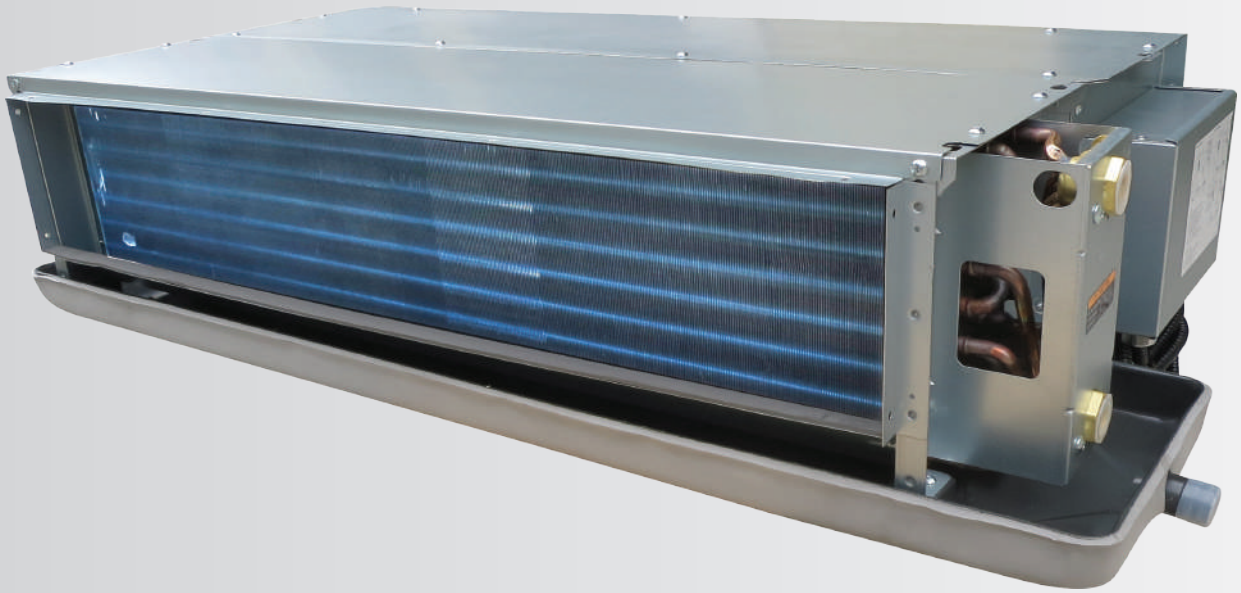
Concealed Ceiling Unit with DCBL Motor



FWW-DA

Cooling Only

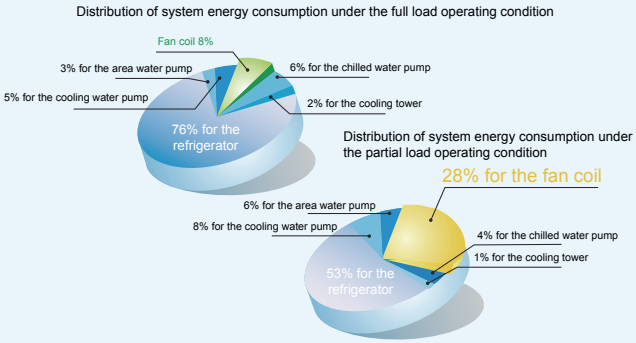
Building nature based on science and technology

Energy saving | Quiet | Comfortable

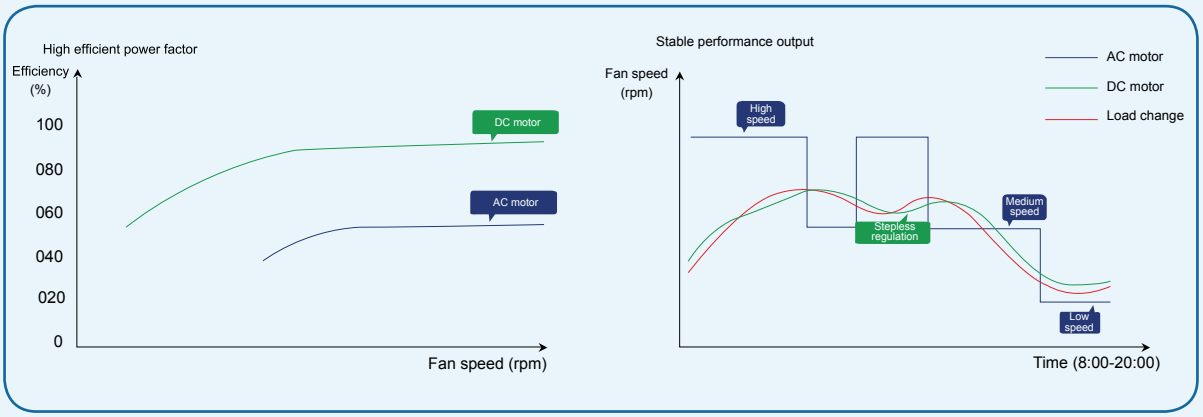
For over one hundred years, DAIKIN has been dedicated to research in air conditioning technologies. Recently, with a view to fitting into the ever increasing demands for energy saving in the world, and responding actively to the trend of high delta temperature and low water flow application, DAIKIN strives hard to develop district cooling DC brushless fan coil unit to make it a new classic product based on its almost up to one hundred years' experience in fan coil structure and performance. The units are widely used in places with higher requirements for energy saving and comfort, such as commercial and office building, high-end residences, hospitals and governmental projects.

Energy saving

- The high efficiency DC brushless motor adopts advanced proportional digital core algorithm and PFC module to achieve the maximum power factor of 99%. Compared to the traditional fan coil, the unit saves energy by over 50% and achieves more remarkable energy saving effect at medium or low speed
- The unit employs the FOC space vector control system to adjust the corresponding motor speed in time, reduce unnecessary waste in electric energy and enhance energy utilization efficiency significantly
- The heat exchangers of the full series of units adopt anti-salt and anti-corrosive louvered hydrophilic aluminum foil to improve the heat exchange efficiency.



In the actual application, energy consumption of the fan coil accounts for 28% of the total energy consumption of air conditioning system. The air conditioner operates at partial load at 90% of time. The traditional fan coil takes up about 28% of total energy consumption because it cannot regulate its power consumption as needed.



*Power factor: It refers to the ratio between the actually consumed power and the power supply capacity. Therefore, the higher the power factor, the more unnecessary losses that can be avoided during power transmission. In this way, the power utilization efficiency is enhanced

*Note: The foregoing statistical data may differ from the actual engineering data due to regional and climatic changes.

Quiet

- The DC brushless motor adopts electronic commutation to avoid electromagnetic interference and noises, ensuring a quiet and comfortable indoor environment during operation.
- The motor adopts stepless speed regulating technology, ensuring a stable noise band curve and remarkable sound quality. The medium/low speed has more advantages compared with traditional motors.
- The unit uses the wide impeller fan following the aerodynamic design and has passed the static and dynamic balance tests, with even air supply and lower noises.
- A rubber axle sleeve is used between the fan and the motor to realize flexible connection, reducing the vibration noise generated when the unit starts/stops and load is increased/ decreased

Comfortable

- The standard control module for unit regulates air flow intelligently, 0~10V adaptor is provided which allows for realizing precise stepless air flow regulation to enable the optimum comfort for people indoors.
- Pulse width modulation (PWM) enables the motor to realize electronic commutation and achieves a temperature control precision up to ±0.5°C, matching the operating air flow under the set temperature perfectly.

Nomenclature

FWW02DASR

FWW 02 D A S R

- R: Pipe Connection
  R-Facing Air Flow Right Hand
  L-Facing Air Flow Left Hand
- S: Motor & ESP
  S-DCBL Motor IP44/B
  50Pa External Static Pressure
- A: Design SN
  "A"-First Design Improve
- D: Coil Type
  D-4 Rows and 2-pipe(4+0) with High Delta T
- 02: Nominal Air Flow
  02, 03 04 05, 06, 07, 08, 09, 10, 12, 14, 16, 18, 20 (*100CFM)
  (CFM, 1CFM=1.7m^3/h)
- FWW: Daikin Horizontal Ceiling Concealed Fan Coil Unit

Note:

(1) The power supply is 220~240/1Ph/50[60]Hz

(2) Please contact factory for detailed configuration about insulation, filter and drain pan.

Specification

Ceiling Concealed Unit for DCBL District Cooling FWW-DA

	MODEL	02DA	03DA	04DA	05DA	06DA	07DA	08DA	10DA	12DA	14DA	16DA	18DA	20DA
Air flow (m^3/h)	High	390	510	650	790	1010	1170	1200	1510	1770	1890	2220	2550	3280
	Medium	370	490	620	750	990	1140	1170	1490	1730	1860	2090	2530	3140
	Low	310	410	520	650	860	1020	1000	1360	1550	1690	1700	2130	2560
ESP (Pa)	High	55	54	56	52	53	54	53	52	53	52	56	53	54
	Medium	50	50	50	50	50	50	50	50	50	50	50	50	50
	Low	35	36	36	38	38	40	40	42	40	41	34	36	33
Total cooling capacity (W)	High	2087	2179	3238	3939	4567	5453	5527	7333	8505	8785	9947	11598	14422
	Medium	2038	2160	3187	3860	4540	5323	5400	7234	8399	8723	9630	11587	14053
	Low	1748	1933	2822	3537	4165	4977	4907	6860	7742	8327	8500	10531	12498
Sensible cooling capacity (W)	High	1473	1512	2184	2677	3285	3859	3944	5178	6064	6311	7309	8468	10647
	Medium	1423	1484	2137	2608	3259	3772	3864	5123	5931	6255	7031	8466	10347
	Low	1201	1307	1856	2354	2954	3504	3461	4807	5396	5902	6072	7550	8988
Water Pressure Drop (Pa)	High	4.8	5.3	12	18.7	8.7	13	13.4	13.5	18.2	19.4	16.3	22.6	24.3
	Medium	4.7	5.3	11.8	18.2	8.7	12.7	13.1	13.3	17.8	19.1	15.5	22.6	23.4
	Low	4.1	4.7	10.2	16.3	7.9	11.6	11.6	12.4	15.2	17.5	12.8	19.3	19.5
Rated power Input (W)	High	41	53	70	81	110	117	127	203	194	237	350	492	568
	Medium	35	51	60	72	103	108	124	182	182	197	309	433	475
	Low	22	33	38	57	79	88	99	146	142	169	247	251	269
Sound pressure level (dB(A))	High	42.5	43.5	44	45	47.5	47.5	48	48.5	50.5	51.5	52	53.5	57
	Medium	41.5	43	43	44	46.5	46.5	47.5	48	49.5	51	51	53	56
	Low	37	40	41	42	43.5	44.5	44.5	46.5	47	48	47	49.5	52
Coil material		Copper												
Fin material		Hydrophilic aluminum 0.11mm												
Filter withdraw		Bottom withdraw												
Max. working pressure		1.6MPa												
Cooling water pipe size		Rc 3/4 Female thread												
Condensation water pipe size		R3/4 Male thread												
Fan	Type	Galvanized steel double stage impeller forward centrifugal												
	Quantity	1	1	2	2	2	2	2	3	4	4	3	3	4
Motor	Type	DCBL motor IP42/B												
	Quantity	1	1	1	1	1	1	1	2	2	2	2	2	2

NOTES:

1) THE AIR FLOW IS DRY AIR FLOW TESTED ON STANDARD AIR CONDITION WITHOUT WATER IN COIL.

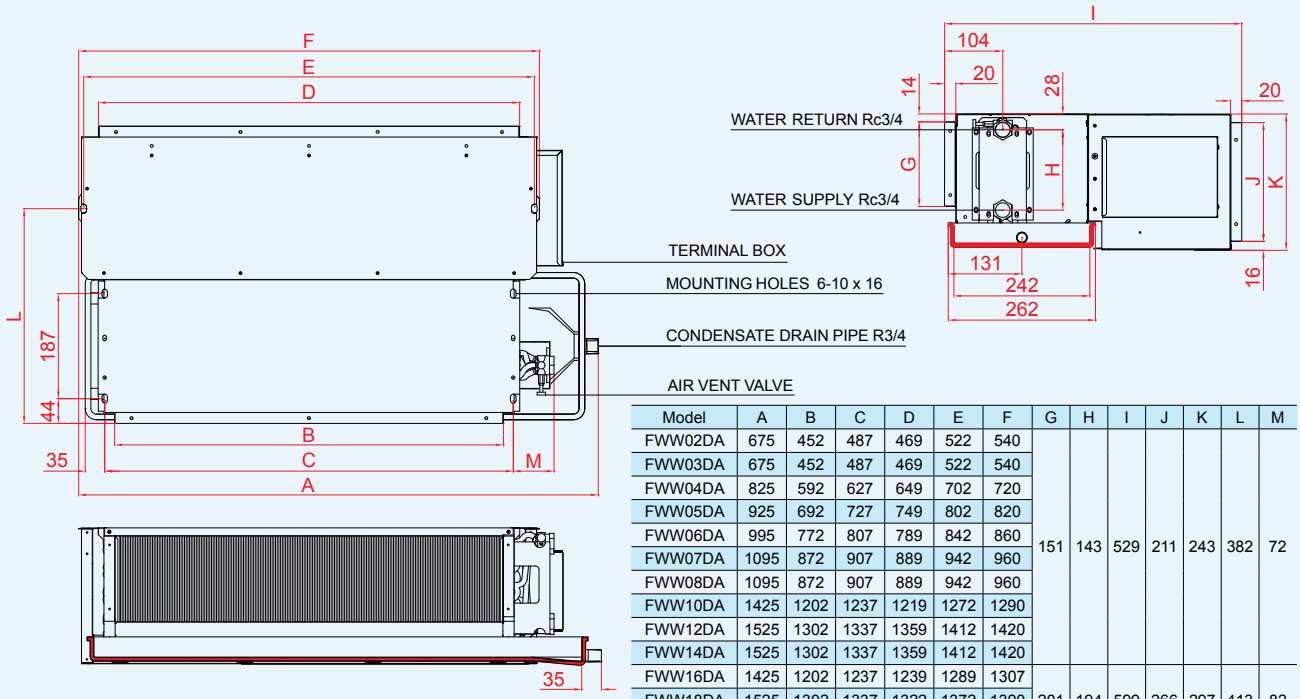
2) THE COOLING CAPACITY ARE TESTED UNDER FOLLOWING CONDITION: ENTERING AIR DB/WB: 24°C DB/18°C, WATER INLET 5.5°C, WATER OUTLET 14.5°C.

3) ALL PERFORMANCE ARE TESTED UNDER 230V~/50HZ WITH BACK PLENUM AND 25MM ALUMINUM FILTER.

4) WHEN THE WATER CONNECT DIRECTION IS CHANGED IN FIELD,THE CAPACITY SHOULD BE REDUCED BY 15%.

5) SOUND PRESSURE MEASURED AT 1M IN FRONT OF THE UNIT AND 1M BELOW THE VERTICAL CENTER LINE OF THE UNIT. AND TESTED IN SEMI-ANECHOIC ROOM,WITH BACKGROUND SOUND PRESSURE LEVEL: 11.5DB (A).

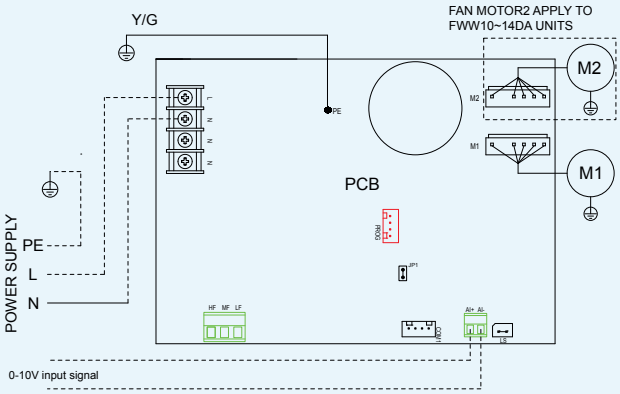
Dimension Diagram



Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FWW02DA	675	452	487	469	522	540	151	143	529	211	243	382	72
FWW03DA	675	452	487	469	522	540							
FWW04DA	825	592	627	649	702	720							
FWW05DA	925	692	727	749	802	820							
FWW06DA	995	772	807	789	842	860							
FWW07DA	1095	872	907	889	942	960							
FWW08DA	1095	872	907	889	942	960							
FWW10DA	1425	1202	1237	1219	1272	1290							
FWW12DA	1525	1302	1337	1359	1412	1420							
FWW14DA	1525	1302	1337	1359	1412	1420							
FWW16DA	1425	1202	1237	1239	1289	1307	201	194	599	266	297	413	82
FWW18DA	1525	1302	1337	1322	1372	1390							
FWW20DA	1825	1602	1637	1622	1672	1690							

Electric Wiring Diagram

MODEL: FWW02~14DA



NOTE:

1.Power cable wiring sequence,please strictly follow the wiring diagram!

2.The PCB board program has been matched with the unit motor and unit static pressure,and it is forbidden to change without authorization.

3.The PCB board black fence terminal block withstands maximum torque ≤0.8N.M.

4.LS port is shorted by default.

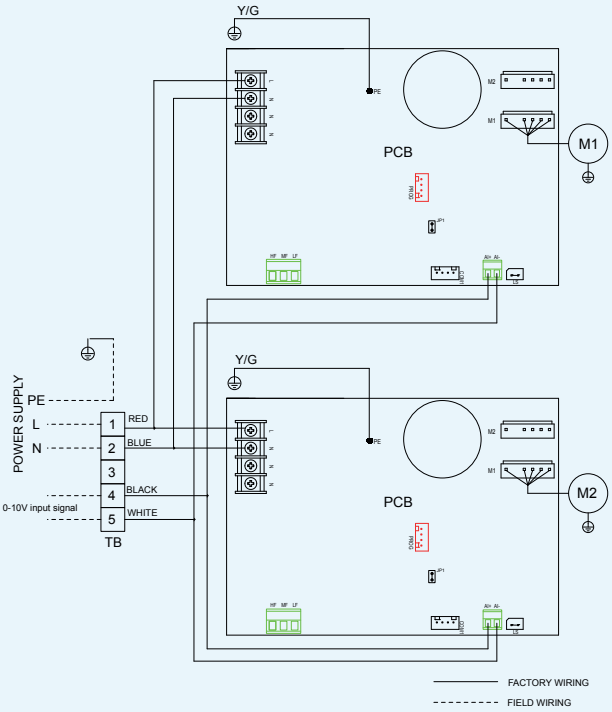
5.JP1 jumper is closed by default.

6.HF,MF and LF are reserved Three-Speed control ports, one of which is 0-10V control.

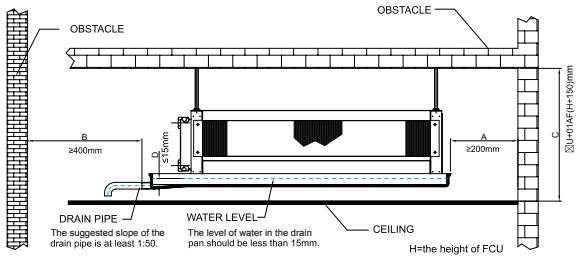
SYMBOL DESCRIPTION:

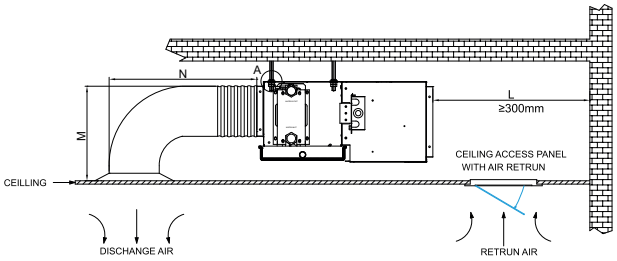
PCB	DC brushless motor power board
M1/M2	Brushless DC motor
TB	Terminal block

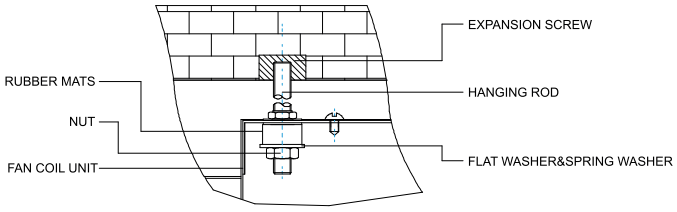
MODEL: FWW16~20DA



Installation Dimension Diagram







Detail A

NOTE:
Dimension M and N was determined by air duct design, air duct should be fire-proof, refer to concerned country national and local regulations. Circulatory air pressure drop should be approximately equal to the External Static Pressure.

The air conditioners manufactured by Daikin Industries have received **ISO 9001 series** certification for quality assurance.

Certificate Number. FM 661837

The airconditioning factories of Daikin Industries have received environmental management system standard **ISO 14001** certification.

Certificate Number. EMS80362

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DAIKIN MIDDLE EAST & AFRICA FZE

P.O. Box 18674, Jebel Ali Free Zone, Dubai, UAE Tel: +971 (0) 4 815 9300, Fax: +971 (0) 4 815 9311

Email: info@daikinmea.com Web: www.daikinmea.com

Daikin Middle East and Africa

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