



- Warning
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
 - Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
 - Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.
- If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.



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DAIKIN



APCVD1509B

Daikin VRV AHU System

STANDARD SERIES AHUR-DBV/CBV &
OUTDOOR AIR SERIES AHUR-DBL/CBL

VRV AHU Applications



Airport



Lobby



Hospital



Factory



Shopping Mall



Sports Hall



Showroom



Warehouse

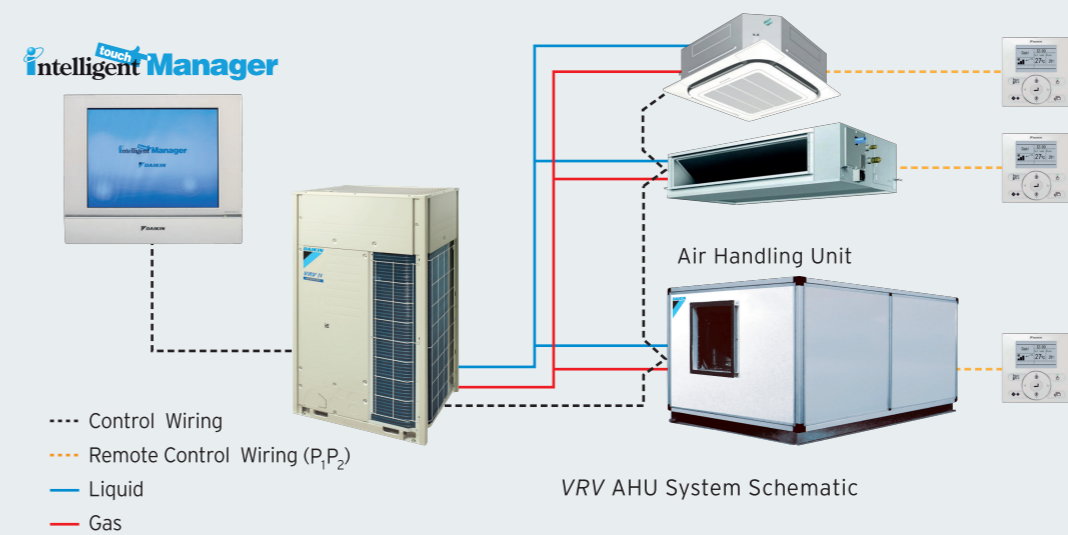


VRV AHU Introduction

Daikin released 2 series of VRV AHU, standard series model AHUR-DBV/CBV and outdoor air series model AHUR-DBL/CBL. It is a DX AHU that is specially designed to operate with VRV IV outdoor unit. This enabled the users to reduce maintenance costs and enjoy more space savings.

Daikin VRV AHU improves the indoor air quality caused by haze, pollutants, etc with options of pre-filters and primary filters.

This is the only total AHU solutions provided and manufactured completely by Daikin.



Total Daikin Solutions
(All products manufacture by Daikin Factory)

What is VRV?

Daikin VRV system is a multi-split type air conditioner for commercial buildings that uses variable refrigerant flow control invented by Daikin.



It enables long piping length up to 165m and maximum level difference (between outdoor and indoor units) of 90m to provide more design flexibility which can match even large-sized buildings.

It allows one touch selection control using intelligent Touch Manager and includes options to link with BACnet® to enhance the Building Management System (BMS).

VRV AHU Application

From small to large commercial spaces, Daikin offers a wide range of R-410A inverter condensing units for use in conjunction with Air Handling Units (AHU) from 6 HP to 120 HP.

AHU provides large air volumes and high ESP (External Static Pressure) enabling the use of extensive ductworks. The refrigerant flows through the copper pipes using R-410A and operates like a large VRV fan coil unit.

Daikin AHU represents the ideal solution for large storage places, atrium, lobby, banquet halls, showrooms, exhibition halls, shopping malls, etc.

It also has the options to customize the specifications such as the filtration type, direction of air in-take and discharge, service access door and blower type (backward or forward curves and plug fan).



Features of VRV AHU

- Harnessing VRV IV VRT technology
- Inverter controlled system
- Can be easily controlled via standard wired remote control (BRC1E62)
- Comes in double skin panel model (Single skin option available)
- Easily managed using intelligent Touch Manager central control system
 - ✓ Communication protocol using DIII-Net to communicate with all existing Daikin communication devices. (option to connect directly to BACnet® BMS)
- Can be placed indoor or outdoor*1

Benefits of using VRV AHU

- Quality and warranty assured
 - ✓ VRV AHU are manufactured by Daikin factory.
- Ease of installation
 - ✓ No additional system such as cooling tower, chiller, and long water piping system are required. This also reduces the total system maintenance costs.
 - ✓ Flexible design of the ducting system.
- Cover large area with different ducting configuration.
- VRV AHU can provide ESP up to 500Pa*2 (Standard Model)
- Total solution concept
 - ✓ Integrating an AHU into the total building climate system enables both design and installation procedures to be based on a single common technology. This simplifies project follow-up, installation, commissioning and maintenance since only one party is involved.
- VRV AHU system can be combined with other types of indoor units to operate concurrently.

Notes:

*1 Optional items required

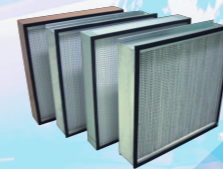
*2 For ESP more than 500Pa, please contact Daikin's Sales Office

*3 BACnet interface

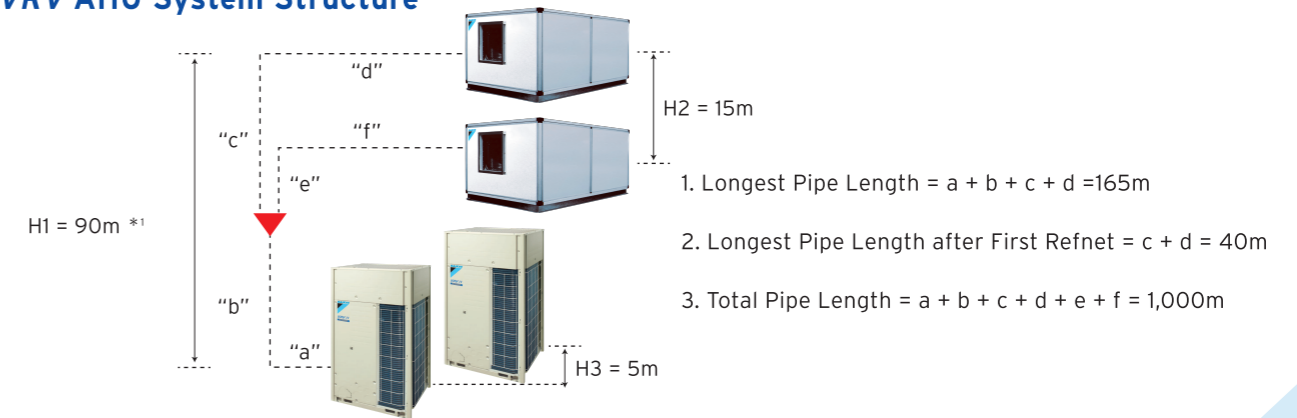
Options

Wide range of options to meet design requirements. Please contact Daikin's Sales Office on options below:

- Fan Type
 - ✓ Backward Curve Aerofoil
 - ✓ Plug Fan
 - ✓ Brushless DC Fan
- Fan Motor control
 - ✓ VSD
 - ✓ Fixed Speed
- AHU Coil Material Type
 - ✓ Copper Fin
 - ✓ Blue Fin
 - ✓ Epoxy Coated Fin and Coil
- AHU Drain Pan Type
 - ✓ Acrylic Enamel with Steel Coating
 - ✓ Galvanized Steel
- AHU Air Filter Type
 - ✓ Medium Filter
 - ✓ Extra Filter
 - ✓ Synthetic
 - ✓ Bag
 - ✓ HEPA
 - ✓ Aluminum
 - ✓ Cartridge
 - ✓ ULPA
- Special Option
 - ✓ Electric Heater
 - ✓ Mixing Box
 - ✓ Outdoor Roof
 - ✓ Heat Pipes
 - ✓ Motor Starter Box
- Customisation
 - ✓ Airflow
 - ✓ Capacity
 - ✓ ESP
 - ✓ Discharge Direction
 - ✓ Heat Recovery Wheel
 - ✓ Piping Outlet
- Controller for Outdoor Air Series
 - ✓ MicroTech III*3 (DDC)



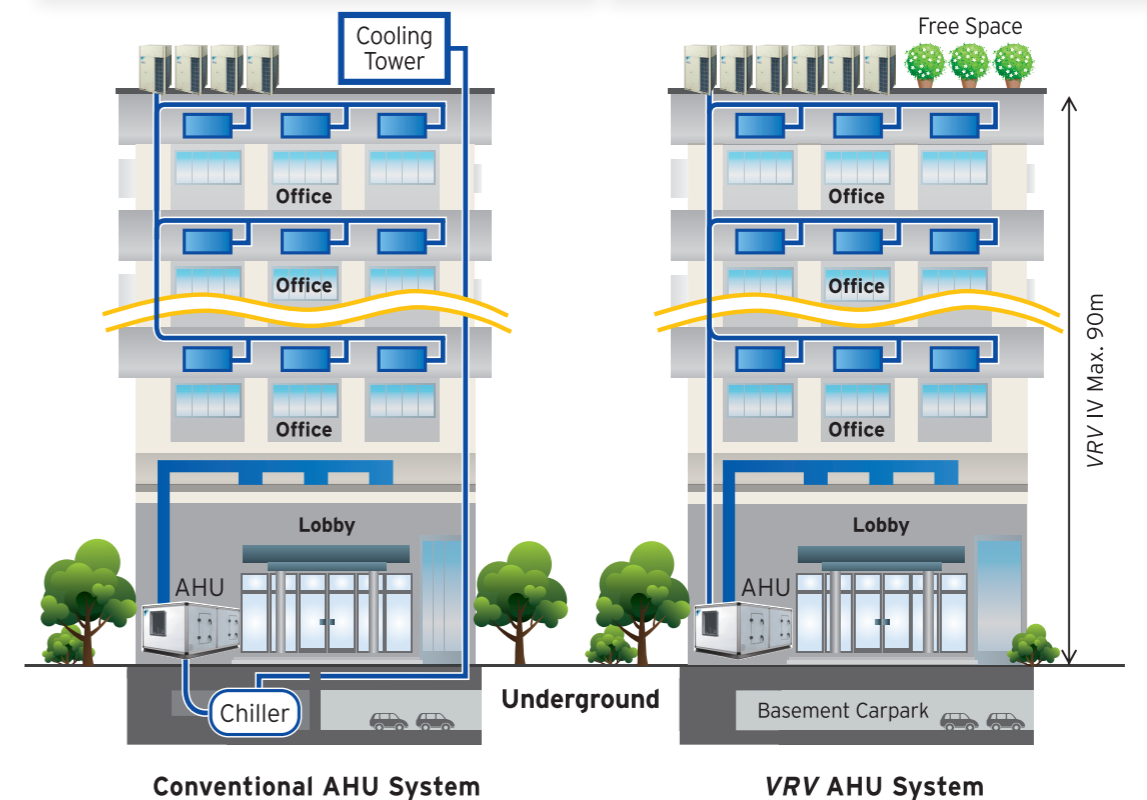
VRV AHU System Structure



*1 When level differences are 50m or more, the diameter of the main liquid piping size must be increased. If the outdoor unit is above the indoor unit, a dedicated setting on the outdoor unit is required. Please contact Daikin's Sales Office for more information.

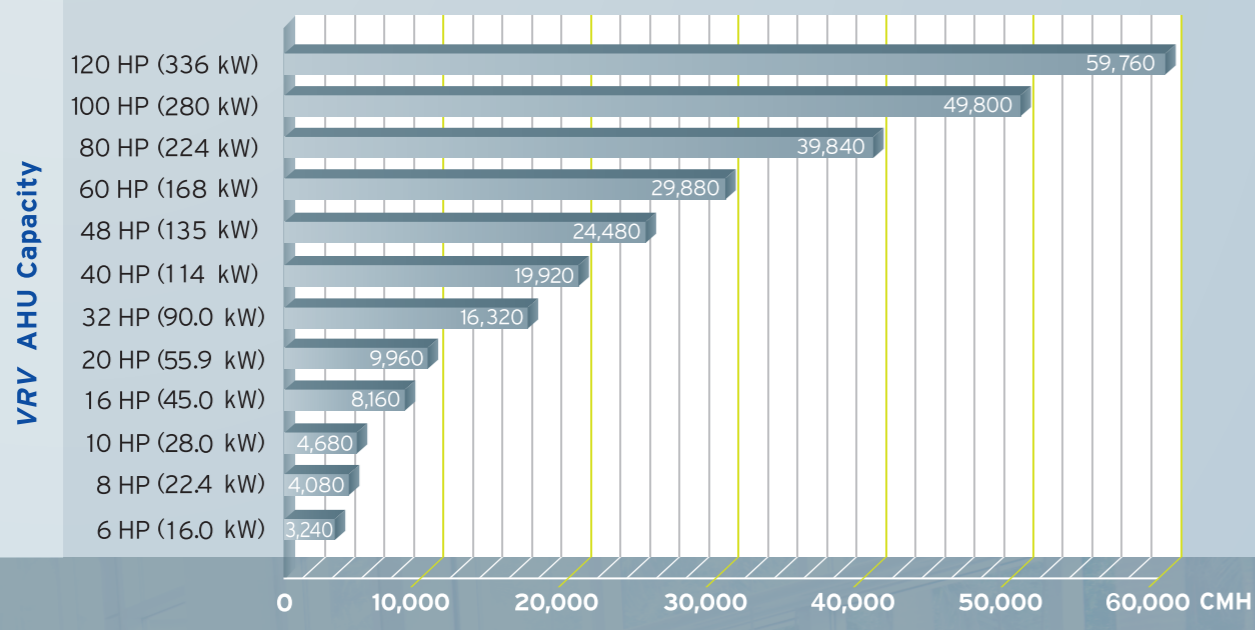
Comparison Table and Diagram for Conventional AHU System and VRV AHU System

Conventional AHU System	VRV AHU System
Require Frequent Maintenance (Cooling Tower + Chiller)	Easy Maintenance (same as common A/C System)
Higher Cost Due to Frequent Maintenance	No Additional Maintenance Cost
Require Larger Installation Space (AHU, Chiller, Cooling Tower)	Require Small Installation Space (AHU, VRV)
Complex System (HVAC Ducting, Chiller and Water Piping)	Simple System (HVAC Ducting)
Complex Control (Variable Frequency Device, Variable Air Volume Control)	Simple Control (Remote Control / intelligent Touch Manager / MicroTech III Controller)



VRV AHU Standard Series

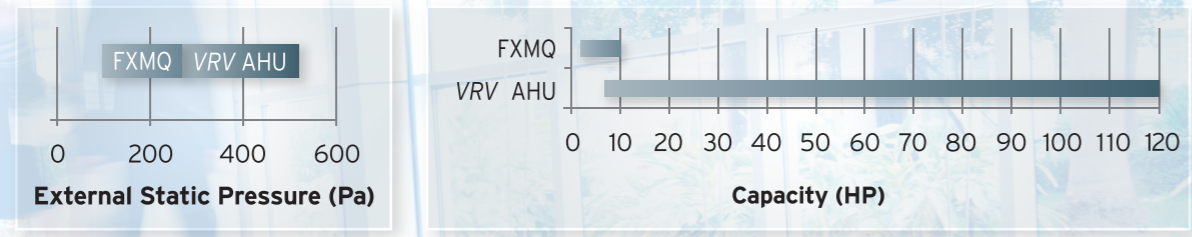
The VRV AHU standard series are available from the capacity range of 6 HP to 120 HP, also with airflow ranging from 3,240 CMH - 59,760 CMH.



Expanded Line Up for Daikin VRV Indoor Series

Comparison for External Static Pressure and Capacity between VRV AHU and Duct Typed Unit

VRV AHU offers higher ESP and Capacity as compared to duct type fan coil unit.



*For ESP more than 500Pa, please contact Daikin's Sales Office

VRV AHU Operation Range

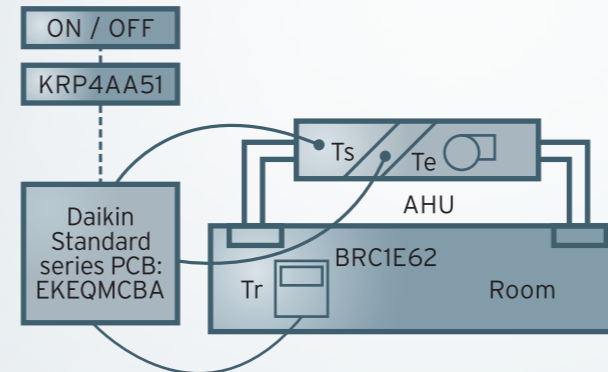
VRV AHU AHUR-DBV/CBV operation is similar as other VRV indoor unit. Following table is the list of operation range for AHU unit.

		Temperature Range	
		Cooling	
Entering Air Temperature to VRV AHU	Minimum	14°C WB	
	Maximum	35°C DB / 25°C WB	
Outdoor Unit	VRV IV	Minimum	-5°C DB
		Maximum	49°C DB
Expansion Valve		Minimum	-5°C DB
		Maximum	46°C DB
Standard series PCB		Minimum	-10°C DB
		Maximum	40°C DB

Possibility Z (Ts/Tr control):

Using Daikin wired remote controller (BRC1E62 - optional) Set point can be fixed via standard Daikin wired remote controller. Remote ON/OFF can be achieved by an optional adapter KRP4AA51.

No additional external controller is required. The cooling load is determined from the air suction temperature and set point on the Daikin remote controller.



Ts = Air suction temperature
Tr = Room temperature
Te = Evaporating temperature
AHU = Air Handling Unit

VRV AHU Standard Series Evaporator Coil, Expansion Valve and Standard series PCB

AHUR-DBV/CBV standard series model use DX coil. Each DX coil will be connected to one external expansion valve (EKE XV) and controlled by one standard series PCB (EKEQMCBA).

VRV AHU Standard Series Evaporator Coils

- 5 capacities of Evaporator Coils
 - 6HP **used on 6HP AHU unit**
 - 8HP **used on 8HP AHU unit**
 - 10HP **used on 10HP AHU unit**
 - 16HP **used on 16HP, 32HP, 48HP AHU unit**
 - 20HP **used on 20HP, 40HP, 60HP, 80HP, 100HP, 120HP AHU unit**

VRV AHU Expansion Valve (EKE XV)

- 5 capacities of AHU Expansion Valve
 - EKE XV140 for 6HP Coil
 - EKE XV200 for 8HP Coil
 - EKE XV250 for 10HP Coil
 - EKE XV400 for 16HP Coil
 - EKE XV500 for 20HP Coil

VRV AHU Standard series PCB (EKEQMCBA)

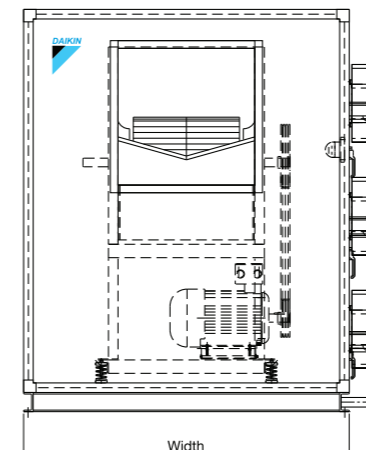


VRV AHU Expansion Valve

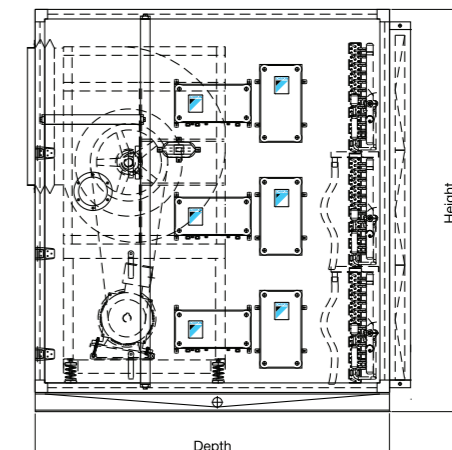
		EKE XV140	EKE XV200	EKE XV250	EKE XV400	EKE XV500	
Casing	Colour	Ivory white					
	Material	Metal					
Dimensions	Unit	H x W x D mm					
Weight	Unit	Kg					
Operation Range	Cooling	Min. ~ Max. °CDB					
		-5.0 ~ 46.0					
Refrigerant	Type	R-410A					
		Braze connection					
Piping connections	Liquid	Type	9.52			12.7	
		OD mm	9.52			15.9	
	Gas	Type	Braze connection				
		OD mm	9.52				
Heat Insulation		Both inlet and outlet					

VRV AHU Standard series PCB

		EKEQMCBA	
Application		Multi	
Outdoor Unit		VRV IV	
Casing	Colour	White grey	
	Material	Resin	
Dimensions	Unit	H x W x D mm	
Weight	Unit	Kg	
Operation Range	Cooling	Min. ~ Max. °CDB	
		-10.0 ~ 40.0	
Power Supply	Phase	1	
	Frequency Hz	50/60	
	Voltage V	230/220	

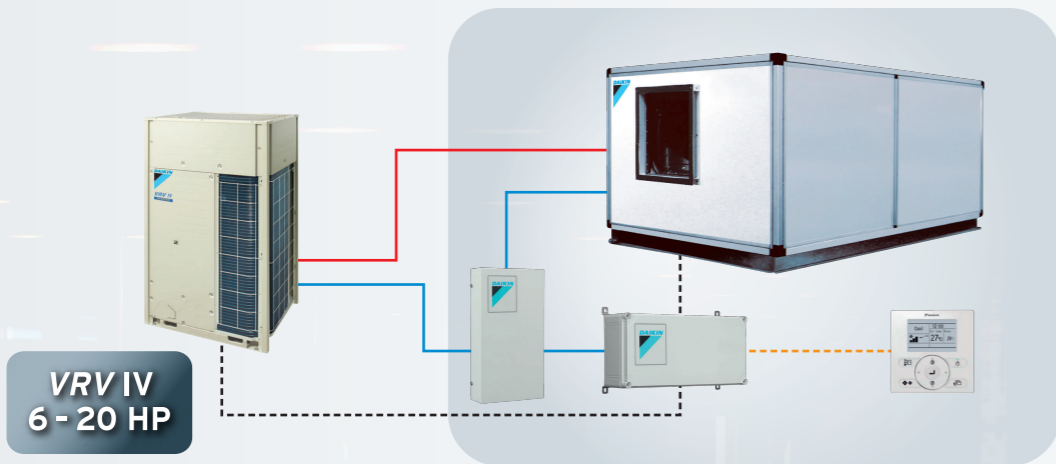


Front View

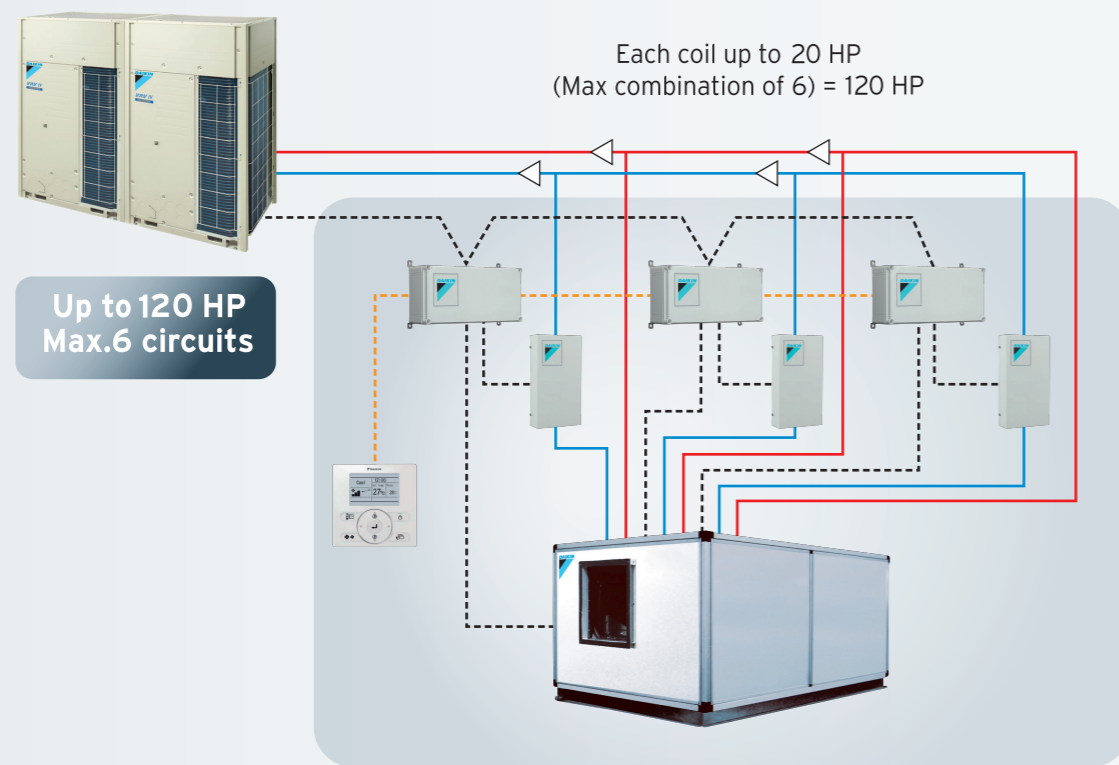


Side View

VRV Connection to AHU Configuration



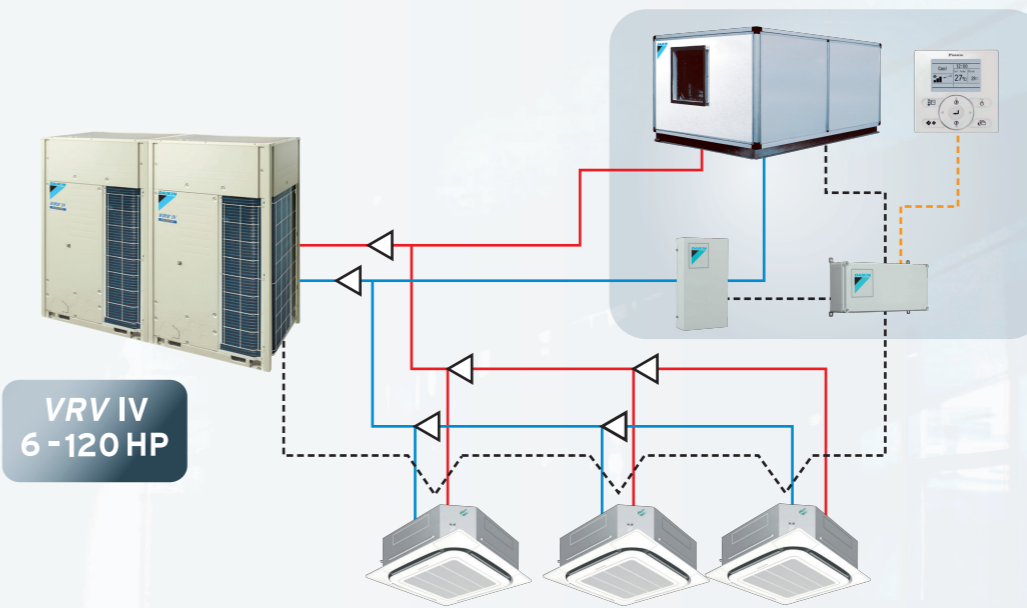
Single VRV System Configuration



Combined VRV System Configuration

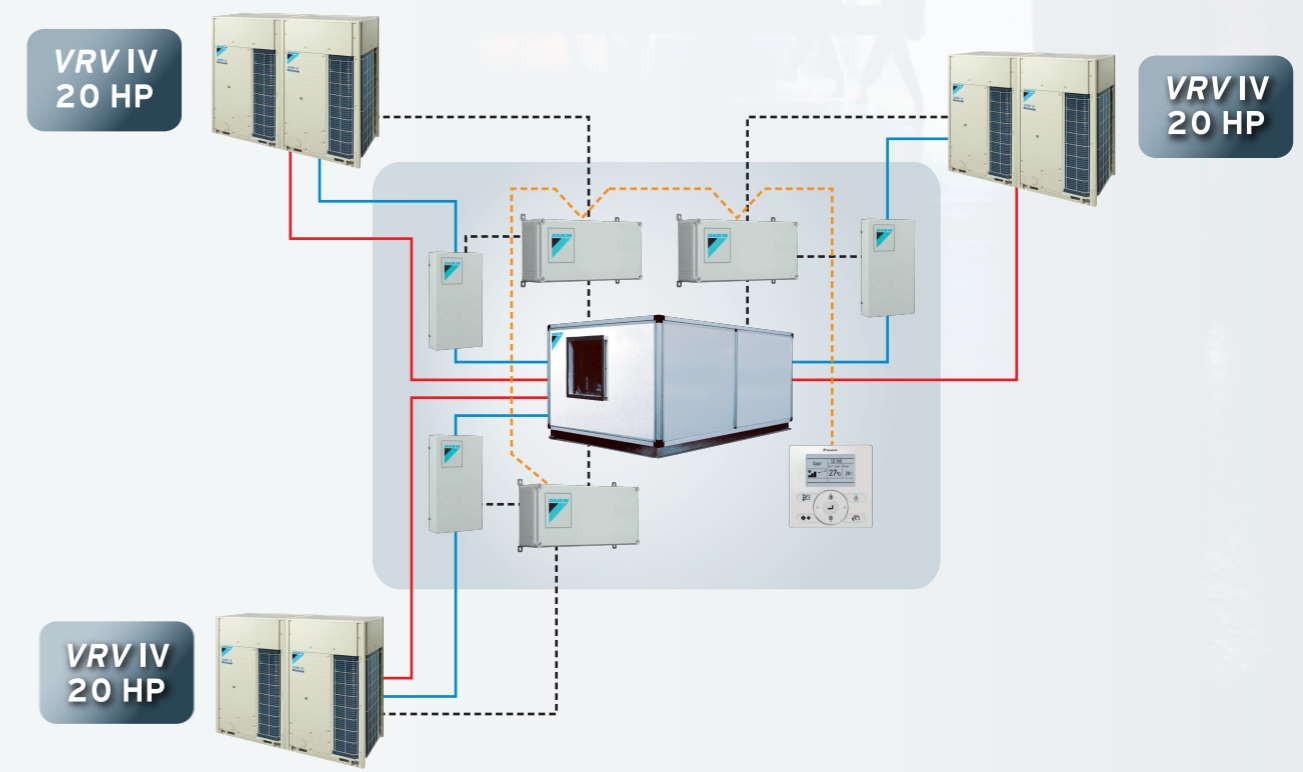
*In case of more than 60 HP system, connection is Multiple VRV system.

---- Control Wiring - - - - Remote Control Wiring (P₁P₂) — Liquid — Gas



Multiple Indoor Units with AHU Configuration

*In case of more than 60 HP system, connection is Multiple VRV system.



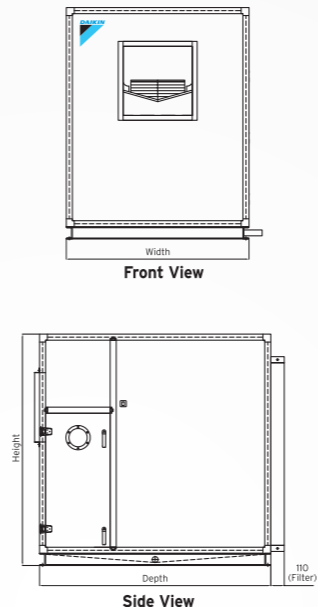
Multiple VRV Systems Configuration

AHU SPECIFICATION (AHUR-DBV/CBV)

1	CASING/INSULATION (DB SERIES)	50mm Thickness Double Skinned Panel 0.5mm Thickness White Colourbond Steel Sheet 50mm Thickness Polyurethane Foam 40Kg/m ³ Density
	CASING / INSULATION (CB SERIES)	25mm Thickness Double Skinned Panel 0.5mm Thickness White Colourbond Steel Sheet 0.5mm Thickness Galvanized Steel Sheet 25mm Thickness PU Foam 40Kg/m ³
2	CASING-FRAME (DB SERIES)	Steel With Black Epoxy Paint
	CASING-FRAME (CB SERIES)	Extruded Aluminium Pentapost Profile
3	COIL	DX Coil
	TUBE	Copper Tube
	FIN	Aluminium Slit
4	HEADER	Copper Tube
	FRAME	Galvanized Steel
	WORKING PRESSURE	10Kg/cm ²
5	FAN	(Brand = Kruger)
	TYPE	Double Width Double Inlet Forward Curved Centrifugal Belt Drive Fan
	WHEEL	Galvanized Steel
6	HOUSING	Galvanized Steel
	FRAME	Steel With Polyester Powder Coating
	MOTOR	(Brand = Teco) Three-Phase Induction Motor Totally Enclosed Fan-Cooled Type Protection = IP55 Insulation Class = F
7	VIBRATION ISOLATOR	Spring Isolator
8	DRAIN PAN (DB SERIES)	1.2mm (SUS 304) Beneath The Drain Pan is Covered With PU Insulation 40Kg/m ³ Density
	DRAIN PAN (CB SERIES)	1.6mm (Steel Sheet With Epoxy Coated) Beneath The Drain Pan is Covered With PU Insulation 40Kg/m ³ Density
9	AIR FILTER	(Brand = AAF) Type = R29 Class = G3 (AFI = 80-85%) Synthetic washable Size = Full (24" x 24" x 2") Half (12" x 24" x 2")

Drawings and Dimension of AHU

Model	Dimension W x D x H (mm)	Model	Dimension W x D x H (mm)
AHUR06DBV	1,300 X 1,200 X 1,200	AHUR06CBV	1,200 X 1,100 X 850
AHUR08DBV	1,300 X 1,400 X 1,200	AHUR08CBV	1,300 X 1,200 X 1,100
AHUR10DBV	1,500 X 1,400 X 1,200	AHUR10CBV	1,500 X 1,200 X 1,100
AHUR16DBV	1,800 X 1,500 X 1,200	AHUR16CBV	1,700 X 1,400 X 1,100
AHUR20DBV	2,100 X 1,600 X 1,200	AHUR20CBV	2,000 X 1,500 X 1,100
AHUR32DBV	1,800 X 1,800 X 1,600	AHUR32CBV	1,700 X 1,700 X 1,500
AHUR40DBV	2,100 X 1,800 X 1,600	AHUR40CBV	2,000 X 1,700 X 1,500
AHUR48DBV	1,800 X 1,950 X 2,300	AHUR48CBV	1,700 X 1,850 X 2,100
AHUR60DBV	2,100 X 1,950 X 2,300	AHUR60CBV	2,000 X 1,950 X 2,200
AHUR80DBV	4,000 X 1,800 X 1,600	AHUR80CBV	3,900 X 1,700 X 1,500
AHUR100DBV	4,000 X 1,950 X 2,300	AHUR100CBV	3,900 X 1,850 X 2,200
AHUR120DBV	4,000 X 1,950 X 2,350	AHUR120CBV	3,900 X 1,950 X 2,200



* Dimension does not include Standard series PCB, Expansion Valve and Pre-filter

AHUR-DBV/CBV SPECIFICATIONS

Model	AHUR06DBV/DBVH AHUR06CBV/CBVH					AHUR08DBV/DBVH AHUR08CBV/CBVH					AHUR10DBV/DBVH AHUR10CBV/CBVH					AHUR16DBV/DBVH AHUR16CBV/CBVH					AHUR20DBV/DBVH AHUR20CBV/CBVH					AHUR32DBV/DBVH AHUR32CBV/CBVH											
	NET (KW) ¹⁾	16.4	16.3	16.2	16.0	15.9	22.9	22.8	22.7	22.4	22.3	28.4	28.3	28.2	28.0	27.8	45.7	45.5	45.3	45.0	44.6	56.8	56.6	56.3	56.0	55.7	91.4	91.0	90.6	90.0	89.2						
Total Cooling Capacity	NET (KW) ¹⁾	11.9	11.8	11.7	11.5	11.4	16.8	16.7	16.6	16.3	16.2	20.9	20.8	20.7	20.5	20.3	33.5	33.3	33.1	32.6	32.4	41.8	41.6	41.3	40.9	40.7	67.0	66.6	66.2	65.3	64.8						
Total Sensible Cooling Capacity	GROSS (KW) ²⁾	17.6	24.0					24.0	29.8					48.3	59.4					96.6																	
Sensible Cooling Capacity	CMH	13.1	17.9					17.9	22.3					36.2	44.3					72.4																	
Air Flow	°CDB/°CWB	3,240	4,080					4,080	4,680					8,160	9,960					16,320																	
Ent. Temp.	°CDB/°CWB	27/19	27/19					27/19	27/19					27/19	27/19					27/19																	
lea. Temp.	°CDB/°CWB	14.7/13.3	13.6/12.7					13.6/12.7	12.5/12.4					13.5/12.7	13.4/12.6					13.5/12.7																	
Coil Type		DX-COIL (R410A) 8mm. WAVE SLIT SURFACE & STRAIGHT EDGE																																			
Coil Face Area	m ²	0.491					0.443	0.54					0.78	0.99					1.56																		
Coil Face Vel.	m/s	1.83					2.56	2.41					2.91	2.79					2.91																		
Air PD.In Coil	Pa	100					100	100					100	100					100																		
Air PD.In Pre Filter ³⁾	Pa	80					80	80					80	80					80																		
Air Filter Size 12"X24X2" ³⁾	PCS.	1					1	-					1	-					2																		
Air Filter Size 24"X24X2" ³⁾	PCS.	1					1	2					2	3					4																		
Air PD.In Casing	Pa	30					30	30					30	30					30																		
ESP.Initial	Pa	250	300	350	450	500	250	300	350	450	500	250	300	350	450	500	250	300	350	450	500	250	300	350	450	500	250	300	350	450	500						
Total Statics Pressure	Pa	460	510	560	660	710	460	510	560	660	710	460	510	560	660	710	460	510	560	660	710	460	510	560	660	710	460	510	560	660	710						
Fan Type		FORWARD CURVE																																			
Model		FDA200CM					FDA250TM	FDA250TM					FDA315TM	FDA355TM					FDA450TM																		
Fan Motor	KW	1.5					2.2	1.5					2.2	2.2					3.0	3.0	4.0					5.5	5.5	7.5									
	POIE	4					4	4					4	4					4	4					4												
Power Supply (50Hz/60Hz)	Volt/Ph./Hz.	380-415/3/50 / 380-415/3/60																																			
FIA	amp.	3.64	5.28					3.64	5.28					5.28	6.58					6.58	8.92					8.92	12.0					12.0	15.4				
Machine Weight (DBV)	kg	545	550					550	560					600	765					775	890					900	1,090					1,090	1,110				
Machine Weight (CBV)	kg	480	485					480	485					530	540					740	750					850	880					990	1,010				
Sound Pressure Level (SPL)	dB(A)	60	61	62	63	64	54	56	57	59	60	54	56	57	59	60	62	63	64	66	67	61	61	62	64	65	62	63	64	65	66						
Standard series PCB	Model/PCS.	EKEQMCBAV3 / 1 pc.					EKEQMCBAV3 / 1 pc.	EKEQMCBAV3 / 1 pc.					EKEQMCBAV3 / 1 pc.	EKEQMCBAV3 / 1 pc.					EKEQMCBAV3 / 2 pcs.																		
Expansion Valve	Model/PCS.	EKEV140 / 1 pc.					EKEV200 / 1 pc.	EKEV250 / 1 pc.					EKEV400 / 1 pc.	EKEV500 / 1 pc.					EKEV400 / 2 pcs.																		
Piping	Liquid pipes	9.5 (Braze connection)					9.5 (Braze connection)	9.5 (Braze connection)					12.7 (Braze connection)	15.9 (Braze connection)					12.7 (Braze connection) x 2																		
Connections	Gas pipes ⁴⁾	15.9 (Braze connection)					19.1 (Braze connection)	22.2 (Braze connection)					28.6 (Braze connection)	28.6 (Braze connection)					28.6 (Braze connection) x 2																		
	Drain pipes	32					32	32					32	32					32																		
Refrigerant Control		Electronic expansion valve					Electronic expansion valve	Electronic expansion valve					Electronic expansion valve	Electronic expansion valve					Electronic expansion valve																		
Panel		Double Skinned																																			
Capacity Index		140					200	250					400	500					800																		

Notes:
 1. Net capacity includes indoor fan heat.
 2. Gross capacity do not include indoor fan heat.
 3. With pre filter, AAF synthetic R29 & class G3 (Washable) eff 80-85%.
 4. It is necessary to reduce piping size by reducer when connection (19.1 → 15.9, 22.2 → 19.1, 28.6 → 22.2, 34.9 → 28.6)

■ Connection ratio

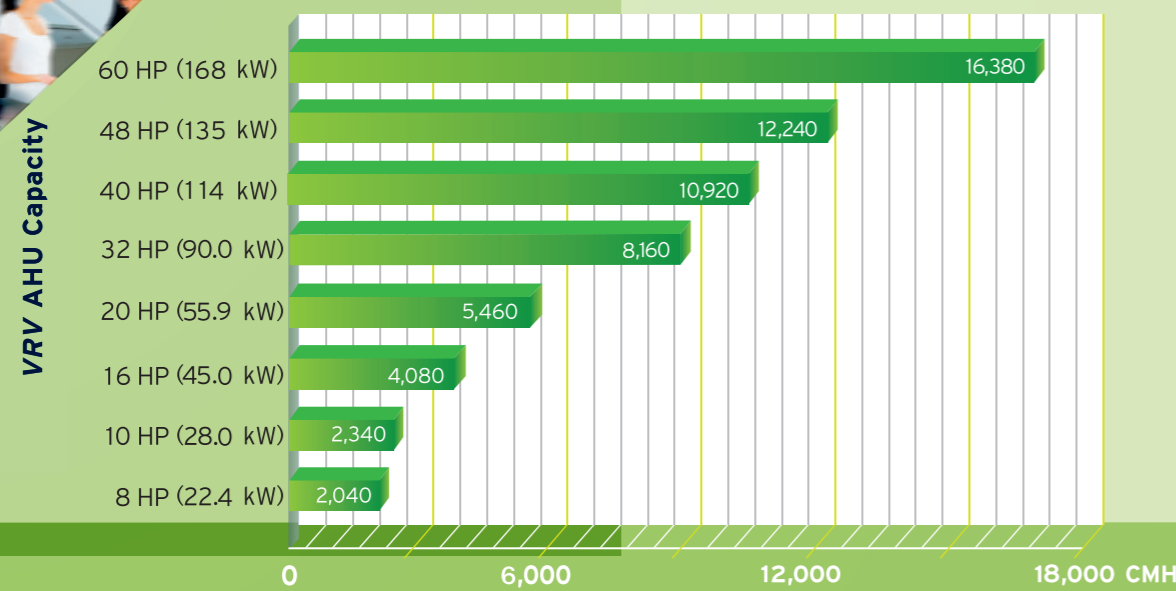
System Pattern	Total CR	VRV Indoor	AHU
VRV DX Indoor unit(s) + AHU	50-110%	0-110%	0-60%
Only AHU (Pair AHU & Multi AHU)	50-110%	-	50-110%

Conversion formula

kcal/h=kWx860
 Btu/h=kWx3412
 cfm=m³/minx35.3

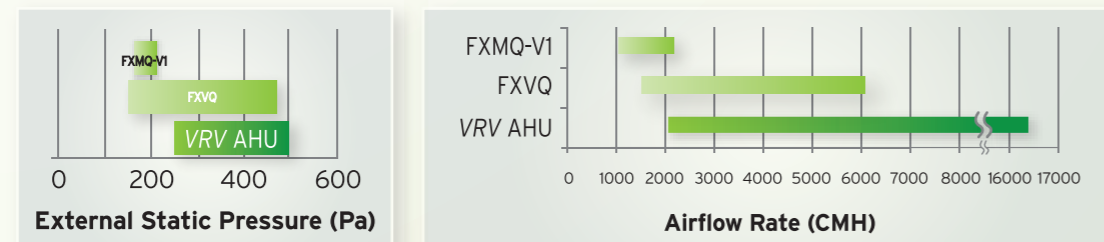
VRV AHU Outdoor Air Series

The VRV AHU Outdoor air series are available from the capacity range of 8 HP to 60 HP, also with airflow ranging from 2,040 CMH - 16,380 CMH.



Comparison for ESP and Capacity between VRV AHU, Ceiling Mounted Duct Type and Floor Standing Duct Type.

VRV AHU offers higher ESP and airflow rate as compared to duct type units.



	From	To
FXMQ-V1	185 Pa	205 Pa
FXVQ	150 Pa	480 Pa
VRV AHU	250 Pa	500 Pa

	From (CMH)	To (CMH)
FXMQ-V1	1,080	2,100
FXVQ	1,518	6,072
VRV AHU	2,040	16,380

*For ESP more than 500Pa, please contact Daikin's Sales Office

VRV AHU Operation Range

VRV AHU AHUR-DBL/CBL operation is similar as other VRV indoor unit. Following table is the list of operation range for AHU unit.

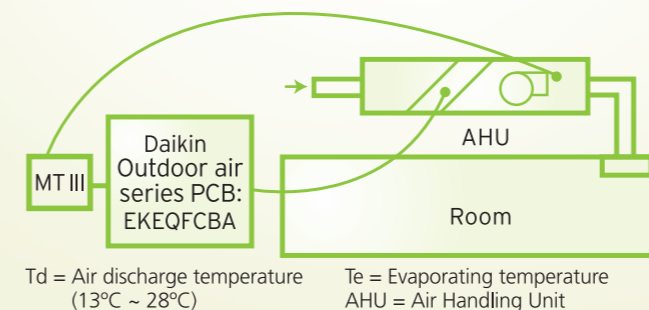
		Temperature Range	
		Cooling	
Entering Air Temperature to VRV AHU	Minimum	14°C WB	
	Maximum	32°C WB	
Outdoor Unit	VRV IV	Minimum	-5°C DB
		Maximum	49°C DB
Expansion Valve		Minimum	-5°C DB
		Maximum	46°C DB
Outdoor air series PCB		Minimum	-10°C DB
		Maximum	40°C DB

Possibility X (Td/Tr control):

Precise air temperature control via MicroTech III (MT III) controller (option)

Room temperature is controlled as a function of the air handling unit suction or discharge air (customer selection). The MT III controller translates the temperature difference between set point and air suction temperature (or air discharge temperature or room temperature) into a reference voltage (0-10V) which is transferred to the Daikin Outdoor air series PCB (EKEQFCBA).

This reference voltage will be used as the main input value for the compressor frequency control.



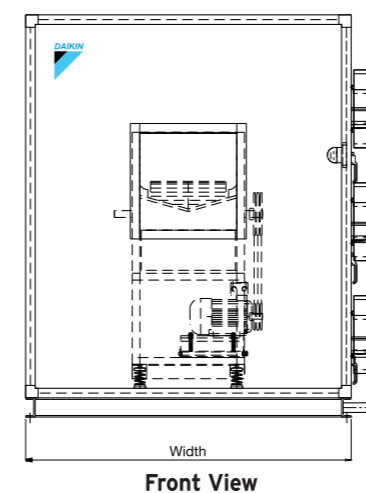
MicroTech III controller (option)



MT III controller is recommended for Outdoor air series AHU controlling, switching and monitoring functions. This controller is programmed to optimize the performance and efficiency of VRV AHU automatically. It can also communicate with Daikin's intelligent Touch Manager via BACnet protocol easily.

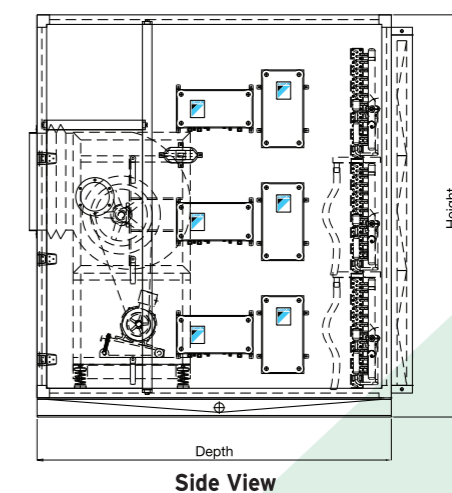
VRV AHU Expansion Valve

		EKEXV200	EKEXV250	EKEXV400	EKEXV500
Casing	Colour	Ivory white			
	Material	Metal			
Dimensions	Unit	H x W x D mm			
	Unit	Kg			
Weight	Unit	2.9			
	Unit	2.9			
Operation Range	Cooling	Min. ~ Max. °CDB			
		-5.0 ~ 46.0			
Refrigerant	Type	R-410A			
		Braze connection			
Piping connections	Liquid	Type	Braze connection		
		OD mm	9.52	12.7	15.9
	Gas	Type	Braze connection		
		OD mm	9.52		
Heat Insulation		Both inlet and outlet			



VRV AHU Outdoor Air Series PCB

		EKEQFCBA
Application		Multi
	Outdoor Unit	VRV IV
Casing	Colour	White grey
	Material	Resin
Dimensions	Unit	H x W x D mm
	Unit	Kg
Weight	Unit	3.9
	Unit	3.9
Operation Range	Cooling	Min. ~ Max. °CDB
		-10.0 ~ 40.0
Power Supply	Phase	1
	Frequency Hz	50/60
	Voltage V	230/220



VRV AHU Outdoor Air Series Evaporator Coil, Expansion Valve and Outdoor Air Series PCB

AHUR-DBL/CBL Outdoor air series use DX coil. Each DX coil will be connected to one external expansion valve (EKEXV) and controlled by one Outdoor air series PCB (EKEQFCBA).

VRV AHU Outdoor air Series Evaporator Coil

- 4 capacities of Evaporator Coil
 - 8HP used on 8HP AHU unit
 - 10HP used on 10HP AHU unit
 - 16HP used on 16HP, 32HP, 48HP AHU unit
 - 20HP used on 20HP, 40HP, 60HP AHU unit

VRV AHU Expansion Valve (EKEXV)

- 4 capacities of AHU Expansion Valve
 - EKEXV200 for 8HP Coil
 - EKEXV250 for 10HP Coil
 - EKEXV400 for 16HP Coil
 - EKEXV500 for 20HP Coil

VRV AHU Outdoor air series PCB (EKEQFCBA)

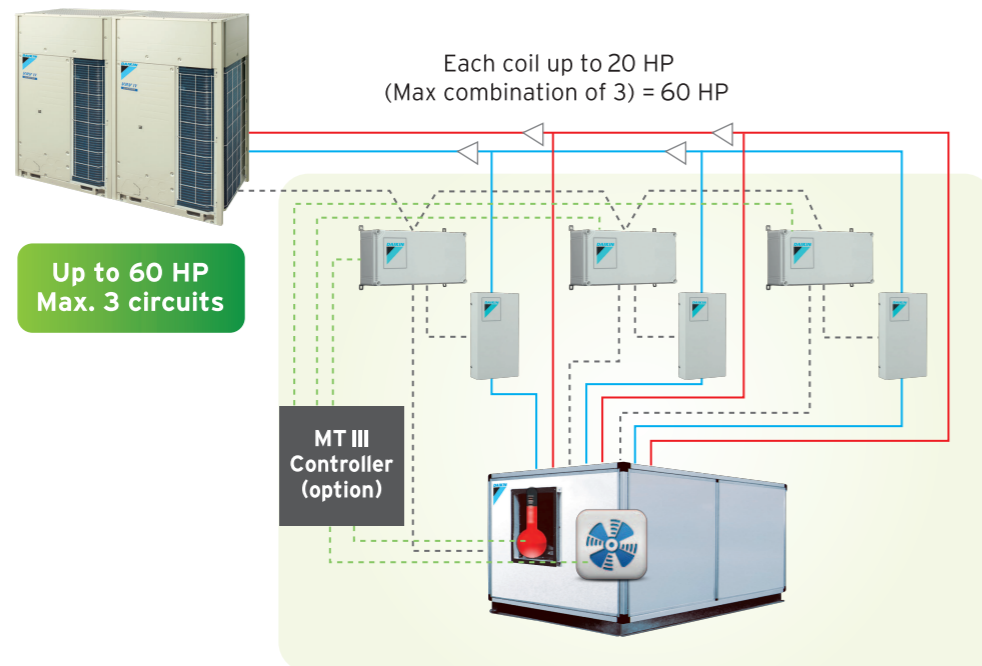
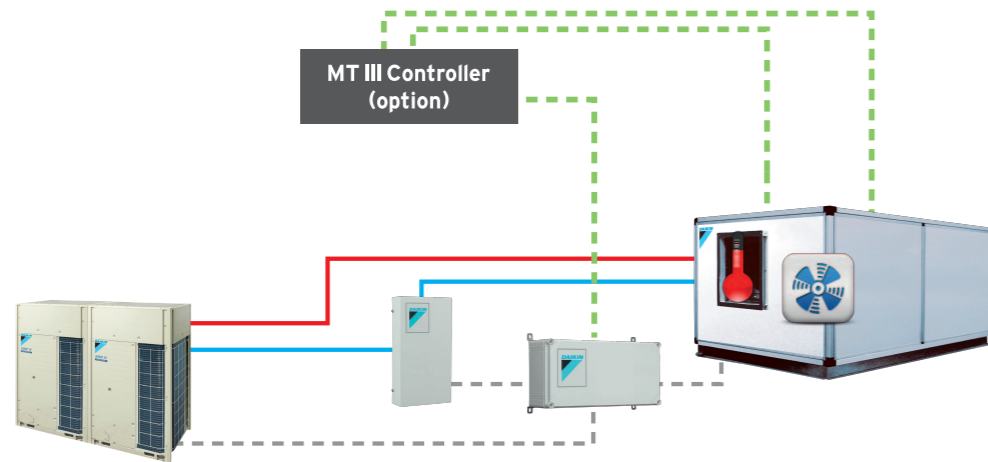


Installation of AHU Outdoor air series PCB should be positioned under a shaded area. Alternatively, a panel should be provided at the Outdoor air series PCB to block off direct sunlight.

Direct sunlight will increase the temperature inside the Outdoor air series PCB and may reduce its lifetime and influence its operation.

Operating temperature of the Outdoor air series PCB is between -10°C and 40°C.

VRV AHU Configuration



Combined VRV System Configuration

----- Control Wiring - - - - - MT III Control Wiring ——— Liquid ——— Gas

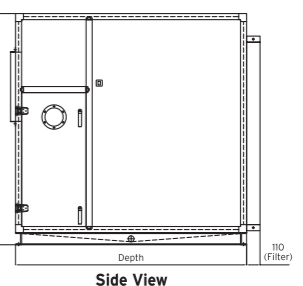
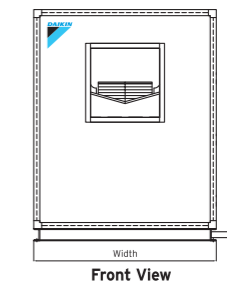
AHU SPECIFICATION (AHUR-DBL/CBL)

1	CASING / INSULATION (DBL SERIES)	50mm Thickness Double Skinned Panel (Thermal Break) 0.5mm Thickness White Colourbond Steel Sheet 50mm Thickness Polyurethane Foam 40Kg/m ³ Density
	WEATHER PROOF ROOF	SUS 304
2	CASING / INSULATION (CBL SERIES)	25mm Thickness Double Skinned Panel 0.5mm Thickness White Colourbond Steel Sheet 0.5mm Thickness Galvanized Steel Sheet 25mm Thickness Polyurethane Foam 40Kg/m ³ Density
	CASING-FRAME (DBL SERIES)	Steel With Black Epoxy Paint
3	CASING-FRAME (CBL SERIES)	Extruded Aluminium Profile
	COIL	DX Coil
	TUBE	Copper Tube
	FIN	Aluminum Slit Type
	HEADER	Copper Tube-Connect
	FRAME	Galvanized Steel
4	WORKING PRESSURE	10Kg/cm ²
	FAN	(Brand = Kruger)
	TYPE	Double Width Double Inlet Forward Curved Centrifugal Belt Drive Fan
	WHEEL	Galvanized Steel Sheet
5	HOUSING	Galvanized Steel Sheet
	FRAME	Steel With Polyester Powder Coating
6	MOTOR	(Brand = Teco) Three-Phase Induction Motor Totally Enclosed Fan-Cooled Type Protection = IP55 Insulation Class = F, IE1
	VIBRATION ISOLATOR	Spring Isolator
7	DRAIN PAN (DBL SERIES)	1.2mm (SUS 304) The Drain Pan is Covered With PU Insulation 40Kg/m ³ Density
	DRAIN PAN (CBL SERIES)	1.6mm (Steel Sheet With Epoxy Coated) Beneath The Drain Pan is Covered With PU Insulation 40Kg/m ³ Density
8	AIR FILTER	(Brand = AAF) Type = R29 Class = G3 (AFI = 80-85%) Synthetic Washable Size = Full (24" x 24" x 2") Half (12" x 24" x 2")

Drawings and Dimension of AHU

Model	Dimension W x D x H (mm)
AHUR08DBL	1,300 X 1,400 X 1,200
AHUR10DBL	1,500 X 1,400 X 1,200
AHUR16DBL	1,800 X 1,500 X 1,200
AHUR20DBL	2,100 X 1,600 X 1,200
AHUR32DBL	1,800 X 1,800 X 1,600
AHUR40DBL	2,100 X 1,800 X 1,600
AHUR48DBL	1,800 X 1,950 X 2,200
AHUR60DBL	2,100 X 1,950 X 2,200

Model	Dimension W x D x H (mm)
AHUR08CBL	1,300 X 1,200 X 1,100
AHUR10CBL	1,500 X 1,200 X 1,100
AHUR16CBL	1,700 X 1,400 X 1,100
AHUR20CBL	2,000 X 1,500 X 1,100
AHUR32CBL	1,700 X 1,700 X 1,500
AHUR40CBL	2,000 X 1,700 X 1,500
AHUR48CBL	1,700 X 1,850 X 2,100
AHUR60CBL	2,000 X 1,950 X 2,200



* Dimension does not include Outdoor air series PCB, Expansion Valve and Pre-filter

AHUR-DBL/CBL SPECIFICATIONS

Model	AHUR08DBL/CBL AHUR08DBLH/CBLH					AHUR10DBL/CBL AHUR10DBLH/CBLH					AHUR16DBL/CBL AHUR16DBLH/CBLH					AHUR20DBL/CBL AHUR20DBLH/CBLH				
Total Cooling Capacity	NET (KW) ¹⁾																			
Total Sensible Cooling Capacity	GROSS (KW) ²⁾																			
Air Flow	CMH																			
Ent. Temp.	°CDB/°CWB																			
Lea. Temp.	°CDB/°CWB																			
Coil Type	DX COIL (R410A) 8mm. WAVE SITT SURFACE & STRAIGHT EDGE																			
Coil Face Area	m ²																			
Coil Face Vel.	m/s																			
Air PD In Coil	Pa																			
Air PD In Pre Filter ³⁾	Pa																			
Air Filter Size 12"X24"X2" ⁴⁾	PCS.																			
Air Filter Size 24"X24"X2" ⁴⁾	PCS.																			
Air PD In Casing	Pa																			
ESP Initial	Pa																			
Total Static Pressure	Pa																			
Fan Type	FORWARD CURVE																			
Model	FSA280CM					FSA280CM					FDA250TM					FDA250TM				
Fan Motor	KW																			
	POLE																			
Power Supply (50Hz/60Hz)	Vol/Ph/Hz																			
FIA	amp.																			
Machine Weight (DBL)	kg																			
Machine Weight (CBL)	kg																			
Sound Pressure Level (SPL)	dBA																			
Outdoor Air series PCB	Model/PCS.																			
Expansion Valve	Model/PCS.																			
Piping Connections	Liquid pipes / Gas pipes / Drain pipes																			
Refrigerant Control	Electronic expansion valve																			
Panel	Double Skinned																			
Capacity Index	200					250					400					500				

Model	AHUR32DBL/CBL AHUR32DBLH/CBLH					AHUR40DBL/CBL AHUR40DBLH/CBLH					AHUR48DBL/CBL AHUR48DBLH/CBLH					AHUR60DBL/CBL AHUR60DBLH/CBLH				
Total Cooling Capacity	NET (KW) ¹⁾																			
Total Sensible Cooling Capacity	GROSS (KW) ²⁾																			
Air Flow	CMH																			
Ent. Temp.	°CDB/°CWB																			
Lea. Temp.	°CDB/°CWB																			
Coil Type	DX COIL (R410A) 8mm. WAVE SITT SURFACE & STRAIGHT EDGE																			
Coil Face Area	m ²																			
Coil Face Vel.	m/s																			
Air PD In Coil	Pa																			
Air PD In Pre Filter ³⁾	Pa																			
Air Filter Size 12"X24"X2" ⁴⁾	PCS.																			
Air Filter Size 24"X24"X2" ⁴⁾	PCS.																			
Air PD In Casing	Pa																			
ESP Initial	Pa																			
Total Static Pressure	Pa																			
Fan Type	FORWARD CURVE																			
Model	FDA315TM					FDA400TM					FDA400TM					FDA500TM				
Fan Motor	KW																			
	POLE																			
Power Supply (50Hz/60Hz)	Vol/Ph/Hz																			
FIA	amp.																			
Machine Weight (DBL)	kg																			
Machine Weight (CBL)	kg																			
Sound Pressure Level (SPL)	dBA																			
Outdoor Air series PCB	Model/PCS.																			
Expansion Valve	Model/PCS.																			
Piping Connections	Liquid pipes / Gas pipes / Drain pipes																			
Refrigerant Control	Electronic expansion valve																			
Panel	Double Skinned																			
Capacity Index	800					1,000					1,200					1,500				

Notes:

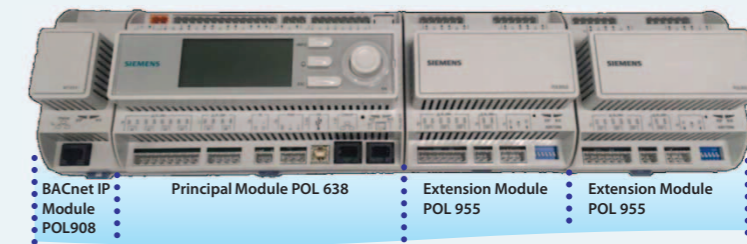
- Net capacity includes indoor fan heat.
- Gross capacity do not include indoor fan heat.
- With pre filter, AAF synthetic R29 & class G3 (Washable) eff 80-85%.
- It is necessary to reduce piping size by reducer when connection (19.1 → 15.9, 22.2 → 19.1, 28.6 → 22.2, 34.9 → 28.6)
- Air temperature control via an external MT III controller (option).

Conversion formula

kcal/h = kW x 860
 Btu/h = kW x 3412
 cfm = m³ / min x 35.3

MicroTech III Controller (Option)

MicroTech III consists of 4 components in a fixed configuration.



Features of MicroTech III

- BACnet IP Module for integration of MicroTech III AHU Controller in networks featuring the BACnet Protocol. Compatible with Daikin intelligent Touch Manager (iTM) or 3rd party BMS.
- Principal Module POL 638 and Extension Module POL 955 have selected analog and digital I/O contacts programmed for control and monitoring of sensors and other related devices in a VRV Outdoor Air Series AHU.
- HMI screen on the Principal Module POL 638 allows easy testing and commissioning and even without a centralised controller or 3rd party BMS.

Functions of MicroTech III

- Supply air control using the supply air sensor
 - Used for temperature control.
- Air quality control – CO2 Levels
 - The controls of the mixing damper can be dependent on the CO2 set point.
 - User can define the CO2 set point.
 - The fresh air damper will be difference between 100% and the percentage opening of the mixing damper.
- Fan airflow control
 - The fan speed control can be done through
 - Direct (w/o inverters).
 - DirectVar (with inverters).
 - Analog controlled variable speed drive with digital release.
 - Pressure control to meet the pressure set points in the duct.
- Monitoring points for other features
 - Room humidity
 - Electric heating coil
 - Outside, room and return temperature
 - VRV alarm

MicroTech III can connect to intelligent Touch Manager.

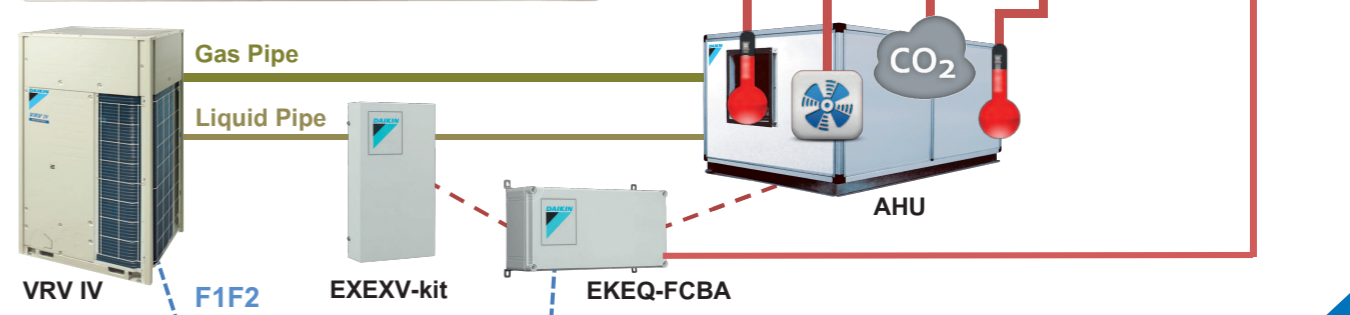
Monitor and control devices related to AHU such as Fan, sensors, and damper



Available object list

- BACnet BI/BO/BV
- BACnet AI/AO/AV

- On/Off
- Operation mode
- Setpoint
- Error monitoring
- CO2 ppm
- Discharged air temp
- Humidity
- Damper control etc...



Flexible customization of AHU

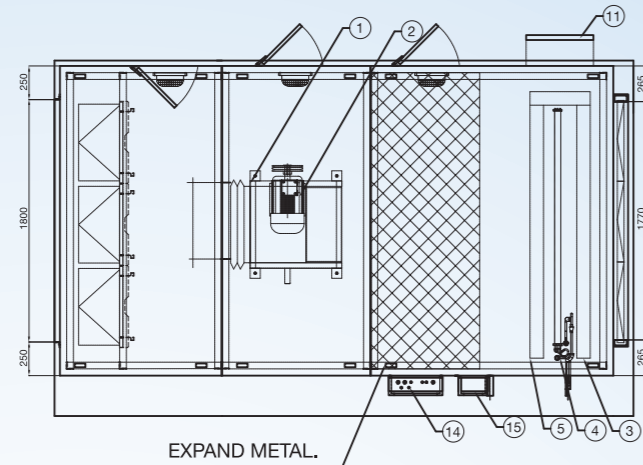
Daikin's AHU can be customized to meet your requirements

Case 1

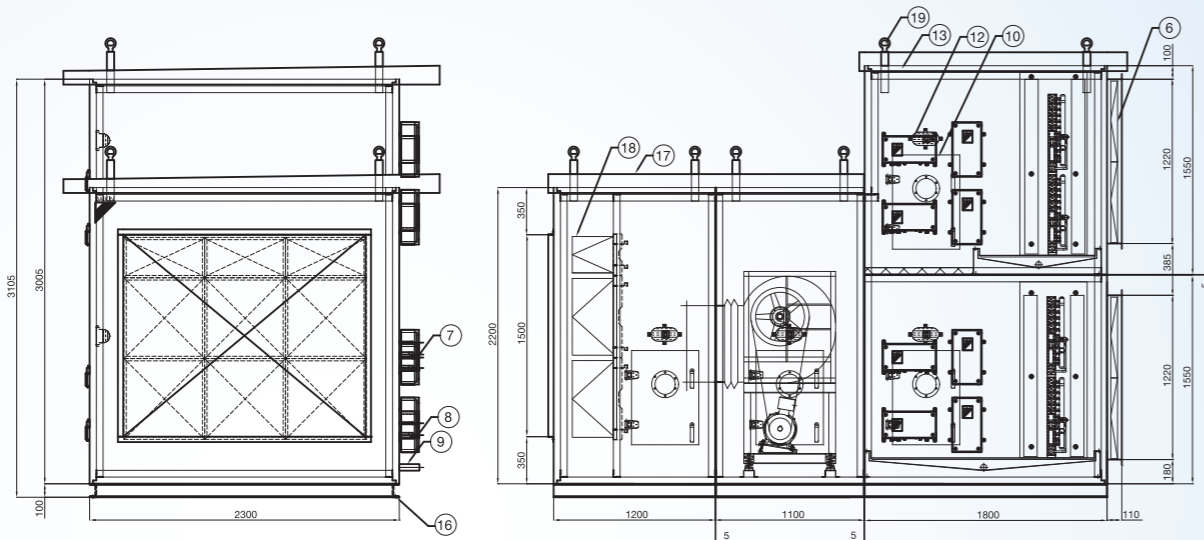
■ Specification

SA FLOW	14,000	CMH.	PRECOIL CAPACITY	23,960	Kcal/Hr.
BYPASS FLOW	-	CMH.	MAINCOIL CAPACITY	224,598	Kcal/Hr.
RA FLOW	14,000	CMH.	REHEATCOIL CAPACITY	23,960	Kcal/Hr.
OA FLOW	-	CMH.	ESP.	800	Pa
			TSP.	1,400	Pa

■ Drawing



Top View



Front View

Side View

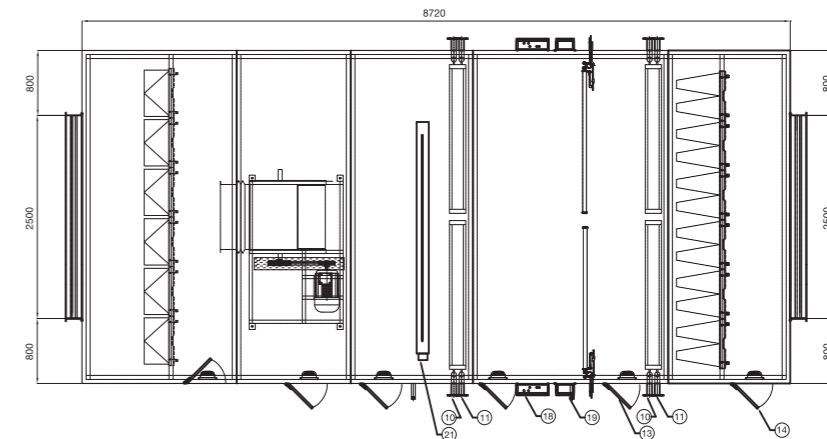
NO.	Parts name	NO.	Parts name	NO.	Parts name
1	FAN	8	SUCTION PIPE = 2 PCS. (REDUCER PIPE 1B = 2 PCS)	14	OUTDOOR AIR SERIES PCB (EKEQFCBA) = 4 PCS.
2	MOTOR	9	DRAIN PIPE = 1 PC.	15	EXPANSION VALVE (EKEXV500) = 4 PCS.
3	PRE COIL = 2 PCS.	10	ACCESS DOOR = 4 PCS.	16	ANCHOR HOLE Ø18-ALL
4	MAIN COIL = 4 PCS.	11	SERVICE PANEL = 2 PCS.	17	ROOF (SUS)
5	HEATING COIL = 2 PCS.	12	MARINE LAMP 11W+SWITCH = 4 PCS.	18	MED FILTER = 9 PCS.
6	PRE FILTER = 12 PCS.	13	SANWICH PANEL	19	EYE BOLTS B-1130-20 = 12 PCS.
7	LIQUID PIPE = 2 PCS.				

Case 2

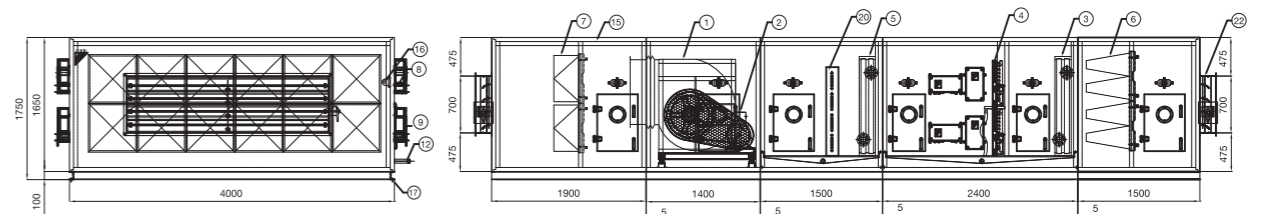
■ Specification

SA FLOW	31,794	CMH.	PRE COOLING CAPACITY	12,383	Kcal/hr.
BYPASS FLOW	-	CMH.	MAIN COOLING CAPACITY	190,318	Kcal/hr.
RA FLOW	31,794	CMH.	RE-HEAT CAPACITY	12,383	Kcal/hr.
OA FLOW	-	CMH.	ESP.	750	Pa
			TSP.	1,460	Pa

■ Drawing



Top View



Front View

Side View

NO.	Parts name	NO.	Parts name	NO.	Parts name
1	FAN BDB630TM	9	SUCTION PIPE 1-3/8B = 4 PCS. (REDUCER PIPE 1B = 4 PCS)	16	MARINE LAMP 11W+SWITCH = 2 PCS.
2	MOTOR22KW.4P (380/3PH/60HZ)	10	INLET PIPE (PRE,RE-HEAT) 2B = 4PCS.	17	ANCHOR HOLE ø18-ALL
3	PRE WC. 3/8"-2Rx13FPkx45STx1730=2PCS.	11	OUTLET PIPE (PRE,RE-HEAT) 2B = 4PCS.	18	STANDARD SERIES PCB (EKEQMCBA) = 4 PCS.
4	MAIN DC. 3/8"-4Rx14FPkx22STx1730=4PCS.	12	DRAIN PIPE 2 B = 2 PCS.	19	EXPANSION VALVE (EKEXV500) = 4 PCS.
5	RH WC. 3/8"-2Rx13FPkx45STx1730=2PCS.	13	ACCESS DOOR 400X700MM = 2 PCS.	20	E/H 3PH/380V/50HZ/30KW
6	BAG FILTER 24"X24"X21" = 12 PCS.	14	ACCESS DOOR 500X700MM = 4 PCS.	21	TERMINAL BOX
7	MED FILTER 24"X24"X12" = 12 PCS.	15	SANWICH PANEL 50 MM.	22	VOLUME DAMPER
8	LIQUID PIPE 5/8B = 4 PCS.				

*Please contact to Daikin sales office for more information