



## DDW-D Modular Air Handling Unit

### Horizontal unit

Model: DDW020D ~ DDW450D

Airflow rate: 1000m<sup>3</sup>/h ~ 45000m<sup>3</sup>/h

### Vertical unit

Model: DDW020D ~ DDW360D

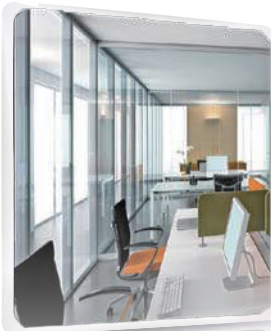
Airflow rate: 1000m<sup>3</sup>/h ~ 36000m<sup>3</sup>/h



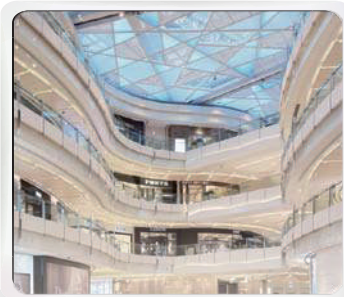


## Overview

Daikin new DDW-D series of modular air handling unit are developed with more advanced technology and production technique on the basis of advantages of previous generation of air handling units. Featuring compact in structure and flexible for assembly, the units can be widely used in commercial and industrial central air conditioning system. Through such processing as air cooling, dewetting and drying, heating and humidifying, and double filtration, the series of units can provide comfortable and clean air-conditioning environment for shopping malls, office buildings, stations, hospitals, and electronics factories.



Commercial office building



Shopping mall



Hospital

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## DDW-D Modular Air Handling Unit

DDW-D Modular air handling units are available for customers with various combinations of horizontal or vertical units. The airflow rate for horizontal units is in the range of 1000~45000m<sup>3</sup>/h, the airflow rate for vertical units is in the range of 1000~36000m<sup>3</sup>/h which can meet the requirements of a variety of designed pressure. The air discharge modes include top air discharge and horizontal air discharge which can make full use of the room space.





## Unit features

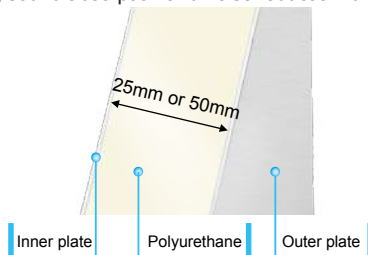
### Superior performance of cabinet

#### ▶ The latest patent structural design (patent No.: 201320410231.0)

- The cabinet is made of panels through aluminum alloy profile embedded mortise and tenon joint, fixed with high strength bolts from outside for the convenience of assembly and disassembly. The unit features stable performance in all kinds of extreme environment.

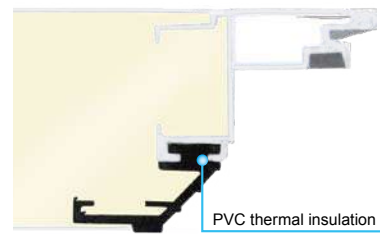
#### ▶ Excellent thermal insulation

- The panel adopts double-layer metal wall structure; the outer layer adopts attractive and durable anti-rust, anti-corrosion color coated sheet; the inner layer adopts aluminum-coated zinc plate; the middle layer is filled in high density environment-friendly polyurethane foaming material which is with good insulation properties, sound absorption and noise reduction functions.



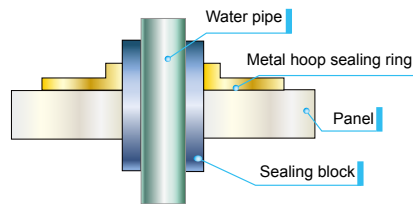
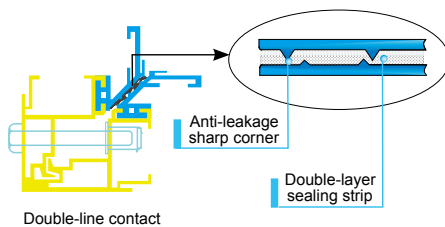
#### ▶ Superior performance of anti-cold bridge

- Special panel structure design of no metal pieces connecting directly inside or outside of unit ensures absolutely no cold bridge.
- Insulation material is pasted between panel and external components such as damper and flange, the unit won't dew in high humidity environment.



#### ▶ Good anti-leakage performance

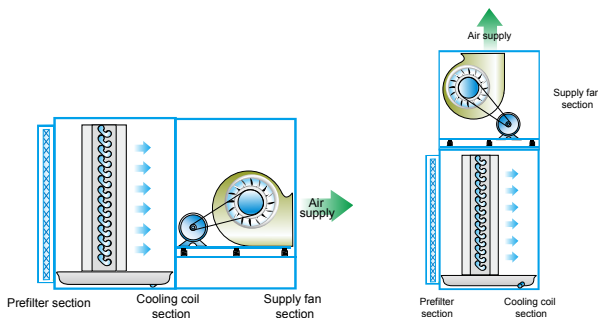
- The design of double-line convex angle anti-leakage is adopted between panels for solid and permanent airtightness;
- The crush- and wear-resistant sealing rings are filled for the joints between cabinet and exposed parts for stable mechanical fixation to reduce the unit leakage effectively;
- The cabinet is equipped with a hinged door to make it tight and look smooth and elegant.



### Variety combination type available for various air handling requirements

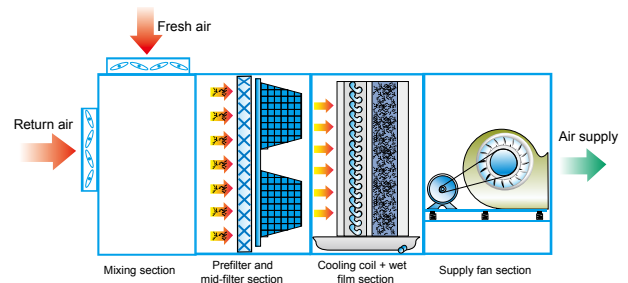
#### ▶ General comfortable places

- The air handling unit with prefilter section, cooling coil section and supply fan section can meet general comfortable places such as the office buildings and shopping malls. For places with higher temperature and humidity requirements of indoor environment, the heating coil or wet film humidifier can be equipped additionally. In order to better meet the requirements of installation space for the indoor unit, the units are available in vertical and horizontal options.



#### ▶ Purified comfortable places

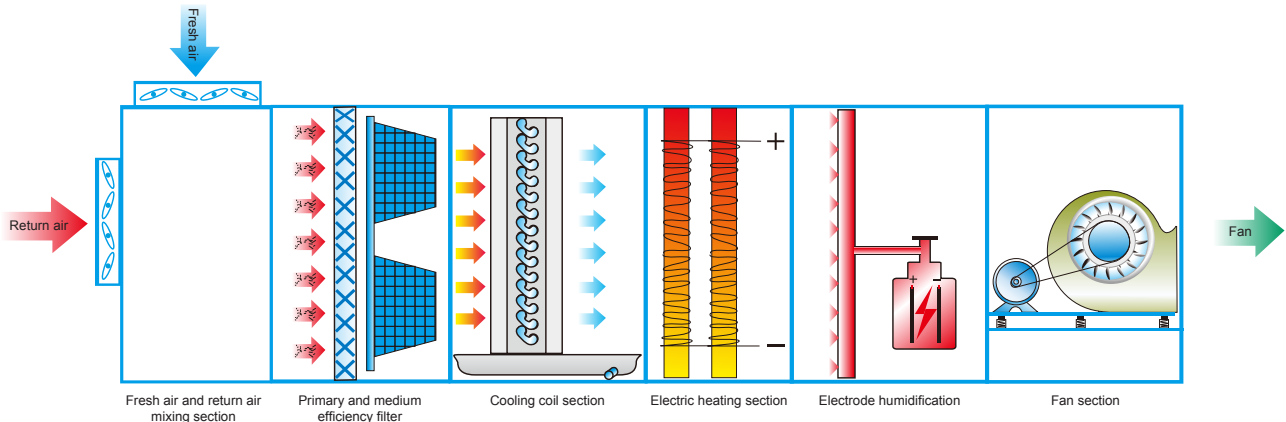
- The air handling unit with prefilter, mid-filter, cooling coil, heating coil, wet film and supply fan section can implement double air purifying treatment for higher cleanliness, to meet higher requirement of air cleanliness for the places such as high-end commercial office building, hospital, and scientific research institutions.





### Constant temperature and humidity places

- They should be equipped with primary efficiency filters, cooling coil for dehumidification, and electric heating of stepless regulation to ensure accurate control for humidity levels; and also equipped with fan, medium efficiency filter, differential pressure gauge, and quality intelligent editable controller.



### Variety of ETP and optional components

- A variety of standard ETP options and a variety of optional components are available, for example, prefilter and mid-filter, the cooling and heating coil, the wet film humidifier, the pointer differential pressure gauge, damper, the inspection light, etc. All are for your convenient, fast, and flexible selection.

### Professional software for DDW-D unit selection

- The professional software for air handling unit selection
- Various available configurations for unit selection according to customer requirements
- Automatic output of unit performance parameters, CAD outline drawings and quotations

### Function sections combination of different units

Function section	Configuration of general standard unit			Configuration of multifunctional unit												
	Prefilter section	Cooling coil section	Supply fan section	Mixing section	Prefilter	Mid-filter section		Cooling coil section	Heating section		Wetfilm humidifying section (direct drainage)			Supply fan section	Others	
						F5~F9	Electrostatic filter		Heating coil (row)	Electric heater (group)	Electrode humidifier	Steam humidifier (MPa)	Wet film humidifier (mm)		Access section	Empty section
Parts	Nylon filter	4 or 6 rows	Supply fan	Flange/Damper	Nylon/Aluminum/G3/G4			2~6 Rows	1~4 Rows	1~6	Proportional control	0.1~0.4	50, 100	Supply fan	Access section	Empty section

Notes: The ETP, overall dimensions, and weight of unit are variable according to selection of different function sections. For details, please refer to the selection software.

### General nomenclature for standard units

DDW 450 D E C D L A A - 0 A F

- A: 25mm panel horizontal fresh air
  - B: 25mm panel horizontal return air
  - C: 25mm panel vertical fresh air
  - D: 25mm panel vertical return air
  - E: 50mm panel horizontal fresh air
  - F: 50mm panel horizontal return air
- Coil rows: C (4 rows), E (6 rows)
- ETP: D (150), G (225), K (300), M (400), P (500)

- A: No mixing section + flange horizontal air discharge
- B: No mixing section + flange top air discharge
- Notes: The vertical unit with top air discharge is the standard unit
- L: Connected from left
- R: Connected from right



## Introduction to function section

### ► Mixing box section

- The regulated return air is fully mixed with fresh air in a certain percentage to avoid air flow stratification and ensure heat exchange and anti-condensation performance for the whole unit.
- The direction and size of air inlet can be designed according to customer requirements. Its standard configuration is flange, and its options includes the manual/electric damper and the damper actuator.

The access door is provided for the mixing section.



Damper

### ► Filter section

- The filter comes standard with a nylon filter, with other options like primary, medium and electronic purification filters available.

- With advanced purification technology, Daikin electrostatic filter have a high purification efficiency of 95% and ozone generation of 1/30 of the national standard.
  - Adopts the latest driving technology with the unique “edge-driven system” as the core;
  - Adopts bipolar and dual voltage and automatic voltage supplement technology to obtain high and constant purification efficiency without being affected by the changes of ambient temperature and humidity;
  - Adopts the technology of constant current and voltage limiting & constant voltage and current limiting to control arc ignition without ozone;
  - Adopts secondary ozone degradation technology to further reduce ozone generation;
  - Equipped with a flow sensor to link with the fan;
  - Equipped with safety lock to ensure safety during maintenance;
  - The core ion adsorption area adopts aviation grade aluminum alloy profile, which is corrosion resistant and durable.



### ► Cooling coil section

- This section aims to the air cooling and dehumidifying. The cooling coil is made up of high quality copper tubes and efficient aluminum fin through mechanical expansion, and finished with pressure test upon requirements of national standard before Exfactory to ensure no leakage.
- A water baffle can be used for the cooling coil to further prevent "spray water" phenomenon from the cooling coil.

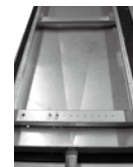


Cooling coil



Aluminum foil

- The corrugated aluminum fin increases the area of heat exchange, optimizes the effect of heat exchange, and is helpful to the flowing of condensed water flow, preventing the formation of water droplets on the fin surface.
- 9~14 fins per inch are optional.



Drain pan

- High quality coated, galvanized steel plate
- Thermal insulation cotton pasted on the outside of drain pan to prevent the second condensation
- V double-tilt design to ensure smooth drainage
- Drainage pipe diameter is designed precisely by condensate water volume
- Option: Stainless steel drain pan

- High quality copper tube is in cross reverseflow layout to enhance the air turbulence and improve heat exchange effect.



Cross reverse-flow layout



Header of cooling coil

- Seamless steel pipe is used as header of cooling coil.
- The header is configured with drainage valve and air vent, and sealing ring is equipped for thermal insulation to eliminate cold bridge and reduce air leakage. Maintenance is convenient.

### ► Heating section

Mainly used to increase the airflow temperature by heating the air.  
Optional: heating coil and electric heater

#### Electric heater

It uses electric energy to heat air and adjusts the heating capacity by groups or by stepless regulation. It is applicable to small-sized and medium-sized places with constant temperature and humidity such as hospital operating room, pharmacy and electronic workshop.

- The electric heater section provides over high temperature protector and no-air power-off protector to eradicate the potential safety hazard arising from superheat of the heater.



Electric heater section



Heat protector



## Introduction to function section

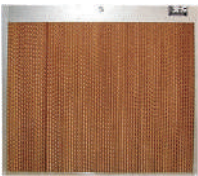
### ► Humidifying section

Humidify the air to ensure the relative humidity of air.

- Access door and water drain pan are available. Working medium inlet is sealed to prevent cold bridge and leakage. Sufficient distance is reserved based on actual conditions to ensure safe operation.
- Various humidification methods including wet film humidification, dry steam humidification, and electrode humidification are available.
- Proportional integral control is adopted in places requiring constant temperature and constant humidity.

#### Wet film humidifier

- The moisture and heat exchange occurs when the air passes through the absorbent medium, thereby increasing the humidity in air;
- The humidification distance is only as thick as the wet film and is compact and effective.



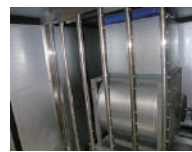
Wet film humidifier

Application:

- For humidification of civil buildings and industrial cooling; it's not used in constant temperature and humidity places due to the low humidification precision.

#### Dry steam humidifier

- Filtered clean steam is sprayed out from the spray hole equipped with metal muffler filter to increase the humidity of air;
- Made from stainless steel, features anti-corrosion, compact size and ease-of-maintenance.



Dry steam humidifier

Application:

- For constant temperature and humidity places or general civil places;
- Multi-spray boom or fast suction dry steam humidifier is recommended for places that require a large amount of humidity;
- For medical and health, industrial plants, civil buildings and other places.

#### Electrode humidifier

- The main engine of humidifier uses electrode to convert electric energy to thermal energy. The water gets heated to generate steam, which is then transmitted to the air conditioning cabinet.



Electrode humidifier

Application:

- High control precision;
- It is suitable for constant temperature and humidity places such as medical, electronic and industrial plants.

### ► Supply fan section

- The supply fan section aims to provide power for the airflow circulation of entire system. It comprises the fan, motor, belt transmission mechanism, base, and shock absorber.
- The fan is certified by the Air Movement and Control Association (AMCA), and selected by professional software to ensure each unit operating in safe and efficient condition.
- The totally enclosed squirrel cage 3-phase asynchronous motor with protection level IP55 and insulation level F is adopted for the section, which can be used in harsh application environment.
- Optional components: inspection light, transformer, start-up cabinet.



- The fan motor is installed on the common base, and the vibration absorbers are installed between the base and the unit to isolate vibration effectively.



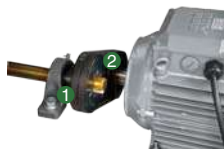
- The impeller is with high stability and low noise through strictly dynamic and static balance correction.



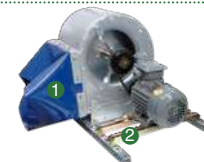
- Single speed or variable frequency motors are available.



- The world renowned brand of bearings are adopted in high assembly accuracy to ensure the unit in long period of continuous operation.



- 1 World famous brand of narrow V-belt is used.
- 2 The belt pulley is in conical sleeve structure for the convenience of rapid assembly and maintenance.



- 1 Flexible connection is used for the outlet of supply fan for effective isolation of vibration.
- 2 Motor maintenance is convenient, and slider is adopted for adjusting motor to the optimal location.



# Parameter table of DDW-D horizontal AHU

Unit model		DDW 020D	DDW 030D	DDW 040D	DDW 050D	DDW 060D	DDW 070D	DDW 080D	DDW 100D	DDW 120D	DDW 150D	DDW 180D	DDW 200D	DDW 220D	DDW 250D	DDW 270D	DDW 300D	DDW 330D	DDW 360D	DDW 400D	DDW 450D	
Nominal airflow rate (m³/h)		2000	3000	4000	5000	6000	7000	8000	10000	12000	15000	18000	20000	22000	25000	27000	30000	33000	36000	40000	45000	
ETP(Pa)	I	150	150	150	150	150	150	225	225	225	300	300	300	300	400	400	400	400	400	400	400	400
	II	225	225	225	225	225	225	300	300	300	400	400	400	400	500	500	500	500	500	500	500	500
	III	300	300	300	300	300	300	400	400	400	400	500	500	500	500	-	-	-	-	-	-	-
Cooling coil	Nominal cooling capacity (kW)	4-row (return air condition)	11.6	18.1	23.4	29.2	34.8	44.0	49.0	60.7	71.8	92.9	106.6	121.5	137.1	155.2	165.1	189.7	207.8	226.8	237.7	265.5
		4-row (fresh air condition)	28.0	40.4	52.3	70.8	85.4	90.0	106.0	136.6	164.0	208.3	245.0	269.6	299.7	341.8	361.5	419.8	460.5	488.8	519.2	576.2
		6-row (return air condition)	15.6	21.7	30.0	39.8	45.1	53.4	60.6	78.0	93.6	115.7	140.5	159.6	177.4	203.8	207.5	236.4	259.8	280.1	296.3	329.5
		6-row (fresh air condition)	34.5	53.6	65.6	87.8	104.6	120.9	136.5	169.9	201.6	257.6	309.2	345.3	383.8	438.5	463.3	520.6	566.3	607.6	631.4	702.5
	Nominal heating capacity (kW)	4-row (return air conditico)	21.7	33.9	42.6	56.6	66.0	80.2	94.2	123.3	147.9	188.8	221.9	246.6	274.1	308.1	332.8	377.9	411.2	443.8	498.4	554.7
		4-row (fresh air condition)	26.1	39.2	50.1	68.8	80.6	91.8	106.1	145.2	174.2	222.6	267.0	296.6	329.7	368.8	383.6	435.5	473.9	517.1	580.7	646.4
		6-row (return air condition)	25.0	38.5	48.9	66.5	76.4	90.4	106.2	145.2	173.4	218.7	262.4	291.6	322.1	362.8	386.5	437.4	476.8	517.9	580.5	650.2
		6-row (fresh air condition)	29.8	46.3	56.7	77.8	92.2	113.7	131.1	168.7	202.4	257.5	309.1	343.4	379.6	429.3	463.7	522.2	569.3	618.2	693.2	772.8
	Nominal cooling water flow (l/s)	4-row (return air conditbn)	0.55	0.86	1.11	1.39	1.66	2.09	2.33	2.89	3.42	4.42	5.07	5.78	6.53	7.39	7.86	9.03	9.90	10.80	11.32	12.64
		4-row (fresh air condition)	1.33	1.92	2.49	3.37	4.06	4.29	5.05	6.51	7.81	9.92	11.67	12.84	14.27	16.28	17.21	19.99	21.93	23.28	24.72	27.44
		6-row (return air condition)	0.74	1.03	1.43	1.89	2.15	2.54	2.89	3.71	4.46	5.51	6.69	7.60	8.45	9.70	9.88	11.26	12.37	13.34	14.11	15.69
		6-row (fresh air condition)	1.64	2.55	3.12	4.18	4.98	5.76	6.50	8.09	9.60	12.27	14.72	16.44	18.28	20.88	22.06	24.79	26.97	28.99	30.07	33.45
Nominal heating water flow (l/s)	4-row (return air condition)	0.52	0.81	1.01	1.35	1.57	1.91	2.24	2.94	3.52	4.50	5.28	5.87	6.53	7.34	7.92	9.00	9.79	10.57	11.87	13.21	
	4-row (fresh air condition)	0.62	0.93	1.19	1.64	1.92	2.19	2.53	3.46	4.15	5.30	6.36	7.06	7.85	8.78	9.13	10.37	11.28	12.31	13.83	15.39	
	6-row (return air condition)	0.60	0.92	1.16	1.58	1.82	2.15	2.53	3.46	4.13	5.21	6.25	6.94	7.67	8.64	9.20	10.41	11.35	12.33	13.82	15.48	
	6-row (fresh air condition)	0.71	1.10	1.35	1.85	2.20	2.71	3.12	4.02	4.82	6.13	7.36	8.18	9.04	10.22	11.04	12.43	13.55	14.72	16.50	18.40	
Nominal cooling water WPD (kPa)	4-row (return air condition)	18.9	42.5	39.7	13.4	12.7	19.3	29.0	42.7	36.3	50.2	21.7	28.6	32.7	30.9	35.6	46.9	50.1	54.3	61.5	66.3	
	4-row (fresh air condition)	44.4	35.4	29.9	58.1	63.4	15.6	22.8	57.9	52.4	61.8	67.4	71.7	75.3	70.2	37.7	48.9	55.6	60.9	75.6	87.7	
	6-row (return air condition)	49.9	14.0	30.8	52.6	27.8	39.7	54.8	59.2	62.0	35.9	49.1	64.6	71.8	70.6	29.0	37.6	40.8	43.8	51.6	56.9	
	6-row (fresh air condition)	30.2	67.0	24.6	34.3	50.2	61.4	82.8	39.0	37.1	52.1	68.2	72.5	76.2	79.4	81.7	90.5	92.3	94.3	103.5	109.3	
Type	Copper pipe embedded with new corrugated aluminum fin																					
FPI	12																					
Working pressure (MPa)	1.6																					
Water pipe diameter	4-row return air	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R3	R3	
	4-row fresh air	R1-1/2	R1-1/2	R2	R2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R3	R3	R3	R3	R3	R3	R3	R3
	6-row return air	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R3	R3	R3	R3	R3	R3
	6-row fresh air	R1-1/2	R2	R2	R2	R2	R2	R2	R2-1/2	R2-1/2	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3
Drainage pipe diameter	R1-1/4																					
Fan	Model/ Material	High efficiency centrifugal forward multi-blade fan/galvanized steel plate																				
	Drive mode	V-belt drive																				
	Air discharge direction	Horizontal air discharge or Top air discharge																				
Motor	Power supply	380V/3N-50HZ																				
	Type	3-phase asynchronous motor with insulation level F and protection level IP55																				
	Rated power (kW)	0.55	0.55 (0.75)	0.75	1.1	1.1 (1.5)	1.5	2.2	2.2	3	4	5.5	5.5	5.5	7.5	11	11	11	15	15	15	15 (18.5)
Filter	Type	Nylon filter																				
	Thickness (mm)	8															21					
	Cabinet	Double layer panel with thickness of 25mm/50mm, outer plate as color plate and inner plate as aluminum zinc plate, filled with thermal insulation polyurethane high-pressure foaming material																				
Dimension of 25mm panel cabinet (mm)*	Length (mm)	953	953	953	1078	1078	1128	1128	1253	1278	1153	1278	1278	1278	1278	1328	1528	1528	1603	1603	1603	
	Width (mm)	900	1050	1080	1250	1320	1500	1680	1690	1690	1920	2100	2280	2400	2400	2470	2760	2760	2760	2920	2920	2920
	Height (mm)	520	520	680	680	730	750	750	880	990	1120	1180	1180	1250	1370	1440	1500	1560	1560	1690	1820	1820
Dimension of 50mm panel cabinet (mm)*	Length (mm)	1005	1005	1005	1130	1130	1180	1180	1305	1330	1205	1330	1330	1330	1330	1330	1380	1580	1580	1655	1655	
	Width (mm)	950	1100	1130	1300	1370	1550	1730	1740	1740	1970	2150	2330	2450	2450	2520	2810	2810	2810	2970	2970	
	Height (mm)	570	570	730	730	780	800	800	930	1040	1170	1230	1230	1300	1420	1420	1490	1550	1610	1740	1870	1870
Unit weight of 25mm panel (kg)	4-row	124	136	158	184	195	215	245	299	327	389	465	484	522	592	606	687	774	791	882	944	
	6-row	129	142	166	193	206	236	256	317	356	420	500	522	610	636	648	736	825	845	945	1012	
Unit weight of 50mm panel (kg)	4-row	138	151	173	202	214	235	266	320	359	414	502	523	642	657	687	834	851	947	1011	1011	
	6-row	143	157	181	211	225	256	277	338	388	445	537	561	651	686	699	736	886	905	1010	1079	

Notes: ■ The parameters for standard units are listed above. For special requirements, we will provide special design.  
 ■ Nominal return air cooling condition: 27°C (dry bulb)/19.5°C (wet bulb); Nominal fresh air cooling condition: 35°C (dry bulb) /28°C (wet bulb); Nominal cooling entering and leaving water temperature: EWT 7°C, LWT 12°C;  
 ■ Nominal return air heating condition: 15°C (dry bulb); Nominal fresh air heating condition: 7°C (dry bulb); Nominal heating entering and leaving water temperature: EWT 60°C, LWT 50°C;  
 ■ The unit weight in the table is the net weight of unit, while the weight in operation will increase by about 20%.  
 ■ The values in the brackets ( ) in the table are the water pipe diameters and motor powers of unit with 6-row cooling coil.  
 ■ The cabinet size does not include the protruding parts (header, air outlet, and suspender).



# Parameter table of DDW-D vertical AHU

Unit model		DDW 020D	DDW 030D	DDW 040D	DDW 050D	DDW 060D	DDW 070D	DDW 080D	DDW 100D	DDW 120D	DDW 150D	DDW 180D	DDW 200D	DDW 220D	DDW 250D	DDW 270D	DDW 300D	DDW 330D	DDW 360D	
Nominal airflow rate (m <sup>3</sup> /h)		2000	3000	4000	5000	6000	7000	8000	10000	12000	15000	18000	20000	22000	25000	27000	30000	33000	36000	
ETP (Pa)	I	150	150	150	150	150	150	225	225	225	225	300	300	300	300	400	400	400	400	
	II	225	225	225	225	225	225	300	300	300	300	400	400	400	400	500	500	500	500	
	III	300	300	300	300	300	300	400	400	400	400	500	500	500	500	-	-	-	-	
Cooling coil	Nominal cooling capacity (kW)	4-row (return air condition)	11.6	18.1	23.4	29.2	34.8	44.0	49.0	60.7	71.8	92.9	106.6	121.5	137.1	155.2	165.1	189.7	207.8	226.8
		4-row (fresh air condition)	28.0	40.4	52.3	70.8	85.4	90.0	106.0	136.6	164.0	208.3	245.0	269.6	299.7	341.8	361.5	419.8	460.5	488.8
		6-row (return air condition)	15.6	21.7	30.0	39.8	45.1	53.4	60.6	78.0	93.6	115.7	140.5	159.6	177.4	203.8	207.5	236.4	259.8	280.1
		6-row (fresh air condition)	34.5	53.6	65.6	87.8	104.6	120.9	136.5	169.9	201.6	257.6	309.2	345.3	383.8	438.5	463.3	520.6	566.3	607.6
	Nominal heating capacity (kW)	4-row (return air condition)	21.7	33.9	42.6	56.6	66.0	80.2	94.2	123.3	147.9	188.8	221.9	246.6	274.1	308.1	332.8	377.9	411.2	443.8
		4-row (fresh air condition)	26.1	39.2	50.1	68.8	80.6	91.8	106.1	145.2	174.2	222.6	267.0	296.6	329.7	368.8	383.6	435.5	473.9	517.1
		6-row (return air condition)	25.0	38.5	48.9	66.5	76.4	90.4	106.2	145.2	173.4	218.7	262.4	291.6	322.1	362.8	386.5	437.4	476.8	517.9
		6-row (fresh air condition)	29.8	46.3	56.7	77.8	92.2	113.7	131.1	168.7	202.4	257.5	309.1	343.4	379.6	429.3	463.7	522.2	569.3	618.2
	Nominal cooling water flow (l/s)	4-row (return air condition)	0.55	0.86	1.11	1.39	1.66	2.09	2.33	2.89	3.42	4.42	5.07	5.78	6.53	7.39	7.86	9.03	9.90	10.80
		4-row (fresh air condition)	1.33	1.92	2.49	3.37	4.06	4.29	5.05	6.51	7.81	9.92	11.67	12.84	14.27	16.28	17.21	19.99	21.93	23.28
		6-row (return air condition)	0.74	1.03	1.43	1.89	2.15	2.54	2.89	3.71	4.46	5.51	6.69	7.60	8.45	9.70	9.88	11.26	12.37	13.34
		6-row (fresh air condition)	1.64	2.55	3.12	4.18	4.98	5.76	6.50	8.09	9.60	12.27	14.72	16.44	18.28	20.88	22.06	24.79	26.97	28.93
	Nominal heating water flow (l/s)	4-row (return air condition)	0.52	0.81	1.01	1.35	1.57	1.91	2.24	2.94	3.52	4.50	5.28	5.87	6.53	7.34	7.92	9.00	9.79	10.57
		4-row (fresh air condition)	0.62	0.93	1.19	1.64	1.92	2.19	2.53	3.46	4.15	5.30	6.36	7.06	7.85	8.78	9.13	10.37	11.28	12.31
		6-row (return air condition)	0.60	0.92	1.16	1.58	1.82	2.15	2.53	3.46	4.13	5.21	6.25	6.94	7.67	8.64	9.20	10.41	11.35	12.33
		6-row (fresh air condition)	0.71	1.10	1.35	1.85	2.20	2.71	3.12	4.02	4.82	6.13	7.36	8.18	9.04	10.22	11.04	12.43	13.55	14.72
	Nominal cooling water WPD (kPa)	4-row (return air condition)	18.9	42.5	39.7	13.4	12.7	19.3	29.0	42.7	36.3	50.2	21.7	28.6	32.7	30.9	35.6	46.9	50.1	54.3
		4-row (fresh air condition)	44.4	35.4	29.9	58.1	63.4	15.6	22.8	57.9	52.4	61.8	67.4	71.7	75.3	70.2	37.7	48.9	55.6	60.9
		6-row (return air condition)	49.9	14.0	30.8	52.6	27.8	39.7	54.8	59.2	62.0	35.9	49.1	64.6	71.8	70.6	29.0	37.6	40.8	43.8
		6-row (fresh air condition)	30.2	67.0	24.6	34.3	50.2	61.4	82.8	39.0	37.1	52.1	68.2	72.5	76.2	79.4	81.7	90.5	92.3	94.3
	Type	Copper pipe embedded with new corrugated aluminum fin																		
	FPI	12																		
	Working pressure (MPa)	1.6																		
	Water pipe diameter	4-row return air	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R1-1/2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2
4-row fresh air		R1-1/2	R1-1/2	R2	R2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R3	R3	R3	R3	R3	
6-row return air		R1-1/2	R1-1/2	R1-1/2	R1-1/2	R2	R2	R2	R2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R2-1/2	R3	R3	R3	R3
6-row fresh air		R1-1/2	R2	R2	R2	R2	R2	R2	R2	R2-1/2	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3
Drainage pipe diameter	R1-1/4																			
Fan	Model/ Material	High efficiency centrifugal forward multi-blade fan/galvanized steel plate																		
	Drive mode	V-belt drive																		
	Air discharge direction	Top air discharge																		
Motor	Power supply	380V/3N~/50Hz																		
	Type	3-phase asynchronous motor with insulation level F and protection level IP55																		
	Power (kW)	0.55 (0.75)	0.75	1.1	1.1 (1.5)	1.5	2.2	2.2	3	4	5.5	5.5	5.5	7.5	11	11	11	15	15	15
Filter	Type	Nylon filter																		
	Thickness (mm)	8														21				
Cabinet	Type	Double layer panel with thickness of 25mm, outer plate as color plate and inner plate as aluminum zinc plate, filled with thermal insulation polyurethane high-pressure foaming material.																		
	Length (mm)	650	650	650	650	650	750	750	900	900	900	900	900	900	900	900	900	1100	1100	
	Width (mm)	900	1050	1080	1250	1320	1500	1680	1690	1690	1920	2100	2280	2400	2400	2470	2760	2760	2760	2760
Unit weight of 25mm panel (kg)	4-row	136	148	172	196	208	242	265	330	374	440	503	534	574	643	657	746	834	852	
	6-row	141	154	180	205	219	263	276	348	403	471	538	572	662	687	699	795	885	906	

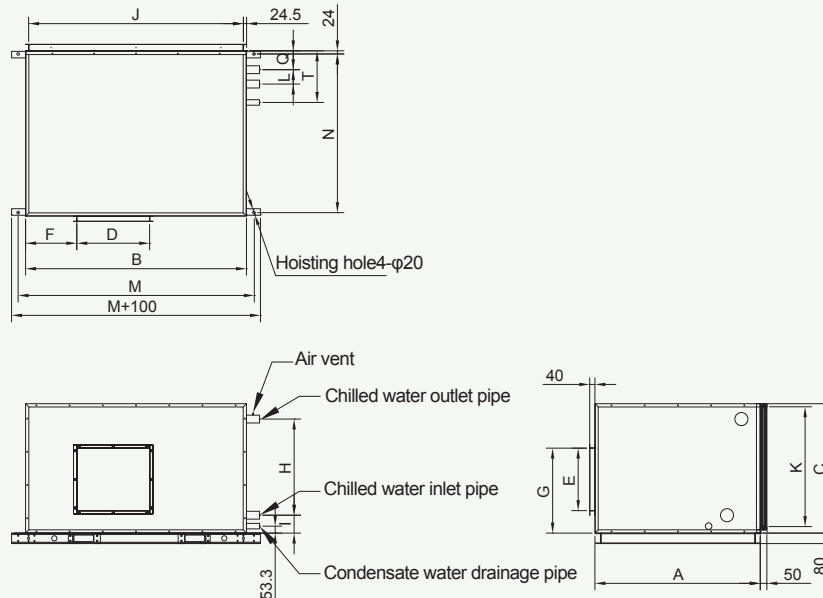
- Notes:
- The parameters for standard units are listed above. For special requirements, we will provide special design.
  - Nominal return air cooling condition: 27°C (dry bulb)/19.5°C (wet bulb); Nominal fresh air cooling condition: 35°C (dry bulb)/28°C (wet bulb); Nominal cooling entering and leaving water temperature: EWT 7°C, LWT 12°C;
  - Nominal return air heating condition: 15°C (dry bulb); Nominal fresh air heating condition: 7°C (dry bulb); Nominal heating entering and leaving water temperature: EWT 60°C, LWT 50°C;
  - The unit weight in the table is the net weight of unit, while the weight in operation will increase by about 20%.
  - The values in the brackets ( ) in the table are the water pipe diameters and motor powers of unit with 6-row cooling coil.
  - The cabinet size does not include the protruding parts (header, air outlet, and suspender).



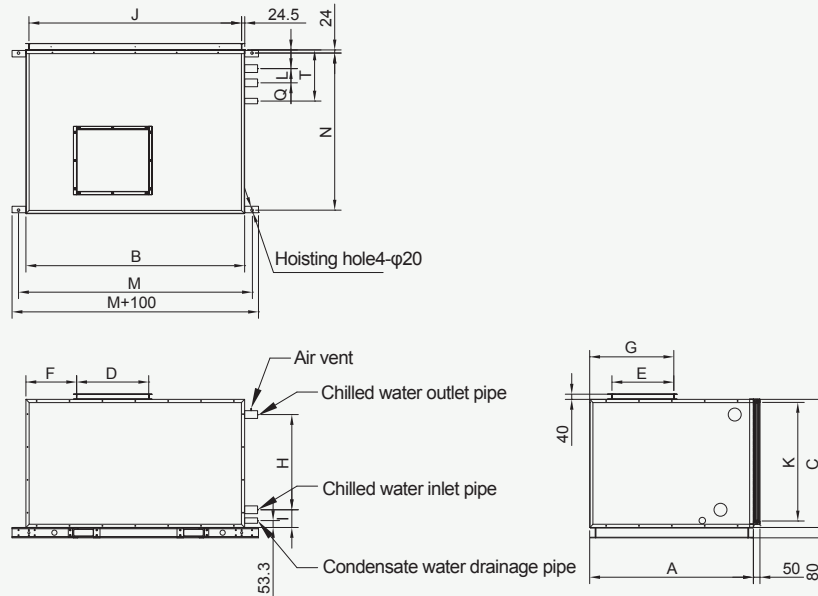


## Dimension of DDW-D horizontal unit (25mm panel)

Horizontal air discharge



Top air discharge



Unit: mm

Unit size	Length	Width	Height	Supply air outlet dimensions					Sizes of connection pipes												Return air inlet dimensions			Lifting hole dimensions			
				D	E	F	G (Horizontal air-out)	G (Top air-out)	H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q(4R) return air	Q(4R) fresh air	Q(6R)	L(4R) return air	L(4R) fresh air	L(6R)	T	J	K	M	N
DDW020D	953	900	520	232	262	178	362	430	294	294	294	294	123	123	123	123	135	135	141	66	66	110	355	853	445	1014	902
DDW030D	953	1050	520	298	262	218	362	430	294	294	294	294	123	123	123	123	135	135	141	66	66	110	355	1003	445	1164	902
DDW040D	953	1080	680	331	289	208	422	504	446	434	446	434	123	129	123	129	135	135	141	66	66	110	355	1033	605	1194	902
DDW050D	1078	1250	680	309	341	293	441	582	446	434	446	434	123	129	123	129	135	135	141	66	66	110	405	1203	605	1364	1027
DDW060D	1078	1320	730	395	341	288	474	574	497	485	485	485	123	129	129	129	135	135	141	66	66	110	405	1273	655	1434	1027
DDW070D	1128	1500	750	373	404	363	504	678	497	485	485	485	123	129	129	129	135	135	141	66	66	110	405	1453	675	1614	1077
DDW080D	1128	1680	750	373	404	543	504	678	485	485	485	485	129	129	129	129	135	135	141	66	66	110	405	1633	675	1794	1077
DDW100D	1253	1690	880	430	478	445	578	810	625	609	625	609	129	137	129	137	141	154	141	83	110	138	405	1643	805	1804	1202
DDW120D	1278	1690	990	557	478	392	650	806.5	752	736	736	736	129	137	137	137	141	154	141	83	110	138	405	1643	915	1804	1227

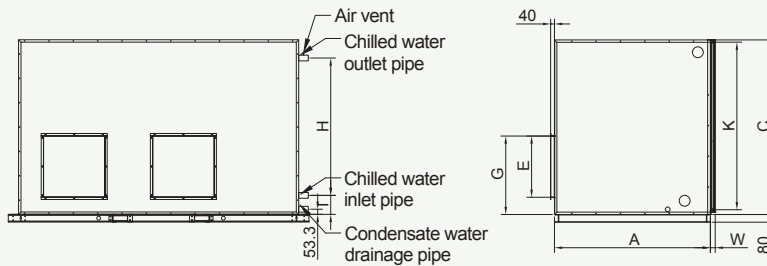
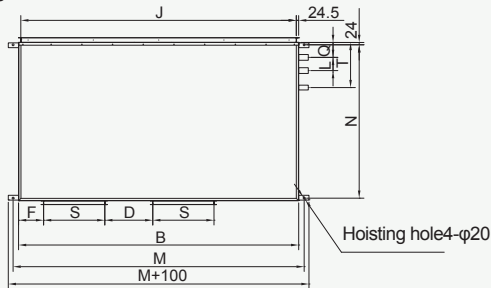
Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and suspender) as shown in the figure above.

■ 4R represents 4 rows and 6R represents 6 rows.

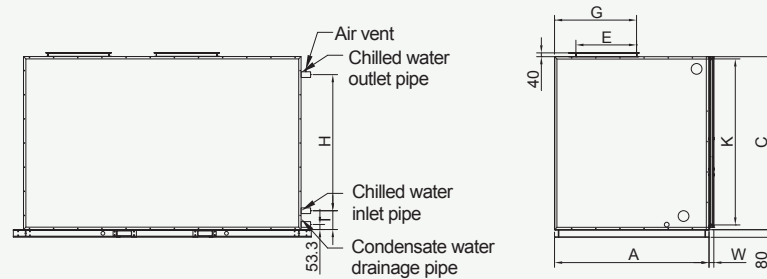
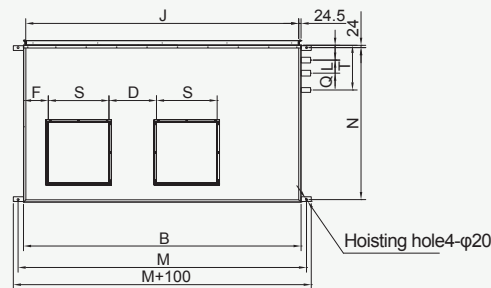


## Dimension of DDW-D horizontal unit (25mm panel)

Horizontal air discharge



Top air discharge



Unit: mm

Unit size	Length	Width	Height	Supply air outlet dimensions					Sizes of connection pipes												Return air inlet dimensions				Lifting hole dimensions			
				A	B	C	D	S	E	F	G (Horizontal air-out)	G (Top air-out)	H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q(4R)	Q(6R)	L(4R)	L(6R)	T	J	K	W
DDW150D	1153	1920	1120	294	373	404	203	572	674.5	863	863	863	863	850	137	137	137	143	154	141	110	138	405	1873	1045	50	2034	1102
DDW180D	1278	2100	1180	343	430	478	173	650	806.5	926	926	926	913	137	137	137	143	154	141	110	138	405	2053	1105	50	-	-	
DDW200D	1278	2280	1180	343	430	478	253	650	806.5	926	926	926	913	137	137	137	143	154	141	110	138	405	2233	1105	50	-	-	
DDW220D	1278	2400	1250	458	557	478	114	650	806.5	990	990	990	977	137	137	137	143	154	141	110	138	405	2353	1175	50	-	-	
DDW250D	1278	2400	1370	458	557	478	114	650	806.5	1117	1104	1117	1104	137	143	137	143	154	141	110	138	405	2353	1295	50	-	-	
DDW270D	1278	2470	1370	458	557	478	122	650	806.5	1117	1104	1117	1104	137	143	137	143	154	141	110	138	405	2423	1295	50	-	-	
DDW300D	1328	2760	1440	458	557	478	267	650	806.5	1180	1167	1167	1167	137	143	143	143	154	141	110	138	455	2713	1365	90	-	-	
DDW330D	1528	2760	1500	450	569	569	290	749	915.5	1244	1231	1231	1231	137	143	143	143	154	141	110	138	455	2713	1425	90	-	-	
DDW360D	1528	2760	1560	450	569	569	290	749	915.5	1307	1294	1294	1294	137	143	143	143	154	141	110	138	455	2713	1485	90	-	-	
DDW400D	1603	2920	1690	500	638	638	261	818	1027.5	1421	1421	1421	1421	143	143	143	143	154	141	110	138	455	2873	1615	90	-	-	
DDW450D	1603	2920	1820	500	638	638	261	818	1027.5	1548	1548	1548	1548	143	143	143	143	154	141	110	138	455	2873	1745	90	-	-	

Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and susponder) as shown in the figure above.

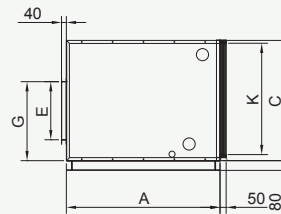
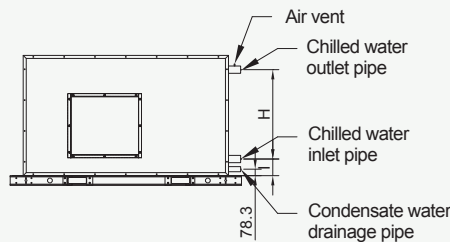
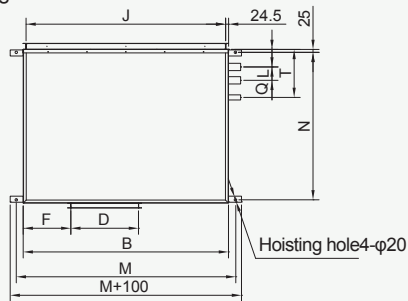
■ 4R represents 4 rows and 6R represents 6 rows.

■ DDW180D~DDW450D models have no lifting holes and cannot be mounted on the ceiling.

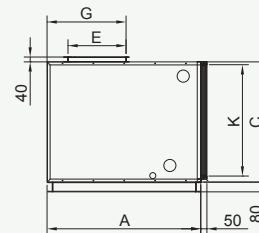
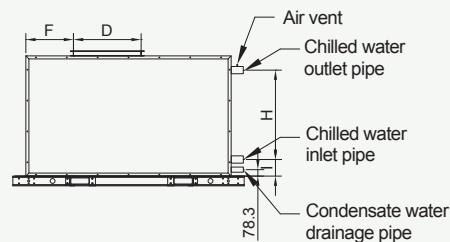
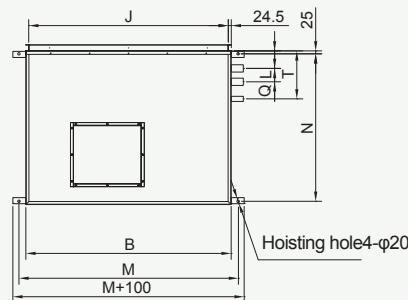


## Dimension of DDW-D horizontal unit (50mm panel)

Horizontal air discharge



Top air discharge



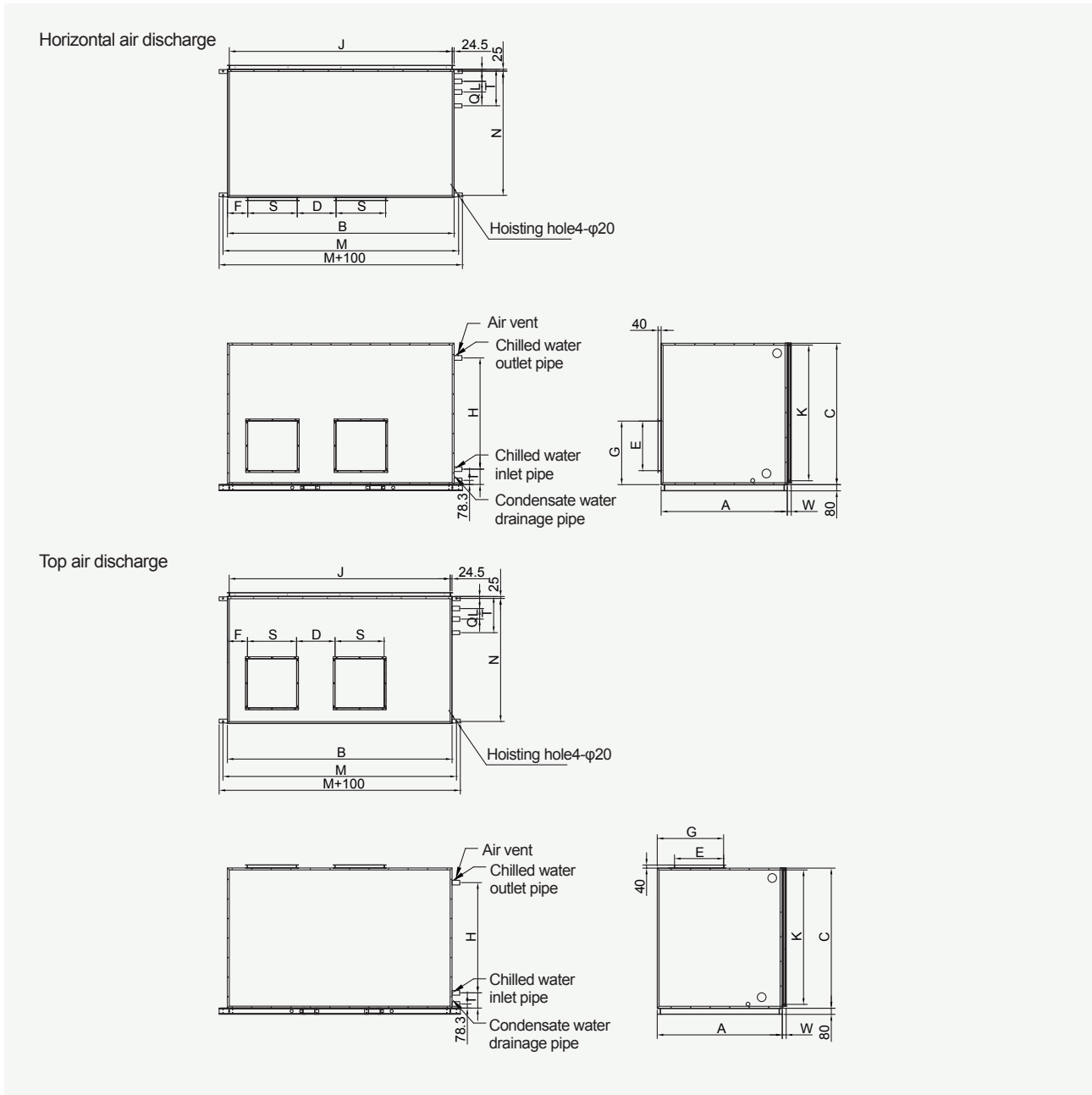
Unit: mm

Unit size	Length	Width	Height	Supply air outlet dimensions				Sizes of connection pipes														Return air inlet dimensions				Lifting hole dimensions	
				A	B	C	D	E	F	G (Horizontal air-out)	G (Top air-out)	H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q(4R) return air	Q(4R) fresh air	Q(6R) return air	L(4R) return air	L(4R) fresh air	L(6R) return air	T	J
DDW020D	1005	950	570	232	262	203	387	455	294	294	294	294	148	148	148	148	150	150	156	66	66	110	370	903	508	1050	950
DDW030D	1005	1100	570	298	262	243	387	455	294	294	294	294	148	148	148	148	150	150	156	66	66	110	370	1053	508	1200	950
DDW040D	1005	1130	730	331	289	233	447	529	446	434	446	434	148	154	148	154	150	150	156	66	66	110	370	1083	668	1230	950
DDW050D	1130	1300	730	309	341	318	466	607	446	434	446	434	148	154	148	154	150	150	156	66	66	110	420	1253	668	1400	1075
DDW060D	1130	1370	780	395	341	313	499	599	497	485	485	485	148	154	154	154	150	150	156	66	66	110	420	1323	718	1470	1075
DDW070D	1180	1550	800	373	404	388	529	703	497	485	485	485	148	154	154	154	150	150	156	66	66	110	420	1503	738	1650	1125
DDW080D	1180	1730	800	373	404	568	529	703	485	485	485	485	154	154	154	154	150	150	156	66	66	110	420	1683	738	1830	1125
DDW100D	1305	1740	930	430	478	470	603	835	625	609	625	609	154	162	154	162	156	169	156	83	110	138	420	1693	868	1840	1250
DDW120D	1330	1740	1040	557	478	417	675	831.5	752	736	736	736	154	162	162	162	156	169	156	83	110	138	420	1693	978	1840	1275

Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and susponder) as shown in the figure above.  
 ■ 4R represents 4 rows and 6R represents 6 rows.



## Dimension of DDW-D horizontal unit (50mm panel)



Unit: mm

Unit size	Length	Width	Height	Supply air outlet dimensions						Sizes of connection pipes										Return air inlet dimensions		Lifting hole dimensions					
				A	B	C	D	S	E	F	G (Horizontal air-out)	G (Top air-out)	H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q(4R)	Q(6R)	L(4R)	L(6R)	T	J	K
DDW150D	1205	1970	1170	294	373	404	228	597	699.5	863	863	863	850	162	162	162	168	169	156	110	138	420	1923	1108	50	2070	1150
DDW180D	1330	2150	1230	343	430	478	198	675	831.5	926	926	926	913	162	162	162	168	169	156	110	138	420	2103	1168	50	-	-
DDW200D	1330	2330	1230	343	430	478	278	675	831.5	926	926	926	913	162	162	162	168	169	156	110	138	420	2283	1168	50	-	-
DDW220D	1330	2450	1300	458	557	478	139	675	831.5	990	990	990	977	162	162	162	168	169	156	110	138	420	2403	1238	50	-	-
DDW250D	1330	2450	1420	458	557	478	139	675	831.5	1117	1104	1117	1104	162	168	162	168	169	156	110	138	420	2403	1358	50	-	-
DDW270D	1330	2520	1420	458	557	478	147	675	831.5	1117	1104	1117	1104	162	168	162	168	169	156	110	138	420	2473	1358	50	-	-
DDW300D	1380	2810	1490	458	557	478	292	675	831.5	1180	1167	1167	1167	162	168	168	168	169	156	110	138	470	2763	1428	90	-	-
DDW330D	1580	2810	1550	450	569	569	315	774	940.5	1244	1231	1231	1231	162	168	168	168	169	156	110	138	470	2763	1488	90	-	-
DDW360D	1580	2810	1610	450	569	569	315	774	940.5	1307	1294	1294	1294	162	168	168	168	169	156	110	138	470	2763	1548	90	-	-
DDW400D	1655	2970	1740	500	638	638	286	843	1052.5	1421	1421	1421	1421	168	168	168	168	169	156	110	138	470	2923	1678	90	-	-
DDW450D	1655	2970	1870	500	638	638	286	843	1052.5	1548	1548	1548	1548	168	168	168	168	169	156	110	138	470	2923	1808	90	-	-

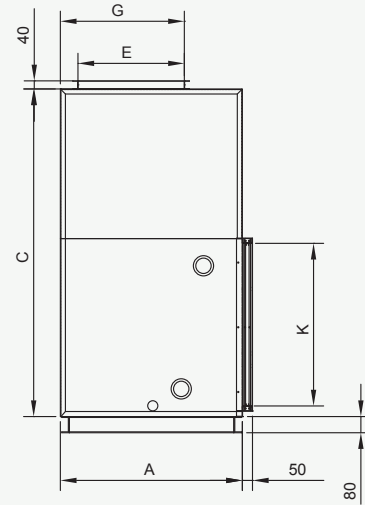
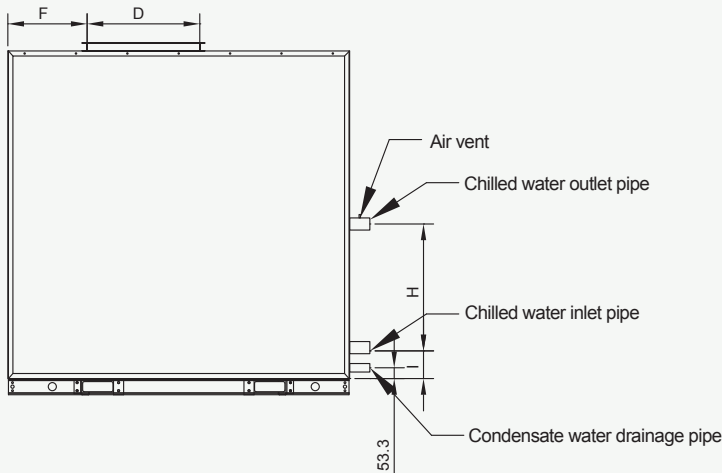
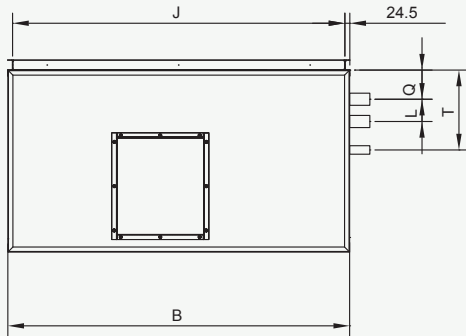
Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and susponder) as shown in the figure above.

■ 4R represents 4 rows and 6R represents 6 rows.

■ DDW180D~DDW450D models have no lifting holes and cannot be mounted on the ceiling.



## ➤ Dimension of DDW-D vertical unit (25mm panel)



Unit: mm

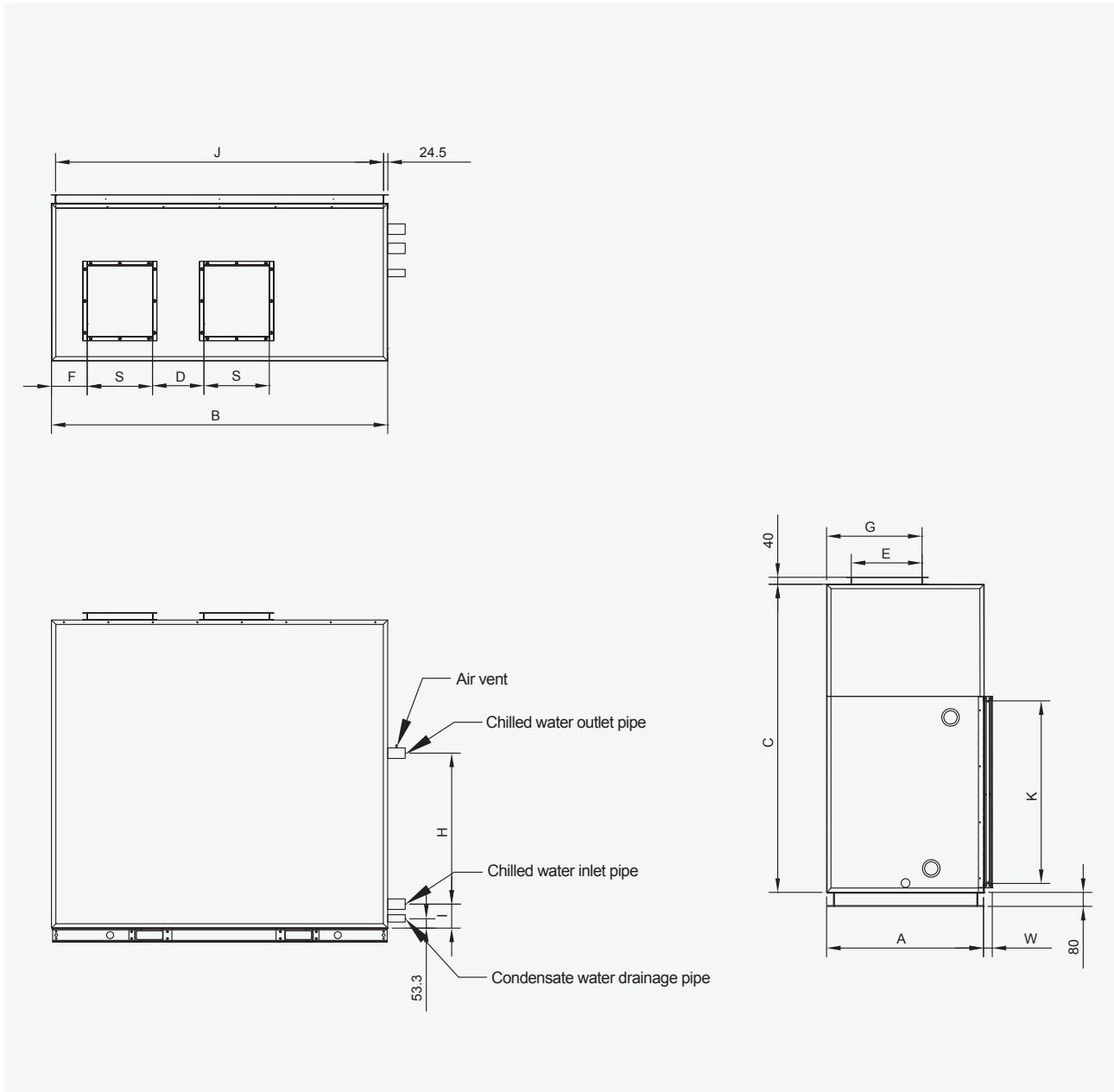
Unit size	Length	Width	Height	Supply air outlet dimensions				Sizes of connection pipes														Return air inlet dimensions		
								H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q(4R) return air	Q(4R) fresh air	Q (6R)	L(4R) return air	L(4R) fresh air	L (6R)			
DDW020D	650	900	970	232	262	159	435	294	294	294	294	123	123	123	123	173	173	179	66	66	110	393	853	445
DDW030D	650	1050	970	298	262	186	435	294	294	294	294	123	123	123	123	173	173	179	66	66	110	393	1003	445
DDW040D	650	1080	1170	331	289	208	403	446	434	446	434	123	129	123	129	173	173	179	66	66	110	393	1033	605
DDW050D	650	1250	1240	309	341	293	423	446	434	446	434	123	129	123	129	173	173	179	66	66	110	443	1203	605
DDW060D	650	1320	1290	395	341	288	422	497	485	485	485	123	129	129	129	173	173	179	66	66	110	443	1273	655
DDW070D	750	1500	1370	373	404	364	484	497	485	485	485	123	129	129	129	173	173	179	66	66	110	443	1453	675
DDW080D	750	1680	1370	373	404	543	484	485	485	485	485	129	129	129	129	173	173	179	66	66	110	443	1633	675
DDW100D	900	1690	1620	430	478	442	565	625	609	625	609	129	137	129	137	179	192	179	83	110	138	443	1643	805
DDW120D	900	1690	1750	557	478	392	550	752	736	736	736	129	137	137	137	179	192	179	83	110	138	443	1643	915

Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and suspender) as shown in the figure above.

■ 4R represents 4 rows and 6R represents 6 rows.



## ➤ Dimension of DDW-D vertical unit (25mm panel)



Unit: mm

Unit size	Length	Width	Height	Supply air outlet dimensions				Sizes of connection pipes												Return air inlet dimensions			
				D	E	F	G	H(4R) return air	H(4R) fresh air	H(6R) return air	H(6R) fresh air	I(4R) return air	I(4R) fresh air	I(6R) return air	I(6R) fresh air	Q (4R)	Q (6R)	L (4R)	L (6R)	T	J	K	W
DDW150D	900	1920	1760	294	404	204	545	863	863	863	850	137	137	137	143	192	179	110	138	443	1873	1045	50
DDW180D	900	2100	1940	343	478	172	572	926	926	926	913	137	137	137	143	192	179	110	138	443	2053	1105	50
DDW200D	900	2280	1940	343	478	252	571	926	926	926	913	137	137	137	143	192	179	110	138	443	2233	1105	50
DDW220D	900	2400	2010	458	478	114	571	990	990	990	977	137	137	137	143	192	179	110	138	443	2353	1175	50
DDW250D	900	2400	2130	458	478	114	571	1117	1104	1117	1104	137	143	137	143	192	179	110	138	443	2353	1295	50
DDW270D	900	2470	2130	458	478	122	571	1117	1104	1117	1104	137	143	137	143	192	179	110	138	443	2423	1295	50
DDW300D	900	2760	2200	458	478	267	571	1180	1167	1167	1167	137	143	143	143	192	179	110	138	493	2713	1365	90
DDW330D	1100	2760	2340	450	569	290	711	1244	1231	1231	1231	137	143	143	143	192	179	110	138	493	2713	1425	90
DDW360D	1100	2760	2400	450	569	290	711	1307	1294	1294	1294	137	143	143	143	192	179	110	138	493	2713	1485	90

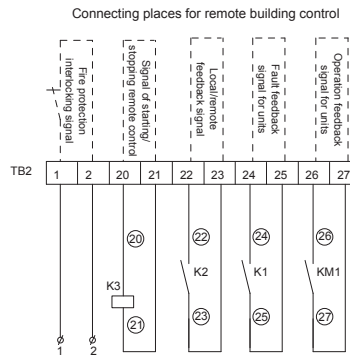
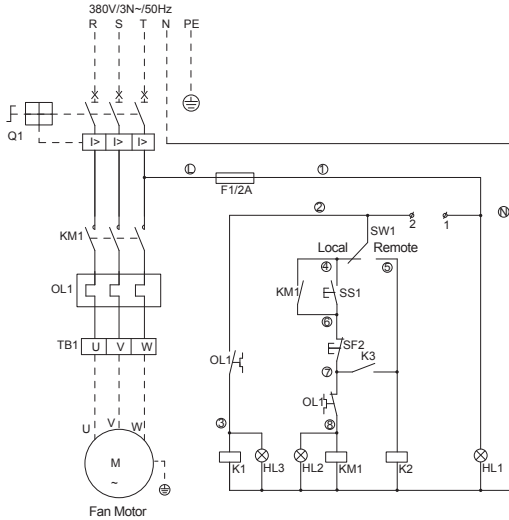
Notes: ■ The cabinet size does not include the protruding parts (header, air outlet, filter, and suspender) as shown in the figure above.  
 ■ 4R represents 4 rows and 6R represents 6 rows.



## Unit control

DDW-D series units are equipped with a variety of electrical control solutions; their main electrical control components are of international brands to ensure accurate, stable and safe control.

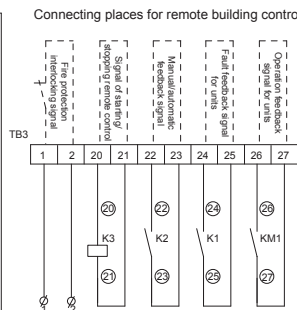
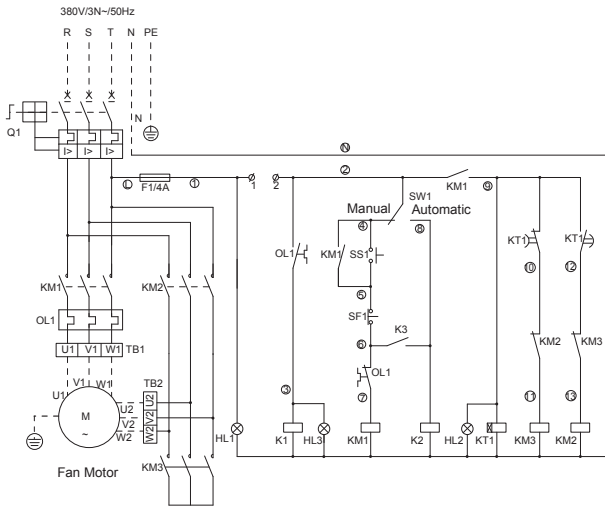
### Diagram of direct startup



Symbol	Description
Q1	Circuit breaker
F1	Fuse
KM1	Contactors
OL1	Overtemperature protector
K1-3	Intermediate relay (220 VAC coil)
SW1	Manual/automatic two-position switch
HL1	Power indicator (red)
HL2	Operating indicator (green)
HL3	Fault indicator (yellow)
SS1	Start button
SF1	Stop button
TB1-2	Terminal block

————— : Factory wiring  
 - - - - - : Field wiring

### Diagram of star-delta startup



Symbol	Description
Q1	Circuit breaker
F1	Fuse
KM1-3	Contactors
K1-3	Intermediate relay (220 VAC coil)
KT1	TIME RELAY
SW1	Manual/automatic two-position switch
HL1	Power indicator (red)
HL2	Operating indicator (green)
HL3	Fault indicator (yellow)
SS1	Start button
SF1	Stop button
TB1-3	Terminal block

————— : Factory wiring  
 - - - - - : Field wiring

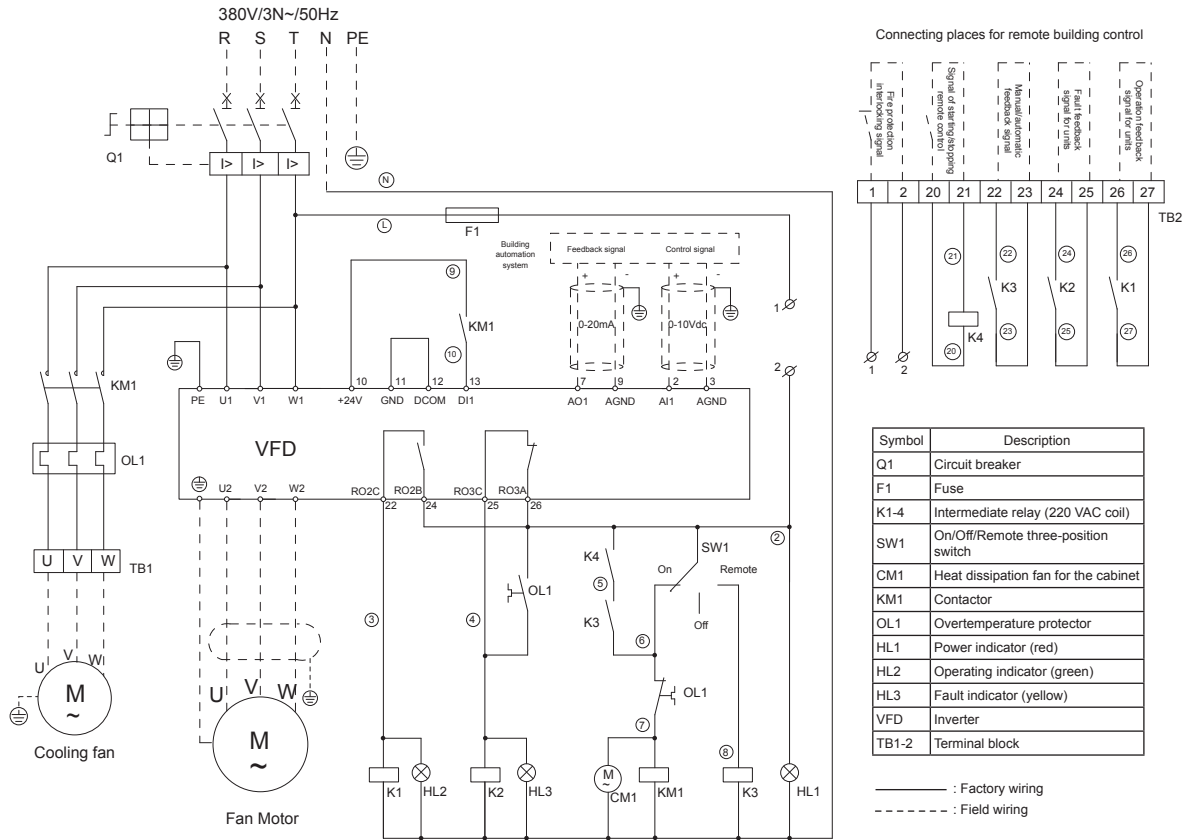
### Functional characteristics

- Remote/local unit start/stop control and status indicator;
- Motor starting method (recommended): direct start for rated power of 7.5 kW and below, star-delta start for rated power of 11-55 kW, and other starting methods for rated power of 75 kW and above;
- Unit status indication: power supply, operating status, fault status;
- Overload, phase loss, undervoltage and short circuit protection;
- Interlocking with fire protection signal;
- Other functions required by customers.



# Unit control

## Schematic diagram of inverter start control principle



### Functional characteristics

- Remote/local unit start/stop control and status indicator;
- Provides the variable-frequency adjustment to enable AHUs to adjust the air flow and air pressure in real time, reducing energy effectively;
- The inverter start reduces the impact on the grid and reduces the cost of power capacity expansion;
- Overload, phase loss, undervoltage and short circuit protection;
- Adopts the globally known inverter specially made for HVAC systems;
- Interlocking with fire protection signal;
- Other functions required by customers.





## Notes

- Appropriate water seal should be fitted to ensure the smooth drainage of condensate water during the installation. The installation diagram for water seal is shown in Fig 1.

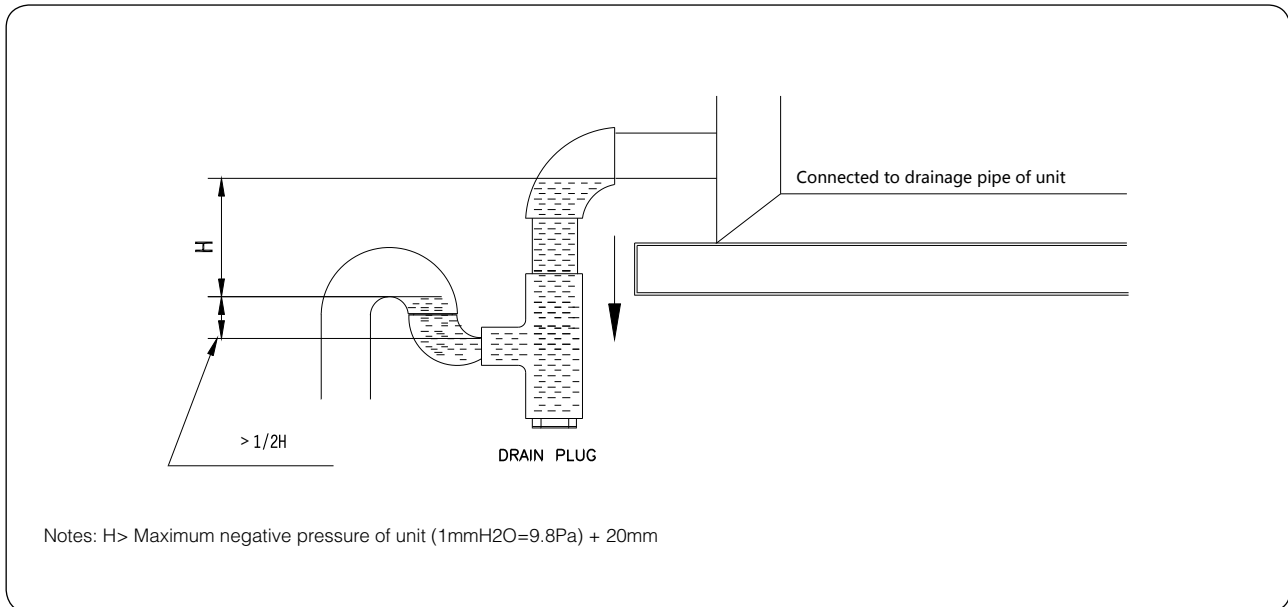


Fig 1 Installation diagram for water seal

**Warning**

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorized importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- 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 unauthorized 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. The units should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the 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 unit close to the sea shore, contact your local distributor.

**Dealer****DAIKIN INDUSTRIES, LTD.**

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