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If you have any enquiries, please contact your local importer, distributor and/or retailer.

# DXE-B Series

Purification-type Modular Air Handling Unit DXE

Air flow: 1000 to 300,000 m<sup>3</sup>/h



### 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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# DXE-B

Purification-type Modular Air Handling Unit



## Certified Product Guaranteed Quality

The DXE-B series units comply with many global certification standards, and lead the industry with excellent casing strength, casing air leakage class, thermal bridging factor, thermal transmittance of the casing, 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 casing strength, casing air leakage class, filter bypass leakage, thermal transmittance of the casing, and thermal bridging factor.
- 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.

DXE-B 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

# DXE-B

## 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.



DXE-B5 cabinet conforms to the grade.

Casing deflection class	CD <sub>1</sub>
Casing air leakage class	CL <sub>1</sub>
Thermal transmittance class	CT <sub>1</sub>
Casing thermal bridging class	CB <sub>1</sub>

Standard classification of AHRI Standard 1350

High level Low level

Casing deflection class	CD <sub>1</sub>	CD <sub>2</sub>	CD <sub>3</sub>	CD <sub>4</sub>	CD <sub>5</sub>		
Rating differential static pressure in. H <sub>2</sub> 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 <sub>1</sub>	CL <sub>2</sub>	CL <sub>3</sub>	CL <sub>6</sub>	CL <sub>12</sub>	CL <sub>24</sub>	CL <sub>100</sub>
Maximum casing air leakage rate CL <sub>v</sub> cfm/100ft <sup>2</sup> (P <sub>r</sub> =1 in.H <sub>2</sub> O)	1(0.0508L/(m <sup>2</sup> s))	2(0.1016L/(m <sup>2</sup> s))	3(0.1524L/(m <sup>2</sup> s))	6(0.3048L/(m <sup>2</sup> s))	12(0.6096L/(m <sup>2</sup> s))	24(1.2192L/(m <sup>2</sup> s))	100(5.08L/(m <sup>2</sup> s))
Thermal transmittance class	CT <sub>1</sub>	CT <sub>2</sub>	CT <sub>3</sub>	CT <sub>4</sub>	CT <sub>5</sub>		
Thermal transmittance without leakage (U).Btu/ft <sup>2</sup> /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/ft <sup>2</sup> /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 <sub>5</sub>	CB <sub>4</sub>	CB <sub>3</sub>	CB <sub>2</sub>	CB <sub>1</sub>		
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	

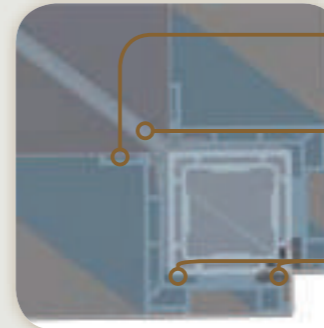
## 3 VDI compliance

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.

## 2 Multiple sealing layers



### Dedicated air-tight sealing groove

- With sealing material for rock wool unit 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

### 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

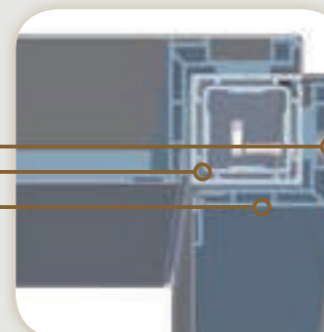
### Sealing for panel threading hole

- 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



Constant flow one-piece seal ring

## 3 Multiple anti cold bridge measures



### Anti cold bridge design between inner and outer panels

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

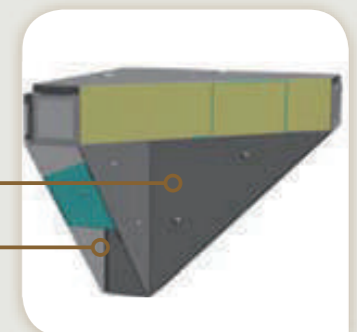
### Anti cold bridge design for the frame

- 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

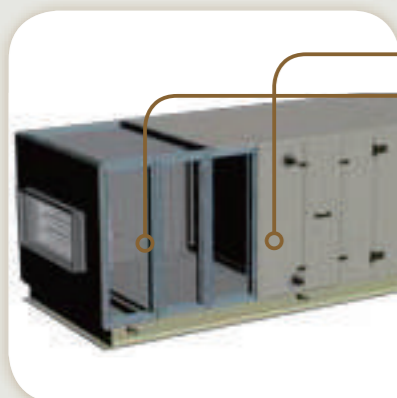
### Standard galvanized and aluminized inner panel

- Service life up to 6 times ordinary galvanized panels
- Thermal reflection ability twice that of ordinary galvanized panels

## Innovative Structure

Combining the requirements of industrial cleaning and commercial cleaning applications, the DXE-B 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/steel structure frame
- Maximum air flow: 300,000 m<sup>3</sup>/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
- Optional 1.0 mm-thick steel plate for the inner and outer panels
- High-density foam materials or rock wool filled to ensure unit strength

# DXE-B

Purification-type Modular Air Handling Unit

DXE-B

## Clean Design for Extreme Cleanliness

The DXE-B 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.

## Strict Design for Purification

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
- Hex socket grub screws are used for fastening inside the unit.
- 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 conduit 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 open

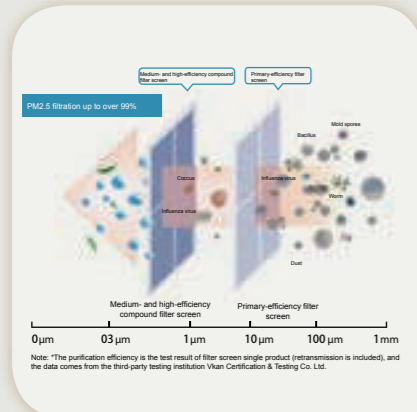
Easy removal

Broader vision

## 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;
- "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

### 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

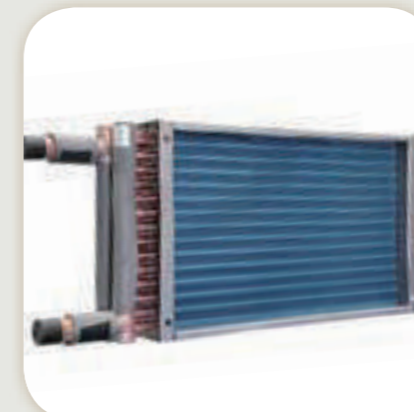
Safe and reliable

Worry-free cleaning

## Clean Heat Exchange

### 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
- Streamlined eliminator with low resistance and good gas-water separation effect
- Drainage pan with small waterproof strip to prevent the condensed water from splashing outside of the drain pan

#### 2. Quality materials contributes to durable service



- New water-based pain for header 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 eliminator in side-drawing design for easy cleaning and replacement
- Tool-free fixed buckle for more convenient side-drawing inspection and maintenance
- Convenient handle of eliminator for easy disassembly

Side-drawing design

Tool-free inspection and maintenance

Handle design

# DXE-B

Purification-type Modular Air Handling Unit

## High-efficiency and Stable Dust-free Air Supply

### 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

# DXE-B

## Quality Assurance with Diversified Functions

The diversified function matching design of the "DXE-B" 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 damper



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.

- Optional built-in damper to efficiently prevent air leak and condensation
- Damper material: quality aluminum alloy/stainless steel/hot-dip galvanized coating; sealed damper (optional) damper type: manual/electric
- Optional devices for the air inlet section: access lamp/view port/canvas soft connection/3D drainage pan

### Muffler Section



Muffler section



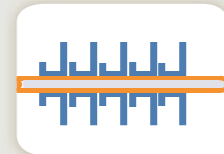
Perforated metal frame

- Porous metal plate with high-quality sound-absorbing cotton inside, which can 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



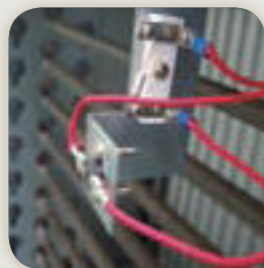
Secondary flanging design of fins does not damage the copper tube

- 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
  - Coil header 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 coil header material: seamless steel header/copper header  
Other options: stainless steel frame

### 2 Electric heater



Bare tube



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 tube

### 3 Steam coil



Steel pipe rolled aluminum sheet coil



Steel pipe fin



Standard male thread 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 heating humidification



- 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 Dry steam humidification



- 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-fog humidifier



- High-pressure micro-fog 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-fog 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.





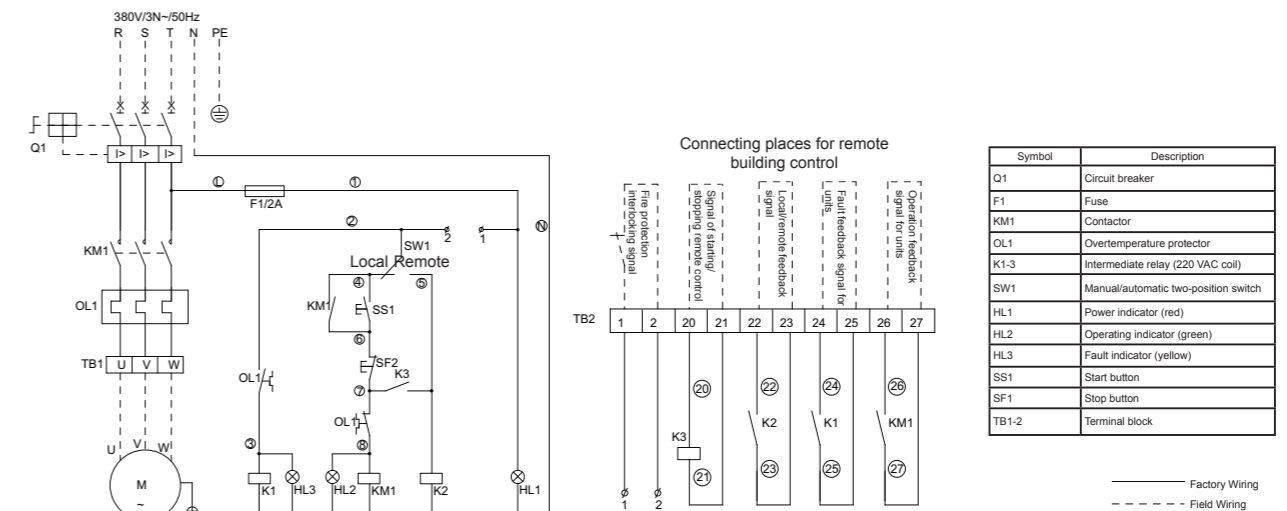
## Model Selection Table

Model	Unit air flow (m³/h)				Cabinet size (panel thickness: 50 mm)	
	Coil face velocity (m/s)				Height (Excluding base)	Width
DXE	2.25	2.50	2.75	3.00	mm	mm
DXE0505	1474	1638	1802	1966	713	713
DXE0507	2479	2754	3029	3305	713	967
DXE0607	3123	3470	3817	4164	840	967
DXE0609	4388	4876	5364	5851	840	1221
DXE0709	5295	5883	6471	7060	967	1221
DXE0714	9542	10602	11662	12722	967	1856
DXE0809	6201	6890	7579	8268	1094	1221
DXE0811	7989	8877	9765	10652	1094	1475
DXE0912	10182	11313	12444	13576	1221	1602
DXE1112	12778	14198	15618	17038	1475	1602
DXE1113	14063	15626	17189	18751	1475	1729
DXE1114	15350	17055	18761	20466	1475	1856
DXE1115	16636	18484	20332	22181	1475	1983
DXE1313	17517	19463	21409	23356	1729	1729
DXE1315	18326	20362	22398	24434	1729	1983
DXE1316	21563	23959	26355	28751	1729	2110
DXE1416	23384	25982	28580	31178	1856	2110
DXE1517	25730	28589	31448	34307	1983	2237
DXE1617	27681	30757	33833	36908	2110	2237
DXE1620	33241	36934	40627	44321	2110	2618
DXE1622	38215	42461	46707	50953	2110	2872
DXE1722	40851	45390	49929	54468	2237	2872
DXE1821	41331	45923	50515	55108	2364	2745
DXE1826	52109	57899	63689	69479	2364	3380
DXE2123	54000	60000	66000	72000	2745	2999
DXE2226	64814	72016	79218	86419	2872	3380
DXE2526	74075	82305	90536	98766	3253	3380
DXE2529	83334	92593	101852	111112	3253	3761
DXE2630	90000	100000	110000	120000	3380	3888
DXE2734	107143	119048	130953	143953	3507	4396

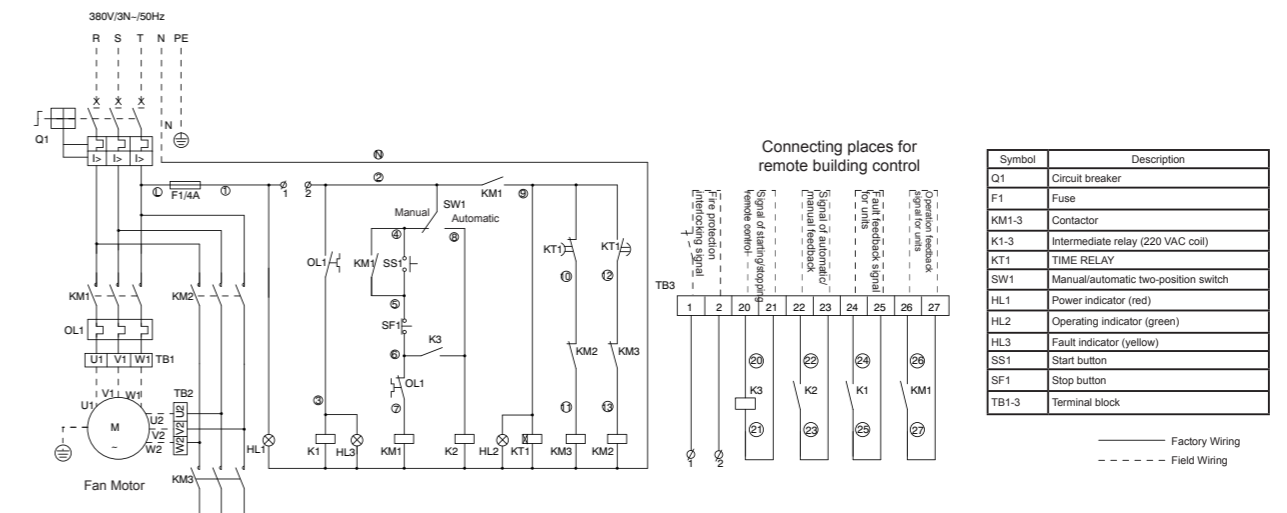
Note:

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

## Schematic diagram of direct start principle



## Schematic diagram of star-delta start principle



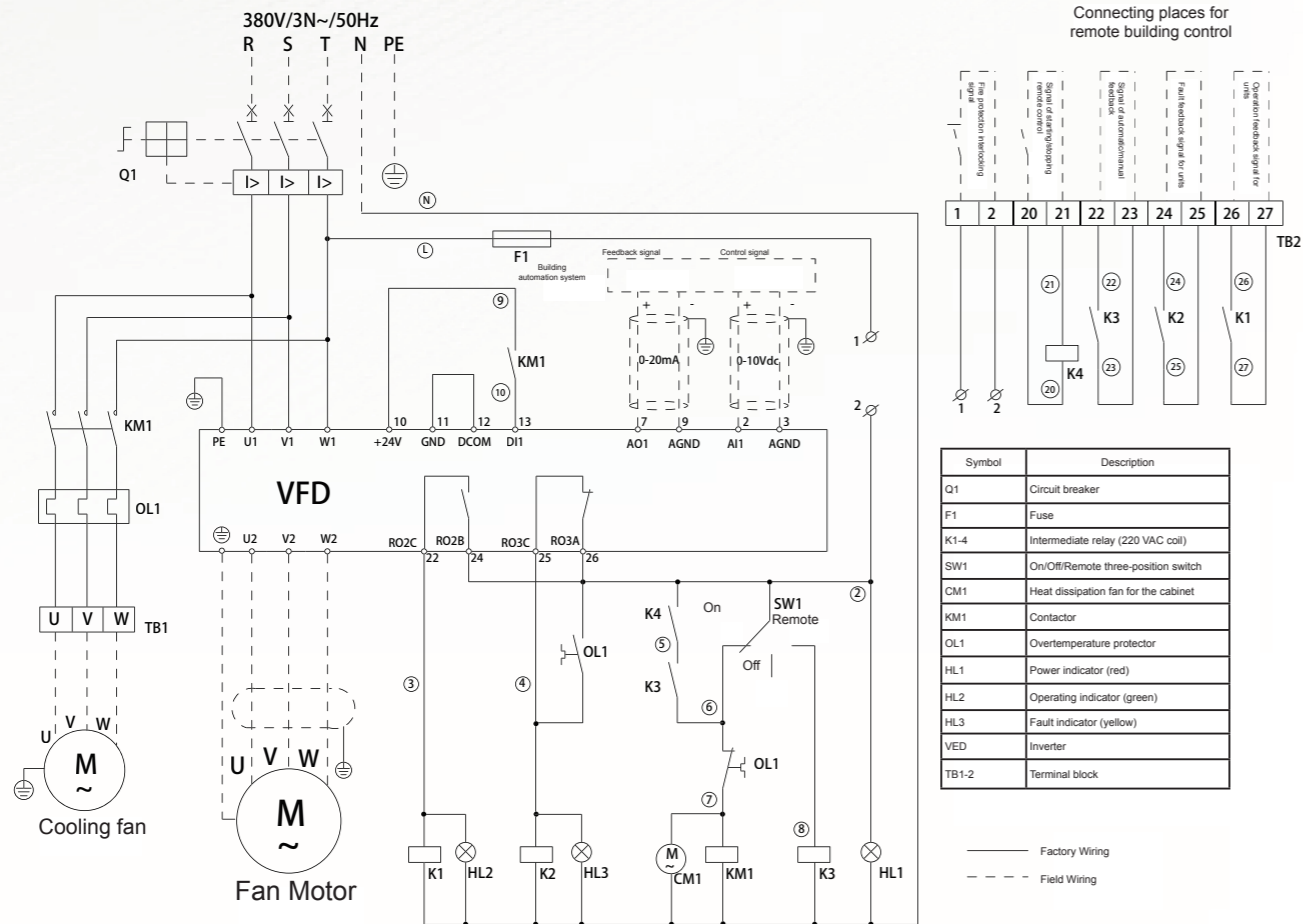
## Functional characteristics

- 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

# DXE-B

Purification-type Modular Air Handling Unit

## Schematic diagram of inverter start control principle



### 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