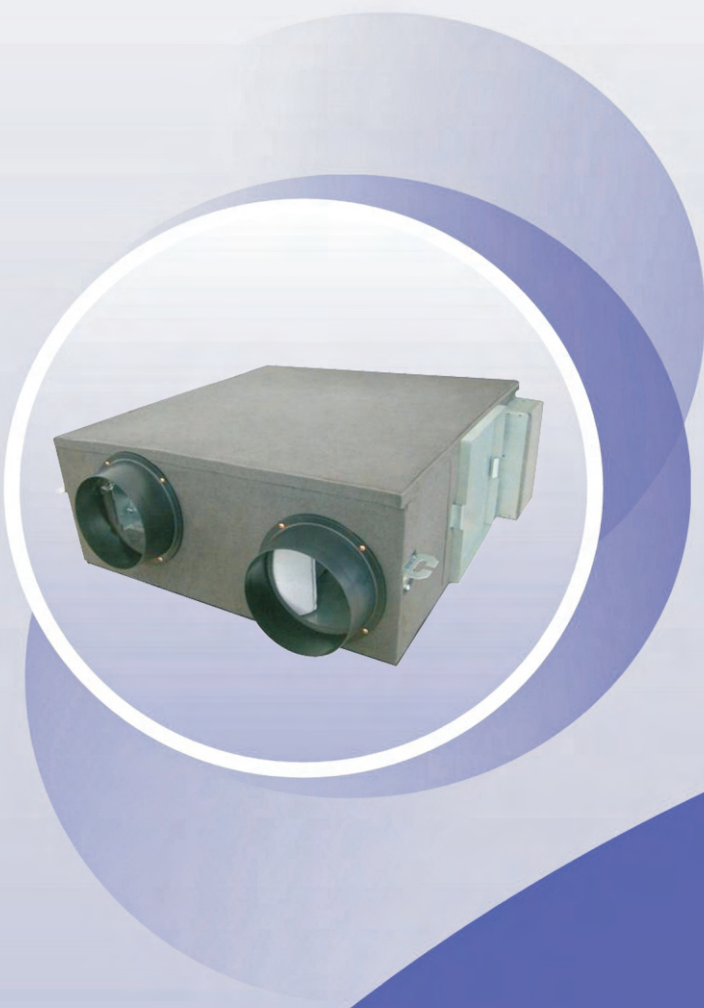


GREE

making better air conditioners

TECHNICAL SALES GUIDE-50Hz



ENERGY-RECOVERY VENTILATION SYSTEM



The photos of products on the cover are for reference only, the actual appearance of certain product may be different.

CONTENTS

1. MODELS LIST.....	2
2. NOMENCLATURE.....	3
3. FEATURES	3
4. PRODUCT DATA.....	4
5. DIMENSION.....	5
6. BASIC SYSTEM CONFIGURATION.....	6
7. MODEL SELECTION REFERENCE.....	7
8. WIRED CONTROLLER.....	8
9. WIRING DIAGRAM.....	9
10. ELECTRIC WIRING WORK.....	11
11. ACCESSORIES.....	12

1 MODELS LIST

Model	Air Flow (m³/h)		External Static Pressure (Pa)		PowerSupply	Appearance
FHBQ-D3.5-K	H	350	H	100	220V~ 50Hz	
	M	260	M	80		
	L	210	L	60		
FHBQ-D5-K	H	500	H	100		
	M	380	M	80		
	L	300	L	60		
FHBQ-D8-K	H	800	H	110		
	M	600	M	85		
	L	480	L	65		
FHBQ-D10-K	H	1000	H	110		
	M	750	M	85		
	L	600	L	65		
FHBQ-D15-M	1500		150		380V 3N~ 50Hz	
FHBQ-D20-M	2000		150			
FHBQ-D30-M	3000		220			

2 NOMENCLATURE

FH	B	Q	-	D	3.5	-	K
1	2	3		4	5		6

NO.	Description	Options
1	The symbol of energy recovery ventilation	/
2	The structure of heat exchanger	board
3	The diathermanous mode	Total heat exchange
4	The mode of installation	Celling mounted type
5	Nominal Air Flow	3.5:350m³/h ; 5:500 m³/h ; ; 30:3000m³/h
6	The phase of power supply	K: single-phase M:three-phase

3 FEATURES

3.1 Description

Our living environments are more and more affected by modern civilization. As the application of air-conditioning system and various composite materials, popularization of office equipments and development of closeness of constructions and for the purpose of energy saving and reduction of cost which cause decrease of fresh air volume, harmful gas and pollution of creature won't be diluted properly and replaced. Healthy, energy-saving, simple and reliable fresh-air system and equipment has been the focus for engineers and users. Gree energy recovery ventilation system has solved this problem. This kind of system has two-way air exchange function so that the change of indoor temp is little during air exchange. The indoor air can be efficiently filtered by the air filter. New technology and new materials and special technique applied in the unit can ensure low energy consumption, great performance, low noise and easy installation.

3.2 Standard Features

- 1). Replacement and Ventilation Function
It introduces fresh air into room and discharges indoor air out of room to make you feel comfortable as in the nature.
- 2). Energy-recovery Function
Internal heat exchanger makes the discharged air and introduced air for cooling and heating exchange.
Energy-recovery rate above 70% keeps heat preservation and ventilation realized.
- 3). Low-noise Design
Special low-noise ventilation fan is set.
- 4). Air Filtration and Purge Function
Internal air filter keeps the fresh air introduced into room pure and dustless.
- 5). Various Series and Multiple Specifications
There are various series to match with the buildings of various structures.

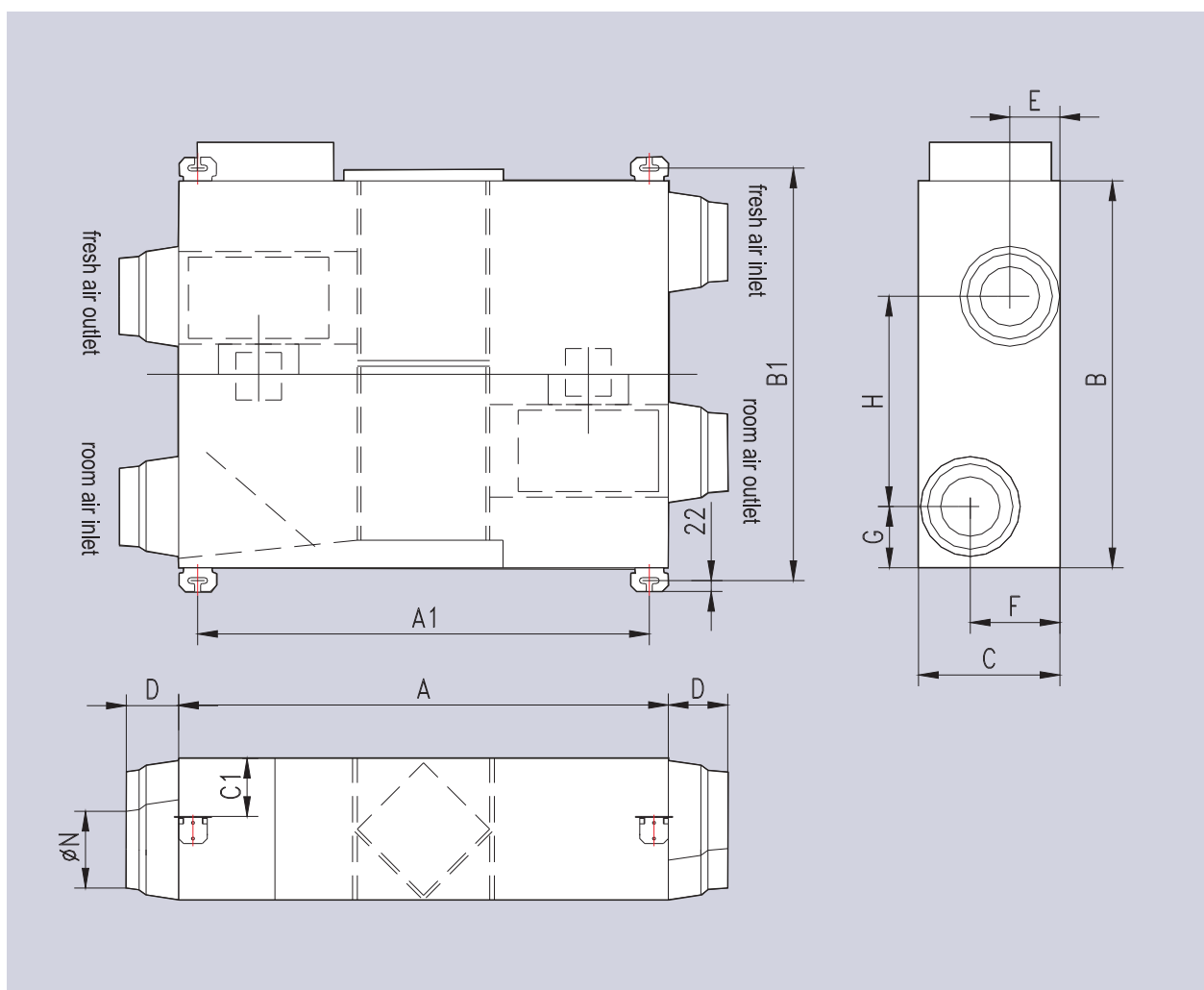
4 PRODUCT DATA

Model			FHBQ-D3.5-K	FHBQ-D5-K	FHBQ-D8-K	FHBQ-D10-K	FHBQ-D15-M	FHBQ-D20-M	FHBQ-D30-M
Power Supply			220V~50Hz				380V 3N~50Hz		
Air Flow (m³/h)	H		350	500	800	1000	1500	2000	3000
	M		260	380	600	750			
	L		210	300	480	600			
External Static Pressure (Pa)	H		100	100	110	110	150	150	220
	M		80	80	85	85			
	L		60	60	65	65			
Temperature Exchanging Efficiency (%)	H		71	68	70	75	73	71	70
	M		73	70	72	77			
	L		75	72	74	79			
Enthalpy Exchanging Efficiency (%)	Heating	H	65	62	63	66	65	62	62
		M	67	64	65	68			
		L	68	65	67	70			
	Cooling	H	61	57	60	62	60	58	58
		M	63	59	62	64			
		L	65	61	64	65			
Wiring Connections	Quantity		3				5		
	Area	mm²	1.0				1.5		
Power Input		W	165	262	400	440	600	950	2800
Operating Sound		dB (A)	37	39	45	46	48	50	54
Dimensions (W×D×H)	Unit	mm	800×879×306	800×879×306	832×1016×380	832×1016×380	1210×1215×452	1210×1215×452	1340×1550×572
	Packaging	mm	1165×1050×315	1165×1050×315	1320×1087×400	1320×1087×400	1550×1540×470	1550×1540×470	1710×1610×700
Weight	Net	kg	45	45	70	70	135	135	240
	Gross	kg	53	53	78	78	152	152	280

Note

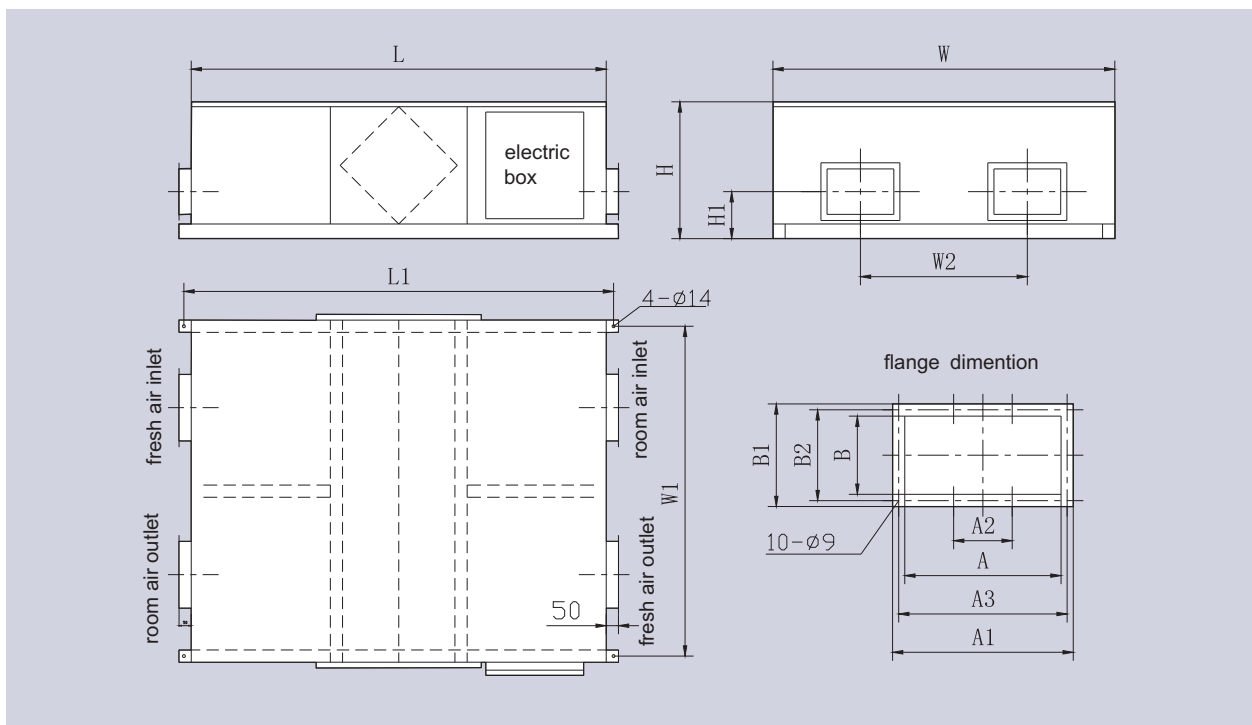
- The models of 200v power supply type has 3types fan speed and the models of 380v have one fan speed.
- The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:
 - (1)Cooling efficiency:Indoor air²⁰CDB, 20°CWB, outdoor temperature 35°CDB, 29°CWB。
 - (2)Heating efficiency:20DB, 14°CWB 。 Outdoor air temperature: 5°CDB, 2°CWB 。
- Sound power level according to ISO 5151-sound pressure calculated at 1m distance.
- Operation condition:ambient temperature-15-50℃, releivate humidity less than 80%RH

5 DIMENSION



Unit: mm

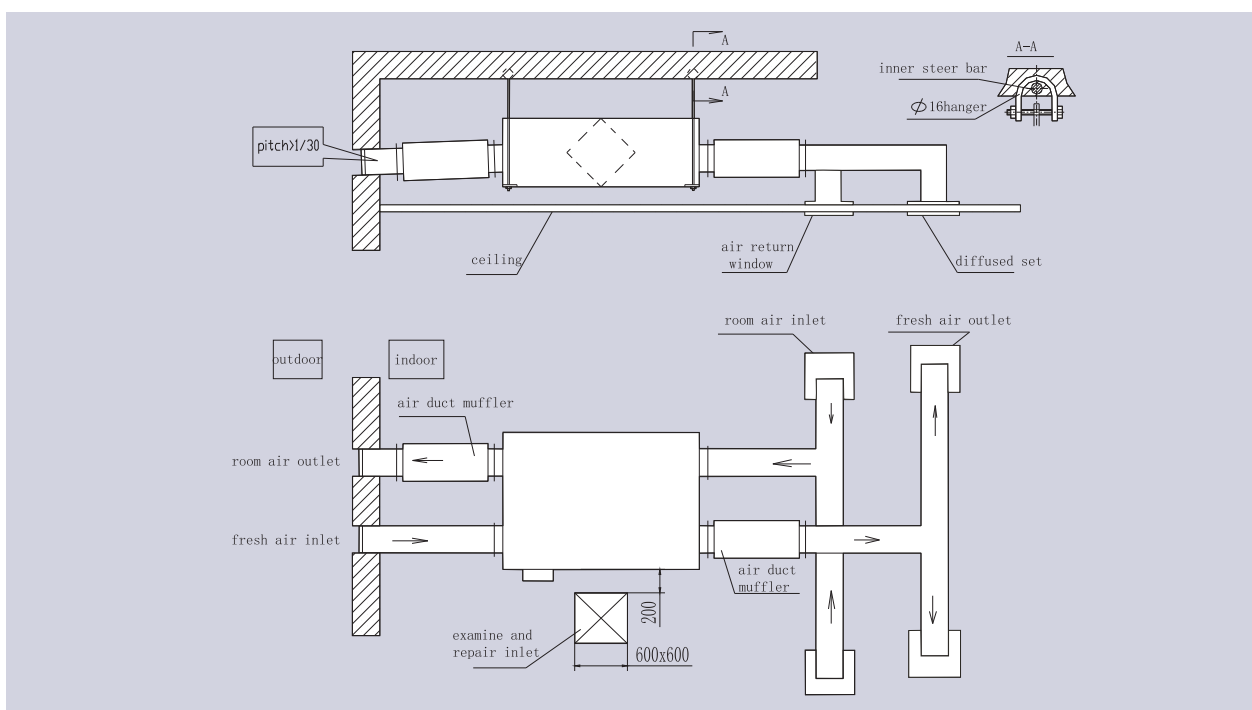
Model	A	A1	B	B1	C	C1	D	E	F	G	H	N
FHBQ-D3.5-K	879	823	800	852	306	125	90	125	175	136	416	197
FHBQ-D5-K	879	823	800	852	306	125	90	125	175	136	416	197
FHBQ-D8-K	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D10-K	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D15-M	1215	1159	1210	1262	452	200	100	190	277	178	737	297
FHBQ-D20-M	1215	1159	1210	1262	452	200	100	190	277	178	737	297



Unit: mm

Model	L	L1	W	W1	W2	H	H1	A	A1	A2	A3	B	B1	B2
FHBQ-D30-M	1550	1650	1340	1310	670	572	249	346	386	180	366	332	372	352

6 BASIC SYSTEM CONFIGURATION



7 MODEL SELECTION REFERENCE

The fresh air flow of comfortable air-condition room

Room type	No smoking					Little smoking		Much smoking
	Common sickroom	gymnasium	Cinema/supermarket	office	Computer room	restaurant	high-grade guest room	boardroom
The need for fresh air per person Q (m ³ /h)	17~42	8~20	8.5~21	25~62	40~100	20~50	30~75	50~125
The frequency of fresh air change (degree/h)	1.06~2.65	0.50~1.25	1.06~2.66	1.56~3.90	2.50~6.25	1.25~3.13	1.88~4.69	3.13~7.81

NOTE:

1. It should be both considered that the room space and the quantity of the person inside to affirm the fresh air flow volume. Based on the data in the table, Calculate the fresh air flow according to the need for fresh air per person and "the frequency of fresh air change", then choose the bigger one as the model selection basis.
2. For special industry such as hospital (surgery, special sickroom), laboratory, workshop, the fresh air flow volume should be calculated according to the interrelated criterion of the industry.

Example:

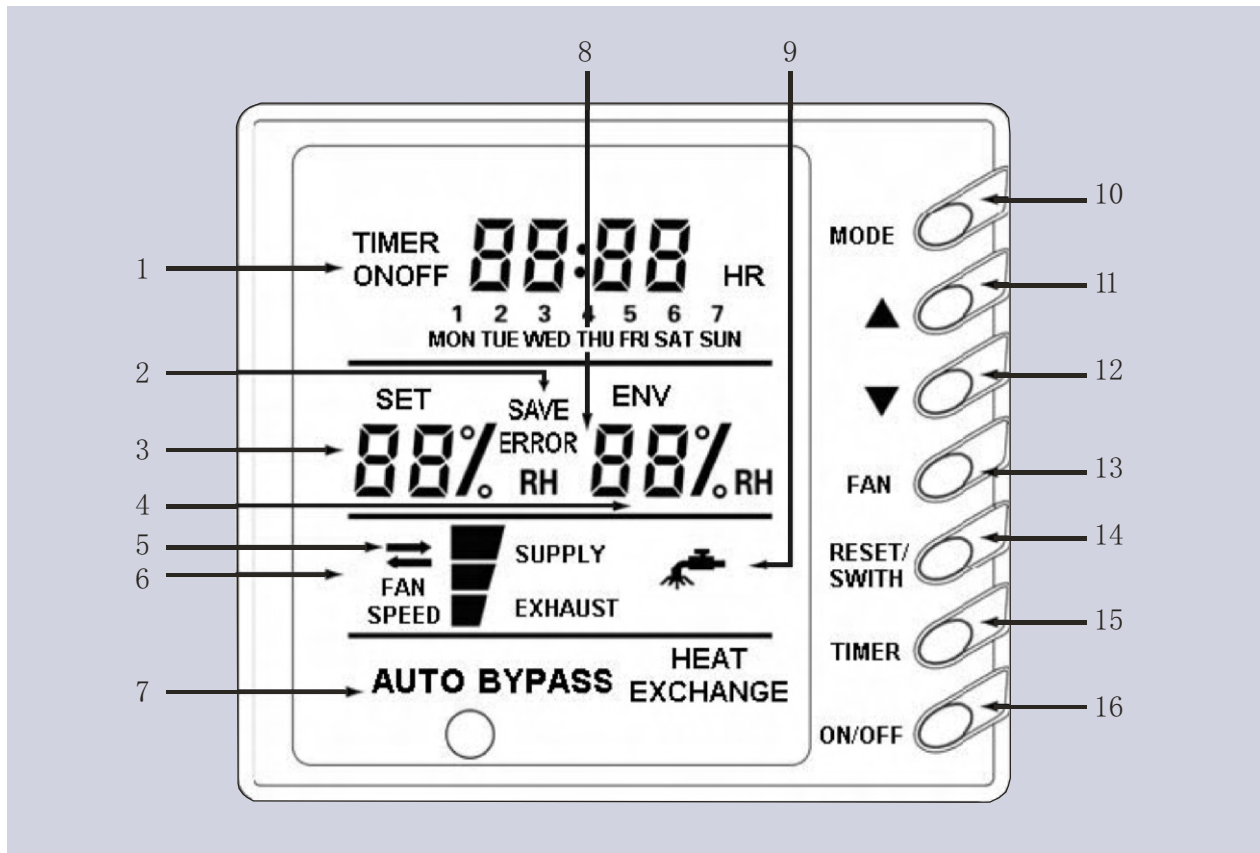
A computer room, area $S=60\text{m}^2$ and net height $h=3\text{m}$, the quantity of the persons $n=10$, .
If we calculate the fresh air flow according to the need for fresh air per person, the result is
 $Q_1=n \times q=10 \times 70=700\text{m}^3/\text{h}$ (the need for fresh air of one person $=70\text{m}^3/\text{h}$)

If we calculate the fresh air flow according to the frequency of fresh air change, the result is
 $Q_2=p \times s \times h=5 \times 60 \times 3=900\text{m}^3/\text{h}$ (the frequency of fresh air change $=5$ times per hour).

$Q_2 > Q_1$, so Q_2 is the model selection basis. Choose FHBQ-D8 or FHBQ-D10 .

(Which is fit or not bases on the actual requirement of projects, such as the fixing space of the machine , the distance the flow can reach, and so on)

8 WIRED CONTROLLER



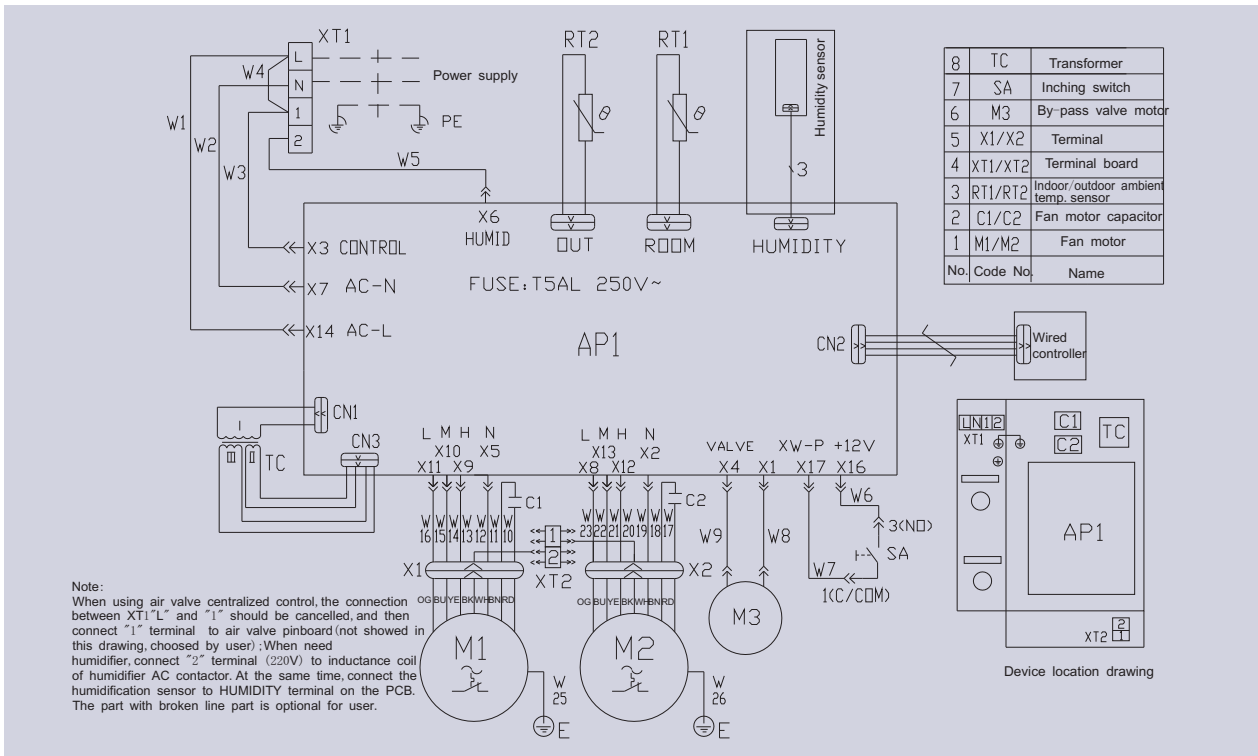
Front panel of wired controller

Constitution of wired controller			
1	Timer display	10	Mode button
2	Energy-saving status display	11	Setting humidity increase button
3	Setting humidity display	12	Setting humidity decrease button
4	Ambient humidity display	13	Fan speed button
5	Air exchange mode (half-half air exchange, discharge and supply)*	14	Reset/Switch button
6	Fan speed display (high, mid, low)*	15	Timer button
7	Mode(auto, by-pass, heat exchange)	16	On/Off button
8	Error status display		
9	Cleaning status of filter display		

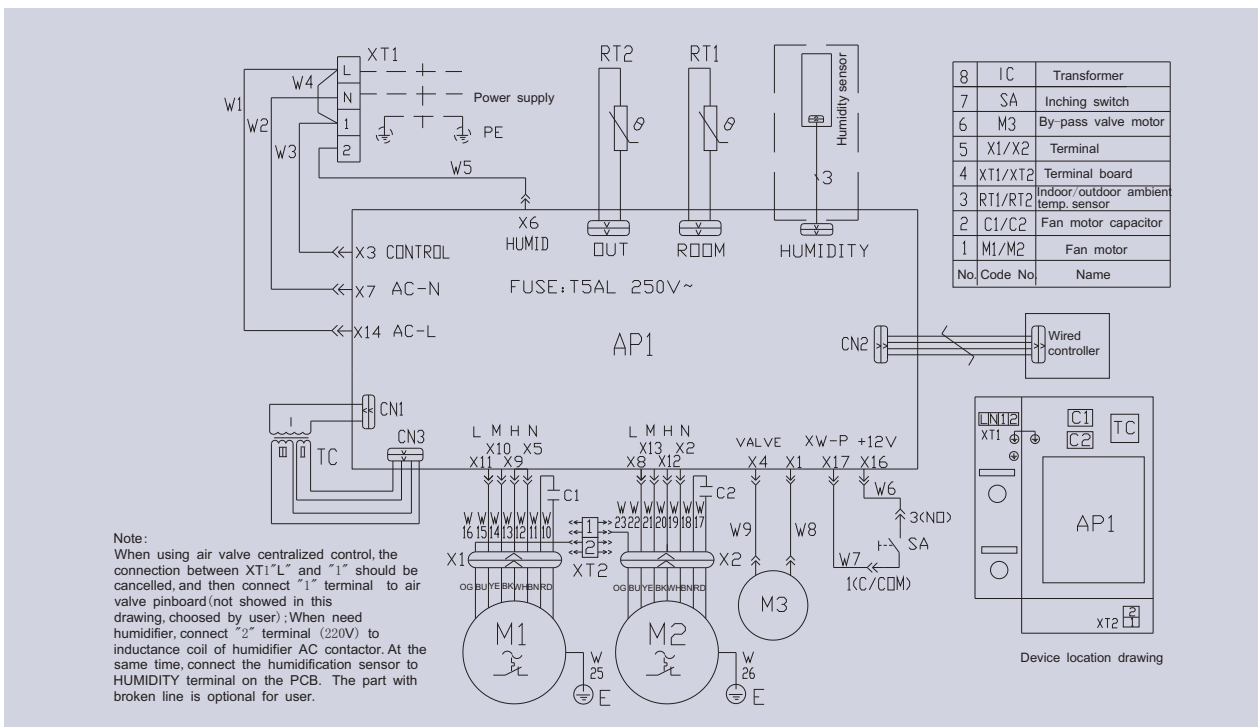
Notice: For FHBQ-D15-M and FHBQ-D20-M, there is no air discharge and supply function in Item 5 and the fan speed in Item 6 is unadjustable. The wired controller is not apply to FHBQ-D30.

9 WIRING DIAGRAM

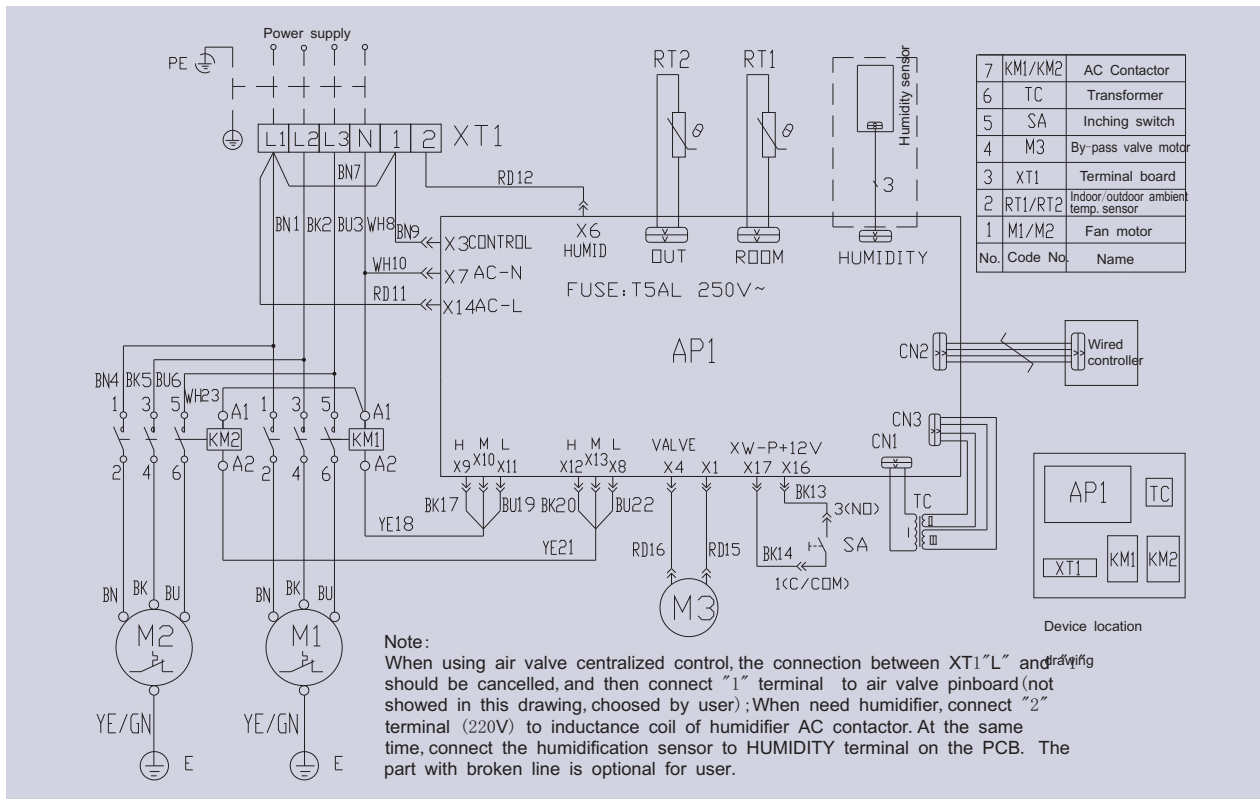
FHBQ-D3.5-K FHBQ-D8-K FHBQ-D10-K Energy recovery ventilation system



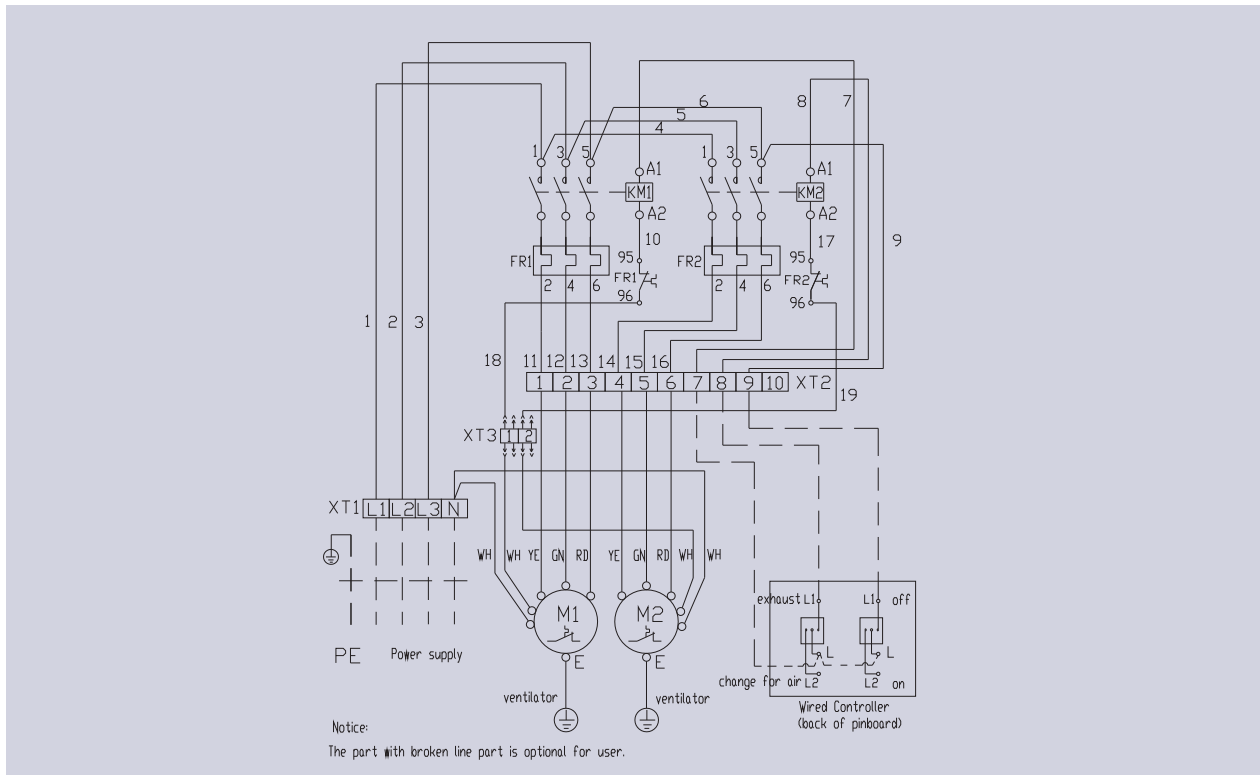
FHBQ-D5-K Energy recovery ventilation system



FHBQ-D15-M, FHBQ-D20-M Energy recovery ventilation system

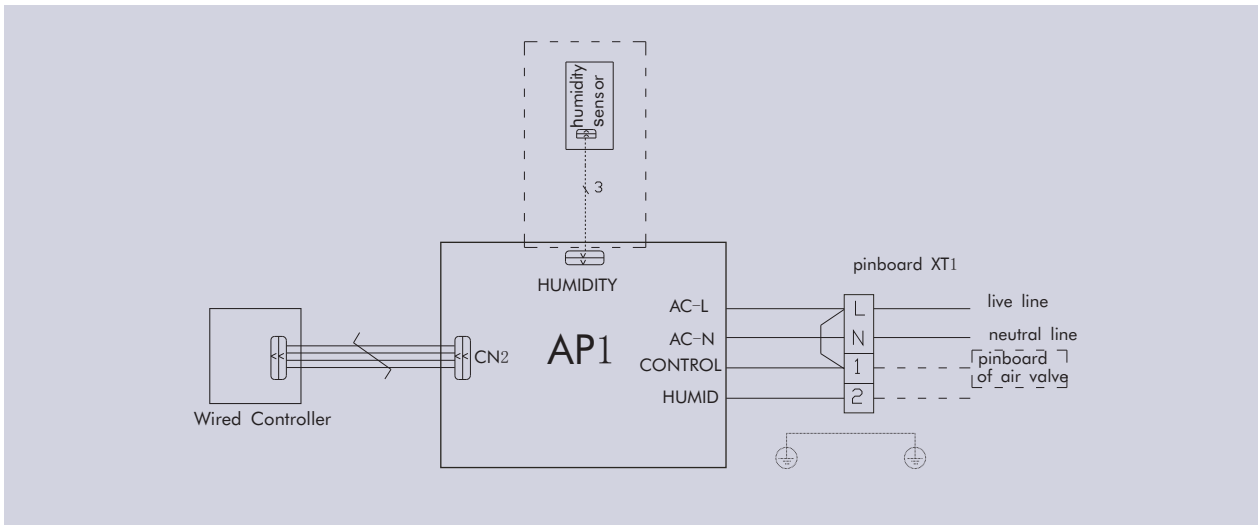


FHBQ-D30-M Energy recovery ventilation system



10 ELECTRIC WIRING WORK

◆FHBQ-D3.5-K, FHBQ-D5-K, FHBQ-D8-K, FHBQ-D10-K Energy recovery ventilation system.

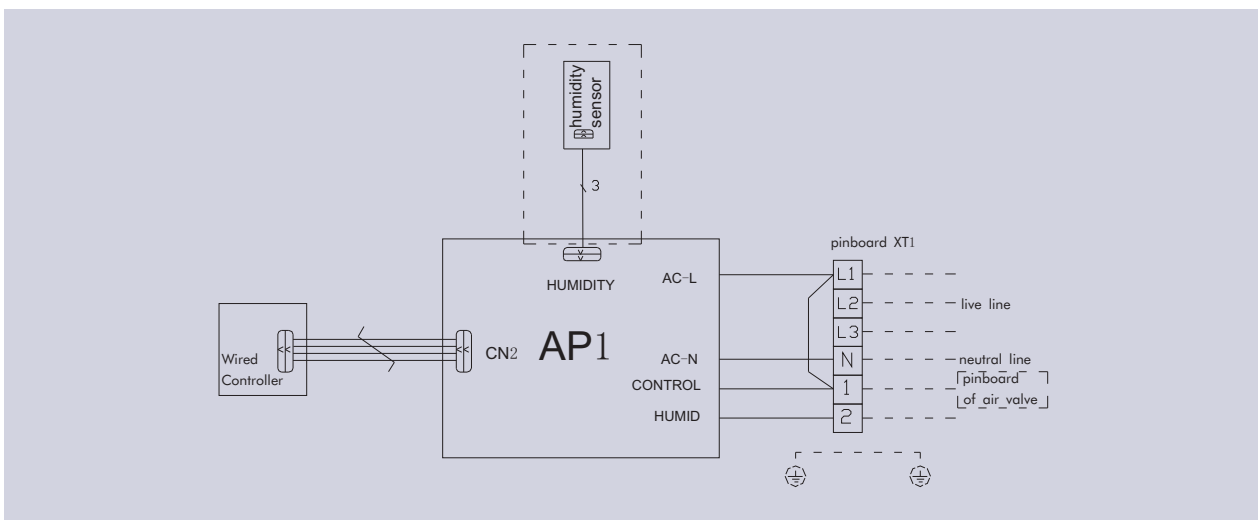


◆When need humidifier, connect "2" terminal (220V~Live line) to inductance coil of humidifier AC contactor. At the same time, connect the humidification sensor to HUMIDITY terminal on the PCB.

◆When using air valve centralized control, the connection between "b" and "1" should be cancelled, and then connect "1" terminal to air valve pinboard.

◆The part with broken line part is optional for user.

◆FHBQ-D15-M, FHBQ-D20-M Energy recovery ventilation system.

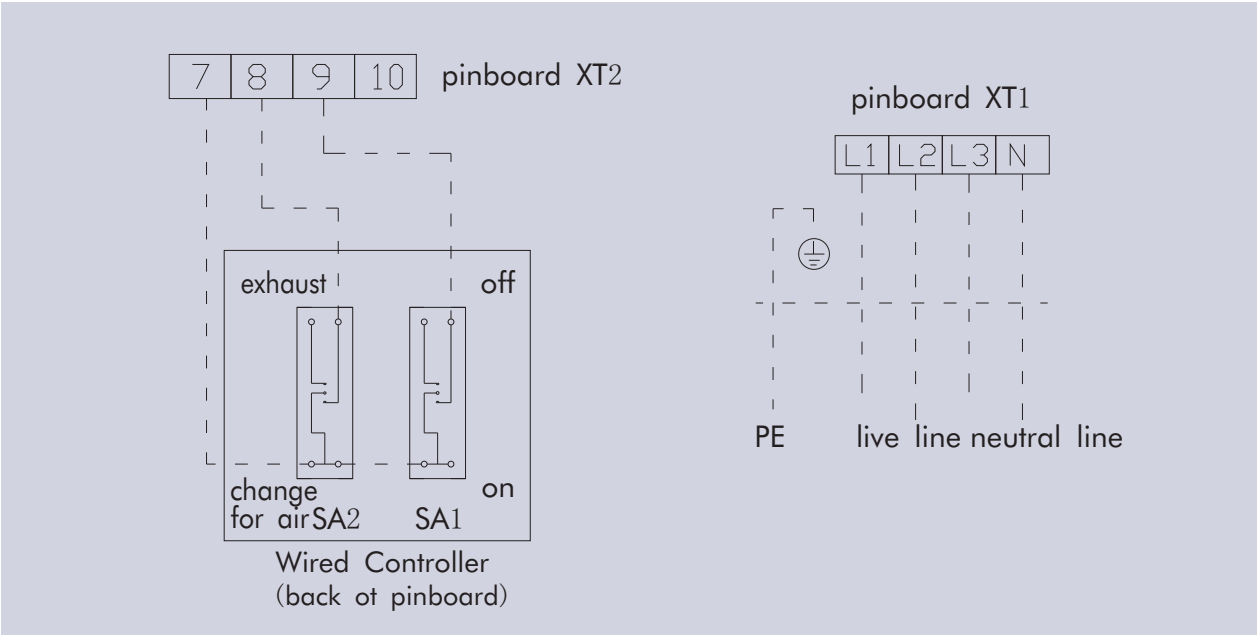


◆When need humidifier, connect "2" terminal (220V~Live line) to inductance coil of humidifier AC contactor. At the same time, connect the humidification sensor to HUMIDITY terminal on the PCB.

◆When using air valve centralized control, the connection between "b1" and "1" should be cancelled, and then connect "1" terminal to air valve pinboard.

◆The part with broken line part is optional for user.

◆FHBQ-D30-M Energy recovery ventilation system



Notice: The part with broken line part is optional for user.

11 ACCESSORIES

Model	Accessories name	Standard	Optional	Provide for oneself
FHBQ-D3. 5, 5, 8, 10, 15, 20, 30	Wired Controller	√		
FHBQ-D3. 5, 5, 8, 10, 15, 20	Humidity sensor		√	
FHBQ-D3. 5, 5, 8, 10, 15, 20	Humidifier			√

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Technology Innovation and quality are always our priority. With efforts of thousands of Gree's engineers, we own more than 3000 patents for our products.

Nowadays, we have 6 production bases in Zhuhai, Chongqing, and Hefei(China), as well as Brazil, Pakistan and Vietnam, with annual production capacity of 27 million sets of residential air conditioners and 2 million sets of commercial air conditioners.

With the installation of Gree commercial air conditioners in important projects at home and abroad like Media Village for 2008 Beijing Olympic Games, Stadiums for 2010 World Cup in South Africa, as well as India Telecom base station, Gree commercial air conditioners are ready to develop steadily to every corner in the world, to present a more comfortable and harmonious working environment and family atmosphere.



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