improve buildings™

Carrier improves the world around us; Carrier improves people's lives; our products and services improve building performance; our culture of improvement will not allow us to rest when it comes to the environment.

Version:	CAT_42GWC_E-1307_03
Supersede:	CAT_42GWC_E-1301_02
Effective Date:	Jul, 2013

United Technologies
Climate | Controls | Security

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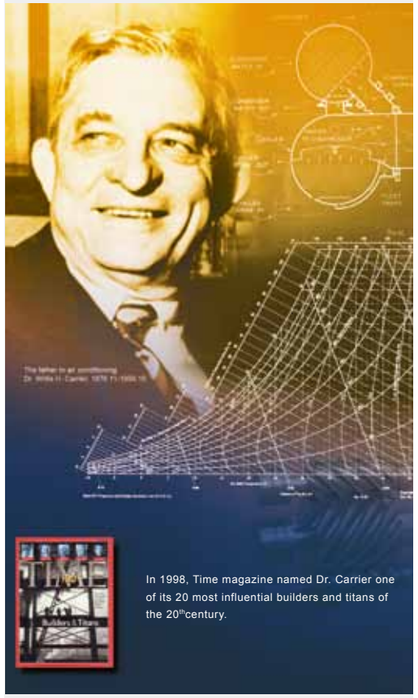
turn to the experts

42GWC

Hydronic Cassette Fan Coil Units

Air Flow: 540~1360m³/h



Carrier China

Carrier Corporation is a subsidiary of the United Technologies Corp. (UTC), which ranks the 150th in Fortune Top 500 in 2011 and has its operations in aerospace and building systems industries all over the world. From the time the founder Dr. Carrier invented the first system of modern air conditioning in 1902, Carrier has been the world leader in the air conditioning industry with its products and system solutions supplied to numerous famous buildings, and up to now, the network of distribution cover more than 170 countries all over the world. In 2011, Carrier ranked top in the HVAC industry field with its sales revenue of US $12 billion.

In China, there are 6 Carrier factories which have more than 2500 employees. As the world-class factory, Carrier has a number of technically advanced production lines, manufacturing commercial and residential chillers, compressors and air-side products. A wide range of products are able to meet diversified requirements of different customers. The global R&D center located in Shanghai has the capability of developing several major projects in the same time, with many advanced technical patents awarded to support Carrier stay most competitive in terms of technology advantage in the HVAC industry.

Model number Nomenclature

Unit body:

42 GWC 003 02 A 0 4 THC

- THC: Manufactory Code — THC:Shanghai Yileng Carrier Air Conditioning Equipement Co Ltd.(Tonghui Factory)
- 4: Product RE-Design Key — 4:4rd Modify
- 0: Unit Packing — 0:Standard Packing
- A: Option — A:Export Standard Unit
- 02: Power Supply — 02:220V-1PH-50HZ; 0C:230V-1PH-60HZ; 0E:DC Motor（Single Control）
- 003: Unit Size(Cooling Capacity) — 003:3.2KW; 004:3.7KW; 005:5.8KW; 006:6.6KW; 008:8.7KW
- GWC: Model Letters — GWC:Hydraulic Cassette~2Pipe
- 42: Product Series — 42:Fan Coil Unit

Panel:

42 GWC 00L 00 A 0 0 THC

- THC: Manufactory Code — THC:Shanghai Yileng Carrier Air Conditioning Equipment Co Ltd.(Tonghui Factory)
- 0: Product RE-Design Key — 0:Original
- 0: Unit Packing — 0:Standard Packing
- A: Option — A:Export Standard Panel Kit
- 00: Power Supply — 00:No Power
- 00L: Unit Size — 00L:Large Chassis; 00S:Small Chassis
- GWC: Model Letters — GWC:Hydraulic Cassette
- 42: Product Series — 42:Fan Coil Unit

Room Controller For BLDC Option

42CN0F0003: Local Room Controller

Air Flow

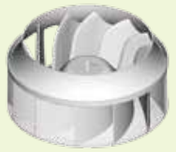
540~1360 m^3/h

Features

- It is a compact unit only 298mm in height. The four suspension brackets of the unit adopt the T shape opening, it can be installed up and fixed easily.
- 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 encased in a special sound-insulating material removes condensate quietly and fast.
- 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.
- Conditioned air is directed along the ceiling then evenly distributed throughout the room.
- A Large LCD screen thermostat is optioned.

Motor and Fan

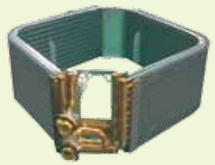
- Optimized designed centrifugal fan design for 42GWC.
- High efficiency.
- Quite running with anti-vibration pads of motor.



Coil

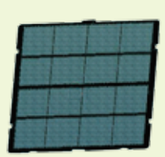
Optimized designed 7 mm coil.

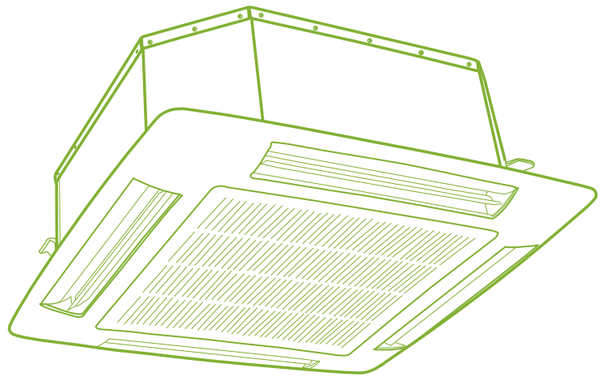
- “L” coil design
- Lanced fin design



Air return grille and filter

- The filter inside the air return grille can be easily removed and washed, And keeps the room air fresh through constant circulation.
- 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, and enwrapped with special designed insulation material.
- 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)

- By providing nearly constant temperature and humidity, lower noticeable operation sound, and energy saving up to 50%, Carrier brushless DC motor fan coil allows us to balance intelligent performance with environmental and economic benefits, increase both owner and occupant satisfaction.

Optional room controller

Accessories (Optional)

Three-way Electric control valve

Two-way Electric control valve

TMS810

TMS710/720

Thermostat

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

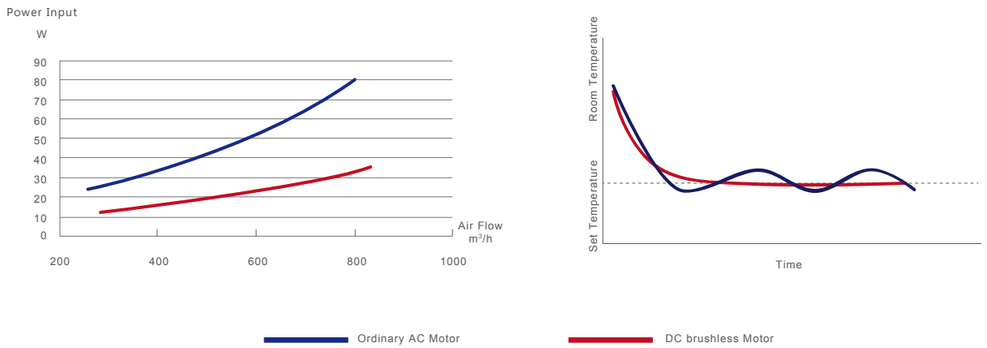
The BLDC fan coil offers an average energy saving of 50% or more, compared to conventional AC fan coil units. In automatic mode, energy consumption can be reduced even further as the unit's advanced intelligent control technology gradually adjusts the motor speed for optimal energy saving. This adds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



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
Nominal Air flow m^3/h	(H)	540	680	850	1020	1360
	(M)	430	540	680	810	1080
	(L)	350	440	550	660	880
Cooling Capacity W		3200	3700	5800	6600	8700
Heating Capacity W		4900	5800	9000	10200	13500
Power Input- AC motor W		35	48	50	60	102
Power Input - DC motor W		14	25	22	28	50
Noise Level dB(A)	(H)	35	40	35	37	45
	(M)	32	35	31	33	40
	(L)	29	31	27	29	35
Water Flow l/min		9.5	11	17	19.5	25
Coil Rows		2	2	2	2	3
Water Pressure Drop KPa		13	16	26	36	16
Water Connection inch		3/4	3/4	1	1	1
Condensate drain pipe mm		16	16	16	16	16
Panel Dimension mm		720*720	720*720	960*960	960*960	960*960
Unit Body Dimension mm		575*575*298	575*575*298	825*825*298	825*825*298	825*825*298
Panel Weight Kg		2.5	2.5	5.0	5.0	5.0
Unit Body Weight Kg		16.5	16.5	37.0	37.0	39.6

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.

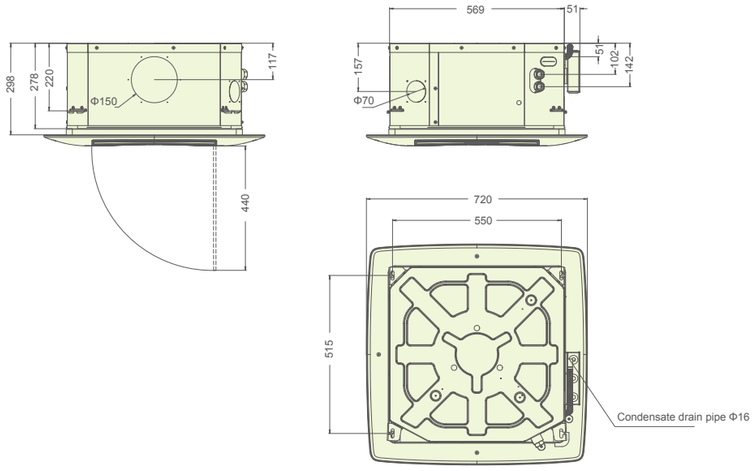
Operating Limits

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	198-264V
Maximum entering water temperature	80℃				

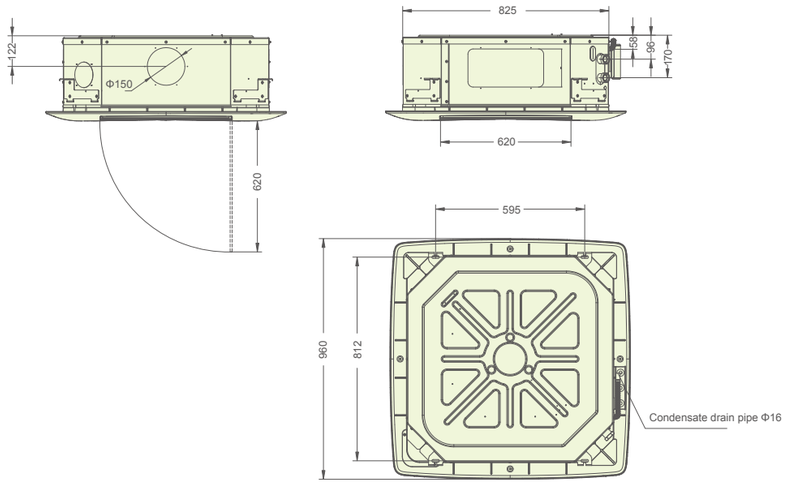
If the room remperature can go down to 0℃, if is advisable to empty the water circuit to avoid damage caused by ice.

Physical Dimensions

42GWC003-004



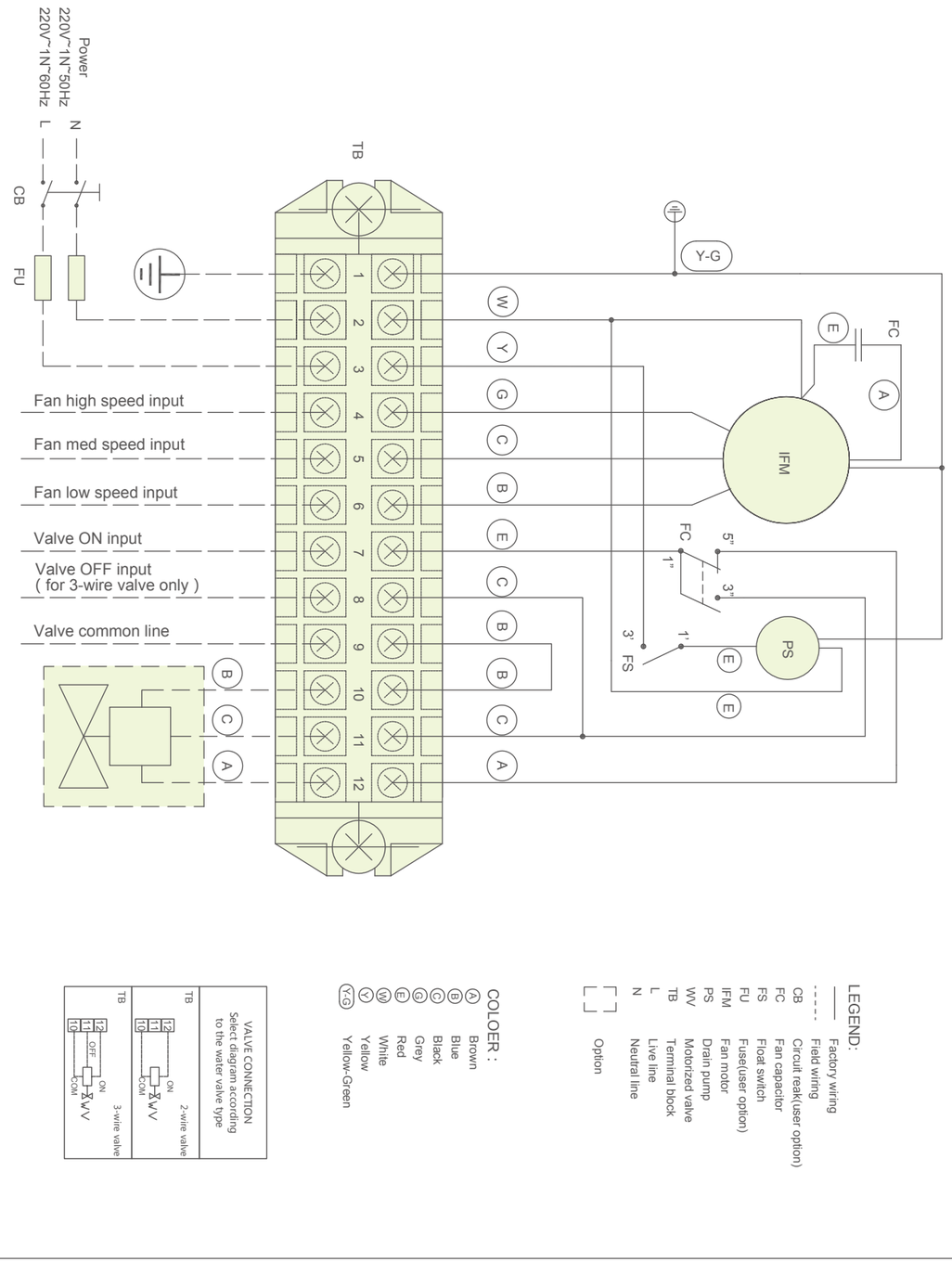
42GWC005-008



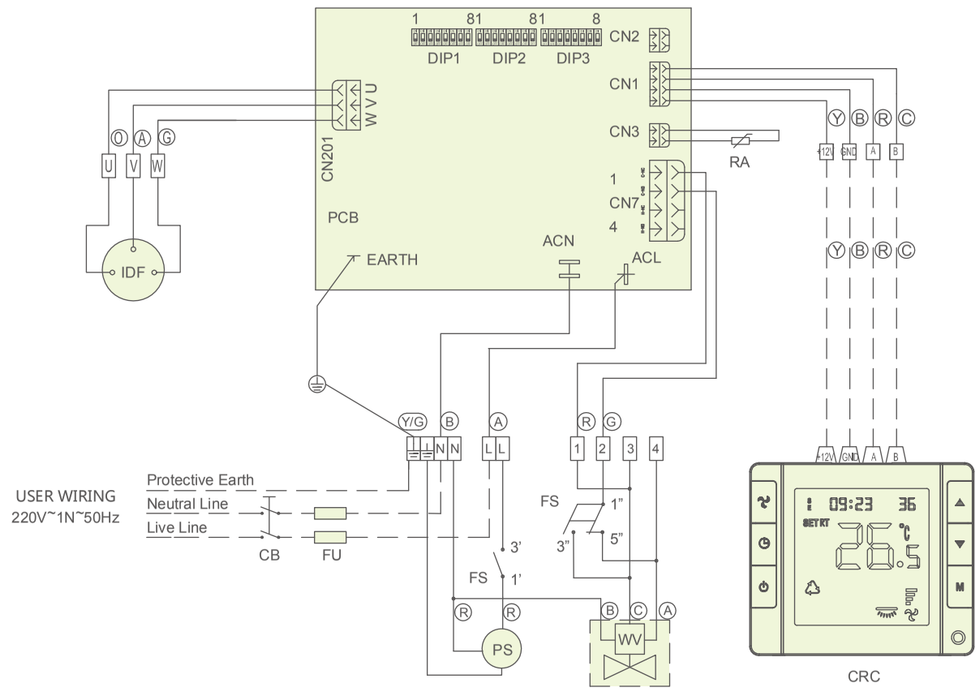
Electrical Data

Models	AC Motor (220V-1Ph-50Hz)		AC Motor (230V-1Ph-60Hz)		DC Motor	
	Power Input	Current	Power Input	Current	Power Input	Current
	W	A	W	A	W	A
42GWC003	35	0.18	40	0.2	13	0.08
42GWC004	48	0.24	58	0.28	26	0.17
42GWC005	50	0.25	58	0.28	22	0.16
42GWC006	60	0.3	74	0.33	28	0.18
42GWC008	102	0.48	122	0.55	49	0.25

Wiring Diagram（AC Motor）



Wiring Diagram（DC Motor）

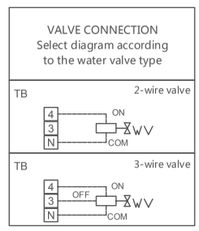


LEGEND:

———	Factory Wiring
- - - -	Field Wiring
□	Terminal Block
IDF	Indoor Fan Motor
RA	Room-air sensor
CRC	Carrier Room Controller
PCB	Driver board
PS	Drain pump
WV	Water valve
FC	Flow switch
⌈ ⌉	For option

WIRES COLOR :

A	Brown
B	Blue
C	Black
G	Grey
O	Orange
E	Red
W	White
Y	Yellow
Y-G	Yellow-Green



ATTENTION

ANY WARRANTY IS DECLINED IN CASE OF FIELD CHANGES OF FACTORY WIRING AND SETTINGS

Wiring Diagram（DC Motor）