



# YBFC Fan Coil Units



The power behind **your mission**

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# Product Introduction

## YBFC Fan Coil Units

YBFC high-efficiency fan-coil units are divided into two major series - ceiling concealed installation and vertical concealed installation. Each range has 2 or 3 pipes for selection, each with 10 models. Under standard working conditions the airflow ranges from 180m³/h to 2380m³/h (high speed), the cooling capacity ranges from 1.78 to 12.94kW, and the heating capacity ranges from 1.63 to 21.74kW. There is a wide range of products, so the different needs of customers can be met. The products are rigorous in design and meticulous in manufacturing; novel in style and advanced in structure; they have high performance, low noise, low power consumption, and high safety and reliability, and they offer easy maintenance and installation.

## Design Features

### High Efficiency

The heat exchanger units adopt high-quality copper tubes, and are equipped with high-efficiency corrugated louver hydrophilic aluminum fins, using advanced mechanical non-expansion tube technology with high heat exchange efficiency. Equipped with large air flow and low noise fans to enhance heat transfer, so heat transfer efficiency is maximized.

### Quiet Operation

All units are optimized for maximum performance. Each fan has been thoroughly checked to ensure high efficient and quiet operation.

### No Condensation

The drain pan of the unit is integrally stamped and formed, so there are no welding seams or solder joints; flame-retardant insulating material is integrally attached to the pan to prevent dripping, leakage and condensation.

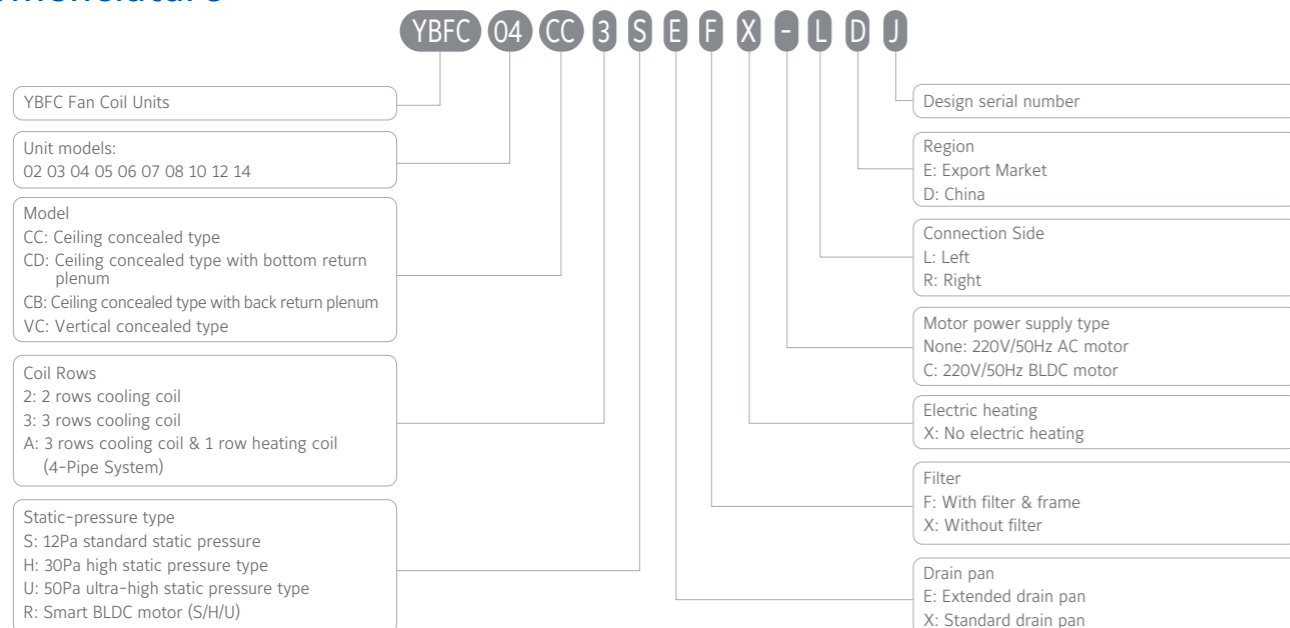
### Easy Installation

The vertical concealed fan-coil unit can be reliably wall-mounted under window sills, and customers can decorate their rooms to be comfortable and beautiful according to their own preferences.

### Easy Maintenance

The motor uses imported high-precision and high-quality ball bearings, so there is no need to supplement with oil; it is self-lubricating, with low noise and a long lifespan. The central shafts of the motor have been tempered and the surfaces have been given an anti-corrosion treatment, making them very durable.

## Nomenclature



### Flexible Application

Provides a variety of options to meet the different needs of customers.

### Quality Assurance

YBFC fan coils have passed the United States Air Conditioning Refrigeration Association AHRI Certification.



### Thermostats

APC-TMS 2000 thermostat  
Working modes: cooling/heating/ventilation



T8000 thermostats  
Working modes: cooling/heating/ventilation



# YBFC Technical Specifications | 2-Pipe | 2 Rows

Model			YBFC02	YBFC03	YBFC04	YBFC05	YBFC06	YBFC07	YBFC08
Rated Air Flow m³/h (Static Pressure S/H/U)	High		360	520	690	870	1030	1190	1360
	Medium		270/270/270	410/440/390	520/535/530	660/660/700	750/790/800	860/910/850	1030/1135/1200
	Low		190/180/190	270/310/270	350/370/360	440/440/530	500/540/580	700/620/590	640/810/860
Rated Cooling Capacity kW (Static Pressure S/H/U)	Total Heat	High	2.0/2.0/2.0	3.03/3.03/3.03	3.6/3.6/3.6	4.5/4.5/4.5	5.4/5.4/5.4	6.3/6.3/6.3	7.2/7.2/7.2
	Sensible Heat	High	1.42/1.43/1.35	2.1/2.1/2.1	2.71/2.65/2.71	3.19/3.36/3.34	3.89/3.89/3.86	4.44/4.44/4.44	5.41/5.41/5.3
Rated Heating Capacity kW (Static Pressure S/H/U)	High		3.16/3.19/3.06	5.05/5.05/5.05	6.09/5.97/6.09	7.11/7.33/7.29	8.74/8.74/8.56	10.07/10.07/10.07	12.49/12.49/12.28
Input Power W (Static Pressure S/H/U)	AC Motor	High	32/38/41	42/54/58	57/68/76	72/80/92	90/99/114	107/120/130	127/142/165
		Medium	24/30/36	30/45/47	51/59/67	56/73/84	82/87/112	99/99/110	109/138/161
		Low	18/23/24	25/34/40	42/50/56	42/61/76	62/70/110	78/82/91	91/117/154
	Smart BLDC Motor	High	15/19/25	22/28/36	27/34/45	39/47/60	52/62/76	60/72/87	61/75/93
		Medium	11/12/15	11/17/19	18/17/21	20/25/29	23/30/35	23/33/40	37/43/54
		Low	7/8/10	6/9/10	9/9/12	11/13/14	12/16/16	13/15/18	21/23/29
Running Current A (Static Pressure S/H/U)	AC Motor	High	0.15/0.18/0.19	0.20/0.26/0.28	0.27/0.32/0.36	0.33/0.38/0.44	0.43/0.47/0.51	0.51/0.58/0.62	0.61/0.66/0.74
	Smart BLDC Motor	High	0.17/0.20/0.24	0.21/0.26/0.32	0.26/0.33/0.40	0.38/0.41/0.51	0.45/0.53/0.65	0.49/0.60/0.71	0.66/0.81/0.99
Number Of Motors			1	1	1	1	1	1	2
Sound Level dB(A) (Static Pressure S/H/U)	AC Motor	High	34/33/36	35/34.5/38	36/38/41	40/39.5/41.5	44/40/42.5	45.5/42/43.5	45.5/42/44
	Smart BLDC Motor	High	34/33/36	35/34.5/38	36/38/41	40/39.5/41.5	44/40/42.5	45.5/42/43.5	45.5/42/44
Water Flow l/s (Static Pressure S/H/U)	Cooling Conditions	High	0.096/0.096/0.096	0.145/0.145/0.145	0.172/0.172/0.172	0.215/0.215/0.215	0.258/0.258/0.258	0.301/0.301/0.301	0.344/0.344/0.344
	Heating Conditions	High	0.096/0.096/0.096	0.145/0.145/0.145	0.172/0.172/0.172	0.215/0.215/0.215	0.258/0.258/0.258	0.301/0.301/0.301	0.344/0.344/0.344
Water Pressure Drop kPa (Static Pressure S/H/U)	Cooling Conditions	High	30.0	28.0	30.0	27.0	38.0	40.0	40.0
	Heating Conditions	High	30.0	28.0	30.0	27.0	38.0	40.0	40.0
Net Weight Of Unit kg			CC	8.7	10.4	11.8	12.3	13.6	15.3
			CB/CD	11.8	14	15.8	16.5	18.1	20.4
Coil	Fin Type	Corrugated-Louver Aluminum Fin With Hydrophilic Coating							
	Working Pressure	1.6MPa							
Fan	Type	Forward Curved Centrifugal Fan							
Motor	Type	Single Phase Permanent Split-Capacitor (PSC) Motor Or Brushless DC (BLDC) Motor							
	Protection Class	IP20							
	Insulation Class	B							
Water Inlet And Outlet Connections	Pipe Size	Rc 3/4"							
Drain Pan Connection	Pipe Size	R2 3/4"							

Note:

- Rated cooling conditions: air inlet at 27°C DB/19.5°C WB, chilled water inlet/outlet at 7°C/12°C.
- Rated heating conditions: air inlet at 21°C DB, hot water inlet at 60°C.
- The air flow, cooling total/sensible heat, and heating capacity are based on the CC type units. Refer to the selection software for the performance report of VC units.
- Sound level: S-type (12Pa) with 1m air duct on the return side and test point is 1 meter below the units (GB/T19232-2019 Figure C.2).  
H/U type (30/50Pa) with 2m air duct on both supply and return side and test point is 1m directly below the units. (GB/T19232-2019 Figure C.3).
- Left or right sidedness cannot be adjusted on site.
- Static pressure type: S standard type (12Pa), H high static pressure type (30Pa), U ultra high static pressure type (50Pa)
- The BLDC motor unit is only applicable to CC/CB/CD units.
- The weight of the unit in the table is the weight of the AC motor unit, and the weight for the BLDC motor unit includes an additional 3.5 kg to the data in the above table.
- The above air flow, cooling capacity, heating capacity, input power and running current are based on 220V input voltage. When a unit is used with 230V input voltage, the performance data should be estimated and adjusted with below correction factors.
  - Airflow: 1.04.
  - Cooling capacity and heating capacity: 1.02.
  - Input power: 1.07.
  - Running current: 1.03.
  - Sound Level (Noise): +1.5dB.



# YBFC Optional Accessories – BLDC Brushless DC Motor

As an energy-saving, environmentally friendly, quiet and comfortable product, the brushless DC (BLDC) fan coil unit can be widely used in public places such as villas, apartments, high-end hotels, hospitals, office buildings, etc.



## Energy Efficient

- ‡ The efficiency is doubled compared to the traditional AC motor, and the average power consumption is only 50% to 70% of that of the AC motor.



### Smart BLDC:

In automatic operation mode, the unit automatically performs stepless adjustment of fan speed, optimizing energy consumption. In manual mode, the user can set the fan speed at high, medium, or low according to different indoor load requirements.

## Low Noise

### Smart BLDC:

- ‡ Uses sine wave PWM control, so the motor runs smoothly, and vibration and noise are reduced. Noise is 1 to 2dB(A) lower than an AC motor.
- ‡ Supports lower speed operation at a part load, resulting in lower noise.



## Smart Control

### Smart BLDC:

- ‡ Users can control single unit or multiple units centrally. A single wired controller can control up to 8 units of the same model at the same time.
- ‡ The units come with an RS485 communication interface, supporting standard Modbus communication protocols, and can be linked with building automation systems to bring about centralized operations and management of remote automation and monitoring.
- ‡ The optional dedicated thermostat, touch LCD screen or simplified LCD screen are beautiful and elegant, and a wide variety of colors are available, allowing seamless integration with existing decorations.



Touch screen BLDC dedicated thermostat



Simplified BLDC dedicated thermostat

- ‡ Easy operation, with automatic and manual modes. Includes timer, fault alarm, parameter setting, and other functions.

## Comfort And Safety

### Smart BLDC:

- ‡ Stepless airflow adjustment allow for precise room temperature control, improving occupant comfort.
- ‡ The units come with a step-up module to ensure the safety and stability of the unit, so they can be applied in a wider voltage range, and external voltage fluctuations that cause the unit to degrade or damage the unit can be avoided.
- ‡ Two-level overcurrent and overheat protection to prevent overloading and burning the motor.

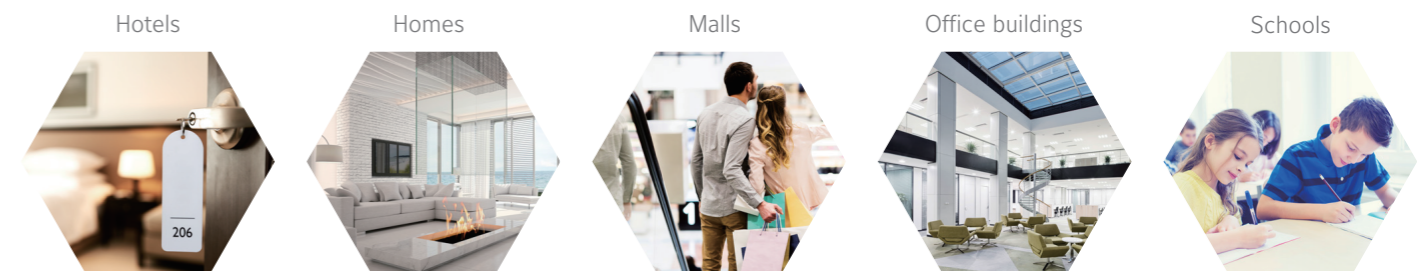


## Flexible Design

- ‡ The maximum or minimum speed of the fan can be adjusted to maintain the indoor air flow requirements.

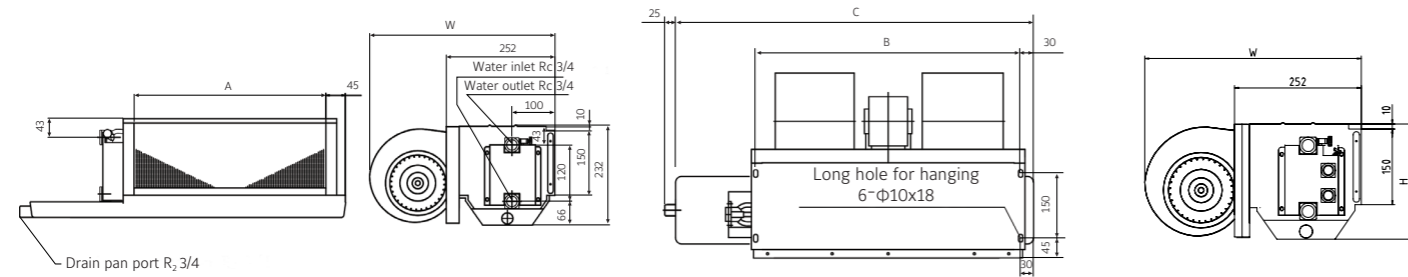
### Smart BLDC Unit:

- ‡ Users can adjust dipswitch to choose among 12Pa/30Pa/50Pa static pressure, depending on the required application.
- ‡ Optional TiO<sub>2</sub>, electric heater and valve packages (on/off type or modulating).



# YBFC Dimensions

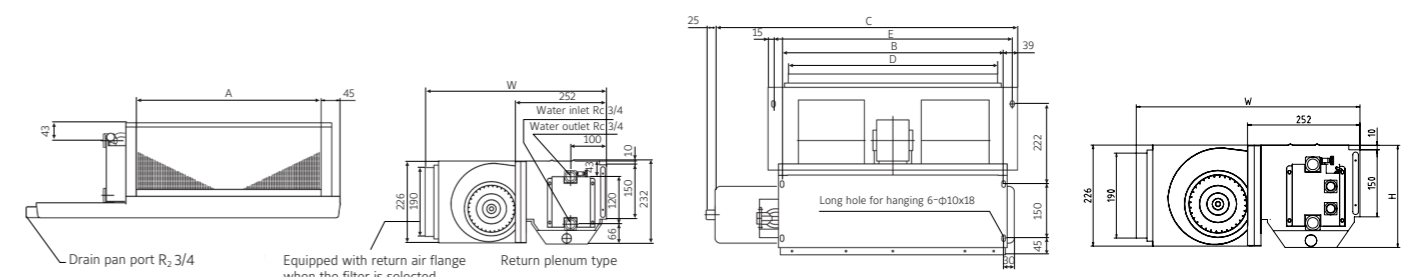
## Ceiling Concealed



Model	A	B	C (Length)	C* (Length)	W (Width)	H (Height)	Plenum Connection Dimension (mm x mm)
YBFC-02CC-2(3/A)-S(H/U)	435	465	635	735	445	233	435 x 150
YBFC-03CC-2(3/A)-S(H/U)	585	615	785	885	445	233	585 x 150
YBFC-04CC-2(3/A)-S(H/U)	665	695	865	965	445	233	665 x 150
YBFC-05CC-2(3/A)-S(H/U)	725	755	925	1025	445	233	725 x 150
YBFC-06CC-2(3/A)-S(H/U)	825	855	1025	1125	445	233	825 x 150
YBFC-07CC-2(3/A)-S(H/U)	1005	1035	1205	1305	445	233	1005 x 150
YBFC-08CC-2(3/A)-S(H/U)	1205	1235	1405	1505	445	233	1205 x 150
YBFC-10CC-3(A)-S(H/U)	1255	1285	1455	1555	445	233	1255 x 150
YBFC-12CC-3(A)-S(H/U)	1505	1535	1705	1805	445	233	1505 x 150
YBFC-14CC-3(A)-S(H/U)	1755	1785	1955	2055	445	233	1755 x 150

- Note:
1. Facing the air outlet, if the piping is on the left, the unit is left-sided, otherwise it is a right-sided unit;
  2. C\* is the size of the unit with extended drain pan (optional).
  3. The BLDC motor unit needs to be equipped with a 100mm extended drain pan.

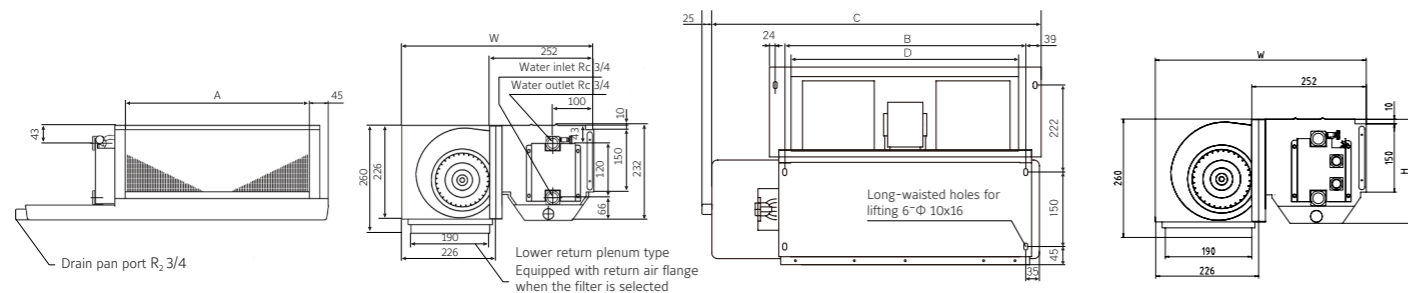
## Concealed Ceiling With Back Return Plenum



Model	A	B	C (Length)	C* (Length)	D	W (Width)	H (Height)	Plenum Connection Dimension (mm x mm)
YBFC-02CB-2(3/A)-S(H/U)	435	465	655	755	431	501	233	435 x 150
YBFC-03CB-2(3/A)-S(H/U)	585	615	805	905	581	501	233	585 x 150
YBFC-04CB-2(3/A)-S(H/U)	665	695	885	985	661	501	233	665 x 150
YBFC-05CB-2(3/A)-S(H/U)	725	755	945	1045	721	501	233	725 x 150
YBFC-06CB-2(3/A)-S(H/U)	825	855	1045	1145	821	501	233	825 x 150
YBFC-07CB-2(3/A)-S(H/U)	1005	1035	1225	1325	1001	501	233	1005 x 150
YBFC-08CB-2(3/A)-S(H/U)	1205	1235	1425	1525	1201	501	233	1205 x 150
YBFC-10CB-3(A)-S(H/U)	1255	1285	1475	1575	1251	501	233	1255 x 150
YBFC-12CB-3(A)-S(H/U)	1505	1535	1725	1825	1501	501	233	1505 x 150
YBFC-14CB-3(A)-S(H/U)	1755	1785	1975	2075	1751	501	233	1755 x 150

- Note:
1. Facing the air outlet, if the pipes are on the left, it is a left-sided unit, otherwise it is a right-sided unit.
  2. C\* is the size of the unit with extended drain pan (optional).
  3. AC motor units with back and bottom return air can be refitted according to site needs, but the DC brushless unit cannot be directly refitted.
  4. Does not come with return air flange as standard, but when a filter is selected, a flange is provided.
  5. The BLDC motor unit needs to be configured with the 100mm extended drain pan.

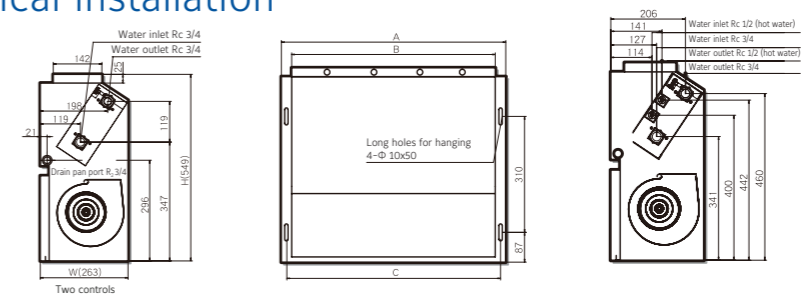
## Concealed Ceiling With Bottom Return Plenum



Model	A	B	C (Length)	C* (Length)	D	W (Width)	H (Height)	Plenum Connection Dimension (mm x mm)
YBFC-02CD-2(3/A)-S(H/U)	435	465	645	745	431	467	233	435 x 150
YBFC-03CD-2(3/A)-S(H/U)	585	615	795	895	581	467	233	585 x 150
YBFC-04CD-2(3/A)-S(H/U)	665	695	875	975	661	467	233	665 x 150
YBFC-05CD-2(3/A)-S(H/U)	725	755	935	1035	721	467	233	725 x 150
YBFC-06CD-2(3/A)-S(H/U)	825	855	1035	1135	821	467	233	825 x 150
YBFC-07CD-2(3/A)-S(H/U)	1005	1035	1215	1315	1001	467	233	1005 x 150
YBFC-08CD-2(3/A)-S(H/U)	1205	1235	1415	1515	1201	467	233	1205 x 150
YBFC-10CD-3(A)-S(H/U)	1255	1285	1465	1565	1251	467	233	1255 x 150
YBFC-12CD-3(A)-S(H/U)	1505	1535	1715	1815	1501	467	233	1505 x 150
YBFC-14CD-3(A)-S(H/U)	1755	1785	1965	2065	1751	467	233	1755 x 150

- Note:
1. Facing the air outlet, if the pipes are on the left, it is a left-sided unit, otherwise it is a right-sided unit.
  2. C\* is the size of the unit with extended drain pan (optional).
  3. AC motor units with back and bottom return air can be refitted according to site needs, but the Smart BLDC unit cannot be directly refitted.
  4. Does not come with return air flange as standard, but when a filter is selected, a flange is provided.
  5. The BLDC motor unit needs to be configured with the 100mm extended drain pan.

## Concealed Vertical Installation



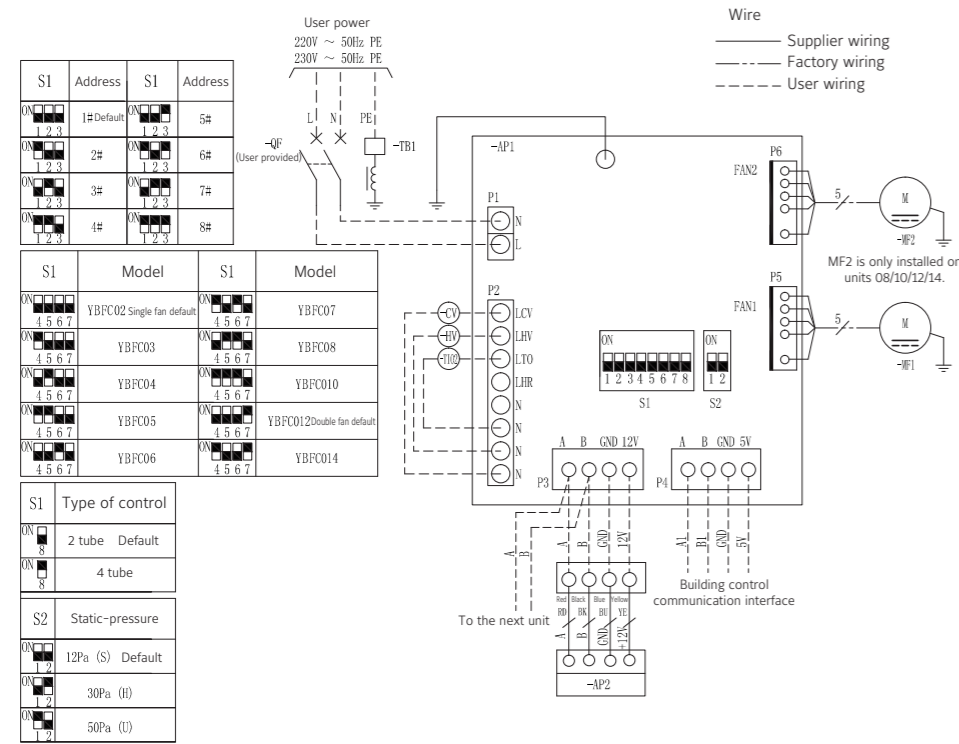
Model	A (Length)	B	C	Width	High	Plenum Connection Dimension (mm x mm)
YBFC-02VC-3-S(H)	655	595	625	263	549	595x142
YBFC-03VC-3-S(H)	755	695	725	263	549	695x142
YBFC-04VC-3-S(H)	855	795	825	263	549	795x142
YBFC-05VC-3-S(H)	937	877	907	263	549	877x142
YBFC-06VC-3-S(H)	1075	1015	1045	263	549	1015x142
YBFC-07VC-3-S(H)	1255	1195	1225	263	549	1195x142
YBFC-08VC-3-S(H)	1375	1315	1345	263	549	1315x142

- Note:
1. Facing the air outlet, if the piping is on the left, the unit is left-sided, otherwise it is a right-sided unit.
  2. VC has no extended drain pan type, the filter slide is standard, and the filter is optional.

# Electrical Wiring Diagrams

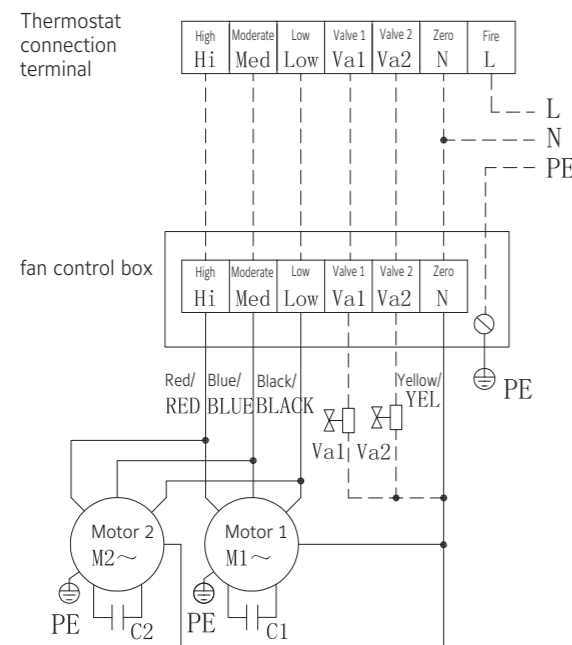
## Circuit Diagrams

### Smart BLDC Motor Unit Wiring Diagram



Code	Description
QF	Circuit Breaker
TB1	Ground Terminal
AP1	Control Board
CV	Cooling Valve
HV	Heating Valve
TiO <sub>2</sub>	Sterilizer
MF1, MF2	Fan Motor
AP2	Wired Controller

### AC Motor Unit Wiring Diagram



- Notes:
- Dotted lines show on-site user wiring.
  - Va1 is the chilled water valve, Va2 is the hot water valve. The two-pipe unit has no hot water valve.
  - YBFC02-07 has one motor, and YBFC08-14 has two motors.
  - All electric connections should comply with local electric installation codes.

# Optional Accessories – TiO<sub>2</sub> Healthy Air Sterilizer

## Industrial Leading Technology - Nano-TiO<sub>2</sub> Healthy Air Sterilizer (Optional)

Nano-scale TiO<sub>2</sub> healthy air sterilization and purification technology can oxidize and decompose harmful substances in the air, effectively kill bacteria and germs spread in the air, efficiently remove odors, harmful microorganisms and all other harmful substances:

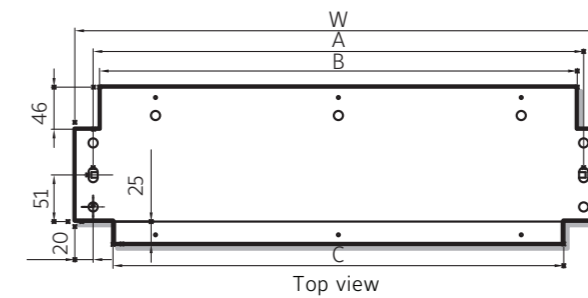
- Biological contaminants - bacteria, germs...
- Organic pollutants - volatile organic compounds (VOCs), formaldehyde, benzene, etc...
- Mold, fungi, etc...
- Inorganic gaseous pollutants - NOx, SOx...
- Smoke and unpleasant odors

As optional accessories, the healthy air sterilization and purification equipment is suitable for fan coils, residential and commercial central air conditioners, and residential split units. For air-conditioning systems that have already been installed, whether they are newly fitted or renovated, we can provide suitable solution packages.

## Duct Style TiO<sub>2</sub> Healthy Air Sterilizer

Model	Number Of Sterilizers	Input Power (W)	Weight (kg)	Dimensions (Single) Length * Height * Depth (mm)
YBFC02-06	1	22	2.59	430*190*100
YBFC07-14	2	22*2	2.59*2	430*190*100

## Package TiO<sub>2</sub> Healthy Air Sterilizer



Model	Input Power (W)	Weight (kg)	Exterior Dimensions Height * Depth (mm)	W	A	B	C
YBFC02	36	4.5	268*172	514	474	460	428
YBFC03	54	5.6	268*172	664	624	640	578
YBFC04	54	6.1	268*172	744	704	690	658
YBFC05	54	6.6	268*172	804	764	750	718
YBFC06	72	7.3	268*172	904	864	850	818
YBFC07	90	8.6	268*172	1084	1044	1030	998
YBFC08	108	10.0	268*172	1284	1244	1230	1198
YBFC10	126	10.4	268*172	1334	1294	1280	1248
YBFC12	144	12.2	268*172	1584	1544	1530	1498
YBFC14	162	14.0	268*172	1834	1794	1780	1748

- The power supply of the sterilizer UV lamp is a 220V-1Ph-50Hz. To prevent injury, do not stare at the sterilizer UV lamp for a long period of time.
- The start-up of the sterilizer and the corresponding unit interlock control (the relevant wiring of the interlock control is completed by the user), when the inner fan is turned on, the sterilizer is turned on; when the inner fan is turned off, the sterilizer is turned off.



## Johnson Controls:

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### Australia (Sydney)

Tel: +61 (2) 9805 8300  
Fax: +61 (2) 9247 7750

### India (Mumbai)

Tel: +91 (22) 6683 7000  
Fax: +91 (22) 6683 7002

### Malaysia (Kuala Lumpur)

Tel: +60 (3) 7628 4300  
Fax: +60 (3) 7874 1180

### China (Shanghai)

Tel: +86 (21) 2285 7000  
Fax: +86 (21) 2285 7599

### Indonesia (Jakarta)

Tel: +62 (21) 5366 8500  
Fax: +62 (21) 5366 8300

### New Zealand (Auckland)

Tel: +64 (9) 635 0880  
Fax: +64 (9) 633 1862

### China (Hong Kong)

Tel: +852 2885 4451  
Fax: +852 2885 7760

### Japan (Tokyo)

Tel: +81 (3) 5738 6100  
Fax: +81 (3) 5738 6298

### Singapore

Tel: +65 6748 0202  
Fax: +65 6743 4420

### China (Macau)

Tel: +853 2875 1820  
Fax: +853 2875 1825

### Korea (Seoul)

Tel: +822 1588 9117  
Fax: +822 6009 9014

### Thailand (Bangkok)

Tel: +66 (2) 794 0101  
Fax: +66 (2) 717 1327-8

The power behind **your mission**

