FB4P Fan Coil Units – 50Hz

Quality Assurance
Certificate Reg. No:
04 100 950420

Puron
the environmentally sound refrigerant

Subject to change without notice

Product Data Catalog

Manufacturer's Name: Saudi Airconditioning Manufacturing Co. Ltd.
Country of origin : Jeddah, Saudi Arabia
Nearest port of embarkation: Jeddah Islamic port
Product classification: Commercial and Residential

FB4P – 50Hz

Nominal Cooling Capacity 1.5 – 5.0 Tons
HFC R-410A Refrigerant

FB4P Direct Expansion multipoise fan coil units are available in 4 sizes with nominal cooling capacity range from 1.5 to 5.0 Tons. Each unit is designed to occupy a minimum space. No complex system controls are required for Carrier fan coil units. Piping, drain, and wiring connections are readily accessible and mounting holes and slots are predrilled to save installation time and field labor expense. They are compact and ready to fit where needed in the basement, crawlspace, attic, utility room, or closet.

Contact your local Carrier representative for additional reference materials.

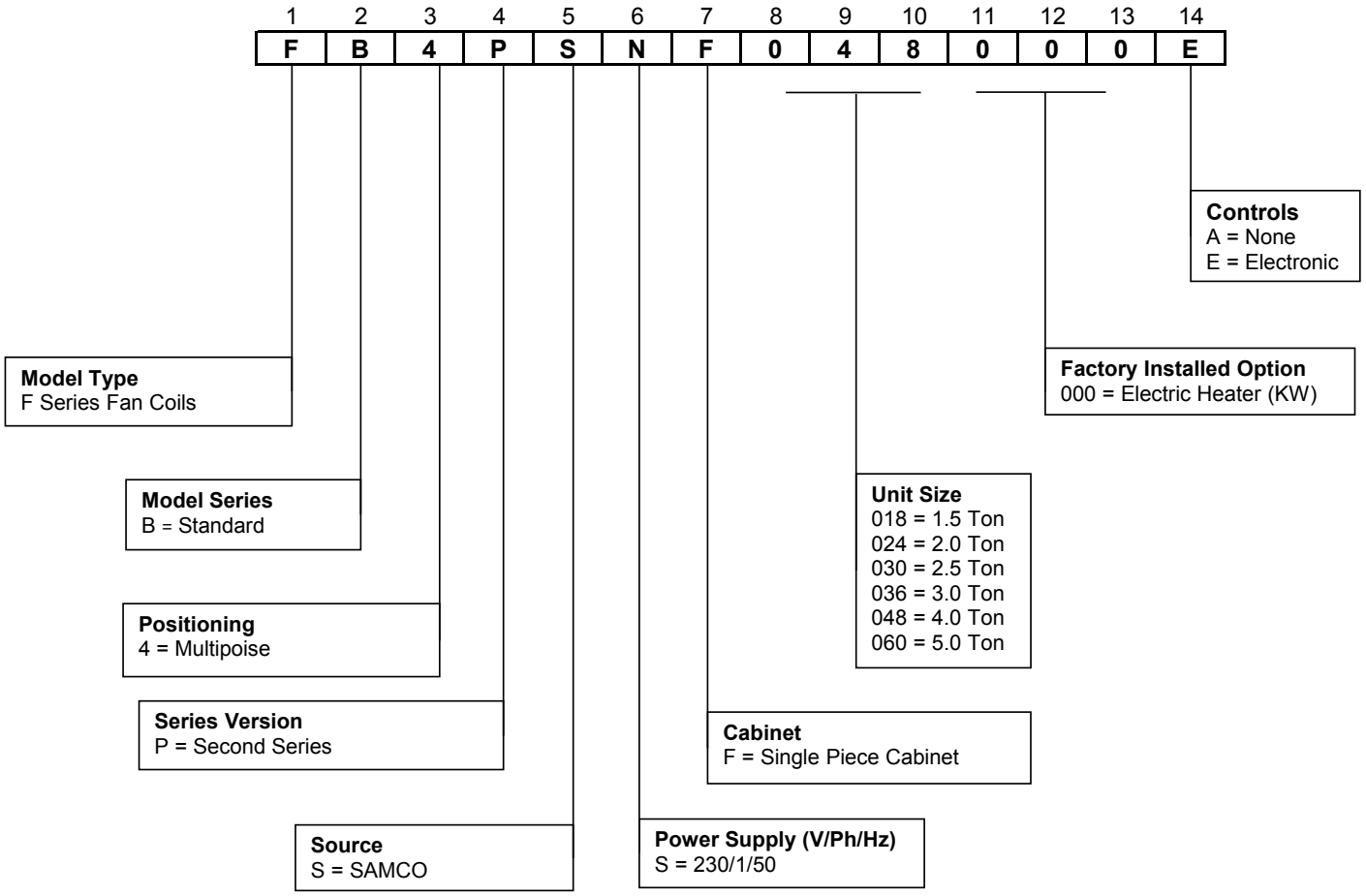
Table of Contents

Features / Benefits

- 6 sizes from 1.5 and 5.0 ton cooling capacity
- High static up to 0.6 water (150Pa) for all sizes
- Efficient lanced sine-wave aluminum fins
- High-impact thermal plastic condensate pan
- Primary and secondary drain connection with brass inserts
- Multipoise design for maximum versatility
- Field installation heater packages
- Solid state interlock control board with built-in fuse
- Sweat type connection
- Multiple electric entries
- Inspection plate to facilitate cleaning the coil
- 3-speed motors for both sizes, in field selection
- Polyester powder painted steel cabinet to withstand harsh Middle Eastern climatic conditions
- 40VA, 208/230V transformer
- Permanent filter with aluminum frame and flame retardant polyester fibers

FB4P direct expansion fan coil is designed for medium and high static pressure, up to 0.6 inches water (150Pa) with cooling capacity from 5.3k watt (18 Mbtuh) to 17.6k watt (60 Mbtuh). FB4P series is available in six sizes with 10 mm thick rubber cabinet insulation density of 32 kg/m^3 to minimize energy losses. FB4P series can be installed vertical or horizontal. FB4P series comes with polyester powder painted zinc coated galvanized steel casing. Super quite multi 3 speed motor for field selection & electric heaters are available option at field installation.

MODEL NUMBER NOMENCLATURE - FB4P - R410A SERIES



Physical Data - FB4P Series

Unit Model	18	24	30	36	48	60
Unit size (Tons)	1.5	2	2.5	3.0	4.0	5.0
Motor HP	1/3		1/2		3/4	
Evaporator Coil						
Coil Material (HP Tube)	3/8" Dia. Copper Tube					
Coil Material (Finplate)	Aluminum					
Rows / Fins Per Inch	2 / 14.5	3 / 14.5	2 / 16	3 / 14.5		
Refrigerant						
Metering Device	Bypass AccuRater					
Piston Size	52	55	59	61	80	84
Filter Type	Polyester Fiber					
Filter Qty. / Size (mm)	1 / 332 x 547 x 21		1 / 547 x 416.5 x 21		1 / 547 x 505.5 x 21	
Unit Dimensions						
Net Weight, kg	43.5	50.8	54.4	57.6	71.2	79.4

Electrical Data

Indoor Model	Power Supply	Vol - Min	Vol - Max	Fan FLA	MCA	MOCP
FB4PSSF018000E	230V-1Phz-50Hz	207	253	2.8	3.5	15
FB4PSSF024000E						
FB4PSSF030000E				4.1	5.1	
FB4PSSF036000E						
FB4PSSF048000E				6.0	7.5	
FB4PSSF060000E						

Combination Matrix and Ratings

Indoor Model	Outdoor Model	Capacity (Btu/hr)		EER (Btu/hr) / W		Power Input (kW)		AMPS	
		AHRI	T3	AHRI	T3	AHRI	T3	AHRI	T3
FB4PSSF018000E	38PKC18DS70-02	20600	17000	11.85	8.60	1.74	1.98	8.5	9.5
FB4PSSF024000E	38PKC24DS70-02	25700	20600	11.90	8.55	2.16	2.41	10.5	11.5
FB4PSSF030000E	38PKC30DS70-02	30000	24000	11.90	8.40	2.52	2.85	11.0	12.4
FB4PSSF036000E	38PKS36DS90-01	35000	29000	11.95	8.65	2.93	3.35	5.3	5.6
FB4PSSF048000E	38PKS48DS90-01	49000	45000	11.81	8.61	4.15	5.23	6.4	7.9
FB4PSSF060000E	38PKS60DS90-01	56000	49500	12.10	8.65	4.63	5.72	7.3	8.9

Legend and Notes

EER — Energy Efficiency Ratio

AHRI — Air-Conditioning, Heating, and Refrigerant Institute

RLA — Rated Load Amps

LRA — Locked Rotor Amps

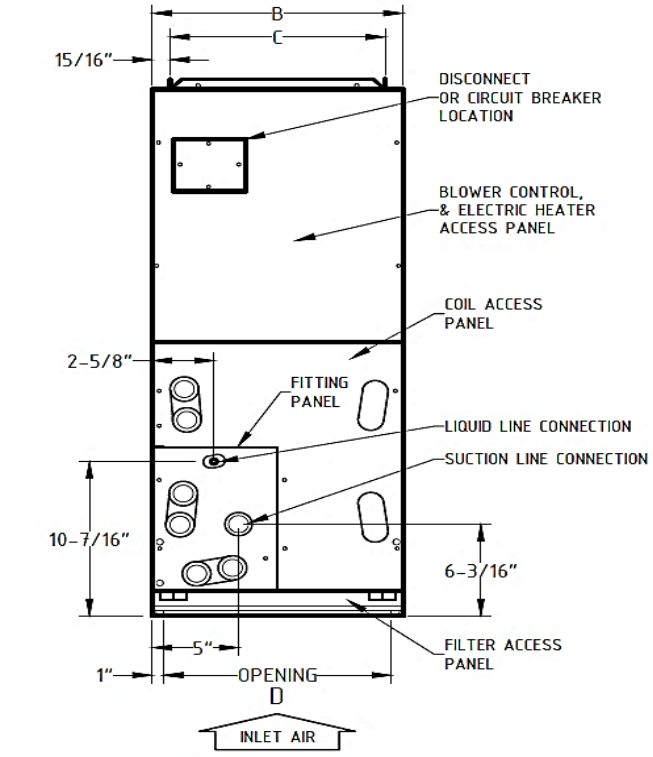
FLA — Full Load Amps

MCA — Minimum Circuit Amps

MOCP — Maximum Overcurrent Protection

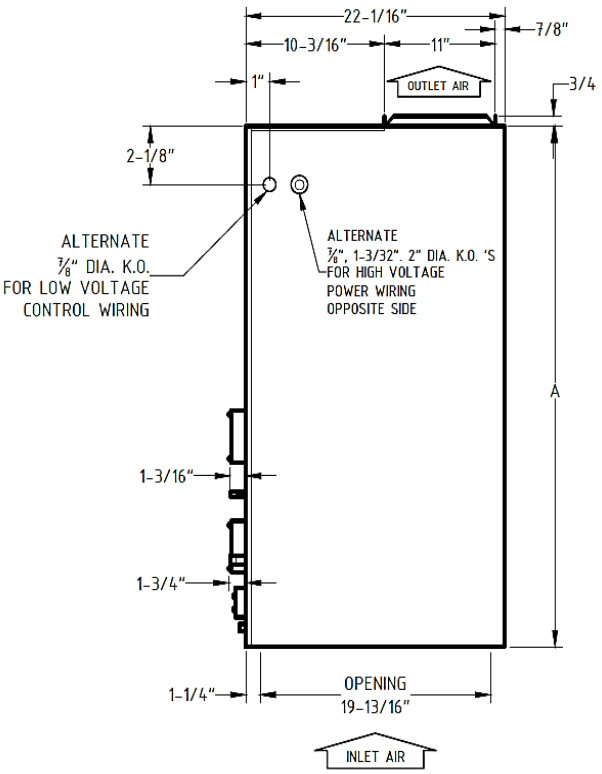
Notes: Testing as per AHRI testing standard and UAE.S ISO 13253:2011 (T3)

Unit Dimensional Drawing

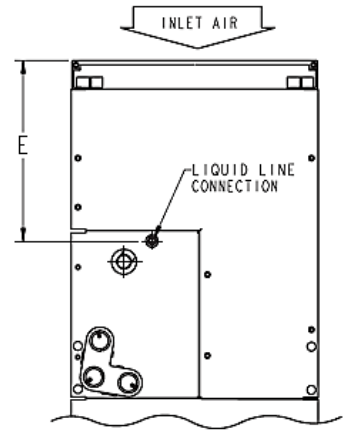


FRONT VIEW

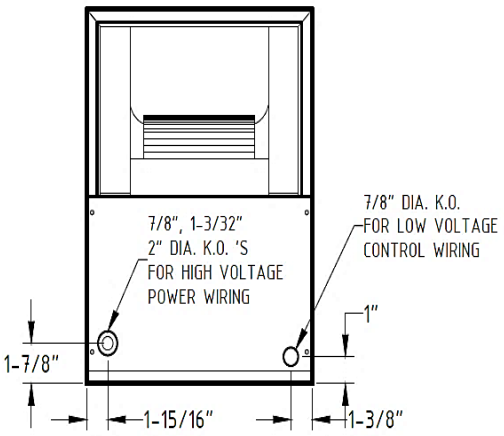
SHOWN WITH "A" COIL DETAILS CONNECTION LOCATIONS FOR UPFLOW OR HORIZONTAL APPLICATIONS



RIGHT SIDE VIEW



ACCESS PANEL CONFIG. FOR
SLOPE COILS
DOWNFLOW OR HORIZ.
RIGHT APPLICATIONS



TOP VIEW

Unit Size	Coil Type	A		B		C		D		E	
		in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.
018	Slope	42-11/16	1084.3	14-5/16	363.5	12-7/16	316.0	12-5/16	312.7	10-7/16	265.1
024	Slope	42-11/16	1084.3	14-5/16	363.5	12-7/16	316.0	12-5/16	312.7	10-7/16	265.1
030	Slope	47-11/16	1211.5	17-5/8	447.5	15-3/4	400.1	15-5/8	396.9	15-3/8	390.5
036	Slope	49-5/8	1260.5	17-5/8	447.5	15-3/4	400.1	15-5/8	396.9	15-3/8	390.5
048	A	49-5/8	1260.5	21-1/8	536.5	19-1/4	489.0	19-1/8	485.8	15-11/16	398.3
060	A	53-7/16	1375.3	21-1/8	536.5	19-1/4	489.0	19-1/8	485.8	19-1/2	495.3

Unit Connection Sizes:

- Suction: 030 & 060 – $^{5}/_{8}$" I.D Sweat
- Liquid: $^{3}/_{8}$" I.D Sweat
- Condensate: $^{3}/_{4}$" FPT

Detailed Performance Data

Matching 38P with FB4P

Nom Cap. Mbtuh	Evaporator Air		Condenser Air Entering Deg. F																	
			85			95			105			115			118			125		
	CFM	EWB	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*
			Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen	
18	500	72	22.6	11.4	1.6	21.5	10.9	1.7	19.8	10.2	1.9	16.5	10.2	2.1	16.0	9.3	2.2	15.0	8.8	2.3
		67	20.4	14.2	1.6	18.9	13.6	1.7	17.2	12.8	1.9	16.7	12.8	2.1	14.8	11.8	2.2	13.9	11.2	2.3
		62	18.6	16.2	1.6	17.5	15.6	1.7	15.6	14.6	1.9	15.1	14.6	2.1	13.3	13.3	2.2	12.4	12.7	2.3
		57	17.5	17.5	1.6	16.7	16.7	1.7	15.1	16.7	1.9	14.7	16.7	2.1	13.3	13.3	2.2	12.4	12.7	2.3
	575	72	23.4	12.3	1.6	22.3	11.9	1.7	20.6	11.3	1.9	20.0	11.3	2.1	17.9	10.3	2.2	16.8	9.8	2.3
		67	21.2	15.9	1.6	19.7	15.2	1.7	18.0	14.5	1.9	17.5	14.5	2.1	15.5	13.5	2.2	14.6	12.8	2.3
		62	19.7	18.4	1.6	18.4	17.7	1.8	16.7	16.7	1.9	16.2	16.7	2.1	14.7	14.7	2.2	13.8	14.0	2.3
		57	19.2	19.2	1.6	18.1	18.1	1.7	16.7	16.7	1.9	16.2	16.7	2.1	14.7	14.7	2.2	13.8	14.0	2.3
	650	72	23.9	13.1	1.6	22.8	12.7	1.7	21.2	12.2	1.9	20.6	12.2	2.1	18.4	11.2	2.2	17.3	10.7	2.3
		67	21.7	17.3	1.6	***20.6***	16.9	***1.7***	18.7	16.1	1.9	18.1	16.1	2.1	16.1	15.0	2.2	15.1	14.3	2.3
		62	20.6	20.3	1.6	19.2	19.2	1.7	17.8	17.8	1.9	17.2	17.8	2.1	15.8	15.8	2.2	14.8	15.0	2.3
		57	20.5	20.5	1.6	19.2	19.2	1.7	17.8	17.8	1.9	17.2	17.8	2.1	15.8	15.8	2.2	14.8	15.0	2.3
24	600	72	28.3	14.1	2.0	27.0	13.6	2.2	25.5	13.0	2.4	24.3	13.0	2.6	22.9	12.0	2.7	21.5	11.4	2.8
		67	25.5	17.6	2.0	24.1	16.9	2.2	22.7	16.3	2.4	21.6	16.3	2.6	19.8	15.0	2.7	18.5	14.3	2.8
		62	23.2	19.8	1.9	22.0	19.2	2.1	20.8	18.6	2.3	19.7	18.6	2.5	17.6	17.0	2.6	16.5	16.2	2.7
		57	21.6	21.6	1.9	20.7	20.7	2.1	19.7	20.7	2.3	18.7	20.7	2.5	17.3	17.3	2.6	16.2	16.5	2.7
	700	72	29.3	15.1	2.0	27.9	14.5	2.2	26.3	13.9	2.4	25.0	13.9	2.6	23.8	13.0	2.7	22.3	12.4	2.8
		67	26.4	19.2	2.0	25.0	18.6	2.2	23.6	17.9	2.4	22.4	17.9	2.6	20.6	16.6	2.7	19.3	15.9	2.8
		62	24.4	22.0	2.0	23.1	21.4	2.2	21.8	20.7	2.4	20.7	20.7	2.6	18.8	18.8	2.7	17.7	18.0	2.8
		57	23.4	23.4	1.9	22.4	22.4	2.1	21.4	21.4	2.4	20.3	21.4	2.6	18.8	18.8	2.7	17.7	18.0	2.8
	800	72	29.9	16.0	2.0	28.5	15.4	2.2	26.9	14.8	2.4	25.5	14.8	2.6	24.3	13.8	2.7	22.8	13.2	2.8
		67	27.1	20.7	2.0	***25.7***	20.1	***2.2***	24.2	19.4	2.4	23.0	19.4	2.6	21.3	18.2	2.7	19.9	17.4	2.8
		62	25.3	24.1	2.0	24.0	23.3	2.2	22.6	22.6	2.4	21.5	22.6	2.6	20.1	20.1	2.7	18.9	19.2	2.8
		57	24.9	24.9	2.0	23.2	23.8	2.2	22.6	22.6	2.4	21.5	22.6	2.6	20.1	20.1	2.7	18.9	19.2	2.8
30	750	72	32.4	16.2	2.3	31.3	15.8	2.5	29.7	15.1	2.8	27.8	14.4	3.0	27.2	14.1	3.0	25.5	13.5	3.2
		67	30.2	19.8	2.3	28.7	19.2	2.5	26.9	18.4	2.7	24.5	17.4	2.9	23.8	17.1	2.9	21.9	18.7	3.0
		62	27.6	23.2	2.3	25.6	22.3	2.4	23.6	21.3	2.6	21.3	20.1	2.7	20.5	19.7	2.8	18.7	18.7	2.9
		57	25.1	25.1	2.2	23.7	23.7	2.4	22.2	23.7	2.5	20.5	20.5	2.7	20.0	20.0	2.8	18.6	18.6	2.9
	850	72	32.9	16.7	2.3	31.9	16.3	2.5	30.4	15.8	2.8	28.5	15.1	3.0	27.8	14.9	3.0	26.1	14.3	3.2
		67	30.9	20.7	2.3	29.4	20.2	2.5	27.6	19.5	2.7	25.3	18.6	2.9	24.5	18.3	2.9	22.5	17.5	3.0
		62	28.4	24.7	2.3	26.5	23.8	2.5	24.3	22.7	2.6	22.0	21.4	2.8	21.2	21.2	2.8	19.7	19.7	2.9
		57	26.4	26.4	2.2	25.0	25.0	2.4	23.4	23.4	2.6	21.6	21.6	2.7	21.0	21.0	2.8	19.7	19.7	2.9
	950	72	33.2	17.1	2.3	32.3	16.9	2.6	30.9	16.3	2.8	29.0	15.7	3.0	28.3	15.5	3.1	26.6	14.9	3.2
		67	31.4	21.5	2.3	***30.0***	21.1	***2.5***	28.2	20.5	2.7	25.9	19.7	2.9	25.1	19.3	3.0	23.1	18.5	3.1
		62	29.0	26.0	2.3	27.2	25.2	2.5	25.0	24.0	2.6	22.7	22.7	2.8	22.0	22.0	2.8	20.6	20.6	2.9
		57	27.6	27.6	2.3	26.1	26.1	2.4	24.4	24.4	2.6	22.6	22.6	2.8	22.0	22.0	2.8	20.6	20.6	2.9

Notes:

1. Capacity rating is shown at an on coil dry bulb of 80F(26.6C)
2. kW* — Total System Power Input
3. Ewb — Entering Wet-Bulb
4. SHC — Sensible Heat Capacity (1000 Btuh) Gross
5. ***Bold, Italics, Underlined*** - Standard Ratings
6. Formulas:
   a) Leaving db = Entering - Sensible Heat Cap / (1.09 x CFM)
   b) Leaving wb = wb corresponding to air leaving coil (hwb)
   c) hwb Leaving = hwb entering - total cap(Btuh)/(4.5 X CFM)
7. Direct interpolation is permissible. Do not extrapolate.

Detailed Performance Data

Matching 38P with FB4P (Continued)

Nom Cap. Mbtuh	Evaporator Air		Condenser Air Entering Deg. F																	
			85			95			105			115			118			125		
	CFM	EWB	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*	Cap. MBH		kW*
			Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen	
36	1000	72	38.6	19.8	2.6	37.3	19.3	2.9	35.7	18.7	3.3	33.7	18.0	3.7	33.1	17.8	3.8	31.4	17.2	4.1
		67	35.5	24.6	2.6	33.9	24.0	2.9	32.0	23.1	3.3	29.7	22.2	3.6	29.1	22.0	3.7	27.4	24.3	4.0
		62	32.0	28.9	2.6	30.2	28.0	2.9	28.3	27.0	3.2	26.3	25.8	3.5	25.6	25.6	3.6	24.3	24.3	3.9
		57	30.5	30.5	2.6	29.1	29.1	2.9	27.6	29.1	3.2	26.0	26.0	3.5	25.5	25.5	3.6	24.3	24.3	3.9
	1100	72	39.0	20.4	2.6	37.8	20.0	2.9	36.2	19.4	3.3	34.3	18.7	3.7	33.6	18.5	3.8	32.0	17.9	4.1
		67	36.1	25.7	2.6	34.5	25.1	2.9	32.5	24.3	3.3	30.3	23.4	3.6	29.6	23.1	3.7	27.9	22.4	4.0
		62	32.7	30.4	2.6	30.9	29.4	2.9	29.0	28.3	3.2	27.0	27.0	3.6	26.4	26.4	3.7	25.2	25.2	3.9
		57	31.5	31.5	2.6	30.1	30.1	2.9	28.6	28.6	3.2	26.9	26.9	3.6	26.4	26.4	3.7	25.2	25.2	3.9
	1200	72	39.4	20.9	2.6	38.2	20.6	2.9	36.6	20.0	3.3	34.7	19.4	3.7	34.0	19.2	3.8	32.4	18.6	4.1
		67	36.6	26.6	2.6	***35.0***	26.1	***2.9***	33.1	25.4	3.3	30.8	24.5	3.6	30.1	24.2	3.8	28.4	23.5	4.0
		62	33.3	31.7	2.6	31.5	30.7	2.9	29.6	29.6	3.2	27.8	27.8	3.6	27.3	27.3	3.7	26.0	26.0	4.0
		57	32.5	32.5	2.6	31.0	31.0	2.9	29.5	29.5	3.2	27.8	27.8	3.6	27.2	27.2	3.7	26.0	26.0	4.0
48	1300	72	55.2	27.7	3.8	52.6	26.8	4.2	49.8	25.7	4.6	46.8	24.6	5.1	45.8	24.2	5.2	42.4	22.9	5.5
		67	49.1	33.8	3.7	46.5	32.8	4.1	44.0	31.7	4.5	40.6	30.3	5.0	39.2	29.8	5.1	36.2	32.6	5.4
		62	44.0	39.9	3.7	41.5	38.7	4.0	39.1	37.5	4.5	35.7	35.7	4.9	34.8	34.8	5.0	32.6	32.6	5.3
		57	42.4	42.4	3.7	40.4	40.4	4.0	38.5	40.4	4.4	35.7	35.7	4.9	34.7	34.7	5.0	32.5	32.5	5.3
	1500	72	56.8	29.5	3.8	54.0	28.4	4.2	51.1	27.3	4.6	48.0	26.2	5.1	47.0	25.8	5.2	43.7	24.6	5.6
		67	50.6	36.4	3.7	47.9	35.3	4.1	45.3	34.3	4.6	42.1	33.0	5.0	40.5	32.4	5.1	37.4	31.1	5.4
		62	45.5	43.2	3.7	43.0	42.0	4.1	40.7	40.7	4.5	38.0	38.0	4.9	36.9	36.9	5.0	34.7	34.7	5.3
		57	44.7	44.7	3.7	42.7	42.7	4.1	40.6	40.6	4.5	37.9	37.9	4.9	36.9	36.9	5.0	34.6	34.6	5.3
	1750	72	58.3	31.4	3.8	55.3	30.3	4.2	52.3	29.2	4.6	49.1	28.0	5.1	48.1	27.7	5.2	45.1	26.7	5.6
		67	52.1	39.6	3.8	***49.0***	38.5	***4.2***	46.6	37.4	4.6	43.5	36.1	5.1	41.8	35.5	5.2	38.7	34.1	5.4
		62	47.2	47.2	3.7	45.1	45.1	4.1	43.0	43.0	4.5	40.4	40.4	5.0	39.2	39.2	5.1	36.8	36.8	5.4
		57	47.1	47.1	3.7	45.0	45.0	4.1	42.9	42.9	4.5	40.3	40.3	5.0	39.1	39.1	5.1	36.7	36.7	5.4
60	1300	72	63.0	30.6	4.2	59.8	29.3	4.6	56.5	28.0	5.1	53.0	26.7	5.6	52.0	26.3	5.8	49.4	25.3	6.2
		67	56.2	36.6	4.1	52.9	35.1	4.6	49.6	33.7	5.0	46.3	32.2	5.5	45.3	31.8	5.7	42.8	36.1	6.1
		62	50.2	42.4	4.1	47.2	40.9	4.5	43.9	39.4	5.0	40.6	37.7	5.5	39.6	37.2	5.6	37.4	36.1	6.0
		57	46.9	46.9	4.1	44.5	44.5	4.5	42.1	44.5	4.9	39.4	39.4	5.4	38.6	38.6	5.6	36.9	36.9	6.0
	1500	72	65.2	32.4	4.2	61.9	31.1	4.7	58.4	29.8	5.1	54.8	28.4	5.7	53.7	28.0	5.8	51.0	27.0	6.3
		67	58.1	39.1	4.2	54.7	37.7	4.6	51.3	36.2	5.1	47.8	34.8	5.6	46.8	34.3	5.7	44.3	33.3	6.1
		62	52.0	45.8	4.1	48.9	44.3	4.5	45.6	42.7	5.0	42.2	40.9	5.5	40.4	40.4	5.6	39.2	39.2	6.0
		57	49.6	49.6	4.1	47.1	47.1	4.5	44.5	44.5	5.0	41.7	41.7	5.5	41.0	41.0	5.6	39.2	39.2	6.0
	1750	72	67.5	34.5	4.2	64.0	33.2	4.7	60.4	31.8	5.2	56.6	30.4	5.7	55.5	30.0	5.9	52.7	29.0	6.3
		67	60.1	42.2	4.2	***56.0***	40.8	***4.6***	53.1	39.3	5.1	49.5	37.8	5.6	48.4	37.4	5.7	45.7	36.3	6.1
		62	54.0	49.8	4.1	50.8	48.2	4.6	47.4	46.3	5.0	44.3	44.3	5.5	43.5	43.5	5.7	41.6	41.6	6.1
		57	52.4	52.4	4.1	49.8	49.8	4.5	47.0	47.0	5.0	44.3	44.3	5.5	43.5	43.5	5.7	41.6	41.6	6.1

Notes:

1. Capacity rating is shown at an on coil dry bulb of 80F(26.6C)
2. kW* — Total System Power Input
3. Ewb — Entering Wet-Bulb
4. SHC — Sensible Heat Capacity (1000 Btuh) Gross
5. ***Bold, Italics, Underlined*** **-** Standard Ratings
6. Formulas:
   a) Leaving db = Entering - Sensible Heat Cap / (1.09 x CFM)
   b) Leaving wb = wb corresponding to air leaving coil (hwb)
   c) hwb Leaving = hwb entering - total cap(Btuh)/(4.5 X CFM)
7. Direct interpolation is permissible. Do not extrapolate.

Performance Data

Fan Performance English - FB4P Air Flow (CFM)

E.S.P. in.wg.	Blower Motor	EXTERNAL STATIC PRESSURE - in.wg					
Unit Size	Speed	0.10	0.20	0.30	0.40	0.50	0.60
018	Tap1 - High	700	650	612	583	540	495
	Tap2 - Med	614	569	534	486	436	398
	Tap3 - Low	540	510	478	424	383	334
024	Tap1 - High	826	795	766	743	706	660
	Tap2 - Med	701	660	616	581	537	499
	Tap3 - Low	617	592	552	507	472	420
030	Tap1 - High	1026	1000	969	938	899	865
	Tap2 - Med	909	873	842	799	762	724
	Tap3 - Low	825	795	757	722	674	634
036	Tap1 - High	1227	1191	1169	1143	1105	1074
	Tap2 - Med	1087	1062	1030	1001	966	930
	Tap3 - Low	1026	1000	969	938	899	865
048	Tap1 - High	1880	1785	1700	1615	1520	1430
	Tap2 - Med	1740	1660	1585	1510	1435	1350
	Tap3 - Low	1425	1585	1360	1315	1255	1170
060	Tap1 - High	1880	1785	1700	1615	1520	1430
	Tap2 - Med	1740	1660	1585	1510	1435	1350
	Tap3 - Low	1425	1395	1360	1315	1255	1170

Fan Performance SI - FB4P Air Flow (m^3/hr)

E.S.P. in.wg.	Blower Motor	EXTERNAL STATIC PRESSURE - Pa					
Unit Size	Speed	25	50	75	100	125	150
018	Tap1 - High	1189	1104	1040	991	917	841
	Tap2 - Med	1043	967	907	826	741	676
	Tap3 - Low	917	866	812	720	651	567
024	Tap1 - High	1403	1351	1301	1262	1200	1121
	Tap2 - Med	1191	1121	1047	987	912	848
	Tap3 - Low	1048	1006	938	861	802	714
030	Tap1 - High	1743	1699	1646	1594	1527	1470
	Tap2 - Med	1544	1483	1431	1358	1295	1230
	Tap3 - Low	1402	1189	1286	1227	1145	1078
036	Tap1 - High	2085	2024	1986	1942	1877	1825
	Tap2 - Med	1847	1804	1750	1701	1641	1580
	Tap3 - Low	1743	1699	1647	1594	1527	1471
048	Tap1 - High	3194	3033	2888	2744	2582	2430
	Tap2 - Med	2956	2820	2693	2566	2438	2294
	Tap3 - Low	2421	2370	2311	2234	2132	1990
060	Tap1 - High	3194	3033	2888	2744	2582	2430
	Tap2 - Med	2956	2820	2693	2566	2438	2294
	Tap3 - Low	2421	2370	2311	2234	2132	1990

Notes:

1. Airflow based upon dry coil at 230v with factory-approved filter and electric heater (2 element heater sizes 018 through 036, 3 element heater sizes 048 through 060). For FB4P models, airflow at 208 volts is approximately the same as 230 volts because the multi-tap ECM motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.

2. To avoid potential for condensate blowing out of drain pan prior to making drain trap: Return static pressure must be less than 0.40 in.wg, Horizontal applications of 048-060 sizes must have supply static greater than 0.20 in.wg.

3. Airflow above 400 cfm/ton on 048-060 size could result in condensate blowing off coil or splashing out of drain pan.

Performance Data (Continued)

Estimated Sound Power Level 50Hz (dBA)

Unit Size	Lw (dB)										
	English		SI		Octave Band Center Frequency (Hz)						
	CFM	ESP	L/S	ESP	63	125	250	500	1000	2000	4000
018	600	0.25	283	62.5	64.7	60.7	56.7	53.7	51.7	49.7	45.7
024	700	0.25	300	62.5	66.0	62.0	58.0	55.0	53.0	51.0	47.0
030	1000	0.25	472	62.5	67.0	63.0	59.0	56.0	54.0	52.0	48.0
036	1200	0.25	566	62.5	67.8	63.8	59.8	56.8	56.8	54.8	48.8
048	1600	0.25	755	62.5	69.0	65.0	61.0	58.0	56.0	54.0	50.0
060	1800	0.25	850	62.5	70.0	66.0	62.0	59.0	57.0	55.0	51.0

Minumum CFM and Motor Speed Selection

Unit Size	HEATER KW									
	3	5	8	9	10	15	18	20	24	30
018	600	600	600	-	600	600	-	-	-	-
024	700	700	700	-	700	700	-	-	-	-
030	800	800	800	-	800	800	800	800	-	-
036	1000	1000	1000	1000	1000	1000	1000	1000	-	-
048	-	-	1400	1400	1400	1400	1400	1400	1400	1400
060	-	-	1400	1400	1400	1400	1400	1400	1400	1400

Factory-Installed Filter Static Pressure Drop (in.wg)

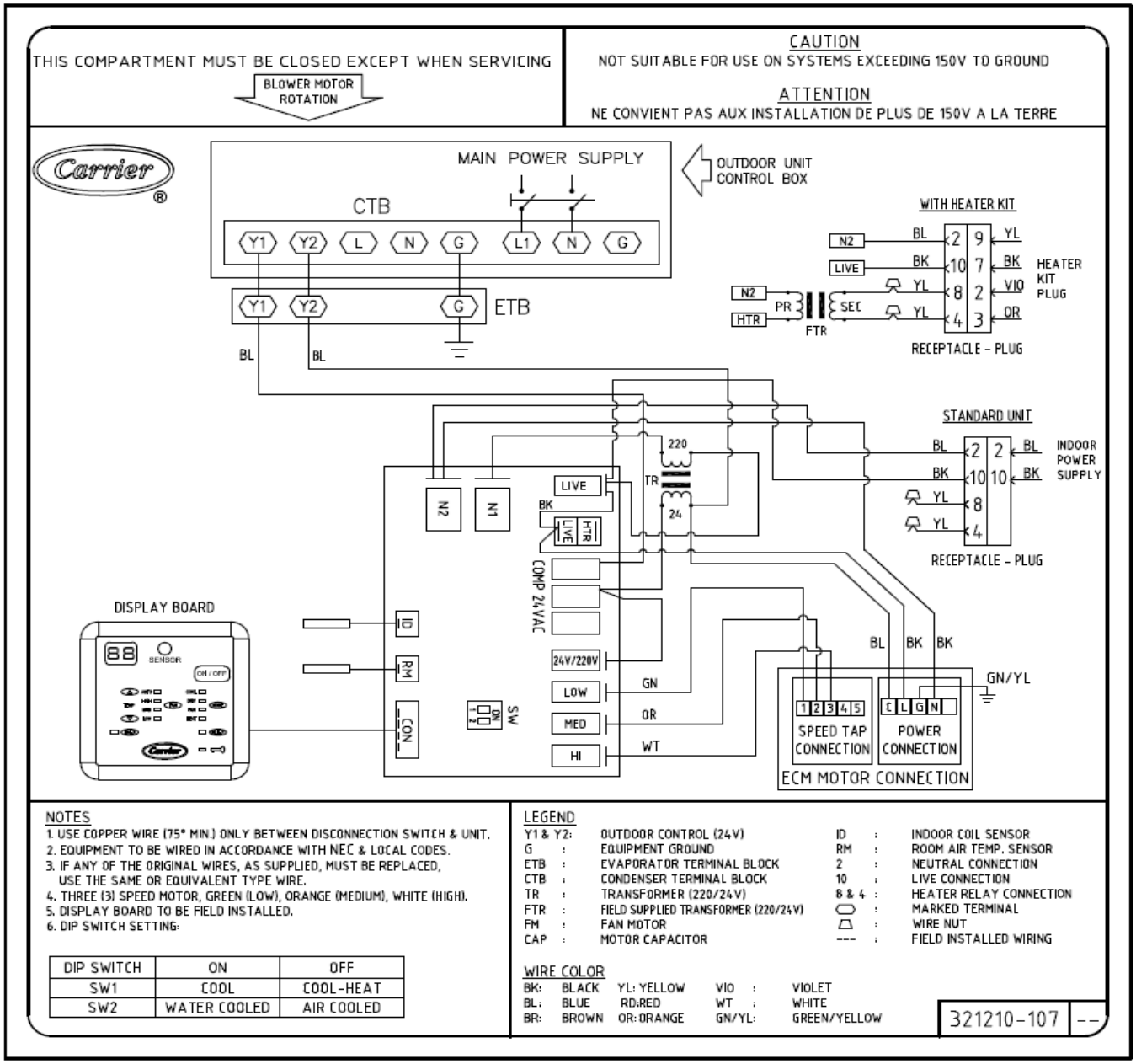
Unit Size	CFM								
	400	600	800	1000	1200	1400	1600	1800	2000
018	0.034	0.049	0.070	-	-	-	-	-	-
024	0.034	0.049	0.076	-	-	-	-	-	-
030	-	-	0.048	0.072	0.100	-	-	-	-
036	-	-	-	0.051	0.070	0.092	-	-	-
048	-	-	-	-	-	0.092	0.120	0.152	-
060	-	-	-	-	-	0.092	0.120	0.152	-

ELECTRIC HEATER STATIC PRESSURE DROP (in.wg)

Sizes	Heater Elements	KW	External Static Pressure Correction
018 - 036	0	0	+0.02
018 - 036	1	3, 5	+0.01
018 - 036	2	8, 10	0
018 - 036	3	9, 15	-0.02
018 - 036	4	20	-0.04
048 - 060	0	0	+0.04
048 - 060	2	8, 10	+0.02
048 - 060	3	9, 15	0
048 - 060	4	20	-0.20
048 - 060	6	18, 24, 30	-0.10

Notes: Sound pressure assumes "standard room", 3 meters from exit, no ducts, ducts will further reduce sound.
Legend: CFM - Cubic Feet per Minute, Pa - Pascal, E.S.P - External Static Pressure, dBA - Decibel, in.wg - Inch Water Gage

Typical Wiring Schematic



Wiring Diagram: FCU FB ECM Motor Cool and Electric Heater
Application: 50Hz (18 - 60)

Controller For Ducted Fan Coil Units

Features: The controller is used to control air cooled ducted split unit, supports the following functions:
- Modes: Cool, Dry, Fan, Heat
- Indoor fan speed: Auto, High, Medium, Low
- Sleep mode
- Compressor protections:
  Comp 3 minutes restart protection
  Indoor coil anti-freeze
  Room sensor and indoor coil sensor failure monitoring
- Non volatile memory – keep system settings
- Programmable On/Off timer
- Random restart to minimize voltage dip during compressor first cut in cycle upon power up.

Hardware Setting: A 2 way DIP switch is used to configure:

DIP Switch	On	Off
SW1	Cool	Cool-Heat
SW2	Water System	DX System

Error Code: If multiple faults happen at the same time, the corresponding error code will be shown one after another

Fault	Error code
Room sensor fault	E1
Indoor coil sensor fault	E2
Comp fault	E4

Split System Description

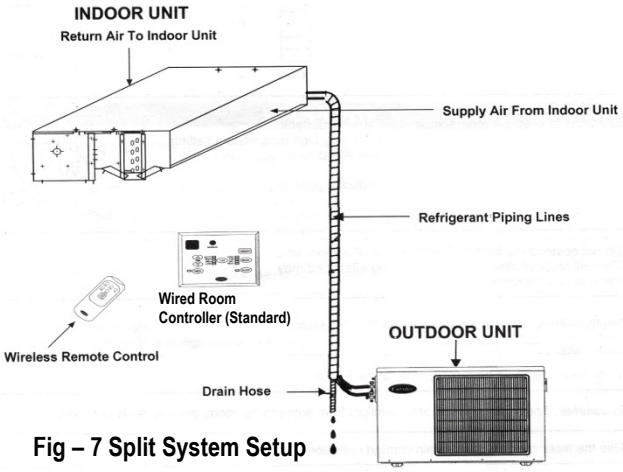


Fig – 7 Split System Setup

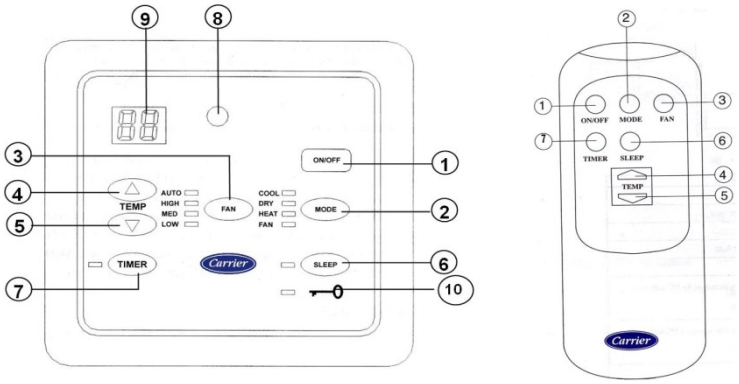


Fig - 8 System Room Controllers

Notes: The wired room controller is mounted on the wall and can control all system functions without wireless remote control.

1) On/Off Key: If you press this key, the system will begin operation, Press the key again, and operation stops. (You can hear a receiving beep). If you press this key immediately after turning off the system, the compressor will not operate for 3 minutes to prevent overloading.

2) Operation Mode Selection Key: Toggles the operation mode: Cool, Dry, Heat, or Fan only

"COOL" Led	Lights on when selecting COOL mode.
"DRY" Led	Lights on when selecting DRY mode.
"HEAT" Led	Lights on when selecting Heat mode.
"FAN" Led	Lights on when selecting FAN mode.

3) Fan Speed Selection Key: Toggles the fan speed: Auto, High, Medium, or Low, Note: Fan key is invalid in Dry mode.

4) Temperature Up Key: By pressing Temperature up Key, the setting temperature increases by 1ºC with each press.

5) Temperature Down Key: By pressing temperature down key, the setting temperature decreases by 1ºC with each press. If you set the desired room temperature, then system will maintain the room temperature as set. Upon setting the desired room temperature the system will maintain the room temperature

Cool Mode: If the room temperature is higher than the setting, the compressor will automatically turn on provide a cooling effect. On the hand, if the room temperature is lower than the setting, the compressor will automatically turn off to stop cooling operation. If indoor fan is programed to be turned off with comp signal, it will turn off once comp is cut off

Heat Mode: If the room temperature is lower than the setting, the Electric heater will automatically turn on to provide a heating effect. If the room temperature is higher than the setting, the heater will automatically turn off to stop heating operation. If indoor fan is programed to be turned off with heater signal, it will turn off once heater is cut off but subject to 30 sec dispersing remaining heat timing.

Dry Mode: The fan speed runs automatically at low speed and compressor stopping and running is controlled by the difference between room and setting temperatures and by continuous running time. If indoor fan is programed to be turned off with comp signal, it will turn off once comp is cut off

- In Dry mode, the humidity is reduced in the space to be air-conditioned.

Fan Mode: There will be no cooling or heating effects; only the fans of indoor unit will run for ventilation at the selected speed (High, Med, and Low).

- In COOL or HEAT mode and if AUTO fan speed is selected; Fan speed is automatically selected by controller according to the difference between setting temperature and room temperature, fan will be continuously running at low speed after setting temperature is achieved.

Notes:

a) Temperature setting range is 16ºC to 30ºC or 60ºF to 85ºF.
b) Hold down at the same time for about 5 seconds, Temp down and fan keys will toggle the temperature setting from degree C to degree F and vice versa.
c) Press any temperature key will flash the current setting temperature for 4 seconds, Should there be no further key press, it will revert to room temperature display. Temperature display range is 0 C to 50 C or 32 F to 99 F.
d) Temp keys are invalid in Fan mode.

6) Sleep Key: Press this key to set the SLEEP timer and then the sleep led will light on, to cancel the sleep timer press this key again.

- Sleep function for healthy sleep to control automatically the room temperature and stop automatically the operation of the air conditioner after certain set off time.
- Sleep mode is valid in cool or heat mode and invalid in Fan mode.

7) Timer Key: Upon count down of the set hours, the system will switch from OFF to ON or vice-versa.

- OFF Timer Function to stop automatically, the air conditioner after certain set OFF time.
- ON Timer Function to start automatically, the air conditioner after certain set ON time.

* Timer setting is 1 Hour to 24 Hour. The timer led will light on when operating the Timer Function
First key press will flash the digital display and Timer Led for 3 seconds.

Notes:

a) The digital displays show the number of hours previously set, only the Timer Led flashes.
b) Subsequent 3 seconds will show the number of hours previously set; only the timer led flashes.
c) Should there be no further key press, it will revert to normal mode.
d) Should Timer key is not released timer setting will increase automatically every 0.5-second.

8) Sensor: Receives the remote controller's signal

9) Display Screen: Displays the set temperature and displays also the TIMER settings when adjusting it.

10) Key Lock Mode: To activate key lock mode, hold down for 3 seconds, temp. Down Key (5) and Mode Key (2). In key lock mode, all keys are not valid except ON/OFF Key (1) to turn ON/OFF the system.

a) Hold down Temp Down and Sleep button for one second to enter into coil temperature display mode. Press Temp Up key to display indoor coil temperature, High Fan LED flashes. With the same sequence to exit coil temperature display mode. Temperature display range is -9C to 78 ºC.
b) Hold down ▽ and FAN buttons for only 1 second to activate the system control parameter setting. Press mode button to go through the desired menu steps (1 to 3) as per the below table. For each setting step press ▽ or △ button to change the setting from 1 to 2, after completing all setting steps hold down for 3 seconds temp down ▽ and mode buttons to exit the key lock mode.

Menu	Parameter	Set Range	Default value	Remarks
1	Temperature display, Auto fan LED flashing	1~2	1	1: Disable room temp display
				2: Enable room temp display
2	Cool mode fan control function, Auto & High fan LED flashing	1~2	1	1: Comp OFF, Fan ON
				2: Comp OFF, Fan OFF
3	Heat mode fan control function, Auto & Medium fan LED flashing	1~2	1	1: Heater OFF, Fan ON
				2: Heater OFF, Fan OFF

Carrier Accessories

Electric Heaters

Heater Part No.	kW @ 240V	Volts/Ph	Stages (kW Operating)	Internal Circuit Protection	Fan Coil Size Used With	Heating Cap** @ 230V
KFCEH0401N03	3	230/1	3	None	018 - 024	9,400
KFCEH0501N05	5	230/1	5	None	018 - 060	15,700
KFCEH0801N08	8	230/1	8	None	018 - 060	25,100
KFCEH0901N10	10	230/1	10	None	018 - 060	31,400
KFCEH3201F20	20	230/1	5, 20	Fuse	030 - 060	62,800
KFCEH1601315	15	230/3	5,15	None	036 - 060	47,100
KFCEH2001318	18	230/3	6, 12, 18	None	048 - 060	56,500
KFCEH3401F24	24	230/3*	8, 16, 24	Fuse	048 - 060	78,300
KFCEH3501F30	30	230/3*	10, 20, 30	Fuse	048 - 060	94,100
KFCEH2401C05	5	230/1	5	Circuit Breaker	018 - 060	15,700
KFCEH2501C08	8	230/1	8	Circuit Breaker	018 - 060	25,100
KFCEH2601C10	10	230/1	10	Circuit Breaker	018 - 060	31,400
KFCEH3301C20	20	230/1	5, 20	Circuit Breaker	030 - 060	62,800
KFCEH2901N09	9	230/1†	3, 9	None	036 - 060	28,200
KFCEH3001F15	15	230/1	5, 15	Fuse	024 - 060	47,100
KFCEH3101C15	15	230/1	5, 15	Circuit Breaker	024 - 060	47,100

* Field convertible to 1 phase.

† Field convertible to 3 phase.

** Blower motor heat not included.

Smart Heat

Heater Part No.	kW @ 240V	Volts/Ph	Stages (kW Operating)	Internal Circuit Protection	Fan Coil Size Used With	Heating Cap* @ 230V
KFCEH0101H10	9	230/1	3, 6, 9	None	18 - 36	28,200
KFCEH0201H15	15	230/1	3, 8, 11, 15	Fuse	24 - 48	47,100
KFCEH0301H20	20	230/1	5, 10, 15, 20	Fuse	30 - 60	62,800

* Blower motor heat not included.

When using units with 20-, 24-, and 30-kw electric heaters, maintain a 1-in. clearance from combustible materials to discharge plenum and ductwork and maintain a distance of 36 in. from the unit. Use an accessory downflow base to maintain proper clearance on downflow installations.

Use flexible connectors between ductwork and unit to prevent transmission of vibration. When electric heater is installed, use heat resistant material for flexible connector between ductwork and unit at discharge connection. Ductwork passing through unconditioned space must be insulated and covered with vapor barrier.

Accessories

Item	Accessory Part No*	Fan Coil Size Used With
Disconnect Kit	KFADK0101DSC	Cooling controls & heaters 3-10kw
Downflow Base Kit	KFACB0101CFB	018, 024
	KFACB0201CFB	030, 036
	KFACB0301CFB	048, 060
Downflow Conversion Kit	KFADC0201SLP	Slope Coil Units
	KFADC0401ACL	A-Coil Units
Single-Point Wiring Kit	KFASP0101SPK	Only 15 & 20kw Fused Heaters
Filter Kit (12 Pack)	KFAFK0112SML	018, 024
	KFAFK0212MED	030, 036
	KFAFK0312LRG	048, 060
Power Plug Kit (25 Pack)	KFAPP0125PLG	All Sizes
PVC Condensate Trap Kit (50 Pack)	KFAET0150ETK	All Sizes
Air Cleaner 240-volt Conversion Kit	KEAVC0201240	All Sizes
Downflow/Horizontal Conversion Gasket Kit	KFAHD0101SLP	All Sizes

* Factory-authorized and listed, field installed.

Guide Specifications

Cooling Only/Electric Heat Fan Coil Unit
HVAC Guide Specifications
Unit Size Range: 1.5 to 5.0 Ton

General

System Description
The fan coil unit is designed for outdoor (or under ceiling) installation, electrically controlled cooling and heating (option). Unit shall be designed for vertical and horizontal installation. Standard unit shall include permanent filter with aluminum frame. Unit shall be designed for medium and high external static pressure up to 0.6 inch water.

Quality Assurance

A. Unit shall be rated in accordance with ESMA, AHRI & T3 standard.
B. Unit shall be designed in accordance with ISO 9001:2008, and shall be manufactured in a facility registered by ISO 9001:2008.
C. Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTMB117.
D. Installation and adhesive shall meet NFPA90A requirements for flame spread and smoke generation.

Products

A. The unit shall be factory assembled single piece cooling unit, with optional electric heat (field installation). Unit cabinet shall be constructed of galvanized steel bonderized and powder painted enamel finish. The unit shall be insulated with rubber insulation that is 10 mm thickness & 32 kg/m^3 density.
B. Unit cabinet panels shall be single skin. Cabinet panels shall be easily removable for service.
C. Unit shall have a permanent type filter with 21 mm thickness aluminum frame. Filter shall be flame retardant polyester fibers. Filters shall be accessible through an access panel.
D. Units shall have high impact thermal plastic sloped condensate pan. Unit shall have primary and secondary drain connection with brass inserts. Unit shall have additional external drain pan for the coil connection condensate water.
E. The unit fan wheel shall be directly connected to the motor. The fan wheel shall be made from steel with a corrosion resistance finish, it shall be a dynamically balanced and double inlet forward curved blades. Unit fan wheel chamber shall be made from galvanized steel.
F. Unit coil shall have aluminum fins mechanically bonded to seamless smooth copper tubes with all joints brazed. Unit coil shall be accessible through an access panel for cleaning. The coil connection shall be sweat type.
G. The unit fan motor shall have permanently lubricated sleeve bearing. The motor shall have overload protection and B class insulation. Unit shall have multiple electric entries for more flexibility.
H. Unit control board shall be 24 VAC and UL listed.

NOTES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