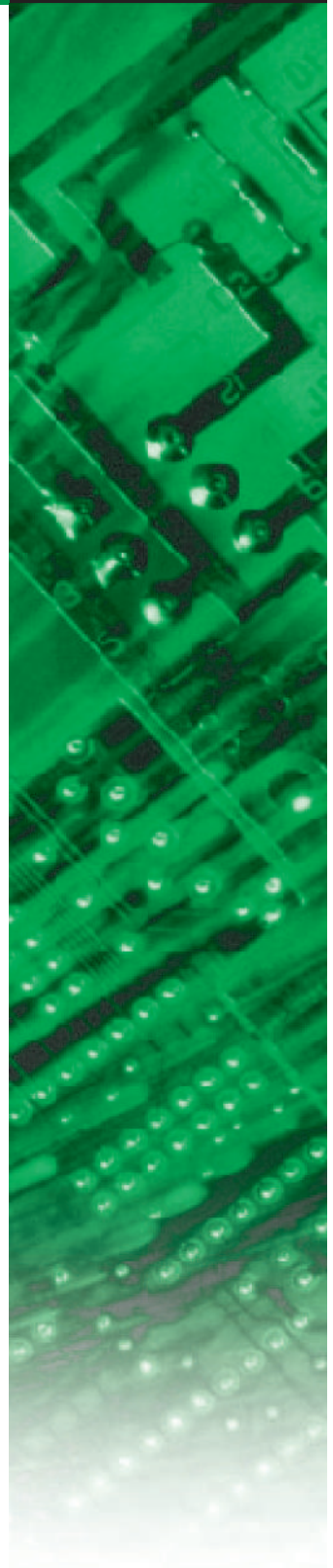
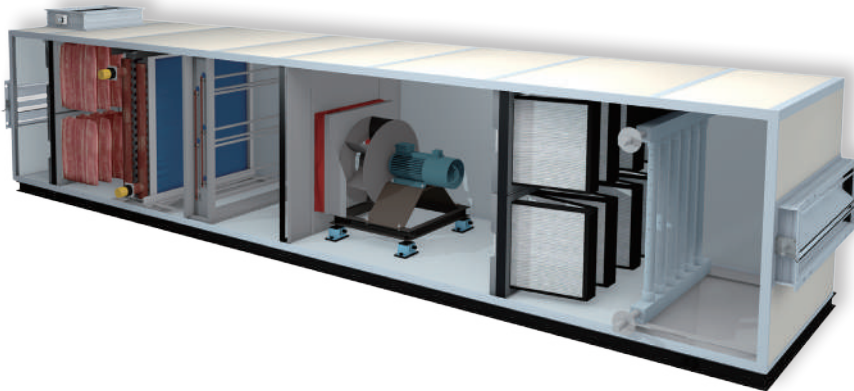


Air Handling Units (DDM-E)

Model: DDM0505E-DDM1826E

Air flow: 2,000-66,000m³/h



Air handling expert from Europe and America

DAIKIN has been one of the largest professional corporations for air-conditioning and refrigeration equipment in the world, and especially built an internationally famous brand of air purification.



Over the years, Daikin has provided the society with many types of high-quality air treatment systems. The new DDM-E series is developed on the basis of the advantages of previous units, and it's developed with strong R&D strength and exquisite production processes. With excellent performance, the products have been highly recognized by AHRI certification (AHRI Standard 1350), EUROVENT certification and CRAA certification. The unit adopts standard modular design, featuring simple structure and flexible combinations. The air volume range is 2,000-66,000m³/h. There are 24 functional sections for options, including mixing section, cooling section, heating section, filter section, humidifier section, attenuator section, heat recovery section and fan section. The combination of different functional sections can meet different air treatment requirements.



Contents

Excellent technology, authoritative certification	3
Nomenclature	4
Features	4
Function instruction	5
Parameter	10
Common combination of function sections (recommend configuration).....	16

Excellent technology, authoritative certification

With excellent technology, the new DDM-E series modular air handling unit has obtained AHRI certification, EUROVENT certification and CRAA certification.

Core institution certification-CRAA certification

Beijing CRAA Quality Certification Center Co., Ltd. ("CRAA Certification Center") was jointly funded and established by China Refrigeration and Air-Conditioning Industry Association (CRAA) and Hefei General Machinery Research Institute (GMRI). It is the first certification institution specializing in refrigeration and air conditioning product certification in China.



European Class-A air-conditioner certification – EUROVENT certification

EUROVENT certification is a high-standard performance certification benchmark for air conditioners in Europe. It is famous for its strict testing process and high standard requirements. It is highly recognized all over the world. The European certification standards mainly includes EN1886 and EN13053. The performance of air handling unit. Mechanical characteristics and whole machine performance of the product are tested respectively.



DDM-E cabinet complies with EN1886 standard class.

Casing strength	D1
Casing air leakage class	L1
Filter bypass leakage	F9
Thermal transmittance of the casing	T2
Thermal bridging factor	TB1

EN1886 standard class classification

	High level					Low level
Casing strength	D1	D2	D3			
Maximum relative deflection of the cabinet under the maximum pressure mm/m	4	10	>10			
Casing air leakage class	L1	L2	L3			
Maximum leakage rate of the cabinet under -400Pa test pressure l/(s.m²)	0.15	0.44	1.32			
Filter bypass leakage	F9	F8	F7	F6	G1~F5	
Maximum filter bypass leakage rate (%) under -400Pa test pressure	0.5	1	2	4	6	
Thermal transmittance of the casing	T1	T2	T3	T4	T5	
Cabinet transmittance factor (U)W/(m².K)	U≤0.5	0.5<U≤1.0	1.0<U≤1.4	1.4<U≤2.0	No requirement	
Thermal bridging factor	TB1	TB2	TB3	TB4	TB5	
Thermal bridging factor of the cabinet Kb	0.75<Kb<1.00	0.60<Kb≤0.75	0.45<Kb≤0.60	0.30<Kb≤0.45	No requirement	

Global authority certification - AHRI certification

AHRI certification is a product quality certification system for HVAC industry in North America. It is one of the most influential certification institutions in the world. Adhering to the tenet of integrity and customer service, AHRI certification has become a famous brand in North America and even in the world. AHRI certification mainly includes standard AHRI 1350 focusing on evaluating cabinet strength, air leakage rate, thermal insulation and cold bridge of the air handling unit.



DDM-E5 cabinet conforms to the grade.

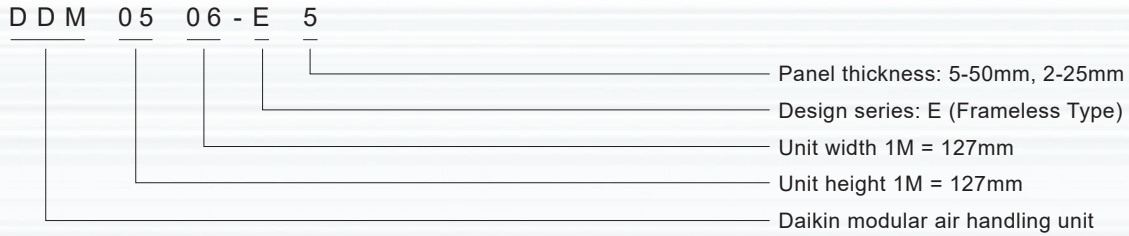
Casing deflection class	CD ₁
Casing air leakage class	CL ₁
Thermal transmittance class	CT ₁
Casing thermal bridging class	CB ₁

Standard classification of AHRI Standard 1350

	High level						Low level
Casing deflection class	CD ₁	CD ₂	CD ₃	CD ₄	CD ₅	CD ₆	
Rating differential static pressure in. H ₂ O	10	8	6	4		1	
Maximum normalized deflection span in/in	0.0033(1/300)	0.0042(1/240)	0.0042(1/240)	0.0042(1/240)		≥0.0042(1/240)	
Casing air leakage class	CL ₁	CL ₂	CL ₃	CL ₄	CL ₁₂	CL ₂₄	CL ₁₀₀
Maximum casing air leakage rate CL _c cfm/100ft²(P _r =1 in.H ₂ O)	1(0.0508L/(m²s))	2(0.1016L/(m²s))	3(0.1524L/(m²s))	6(0.3048L/(m²s))	12(0.6096L/(m²s))	24(1.2192L/(m²s))	100(5.08L/(m²s))
Thermal transmittance class	CT ₁	CT ₂	CT ₃	CT ₄	CT ₅		
Thermal transmittance without leakage (U).Btu/ft²°F	U≤0.14	0.14<U≤0.23	0.23<U≤0.36	0.36<U≤0.55		U>0.55	
Thermal transmittance with leakage (U).Btu/ft²°F	U≤0.16	0.16<U≤0.26	0.26<U≤0.39	0.39<U≤0.61		U>0.61	
Casing thermal bridging class	CB ₀	CB ₁	CB ₂	CB ₃	CB ₄	CB ₅	
Thermal bridging factor (Kb)	Kb≥0.8	Kb≥0.8	0.8>Kb≥0.6	0.6>Kb≥0.4	0.4>Kb≥0.2		Kb<0.2

Certified in accordance with the AHRI Central Station Air-handling Unit Casing Certification Program, which is based on AHRI Standard 1350, Certified units may be found in AHRI Directory at www.ahridirectory.org

Nomenclature



Note:

- Cabinet length = length module * 127 + transport segment module * K + N
 - Cabinet width = width module * 127 + K
 - Cabinet height (include base) = height module * 127 + K + base height
- Unit: mm
 K value: 25mm unit is 28mm, 50mm unit is 78mm
 N value: 25mm unit is 6mm, 50mm unit is 10mm

Features

Adopt patent structure design for cabinet

- For panel, adopt double layer metal wallboard, aluminum alloy profile, PVC thermal insulation strip, with polyurethane thermal insulation materials filled in middle. Made by whole foaming in pressure, the surface of aluminum alloy profile is treated with oxidation coating, high corrosion prevention capacity.
- The cabinet is spliced by panels with aluminum alloy profile embedded mortise and tenon joint structure, adopt high strength bolt for outside fixing, easily to disassemble and assembly.



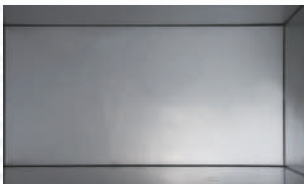
Aluminum alloy profile adopts oxidation coating corrosion prevention



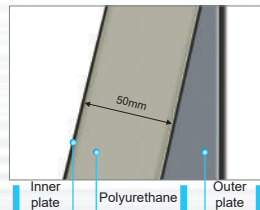
The panel is easy to disassemble and assemble

Superexcellent heat insulation property

- The outer plate for panel is color-coated sheet (standard configuration), and the inner panel is aluminizing zinc plate (standard configuration). The service life of aluminizing zinc plate is 6 times of the one of galvanized plate, and the heat reflectivity is 2 times of the one of galvanized plate;
- Use thermal insulation material specially made to separate the inner plate and outer plate, and fill into polyurethane thermal insulation material, foam in fluoride-free evenly under high pressure.



Internal level

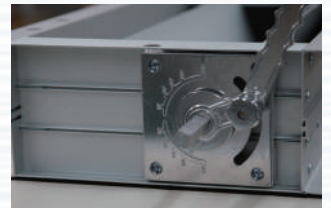


Superior cold bridge resistance performance

- Specially designed PVC panel structure, no metal components are connected with each other directly inside and outside the whole unit and no cold bridge totally;
- Fix the damper and other external parts by using thermal insulation materials, and no condensation will appear under high temperature.



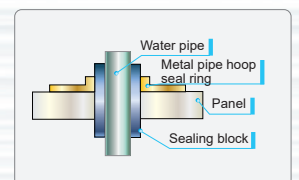
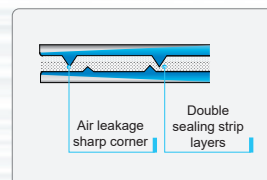
PVC thermal insulation strip



Post seal cotton between damper and panel

Good impermeability

- Adopt double line contact air leakage protection design between panel, tight and stable, perpetual impermeability for air leak protection;
- The connecting places of cabinet and exposed parts shall be filled with pressure and wear resisting sealing strip, and fixed by mechanical method, to reduce the unit air leakage rate effectively;
- For access door with locks, adopt special impermeability design, distinguishingly treat the positive pressure and negative pressure segments of units. All the access door shall be equipped with integral ageing resistance seal ring.



Header diagram

Function instruction

Cooling coil section

It is used for cooling and dehumidifying the air flow. The coil is made of fins and seamless copper tubes, which are tightly bonded by mechanical riser. All coils have passed the certification of AHRI, and their performances conform to EN13053.

- All coils shall pass high pressure test by charging nitrogen before ex- factory , to ensure no leakage;
- Can set aluminum water eliminator behind cooling coil, to further avoid the water blowing problem;
- Optional: stainless cooling coil frames, anti-freezing switch.



Cooling coil pipe



Aluminum

- The fins are corrugation aluminum pieces, which enlarge heat exchange area and optimize heat transfer effect, and it is convenient for the condensate water to drop, to avoid foaming water drop on fin surface;
- FPI is 9~14 selectable.



Drain pan

- Adopt high quality galvanized steel plate coating;
- Paste insulation for drain pan outer to prevent second condensation;
- V type double-tilt design, to ensure smooth water drainage;
- Precise design the drain pipe by condensation quantity;
- Optional: stainless.

- Cross reverse-flow arrangement of high quality copper pipe, increase air turbulent flow and improve heat transfer effect.



Cross reverse-flow arrangement



Cooling coil collector pipe

- Cooling coil collector pipe is seamless steel pipe;
- Set drain valve and air vent on header pipe, with thermal insulation seal ring, to eliminate cold bridge, reduce air leakage rate and facility access;
- Optional: copper.

Fan section

The fan section supply power for the whole system airflow. Fan section is composed of fan, motor, belt gear, base, shock absorber and others.

- The fan is of air movement and control association, USA (AMCA) authentication and professional software selection, so as to ensure every fan can operate safely and efficiently;
- Adopt full sealing squirrel cage three-phase asynchronous motor, with IP55 protection level and F grade insulation grade, adapt to severe application environment;
- Optional: metal belt guard, pressure sensor and start-up cabinet.



- Install the fan and motor on the same base, adopt flexible connection at air outlet of fan, for effectively vibration isolation.



- The impeller shall be implemented strictly dynamic and static balance correction, smooth and steady, low noise.



- For motor optional: single speed motor, double speed motor, variable frequency motor, flameproof motor and others.



- For bearing, adopt the international famous brand ones of high assembly accuracy, to ensure the unit can operate continuously for long time.



- Adopt V type belt of international famous brand;
- The belt wheel is of taper sleeve structure, convenient for rapid assembly and access.



- Equipped with sliding rail adjustment system for motor, so as to adjust optimum installation, convenient for access.



- Spring absorber, can reduce vibration effectively.

Heating section

Mainly used for improving the airflow temperature by heating air.
Optional: Heating coil, steam coil, electric heater.

Steam coil

The unit is processed air heating according to the heat-transfer medium of high-temperature steam, suitable for places with steam such as chemical engineering, hospital, pharmacy and tobacco.

- Standard configuration with steel tube rolling aluminum sheet coil, the material of parent tube is steel, and with features of advantage processing technology, low thermal resistance, high strength and standard outer source nipple, optional flange connector.
- Optional: copper steam coil, stainless steel steam coil, stainless steel fin steam coil.



Steel tube rolling aluminum coil

Electric heater

Heating the air by electric, heat capacity can be adjusted by grouping or stepless. It is suitable for small and medium constant temperature and humidity places such as operating room, pharmacy in hospital, electronic plant.

- Overheat protector and breezeless outage protector connectors are provided in electric heater section. The potential safety hazard caused by overheating of heater should be avoided.



Electric heater section



Overload protection device

Humidifier section

Process wet treatment to air so as to ensure its relative humidity of air.

- There are access door and drainage pan in this section; seal the entrance with insulator, so as to avoid cold bridge and air leakage; reserve enough absorb distance according to actual condition so as to ensure safety operation;
- Multi humidification way to adopt: including wet film humidification, dry steam humidification, secondary steam humidification, electrode (electric) humidification, high pressure spraying (micro) humidification, washing spraying humidification and so on;
- The needed proportional plus integral control applied in constant temperature and humidity places.
- Optional: access window, waterproof access lamp, humidity sensor, humidity independent controller.

Wet film humidification

- When the air crossing the high water-absorbing material, damp and hot exchange, and then the humidity in air will increase;
- The humidification distance is just the thickness of wet film, with small volume and well humidification effective.



Wet film humidifier

Application:

- Suitable for the humidification of residential architecture, industry cooling, as its low humidification accuracy, it is not applied in constant temperature and humidity normally.

Dry steam humidifier

- The clear steam will be sprayed from orifice with metal silencing strainer after filtration, so as to improve the air humidity in air handling unit;
- Produced by all stainless steel, with characteristic of corrosion resistance, compact size and easily access.



Dry steam humidifier

Application:

- Constant temperature and humidity places or common civil use places;
- If it requires large humidification capacity, adopt multi-nozzle mast or fast suction dry steam humidifier;
- It is suitable for medical treatment and public health, industrial factory building and civil building.

Electrode (electric) humidifier

- The humidifier host transforms the electric energy to thermal energy which heat the water to produce steam then conveyed into AHU cabinet.



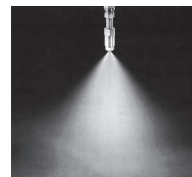
Electrode (electric) humidifier

Application:

- High control accuracy;
- It is suitable for medical treatment and public health, electron, industrial factory building and other constant temperature and humidity places.

High pressure spraying (micro) fog humidifier

- Pressurize the water by pump, and convey to AHU cabinet from the pipeline to eject from special nozzle, form tiny water drop (tinier water mist), and be absorbed after fully contact to air, to improve air humidity.



High pressure micro fog humidifier

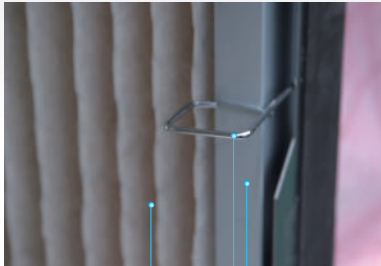
Application:

- The place required high humidification accuracy shall adopt high pressure micro fog humidification method;
- It is suitable for medical treatment and public health, electron, tobacco, office building, shopping mall and others.

Filter section

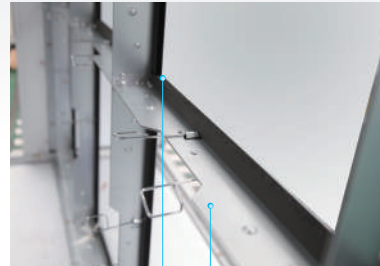
Excellent filter design and installation

The filter section of DDM-E series units is designed to meet the requirements of Class F9 of EN1886 certification and has obtained EUROVENT certification.



Filter Fixing buckle Aluminum alloy frame

- Adopt fast clip system, so as to ensure the air impermeability and filter collection efficiency lasting airtight, uniform specification and easy to change;
- Access orientation is from front for standard filter;
- Optional: side access.



Frame seal PE Filter support frame

- Adopt special sealing materials for the places among frames and between filter and frames, to effectively reduce air leakage rate;
- The standard material for filter installation frame is galvanized steel;
- Optional: stainless steel.

Complete filter types

■ Plate type filter

- The filtering grade is G3 and G4, aluminum alloy frame, 2 inch thickness, and 80%~90% filter efficiency (gravimetric method);
- The filtering material is high quality polyester synthetic fiber, of large clogging capacity, low resistance and good leak tightness;
- Optional: 4 inch thickness filter, INTERSEPT antibacterial agent.



■ Bag type filter

- The filtering grade is G3, G4 and M5~F9, aluminum alloy frame, bag thickness is 15 inch, and 40%~95% filter efficiency (colorimetric method);
- The filtering material is high quality artificial fiber filter paper, of large clogging capacity, low resistance and good leak tightness;
- Optional: glass fiber filter material, INTERSEPT antibacterial agent.



■ HEPA

- The filtering grades are H10, H11, H12 and H13 respective, high strength metal frame, thickness is 11.5 inch and 85%~99.995% filter efficiency;
- The filter material is waterproof type superfine glass fiber filter paper, of large clogging capacity, low resistance and good leak tightness;
- Optional: thick fold type filter, PTFE ultra-low resistance filter, INTERSEPT antibacterial agent.



■ Electronic purification filter

Electronic purification filter adopts the world's leading "ultra-clean technology" to achieve 95% ultra-high purification efficiency and only 1/30 of ozone generation under the national standard.

- Adopt the latest driving technology with the unique "edge-driven system" as the core.
- Adopt 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.
- Adopt the technology of constant current and voltage limiting & constant voltage and current limiting to control arc ignition without ozone.
- Adopt secondary ozone degradation technology to further reduce ozone generation.
- Configure a flow sensor to link with the fan.
- Configure a safety lock switch for your easy maintenance.
- The core ionization and adsorption zone is made of aviation-grade aluminium alloys which are anti-corrosive and durable.



Heat recovery section

Currently, the concept of energy saving and environment protecting become more and more popular. In HVAC system, the energy contained in the exhaust air of air-conditioning area (room) is considerable, so great energy-saving benefit and environmental benefit will be gained according to energy recycle.

Following provisions are from the 5.3.14 item in Unified standard for constructional quality acceptance of building engineering GB50189-2005:

If there are centralized exhaust systems in buildings and according with one of the following condition, exhausting and heat recovery unit should be installed. The rated heat recovery efficiency of exhausting and heat recovery unit (total and sensible heat) should be not less than 60%.

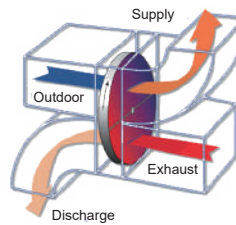
- For straight-flow air conditioning system of 3,000m³/h or more supply air, and the temperature difference between fresh and exhaust air is 8°C or higher;
- For air conditioning system with 4,000m³/h or more design fresh air, and the temperature difference between fresh and exhaust air is 8°C higher;
- For the system with independent fresh air and exhaust air.

The DDM-E unit series from DAIKIN will consider the initial cost and effectiveness fully in users' items, so as to provide various solutions of heat recovery to users, including wheel heat recovery, plate type heat recovery, and heat pipe heat recovery and so on.

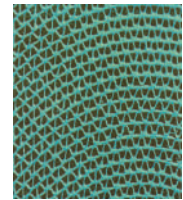
Wheel heat recovery principle

Adopt specially-made cellular metal template with special adsorbing material on surface. As fresh air across half of wheel, exhaust air will across another half wheel at the same time. The wheel will keep low-speed rotation in cycle in the function of actuating unit, then exchange the energy and vapour to another side, so as to resave energy according to take advantage of the waste heat (waste cool) of exhaust air to process preheat (pre-cool) for fresh air.

- Optional wheel: Sensible wheel heat recovery
Total heat recovery wheel
- The features of wheel: high heat exchange efficiency, small volume, long service life and usable in large air flow unit.



Wheel recovery principle



Wheel with adsorbing material on surface

Plate type heat recovery principle

Process heat transfer according to the cross flow between the heat and cool air, the two adjacent aluminum plate will form a supplying or exhausting channel, while process air supplying according one side of aluminum, and air exhausting according another side, so the heat will transmit from the heater side to the colder side.

- Optional plate: Standard sensible heat recovery
Anticorrosion and sensible heat recovery
High temperature sensible heat recovery
Total heat recovery
- The features of plate: avoid cross contamination, flexibly usage, easy installation and needless access.

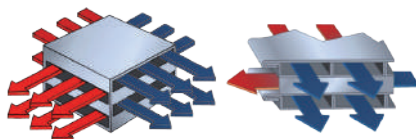


Plate type heat recovery principle

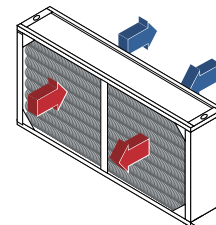


Plate type heat recovery

Heat pipe heat recovery principle

Heat pipe is energy-efficient element. Rolling aluminum fin pipe by pure aluminum tube, wash it and process it to high vacuum, then add a certain amount of heat transfer material. The heat transfer material is R134a usually. When air conditioning system supplying heat, the heat transfer material in vacuum pipe shall be condensed in fresh air side and then evaporated in exhaust air side, and then recycling again and again. While supplying cooling, the recycling would be opposite, and then the heat recovery could be achieved.

- Optional heat pipe: Normal temperature sensible heat recovery
Low temperature sensible heat recovery
- Note: Heat pipe heat recovery is unavailable in software, please contact factory for selection.
- The features of heat pipe: high heat exchange capacity, quickly thermal response, small resistance loss.



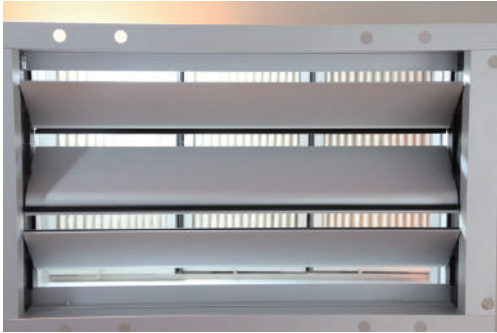
Heat pipe heat recovery principle



Heat pipe recovery

Mixing box section

- Adjust the ratio of return air and fresh air to fully mix to avoid air stratification, and ensure heat exchange and anti-condensation performance of the whole units;
- Design the air inlet direction and size according to users' requirements. Provide standard configuration of flange in air inlet, and the damper is optional;
- Provide with access door;
- Optional: access lamps, access window, manual damper, electric damper, manual-electric damper.



Aluminum alloy damper

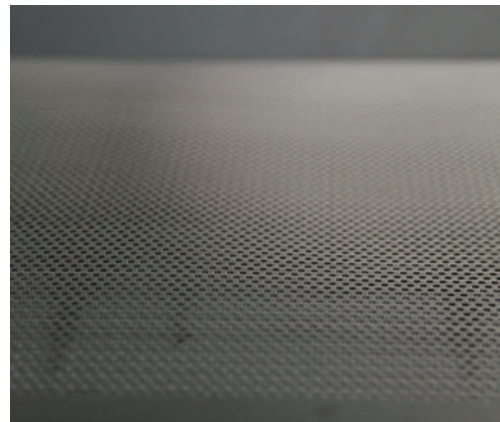
- Damper can adopt aluminum and electrostatic powder spraying galvanized steel;
- The control way of damper is manually or electric;
- Optional: damper actuator;
- The leaf structure of aluminum alloy damper is two-sided airfoil, and sealed with disc rubber strip;
- The leaf structure of galvanize steel damper is ripple counter margin interlocked, and sealed with special rubber.

Attenuator section

- Reduce unit noise, many types of attenuators can be selected, include dissipative attenuator, reactive attenuator and composite attenuator;
- Adopt expanded metal, internally clipped high quality sound absorption PE, B1 fireproofing grade, meeting fire safe requirements;
- Place on positive pressure sections of unit can exert better damping effect.



Attenuator section



















The frame is perforation galvanized plate, optional: stainless steel

Attenuator dynamic state insertion loss dB

Length \ Octave	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
600mm	6	9	12	22	30	29	21	12
900mm	7	12	16	28	35	35	28	17
1,200mm	7	15	20	34	40	40	34	21

Parameter

Length of various function sections

Function section name	Diagram	Length	Remarks
Mixing box		5M	With access function
Access section		5M	-
Plate type filter section		1M	Need taking access into account
Mixing filter section		4M	Need taking access into account
UV lights section		1M	Need taking access into account
HEPA section		5M	Need taking access into account
Cooling coil section/cooling coil wet film humidifier section/cooling coil heating section		5M / 7M / 8M	Define the section length according to coil rows and combination
Steam/hot water heating coil section		2M	-
Electric heating section		2M / 4M	Define the section according to electric heating capacity
Burning section		21M	Need taking access into account for the front and behind
Washing and spraying section		16M	Need taking access into account for the front and behind
Humidifier section		-	Define the section length according to the humidifier design
Heat recovery section		Wheel/hot hose: 3M/4M Plate type: 6M~10M	Need taking access into account for the front and behind Define the section length according to the heat recovery design
Fan section		(2,000~6,000m ³ /h) 6M (6,000~18,000m ³ /h) 8M (18,000~30,000m ³ /h) 11M (30,000~45,000m ³ /h) 13M	The section length is the recommended value of general unit type, and the specific length is related to fan model and motor power
Diffuser section		5M	With access function
Attenuator section		See to attenuator section	Need taking access into account

Note:

- The above length of function sections are standard;
- If you have special requirements for function sections and size, please contact the local sale office.
- Refer to page 16, 17 for the recommended configuration.

List for quick selection of the unit types in common use

Type	Air flow m ³ /h				Cabinet size - 25mm		Cabinet size - 50mm	
	Face velocity m/s				Height (not include base)	Width	Height (not include base)	Width
DDM-E	2.25	2.5	2.75	3	mm	mm	mm	mm
DDM0505-E	1,474	1638	1,802	1,966	663	663	713	713
DDM0507-E	2,478	2,754	3,029	3,305	663	917	713	967
DDM0607-E	3,123	3,470	3,817	4,165	790	917	840	967
DDM0609-E	4,389	4,876	5,364	5,852	790	1,171	840	1,221
DDM0709-E	5,295	5,883	6,472	7,060	917	1,171	967	1,221
DDM0714-E	9,542	10,602	11,663	12,723	917	1,806	967	1,856
DDM0809-E	6,201	6,890	7,579	8,268	1,044	1,171	1,094	1,221
DDM0811-E	7,989	8,877	9,765	10,652	1,044	1,425	1,094	1,475
DDM0912-E	10,181	11,313	12,444	13,575	1,171	1,552	1,221	1,602
DDM1112-E	12,778	14,198	15,617	17,037	1,425	1,552	1,475	1,602
DDM1113-E	14,064	15,626	17,189	18,752	1,425	1,679	1,475	1,729
DDM1114-E	15,350	17,055	18,761	20,466	1,425	1,806	1,475	1,856
DDM1115-E	16,635	18,484	20,332	22,181	1,425	1,933	1,475	1,983
DDM1313-E	17,517	19,483	21,409	23,356	1,679	1,679	1,729	1,729
DDM1315-E	18,326	20,362	22,398	24,434	1,679	1,933	1,729	1,983
DDM1316-E	21,563	23,959	26,355	28,750	1,679	2,060	1,729	2,110
DDM1416-E	23,384	25,982	28,580	31,178	1,806	2,060	1,856	2,110
DDM1517-E	25,730	28,589	31,448	34,306	1,933	2,187	1,983	2,237
DDM1617-E	27,681	30,757	33,833	36,908	2,060	2,187	2,110	2,237
DDM1620-E	33,241	36,934	40,628	44,321	2,060	2,568	2,110	2,618
DDM1622-E	33,241	36,934	40,628	44,321	2,060	2,822	2,110	2,872
DDM1722-E	40,581	45,390	49,929	54,468	2,187	2,822	2,237	2,872
DDM1821-E	41,331	45,923	50,515	55,107	–	–	2,364	2,745
DDM1826-E	52,109	57,899	63,689	69,478	–	–	2,364	3,380

Note:

- As the unit types is too many, just list the quick selection of the unit types in common use;
- Refer the type selection of Smart Tools selection software for specific types.

Performance parameter of common units

Unit		Working condition	Mixing working condition (30% fresh air) DB 29.1°C RH 56%	Fresh air working condition (100% fresh air) DB 34°C RH 63.7%	Fresh air working condition (100% fresh air) DB 0°C RH 48%	Mixing working condition (30% fresh air) DB 14.1°C RH 62%	New air working condition (100% fresh air) DB 0°C RH 48%			
Unit	Nominal air flow	4 row of cooling coil		6 row of cooling coil		2 row of heating coil		2 row of heating coil		1 row of Steam coil
Type		Total cooling capacity	Water flow	Total cooling capacity	Water flow	Heating capacity	Water flow	Heating capacity	Water flow	Heating capacity
DDM-E	m ³ /h	kW	l/s	kW	l/s	kW	l/s	kW	l/s	kW
DDM0505-E	2,000	9.0	0.43	27.4	1.30	15.0	0.36	10.0	0.24	8.2
DDM0507-E	3,000	18.6	0.89	46.8	2.23	26.7	0.64	18.6	0.44	12.2
DDM0607-E	4,000	24.4	1.16	61.8	2.94	34.4	0.82	23.9	0.57	16.3
DDM0609-E	5,000	35.6	1.70	82.5	3.93	47.7	1.14	34.1	0.81	20.4
DDM0709-E	6,000	42.7	2.03	99.0	4.71	57.3	1.36	40.9	0.97	24.5
DDM0714-E	11,000	86.70	4.13	181.70	6.96	108.50	2.64	79.00	1.92	44.90
DDM0809-E	8,000	54.2	2.58	127.8	6.09	72.5	1.73	51.6	1.23	32.7
DDM0811-E	10,000	73.4	3.50	165.0	7.86	95.4	2.27	68.2	1.62	40.8
DDM0912-E	12,000	92.1	4.39	202.2	9.63	118.3	2.82	84.8	2.02	49.0
DDM1112-E	15,000	115.1	5.48	252.8	12.04	147.9	3.52	106.0	2.52	61.2
DDM1113-E	18,000	136.1	6.48	290.7	13.84	171.8	4.09	125.0	2.98	73.5
DDM1114-E	20,000	153.5	7.31	323.0	15.38	194.1	4.62	138.9	3.31	81.7
DDM1215-E	22,000	168.9	8.04	359.1	17.10	220.5	5.25	152.8	3.64	89.8
DDM1215-E	25,000	190.5	9.07	399.3	19.01	238.6	5.68	173.6	4.13	102.1
DDM1313-E	21000	160.80	7.66	343.00	13.92	203.70	4.96	146.90	3.58	85.70
DDM1316-E	27,000	214.9	10.23	440.7	20.99	266.3	6.34	194.1	4.62	110.2
DDM1416-E	30,000	237.0	11.29	479.2	22.82	295.8	7.04	212.0	5.05	122.5
DDM1517-E	33,000	264.5	12.60	515.5	24.55	325.4	7.75	237.2	5.65	134.7
DDM1617-E	35,000	280.5	13.36	549.9	26.19	350.8	8.35	251.6	5.99	142.9
DDM1620-E	40,000	336.4	16.02	624.9	29.76	407.2	9.70	299.7	7.14	163.3
DDM1622-E	45,000	375.9	17.90	687.2	32.72	465.3	11.08	339.9	8.09	183.7
DDM1622-E	42,000	359.40	16.82	663.90	16.82	440.90	10.74	321.90	7.84	171.50
DDM1722-E	45,000	385.10	17.98	711.40	17.98	472.40	11.51	345.00	8.41	183.70
DDM1821-E	50,000	411.00	19.14	764.10	19.14	509.00	12.40	371.10	9.04	204.10
DDM1826-E	60,000	486.40	19.14	895.80	19.14	629.90	15.35	460.00	11.21	245.00

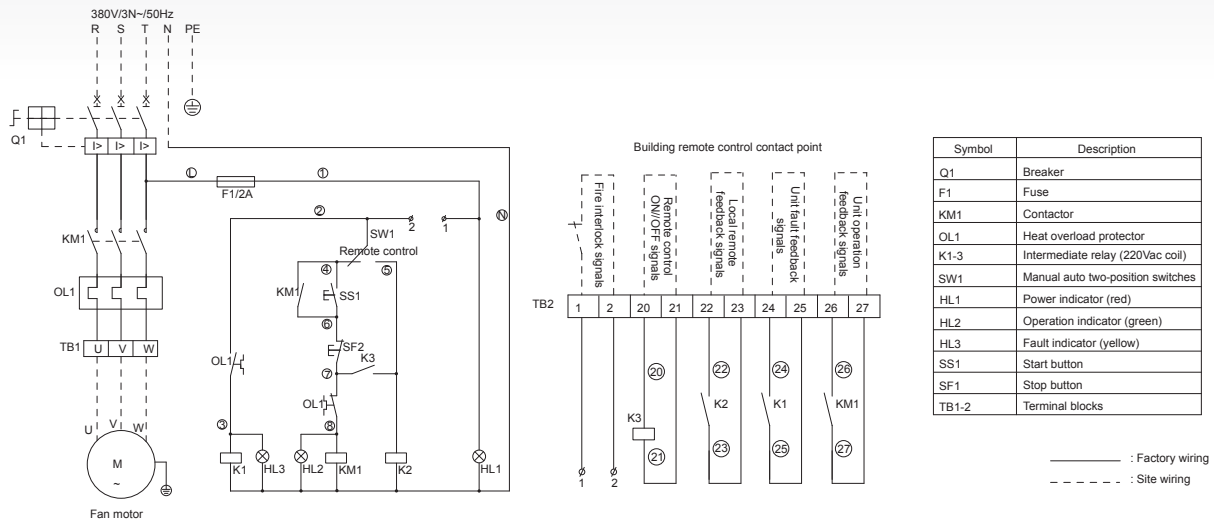
Note:

- EWT is 7°C with 5°C temperature difference, and EWT for heating is 60°C with 10°C temperature difference, 0.2MPa steam pressure;
- Coil is copper aluminum fin, FPI is optional 9~14 pieces, and the data in the table above are the ones of 12 FPI;
- As there are too many models, to list all the performance parameter;
- Refer the type selection of Smart Tools selection software for specific types.

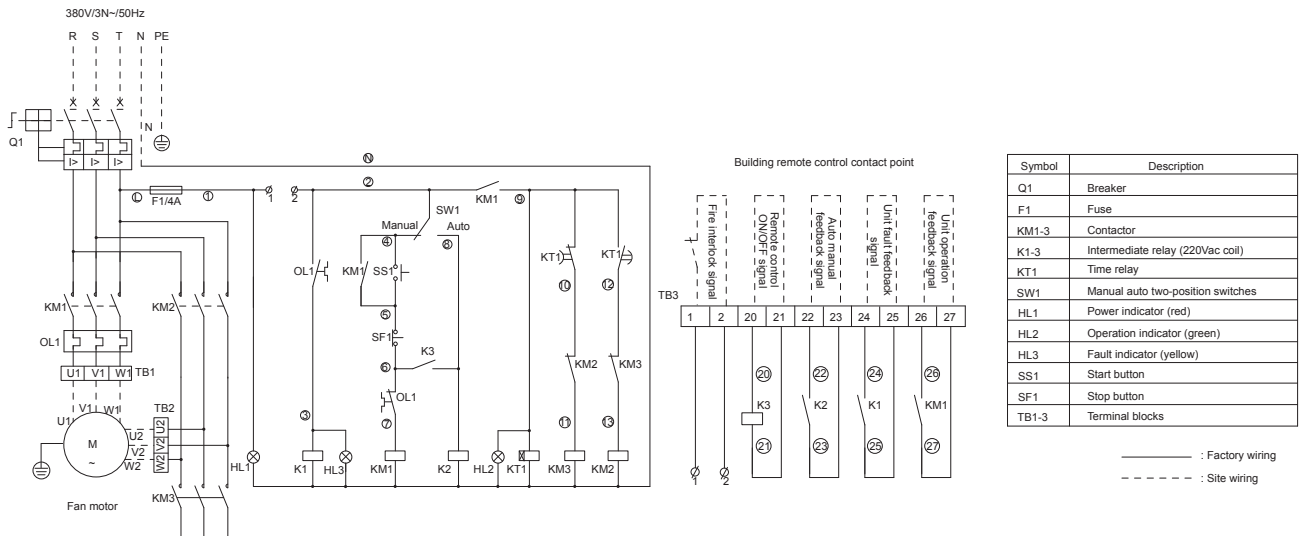
Electrical control (Note: Please contact the factory in advance for the following control functions.)

DDM-E series units are provided with various electrical control schemes, and all the main electrical control units are internationally famous brands to ensure precise, stable & reliable control.

Schematic diagram for direct starting



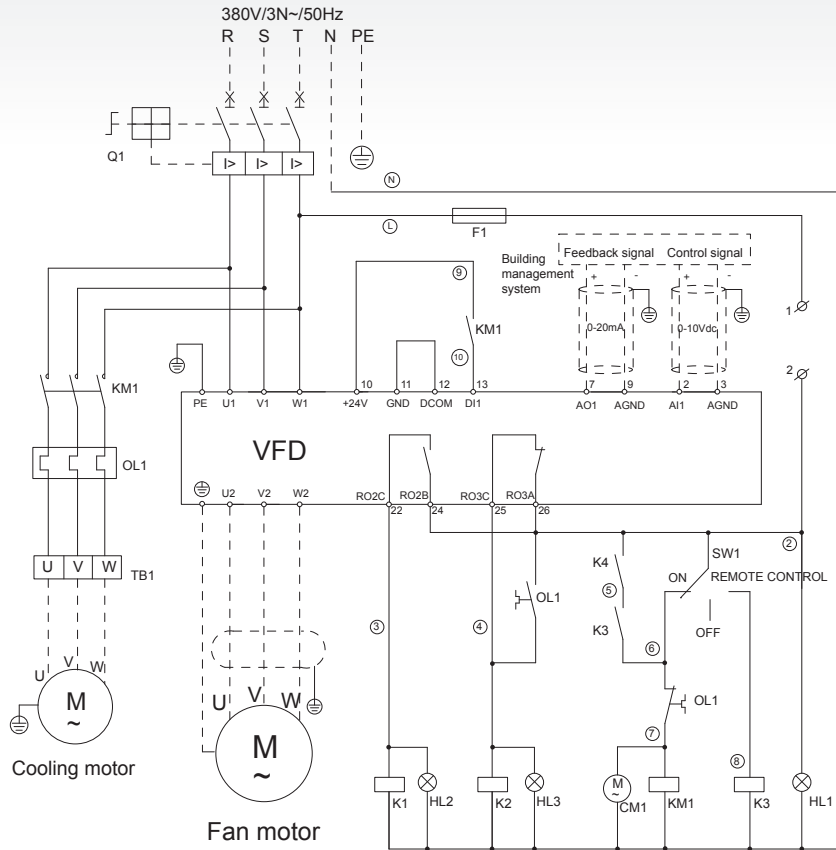
Schematic diagram for Star-Delta Starting



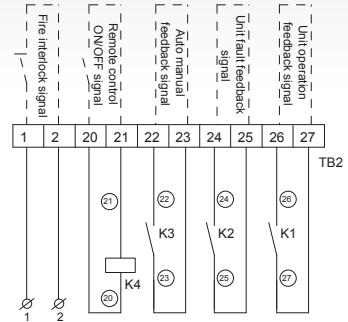
Functional features

- Remote/local start-stop control and status indication;
- Recommended motor startup mode: For rated power under 7.5KW, direct startup mode is recommended. For rated power 11~55KW, star-delta startup mode is recommended. For rated power of 75KW or above, other startup mode is recommended;
- Unit status indication: power, running, failure status;
- Overload, open phase, under-voltage, short circuit and other protection;
- Interlocked with fire signal;
- Other customer required functions.

Variable frequency startup control principle diagram



Building remote control contact point



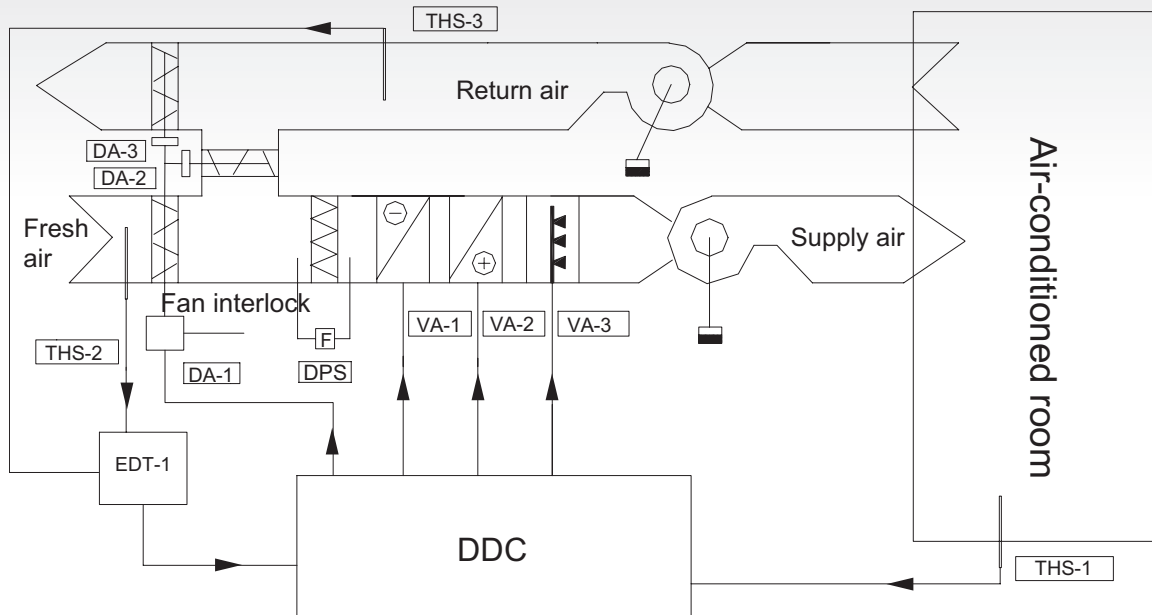
Symbol	Description
Q1	Breaker
F1	Fuse
K1-4	Intermediate relay (200Vac coil)
SW1	Three-position switch of ON, OFF and REMOTE CONTROL
CM1	Cabinet heat dissipation fan
KM1	Contactors
OL1	Overload protector
HL1	Power indicator (red)
HL2	Operation indicator (green)
HL3	Fault indicator (yellow)
VFD	VFD
TB1-2	Terminal block

— Factory wiring
 - - - Site wiring

Functional features

- Remote/local start-stop control and status indication;
- Variable frequency helps to realize the real-time air volume and pressure adjustment for air-handling unit, thus to effectively reduce the energy consumption;
- Variable frequency startup mode reduces the impact to the power grid and the power capacity expansion cost;
- Overload, open phase, under-voltage, short circuit protection;
- Adopt the special frequency converter of international famous brands of HVAC products;
- Interlocked with fire fighting signal;
- Other customer required functions.

Direct digital control with enthalpy difference control function and constant temperature and humidity function



Symbol description

Symbol	Name	Remarks
DDC	Direct digital controller	Analog input/output, switch input/output
VA-1/2/3	Motorized valve	Analog control, optional spring-return
THS-1	Room type temperature and humidity sensor	Combination type
THS-2/3	Air-duct type temperature and humidity sensor	Combination type
EDT-1	Enthalpy difference transmitter	-
DPS-1	Differential pressure switch	-
DA-1/2/3	Damper actuator	Analog control, switch control, optional spring-return

Functional description

DDC is direct digital controller, with configurable analog input/output, switch input/output. The system parameters, operation mode and process curve can be displayed on the controller directly.

- Temperature control: Use the room temperature sensor THS-1, to test the room temperature and the temperature signal is sent to the DDC controller to compare with the pre-set target value. According to the result, the DDC controller releases signal to adjust the opening of cold water valve or hot water valve so as to control the room temperature;
- Humidity control: Use the room humidity sensor, THS-1, to test the room humidity and the humidity signal is sent to the DDC controller to compare with the pre-set target value. According to the result, the DDC controller release signal to adjust the opening of humidifier so as to control the room humidity;
- Mixing air control: THS-2 and THS-3, the fresh/return air-duct temperature and humidity sensor respectively test the temperature and humidity of the fresh air and return air, the result is calculated by EDT-1, the enthalpy difference transmitter, and the enthalpy difference signal is entered into DDC. According to this signal, DDC releases the corresponding signal to control the opening of fresh air, return air and ventilation valve, respectively are DA-1,-2 and-3, thus to adjust the mixing ratio of fresh air and return air to reduce the energy consumption. Meanwhile, the room air condition can be improved. (Keep the lowest fresh air in winter and summer, while use the outdoor fresh air in transition season as far as possible.)

Remark: If there are any other control requirements for temperature and humidity, please contact DAIKIN.

Common combination of function sections (recommend configuration)

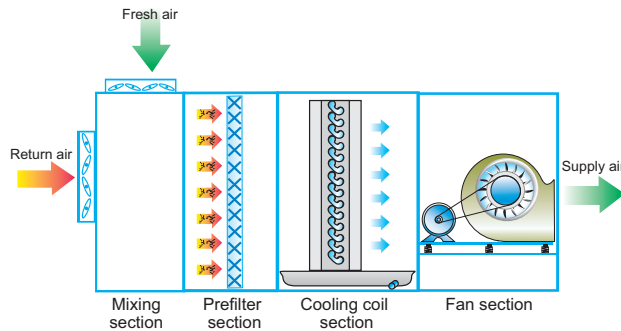
With advanced structure, excellent performance, rich functions and flexible design, various function sections of DDM-E units series can meet different requirements for air handling of various places.

As a famous manufacturer of central air conditioning equipment and supplier of air purification system in the world, DAIKIN has over 50 years experiences for research, design, system application and innovation for air handling units, and provide specialized design solutions of air handling units used in various places, as follows.

For DDM-E series of units, we can provide you with special solution for your specific requirements, Please just submit your requirements to local DAIKIN sales branches.

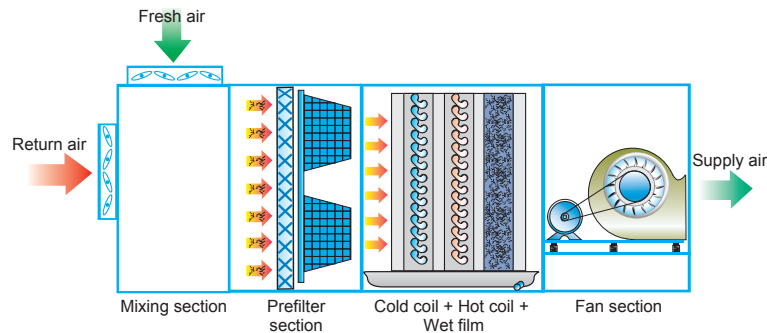
Suitable for the unit used in general comfort place

Air handling unit with fresh return air mixing section, prefilter (G3/G4), cooling coil section (can add heating coil or wet film humidification) and supply section, can meet the temperature control requirements for comfort places.



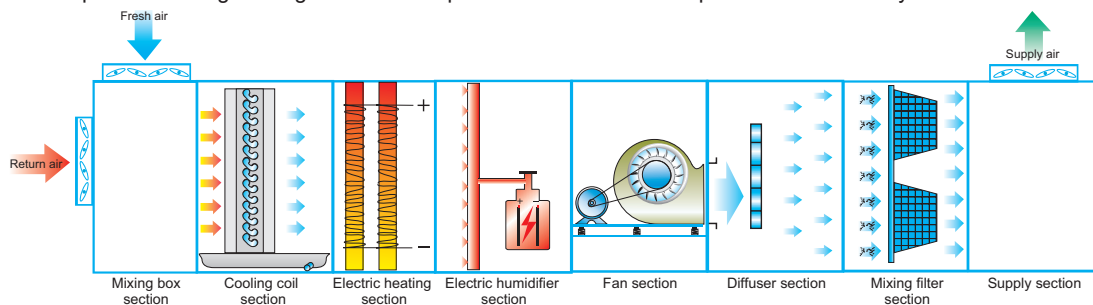
Suitable for the units for advanced comfort places

Equipped with prefilter (G3/G4) and mid-filter (M5/M6), cooling coil section, heating section, wet film humidifier section and fan section. For double layers of air purification treatment, better cleanliness, accuracy control for the supply air temperature, and primarily adjustment for air humidity. It can be used for the places with general requirements for air cleanliness, temperature and humidity.



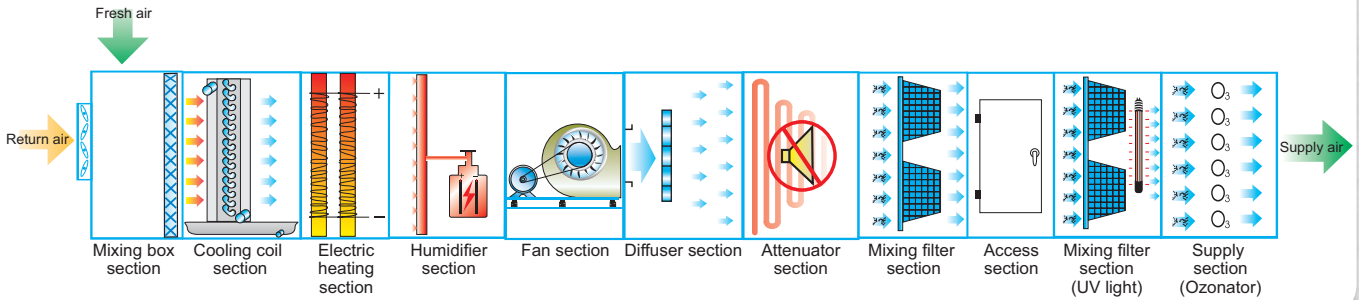
The units fit for the places of purification requirements below 10,000 grades (constant temperature and humidity)

Equipped with primary filter (G4) and cooling coil dehumidification coil, and equipped with stepless regulation electrical heating, the humidification capacity can proportionally controlled and output. Fan section, mixing filter and filter section are with optional differential pressure display, equip with high quality intelligent programmable logic controller. The intelligent control scheme can be used for various purification engineering of different requirement for constant temperature and humidity control.



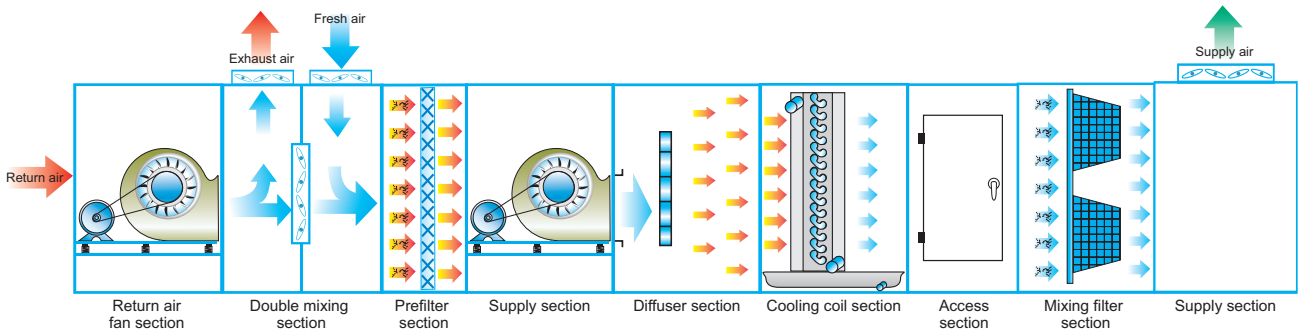
Suitable for the places required 100 grade and 1,000 grade of high quality purification constant temperature and humidity control

Equipped with high quality primary filter (G4) and attenuator filter (F8) containing INTERSEPT antibacterial agent. Equipped with ultraviolet sterilizing lamp in filter section to kill the bacteria filtered from the filter, and fit ozonator or negative-ion generator at air outlet section to fully improve the indoor air quality, and equip electric heating and clean steam humidifier at the same time. Clean type attenuator and backward-curved fan (can equip with variable frequency motor) combine with the efficient or super efficient filter at the end of clean room, maintain constant positive and negative requirements of clean room, meet the requirements of clean room engineering for high cleaning class, constant temperature and humidity, and low noise control.



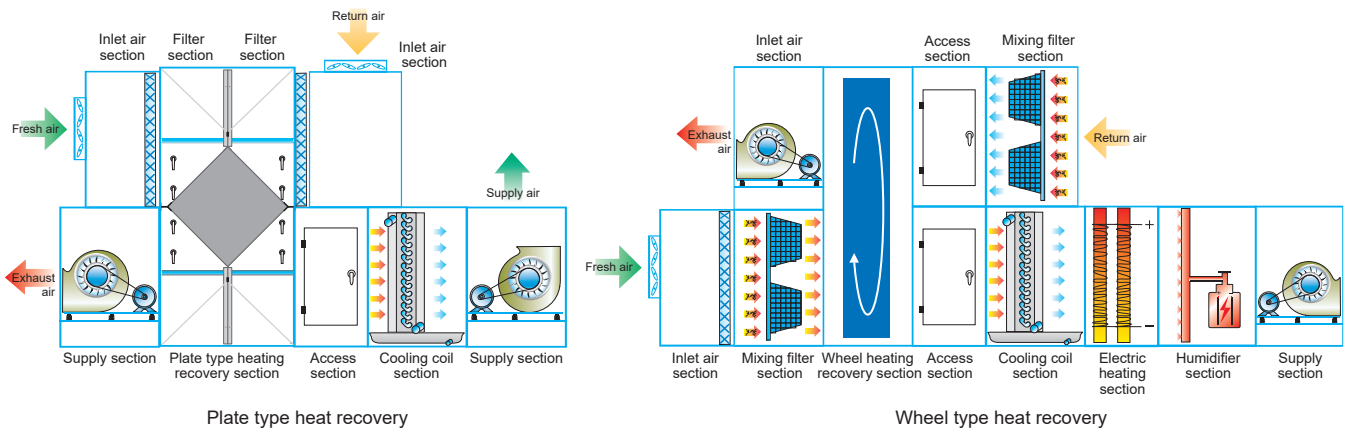
The units suitable for the places of centralized processing fresh air exhaust

Air handling units with primary and mixing filters, work by air return fan and air supply fan together, exhaust air by dividing section concentrated, can control the positive and negative pressure of clean room precisely, suitable for the air handling process of concentration exhausting air.



The recovery unit suitable for energy conservation and environment protection places

Equip with heat recovery, recover part of cold (hot) capacity in exhaust air, and process pre-cooling (heating) treatment to fresh air, and hereby reduce the energy consumption for supply air treatment and meet energy-saving effect. For heat recovery, it can select the wheel type, plate type or heating plate type and the placement types are longitudinal (left and right) type and vertical (up and down) type. Can set the mixing of part return air and fresh air inside, and flexibly configure the function sections at supply and return air side according to the requirements.



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.



The air conditioners manufactured by Daikin Industries have received **ISO 9001 series** certification for quality assurance.

Certificate Number. FM 661837



The airconditioning factories of Daikin Industries have received environmental management system standard **ISO 14001** certification.

Certificate Number. EMS 80362

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

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