

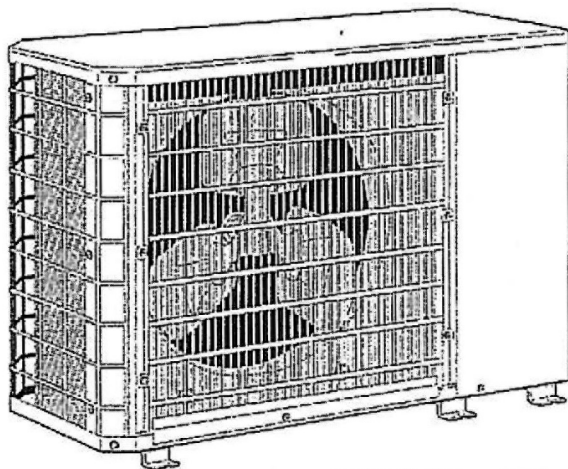


Product Data

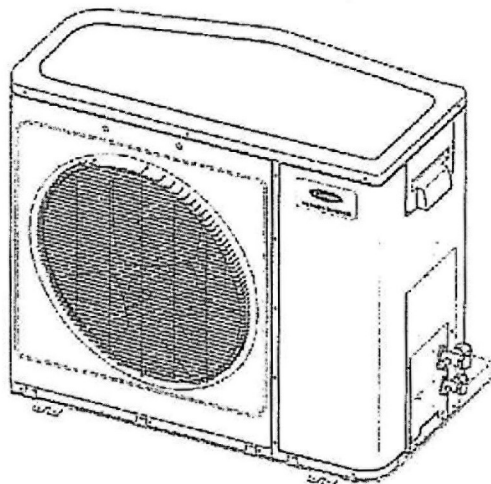
38HK12-60 38HQ12-24 Condensing Unit 50HZ

1 to 5 Nominal Tons

The 38H Series Energy-Efficient Split condensing units incorporate innovative technology to provide reliable cooling performance. Built into these units are features most desired by the industry.



38HK 48k - 60k



38HK 12k - 36k

Features/Benefits

- Designed especially for high ambient environment.
- EER (Energy Efficiency Ratio) ratings of up to 10.0.
- The small footprint coupled with the horizontal airflow design means that the 38H Series units can be installed within 200 mm (8 in.) of an outside wall, on a roof, balcony, or deck.

Electrical Range

— All units are offered in 220-240v single phase. Three-phase units are available from 048 through 060 sizes in 400v.

Wide Range of Sizes

— The 38H Series is available in 7 nominal sizes from 012 through 060 to meet the needs of residential and light commercial applications.

Application Versatility

— The unit can be combined with a wide variety of evaporator coils and blower packages to provide quiet, dependable comfort. Unit can be installed on a roof or at ground level.

Easy access for service and maintenance

A single panel provides immediate access to the isolated compressor and control compartment, allowing a service technician access to check unit operation without losing condenser airflow. Coils can be cleaned quickly from the outside.

Secure operation

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork. The 38H Series units can be installed 8 in. away from outside walls, protecting coils from vandals and severe





Fast Installation

Carrier's compact systems take only a few hours to install — only wire and piping need to be run. The fast and easy installation ensures minimal disruption to customers in the home or workplace. This Carrier advantage is especially beneficial in retrofit situations.

External Service Valves

— Service valves are brass, front seating type. The 38H Series has flare connections,

sweat adapter kit is provided for 7/8" tube size. Valves are externally located so refrigerant tube connections can be made quickly and easily. Each valve has a service port for ease of checking operating refrigerant pressures.

Built-in reliability

Carrier split system outdoor units are designed to provide years of trouble-free operation. The 38H Series condensing

units are the only dedicated commercial units with all safety features standard to ensure high performance and lasting reliability under the most demanding situations. For example, start capacitors ensure dependable start-ups, especially during low voltage conditions (down to 187 v). High-pressure and low-pressure safety switches are standard

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Quality Assurance

SAMCO



Approvals :

ISO 9001 : 2000

EN ISO 9001 : 2000

ANSI/ASQC Q9001 : 2000



Model number nomenclature

38	H	K	C	18	D	S	7	0	-	00
Type 38-Air-Cooled Condenser										Factory Reference
Series										Design Series
Condenser Type K-Cool Q- Heat Pump										Voltage 7 - 220/240-1-50 9 - 400-3-50
Compressor C- Reciprocating R- Rotary - Super Tropical										Fin Type S- Standard Bare Fins P- Pre-Coated Blue Fins
Nominal Capacity in Tons (kW) 012 - 1 Ton (3.5 kW) 018 - 1.5 Tons (5.3 kW) 024 - 2 Tons (7 kW) 030 - 2.5 Tons (8.8 kW) 036 - 3 Tons (10.6 kW) 048 - 4 Tons (14 kW) 060 - 5 Tons (17.6 kW)										Application D: Ducted application FB4A or 42TX 24 Volt compressor contactor U: Un Ducted application/Decorative Ceiling Cassette, Hi wall,-etc. 220 Volt compressor contactor

Physical Data

UNIT 38H	12	18	24	30	36	48	60
NOMINAL CAPACITY (Tons)	1.0	1.5	2	2.5	3	4.0	5.0
OPERATING WEIGHT (lb)	119	123	139	154	161	211	227
SHIPPING DIMENSIONS (in) (W X H X D)	37 x 29.7 x 16.1					50.4 X 40.2 X 30	
COMPRESSOR Cool Only Heat Pump	Rotary	Rotary			Reciprocating		
REFRIGERANT TYPE	R22						
METERING DEVICE Ducted Application Un-ducted Application	Capillary Tube			Nozzle, in the indoor unit			
FINISH	Gray						
OUTDOOR FAN RPM/CFM Diameter, No. Blades Motor Horsepower,	Propeller Type 1100/2000 18 in, 3 1/12					860/3,000 24 in, 3 1/3	
COIL DATA Face Area (sq ft) Tubes Fins FPI	Smooth		6.3 Aluminium, Double Wavy			Helical grooved 12.05	
REFRIGERANT LINES Connection Type Liquid Line Vapour Line Max Length Max Lift Max Drop	5/8 in.			Flare 3/8 inch		3/4 in. 7/8 inch*	

* Sweat adapter kit is provided for 7/8" tube size



Combination ratings

COOLING ONLY

Nominal Cap. MBtuh	INDOOR TYPE	INDOOR MODEL	OUTDOOR MODEL	ARI NET CAP. (Btuh)	ARI* CFM	TOTAL (kW)	EER
12	Ducted Split - 42TX	42TX-012-701R	38HQR012DS70	13200	500	1.4	9.4
	High Wall	42KPB012703	38HQR012US70	13300	380	1.6	8.3
	High Wall	42KHB0127	38HQR012US70	13300	380	1.6	8.3
18	Cassette	40GKX0187	38HQR018US70	17800	425	2.3	7.7
	Cassette	40KMC0187	38HQR018US70	17800	425	2.3	7.7
	Console	42VMC187C	38HQR018US70	18000	440	2.25	8.0
	Ducted Split - 42TX	42TX-018-701R	38HQR018DS70	19400	650	2.4	8.1
	Ducted Split - FB4A	FB4ASSF018	38HQR018DS70	20000	1150	2.5	8.0
	High Wall	42KPC018703	38HQR018US70	18000	550	2.2	8.2
	High Wall	42KHC0187	38HQR018US70	18000	550	2.2	8.2
	High Wall	42EGC018-7	38HQR018US70	18000	550	2.15	8.4
	Cassette	40GKX0247	38HQR024US70	23900	450	2.95	8.1
24	Cassette	40KMC0247	38HQR024US70	23900	450	2.95	8.1
	Console	42VMC247C	38HQR024US70	24000	530	2.95	8.1
	Ducted Split - 42TX	42TX-024-701R	38HQR024DS70	24900	650	3.1	8.0
	Ducted Split - FB4A	FB4ASSF024	38HQR024DS70	24300	1200	3.1	7.8
	High Wall	42KPD024703	38HQR024US70	24000	650	3.0	8.0
	High Wall	42KHD0247	38HQR024US70	24000	650	3.0	8.0
	High Wall	42EGC024-7	38HQR024US70	24000	650	2.9	8.3
	Cassette	40GKX0367	38HQR030US70	28500	750	3.1	9.2
	Cassette	40KMC0367	38HQR030US70	28500	750	3.1	9.2
30	Ducted Split - 42TX	42TX-030-701R	38HQR030DS70	29500	800	3.2	9.2
	Ducted Split - FB4A	FB4ASSF030	38HQR030DS70	30100	1500	3.3	9.1
	Cassette	40GKX0487	38HQR036US70	35100	975	3.7	9.5
36	Cassette	40KMC0487	38HQR036US70	35100	975	3.7	9.5
	Ducted Split - 42TX	42TX-036-701R	38HQR036DS70	35000	1100	4.0	8.8
	Ducted Split - FB4A	FB4ASSF036	38HQR036DS70	34500	1500	4.0	8.6
	Free Stand	42SM5C	38HQR036US70	35000	800	3.8	9.2
	Cassette	40GKX0487	38HQR048US90	40700	975	4.2	9.7
48	Cassette	40KMC0487	38HQR048US90	40700	975	4.2	9.7
	Ducted Split - 42TX	42TX-048-701R	38HQR048DS90	45000	1400	4.5	10.0
	Ducted Split - FB4A	FB4ASSF048	38HQR048DS90	46000	1650	4.6	10.0
	Free Stand	42SD5C	38HQR048US90	45000	900	4.5	10.0
	Ducted Split - 42TX	42TX-060-701R	38HQR060DS90	59000	1550	6.0	9.8
60	Ducted Split - FB4A	FB4ASSF060	38HQR060DS90	59000	1850	5.9	10.0
	Free Stand	42SD7C	38HQR060US90	59000	1500	5.9	10.0

HEAT PUMP

Nominal Cap. MBtuh	INDOOR TYPE	INDOOR MODEL	OUTDOOR MODEL	COOLING MODE				HEATING MODE			
				ARI NET CAP. (Btuh)	ARI* CFM	EER	kW	ARI NET CAP. (Btuh)	ARI* CFM	COP	kW
12	High Wall	42QPB012703	38HQR012US70	12000	380	8.0	1.5	12000	380	9.2	1.3
18	High Wall	42QPC018703	38HQR018US70	18000	550	8.2	2.2	18000	550	9.0	2.0
	High Wall	42QHC0187	38HQR018US70	18000	550	8.2	2.2	18000	550	9.0	2.0
	High Wall	42EGQ018-7	38HQR018US70	18000	550	8.2	2.2	18000	550	9.0	2.0
24	High Wall	42QPD022703	38HQR024US70	24000	650	8.1	2.95	24000	650	9.2	2.6
	High Wall	42QHD024-7	38HQR024US70	24000	650	8.1	2.95	24000	650	9.2	2.6
	High Wall	42EGQ024-7	38HQR024US70	24000	650	8.1	2.95	24000	650	9.2	2.6

LEGEND

CFM — Cubic Feet Per Minute

EER — Energy Efficiency Ratio

* Air Conditioning and Refrigeration Institute.

NOTES:

Cooling Standard: 80 F db, 67 F wb indoor entering-air temperature and 95 F db air entering outdoor unit.

Heating Standard: 70 F db, 60 F wb indoor entering-air temperature and 47 F db air entering outdoor unit.



Base Unit Dimensions – 38H 12-36

NOTES:

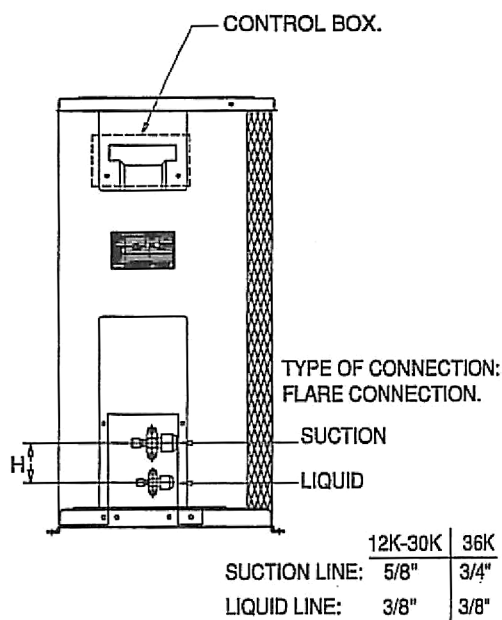
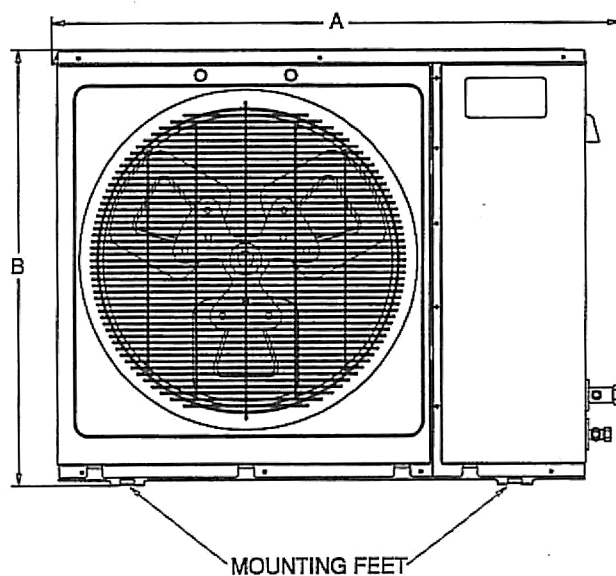
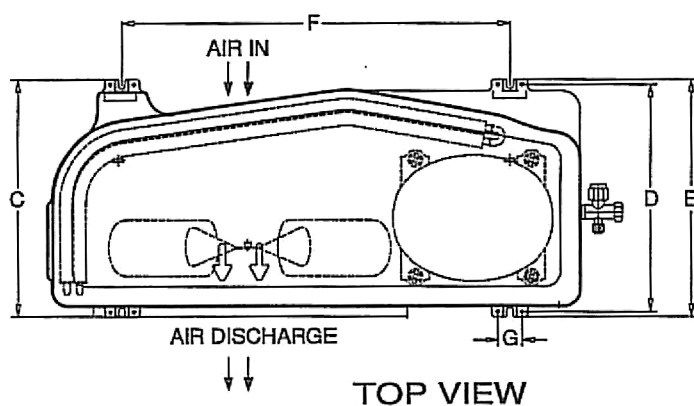
1. FREE DISTANCE AROUND THE UNIT FROM THE WALL.

FRONT: 59 in. (1500 mm) min.

REAR & SIDES: 20 in (500 mm) min.

2. SIZE OF WIRE: 12AWG.

A	B	C	D	E	F	G	H
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm
36.14 918	27.76 705	15.24 387	14.65 372	15.28 388	24.80 630	1.57 40	2.49 63.2



SIDE VIEW

Performance Data - (50/60 HZ)

Nom Cap. MBtuh	Evaporator Air		CONDENSER AIR ENTERING Deg. F																	
			75			85			95			105			115			120		
			Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw
			Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen	
48	1300	72	54.4	26.5	4.0	52.4	25.9	4.3	49.9	25.1	4.6	46.1	32.9	5.0	44.3	32.3	5.4	41.9	31.2	5.6
		67	50.3	32.9	3.9	47.8	32.1	4.2	45.0	31.0	4.5	41.1	40.5	4.9	39.1	40.0	5.1	36.8	38.8	5.3
		62	45.5	38.8	3.8	42.8	37.6	4.1	40.1	36.3	4.3	36.6	47.3	4.6	34.9	45.8	4.9	33.3	43.7	5.0
		57	43.3	40.8	3.8	41.3	39.0	4.0	39.2	37.0	4.2	36.3	47.6	4.6	35.0	45.8	4.9	33.4	43.7	5.0
	1500	72	55.1	27.4	4.1	53.2	26.9	4.4	50.7	26.2	4.7	46.9	34.5	5.1	45.0	34.1	5.5	42.7	33.0	5.7
		67	51.2	34.7	4.0	48.8	34.0	4.3	46.0	33.1	4.6	41.9	43.4	5.0	39.8	42.9	5.2	37.5	41.6	5.4
		62	46.6	41.4	3.9	44.0	40.1	4.2	41.2	38.9	4.4	37.9	49.6	4.8	36.6	47.9	5.0	34.9	45.7	5.2
		57	45.3	42.7	3.9	43.2	40.7	4.2	41.0	38.7	4.4	37.8	49.6	4.8	36.5	47.9	5.0	34.9	45.7	5.2
	1700	72	55.6	28.2	4.2	53.7	27.8	4.5	51.3	27.2	4.8	47.5	36.1	5.2	45.6	35.7	5.6	43.2	34.7	5.8
		67	51.9	36.4	4.1	49.5	35.8	4.4	46.8	35.0	4.7	42.5	46.1	5.1	40.4	45.5	5.4	38.0	44.3	5.5
		62	47.5	43.7	4.0	45.0	42.5	4.3	42.5	40.1	4.6	39.2	51.4	4.9	37.9	49.7	5.2	36.1	47.4	5.4
		57	46.9	44.2	4.0	44.9	42.3	4.3	42.5	40.1	4.6	39.2	51.4	4.9	37.9	49.7	5.2	36.1	47.3	5.4
60	1450	72	69.7	34.1	5.2	67.3	33.3	5.6	64.0	32.3	5.9	58.5	41.7	6.5	56.2	41.0	6.9	53.2	39.6	7.1
		67	64.5	42.3	5.0	61.4	41.2	5.4	57.7	39.8	5.8	52.1	51.4	6.2	49.6	50.8	6.5	46.7	49.3	6.7
		62	58.3	49.8	4.9	54.9	48.2	5.2	51.5	46.6	5.5	46.4	60.0	5.9	44.3	58.1	6.2	42.3	55.5	6.4
		57	55.5	52.4	4.8	53.0	50.0	5.1	50.3	47.5	5.4	46.0	60.3	5.9	44.4	58.2	6.2	42.3	55.5	6.5
	1650	72	70.6	35.2	5.3	68.2	34.6	5.7	65.1	33.7	6.1	59.5	43.8	6.6	57.1	43.2	7.0	54.2	41.9	7.3
		67	65.7	44.6	5.2	62.6	43.7	5.5	59.0	42.6	5.9	53.2	55.1	6.4	50.5	54.4	6.7	47.6	52.8	6.9
		62	59.8	53.2	5.0	56.4	51.6	5.4	52.8	49.9	5.7	48.0	63.0	6.1	46.4	60.8	6.5	44.3	58.0	6.7
		57	58.1	54.9	5.0	55.4	52.3	5.3	52.6	49.7	5.7	48.0	63.0	6.1	46.4	60.8	6.5	44.2	58.0	6.7
	1850	72	71.3	36.2	5.4	68.8	35.7	5.8	65.8	35.0	6.2	60.3	45.8	6.7	57.8	45.3	7.2	54.8	44.0	7.4
		67	66.5	46.7	5.3	63.5	46.0	5.6	60.0	45.0	6.0	54.0	58.5	6.5	51.2	57.8	6.9	48.3	56.2	7.1
		62	60.9	56.1	5.1	57.7	54.5	5.5	54.5	51.5	5.9	49.8	65.3	6.3	48.1	63.1	6.7	45.8	60.1	6.9
		57	60.1	56.8	5.1	57.5	54.3	5.5	54.5	51.5	5.9	49.8	65.3	6.3	48.1	63.1	6.7	45.8	60.1	6.9
70	1600	72	79.2	37.7	6.5	76.4	36.8	7.0	72.7	35.7	7.4	71.4	35.7	8.1	68.6	35.2	8.6	65.0	33.9	9.0
		67	73.3	46.7	6.3	69.7	45.5	6.8	65.5	44.0	7.2	63.6	44.1	7.8	60.6	43.5	8.2	57.1	42.2	8.5
		62	66.2	55.1	6.1	62.3	53.3	6.5	58.5	51.5	6.9	56.7	51.4	7.4	54.1	49.8	7.8	51.7	47.5	8.1
		57	63.0	57.9	6.1	60.2	55.3	6.5	57.1	52.5	6.8	56.2	51.7	7.4	54.2	49.8	7.8	51.7	47.5	8.1
	1800	72	80.2	38.9	6.6	77.4	38.2	7.1	73.9	37.2	7.6	72.7	37.5	8.3	69.8	37.0	8.8	66.1	35.9	9.1
		67	74.6	49.3	6.5	71.1	48.3	6.9	67.0	47.0	7.4	64.9	47.2	8.0	61.7	46.6	8.4	58.1	45.3	8.6
		62	67.9	58.8	6.3	64.0	57.0	6.7	60.0	55.2	7.1	58.7	53.9	7.7	56.7	52.1	8.1	54.0	49.7	8.4
		57	66.0	60.7	6.2	62.9	57.8	6.7	59.8	55.0	7.1	58.6	53.9	7.7	56.6	52.1	8.1	54.0	49.7	8.4
	2000	72	80.9	40.0	6.8	78.2	39.5	7.3	74.7	38.7	7.8	73.6	39.2	8.4	70.6	38.8	9.0	66.9	37.7	9.3
		67	75.5	51.7	6.6	72.1	50.9	7.1	68.1	49.8	7.6	65.9	50.1	8.2	62.5	49.5	8.6	58.9	48.1	8.9
		62	69.2	62.0	6.5	65.6	60.3	6.9	61.9	57.0	7.4	60.8	55.9	7.9	58.8	54.0	8.4	56.0	51.5	8.7
		57	68.3	62.8	6.4	65.3	60.1	6.9	61.9	57.0	7.4	60.8	55.9	7.9	58.8	54.0	8.4	56.0	51.5	8.7

Multipliers to Determine the Performance With Other Indoor Coils

Condenser N. Cap. MBtuh	Evaporator N. Cap. MBtuh	Cooling Cap.	Power
18	24	1.10	1.07
24	30	1.05	1.05
30	36	1.03	1.05
36	42	1.04	1.05
48	60	1.05	1.05
60	70	1.02	1.03

Notes:

1. Net Capacities shown include a deduction for evaporator fan motor heat.

2. Formulas:

Leaving db= Entering - Sensible Heat Cap./(1.09 x CFM)

Leaving wb= wb corresponding to air leaving coil (hw)

h wb leaving = hwb entering - Total Cap(Btuh)/(4.5 X CFM)

3. Direct Interpolation Permissible. Do not extrapolate.



Electrical Data

COOL ONLY MODELS

Nominal Cap. MBtuh	OUTDOOR MODEL	Power Supply	Compressor		Fan
			FLA	LRA	FLA
12	38HHR012DS70	220-240/1/50	5.8	31.0	1.0
	38HHR012US70	220-240/1/50	5.8	31.0	1.0
18	38HRC018US70	220-240/1/50	9.7	51.0	1.0
	38HHR018US70	220-240/1/50	9.7	51.0	1.0
	38HRC018DS70	220-240/1/50	9.7	51.0	1.0
	38HRC018US70	220-240/1/50	9.7	51.0	1.0
	38HHR018US70	220-240/1/50	9.7	51.0	1.0
24	38HRC024US70	220-240/1/50	14.0	58.0	1.0
	38HHR024US70	220-240/1/50	14.0	58.0	1.0
	38HRC024DS70	220-240/1/50	14.0	58.0	1.0
30	38HRC030US70	220-240/1/50	13.4	85.0	1.0
	38HRC030DS70	220-240/1/50	13.4	85.0	1.0
36	38HRC036US70	220-240/1/50	13.4	85.0	1.0
	38HRC036DS70	220-240/1/50	17.0	90.0	1.0
48	38HRC048US90	400/3/50	6.7	53.0	2.3
	38HRC048DS90	400/3/50	6.7	53.0	2.3
60	38HRC060DS90	400/3/50	9.1	82.0	2.3
	38HRC060US90	400/3/50	9.1	82.0	2.3

HEAT PUMP MODELS

Nominal Cap. MBtuh	OUTDOOR MODEL	Power Supply	Compressor		Fan
			FLA	LRA	FLA
12	38HQR012US70	220-240/1/50	5.8	31.0	1.0
18	38HQR018US70	220-240/1/50	9.7	51.0	1.0
24	38HQR024US70	220-240/1/50	14.0	58.0	1.0

LEGEND

FLA — Full Load Amps

LRA — Locked Rotor Amps

RLA — Rated Load Amps

MCA — Minimum Circuit Amps

MOCP — Maximum Over current Protection Amps



Detailed Performance Data – Matching 38HK with 42TX

Nom Cap. Mbtuh	Evaporator Air		CONDENSER AIR ENTERING Deg. F																							
	CFM	EWB	75				85				95				105				115				120			
			Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw						
			Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen							
12	400	72	15.4	8.4	1.2	14.9	8.2	1.3	14.2	7.9	1.4	13.4	7.6	1.5	12.5	7.3	1.6	11.9	6.9	1.7						
		67	14.3	10.4	1.2	13.6	10.1	1.3	12.8	9.8	1.4	11.9	9.4	1.5	11.0	9.0	1.5	10.5	8.6	1.6						
		62	12.9	12.2	1.2	12.2	11.8	1.2	11.4	11.4	1.3	10.6	11.0	1.4	9.9	10.3	1.5	9.4	9.8	1.5						
		57	12.3	12.9	1.2	11.7	12.3	1.2	11.1	11.7	1.3	10.5	11.0	1.4	9.9	10.3	1.5	9.4	9.8	1.5						
	450	72	15.6	8.7	1.3	15.1	8.5	1.4	14.4	8.3	1.4	13.6	8.0	1.5	12.7	7.7	1.6	12.1	7.3	1.7						
		67	14.6	11.0	1.2	13.9	10.7	1.3	13.1	10.4	1.4	12.2	10.1	1.5	11.2	9.7	1.6	10.7	9.2	1.6						
		62	13.2	13.1	1.2	12.5	12.7	1.3	11.7	12.3	1.4	11.0	11.5	1.4	10.3	10.8	1.5	9.8	10.3	1.6						
		57	12.9	13.5	1.2	12.3	12.8	1.3	11.7	12.2	1.4	11.0	11.5	1.4	10.3	10.8	1.5	9.8	10.3	1.6						
	500	72	15.8	8.9	1.3	15.2	8.8	1.4	14.6	8.6	1.5	13.8	8.4	1.6	12.9	8.1	1.7	12.2	7.7	1.7						
		67	14.7	11.5	1.3	14.1	11.3	1.3	13.3	11.1	1.4	12.4	10.7	1.5	11.4	10.3	1.6	10.8	9.8	1.7						
		62	13.5	13.8	1.2	12.8	13.4	1.3	12.1	12.7	1.4	11.4	11.9	1.5	10.7	11.2	1.6	10.2	10.7	1.6						
		57	13.3	13.9	1.2	12.7	13.3	1.3	12.1	12.7	1.4	11.4	11.9	1.5	10.7	11.2	1.6	10.2	10.7	1.6						
18	450	72	22.6	11.2	2.07	21.8	11.0	2.23	20.7	10.6	2.38	19.6	10.2	2.55	18.3	9.8	2.72	17.4	9.3	2.82						
		67	20.9	13.9	2.02	19.9	13.6	2.17	18.7	13.1	2.31	17.4	12.6	2.46	16.1	12.1	2.58	15.3	11.5	2.66						
		62	18.9	16.4	1.97	17.8	15.9	2.09	16.7	15.3	2.21	15.5	14.7	2.33	14.4	13.9	2.46	13.7	13.2	2.54						
		57	18.0	17.3	1.94	17.2	16.5	2.07	16.3	15.6	2.19	15.4	14.8	2.33	14.4	13.9	2.46	13.7	13.2	2.55						
	550	72	22.9	11.6	2.12	22.1	11.4	2.28	21.1	11.1	2.43	19.9	10.8	2.60	18.6	10.3	2.77	17.7	9.8	2.87						
		67	21.3	14.7	2.07	20.3	14.4	2.22	19.1	14.0	2.37	17.8	13.5	2.53	16.4	13.0	2.65	15.6	12.3	2.72						
		62	19.3	17.5	2.02	18.3	17.0	2.16	17.1	16.4	2.28	16.1	15.4	2.41	15.1	14.5	2.55	14.3	13.8	2.63						
		57	18.8	18.1	2.00	17.9	17.2	2.14	17.0	16.4	2.28	16.1	15.5	2.41	15.1	14.5	2.55	14.3	13.8	2.63						
	650	72	23.1	11.9	2.17	22.3	11.8	2.33	21.3	11.5	2.48	20.2	11.2	2.65	18.8	10.8	2.82	17.9	10.3	2.93						
		67	21.5	15.4	2.12	20.6	15.2	2.26	19.4	14.8	2.42	18.1	14.3	2.57	16.7	13.8	2.71	15.8	13.1	2.79						
		62	19.7	18.5	2.07	18.7	18.0	2.21	17.7	17.0	2.36	16.7	16.0	2.49	15.7	15.0	2.63	14.9	14.3	2.72						
		57	19.5	18.7	2.05	18.6	17.9	2.21	17.7	17.0	2.36	16.7	16.0	2.49	15.7	15.0	2.63	14.9	14.3	2.72						
24	450	72	29.0	14.4	2.67	27.9	14.1	2.87	26.6	13.7	3.07	25.1	13.2	3.28	23.4	12.6	3.50	22.3	12.0	3.63						
		67	26.8	17.9	2.60	25.5	17.4	2.79	24.0	16.9	2.98	22.4	16.2	3.16	20.7	15.6	3.33	19.7	14.8	3.42						
		62	24.2	21.1	2.53	22.8	20.4	2.69	21.4	19.7	2.85	19.9	18.9	3.00	18.5	17.8	3.17	17.6	16.9	3.27						
		57	23.0	22.2	2.50	22.0	21.2	2.66	20.9	20.1	2.81	19.8	19.0	2.99	18.5	17.8	3.17	17.6	16.9	3.28						
	550	72	29.3	14.9	2.73	28.3	14.6	2.93	27.0	14.3	3.13	25.6	13.8	3.35	23.8	13.3	3.56	22.6	12.6	3.69						
		67	27.3	18.9	2.67	26.0	18.5	2.86	24.5	18.0	3.05	22.8	17.4	3.25	21.1	16.7	3.41	20.0	15.8	3.50						
		62	24.8	22.5	2.60	23.4	21.8	2.77	21.9	21.1	2.93	20.6	19.9	3.10	19.4	18.6	3.28	18.4	17.7	3.38						
		57	24.1	23.2	2.57	23.0	22.2	2.76	21.9	21.1	2.93	20.6	19.9	3.10	19.4	18.7	3.28	18.4	17.7	3.38						
	650	72	29.6	15.3	2.80	28.6	15.1	2.99	27.3	14.8	3.20	25.9	14.4	3.42	24.1	13.9	3.63	22.9	13.2	3.77						
		67	27.6	19.8	2.73	26.4	19.5	2.91	24.9	19.1	3.11	23.2	18.4	3.31	21.4	17.7	3.49	20.3	16.8	3.60						
		62	25.3	23.7	2.66	24.0	23.1	2.84	22.6	21.8	3.03	21.4	20.6	3.20	20.1	19.3	3.39	19.1	18.4	3.50						
		57	25.0	24.0	2.64	23.9	23.0	2.84	22.7	21.8	3.03	21.4	20.6	3.20	20.1	19.3	3.39	19.1	18.4	3.50						
30	600	72	34.3	16.0	2.71	33.1	15.7	2.92	31.5	15.2	3.12	29.7	14.6	3.33	27.8	14.0	3.55	26.4	13.3	3.69						
		67	31.7	19.9	2.65	30.2	19.4	2.84	28.4	18.7	3.03	26.5	18.0	3.22	24.5	17.3	3.38	23.3	16.4	3.48						
		62	28.7	23.4	2.57	27.0	22.7	2.74	25.3	21.9	2.89	23.6	21.0	3.05	21.9	19.8	3.22	20.8	18.8	3.33						
		57	27.3	24.7	2.54	26.1	23.5	2.70	24.7	22.4	2.86	23.4	21.1	3.04	21.9	19.8	3.22	20.8	18.8	3.33						
	700	72	34.7	16.6	2.78	33.5	16.3	2.98	32.0	15.8	3.18	30.3	15.4	3.41	28.2	14.7	3.62	26.8	14.0	3.75						
		67	32.3	21.0	2.71	30.8	20.6	2.90	29.0	20.0	3.10	27.0	19.3	3.31	25.0	18.5	3.46	23.7	17.6	3.56						
		62	29.4	25.0	2.64	27.7	24.3	2.82	26.0	23.5	2.98	24.4	22.1	3.15	22.9	20.7	3.33	21.8	19.7	3.44						
		57	28.6	25.8	2.61	27.2	24.6	2.80	25.9	23.4	2.98	24.4	22.1	3.15	22.9	20.7	3.33	21.8	19.7	3.44						
	800	72	35.1	17.0	2.84	33.9	16.8	3.04	32.4	16.5	3.25	30.7	16.0	3.47	28.6	15.4	3.69	27.2	14.7	3.83						
		67	32.7	22.0	2.78	31.2	21.7	2.96	29.5	21.2	3.17	27.4	20.5	3.36	25.3	19.7	3.55	24.1	18.7	3.65						
		62	30.0	26.4	2.70	28.4	25.7	2.89	26.8	24.2	3.08	25.3	22.9	3.26	23.8	21.5	3.45	22.6	20.4	3.56						
		57	29.6	26.7	2.69	28.3	25.6	2.89	26.8	24.2	3.08	25.3	22.9	3.26	23.8	21.5	3.45	22.6	20.4	3.56						
36	800	72	40.7	20.4	3.43	39.2	20.0	3.69	37.4	19.4	3.94	35.3	18.6	4.21	33.0	17.8	4.49	31.3	16.9	4.66						
		67	37.6	25.4	3.35	35.8	24.7	3.59	33.7	23.9	3.83	31.4	23.0	4.07	29.1	22.1	4.27	27.6	21.0	4.40						
		62	34.0	29.9	3.25	32.0	28.9	3.46	30.0	27.9	3.66	28.0	26.8	3.86	26.0	25.3	4.08	24.7	24.0	4.21						
		57	32.4	31.4	3.21	30.9	30.0	3.42	29.3	28.5	3.62	27.8	27.0	3.85	26.0	25.3	4.08	24.7	24.0	4.21						
	950	72	41.2	21.1	3.51	39.8	20.8	3.76	38.0	20.2	4.02	35.9	19.6	4.31	33.5	18.8	4.58	31.8	17.8	4.74						
		67	38.3	26.8	3.43	36.5	26.2	3.67	34.4	25.5	3.92	32.1	24.6	4.18	29.6	23.6	4.38	28.1	22.4	4.50						
		62	34.9	31.9	3.34	32.9	30.9	3.57	30.8	29.9	3.76	29.0	28.1	3.98	27.2	26.4	4.21	25.8	25.1	4.35						
		57	33.9	32.9	3.30	32.3	31.4	3.54	30.7	29.8	3.76	29.0	28.2	3.98	27.2	26.4	4.21	25.9	25.1	4.35						
	1100	72	41.6	21.7	3.60	40.2	21.4	3.85	38.4	21.0	4.11	36.4	20.5	4.39	33.9	19.7	4.67	32.2	18.7	4.84						
		67	38.8	28.0	3.51	37.1	27.6	3.74	35.0	27.0	4.00	32.6	26.1	4.25	30.0	25.1	4.48	28.5	23.8	4.62						
		62	35.6	33.6	3.42	33.7	32.7	3.65	31.8	30.9	3.90	30.0	29.2	4.12	28.2	27.4	4.36	26.8	26.0	4.50						
		57	35.1	34.1	3.40	33.6	32.6	3.65	31.8	30.9	3.90	30.0	29.2	4.12	28.2	27.4	4.36	26.8	26.0	4.50						

Accessory 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	018-070	25,100
KFCEH0901N10	10	230/1	10	None	018-070	31,400
KFCEH3201F20	20	230/1	5, 20	Fuse‡	030-070	62,800
KFCEH1601315	15	230/3	5, 15	None	036-070	47,100
KFCEH2001318	18	230/3	6, 12, 18	None	042-070	56,500
KFCEH3401F24	24	230/3*	8, 16, 24	Fuse	048, 060, 070	78,300
KFCEH3501F30	30	230/3*	10, 20, 30	Fuse	048, 060, 070	94,100
KFCEH2401C05	5	230/1	5	Circuit Breaker	018-060	15,700
KFCEH2501C08	8	230/1	8	Circuit Breaker	018-070	25,100
KFCEH2601C10	10	230/1	10	Circuit Breaker	018-070	31,400
KFCEH3301C20	20	230/1	5, 20	Circuit Breaker	030-070	62,800
KFCEH2901N09	9	230/1†	3, 9	None	036-070	28,200
KFCEH3001F15	15	230/1	5, 15	Fuse‡	024-070	47,100
KFCEH3101C15	15	230/1	5, 15	Circuit Breaker	024-070	47,100

* Field convertible to 1 phase.

† Field convertible to 3 phase.

‡ Single point wiring kit required for these heaters in Canada.

** Blower motor heat not included.

Carrier accessories

ITEM	ACCESSORY PART NO.*	FAN COIL SIZE USED WITH
Disconnect Kit	KFADK0101DSC	Cooling controls and heaters 3- through 10-kw
Downflow Base Kit	KFACB0101CFB	018, 024
KFACB0201CFB	030, 036	
KFACB0301CFB	038, 042, 048, 060	
KFACB0401CFB	054, 070	
Downflow Conversion Kit	KFADC0201SLP	Slope Coil Units—018, 024, 030, 036, 042
KFADC0401ACL	A-Coil Units—038, 048, 054, 060, 070	
Single-Point Wiring Kit	KFASP0101SPK	Only with 15- and 20-kw Fused Heaters
Filter Kit (12 Pack)	KFAFK0112SML	018, 024
KFAFK0212MED	030, 036	
KFAFK0312LRG	038, 042, 048, 060	
KFAFK0412XXL	054, 070	
Power Plug Kit (25 Pack)	KFAPP0125PLG	FA4A 018-060
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

* Factory-authorized and listed, field installed.



Detailed Performance Data – Matching 38HK with FB4A

Nom Cap. MBtuh	Evaporator Air		CONDENSER AIR ENTERING Deg. F																	
			75				85			95			105			115			120	
	CFM	EWB	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw
			Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen		Tot	Sen	
18	525	72	23.6	11.2	2.19	22.8	11.0	2.35	21.7	10.6	2.51	20.5	10.2	2.69	19.1	9.8	2.87	18.1	9.4	2.97
		67	21.9	13.9	2.13	20.8	13.6	2.29	19.6	13.1	2.44	18.3	12.6	2.59	16.9	12.1	2.73	15.9	11.7	2.81
		62	19.8	16.4	2.07	18.6	15.9	2.21	17.4	15.3	2.33	16.3	14.7	2.46	15.1	13.9	2.60	14.4	13.2	2.68
		57	18.8	17.3	2.05	18.0	16.5	2.18	17.0	15.6	2.31	16.1	14.8	2.45	15.1	13.9	2.60	14.4	13.2	2.69
	600	72	23.9	11.6	2.24	23.1	11.4	2.40	22.1	11.1	2.99	20.9	10.8	2.75	19.5	10.3	2.92	18.4	10.0	3.02
		67	22.3	14.7	2.19	21.2	14.4	2.34	20.0	14.0	2.50	18.6	13.5	2.67	17.2	13.0	2.79	16.2	12.6	2.87
		62	20.3	17.5	2.13	19.1	17.0	2.27	17.9	16.4	2.40	16.8	15.4	2.54	15.8	14.5	2.69	15.1	13.8	2.77
		57	19.7	18.1	2.11	18.8	17.2	2.26	17.8	16.4	2.40	16.8	15.4	2.54	15.8	14.5	2.69	15.1	13.8	2.77
	675	72	24.2	11.9	2.29	23.3	11.8	2.45	22.3	11.5	2.62	21.1	11.2	2.80	19.7	10.8	2.98	18.7	10.5	3.09
		67	22.6	15.4	2.24	21.5	15.2	2.39	20.3	14.8	2.55	18.9	14.3	2.71	17.4	13.8	2.86	16.4	13.4	2.95
		62	20.7	18.5	2.18	19.6	18.0	2.33	18.5	17.0	2.49	17.4	16.0	2.63	16.4	15.0	2.78	15.6	14.3	2.87
		57	20.4	18.7	2.17	19.5	17.9	2.33	18.5	17.0	2.49	17.4	16.0	2.63	16.4	15.0	2.78	15.6	14.3	2.87
24	550	72	28.7	13.3	2.67	27.7	13.0	2.87	26.4	12.6	3.07	24.9	12.1	3.28	23.3	11.6	3.50	22.0	11.2	3.63
		67	26.6	16.5	2.60	25.3	16.1	2.79	23.8	15.6	2.98	22.2	15.0	3.16	20.5	14.4	3.33	19.3	13.9	3.42
		62	24.0	19.5	2.53	22.6	18.8	2.69	21.2	18.2	2.85	19.8	17.5	3.00	18.4	16.4	3.17	17.5	15.7	3.27
		57	22.8	20.5	2.50	21.8	19.5	2.66	20.7	18.6	2.81	19.6	17.6	2.99	18.4	16.4	3.17	17.5	15.7	3.28
	625	72	29.1	13.8	2.73	28.1	13.5	2.93	26.8	13.2	3.13	25.4	12.7	3.35	23.6	12.2	3.56	22.4	11.8	3.69
		67	27.1	17.4	2.67	25.8	17.1	2.88	24.3	16.6	3.05	22.6	16.0	3.25	20.9	15.4	3.41	19.7	14.9	3.50
		62	24.6	20.8	2.60	23.2	20.1	2.77	21.8	19.5	2.93	20.5	18.3	3.10	19.2	17.2	3.28	18.3	16.4	3.38
		57	23.9	21.4	2.57	22.8	20.4	2.76	21.7	19.4	2.93	20.4	18.3	3.10	19.2	17.2	3.28	18.3	16.4	3.38
	700	72	29.4	14.1	2.80	28.3	14.0	2.99	27.1	13.7	3.20	25.7	13.3	3.42	23.9	12.8	3.63	22.7	12.4	3.77
		67	27.4	18.3	2.73	26.2	18.0	2.91	24.7	17.6	3.11	23.0	17.0	3.31	21.2	16.3	3.49	20.0	15.9	3.60
		62	25.1	21.9	2.66	23.8	21.3	2.84	22.5	20.1	3.03	21.2	19.0	3.20	19.9	17.8	3.39	19.0	17.0	3.50
		57	24.8	22.2	2.64	23.7	21.2	2.84	22.5	20.1	3.03	21.2	19.0	3.20	19.9	17.8	3.39	19.0	17.0	3.50
30	1000	72	35.6	18.4	2.89	34.3	18.0	3.11	32.7	17.5	3.32	30.8	16.8	3.55	28.8	16.1	3.78	27.3	15.5	3.92
		67	32.9	22.9	2.82	31.3	22.3	3.02	29.4	21.6	3.22	27.5	20.7	3.42	25.4	19.9	3.60	24.0	19.3	3.70
		62	29.8	27.0	2.74	28.0	26.1	2.91	26.3	25.2	3.08	24.5	24.2	3.25	22.7	22.8	3.43	21.7	21.7	3.54
		57	28.3	28.4	2.70	27.0	27.1	2.88	25.7	25.7	3.05	24.3	24.3	3.24	22.7	22.8	3.43	21.7	21.7	3.55
	1150	72	36.0	19.1	2.96	34.8	18.7	3.17	33.2	18.2	3.39	31.4	17.7	3.62	29.3	16.9	3.85	27.8	16.4	3.99
		67	33.5	24.1	2.89	31.9	23.6	3.09	30.1	23.0	3.30	28.1	22.2	3.52	25.9	21.3	3.69	24.4	20.7	3.79
		62	30.5	28.8	2.81	28.8	27.9	3.00	27.0	27.0	3.17	25.3	25.4	3.35	23.8	23.8	3.55	22.7	22.7	3.66
		57	29.6	29.7	2.78	28.3	28.3	2.99	26.9	26.9	3.17	25.3	25.4	3.35	23.8	23.8	3.55	22.7	22.7	3.66
	1300	72	36.4	19.6	3.03	35.1	19.3	3.24	33.6	18.9	3.46	31.8	18.4	3.69	29.6	17.8	3.93	28.1	17.2	4.07
		67	33.9	25.3	2.96	32.4	24.9	3.15	30.6	24.3	3.37	28.5	23.6	3.58	26.3	22.6	3.77	24.7	22.0	3.89
		62	31.1	30.3	2.88	29.5	29.5	3.07	27.8	27.9	3.28	26.3	26.3	3.47	24.7	24.7	3.67	23.5	23.5	3.79
		57	30.7	30.7	2.86	29.4	29.4	3.07	27.8	27.9	3.28	26.2	26.3	3.47	24.7	24.7	3.67	23.5	23.5	3.79
36	1050	72	40.8	20.8	3.50	39.3	20.4	3.77	37.4	19.7	4.02	35.3	19.0	4.30	33.0	18.2	4.59	31.3	17.5	4.76
		67	37.7	25.9	3.41	35.9	25.2	3.66	33.7	24.4	3.90	31.5	23.4	4.15	29.2	22.5	4.36	27.5	21.8	4.49
		62	34.1	30.5	3.32	32.1	29.5	3.53	30.1	28.5	3.73	28.1	27.4	3.94	26.1	25.7	4.16	24.9	24.6	4.29
		57	32.4	32.1	3.28	31.0	30.6	3.49	29.4	29.1	3.69	27.8	27.5	3.93	26.1	25.8	4.16	24.9	24.6	4.30
	1200	72	41.3	21.5	3.59	39.9	21.2	3.84	38.1	20.6	4.11	36.0	20.0	4.39	33.6	19.2	4.67	31.8	18.5	4.84
		67	38.4	27.3	3.50	36.6	26.7	3.74	34.5	26.0	4.00	32.2	25.1	4.27	29.7	24.1	4.47	28.0	23.4	4.59
		62	34.9	32.5	3.40	33.0	31.5	3.64	30.9	30.5	3.84	29.0	28.7	4.06	27.3	26.9	4.30	26.0	25.7	4.44
		57	34.0	33.6	3.37	32.4	32.0	3.62	30.8	30.4	3.84	29.0	28.7	4.06	27.3	26.9	4.30	26.0	25.7	4.44
	1350	72	41.7	22.1	3.67	40.2	21.9	3.93	38.5	21.4	4.19	36.4	20.9	4.48	34.0	20.1	4.77	32.2	19.5	4.94
		67	38.9	28.6	3.59	37.1	28.1	3.82	35.1	27.5	4.09	32.6	26.6	4.34	30.1	25.6	4.57	28.4	24.9	4.71
		62	35.6	34.3	3.49	33.8	33.4	3.72	31.9	31.5	3.98	30.1	29.7	4.20	28.3	27.9	4.45	26.9	26.6	4.59
		57	35.2	34.7	3.47	33.6	33.2	3.72	31.9	31.5	3.98	30.1	29.7	4.20	28.3	27.9	4.45	26.9	26.6	4.59



Detailed Performance Data – Matching 38HK with FB4A

Nom Cap. Mbtuh	Evaporator Air		CONDENSER AIR ENTERING Deg. F																	
	CFM	EWB	75			85			95			105			115			120		
			Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw	Cap. MBtuh		Tot Sys Kw
			Tot	Sen	Kw	Tot	Sen	Kw	Tot	Sen	Kw	Tot	Sen	Kw	Tot	Sen	Kw	Tot	Sen	Kw
48	1300	72	54.4	26.5	4.03	52.4	25.9	4.33	49.9	25.1	4.62	47.1	24.2	4.94	44.0	23.1	5.27	41.7	22.3	5.47
		67	50.3	32.9	3.93	47.8	32.1	4.21	45.0	31.0	4.49	42.0	29.8	4.77	38.9	28.6	5.02	36.6	27.8	5.16
		62	45.5	38.8	3.82	42.8	37.6	4.06	40.1	35.3	4.29	37.4	34.8	4.53	34.7	32.8	4.78	33.2	31.3	4.94
		57	43.3	40.8	3.77	41.3	39.0	4.01	39.2	37.0	4.25	37.1	35.0	4.51	34.8	32.8	4.78	33.2	31.3	4.95
	1500	72	55.1	27.4	4.12	53.2	26.9	4.42	50.7	26.2	4.72	48.0	25.4	5.05	44.8	24.4	5.37	42.4	23.6	5.56
		67	51.2	34.7	4.03	48.8	34.0	4.31	46.0	33.1	4.60	42.9	31.9	4.91	39.6	30.7	5.14	37.3	29.8	5.28
		62	46.6	41.4	3.91	44.0	40.1	4.18	41.2	38.9	4.42	38.7	36.5	4.67	36.4	34.3	4.94	34.7	32.7	5.10
		57	45.3	42.7	3.88	43.2	40.7	4.16	41.0	38.7	4.42	38.7	36.5	4.67	36.3	34.3	4.94	34.7	32.7	5.10
	1700	72	55.6	28.2	4.22	53.7	27.8	4.51	51.3	27.2	4.82	48.6	26.6	5.15	45.3	25.6	5.48	43.0	24.8	5.68
		67	51.9	36.4	4.12	49.5	35.8	4.39	46.8	35.0	4.70	43.5	33.9	4.99	40.1	32.6	5.26	37.8	31.7	5.42
		62	47.5	43.7	4.01	45.0	42.5	4.28	42.5	40.1	4.58	40.1	37.9	4.83	37.7	35.6	5.11	35.9	33.9	5.28
		57	46.9	44.2	3.99	44.9	42.3	4.28	42.5	40.1	4.58	40.1	37.9	4.83	37.7	35.6	5.11	35.9	33.9	5.28
60	1450	72	69.7	34.1	5.18	67.3	33.3	5.55	64.0	32.3	5.93	60.4	31.1	6.34	56.5	29.7	6.76	53.5	28.6	7.02
		67	64.5	42.3	5.04	61.4	41.2	5.40	57.7	39.8	5.76	53.9	38.3	6.12	49.9	36.8	6.43	47.0	35.7	6.62
		62	58.3	49.8	4.90	54.9	48.2	5.21	51.5	46.6	5.51	48.0	44.7	5.81	44.6	42.1	6.14	42.5	40.2	6.33
		57	55.5	52.4	4.83	53.0	50.0	5.15	50.3	47.5	5.44	47.6	44.9	5.79	44.6	42.1	6.14	42.5	40.2	6.34
	1650	72	70.6	35.2	5.29	68.2	34.6	5.66	65.1	33.7	6.06	61.6	32.6	6.48	57.4	31.3	6.89	54.4	30.3	7.13
		67	65.7	44.6	5.16	62.6	43.7	5.52	59.0	42.6	5.90	55.0	41.0	6.29	50.8	39.4	6.59	47.8	38.3	6.77
		62	59.8	53.2	5.02	56.4	51.6	5.37	52.8	49.9	5.66	49.7	46.9	5.99	46.6	44.0	6.34	44.5	42.0	6.55
		57	58.1	54.9	4.97	55.4	52.3	5.34	52.6	49.7	5.66	49.6	46.9	5.99	46.6	44.0	6.34	44.5	42.0	6.55
	1850	72	71.3	36.2	5.41	68.8	35.7	5.79	65.8	35.0	6.18	62.3	34.1	6.61	58.1	32.8	7.03	55.1	31.9	7.28
		67	66.5	46.7	5.29	63.5	46.0	5.63	60.0	45.0	6.03	55.8	43.5	6.40	51.5	41.8	6.75	48.5	40.7	6.95
		62	60.9	56.1	5.15	57.7	54.5	5.49	54.5	51.5	5.87	51.5	48.6	6.20	48.4	45.7	6.56	46.1	43.5	6.78
		57	60.1	56.8	5.12	57.5	54.3	5.49	54.5	51.5	5.87	51.4	48.6	6.20	48.4	45.6	6.56	46.1	43.5	6.78

Multippliers to Determine the Performance With Other Indoor Coils

Condenser N. Cap. MBtuh	Evaporator N. Cap. MBtuh	Cooling Cap.	Power
18	24	1.10	1.07
24	30	1.05	1.05
30	36	1.03	1.05
36	42	1.04	1.05
48	60	1.05	1.05
60	70	1.02	1.03

Notes:

1. Net Capacities shown include a deduction for evaporator fan motor heat.

2. Formulas:

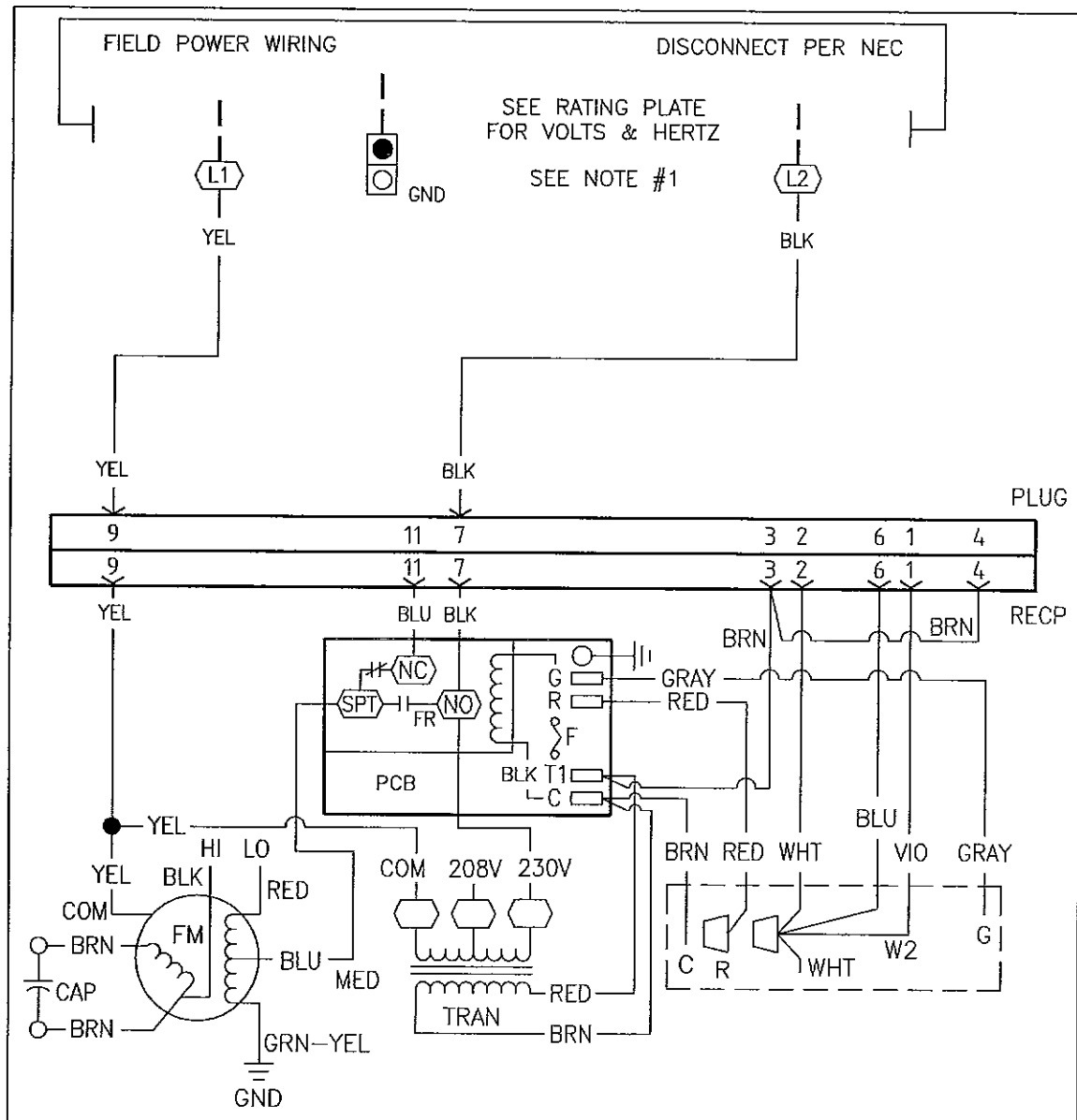
Leaving db= Entering - Sensible Heat Cap./(1.09 x CFM)

Leaving wb= wb corresponding to air leaving coil (hwb)

h wb leaving = hwb entering - Total Cap(Btuh)/(4.5 X CFM)

3. Direct Interpolation Permissible. Do not extrapolate.

Typical Wiring Schematic



Guide Specification

**FB4A HIGH STATIC CHILLED
WATER FAN COIL
NORMAL COOLING CAPACITY 1
TO 6 TON,
ELECTRIC HEATER OPTION
(FIELD INSTALLATION)
500:2000 CFM**

**Carrier MODEL NUMBERS FB4A
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 0.7 inch water.

QUALITY ASSURANCE

- Unit shall be rated in accordance with ARI standard # 410/91.
- Installation and adhesive shall meet NFPA90A requirements for flame spread and smoke generation.
- Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
- Unit shall be manufactured in facility registered to ISO9001:2000/BS5750, part 2.

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 1 inch thickness & 32 kg/m³ 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 1 inch 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.

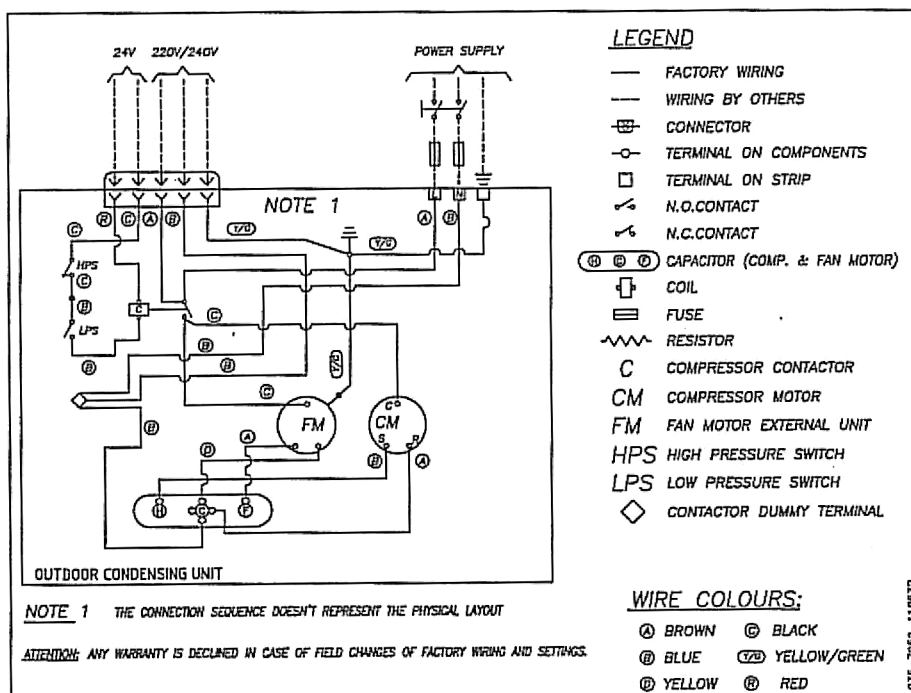
I. Unit control board shall be 24 VAC and UL listed.

Electrical data for units with factory-installed heaters

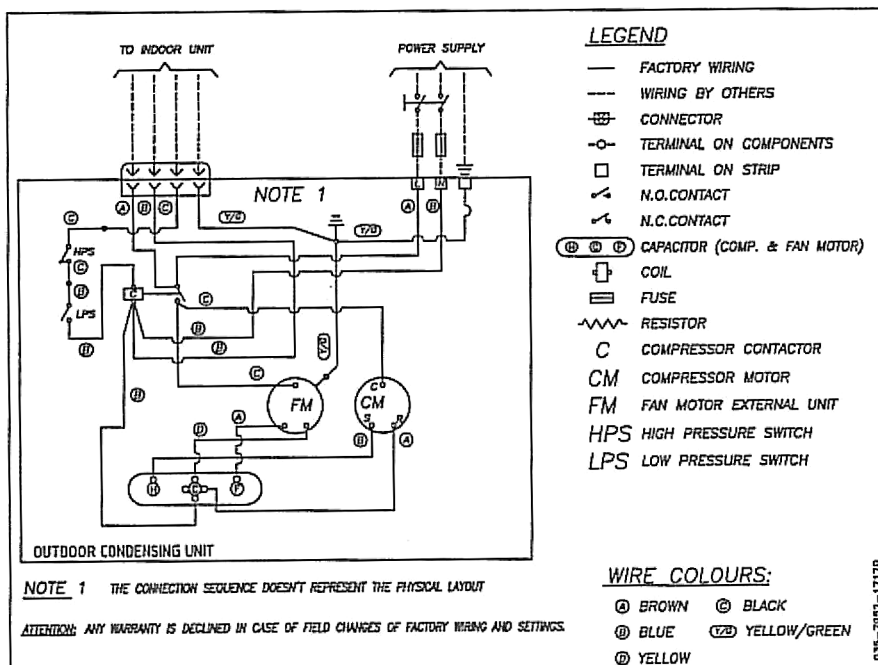
PRODUCT NO.	PHASE/ HERTZ	MOTOR HP	MOTOR FLA	SINGLE CIRCUIT					DUAL CIRCUIT				
				HEATER INSTALLED	HEATER AMPS	MIN. AMPACITY	MAX. OVERCURRENT PROTECTION (208/230)	HEATER AMPS L1/L2	MIN. AMPACITY L1/L2	MAX. OVERCURRENT PROTECTION L1/L2	HEATER AMPS L3/L4	MIN. AMPACITY L3/L4	MAX. OVERCURRENT PROTECTION L3/L4
FA4BNF018005	1/60	1/10	0.9	MKFEH0601N05	18.1/20.0	23.8/26.2	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF018008	1/60	1/10	0.9	MKFEH0801N08	28.9/32.0	37.3/41.2	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF018010	1/60	1/10	0.9	MKFEH0901N10	36.2/40.0	46.4/51.2	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024005	1/60	1/4	1.8	MKFEH0601N05	18.1/20.0	24.9/27.3	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024008	1/60	1/4	1.8	MKFEH0801N08	28.9/32.0	38.4/42.3	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024010	1/60	1/4	1.8	MKFEH0901N10	36.2/40.0	47.5/52.3	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030005	1/60	1/4	1.5	MKFEH0601N05	18.1/20.0	24.5/26.9	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030008	1/60	1/4	1.5	MKFEH0801N08	28.9/32.0	36.0/41.9	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030010	1/60	1/4	1.5	MKFEH0901N10	36.2/40.0	47.2/51.9	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030015	1/60	1/4	1.5	MKFEH3001F15	54.2/59.9	69.7/75.8	70/80	36.2/40.0	47.2/51.9	50/60	18.1/20.0	22.7/25.0	25/25
FA4BNF036005	1/60	1/3	2.4	MKFEH0601N05	18.1/20.0	26.7/28.0	30/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036008	1/60	1/3	2.4	MKFEH0801N08	28.9/32.0	39.2/43.0	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036010	1/60	1/3	2.4	MKFEH0901N10	36.2/40.0	48.3/53.0	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036015	1/60	1/3	2.4	MKFEH3001F15	54.2/59.9	70.8/77.9	80/80	36.2/40.0	48.3/53.0	50/60	18.1/20.0	22.7/25.0	25/25
FA4BNF042010	1/60	1/2	2.9	MKFEH0801N10	36.2/40.0	48.9/53.7	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF042015	1/60	1/2	2.9	MKFEH3001F15	54.2/59.9	71.4/78.5	80/80	36.2/40.0	48.9/53.7	50/60	18.1/20.0	22.7/25.0	25/25
FA4BNF048008	1/60	3/4	4.3	MKFEH0801N08	28.9/32.0	41.5/45.4	45/50	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF048010	1/60	3/4	4.3	MKFEH0901N10	36.2/40.0	50.7/55.4	60/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF048015	1/60	3/4	4.3	MKFEH3001F15	54.2/59.9	73.2/80.3	80/90	36.2/40.0	50.7/55.4	60/60	18.1/20.0	22.7/25.0	25/25
FA4BNF060010	1/60	3/4	5.4	MKFEH0901N10	36.2/40.0	52.0/56.8	60/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF042008	1/60	1/2	2.9	MKFEH0801N08	28.9/32.0	39.8/43.7	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF018005	1/60	1/10	0.9	MKFEH0701D05	18.1/20.0	23.8/26.2	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF018008	1/60	1/10	0.9	MKFEH1201D08	28.9/32.0	37.3/41.2	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF018010	1/60	1/10	0.9	MKFEH1301D10	36.2/40.0	46.4/51.2	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024005	1/60	1/4	1.8	MKFEH0701D05	18.1/20.0	24.9/27.3	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024008	1/60	1/4	1.8	MKFEH1201D08	28.9/32.0	38.4/42.3	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF024010	1/60	1/4	1.8	MKFEH1301D10	36.2/40.0	47.5/52.3	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030005	1/60	1/4	1.5	MKFEH0701D05	18.1/20.0	24.5/26.9	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030010	1/60	1/4	1.5	MKFEH1201D08	28.9/32.0	38.0/41.9	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF030015	1/60	1/4	1.5	MKFEH1301D10	36.2/40.0	47.2/51.9	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036005	1/60	1/3	2.4	MKFEH0701D05	18.1/20.0	25.7/28.0	30/30	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036008	1/60	1/3	2.4	MKFEH1201D08	28.9/32.0	39.2/43.0	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF036010	1/60	1/3	2.4	MKFEH1301D10	36.2/40.0	48.3/53.0	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF042008	1/60	1/2	2.9	MKFEH1201D08	28.9/32.0	39.8/43.7	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF042010	1/60	1/2	2.9	MKFEH1301D10	36.2/40.0	48.9/53.7	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF048008	1/60	3/4	4.3	MKFEH1201D08	28.9/32.0	41.5/45.4	45/50	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF048010	1/60	3/4	4.3	MKFEH1301D10	36.2/40.0	50.7/55.4	60/60	N/A	N/A	N/A	N/A	N/A	N/A
FA4BNF060010	1/60	3/4	5.4	MKFEH1301D10	36.2/40.0	52.0/56.8	60/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF018005	1/60	1/5	1.5	MKFEH0501N05	18.1/20.0	24.5/26.9	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF018008	1/60	1/5	1.5	MKFEH0801N08	28.9/32.0	38.0/41.9	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF018010	1/60	1/5	1.5	MKFEH0901N10	36.2/40.0	47.2/51.9	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF024005	1/60	1/4	1.8	MKFEH0501N05	18.1/20.0	24.9/27.3	25/30	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF024008	1/60	1/4	1.8	MKFEH0801N08	28.9/32.0	38.4/42.3	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF024010	1/60	1/4	1.8	MKFEH0901N10	36.2/40.0	47.5/52.3	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF030005	1/60	1/3	2.4	MKFEH0501N05	18.1/20.0	25.7/28.0	30/30	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF030008	1/60	1/3	2.4	MKFEH0801N08	28.9/32.0	39.2/43.0	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF030010	1/60	1/3	2.4	MKFEH0901N10	36.2/40.0	48.3/53.0	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF036005	1/60	1/3	2.4	MKFEH3001F15	54.2/59.9	70.8/77.9	80/80	36.2/40.0	48.3/53.0	50/60	18.1/20.0	22.7/25.0	25/25
FB4BNF036008	1/60	1/3	2.7	MKFEH0501N05	18.1/20.0	26.0/28.4	30/30	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF036010	1/60	1/3	2.7	MKFEH0801N08	28.9/32.0	39.5/43.4	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF036015	1/60	1/3	2.7	MKFEH0901N10	36.2/40.0	48.7/53.4	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF042010	1/60	1/2	2.9	MKFEH0901N10	36.2/40.0	48.9/53.7	50/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF042015	1/60	1/2	2.9	MKFEH3001F15	54.2/59.9	71.1/75.5	80/80	36.2/40.0	48.9/53.7	50/60	18.1/20.0	22.7/25.0	25/25
FB4BNF048008	1/60	3/4	4.3	MKFEH0801N08	28.9/32.0	41.5/45.4	40/45	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF048010	1/60	3/4	4.3	MKFEH0901N10	36.2/40.0	50.7/55.4	60/60	N/A	N/A	N/A	N/A	N/A	N/A
FB4BNF048015	1/60	3/4	4.3	MKFEH3001F15	54.2/59.9	73.2/80.3	80/90	36.2/40.0	50.7/55.4	60/60	18.1/20.0	22.7/25.0	25/25
FB4BNF060010	1/60	3/4	5.4	MKFEH0901N10	36.2/40.0	52.0/56.8	60/60	N/A	N/A	N/A	N/A	N/A	N/A

Typical Wiring Schematic 38HK 12-36- 50Hz

220-240V/1Ph 24V Control

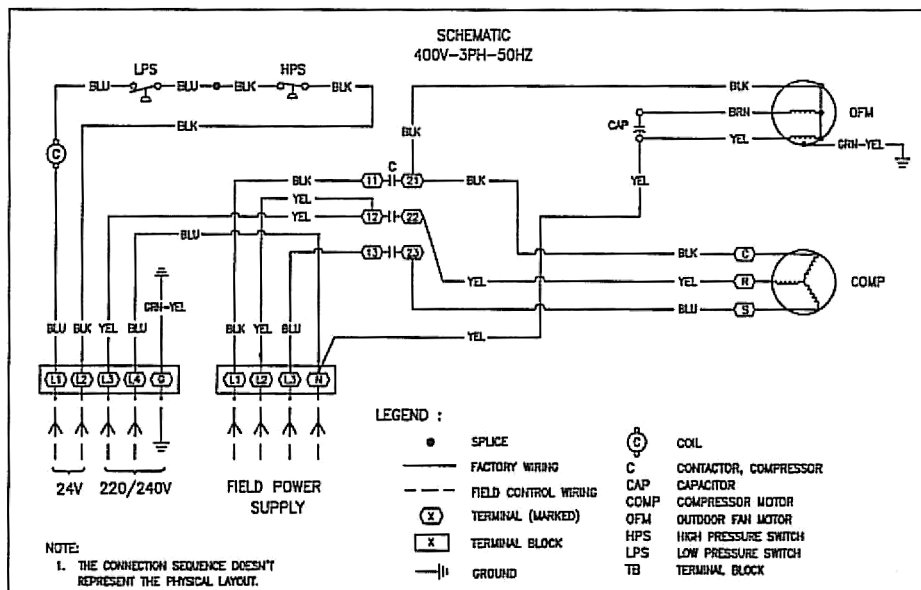


220-240V/1Ph 220V Control

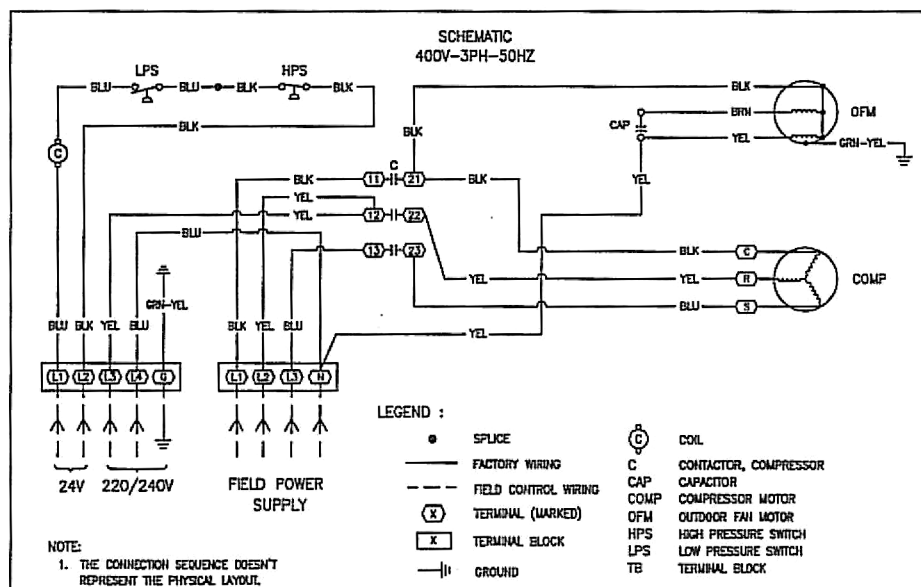


Typical Wiring Schematic 38HK- 48-60 50Hz

400V/3Ph 24V Control



400V/3Ph 220V Control





Application data

Unit selection

Select equipment to match or be slightly less than anticipated peak load. This provides better humidity control, fewer unit cycles, and less part-load operation.

For units used in spaces with high sensible loads, base equipment selection on unit sensible load, not on total anticipated load. Adjust for anticipated room wet bulb temperature to avoid under sizing equipment.

When selecting equipment that has outdoor air introduced into the unit, determine the mix conditions of room air and outdoor air at design conditions. The cooling capacity tables in this literature are based on 80 F edb. To select the proper equipment, adjust for actual dry-bulb and wet-bulb conditions with the required outdoor air.

Unit mounting

Unit leveling — For reliable operation, units should be level in all planes.

Clearance — Provide adequate clearance for airflow. See dimensional drawings for proper clearances. The condensing units are designed for free-blow application. Air inlets and outlets should not be restricted. Outdoor fan external static pressure available is less than 0.1 in. wg.

Unit location — Units may be wall mounted, pad mounted at ground level, roof mounted, or mounted on or under a deck or patio. Be sure that water from roof does not drain directly onto the unit. If 38 Series condensing units are mounted near a wall, the condenser air should discharge away from the wall. This will provide inherent coil protection and the best possible sound and airflow performance.

Winter start — The use of a winter start control may extend the operation range (generally to 35 F or 40 F). Winter start bypasses the low-pressure switch for 3 minutes.

Crankcase heater — Units with low ambient control should be equipped with crankcase heaters to prevent refrigerant migration during compressor off cycle.

Refrigerant lines

General refrigerant line sizing:

1. All charges, line sizing, and capacities are based on runs of 25 ft. For runs over 25 ft, consult the appendix A.

NOTE: The minimum line length should be 10 ft.

MAXIMUM LINE LENGTHS

UNIT	MAXIMUM EQUIVALENT FT	MAXIMUM LIFT — FAN COIL BELOW CONDENSING UNIT	MAXIMUM LIFT — FAN COIL ABOVE CONDENSING UNIT
38HK	50	30*	30*

*Maximum distance permitted is 30 ft from lowest system component to highest system component. For longer line application please refer to appendix A.

2. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, not more than 36 in. should be buried. Provide a minimum 6 in. vertical rise to the service valves to prevent refrigerant migration.

3. The refrigerant lines must be insulated. Use a minimum of 1/2-in. thick insulation. Closed-cell insulation is recommended in all applications.

4. Special consideration should be given to isolating interconnecting tubing from the building structure. Isolate the tubing so that vibration or noise is not transmitted into the structure.

5. The 38 Series system charge is based on rated performance and 25 ft of line.

6. For the supply and return lines, check physical data.

SYSTEM OPERATING CONDITIONS OPERATING LIMITS

TEMPERATURE CONDITIONS	LIMITS
Maximum Cooling Ambient (F)	125
Minimum Cooling Ambient (F) (without accessory low-ambient kit)	55
Minimum Cooling ambient (F) (with accessory low-ambient kit)	35
Saturated Suction Temperature Range Minimum (F) Maximum (F)	20 55
Saturated Condensing Temperature Range Minimum (F) Maximum (F)	60 150
Maximum Compressor Discharge Temperature (F)	275
Minimum Discharge Superheat (F)	60

NOTE: For system controls see Electrical Data.



Controls

Unit operation

NOTE: AUTO fan mode is used as the unit operation example for ALL fan coil units in this section. Contact your local Carrier dealer for operation information in other fan modes.

Fan coil units — Duct free fan coil units have a self-contained control system that determines the set point for fan coil operation, fan mode operation, and heating mode operation (if provided). The un-ducted fan coil units and 42TX units are equipped with a thermostat. For ducted fan coils the field installed thermostat determines the set point for fan mode operation, and electric heat operation (if provided).

On a call for cooling operation by a single fan coil unit, a signal is sent to the 38H outdoor unit and energizes a control relay.

The indoor blower starts according to the normal fan coil unit sequence of operation.

The control relay (in the outdoor unit) initiates operation of a cooling cycle for the compressor. As the set point at the fan coil is satisfied, its individual signal to the 38HK unit stops.

38 Series outdoor condensing unit — The outdoor unit is equipped with a control that monitors the indoor fan coil cooling request.

Unit malfunction — Each unit is equipped with a high-pressure switch (HPS), a low pressure switch (LPS),

Compressor over current protection is achieved by an internal line break overload, which automatically resets when the motor temperature cools to a satisfactory level.