Let the building breathe freely

ESD Series

Modular Air Handling Unit

Air flow: 1000 to 300,000 m^3/h

AAF INTERNATIONAL

ESD

Purification-type Modular Air Handling Unit

Certified Product Guaranteed Quality

The ESD series units comply with many global certification standards, and lead the industry with excellent mechanical strength, air leakage rate, thermal bridge coefficient, heat transfer coefficient, purification design and many other performance capabilities.

1 EUROVENT certified

Eurovent certification, broadly accepted in the world, is known for being a high level product performance certification with stringent test means and strict standards. Eurovent certified products are of high degree of credibility.

Eurovent standards for AHU products include EN1886 and EN13053.

- EN1886 specifies the mechanical characteristic of air handling units, such as the cabinet strength grade, cabinet leakage rate, filter bypass leakage rate, cabinet heat transfer coefficient, and cabinet thermal bridge coefficient.
- EN13053 specifies the system performance of air handling units, such as the unit's actual air flow, air pressure, cooling capacity, heating capacity, motor power, and noise.

ESD cabinet complies with the EN1886 standard grade

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

High level — Low level

2 AHRI certified

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.

ESD cabinet conforms to the grade.

Casing deflection class	CD_1
Casing air leakage classC	L_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_6
Rating differential static pressure in. H_2O	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_6	CL_{12}	CL_{24}	CL_{100}
Maximum casing air leakage rate CL_ncfm/100ft²(P_f=1 in.H_2O)	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

3 VDI compliance

Verein Deutscher Ingenieure (VDI), founded in 1856, has become a reputed engineering association in Europe. Its strict standards are adopted by many countries.

Applicable VDI standard for air handling units is VDI6022 (Blatt 1/Blatt 3).

- VDI6022 specifies the planning, air conditioning design, operation, service, and maintenance of purification-type air handling units.

ESD

Purification-type Modular Air Handling Unit

Innovative Structure

Combining the requirements of industrial cleaning and commercial cleaning applications, the ESD series units can provide customers with two customized structural types: standard and clean models. The unit cabinet adopts an innovative double-layer closed frame structure: the high-strength aluminum alloy/steel structure frame is completely wrapped in the thermal insulation frame to prevent cold bridges of the frame, and has higher strength; it also adopts fluorine-free and environmentally friendly high-density foam panels, and the inner and outer panels are connected by ultra-long thermal insulation polymer materials, which can prevent cold bridge and has strong insulation, while the panels are connected by anti-cold bridge bolts. In addition, the cabinet is sealed with an advanced constant-flow one-piece seal ring or closed-cell high-elastic seal strip, with excellent sealing performance.

1 Rugged and reliable

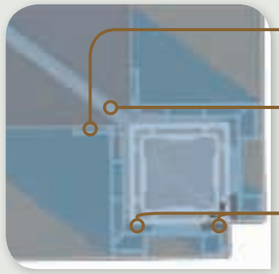
High-strength frame

- High-strength aluminum alloy/galvanized steel structure frame
- Maximum air flow: 300,000 m^3/h, maximum pressure: 3000 Pa
- Reasonably arranged frame based on stress analysis
- Specially reinforced panel when rock wool insulation or high air flow and high static pressure is adopted

High-strength panel

- Panel thickness: 50 mm
- High-density foam materials or rock wool filled to ensure unit strength

2 Multiple sealing layers



Dedicated air-tight sealing groove

- Rock wool sealing material to prevent air leakage from the panel

Inner joint fillers and sealants

- Joint fillers and sealants inside the cabinet
- Optional food-grade sealants/silicone-free sealants

Constant flow one-piece seal ring/Closed-cell high-elastic seal strip

- High-density closed-cell sealing strip + patented air-tight tipping washer
- Optional constant-flow one-piece seal ring for cabinet panel to get excellent seal, corrosion resistance and outstanding anti-aging performance

Constant flow one-piece seal ring

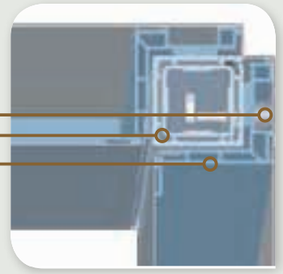
Positive/negative pressure door design

- Positive pressure door at the positive pressure section, and negative pressure door at the negative pressure section; with constant-flow one-piece seal ring to guarantee optimum leak-tightness

Sealing for panel threading hole

- Cable gland for sealing at unit connection port; sealant and heat-insulating sealing strip for sealing at water inlet/outlet pipe in the coil section

3 Multiple anti cold bridge measures



Anti cold bridge design between inner outer panels

- Ultra-long thermal insulation polymer materials between inner and outer panels to prevent cold bridge

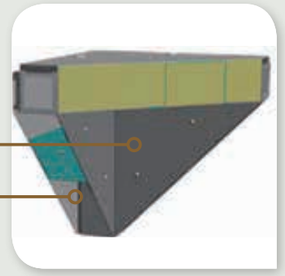
Anti cold bridge design for the frame

- Double-layer frame design, with the metal profile wrapped in the thermal insulation polymer material
- Built-in structure to prevent cold bridge

Fastening kit to avoid cold bridge

- Fasteners embedded in the insulation sleeve without contact with the outer panel, thus have no hidden danger of condensation

4 Applicable to various environments



Multiple insulation options

- Fluorine-free and environmentally friendly high-density foam panels to reduce the heat-insulation coefficient to 0.0199 W/(m·K)
- Optional class A fireproof rock wool insulation
- 50 mm-thick panels for insulation

Standard galvanized and aluminized inner panel

- The only domestic model using galvanized and aluminized panels
- Service life up to 6 times ordinary galvanized panels
- Thermal reflection ability twice that of ordinary galvanized panels

ESD

Purification-type Modular Air Handling Unit

Clean Design for Extreme Cleanliness

The ESD series units are manufactured in strict accordance with the Eurovent option for the hygienic aspect of air handling units and the series of standards VDI6022 formulated by Verein Deutscher Ingenieure (VDI), and strive to keep improving the cleanliness.

Compliance with clean design requirements specified in VDI6022 and Eurovent Hygienic option

Major requirements

Cabinet design	Spray inner panel or SUS; smooth inner surface; double-layer panel; antibacterial material; pore-free sealing material
Filter section	Drainage pan for fresh air filtering for easy cleaning; with differential pressure device; filter materials to prevent the growth of microorganism
Heat exchanger	Aluminum fin with big spacing, and copper heat exchange tube and gas collecting pipe; oblique SUS drain pan; condensed water discharge device
Fan section	Direct driven fan to prevent belt driving; easy to clean
Maintenance	Sufficient maintenance space; enhanced safety and convenience

Advanced Clean Cabinet Technology

Clean design

1. Flat and smooth cabinets both inside and outside

- Cabinet frame completely hidden inside the cabinet
- Integrated access door, with inside flush with panel to avoid accumulation of dust
- Sinking drain pan design for easy cleaning

2. Excellent bacteriostatic and antiseptic effects

- No exposure of non-metal parts, to prevent ozone/formaldehyde and other fungicides from affecting the durability of the product
- Closed-cell sealing materials, guaranteeing high protection against corrosion and bacterial growth
- Stainless steel plate or spray color steel plate as inner and outer panels of the double-layer panel to prevent bacteria and corrosion
- Highly durable unit base after sandblasting and phosphating
- Corrosion-resistant metal line pipes for external wiring

Convenient maintenance

- Large-size integrated access door for easy access
- Optional connecting rod structure for more convenient use
- Externally fixed panels support easy disassembly
- Optional inspection lamp and wide-angle aerial check window for better visibility without condensation

Convenient maintenance | One-click startup | Easy removal | Broader vision

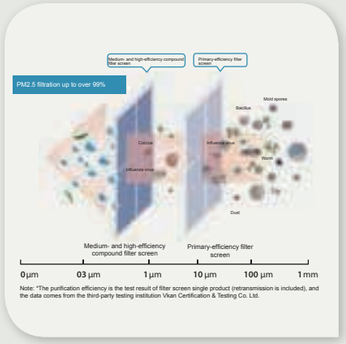
ESD

Purification-type Modular Air Handling Unit

Multiple Layers of Antibacterial Filtration

Clean design

1. Multiple options for dust removal and anti-bacteria



- Various dust removal and sterilization devices available: primary-efficiency/medium-efficiency/high-efficiency/electronic purification/ultraviolet sterilization/ozone generator/nano photon purification, etc.
- Optional primary-/medium-/high-efficiency filters: G3-G4/M5-F9/H10-H13;
- AAF's "ultra-clean" technology with high-pressure ionization for electrostatic dust removal and effective sterilization

2. Optimized design for long-term high efficiency

- Optimized V-shaped bag structure to achieve lower filter resistance; high dust holding and low resistance design for longer service life
- Waterproof ultra-fine glass fiber melt-blown antibacterial filter material, antibacterial agent can be added to avoid bacterial growth and guarantee more stable efficiency throughout the service life

3. Airtight installation with minimum leakage

- High-density and high-elastic sealing parts/constant flow one-piece seal ring for frame sealing
- New buckle design with better clamping effect
- Filter bypass leakage rate ≤ 0.5%

Convenient maintenance

- Filter frame is compatible with filters of various thicknesses and is easy to replace
- Filter section can be equipped with a differential pressure gauge and a differential pressure switch to monitor the filter's dirty and clogged conditions in real time
- Chamfer processing for the installation metal plate in the filter section for safer installation and replacement
- A drainage pan can be equipped in front of the filter section for cleaning

Convenient replacement | Real-time monitoring | Safe and reliable | Worry-free cleaning

Clean design

1. Optimized design for effective anti-corrosion

- Big spacing design of heat exchanger makes it easy to clean
- Standard three-dimensional quick drainage pan with small drainage resistance to achieve smoother drainage
- Heat exchanger placed overhead the drainage pan to prevent the coil from breeding bacteria
- Side-drawing design of heat exchanger/waterproof board for complete cleaning
- Streamlined waterproof board with low resistance and good gas-water separation effect
- Drainage pan with small waterproof strip to prevent the condensed water from splashing outside

2. Quality materials contributes to durable service

- New water-based pain for water collecting pipe of the heat exchanger, corrosion resistant
- Quality aluminum alloy/stainless steel waterproof board with excellent corrosion resistance and aging resistance performance
- Optional hydrophobic fin for smooth drainage and corrosion resistance
- Optional corrosion-resistant stainless steel for the installation metal plate in the coil section

Convenient maintenance

- Coil and waterproof board in side-drawing design for easy cleaning and replacement
- Tool-free fixed buckle for more convenient side-drawing inspection and maintenance
- Convenient handle of waterproof board for easy disassembly of waterproof board

Side-drawing design | Tool-free inspection and maintenance | Handle design

ESD

Purification-type Modular Air Handling Unit

Clean design

1. Innovative clean design

- Optional EC fan or plug fan for the fan section to prevent dust due to belt wear
- IP55-rated standard waterproof motor
- Concealed fan bracket design and flat and smooth inner surface to guarantee complete cleaning

2. Quality parts are corrosion-resistant and dustproof

- Quality bearings with longer service life
- Smooth air inlet/outlet canvas without dust accumulation, can be removed for cleaning

Worry-free convenient maintenance

- A linked switch can be set between the fan and the access door, and the fan will automatically stop when the access door in the fan section is opened
- Standard fan air inlet protective mesh enclosure to protect personal safety
- Standard integrated access door to provide big space for inspection and maintenance
- Optional motor maintenance hanging bracket for more convenient motor maintenance and replacement
- Compression ring can be equipped in the fan section to timely monitor the air flow and air pressure of the unit and maintain the indoor and outdoor pressure difference

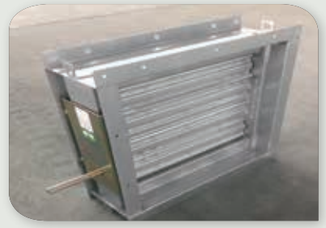
Linked switch | Protective mesh enclosure | Accurate pressure tapping | Motor maintenance hanging bracket

Quality Assurance with Diversified Functions

The diversified function matching design of the "ESD" series units can provide customized solutions for various industries through a professional technical team,
and provide customers with better
quality and service.

Mixing Box Section

Air inlet section



Sealed air valve

Inlet/Outlet air flange soft connection

The air inlet section provides enough space to fully blend the fresh air and return air so as to avoid air stratification and prevent condensation inside the cabinet.

- Built-in air valve (as required) to efficiently prevent air leak and condensation

Air valve material: quality aluminum alloy/stainless steel/hot-dip galvanized coating; sealed air valve (optional)
Air valve type: manual/electric

- Optional devices for the air inlet section: inspection lamp/check window/canvas soft connection/3D drainage pan

Muffler Section

Muffler section

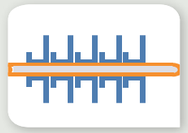
Perforated metal frame

- Porous metal plate with high-quality sound-absorbing cotton inside, which can reach B1 fire rating and meet the fire safety requirements
- Better noise reduction effect if it is placed in the positive pressure section of the unit
- High- and medium-efficiency or above filters installed after the muffler section of high-grade clean places for enhanced safety and reliability
- Optional side-drawing design for easier replacement and cleaning.

Heating Section

Optional devices according to different site conditions and usage characteristics & needs: hot water heat exchanger, steam heat exchanger, electric heating, and burner;

1 Hot-water heating



Secondary flanging design of fins does not damage the copper tube

- The coils of the whole series of units have been certified by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) to ensure the excellent heat exchange performance of the units
- All coils are subjected to pressure test before delivery to ensure no leakage
- Coil equipped with a new corrugated hydrophilic aluminum foil, cross-counterflow design, optimized heat transfer effect
- Gas collecting pipe sealed with a heat-insulating seal ring to prevent cold bridges and reduce air leakage from the unit
- Optional side-drawing design for easier cleaning

  Optional aluminum foil material: anti-corrosion aluminum foil/copper foil

  Optional gas collecting pipe material: seamless steel pipe/copper gas collecting pipe

  Other options: stainless steel frame

2 Electric heater

Bare pipe

Heat protector

- Adjustment of electric heating capacity by group to achieve high temperature control accuracy, good heating effect, and low inertia
- Electric heating tube with smooth surface to make cleaning easier and avoid dust accumulation
- Multiple thermal protection: overtemperature protection, air-less power-off protection, and thermal fuse protection
- Optional electric heater: tension-wrapped/bare pipe

3 Steam heater

Steel pipe rolled aluminum sheet coil

Steel pipe fin

Standard outside-threaded connector

- Bimetallic steel-aluminum composite spiral fins adopt steel pipe as the base pipe; the aluminum fins are formed by one-time rolling of the mold, and are closely connected to the base pipe, which has small contact thermal resistance, high heat transfer coefficient and good heat transfer stability
- Inner steel pipe (base pipe) of the steel-aluminum composite spiral fin pipe protected from corrosion by the outer aluminum pipe wall, with better corrosion resistance
- Optional flange connector

Humidifier Section

A variety of humidification methods are available, including wet film humidification, dry steam humidification, secondary steam humidification, electrode (heat) humidification, high-pressure spraying (micro-fog) humidification, water spraying humidification, etc.

1 Electric humidifier

- Proportional adjustment control, stable, reliable, and more precise
- Support of multiple control signals such as DC 0-10 V or DC 0-5 V, and 4-20 mA
- Use of electric heating humidification to avoid frequent water drainage of the humidifier with less energy used
- Stainless-steel fast-absorption steam spray rod to realize highly efficient anti-corrosion
- Low water level protection device to effectively monitor the use of the humidifier

2 Steam humidifier

- Clean steam humidification to prevent bacteria breeding
- Quality all-stainless steel seamless pipes to prevent rust; nozzles arranged evenly along the length of the nozzle pipe to make the steam evenly distributed throughout the length of the pipe
- Heat-resistant non-metallic nozzles spray no condensed water, which can ensure 100% dry steam humidification
- Sufficient humidification distance to make sure that steam can be completely absorbed
- Sealed installation of steam inlet to effectively prevent cold bridge and air leakage

3 High-pressure micro-frog humidifier

- High-pressure micro-frog humidification is recommended for places with high humidification accuracy requirements
- Stainless steel atomization nozzle, corrosion resistant and has high humidification efficiency
- Stable and advanced high-pressure micro-frog humidification system for more accurate, intelligent and energy-saving control
- Optional touch screen control panel

4 Water spraying humidifier

- Humidification and cooling at the same time, and filtering out the dust in the air and harmful gases such as sulfur dioxide
- Integrated stainless steel frame
- Optional inverter water pump and BMS
- Applicable for chemical, textile, printing, electronic, automobile manufacturing. etc.

Heat Recovery Section

1 Rotary heat recovery

Rotary heat exchanger

There are two optional forms:

- Sensible heat type: Recover air discharge heat
- Total heat type: Recover air discharge heat and water

The rotary is equipped with a self-cleaning sector, which uses the pressure difference between the air supply and air discharge to reduce the possibility of cross contamination between the discharge air and the fresh air.

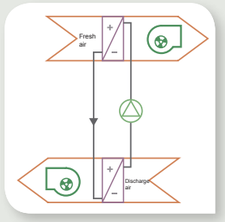
2 Plate type heat recovery

The unit can be equipped with a sensible plate heat recovery device, with two optional types:

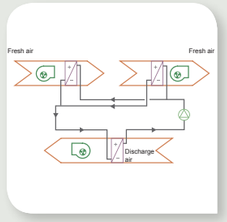
- Standard aluminum material
- Epoxy coating with excellent corrosion resistance

The energy recovery section on the air discharge side can be equipped with a stainless steel drainage pan to ensure that the condensed water produced can be discharged smoothly.

3 Ethylene glycol heat recovery



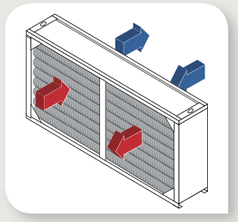
One-to-one energy recovery system



One-to-more energy recovery system

- No cross-contamination, less dependent on space, easy to install, applicable to places with long air supply and discharge distance
- Energy saving: It recovers the heat on the discharge side through the circulation of the ethylene glycol medium inside the heat exchanger, so as to realize the pre-cooling or pre-heating effect on the fresh air side, and reduce energy consumption
- One-to-one or one-to-more energy recovery system as required

4 Heat tube heat recovery



Heat tube heat recovery principle

Heat tube heat recovery device

The heat tube is a high-efficiency and energy-saving component. It is made of pure aluminum tube rolled into aluminum fin tube, cleaned and pumped into high vacuum, and is charged with a certain amount of heat transfer working medium, which is usually R134a. When the air-conditioning system supplies heat, the working medium in the vacuum tube condenses on the fresh air side and evaporates on the return air side, and circulates repeatedly to recover heat; it is quite the contrary for cooling.

- Optional heat tube: Normal temperature sensible heat recovery and low temperature sensible heat recovery
- Characteristics of heat tube: Large heat exchange capacity, rapid thermal response, low resistance loss, no energy loss or cross-contamination

Unit Parameters

Nomenclature

ESD 08 10 – B 5 (PA)

- Factory identification code: (PA/PB/RW)
- Panel thickness: 5-50 mm;
- Design sequence: B series unit;
- Width direction module
- Height direction module
- AAF Purification-type Modular Air Handling Unit

Unit Models

	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
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5	■	■	■	■	■	■	■	■																						

Model Selection Table

Model	Unit air flow (m^3/h)				Cabinet size (panel thickness: 50 mm)	
	Coil face velocity (m/s)				Height (Excluding base)	Width
ESD	2.25	2.50	2.75	3.00	mm	mm
ESD0505	1474	1638	1802	1966	713	713
ESD0507	2479	2754	3029	3305	713	967
ESD0607	3123	3470	3817	4164	840	967
ESD0609	4388	4876	5364	5851	840	1221
ESD0709	5295	5883	6471	7060	967	1221
ESD0714	9542	10602	11662	12722	967	1856
ESD0809	6201	6890	7579	8268	1094	1221
ESD0811	7989	8877	9765	10652	1094	1475
ESD0912	10182	11313	12444	13576	1221	1602
ESD1112	12778	14198	15618	17038	1475	1602
ESD1113	14063	15626	17189	18751	1475	1729
ESD1114	15350	17055	18761	20466	1475	1856
ESD1115	16636	18484	20332	22181	1475	1983
ESD1313	17517	19463	21409	23356	1729	1729
ESD1315	18326	20362	22398	24434	1729	1983
ESD1316	21563	23959	26355	28751	1729	2110
ESD1416	23384	25982	28580	31178	1856	2110
ESD1517	25730	28589	31448	34307	1983	2237
ESD1617	27681	30757	33833	36908	2110	2237
ESD1620	33241	36934	40627	44321	2110	2618
ESD1622	38215	42461	46707	50953	2110	2872
ESD1722	40851	45390	49929	54468	2237	2872
ESD1821	41331	45923	50515	55108	2364	2745
ESD1826	52109	57899	63689	69479	2364	3380
ESD2123	54000	60000	66000	72000	2745	2999
ESD2226	64814	72016	79218	86419	2872	3380
ESD2526	74075	82305	90536	98766	3253	3380
ESD2529	83334	92593	101852	111112	3253	3761
ESD2630	90000	100000	110000	120000	3380	3888
ESD2734	107143	119048	130953		3507	4396

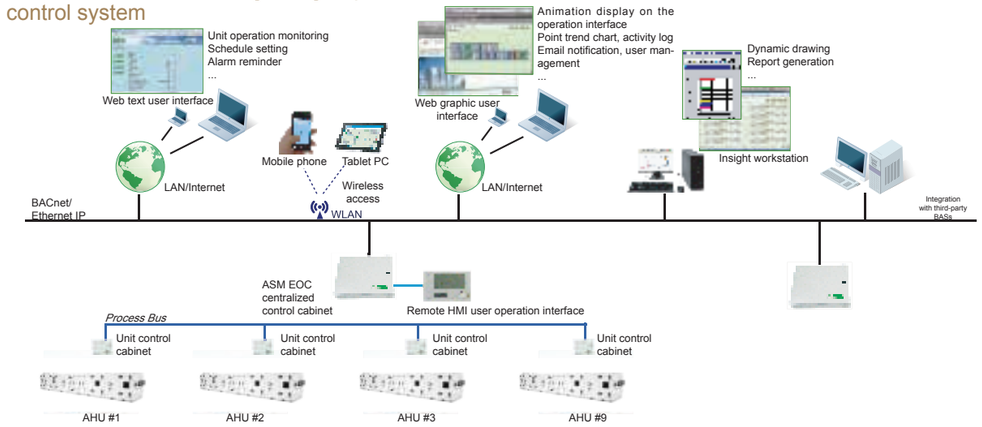
Note:
- This table lists selection for only part commonly-used models.

Unit Control

Integrated AHU

ASM ECO is an air handling unit management system. It can be used as an independent standard unit control system or participate in a group control system to monitor each air handling unit. The flexible configuration provides the optimized control plan for different application requirements of the air handling unit. It can also combine with the CSM ECO equipment room management system to reduce energy consumption.

Architecture of air handling unit group control system



Centralized monitoring

It can realize the communication and information overview of 9 AAF AHUs, which is convenient for unit operation and management.

Flexible configuration

A MicroTech III is used as a centralized controller with high quality assurance, improving hardware configuration flexibility in a comprehensive way.

Methods for energy saving

It reasonably controls the operation of the unit's fan, monitors faults and timely detects alarm information, with TSP function.

Comprehensive applications

It is applicable to air handling units in the form of full fresh air system, constant temperature and humidity system and heat recovery system.

User-friendly interface

The solution provides experience of various user interfaces and graphic remote monitoring. It provides BACnetIP or Modbus protocol options for integration for third-party building management systems (BMSs).

Energy efficiency solutions

- Frequency control technology

According to the feedback of the pressure difference signal, the motor frequency control is realized to balance the system air flow. The fan operating status feedback and fault alarm are set to realize the linkage of the unit and fan.

- Rotary heat recovery technology

By controlling the heat recovery system, the heat recovery efficiency of the room is greatly improved, the energy saving effect is more obvious, and the equipment operation fault feedback can be received.

- TSP -- Time Schedule Program

The corresponding time program are set according to the characteristics of the controlled area to automatically switch the operating mode, so as to improve the operating efficiency of the unit, and reduce the energy consumption of the unit.

- Timeliness of alarm and troubleshooting

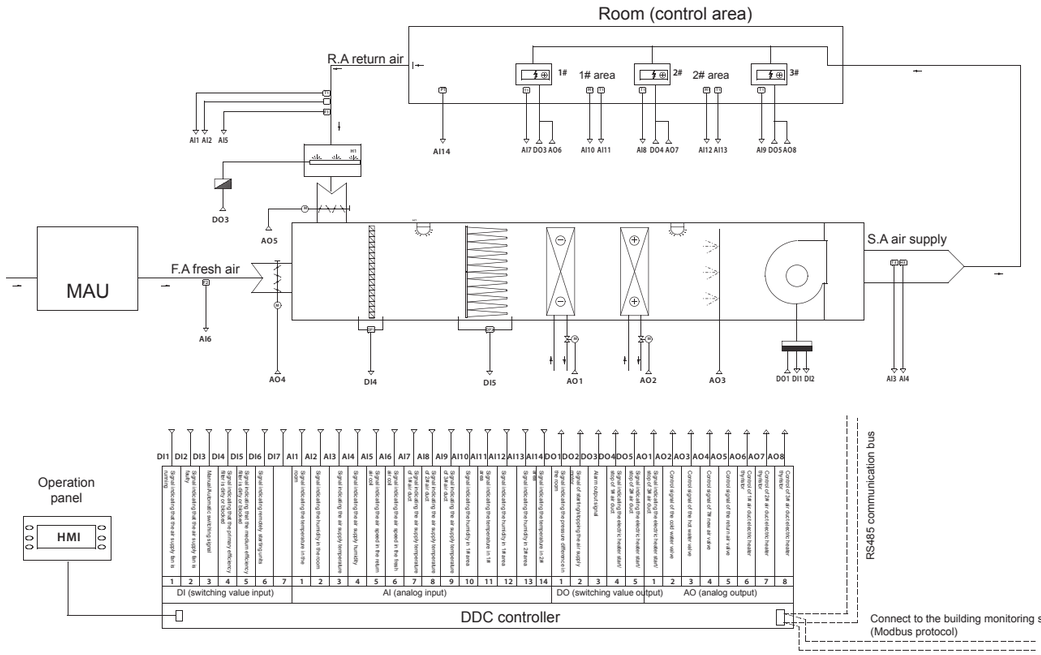
The complete alarm system can perform fault diagnosis for general low-level alarms, output alarm signals in time, run with faults without affecting the system, and stop in time in case of high-level alarms.

- Winter/summer temperature compensation

In case of ultra-high temperature in summer or ultra-low temperature in winter, it can adjust the indoor temperature according to the set point of the outdoor temperature and the slope of the corresponding temperature compensation, so as to optimize the system control.

ESD Electric Control

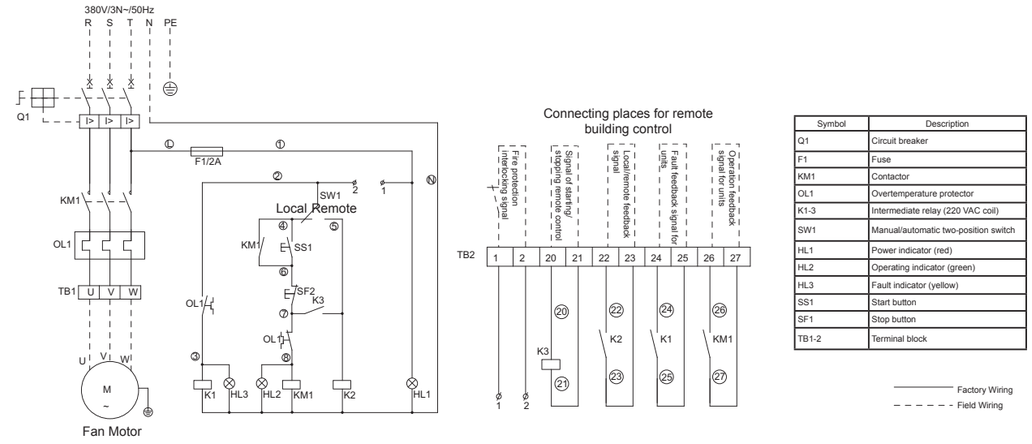
Schematic diagram of constant temperature and humidity control principle



Functional characteristics

- Remote/local unit monitoring operation
- Real-time monitoring of supply air/return air temperature and humidity
- Real-time accurate monitoring of air flow and static pressure
- Accurate control of the pressure difference between indoor and outdoor
- Alarm of filter filth blockage
- Overload, phase loss, undervoltage and short circuit protection
- Interlocking with fire protection signal
- Other functions required by customers

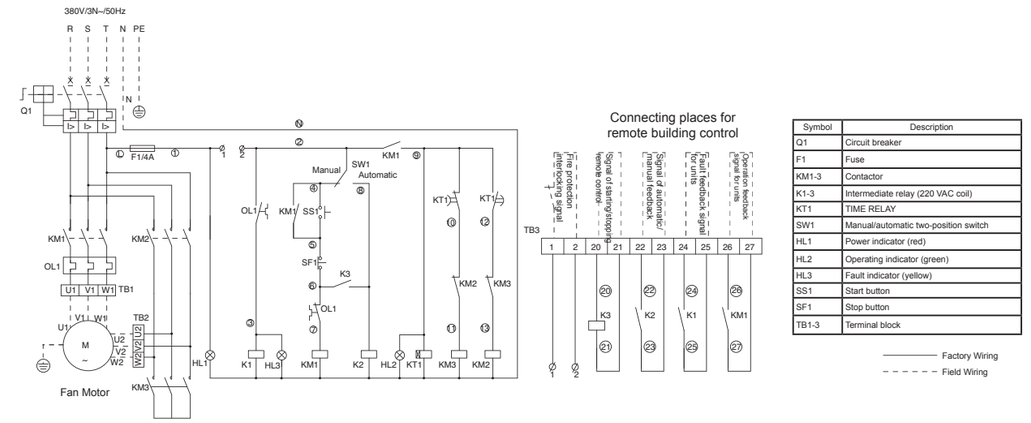
Schematic diagram of direct start principle



Symbol	Description
Q1	Circuit breaker
F1	Fuse
KM1	Contactor
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

Schematic diagram of star-delta start principle



Symbol	Description
Q1	Circuit breaker
F1	Fuse
KM1-3	Contactor
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

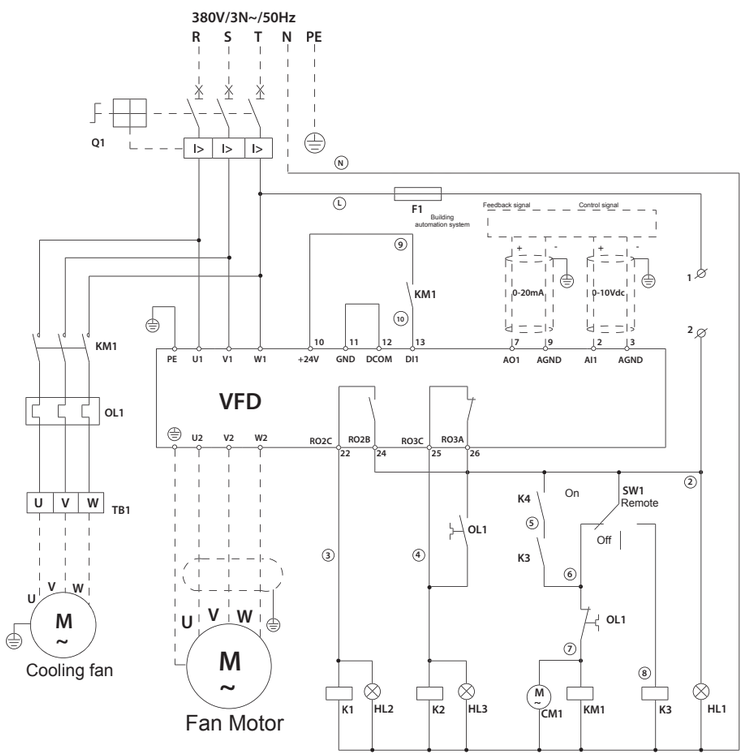
Functional characteristics

- 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

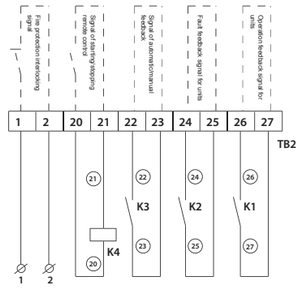
ESD

Purification-type Modular Air Handling Unit

Schematic diagram of inverter start control principle



Connecting places for remote building control



Symbol	Description
Q1	Circuit breaker
F1	Fuse
K1-4	Intermediate relay (220 VAC coil)
SW1	On/Off/Remote three-position switch
CM1	Heat dissipation fan for the cabinet
KM1	Contactor
OL1	Overtemperature protector
HL1	Power indicator (red)
HL2	Operating indicator (green)
HL3	Fault indicator (yellow)
VED	Inverter
TB1-2	Terminal block

Factory Wiring

Field Wiring

Functional characteristics

- Remote/local unit start/stop control and status indicator
- Inverter adjustment realizes the real-time air flow and pressure adjustment function of the air handling unit, thus effectively reducing energy consumption
- 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
- International famous brand HVAC inverters are adopted
- Interlocking with fire protection signal
- Other functions required by customers

McQuay International

★ The product in the printed materials may vary from the actual product. Please refer to the actual unit when purchasing.

★ Information presented in this document has been carefully checked; however, McQuay shall not be responsible for any consequences resulted from any printing errors and omissions.

★ Models, parameters, and performance are subject to change due to product improvements without prior notice. For details about technical parameters, refer to their nameplates.

CH2007-2000-A