fault codes of the outdoor unit part:					
1	A1	The indoor capacity exceeds outdoor's minimum allowable range	Off	Blinking	Blinking
2	A2	Not existing model or wrong combination	Off	Off	Blinking
3	A3	The indoor amount exceeds the maximum allowable quantity	Off	Off	Blinking
4	A4	Driver board type is not suited to main controller	Off	Off	Blinking
5	C0	DC busbar under-voltage	Off	Blinking	On
6	C1	AC input under-voltage	Off	Blinking	On
7	C2	AC input over-current stop	On	Blinking	Off
8	C3	Input voltage sampling malfunction	Blinking	On	Off
9	C4	DSP and PFC communication malfunction	Blinking	On	Off
10	C5	Radiator/PIM sensor malfunction	Off	On	Blinking







11	C6	DSP and communication board communication malfunction	Blinking	On	Off
12	C7	Outdoor unit and drive board communication malfunction	Blinking	On	Off
13	C8	Compressor over-current alarm	-	-	-
14	C9	Compressor weak magnetic protection alarm	Off	On	Blinking
15	CA	Radiator overheating alarm		-	-
16	CC	AC input over-current alarm	-	-	-
17	CD	EEPROM of drive board malfunction alarm	Off	On	Blinking
18	CE	Compressor1 over-current alarm	Off	On	Blinking
19	CF	Compressor2 over-current alarm	Off	On	Blinking
20	E0	System malfunction	Off	Off	Blinking
21	E1	Exhaust temperature sensor malfunction of Compressor1 (TH2)	Off	Blinking	Blinking
22	E2	Ultra-low superheat degree protection	Off	Blinking	Blinking
23	E3	4WV/CHECK VAVLE/EXV malfunction	Blinking	Blinking	Off
24	E4	Exhaust temperature sensor malfunction of Compressor2 (TH3)	Blinking	Blinking	Off
25	E5	Communication malfunction of household billing system and outdoor units	Blinking	Blinking	Off
26	E6	The indoor capacity exceeds outdoor's maximum allowable range	Off	Off	Blinking
27	E7	All indoor units and outdoor units communication malfunction	On	Blinking	On
28	E8	IPM over-current stop	On	Blinking	Off
29	E9	Compressor drive failure	On	Off	Blinking
30	EA	Compressor over-current	On	Off	Blinking
31	EB	Open phase of compressor drive input voltage	Off	Blinking	On
32	EC	IPM current sampling malfunction	On	Blinking	Off
33	ED	Radiator or PIM overheating stop	Off	On	Blinking
34	EE	Driver's PIM precharge failure	Off	On	Blinking
35	EF	DC busbar over-voltage	Off	Blinking	On
36	F0	Master communicate fail with No.0 Slave Unit	On	Blinking	On
37	F1	Master communicate fail with No.1 Slave Unit	On	Blinking	On
38	F2	Master communicate fail with No.2 Slave Unit	On	Blinking	On
39	F4	Wrong dial setting	Off	Blinking	Blinking
40	F5	Compressor1 discharge temperature exceeds allowed range	Off	Blinking	Blinking













41	F6	Compressor2 discharge temperature exceeds allowed range	Off	Blinking	Blinking
42	F7	Compressor1 current sensor malfunction	On	Blinking	Blinking
43	F8	Compressor2 current sensor malfunction	On	Blinking	Blinking
44	FA	Fire Alarm	Blinking	On	Blinking
45	H0	Stop malfunction due to ultra-low superheat degree of air exhaust	Off	Blinking	Blinking
46	H1	Temperature sensor malfunction of main subcool outlet (TH10)	Off	Blinking	Off
47	H2	Suction temperature sensor fault(TH12)	Off	Blinking	Off
48	H3	Exhaust temperature sensor fault(TH1)	Off	Blinking	Off
49	H4	Temperature sensor malfunction of branch subcool outlet (TH11)	Off	Blinking	Off
50	H5	Outdoor heat exchanger coil outlet f malfunction (TH9)	Off	Blinking	Off
51	H6	Outdoor environment sensor malfunction (TH8)	Off	Blinking	Off
52	H7	EEPROM storage malfunction of outdoor unit	Off	Off	Blinking
53	H8	High pressure over-high/over-low fault	Blinking	Off	Blinking
54	H9	High pressure sensor malfunction	Blinking	Off	Blinking
55	HA	High pressure switch disconnection	Blinking	Off	Blinking
56	HB	Low pressure over-low malfunction	Blinking	Off	Off
57	HC	Low pressure sensor malfunction	Blinking	Off	Off
58	HD	Alarm fault due to ultra-low superheat degree of air exhaust	Off	Blinking	Blinking
59	HE	Ambient temperature exceeding the allowed range	Off	Blinking	Blinking
60	HF	Exhaust temperature exceeding the allowed range OR exhaust temperature switch disconnection	Off	Blinking	Blinking
61	P0	FAN1: over-current	Blinking	Blinking	Blinking
62	P1	FAN1:IPM malfunction	Blinking	Blinking	Blinking
63	P2	FAN1: Drive stall	Blinking	Blinking	Blinking
64	P3	FAN1: Lack phase	Blinking	Blinking	Blinking
65	P4	FAN1: Speed loss	Blinking	Blinking	Blinking
66	P5	FAN1: Over speed while startup	Blinking	Blinking	Blinking
67	P6	FAN1: Hall signal malfunction	Blinking	Blinking	Blinking
68	P7	FAN1: Hardware malfunction	Blinking	Blinking	Blinking
69	P8	FAN1: DC busbar under-voltage	Blinking	Blinking	Blinking
70	P9	FAN1:IPM overheating	Blinking	Blinking	Blinking
71	PA	FAN1:Communication malfunction	Blinking	Blinking	Blinking











72	PB	FAN1: Fatal malfunction	Blinking	Blinking	Blinking
73	PF	Outdoor unit and drive board of fan1 communication malfunction	Blinking	Blinking	Blinking
74	U0	FAN2: over-current	Blinking	Blinking	Blinking
75	U1	FAN2:IPM malfunction	Blinking	Blinking	Blinking
76	U2	FAN2: Drive stall	Blinking	Blinking	Blinking
77	U3	FAN2: Lack phase	Blinking	Blinking	Blinking
78	U4	FAN2: Speed loss	Blinking	Blinking	Blinking
79	U5	FAN2: Over speed while startup	Blinking	Blinking	Blinking
80	U6	FAN2: Hall signal malfunction	Blinking	Blinking	Blinking
81	U7	FAN2: Hardware malfunction	Blinking	Blinking	Blinking
82	U8	FAN2: DC busbar under-voltage	Blinking	Blinking	Blinking
83	U9	FAN2:IPM overheating	Blinking	Blinking	Blinking
84	UA	FAN2:Communication malfunction	Blinking	Blinking	Blinking
85	UB	FAN2: Fatal malfunction	Blinking	Blinking	Blinking
86	UF	Outdoor unit and drive board of fan2 communication malfunction	Blinking	Blinking	Blinking
87	00	Communication malfunction with indoor unit 0#	On	Blinking	On
88	01	Communication malfunction with indoor unit 1#	On	Blinking	On
89	On	Blinking	On
90	63	Communication malfunction with indoor unit 63#	On	Blinking	On

Displayed normal operating status of the lamp panel:

A5VWM	Silk-screen						
	Mode	Cool	Fan	Dry	Heat	Timing	Sleep
	LED						
		Green			Red	Yellow	Red

A5VCC A5VDB	Silk-screen	Cool	Dry/Timing		Fan		Heat
	Mode	Cool	Dry	Timing	Fan	Sleep	Heat
	LED						
		Green					Red

A5VCK	Silk-screen						
	Mode	Cool	Heat	Dry	Timing	Fan	Sleep
	LED						
		Green	Red	Yellow		Red	

A5VCM	Silk-screen						
	Mode	Cool	Dry	Timing	Fan	Sleep	Heat
	LED						
		Green				Red	

• The following symptoms are not faults of the units:

Sometimes odorous gases blow out of units because tobacco smoke, cosmetic odor, and odors from furniture and electrical appliances are taken into the units. You may hear fizzles when the air conditioner is cooling, heating, started, or stopped. The sounds are generated when refrigerant flows in the unit.

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