42GWC
Hydronic Cassette Fan Coil Unit

Air flow: 510~2380 m^3/h





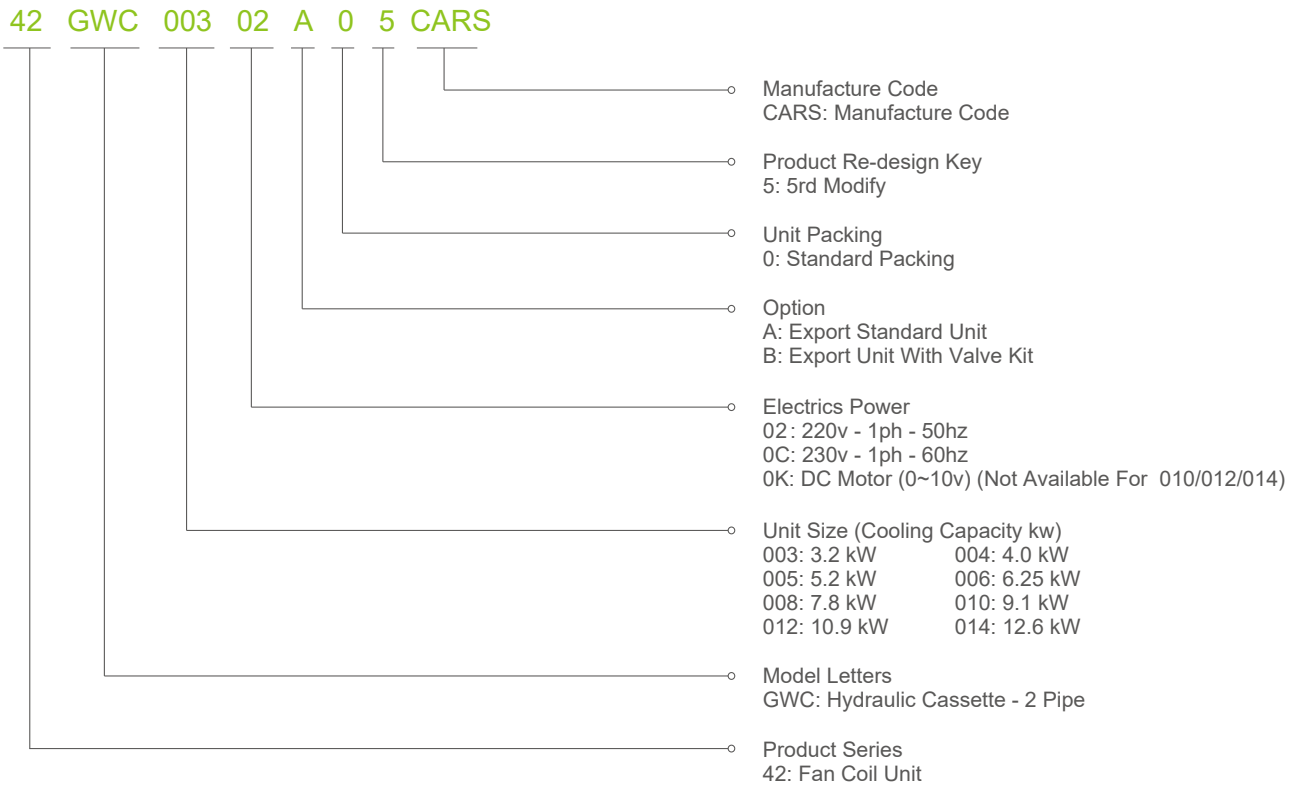
In 1998, Time magazine named Dr. Carrier oneof its 20 most influential builders and titans of the 20thcentury.

Carrier is a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies. Supported by the iconic Carrier name, the company's portfolio includes industry-leading brands such as Carrier, Kidde, Edwards, LenelS2 and Automated Logic. Carrier's businesses enable modern life, delivering efficiency, safety, security, comfort, productivity and sustainability across a wide range of residential, commercial and industrial applications.

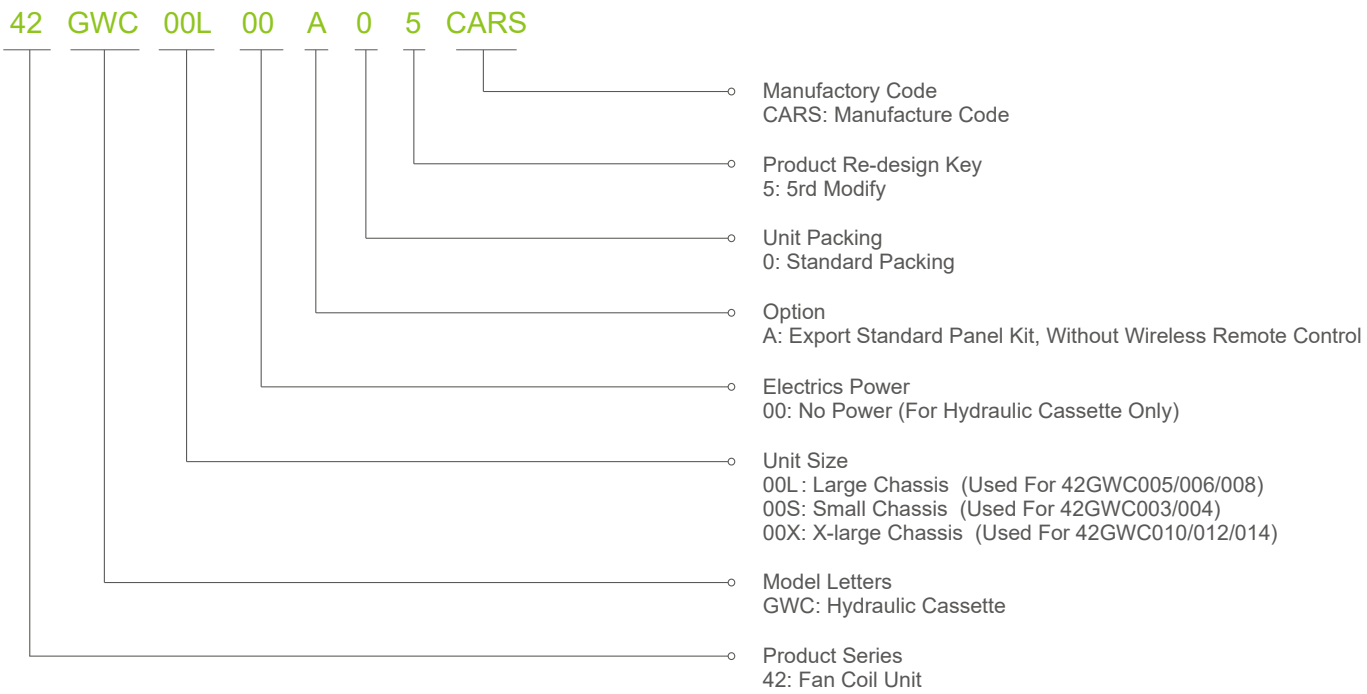


Model number Nomenclature

Unit body:



Panel:

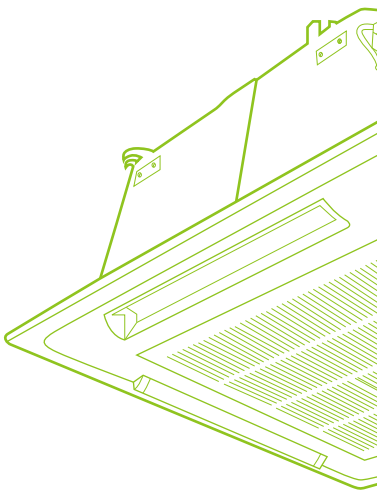


Air Flow

510~2380 m^3/h

Features

- Compact design for easy installation.
- Four-way air distribution gives individual comfort while for localized control each diffuser may be adjusted or even shut down completely.
- The unique design of centrifugal fan ensures the quiet running of the unit. This thoroughly eliminates the bothering throttle noise inside the room.
- High-performance condensate drain pump.
- Return air enters the cassette unit through a large grille, cleaned by an easily removable, washable filter, and then keep the room air fresh through constant circulation.
- The Special design of the diffuser ensures rapid blending of the supply and room air.
- A Large LCD screen thermostat is optioned.



Motor and Fan

- Optimized designed centrifugal fan design for 42GWC.
- High efficiency.
- Quite running with anti-vibration pads of motor.



Coil

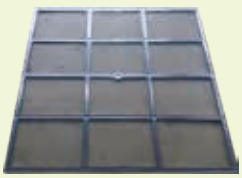
Optimized designed 9.52 mm coil.



Air return grille and filter

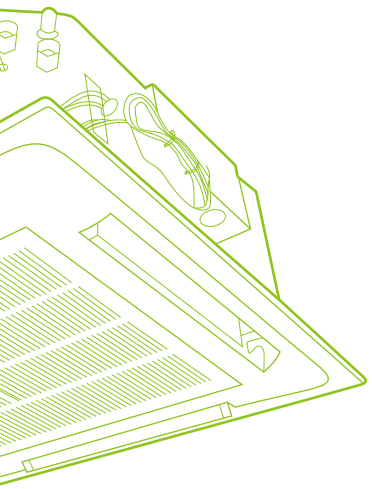
- The filter inside the air return grille can be easily removed and washed.
- The front panel and frill of the unit are designed with stylish appearance makes it suitable to match various room decorations.





Condensate drain pump

- High performance condensate drain pump inbuilt the unit.
- Drain out the condensate water quietly.
- Keeps running when the unit standby.
- To avoid the leakage of the condensate water, it's recommended to install the two-way valve or three-way valve in the water system.



Brushless DC motor (option)

- Compared with conventional AC FCU, BLDC FCU can stepless modulating the airflow, and have big advantages in efficiency, noise and energy saving.
- Set precision of THT420 thermostat for 42GWC BLDC is up to 0.5℃.
- 42GWC BLDC can not only match THT420 thermostat, but also be compatible with common 0~10V thermostat on the market.
- The unit can provide stand alone or group control and can be connected to the room control unit (RCU).
- The MODBUS type controller is equipped with RS485 communication interface, supports standard Modbus communication protocol, and facilitates access to the building automation (BA) system.
- THT420 thermostat have timing function and convenient to set start and turn off time.
- Using IPM drive module, it has protections of overcurrent, overvoltage, undervoltage, rotor locking, overspeed, etc.



BLDC motor



THT420 series

Accessories (Optional)



Electric two-way ball valve



TMS810R

Features and applications of brushless DC motor FCU

- Compared to traditional fan coils, brushless DC motor fan coils are featured by energy-saving, supreme comfort, intelligent control and reliability with up-to-date brushless DC stageless motor and advanced control technology. Carrier brushless DC fan coil is ideal choice for buildings seeking for both green and comfort.

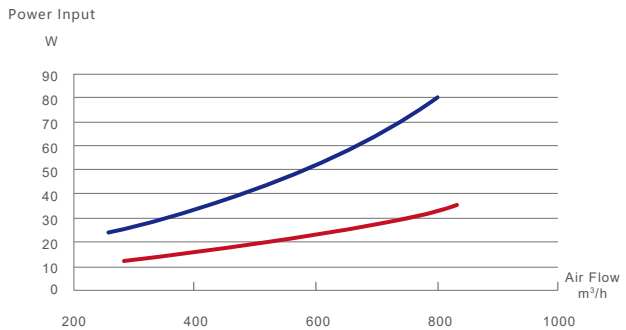
Significant energy saving

- The BLDC fan coil offers an average energy saving of 50% or more, compared to conventional AC fan coil units. In automatic mode, energy consumption can be reduced even further as the unit's advanced intelligent control technology gradually adjusts the motor speed for optimal energy saving. This adds up to a significant reduction in the total HVAC system running cost.

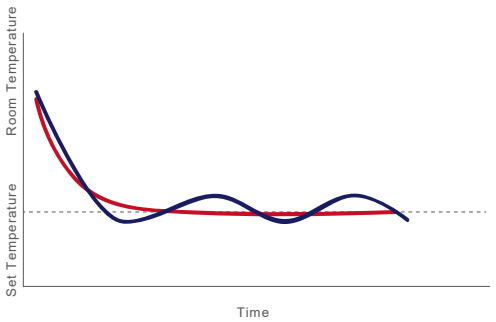
Supreme comfort

- Conventional AC fan coil units regulate room temperature by water flow control and fan speed, which is set at high, medium, or low. Considerable fluctuation in actual room temperature is inevitable and poor humidity control is a common problem. Through its AC/DC converter, the BLDC fan coil linearly regulates motor speed using pulse-width modulation. Airflow and water flow are regulated according to room load change or a customized temperature/humidity control scheme.
- In contrast to the traditional fan coil unit, the BLDC fan coil delivers precise temperature and humidity control in accordance with actual demand and is able to stabilize the room temperature to within ± 0.5°C in automatic mode.

Power Consumption Comparison



Between AC Motor and DC Motor



Ordinary AC Motor

DC brushless Motor

Super-quiet operation

- The 42GWC series fan coil unit was developed for quiet operation. Engineered with advanced low-noise fan technology, it is manufactured with state-of-art craftsmanship, adopting a large fan wheel structure and NSK bearings.
- Carbon brush noise, unavoidable in conventional AC fan coil units, is eliminated in the BLDC fan coil. Most of the time, the unit is operating at medium or low speeds, where quiet operation is all the better.

Flexible and convenient

- With factory default settings for both the fan coil, the 42GWC BLDC fan coil unit is ready to operate by simply wiring the fan coil and thermostat.

Safe and reliable

- The 42GWC fan coil comes with a power factor correction (PFC) module for surge protection and improved efficiency. The high voltage power module ensures safe and stable operation under a wide range of power environment. Overload and over-current protection prevents motor burnout.

Technical Data

Model		003	004	005	006	008	010	012	014
Nominal Air flow m^3/h	(H)	510	680	850	1020	1360	1700	2040	2380
	(M)	420	560	650	780	1050	1300	1570	1830
	(L)	350	460	520	600	800	1010	1210	1410
Cooling Capacity W		3200	4000	5200	6250	7800	9100	10900	12600
Heating Capacity W		4830	6000	7850	9450	10800	13700	16300	18900
Power Input- AC motor W		35	55	65	80	114	150	160	190
Power Input - DC motor W		15	20	23	29	55	/	/	/
Noise Level dB (A)	(H)	38	41	40	41	45.5	48	50	52
	(M)	34	38	36	37	41	45	47	49
	(L)	31	34	33	34	39	41	44	46
Water Flow l/min		9.2	11.5	14.9	17.9	22.4	26.1	31.2	36.1
Water Pressure Drop KPa		25	22	24	30	40	30	35	50
Water Connection inch		Rc 3/4"	Rc 3/4"	Rc 3/4"	Rc 3/4"	Rc 3/4"	Rc 3/4"	Rc 3/4"	Rc 3/4"
Unit Body Dimension mm		650*650		850*850			1050*1050		
Panel Dimension mm		570*570*250		730*730*290			930*930*290		
Panel Weight Kg		2.5	2.5	4.5			6.5		
Unit Body Weight Kg		25	26	33			43.5		

Note: Cooling Conditions: 27℃ DB/19.5℃ WB entering air temperature, 7℃ entering water and 5℃ temperature rise.
Heating Conditions: 21℃ entering air temperature, 60℃ entering water temperature,the same water flow as the cooling conditions.
The noise is tested in the anechoic test room,measured with a fine audiometer located 1 meter away from the unit front panel and the unit bottom panel.
Water pressure drop shown in above table doesn't include valve pressure drop.

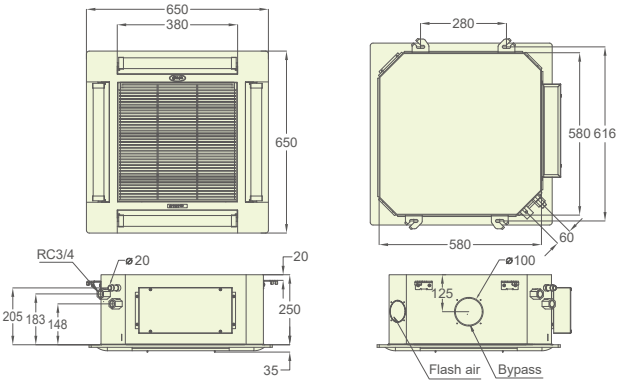
Operating Limits

Water Circuit		Water Circuit		Water Circuit	
Maximum water-side pressure	1400kPa	Maximum temperature	5℃	Nominal single-phase vohage	220V, 50Hz
Minimum entering water temperature	4℃	Maximum temperature	32℃	Operating voltage limits	198V~242V
Maximum entering water temperature	80℃				

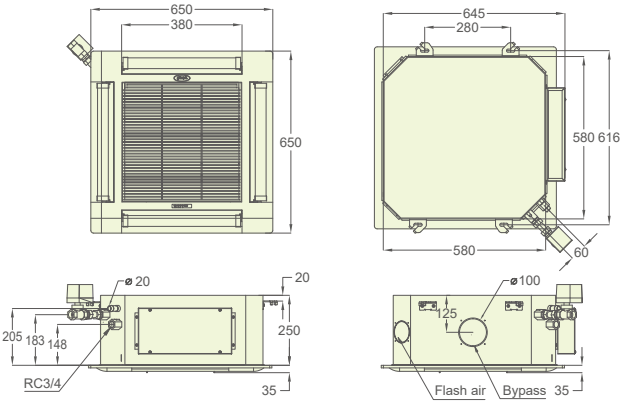
If the room temperature goes down to 0℃, it is advisable to empty the water circuit to avoid damage caused by frozen.

Physical Dimensions

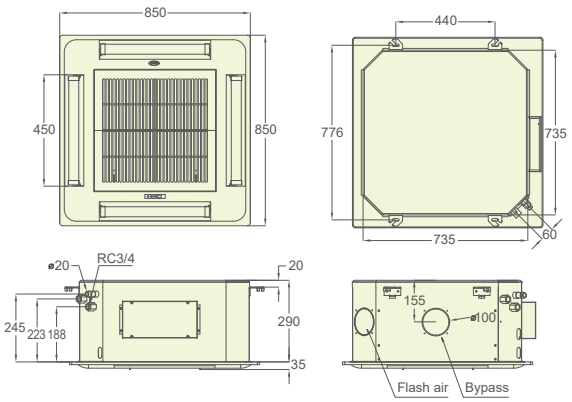
42GWC 003-004 without ball valve



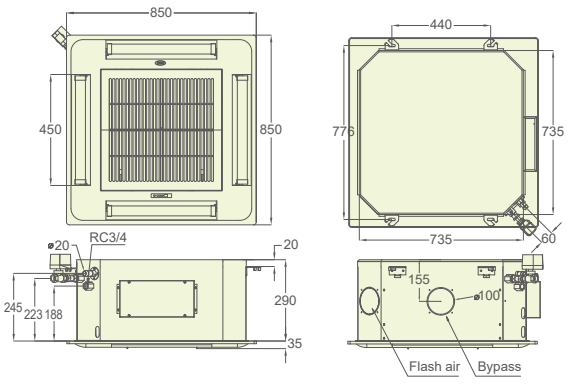
42GWC 003-004 with ball valve



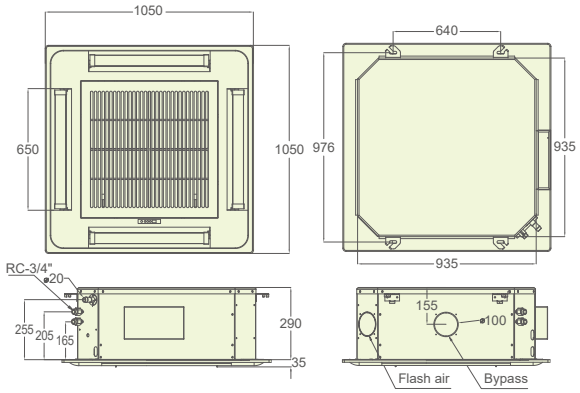
42GWC 005-008 without ball valve



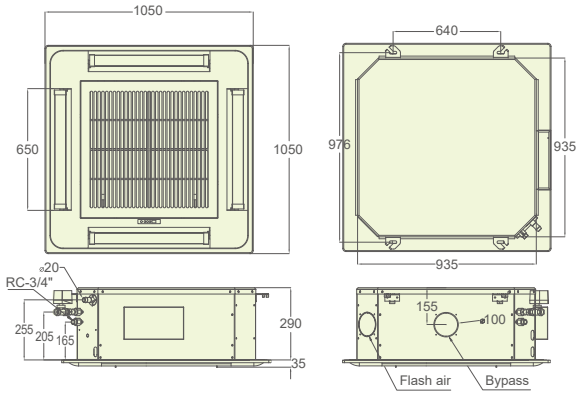
42GWC 005-008 with ball valve



42GWC 010-014 without ball valve



42GWC 010-014 with ball valve



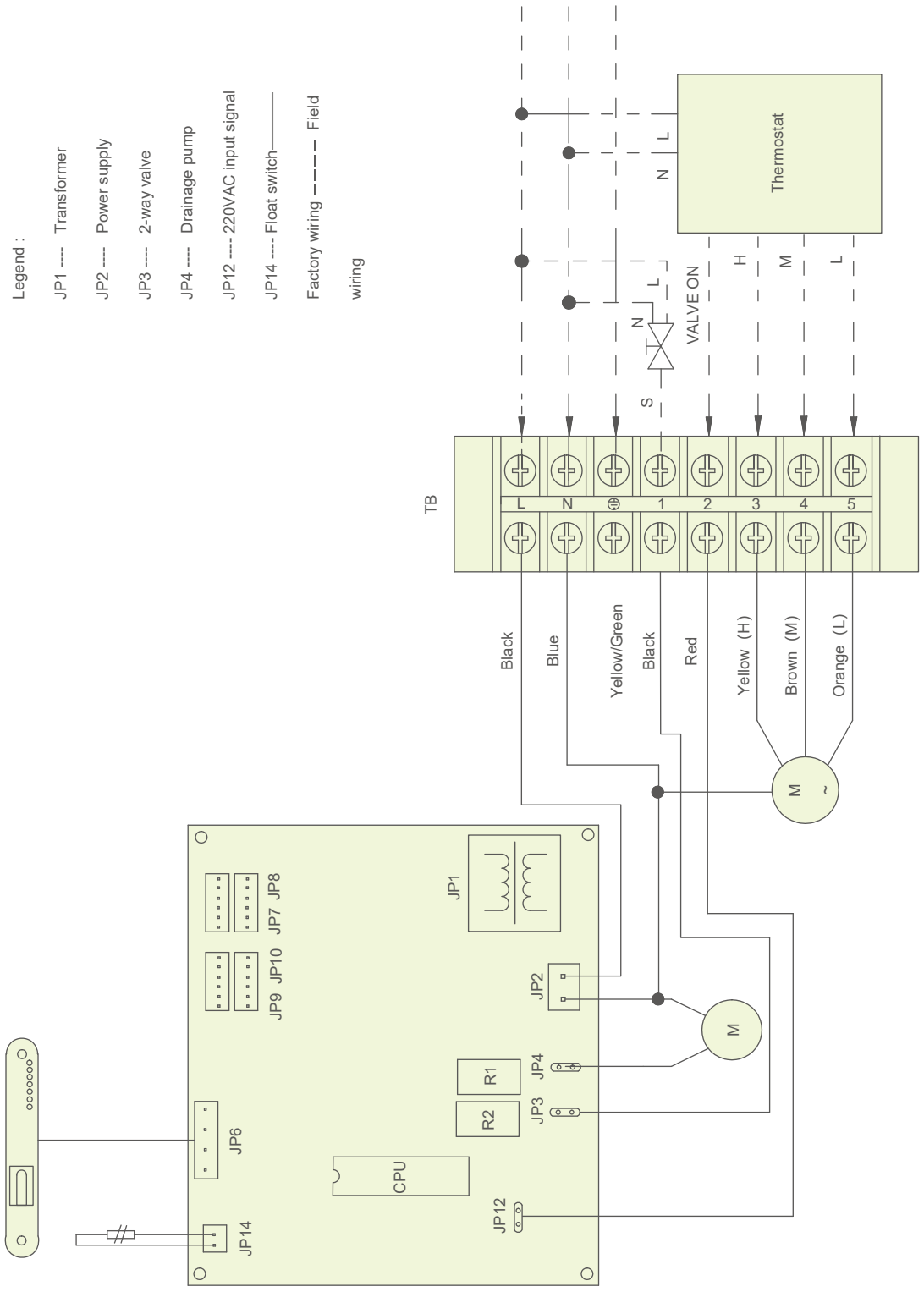
Electrical Data

Performance / Models	003	004	005	006	008	010	012	014
Power Input (AC) W	35	55	65	80	114	150	160	190
Power Input (DC) W	15	20	22	28	63	/	/	/
Current (AC) A	0.16	0.25	0.3	0.37	0.52	0.7	0.74	0.88
Current (DC) A	0.07	0.09	0.1	0.13	0.29	/	/	/

Note: Power input data and current data in above table is based on 220V-1Ph-50Hz.

Wiring Diagram

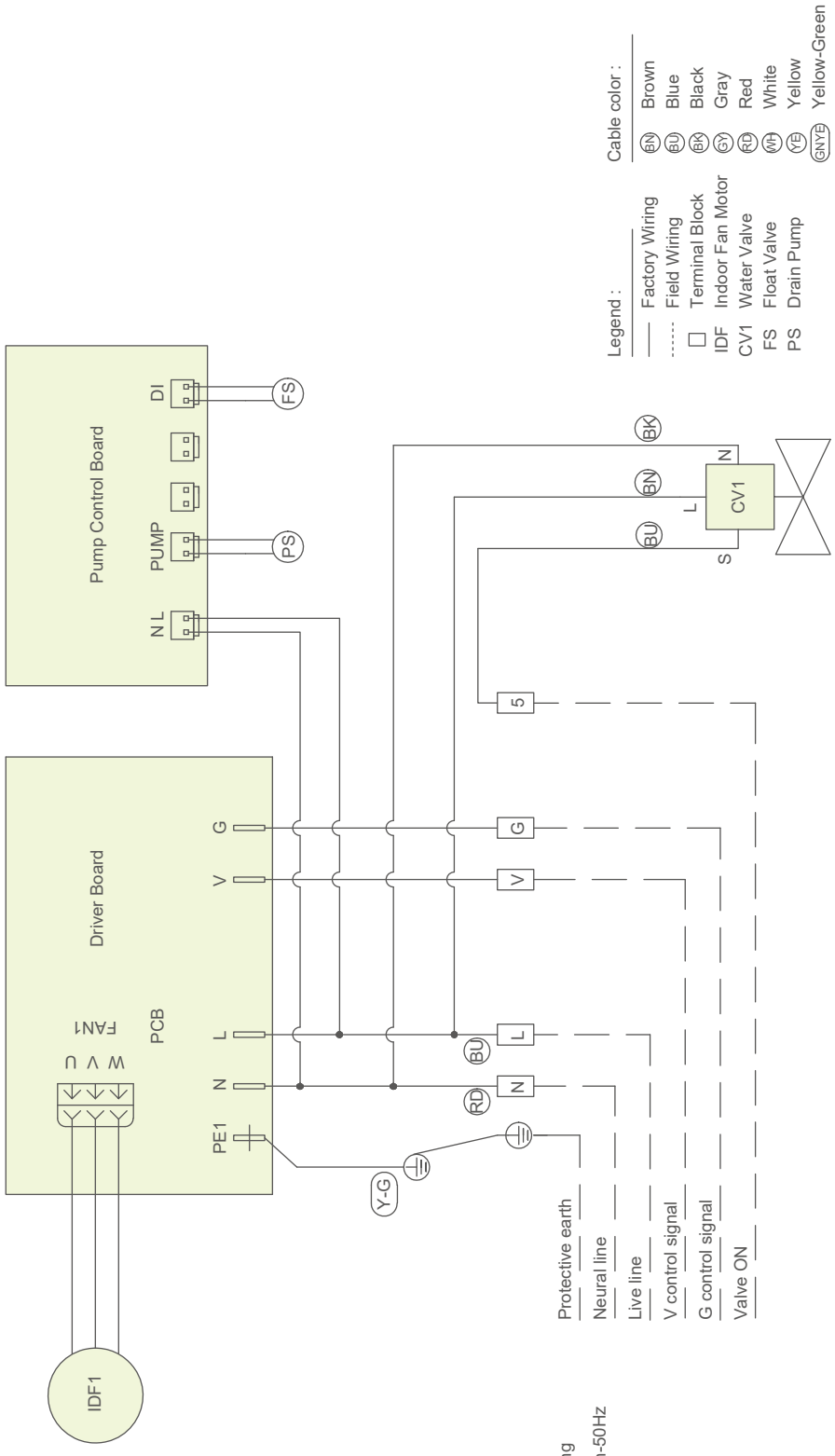
42GWC 003-014 AC



Attention: Any warranty is declined in case of field changes of factory wiring and settings

Wiring Diagram

42GWC 003-008 DC



Attention: Any warranty is declined in case of field changes of factory wiring and settings

Ordering Information

- When ordering, please clearly indicate product information based on product nomenclature, including unit model, power-supply, options etc.
- Please read instruction manual shipped with unit thoroughly before starting installation. Choose proper installation position and comply with national and local safety code requirements.
- If unit without valve is ordered, please local-supply and mount motorized valve on the unit after the unit installation. If unit with valve is ordered, the valve will be mounted to unit in factory.
- High performance condensate drain pump is inbuilt in the unit, with draining distance 200mm higher than unit top. If it is necessary to discharge the condensate from a level above 200 mm, install an auxiliary water discharge pump and float valve. ·The float valve is recommended to stop the flow switch if there is a fault at the auxiliary pump.
- Please refer to instruction manual for water connection, motorized valve and control wiring etc.
- Please refer to instruction manual for fresh air renewal and conditioned air supply to an adjacent room, otherwise condensate may drip.
- Cleaning and maintenance operations must be carried out by specially trained personnel. Before performing any service or maintenance operations, turn OFF the main power switch.
- Please refer to instruciton manual for more informations.

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