

# ***SINKO***

## **ECM FAN COIL UNIT SERIES**

Energy saving and

Environment-friendly Type



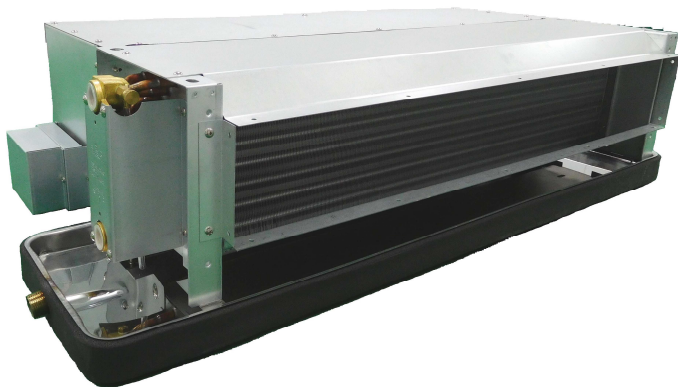
***Love the Earth***

***Save the Environment by***

***Reducing carbon emission***

## **GSRC** series

**3-speeds Type**



**G-SRC-3S-2015C**

- **Product Characteristics**

SINKO 3-speeds ECM (EC motor) Fan Coil Unit uses Brushless AC motor with advance optimized control technology which has low noise level, low vibration, low loss, high torque and efficiency. It is the best motor for air conditioners for carbon emission reduction.

A . Application Places

Application for high class hotels, motels, stores, restaurants, offices and hospitals.

B . Runs smoothly with very low noise and nearly no vibration

SINKO's ECM uses sinusoidal wave AC to drive the rotor, more advanced than regular BLDC or EMC which uses square wave DC. Sinusoidal wave AC results in low electrical noise and low vibration during operation.

C . High efficiency and energy saving

Compared to traditional motors, under the same air volume of external static pressure, its energy saving at low speed could be up to 70%.

D . Easy and simple to operate

It can be used with traditional 3-speeds thermostat for PSC (Permanent Split Capacitor) motor. It can also be used with SINKO's digital thermostat integrating all control functions at one point.

E . Convenient onsite management

Motor speed and power can be adjusted according to different air volume, static pressure, and noise level requirement at site with our calibration chart.

F . Stable quality with high reliability

The main body of the ECM is integrated with the driver to effectively lower interference and wiring problems. The driver module consists of multiple protection functions like over heat, over current and locked rotor. It is highly stable and reliable.

G . Low maintenance cost

There only two ECM for the entire series of GSRC fan coil unit, one double shaft and one single shaft. Power and speed of our motors can be adjusted to suit whole range of air flow and static pressure. Greatly reduced the number of spare parts.

H . Easy for retro-fit work

The size and installation method of the ECM are the same as our traditional PSC motors. They can be replaced into existing installations without changing the control system.

※ Step-less ECM are also available.

- **Energy saving advantages**

Under the same external static pressure and air volume, the ECM can save up to 70% in power consumption rate as compared to traditional 3-speed PSC motor. The comparison of power consumption and energy efficiency between ECM and traditional 3-speed PSC motor is shown in diagram 1 and 2.

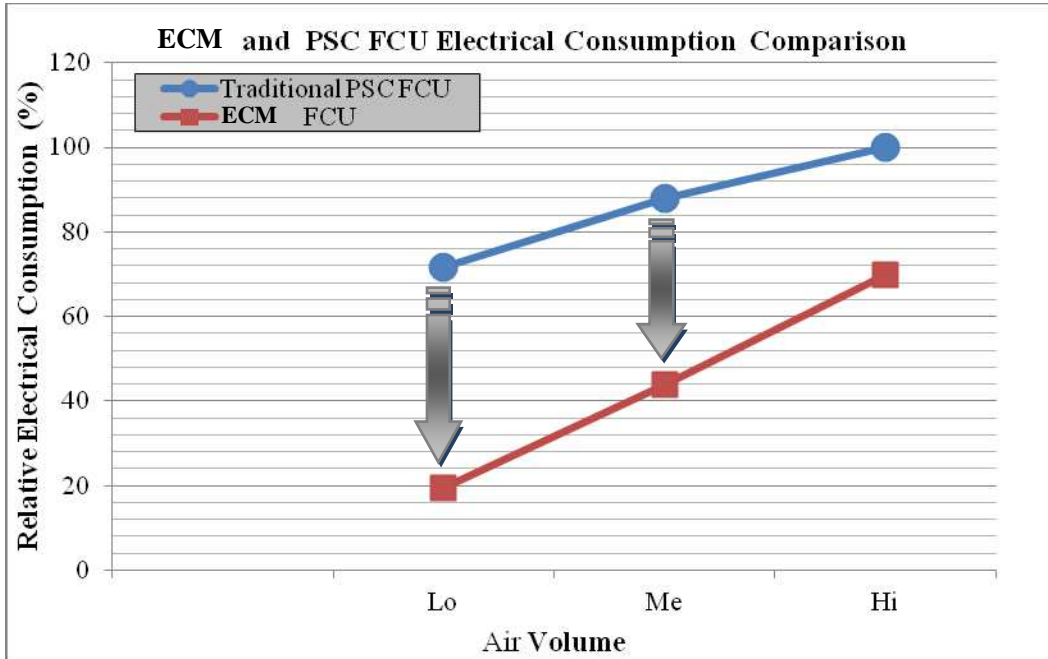


Diagram 1: The FCU electrical consumption comparison between ECM and traditional 3-speed PSC motor

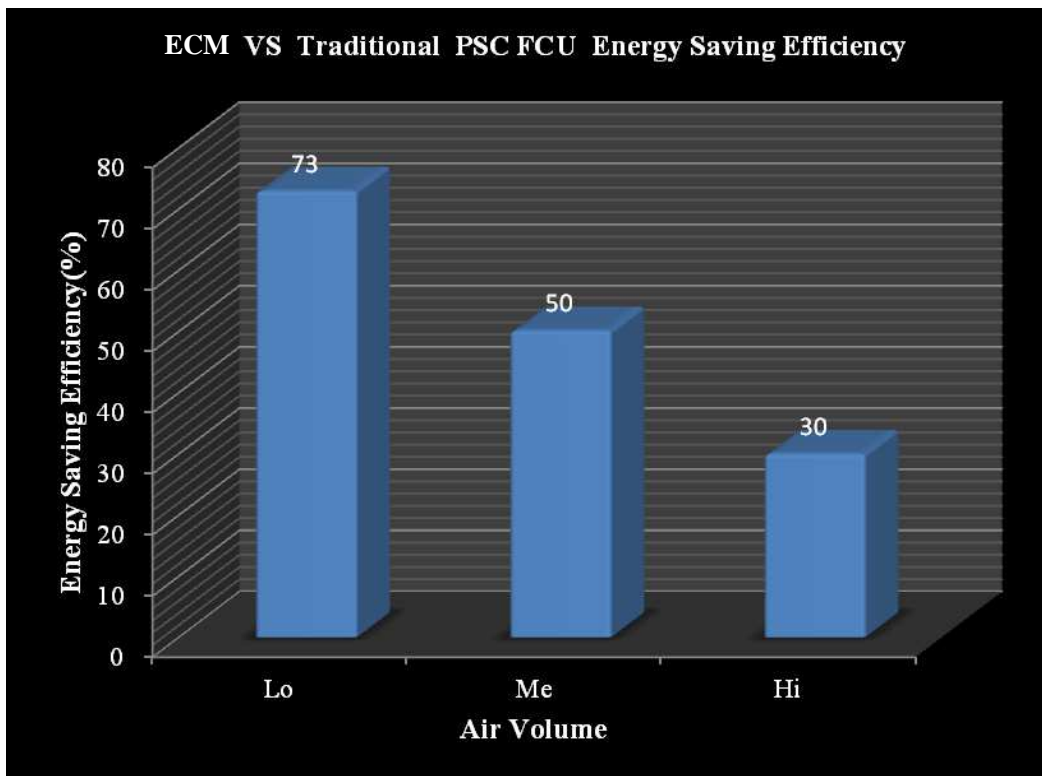
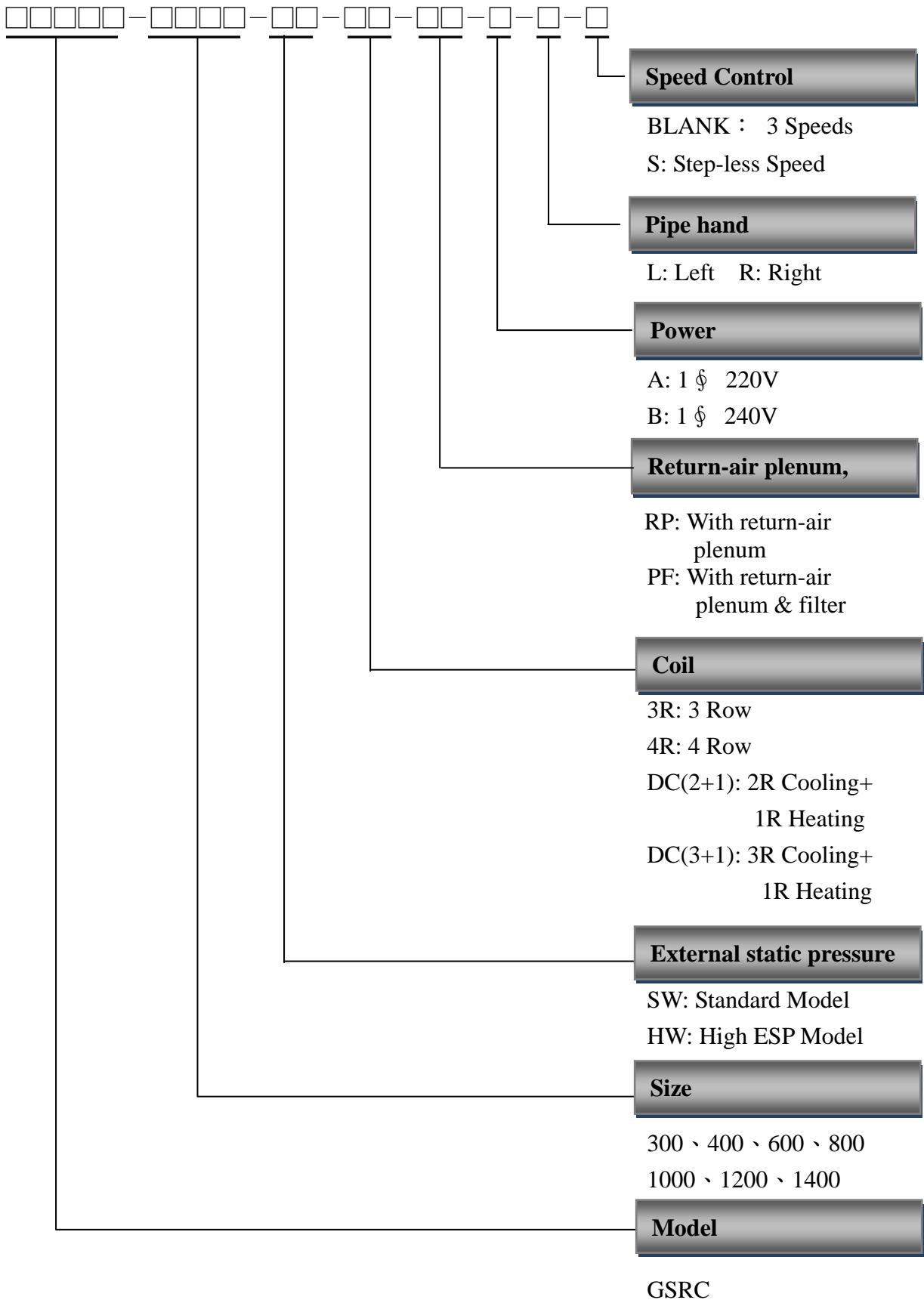


Diagram 2: The energy saving efficiency comparison between ECM and traditional 3-speed PSC motor

● **Nomenclature (Reference)**



● **Specification**

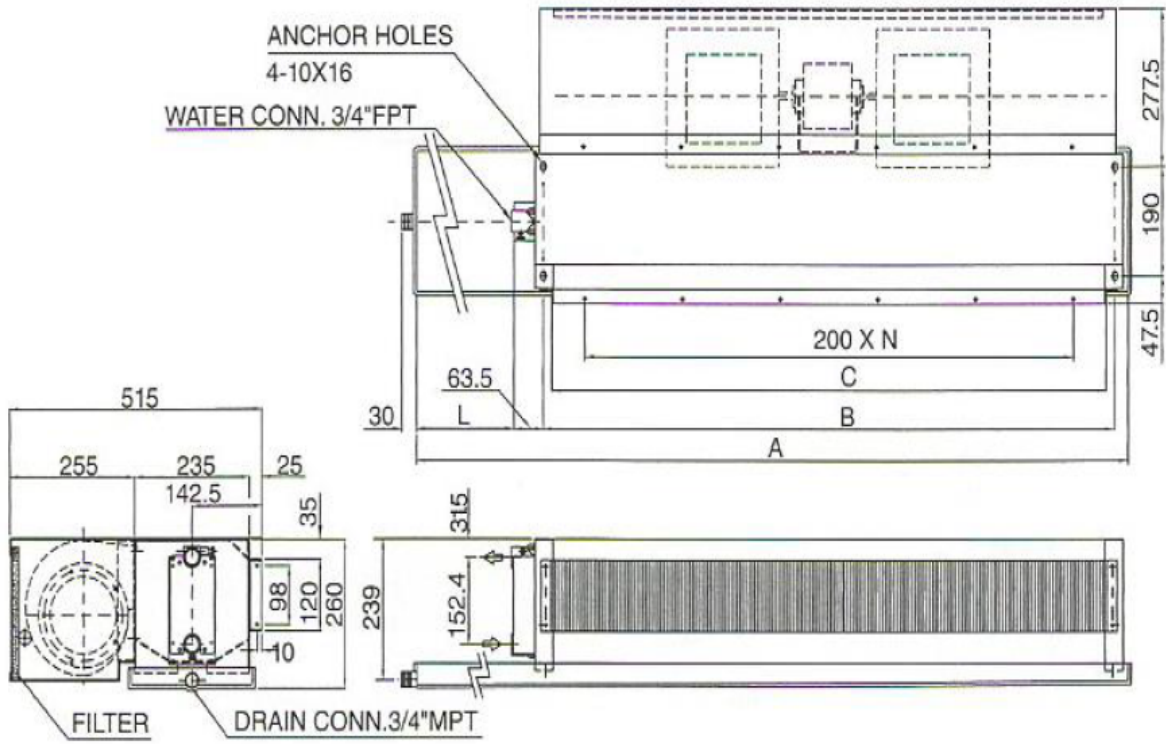
Type		Ceiling hideaway type fan coil unit							
Model		GSRC-SW, GSRC-HW							
Size		300	400	600	800	1000	1200	1400	
Cooling capacity (watt)		2820	3640	5430	7190	9010	10790	12360	
Fan	Type	Forward-curved DIDW centrifugal fan							
	Number	1	2	2	2	3	4	4	
Air Volume (L/sec)	HW	H	156	224	293	359	496	570	687
		M	135	196	264	297	437	522	581
		L	104	150	210	213	352	424	426
	SW	H	123	198	271	300	427	529	587
		M	106	168	218	260	358	441	510
		L	83	125	169	192	281	338	372
Motor	Type	Permanent magnet synchronous motor							
	Power supply	AC 220V 50Hz							
	Number	1	1	1	1	2	2	2	
Input power (watt)	HW	H	49	53	72	109	140	157	209
		M	32	34	56	68	105	119	144
		L	17	19	27	34	60	65	70
	SW	H	25	32	51	60	91	108	134
		M	19	21	33	44	63	65	86
		L	12	13	17	21	33	35	42
Coil	Type	Slit surface aluminum fins mechanically bonded to copper tube, complete with water in/out sockets and manual air vent.							
	Row/ FPI	3- Row / 12 FPI							
	Operating pressure(kPa)	1700kPa(250psig) maximum ,unless otherwise specified							
Piping	Inlet / Outlet	3/4" FPT Conn.							
	Drain	3/4" MPT Conn.							
Water flow (L/sec)		0.135	0.174	0.26	0.344	0.431	0.516	0.591	
Insulation for drain pan		6mm thickness insulation material							
Weight (kg)		16	20	24	28	36	42	45	

Note :

1. Entering Air Temperature : DB 27°C/WB19.5°C ; Entering Water Temperature : 7°C
2. SW (standard-speed model) : 30 Pa External Static Pressure
3. HW (High ESP model) : 50 Pa External Static Pressure

● Dimension

GSRC (300 ~1400) (With Plenum)

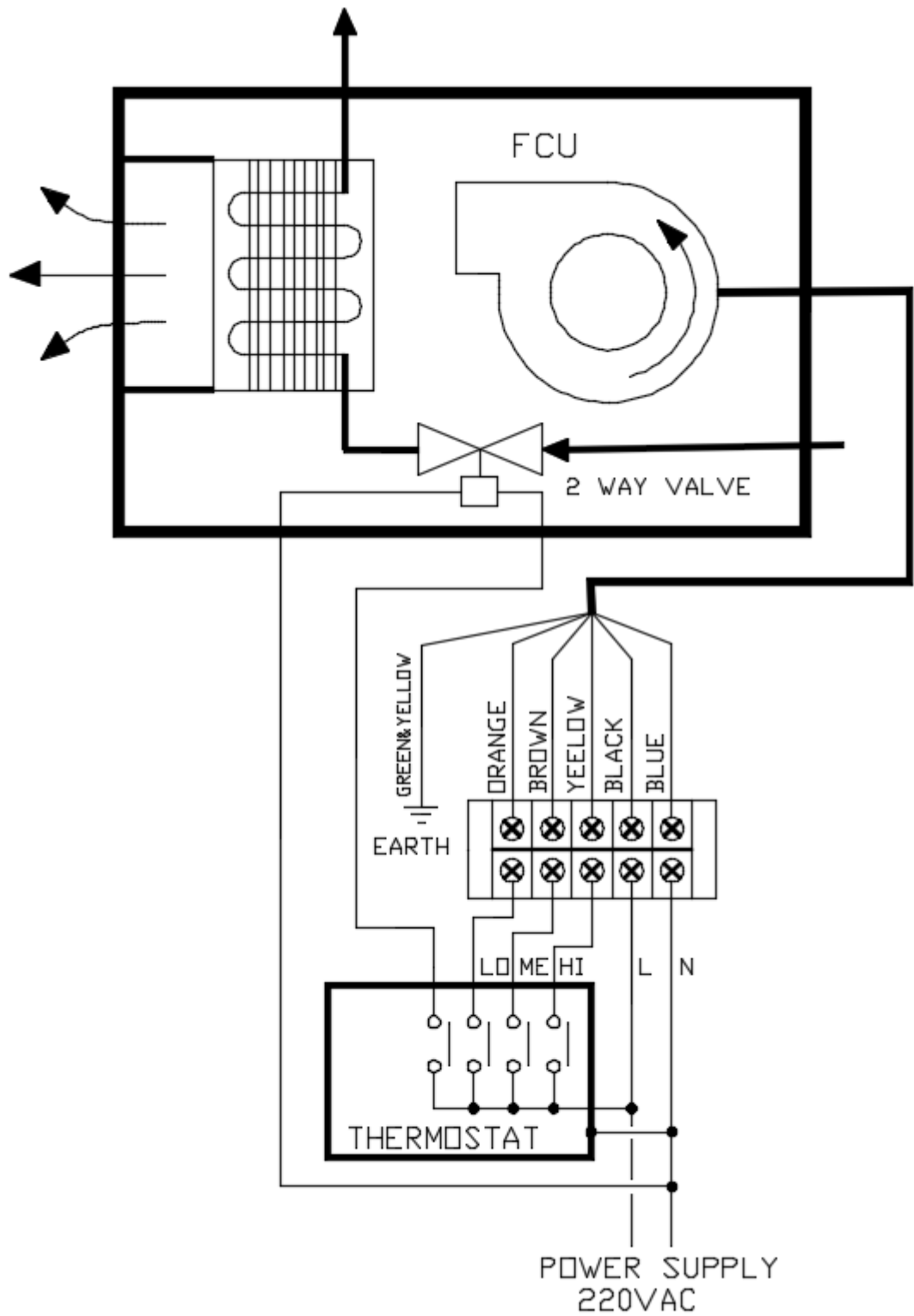


Model / Size	Dimension (mm)			
	A	B	C	D
GSRC-300	635	500	462	510
GSRC-400	885	750	712	760
GSRC-600	1020	885	847	890
GSRC-800	1305	1170	1132	1180
GSRC-1000	1490	1340	1302	1350
GSRC-1200	1740	1590	1552	1600
GSRC-1400	1920	1770	1732	1780

Remarks: 1. The pipe connection method is identified by facing the air outlet, if the water in/out pipe is on the left side, the connection is on the left.

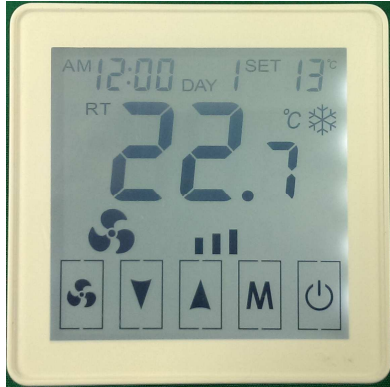
2. Special anti-corrosion aluminum fin or copper fin for water coil can be ordered upon request

- **Wiring diagram ( 3 -speed type)**



## ● Thermostat (Optional)

Provides one type of thermostat with the ECM FCU which can precisely and automatically adjust a room temperatures.



### **TW1003AC**

- ◆ LCD back light display
- ◆ Touch-key
- ◆ 3-speed control
- ◆ Built-in temperature sensor
- ◆ Chiller remote control
- ◆ Size: 86(W)×86(H)×14(D) mm



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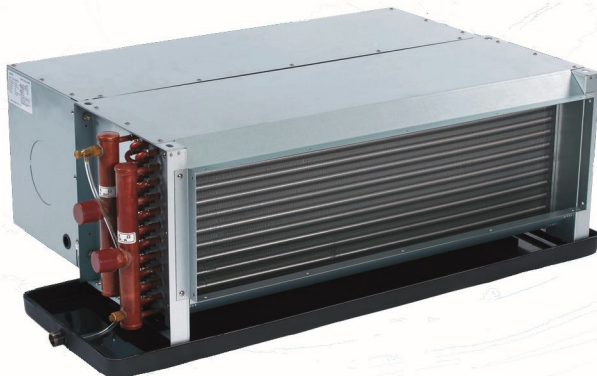
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## **GTCRH** series

3-speeds Type



G-TCRH-2017- 3S-V2

- **Product Characteristics**

SINKO 3-speeds ECM (EC motor) Fan Coil Unit uses Brushless AC motor with advance optimized control technology which has low noise level, low vibration, low loss, high torque and efficiency. It is the best motor for air conditioners for carbon emission reduction.

A . Application Places

The most suitable for use in high static pressure and large air volume places.

B . Runs smoothly with very low noise and nearly no vibration

SINKO's ECM uses sinusoidal wave AC to drive the rotor, more advanced than regular BLDC or EMC which uses square wave DC. Sinusoidal wave AC results in low electrical noise and low vibration during operation.

C . High efficiency and energy saving

Compared to traditional motors, under the same air volume of external static pressure, its energy saving at low speed could be up to 70%.

D . Easy and simple to operate

The motor has high 、 medium and low speed control, such as AC motor with strong electric drive directly without other conversion devices.

E . Convenient onsite management

Motor speed and power can be adjusted according to different air volume, static pressure, and noise level requirement at site with our calibration chart.

F . Stable quality with high reliability

The main body of the ECM is integrated with the driver to effectively lower interference and wiring problems. The driver module consists of multiple protection functions like over heat, over current and locked rotor. It is highly stable and reliable.

G . Low maintenance cost

There only two ECM for the entire series of GTCRH fan coil unit, one double shaft and one single shaft. Power and speed of our motors can be adjusted to suit whole range of air flow and static pressure. Greatly reduced the number of spare parts.

H . Easy for retro-fit work

The size and installation method of the ECM are the same as our traditional PSC motors. They can be replaced into existing installations without changing the control system.

- **Energy saving advantages**

Under the same external static pressure and air volume, the ECM can save up to 70% in power consumption rate as compared to traditional 3-speed PSC motor. The comparison of power consumption and energy efficiency between ECM and traditional 3-speed PSC motor is shown in diagram 1 and 2.

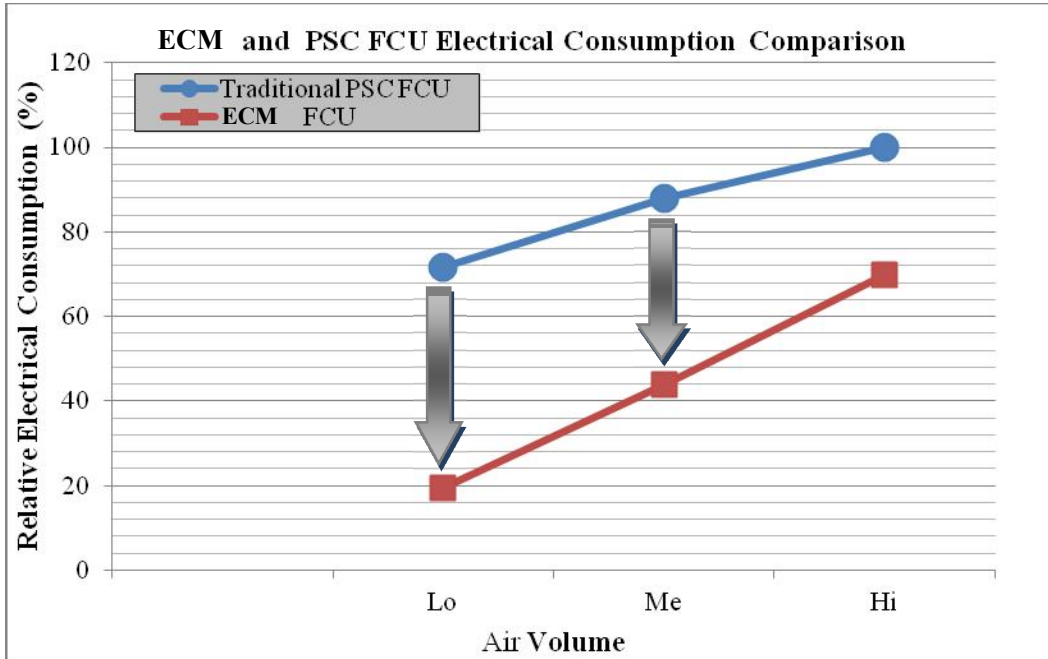


Diagram 1: The FCU electrical consumption comparison between ECM and traditional 3-speed PSC motor

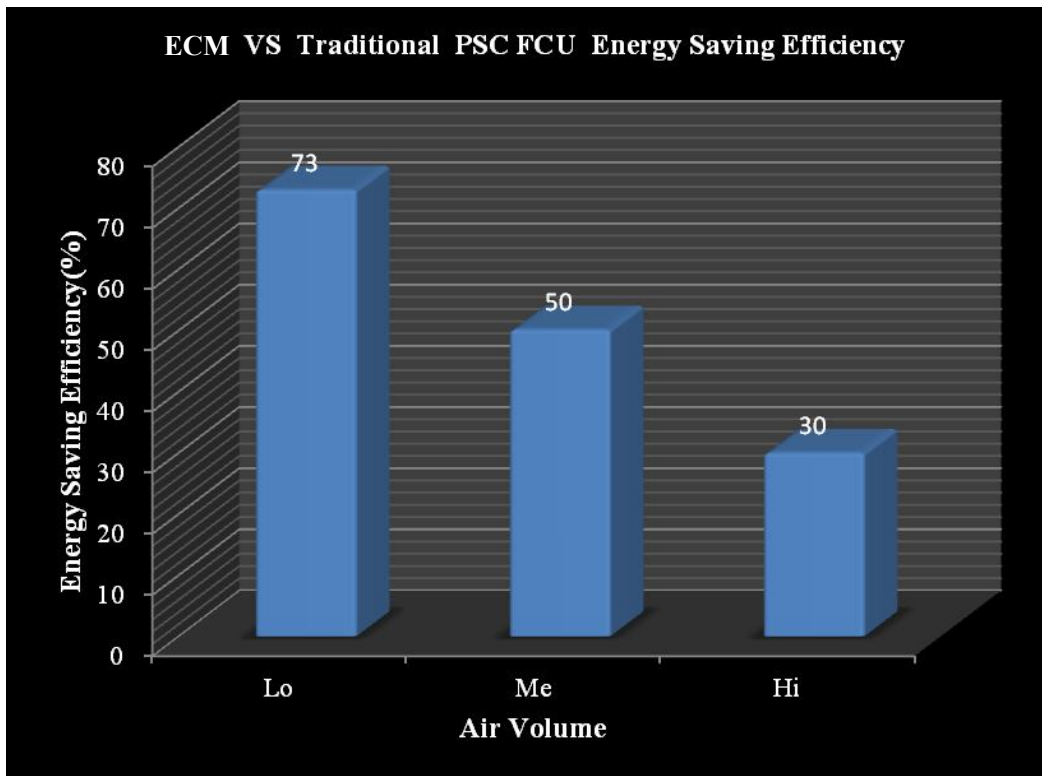
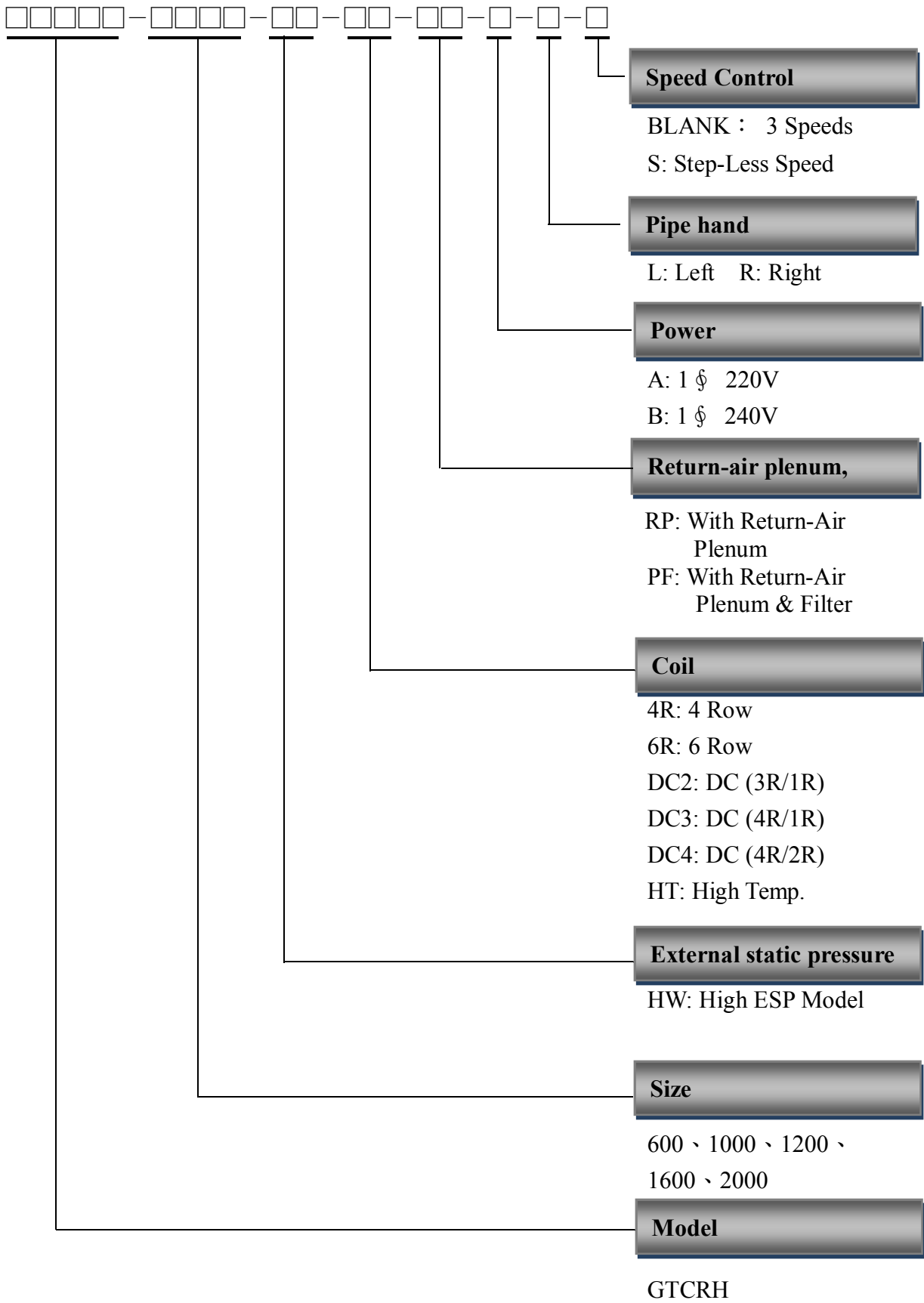


Diagram 2: The energy saving efficiency comparison between ECM and traditional 3-speed PSC motor

● **Nomenclature (Reference)**



● **Specification**

Type		Ceiling recessed, high static type					
Model		GTCRH					
Size		600	1000	1200	1600	2000	
Cooling capacity (kW)	SH	4.57	7.34	7.89	10.85	13.52	
	TH	6.38	10.76	10.66	15.19	20.19	
Fan	Type	Forward-curved DIDW centrifugal fan					
	Number	1	2	2	3	4	
Air Volume (L/sec)	HW	H	373	603	650	895	1083
		M	286	471	570	695	819
		L	210	315	404	467	552
Motor	Type	Permanent magnet synchronous motor					
	Power supply	AC 220V 50Hz					
	Number	1	1	1	2	2	
Input power (watt)	HW	H	231	313	318	467	553
		M	109	157	201	230	263
		L	47	64	83	96	116
Coil	Type	Slit surfaced, aluminum finned coil complete with inlet/outlet Conn. and air vent.					
	Row/ FPI	4 Row / 12 FPI					
	Operating pressure	1700kPa(250psig) maximum ,unless otherwise specified					
Piping	Inlet / Outlet Conn.	3/4" FPT	1" MPT	1" MPT	1" MPT	1-1/4" MPT	
	Drain Pan	Stainless Steel, SUS 430 3/4" MPT Conn.					
Water flow (L/sec)		0.305	0.513	0.510	0.725	0.965	
Insulation for drain pan		6mm thickness insulation material					
Weight without plenum (kg)		35	40	46	60	72	
Weight with plenum (kg)		37	44	52	68	82	
Holding water (L)		2.6	3.1	3.9	4.5	5.7	

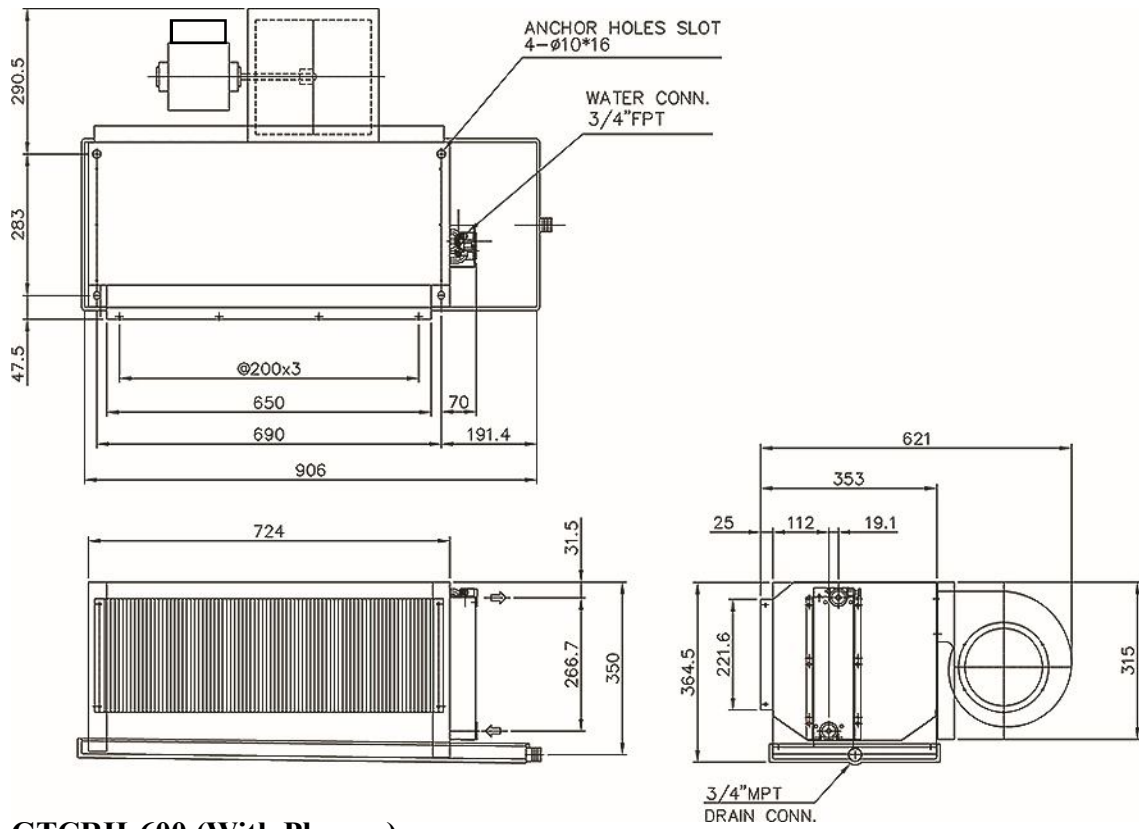
Note :

1. Cooling capacity is based on DB 24°C, WB 17.8°C, EWT 7°C, LWT 12°C.
2. Cooling capacity, input power are based on H speed.
3. Air volume is based on ESP 100Pa without plenum and filter.

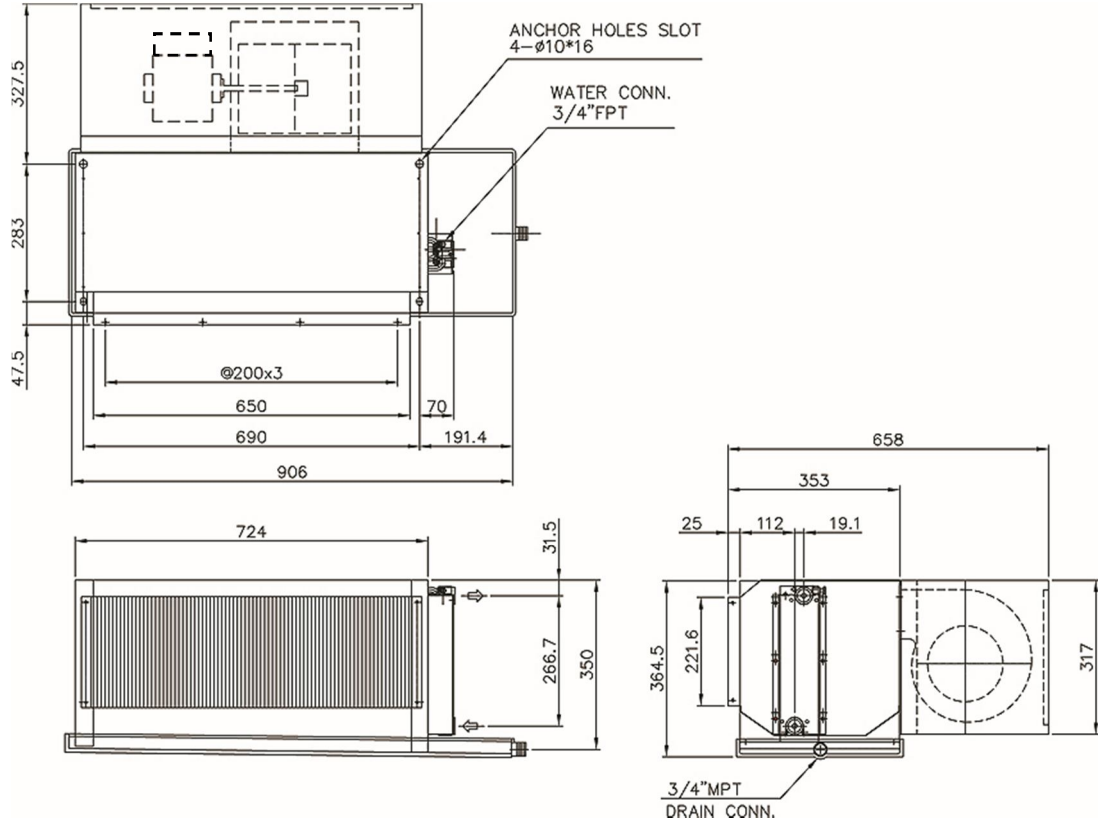


● **Dimensions**

**GTCRH-600 (Without Plenum)**

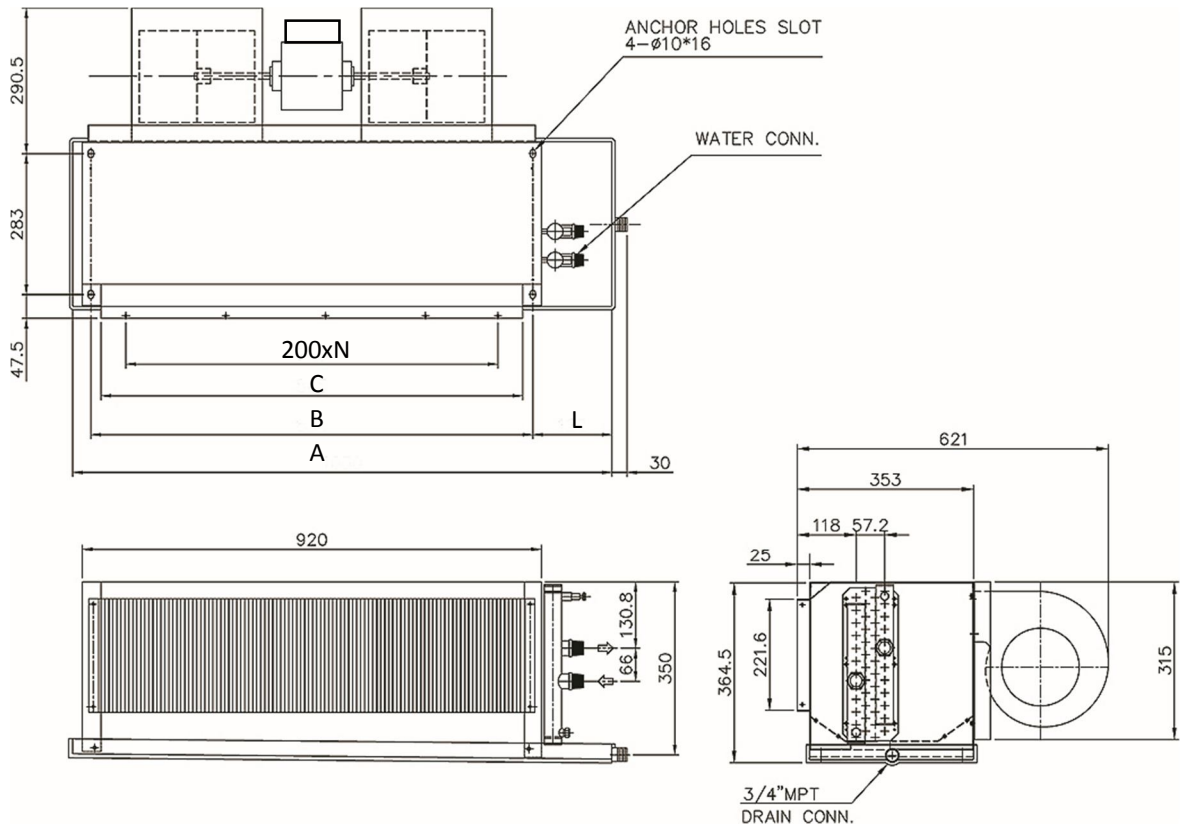


**GTCRH-600 (With Plenum)**



## ● Dimensions

### GTCRH-1000~2000 (Without Plenum)



Model / Size	Dimension (mm)				
	A	B	C	L	N
GTCRH-1000	1050	885	847	122	4
GTCRH-1200	1335	1135	1097	157	5
GTCRH-1600	1505	1340	1302	122	6
GTCRH-2000	1935	1770	1732	122	7

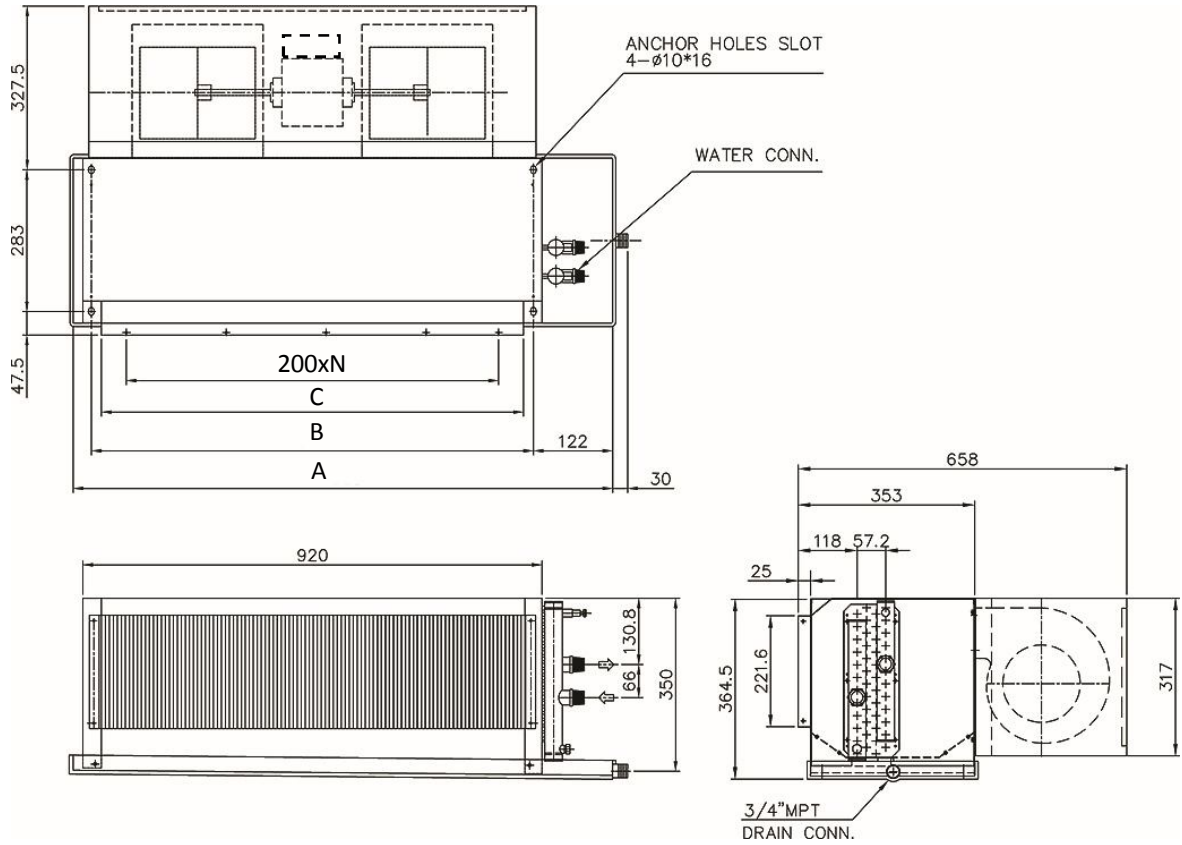
Note: 1. The pipe connection method is identified by facing the air outlet, if the water in/out pipe is on the left side, the connection is on the left.

2. Special anti-corrosion aluminum fin or copper fin for water coil can be ordered upon request



● **Dimensions**

**GTCRH-1000~2000 (With Plenum)**

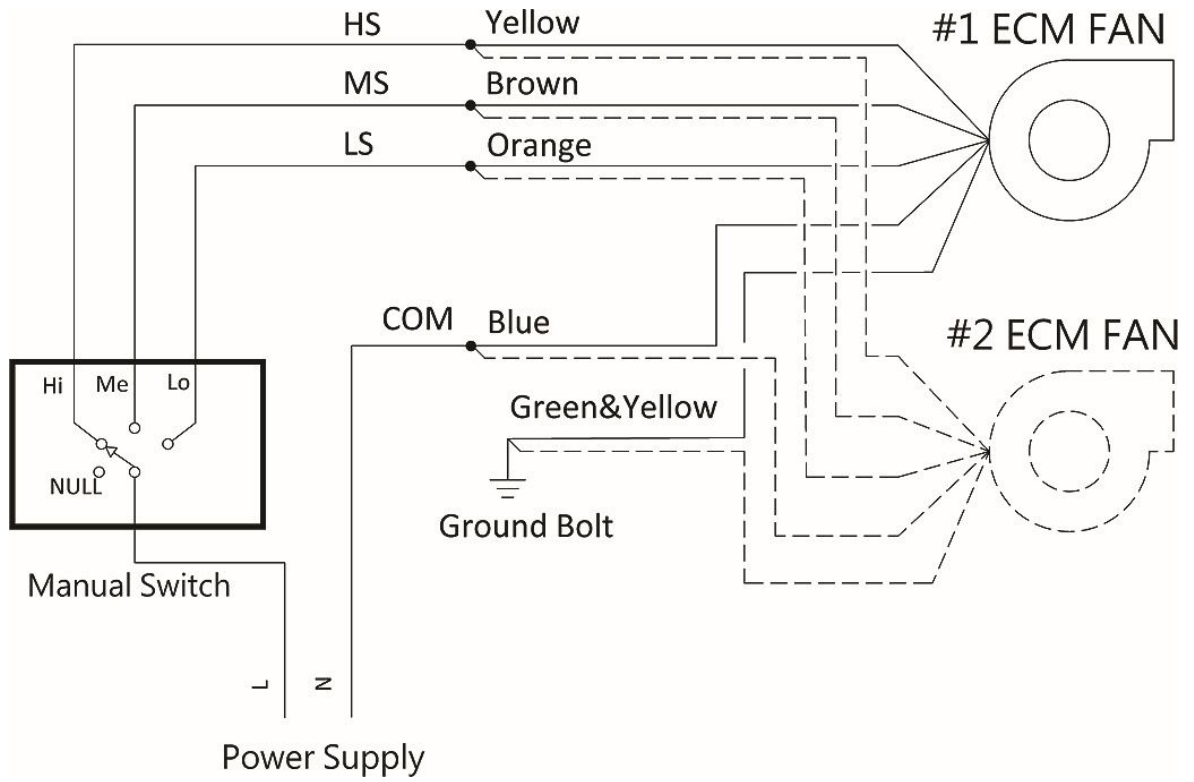


Model / Size	Dimension (mm)				
	A	B	C	L	N
GTCRH-1000	1050	885	847	122	4
GTCRH-1200	1335	1135	1097	157	5
GTCRH-1600	1505	1340	1302	122	6
GTCRH-2000	1935	1770	1732	122	7

Note: 1. The pipe connection method is identified by facing the air outlet, if the water in/out pipe is on the left side, the connection is on the left.

2. Special anti-corrosion aluminum fin or copper fin for water coil can be ordered upon request

● **Wiring diagram ( 3 -speed type)**



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