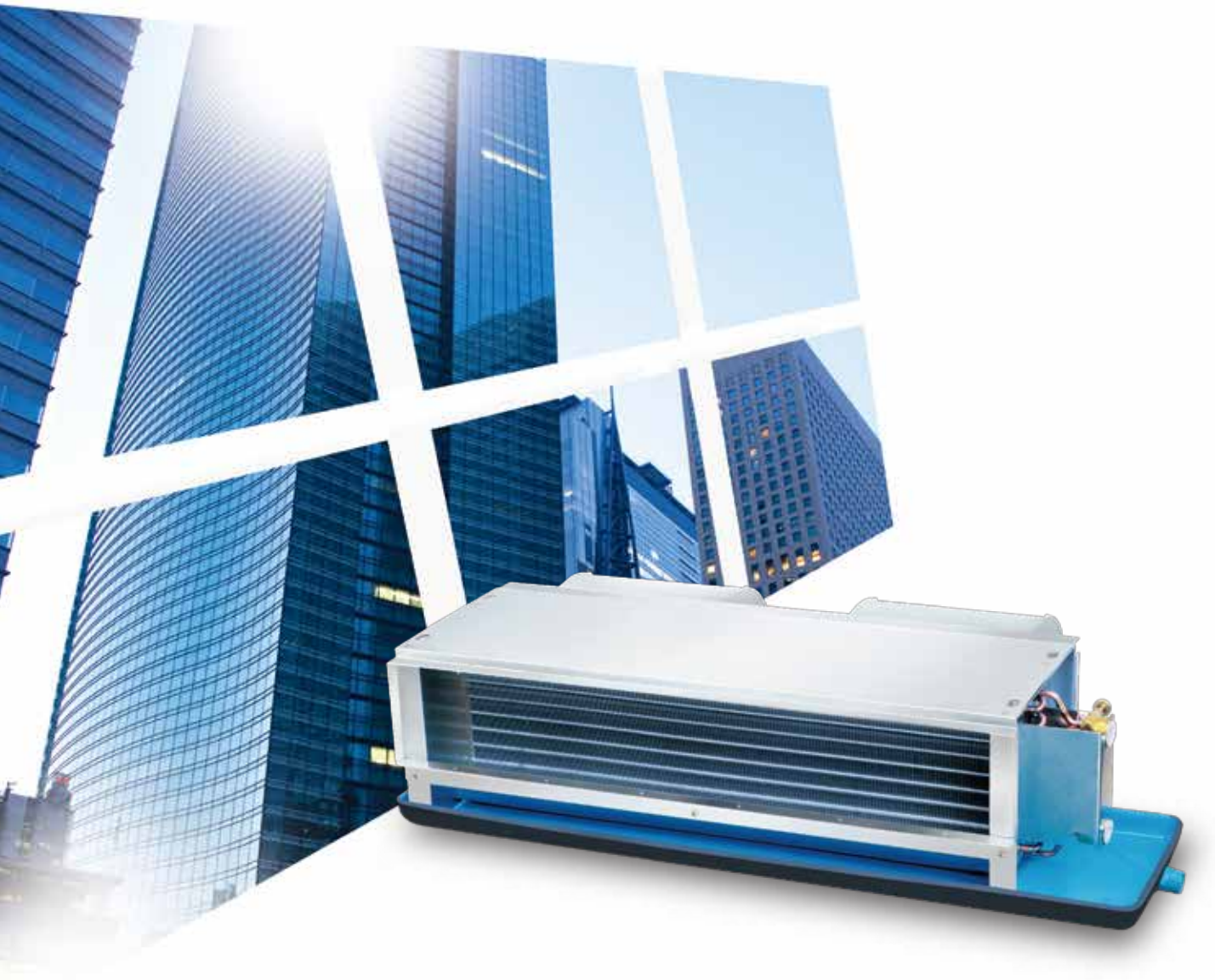
Carrier

United Technologies

turn to the experts



42CN^New

EC motor Fan Coil Unit

Air Volume：340~2040m³/h

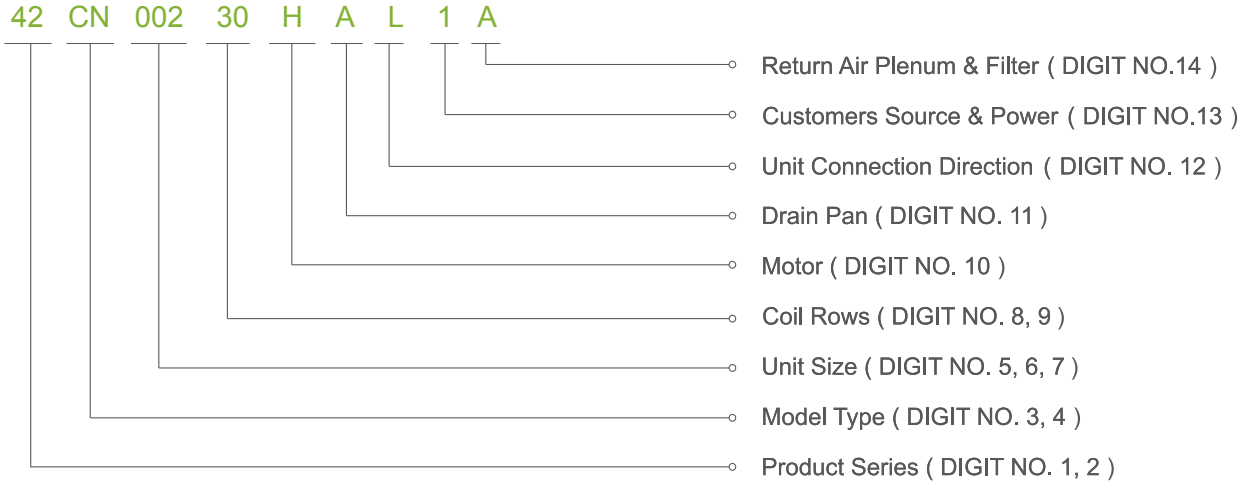
Turn To The Experts

Founded by the inventor of modern air conditioning, Carrier is the world's leader in high-technology heating, air-conditioning and refrigeration solutions. Carrier experts provide sustainable solutions, integrating energy-efficient products, building controls and energy services for residential, commercial, retail, transport and food service customers. Carrier is a part of UTC Build ing & Industrial Systems, a unit of United Technologies Corp., a leading provider to the aerospace and building systems industries worldwide.

With a broad portfolio of advanced technical patent awards, our global R&D center in Shanghai develops innovative heat, ventilation and air-conditioning (HVAC) solutions.

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

Model Number Nomenclature



- DIGIT NO. 1, 2
  product series
  42: fan coil

- DIGIT NO. 3, 4
  model type
  CN: low noise horizontal ceiling type FCU

- DIGIT NO. 5, 6, 7
  unit size (air volume = unit size x 170m³ / h)
  002:340m³/h
  003:510m³/h

- DIGIT NO. 8, 9
  coil row
  20: 2R cooling
  30: 3R cooling
  31: 3R cooling +1R heating

- DIGIT NO. 10
  motor
  H : EC motor-3-speed version

- DIGIT NO. 11
  drain pan
  A: standard drainpan
  B: lengthen drainpan
  C: stainless drainpan
  D: lengthen stainless drainpan

- DIGIT NO. 12
  unit connection direction (face to discharge air)
  L: left
  R: right

- DIGIT NO. 13
  customer source & power
  0: sale in mainland 220V-1PH-50HZ (omissible)
  1: export to HongKong 220V-1PH-50HZ
  2: export 220V-1PH-50Hz

- DIGIT NO. 14
  return air plenum & filter
  0: without both (omissible)
  A: unit with rear return air plenum
  B: unit with bottom return air plenum
  C: unit with rear return air plenum & nylon filter
  D: unit with bottom return air plenum & nylon filter

Note: EC motor unit doesn't include room controller. Please select room controller separately according to control requirements.

Features

Ultra High Efficiency Heat Exchanger

- The unit coil adopts the newly developed double-flanging structure of lanced blue hydrophilic fin and advanced mechanical tube-expanding technique to ensure that the copper tube optimally contacts with the aluminum foil

Low noise centrifugal fan

- Adopts the newly designed wide impeller with large diameter and slow speed forward multi-blade impeller. The fan casing is strengthened with reinforcing ribs for additional strength. With NSK bearings, ensuring small vibration and low noise in operation.

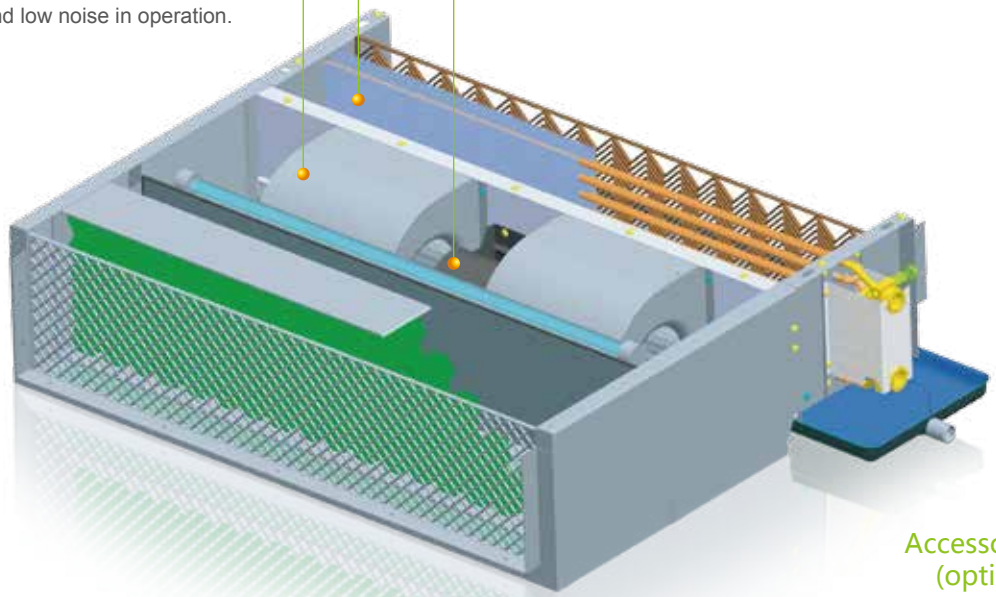
Fan Impeller

NSK Bearing

EC motor

- EC motor is a standard option for Carrier 42CN FCU. Compared to AC motor, EC motor have great advantages in efficiency, noise and comfort.

EC motor



Insulating Material

- The units adopts PEF heat insulating material and one-step forming process of drain pan for thermal insulation, making it durable and good in heat preservation.

Ultra thin

- The unit height is only 230mm, so that they can save installation space and meet the requirement of all kinds of situations.

Accessories (optional)

- The diversified drain pans are provided to meet application demands at various situations with good thermal insulation and watertightness.
- The large screen temperature controller is exquisite in appearance and convenient in operation. The block contact, remote-control receiver or remote controller can be selected. The four-pipe function can also be selected.
- The motorized 2-way & 3-way valves ensure more reasonable energy saving in system usage.

Motorized 3-way valve (Optional)

Motorized 2-way valve (Optional)

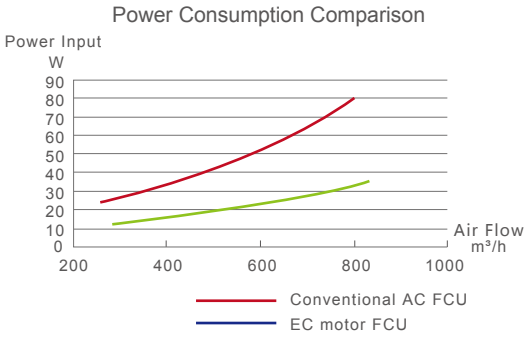
Thermostat(Optional)

Features and applications of brushless EC motor FCU

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

Significant energy saving

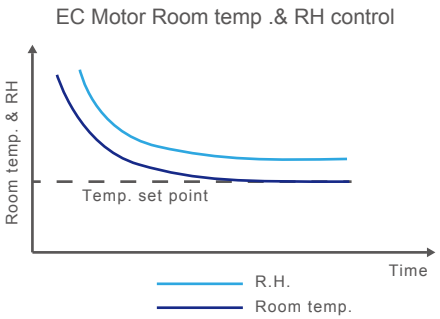
Buildings are among the largest consumers of energy. While energy consumption differs between types of building, heating, ventilation, and air-conditioning (HVAC) systems typically account for about 35% of total consumption, with the fan coil unit representing about 20% to 30% of this total. Carrier advanced EC motor fan coil offers an average energy saving of 45-50% or more, compared to conventional AC fan coil units. This adds up to a significant reduction in the total HVAC system running cost.



Supreme comfort

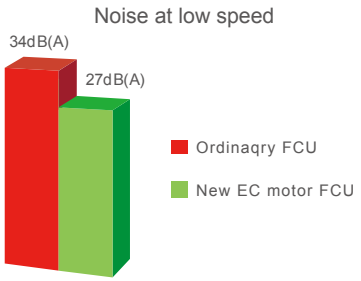
Conventional AC fan coil units regulate room temperature by water flow control and fan speed, which is set at high, medium,or low. Considerable fluctuation in actual room temperature is inevitable and poor humidity control is a common problem. Through its AC/EC converter, the EC motor fan coil regulates 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 EC motor fan coil delivers precise temperature and humidity control in accordance with actual demand.



Super-quiet operation

The 42CN 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 EC motor fan coil. Most of the time, the unit is operating at medium or low speeds, where quiet operation is all the better.



Flexible control

New 42CN EC motor fan coil provides multiple control plans to meet the needs of various buildings, including hotels and office complexes. For retrofit project, it can compliant with normal AC controller to lower initial cost. The 42CN series fan coil also provides both stand-alone and zone control as optional to meet the needs of various control requirements.

Convenient application

With factory default settings for both the fan coil, the 42CN EC motor fan coil unit is ready to operate by simply wiring the fan coil and thermostat. Modifying the external static pressure is easily done in the field by changing the dip switch settings between 12Pa, 30Pa and 50Pa, as required.

Technical Parameter

Technical Data (2R Coil)

Performance		Model	002	003	004	005	006	008
Air Volume m³/h		HIGH	340	530	700	880	1020	1430
		MED	270	420	560	700	810	1140
		LOW	200	310	420	520	610	850
Cooling Capacity W			2000	2820	3740	4500	5400	7350
Heating Capacity W			3100	4400	5820	6900	8400	11160
Power Input W	12 Pa	HIGH	14	19	25	35	52	67
		MED	9	12	15	20	29	37
		LOW	5	6	7	9	12	16
	30 Pa	HIGH	19	26	34	46	65	85
		MED	12	16	20	26	38	46
		LOW	6	7	9	10	13	17
	50 Pa	HIGH	28	35	46	60	82	105
		MED	18	22	27	34	48	58
		LOW	7	8	10	12	15	19
Noise dB(A)	12 Pa	HIGH	34	35.5	38.5	42	44.5	43.5
		MED	31	32	34	37	38.5	38
		LOW	22	22.5	23	24	27.5	26.5
	30 Pa	HIGH	37.5	38.5	41.5	43.5	45.5	46
		MED	34.5	35.5	36.5	37.5	39.5	41
		LOW	23	24	25	26.5	28.5	27
	50 Pa	HIGH	41	43	44.5	45.5	47	47.5
		MED	37	39	40	40	41	42
		LOW	24	25.5	26.5	28	30	28
Water Flow l/min			5.7	8.1	10.7	12.9	15.5	21
Water Pressure kPa			20	28	30	30	38	38
Fan	Type		Centrifugal, forward multi-blade					
Motor	Type		EC motor					
Coil	Working Pressure		1.6 MPa					
CONNS	In-Out		3/4″ FPT					
	Condensing Drain		3/4″ MPT					
Net Weight Kg			11.8	12.8	15.3	16.5	19.8	25.5
Options			Thermostat, 2 Way/ 3Way Valve, Return air plenum					

Technical Data (3R Coil)

Performance		Model	002	003	004	005	006	008	010	012
Air Volume m³/h		HIGH	340	510	680	850	1020	1360	1700	2040
		MED	265	405	535	680	790	1060	1360	1595
		LOW	195	305	405	510	585	790	1020	1180
Cooling Capacity W			2400	3200	4250	5000	6200	8100	9800	11500
Heating Capacity W			3600	5100	6450	7870	9300	12500	15200	17200
Power Input W	12 Pa	HIGH	14	19	25	35	52	67	90	97
		MED	9	12	15	20	29	37	48	54
		LOW	5	6	7	9	12	16	17	18
	30 Pa	HIGH	19	26	34	46	65	85	109	115
		MED	12	16	20	26	38	46	58	65
		LOW	6	7	9	10	13	17	18	20
	50 Pa	HIGH	28	35	46	60	82	105	142	155
		MED	18	22	27	34	48	58	78	85
		LOW	7	8	10	12	15	19	20	21
Noise dB(A)	12 Pa	HIGH	34	35.5	38.5	42	44	43.5	46.5	48.5
		MED	31	32	34	37	38.5	38	41	42
		LOW	22	22.5	23	24	27.5	26.5	27	27.5
	30 Pa	HIGH	37.5	38.5	41.5	43.5	45.5	46	48.5	49.5
		MED	34.5	35.5	36.5	37.5	39.5	41	44	45
		LOW	23	24	25	26.5	28.5	27	27.5	28
	50 Pa	HIGH	41	43	44.5	45.5	47	47.5	50	51
		MED	37	39	40	40	41	42	46	47
		LOW	24	25.5	26.5	28	30	28	28	29
Water Flow l/min			6.9	9.2	12.2	14.3	17.8	23.2	28.1	32.9
Water Pressure kPa			25	21	30	30	32	28	40	40
Fan	Type		Centrifugal, forward multi-blade							
Motor	Type		EC motor							
Coil	Working Pressure		1.6 MPa							
CONNS	In-Out		3/4″ FPT							
	Condensing Drain		3/4″ MPT							
Net Weight Kg			12.2	13.3	15.8	17.1	20.5	26.4	29.7	33.8
Options			Thermostat, 2 Way/ 3Way Valve, Return air plenum							

Note : 1.The data without note is the performance in high speed with relevant static.
2.Cooling Conditions:Entering Water 7℃,Temperature Rise 5℃,Entering Air Temperature 27℃DB,19.5℃WB.
Heating Conditions:Entering Water 60℃,Air 21℃DB,the same water flow as the cooling conditions.
3.The noise is tested in the anechoic test room,meansured with a fine audiometer located 1 meter away from the unit front panel and the unit bottom panel.
4.All above data is for standard unit. For other optional EC motor data, please contact local agencies.

Technical Parameter

Technical Data (3+1R Combined Coil)

Performance	Model		002	003	004	005	006	008	010	012
Air Volume m^3/h	HIGH		340	510	680	850	1020	1360	1700	2040
	MED		270	410	545	680	815	1090	1360	1630
	LOW		170	255	340	425	510	545	680	815
Cooling Capacity W			2200	2900	3850	4750	5800	7900	9000	10800
Heating Capacity W			1900	2740	3300	4150	4900	6400	7200	8500
Power Input W	12 Pa	HIGH	14	19	25	35	52	67	90	97
		MED	9	12	15	20	29	37	48	54
		LOW	5	6	7	9	12	16	17	18
	30 Pa	HIGH	19	26	34	46	65	85	109	115
		MED	12	16	20	26	38	46	58	65
		LOW	6	7	9	10	13	17	18	20
	50 Pa	HIGH	28	35	46	60	82	105	142	155
		MED	18	22	27	34	48	58	78	85
		LOW	7	8	10	12	15	19	20	21
Noise dB(A)	12 Pa	HIGH	34	36	38.5	42	44	43.5	48	49
		MED	31	32	34	37	38.5	38	44	45
		LOW	22	22.5	23	24	27.5	26.5	27	27.5
	30 Pa	HIGH	37.5	39.5	41.5	43.5	45.5	46	50	51
		MED	34.5	35.5	36.5	37.5	39.5	41	45	45.5
		LOW	23	24	25	26.5	28.5	27	27.5	28
	50 Pa	HIGH	41	43	44.5	45.5	47	47.5	51	52
		MED	37	39	40	40	41	42	46	47
		LOW	24	25.5	26.5	28	30	28	28	29
Water Flow l/min	Cooling		6.3	8.3	11.0	13.6	16.6	22.6	25.7	31
	Heating		2.8	4.0	4.8	6.0	7.1	9.3	10.6	12.5
Water Drop KPa	Cooling		22	20	30	30	30	32	40	40
	Heating		9	11	14	17	20	23	40	40
Fan	Type		Centrifugal, forward multi-blade							
Motor	Type		EC motor							
Coil	Working Pressure		1.6 MPa							
CONNS	In-Out		3/4" FPT							
	Condensing Drain		3/4" MPT							
Net Weight Kg			13.1	14.3	16.9	18.4	22.1	28.2	31.7	35.9
Options			Thermostat, 2 Way/ 3Way Valve, Return air plenum							

Note : 1.The data without note is the performance in high speed with relevant static.
2.Cooling Conditions:Entering Water 7℃,Temperature Rise 5℃,Entering Air Temperature 27℃DB,19.5℃WB.
Heating Conditions:Entering Water 60℃,Air 21℃DB,the same water flow as the cooling conditions.
3.The noise is tested in the anechoic test room,meansured with a fine audiometer located 1 meter away from the unit front panel and the unit bottom panel.
4.All above data is for standard unit. For other optional EC motor data, please contact local agencies.

Dimensions

Unit Dimension

Type	Dimension										
	A	B	C	D	E	F	H	J	K	M	N
42CN002	690	770	550	520	35	480	550	75	400	10	6
42CN003	770	890	630	600	75	480	630	115	400	12	6
42CN004	890	970	750	720	75	600	750	75	600	14	6
42CN005	970	1090	830	800	55	720	830	115	600	16	8
42CN006	1170	1410	1030	1000	95	840	1030	115	800	18	8
42CN008	1410	1530	1270	1240	95	1080	1270	35	1200	26	10
42CN010	1530	1770	1390	1360	95	1200	1390	95	1200	28	10
42CN012	1770	2010	1630	1600	95	1440	1630	115	1400	32	12

Note: B is the dimension of lengthening drain pan.

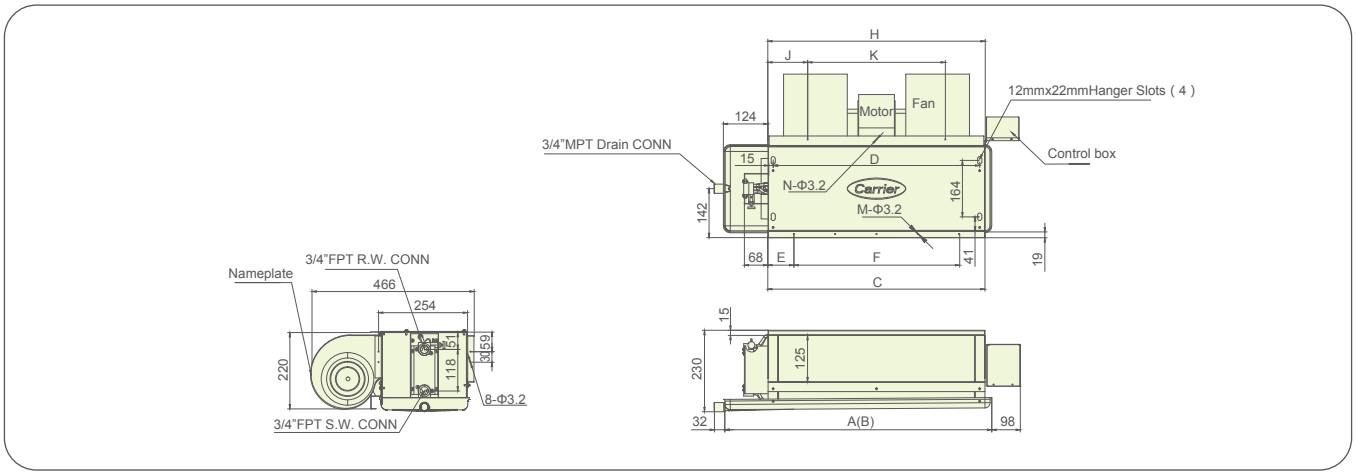
42CN Return Air Plenum

Part Number	Dimension						
	A	B	C	D	E	F	Used In
42CE402900	554	47	2	400	494	520	42CN002
42CE403900	634	87	2	400	574	600	42CN003
42CE404900	754	47	3	600	694	720	42CN004
42CE405900	834	87	3	600	774	800	42CN005
42CE406900A	1034	87	4	800	974	1000	42CN006
42CE408900	1274	107	5	1000	1214	1240	42CN008
42CE410900	1394	67	6	1200	1334	1360	42CN010
42CE412900	1634	87	7	1400	1574	1600	42CN012
42CE414900	1874	107	8	1600	1814	1840	42CN014

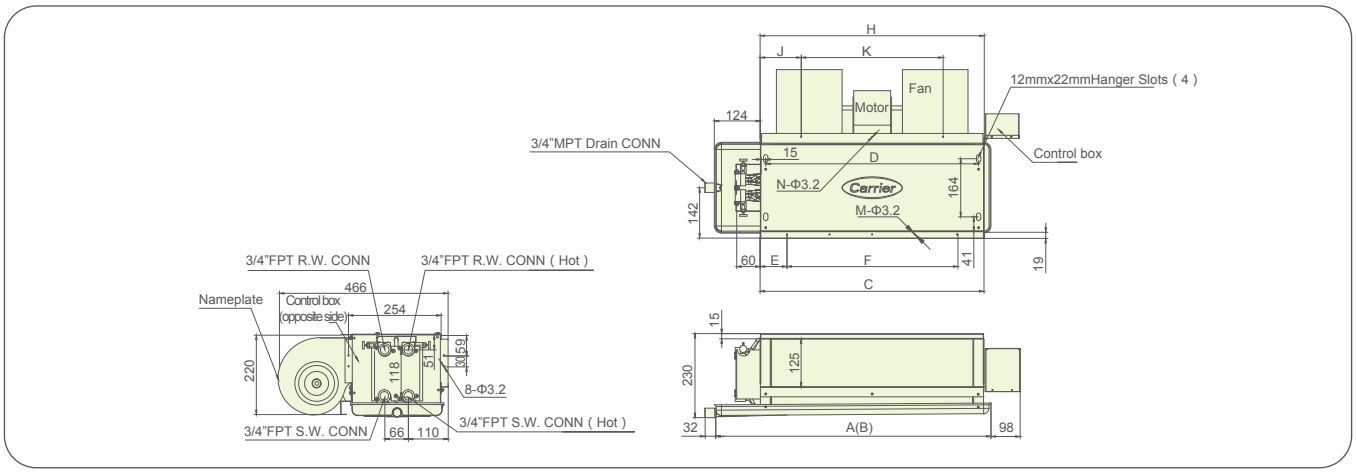
Note: 1. With Rear/Bottom air return plenum
2.Easily connect with Rear/Bottom air return plenum in the jobsite.
3.For use of an additional purifying module, please consult separately.
4. The part number of return air plenum used in 42CN and 42CE is the same.

Dimension

2R/3R Coil

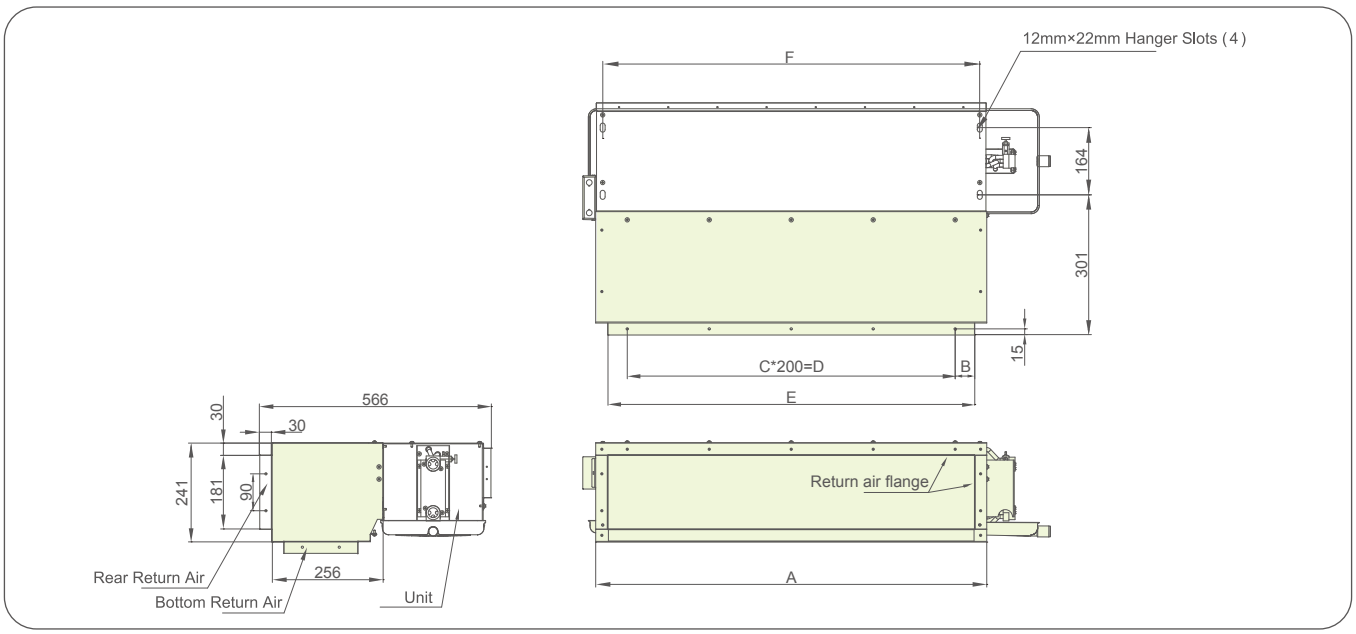


3+1R Coil



Note: All above data is for standard unit. For other optional EC motor data, please contact local agencies.

42CN Return Air Plenum



Electrical data

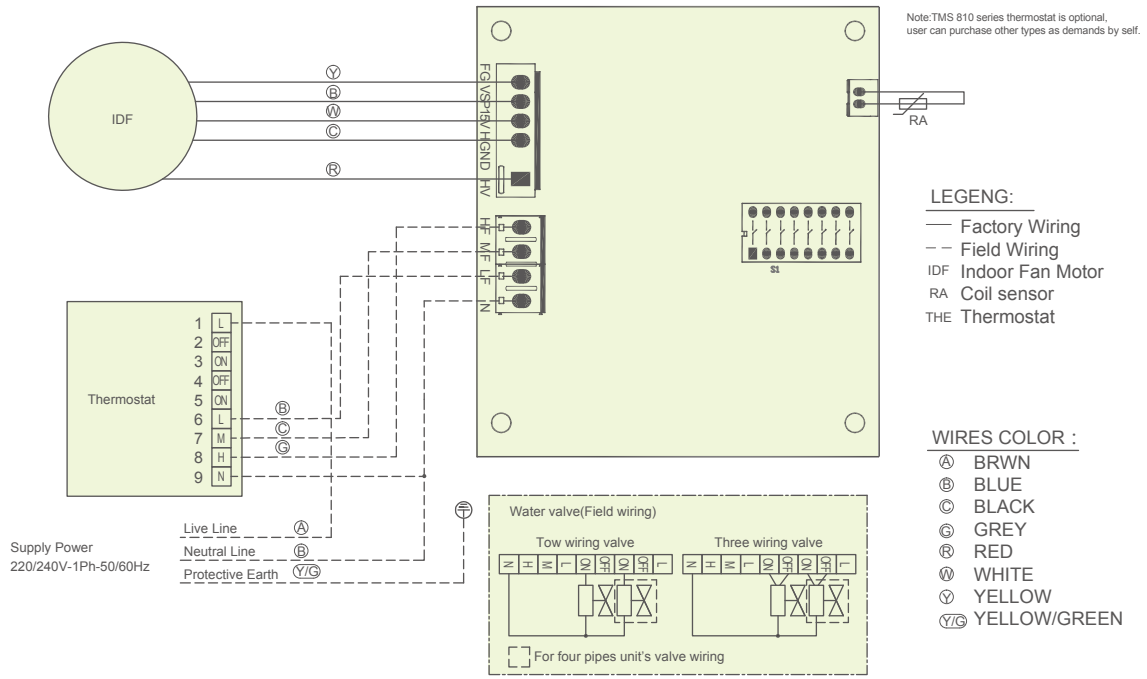
Power：220V-1Ph - 50/60Hz

Type		002	003	004	005	006	008	010	012
Power Input (W)	2R 12Pa	14	19	25	35	52	67	-	-
	3R 12Pa	14	19	25	35	52	67	90	97
	3+1R 12Pa	14	19	25	35	52	67	-	-
	2R 30Pa	19	26	34	46	65	85	-	-
	3R 30Pa	19	26	34	46	65	85	109	115
	3+1R 30Pa	19	26	34	46	65	85	-	-
	2R 50Pa	28	35	46	60	82	105	-	-
	3R 50Pa	28	35	46	60	82	105	144	155
	3+1R 50Pa	28	35	46	60	82	105	-	-
Current (A)	2R 12Pa	0.06	0.09	0.11	0.16	0.24	0.30	-	-
	3R 12Pa	0.06	0.09	0.11	0.16	0.24	0.30	0.41	0.44
	3+1R 12Pa	0.06	0.09	0.11	0.16	0.24	0.30	-	-
	2R 30Pa	0.09	0.12	0.15	0.21	0.30	0.39	-	-
	3R 30Pa	0.09	0.12	0.15	0.21	0.30	0.39	0.50	0.52
	3+1R 30Pa	0.09	0.12	0.15	0.21	0.30	0.39	-	-
	2R 50Pa	0.13	0.16	0.21	0.27	0.37	0.48	-	-
	3R 50Pa	0.13	0.16	0.21	0.27	0.37	0.48	0.65	0.70
	3+1R 50Pa	0.13	0.16	0.21	0.27	0.37	0.48	-	-

All above data is for standard unit. For other optional EC motor data, please contact local agencies.

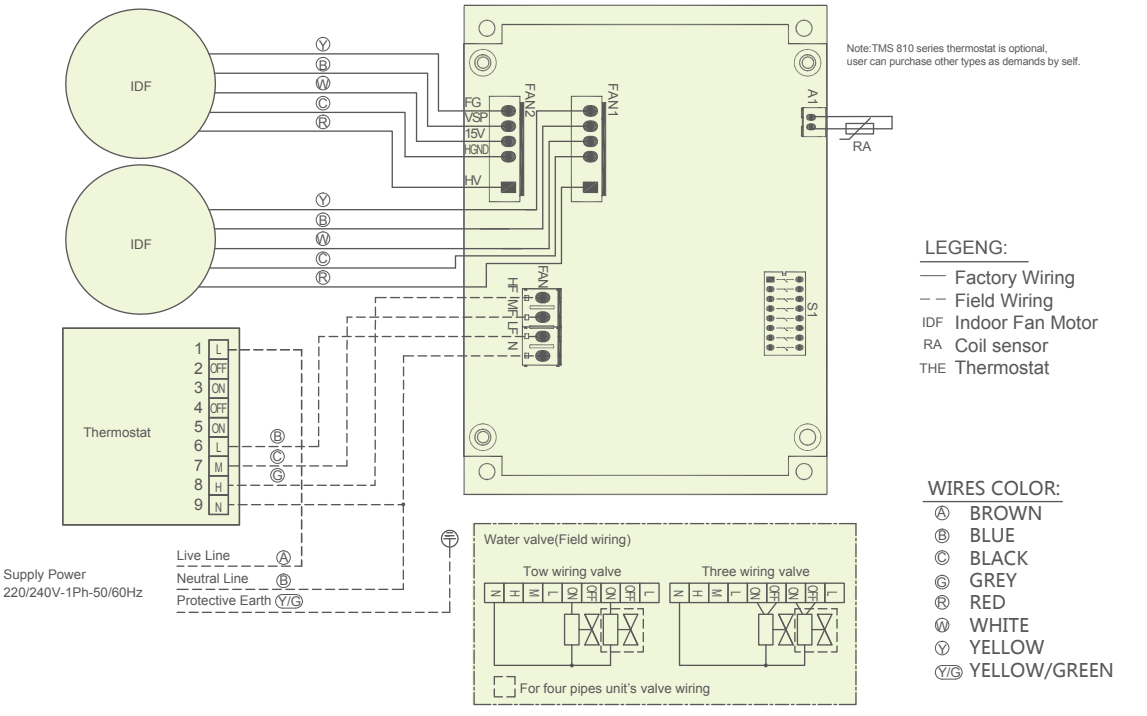
Wiring

Single motor unit



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

Dual motor unit



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

All above data is for standard unit. For other optional EC motor data, please contact local agencies.

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.

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Version:	CAT-42CND_E1506-03
Supersede:	CAT-42CND_E1411-02
Effective date:	Jun. 2015