Package Rooftop Units – 60Hz

Quality Assurance
Certificate Reg. No:
04 100 950420

Subject to change without notice

Manufacturing point: Jeddah, Saudi Arabia
Nearest port of embarkation: Jeddah Islamic port
Product classification: Commercial

Product Data Catalog

50TCM – 60Hz

Unit Size 6.0 – 12.5 Tons
HFC R-410A Refrigerant

The 50TCM units are single side discharge rooftop cooling unit utilizing electric heat as an option. Units are pre-wired, pre-charged with R-410A refrigerant, and tested at the factory. These units can be placed on the side of a building or can be placed on a roof without roof curbs. Each unit is designed to occupy a minimal space. Piping and drain connections are readily accessible.

Contact your local Carrier representative for additional reference materials.

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Features / Benefits

Every compact one-piece unit arrives fully assembled, charged, tested, and ready to run.

Durable-Dependable Construction

Designed for durability in any climate, the weather-resistant cabinets are constructed of galvanized steel, bonderized, and all exterior panels are coated with a pre-painted baked enamel finish. The paint finish is non-chalking, and is capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour Salt Spray Test. All internal cabinet panels are primed, permitting longer life and a more attractive appearance for the entire unit. Totally enclosed condenser-fan motor and permanently lubricated bearings provide additional unit dependability.

Indoor-Air Quality

Non corrosive sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) Standard 62-99 (IAQ). 2”inch filters provide for greater particle reduction in the return air.

Simple, Electrical Connections

Terminal boards, located in the unit control box, facilitate connections to room thermostat, outdoor thermostat(s) and electric heater. Service panels can be quickly removed, permitting easy servicing. Both power and control connections are made on the same side of the unit to simplify installation. In addition, color-coded wires permit easy tracing and diagnostics.

Easy Installation

All units feature base rail design with forklift slots and rigging holes for easier maneuvering. Durable packaging protects all units during shipment and storage. Convenient side by side openings permit installation very close to face of buildings or on roof top. The non-corrosive sloped condensate pan minimizes residual condensate in off cycle. An external, field-supplied P-trap is required. Field-installed electric heaters are available up to 45.9 kW.

Installation Features

- Single point electrical service entry
- Side discharge application
- No roof curb needed
- Side-by-side supply and return air
- Separate panel for control box

Performance Features

- HFC R-410A non-ozone depleting refrigerant
- ASHRAE 90.1 Compliant
- EER's up to 12.2
- TXV refrigerant metering device
- Two independent refrigerant circuits, each with a scroll compressor
- Low outdoor temperature cooling operation down to 40^{o} F
- Liquid filter drier standard on each circuit
- Non-corrosive sloped condensate drain pan in accordance to ASHRAE 62 standard
- Thermally protected and permanently lubricated condenser and evaporator fan motors

Environmentally Sound Refrigerant Choice

R410A refrigerant is:

- A chlorine-free refrigerant from the HFC group
- Has zero ozone depletion potential
- Thermally efficient and provides high EER (energy efficiency), COP, and part load efficiencies

Superior Reliability, Efficiency and Safety

- Exceptional endurance tests
    - Painted panels tested to ASTM B-117 500 hours salt spray protection
    - Pre-coated fin condenser coil for extra corrosion protection
- Compressor Protection:
    - High and low pressure cutouts
    - Phase protection relay
    - Crankcase heaters are standard for all units
    - Internal over temperature protection
    - Freeze protection
- Low vibration design:
    - Leak-tight refrigerant circuit
    - Brazed refrigerant connections for increased leak tightness
    - Low-noise scroll compressors with low vibration levels
- Control circuit protected by circuit breaker
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Transformer for safe 24V control circuit supply included
- High Efficiency, High Static Blower
- State-of-art scroll compressor technology
- Dual, electrically and mechanically independent refrigerant circuit

Shipping Information

Unit data with Condenser and Evaporator Al/Cu, Condenser Precoat Al/Cu and Evaporator Al/Cu Coils[1]

Unit Model Number	EST. WT. (KG)		DIMENSIONS (MM)					
			Net			With Wooden create above		
	NET	GROSS (with Skid)	LENGTH	WIDTH	HEIGHT	LENGTH	WIDTH	HEIGHT
50TCMA07XXX1-0A0A0	275	285	1888	1187	1051	1943	1219	1089
50TCMD08XXX1-0A0A0	345	360	2238	1510	1048	2292	1543	1207
50TCMD09XXX1-0A0A0	388	403	2238	1510	1253	2292	1543	1412
50TCMD12XXX1-0A0A0	393	408	2238	1510	1253	2292	1543	1412
50TCMD14XXX1-0A0A0	489	504	2238	1510	1253	2292	1543	1412

Unit data with Condenser Only Cu/Cu Coils[1]

Unit Model Number	EST. WT. (KG)		DIMENSIONS (MM)					
			Net			With Wooden create above		
	NET	GROSS (with Skid)	LENGTH	WIDTH	HEIGHT	LENGTH	WIDTH	HEIGHT
50TCMA07XXE1-0A0A0	310	320	1888	1187	1051	1943	1219	1089
50TCMD08XXE1-0A0A0	379	394	2238	1510	1048	2292	1543	1207
50TCMD09XXE1-0A0A0	430	445	2238	1510	1253	2292	1543	1412
50TCMD12XXE1-0A0A0	434	449	2238	1510	1253	2292	1543	1412
50TCMD14XXE1-0A0A0	530	545	2238	1510	1253	2292	1543	1412

Unit data with Condenser and Evaporator Cu/Cu Coils[1]

Unit Model Number	EST. WT. (KG)		DIMENSIONS (MM)					
			Net			With Wooden create above		
	NET	GROSS (with Skid)	LENGTH	WIDTH	HEIGHT	LENGTH	WIDTH	HEIGHT
50TCMA07XXF1-0A0A0	331	341	1888	1187	1051	1943	1219	1089
50TCMD08XXF1-0A0A0	398	413	2238	1510	1048	2292	1543	1207
50TCMD09XXF1-0A0A0	461	476	2238	1510	1253	2292	1543	1412
50TCMD12XXF1-0A0A0	465	480	2238	1510	1253	2292	1543	1412
50TCMD14XXF1-0A0A0	561	576	2238	1510	1253	2292	1543	1412

Factory Installed Options and Field Installed Accessories

Category	Item Description	Factory Installed Option	Field Installed Accessory
Coil Options	Cu/Cu indoor and/or outdoor coils[1]	X	
	Pre–coated outdoor coils[1]	X	
Indoor Motor & Drive	Multiple motor and drive packages[1]	X	
Sight glass	Refrigerant sight glass installed on each circuit[1]	X	
Condenser Protection	Condenser coil hail guard (louvered design)		X
Controls	Thermostats, temperature sensors, and subbases		X
	RTU Open –protocol controller		X
	Time Guard II compressor delay control circuit		X
	Smoke detector (supply and return)		X
Electric Heat	Electric Resistance Heaters		X
	Single Point Kit		X
Low Ambient Control	Winter start kit[2]		X
	Motormaster head pressure control		X

NOTES:
1. Please refer to product nomenclature for ordering information.
2. See application data for assistance.

Factory Options and Accessories

RTU Open, Multi-protocol Controller

Connect the rooftop to an existing BAS without complicated translators or adapter modules using the RTU Open controller. This new controller speaks the 4 most common building automation system languages (BACNET, Modbus, Johnson N2, and LonWorks). Use this controller when you have an existing BAS.

Time Guard II Control Circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with PremierLink, RTU Open, or authorized commercial thermostats.

Filter or Fan Status Switches

Use these differential pressure switches to detect a filter clog or indoor fan motor failure. When used in conjunction with a compatible unit controller/thermostat, the switches will activate an alarm to warn the appropriate personnel.

Winter Start Kit

The winter start kit by Carrier extends the low ambient limit of your rooftop to 25°F (-4°C). The kit by-passes the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Alternate Motors and Drives

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your Carrier expert has a factory installed combination to meet your application. A wide selection of motors and pulleys (drives) are available, factory installed, to handle nearly any application.

Electric Heaters

Carrier offers a full-line of field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.

MODEL NUMBER NOMENCLATURE - 50TCM - R410A SERIES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5	0	T	C	M	A	0	7	A	2	A	1	-	0	A	0	A	0

Unit Heat Type
50 = Cooling / Electric Heat RTU

Model Series - Desert Master
TCM = High Ambient Application

Refig. System Options
A = Standard 1 - Stage Cooling
D = Standard 2 - Stage Cooling Models 08-14

Unit Size
07 = 6.0 Ton
08 = 7.5 Ton
09 = 8.5 Ton
12 = 10.0 Ton
14 = 12.5 Ton

Design Series
A = Series A
B = Series B

Power Supply (V/Ph/Hz)
2 = 400/3/60
5 = 230/3/60

Coil Options (Outdoor - Indoor)
A = Al/Cu - Al/Cu
B = Precoat Al/Cu - Al/Cu
E = Cu/Cu - Al/Cu
F = Cu/Cu - Cu/Cu

Indoor Fan Options
1 = Standard Static Option
2 = Medium Static Option
3 = High Static Option

Design Review
- = Factory Assigned

Base Unit Controls
0 = Electromechanical Controller

Sensor Options
A = None

Service Options
0 = None
1 = Sight Glass

Electrical Options
A = None

Brand/Packaging
0 = Standard

AHRI Capacity Rating

Unit 50TCM	Unit Size (Ton)	Standard Air Flow Rate (CFM)	Net Cooling Capacity (BTU/hr)	EER	Standard m3/hr	Standard L/s
A07	6.0	2400	72000	11.20	4075	1133
D08	7.5	3000	93000	12.10	5094	1416
D09	8.5	3500	108000	12.20	5943	1652
D12	10.0	4000	127000	11.60	6792	1888
D14	12.5	4100	154000	11.00	6962	1935

Minimum - Maximum Air Flow Rate

Unit 50TCM	Minimum	Maximum	Minimum	Maximum
	CFM	CFM	L/s	L/s
A07	1800	3000	849	1416
D08	2250	3750	1062	1770
D09	2550	4250	1203	2006
D12	3000	5000	1416	2360
D14	3700	6000	1746	2831

Minimum Electric Heating Air Flow Rate

Unit 50TCM	Unit Voltage	Heater kW	Unit Configuration	Minimum	Minimum
				CFM	L/s
A07	All	All	Horizontal	1800	849
D08	All	All	Horizontal	2250	1062
D09	All	All	Horizontal	2250	1062
D12	All	All except 42.4 & 50	Horizontal	3000	1416
D14	All	All except 42.4 & 50	Horizontal	3000	1416
D12	230	42.4 & 50	Horizontal	3200	1510
D14	230	42.4 & 50	Horizontal	3200	1510

EER - Energy Efficiency Ratio
CFM - Cubic Feet per Minute
L/s - Liters per Second
BTU - British Thermal Unit

*AHRI - Air Conditioning, Heating and Refrigeration Institute
1. Rated in accordance with AHRI Standards 340/360 and SASO 2874/2016
2. Cooling capacities are net and include deductions for indoor fan motor heat
3. Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db air entering outdoor unit

Unit Physical Data (English)

Unit 50TCM	A07	D08	D09	D12	D14
Unit Dimensions	41.3x74.3x46.7	41.2x88.1x59.4	49.3x88.1x59.4		
Unit Operating weight	606	761	855	866	1078
Refrigeration System					
Compressor No.# / Type	1 / Scroll	2 / Scroll			
Refrigerant type	Puron ® R410A				
Circuts No.#	1	2			
Charge per Circuit (1-Down/2-Up) -LBS 230V	19.84	6.39 / 6.83	11.30 / 13.27	10.91 / 10.91	13.00 / 13.88
Charge per Circuit (1-Down/2-Up) -LBS 400V	16.53	9.92 / 8.60	11.90 / 11.02	10.91 / 10.91	16.53 / 13.88
Metering Device	TXV	Acutrol			
Filter Drier Qty	1	2			
High Pressure Switch (Trip/ Reset)- PSIG	630 / 505				
Low Pressure Switch (Trip/ Reset)- PSIG	54 / 117				
Condenser Coil*					
Coil Type	3/8" Helical Grooved Copper Tube, 0.75" Aluminum Lance Sine Wave fins.				
Standard Coil Material	Cu/Al				
Rows / FPI	2 / 17			1 / 20	2 / 20
Face Area (ft^2)	21.3	20.5	25.1		
Coil test Pressure (PSIG)	450				
Condenser Fan & Motor					
Approx. Air Flow Rate (CFM)	4350	7000		10900	10000
Quantity	1	2		1	
Diameter (in) / No. of Blades	26 / 3	22 / 3		30 / 3	
Motor Type	Induction Motor - Totally Enclosed				
Motor HP-RPM	1/3 - 825	1/4 - 1100		1 - 1140	
Evaporator Coil*					
Coil Type	3/8" Helical Grooved Copper Tube, 0.75" Aluminum Lance Sine Wave fins.				
Standard Coil Material	Cu/Al				
Rows / FPI	4 / 15	3 / 15	4 / 15		
Face Area (ft^2)	7.3	8.9	11.1		
Coil test Pressure (PSIG)	350				
Drain Pan connection Size (in)	3/4				
Return Air Filter Qty / Size (in)	4 / 16x16x2	4 / 16x20x2	4 / 20x20x2		
Evaporator Fan					
Fan Qty - Fan Shaft Size (in) - Fan Size (in)	1 - 15.9 - 254 x 254	1 - 25.4 - 381 x 381			
Fan Type	Centrifugal - Forward Blade				
Drive Type	Belt				
Motor Type	Induction Motor - Open Drip Proof				
Standard Static Drive					
Motor Qty	1				
Maximum HP (230V/400V)	2.4 / 1.7	1.7 / 1.7		2.4 / 2.5	2.9 / 3.0
FLA (230V/400V)	5.2 / 2.8			5.2 / 4.2	7.5 / 5.0
Efficiency @ Full Load (230V/400V)	80% / 74%			80% / 75%	81% / 75%
RPM Range (230V)	1073 - 1457	489 - 747	518 - 733	591 - 838	652 - 843
RPM Range (400V)	728 - 1035	489 - 747	518 - 733	604 - 819	652 - 843
Motor Shaft Size (230V-400V) (in)	5/8 - 5/8			5/8 - 7/8	7/8 - 7/8
Motor Frame Size(230V/400V)	56Y / 56Y				56Y / 56HZ
Medium Static Drive					
Motor Qty	1				
Maximum HP (230V/400V)	2.9 / 3.0		2.9 / 3.0	3.7 / 4.7	
FLA (230V/400V)	7.5 / 5.0		5.2 / 4.2	10 / 7.5	
Efficiency @ Full Load (230V/400V)	81% / 75%		80% / 75%	81% / 76%	
RPM Range (230V)	1173 - 1518	733 - 949	690 - 936	838 - 1084	
RPM Range (400V)	1073 - 1457	733 - 949	690 - 936	838 - 1084	
Motor Shaft Size (230V-400V) (in)	7/8 - 7/8		5/8 - 7/8	7/8 - 7/8	
Motor Frame Size(230V/400V)	56Y / 56HZ		56Y / 56Y	56Y / 145TY	
High Static Drive					
Motor Qty	1				
Maximum HP (230V/400V)	3.7 / 4.7	4.7 / 4.7	3.7 / 3.0	4.7 / 4.7	
FLA (230V/400V)	10.0 / 7.5	15 / 7.5	10.0 / 5.0	15 / 7.5	
Efficiency @ Full Load (230V/400V)	80% / 76%	81% / 76%	80% / 75%	81% / 76%	
RPM Range (230V)	1474 - 1788	909 - 1102	838 - 1084	1022 - 1240	
RPM Range (400V)	1474 - 1788	909 - 1102	838 - 1084	1013 - 1229	
Motor Shaft Size (230V-400V) (in)	7/8 - 7/8				
Motor Frame Size(230V/400V)	56Y / 145TY	145TY / 145TY	56Y / 56HZ	145TY / 145TY	

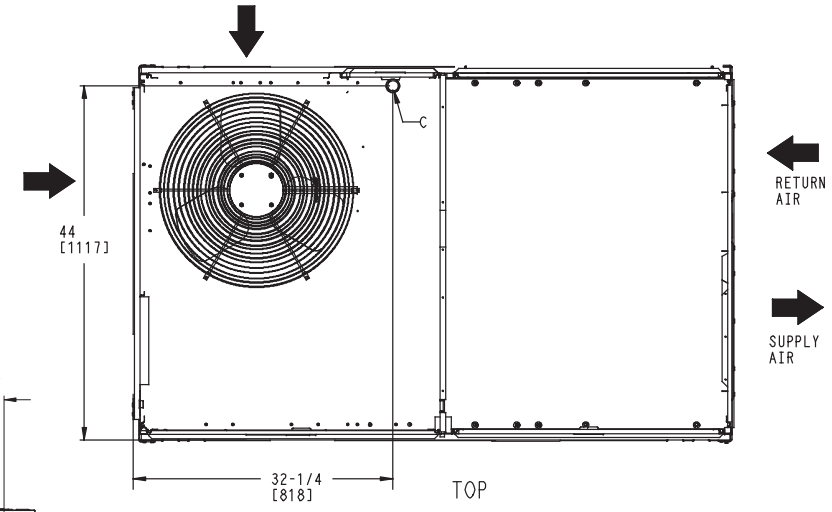
Unit Physical Data (SI)

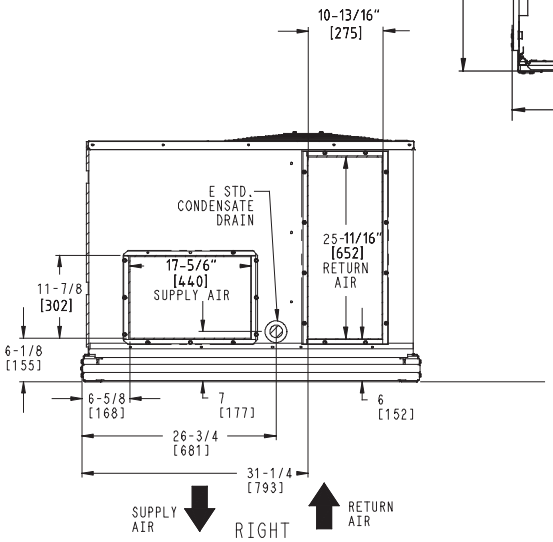
Unit 50TCM	A07	D08	D09	D12	D14
Unit Dimensions	1051x1888x1187	1048x2238x1510	1253x2238x1510		
Unit Operating weight	275	345	388	393	489
Refrigeration System					
Compressor No.# / Type	1 / Scroll	2 / Scroll			
Refrigerant type	Puron ® R410A				
Circuts No.#	1	2			
Charge per Circuit (1-Down/2-Up) - kG 230V	9.00	2.90 / 3.10	5.13 / 6.02	4.95 / 4.95	5.90 / 6.30
Charge per Circuit (1-Down/2-Up) - kG 400V	7.50	4.50 / 3.90	5.40 / 5.00	4.95 / 4.95	7.50 / 6.30
Metering Device	TXV	Acutrol			
Filter Drier Qty	1	2			
High Pressure Switch (Trip/ Reset)- bar	43 / 34				
Low Pressure Switch (Trip/ Reset)- bar	4 / 8				
Condenser Coil*					
Coil Type	3/8" Helical Grooved Copper Tube, 0.75" Aluminum Lance Sine Wave fins.				
Standard Coil Material	Cu/Al				
Rows / FPI	2 / 17			1 / 20	2 / 20
Face Area (m^2)	1.98	1.90	2.33		
Coil test Pressure (bar)	31				
Condenser Fan & Motor					
Approx. Air Flow Rate (m^3/hr)	7388	11886		18508.2	16980
Quantity	1	2		1	
Diameter (mm) / No. of Blades	660 / 3	559 / 3		762 / 3	
Motor Type	Induction Motor - Totally Enclosed				
Motor HP- RPS	1/3 - 32	1/4 - 43		1 - 45	
Evaporator Coil*					
Coil Type	3/8" Helical Grooved Copper Tube, 0.75" Aluminum Lance Sine Wave fins.				
Standard Coil Material	Cu/Al				
Rows / FPI	4 / 15	3 / 15	4 / 15		
Face Area (m^2)	0.7	0.8	1.0		
Coil test Pressure (bar)	23.8				
Drain Pan connection Size (mm)	19				
Return Air Filter Qty / Size (in)	4 / 16x16x2	4 / 16x20x2	4 / 20x20x2		
Evaporator Fan					
Fan Qty - Fan Shaft Size (mm) - Fan Size (mm)	1 - 15.9 - 254 x 254	1 - 25.4 - 381 x 381			
Fan Type	Centrifugal - Forward Blade				
Drive Type	Belt				
Motor Type	Induction Motor - Open Drip Proof				
Standard Static Drive					
Motor Qty	1				
Maximum kW (230V/400V)	1.8 / 1.3	1.3 / 1.3		1.8 / 1.9	2.2 / 2.2
FLA (230V/400V)	5.2 / 2.8			5.2 / 4.2	7.5 / 5.0
Efficiency @ Full Load (230V/400V)	80% / 74%			80% / 75%	81% / 75%
RPM Range (230V)	17.9 - 24.3	8.2 - 12.5	8.6 - 12.2	9.9 - 14.0	10.9 - 14.1
RPM Range (400V)	12.1 - 17.3	8.2 - 12.5	8.6 - 12.2	10.1 - 13.7	10.9 - 14.1
Motor Shaft Size (230V/400V) (mm)	15.9 / 15.9			15.9 / 22.2	22.2 / 22.2
Motor Frame Size(230V/400V)	56Y / 56Y				56Y / 56HZ
Medium Static Drive					
Motor Qty	1				
Maximum kW (230V/400V)	2.2 / 2.2		1.8 / 1.9	2.8 / 3.5	
FLA (230V/400V)	7.5 / 5.0		5.2 / 4.2	10 / 7.5	
Efficiency @ Full Load (230V/400V)	81% / 75%		80% / 75%	81% / 76%	
RPM Range (230V)	19.6 - 25.3	12.2 - 15.8	11.5 - 15.6	14.0 - 18.1	
RPM Range (400V)	17.9 - 24.3	12.2 - 15.8	11.5 - 15.6	14.0 - 18.1	
Motor Shaft Size (230V/400V) (mm)	22.2 / 22.2		15.9 / 22.2	22.2 / 22.2	
Motor Frame Size(230V/400V)	56Y / 56HZ		56Y / 56Y	56Y / 145TY	
High Static Drive					
Motor Qty	1				
Maximum kW (230V/400V)	2.8 / 3.5	3.5 / 3.5	2.8 / 2.2	3.5 / 3.5	
FLA (230V/400V)	10.0 / 7.5	15 / 7.5	10.0 / 5.0	15 / 7.5	
Efficiency @ Full Load (230V/400V)	80% / 76%	81% / 76%	80% / 75%	81% / 76%	
RPM Range (230V)	24.6 - 29.8	15.2 - 18.4	14.0 - 18.1	17.0 - 20.7	
RPM Range (400V)	24.6 - 29.8	15.2 - 18.4	14.0 - 18.1	16.9 - 20.5	
Motor Shaft Size (230V/400V) (mm)	22.2 / 22.2				
Motor Frame Size(230V/400V)	56Y / 145TY	145TY / 145TY	56Y / 56HZ	145TY / 145TY	

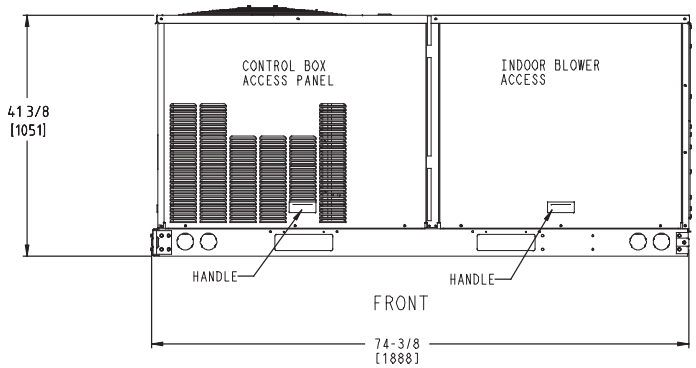
CURBS & WEIGHTS DIMENSIONS - 50TCM07

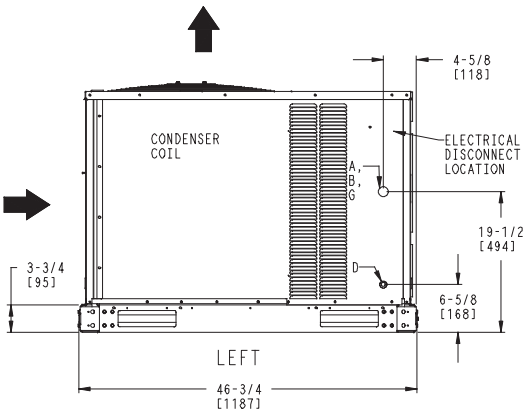
NOTES:

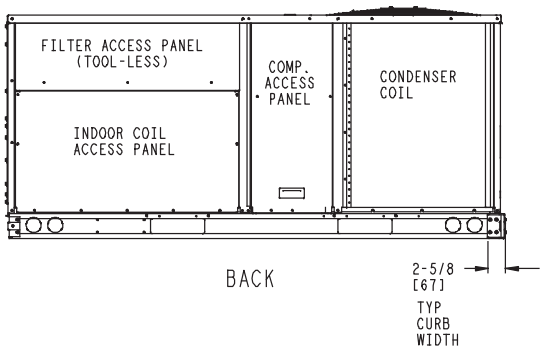
1. DIMENSIONS ARE IN INCHES, DIMENSIO
   IN ( ) ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW









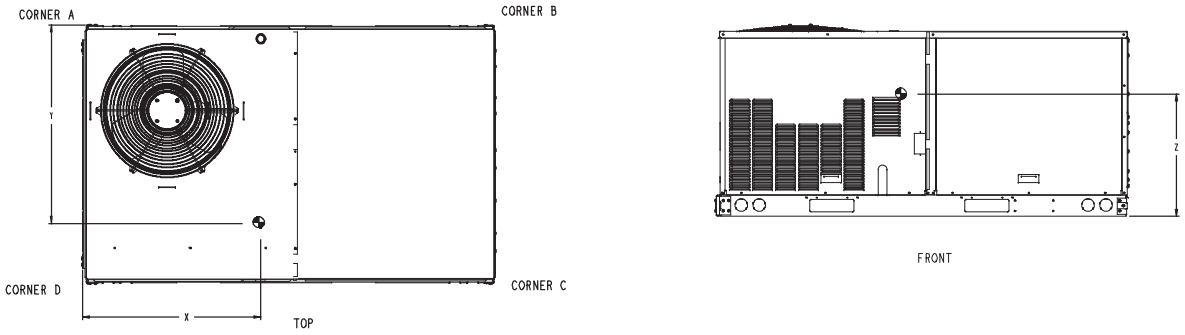


	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY HOLE
B	2" DIA [51] POWER SUPPLY KNOCKOUT
C	1 3/4" DIA [44] GAUGE ACCESS PLUG
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2 1/2 " DIA [64] POWER SUPPLY KNOCK-OUT

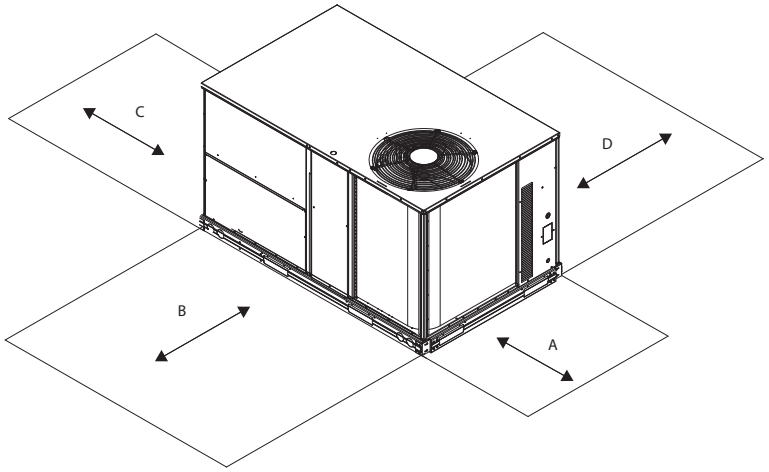
Dimensions 50TCMA07

CURBS & WEIGHTS DIMENSIONS - 50TCM07 (cont.)

UNIT	STD. UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50TCMA07	607	275	150	68	160	73	153	69	144	65	38 [965]	22 [559]	20 3/4 [527]



Dimensions 50TCMA07



Service Clearance

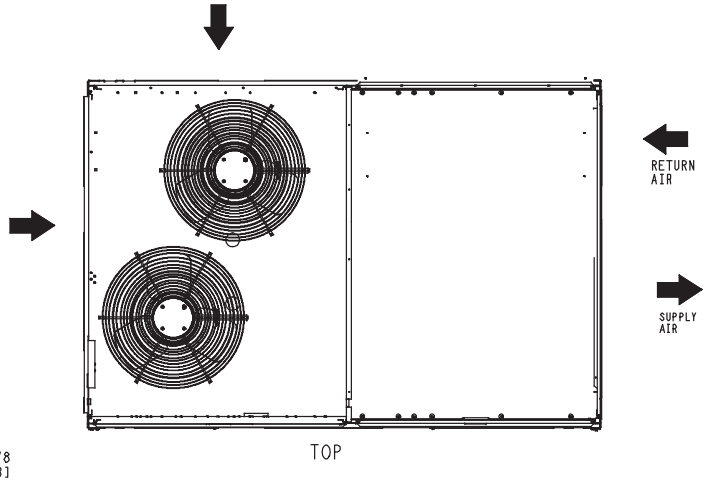
LOC	DIMENSION	CONDITION
A	48–in (1219 mm) 18–in (457 mm) 18–in (457 mm) 12–in (305 mm)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	42–in (1067 mm) 36–in (914 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall) Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
C	36–in (914 mm) 18–in (457 mm)	Side condensate drain is used Minimum clearance
D	42–in (1067 mm) 36–in (914 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

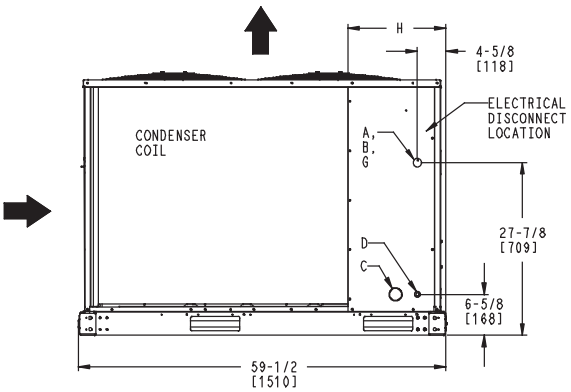
CURBS & WEIGHTS DIMENSIONS - 50TCMD08/09

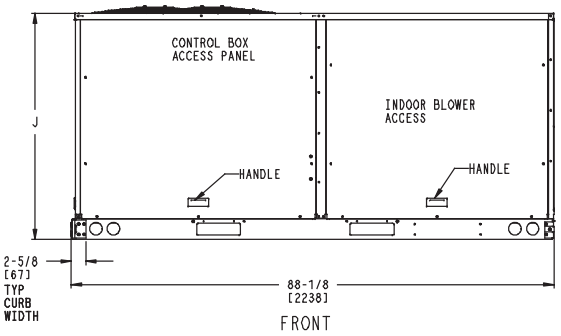
NOTES:

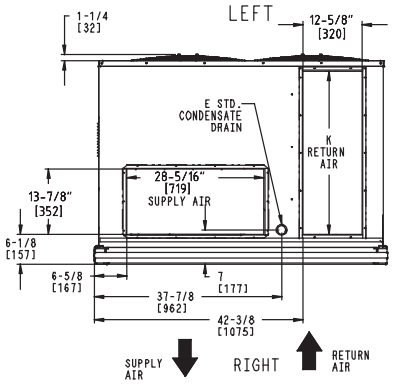
1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN ( ) ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW

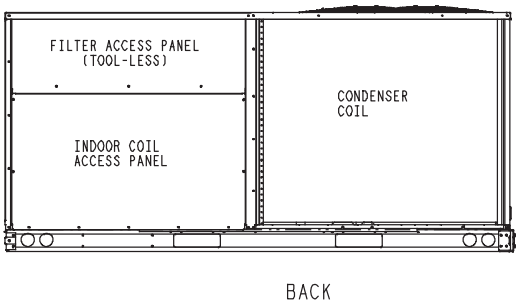
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" DIA [51] GAUGE ACCESS PLUG
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2 " DIA [51] POWER SUPPLY KNOCK-OUT









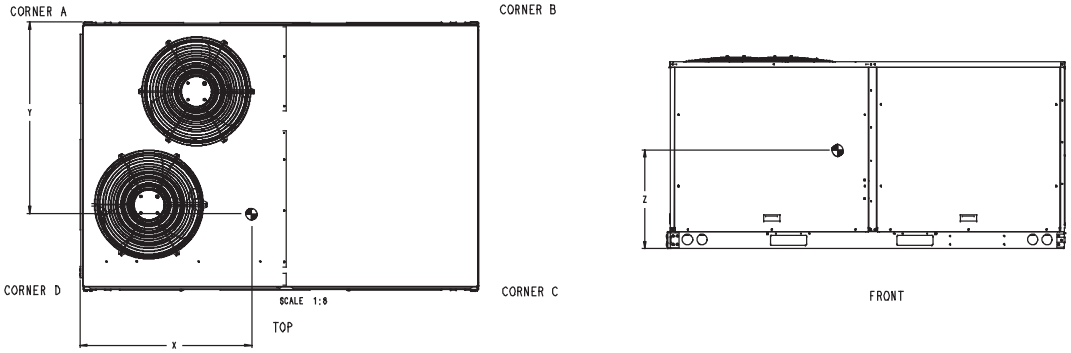


UNIT	OUTDOOR COIL TYPE	J	K	H
50TCMD08	RTPF	41 1/4 [1048]	33 11/16" [856]	15 7/8 [403]
50TCMD09	RTPF	49 3/8 [1253]	36 3/8" [924]	15 7/8 [403]
RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)				

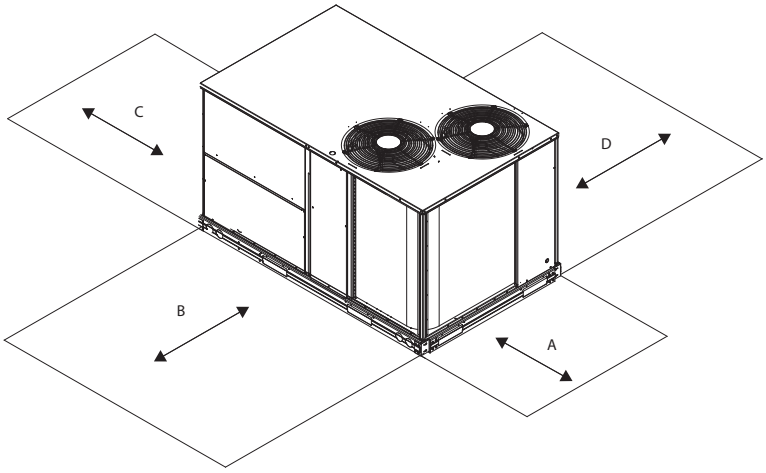
Dimensions 50TCMD08/09

CURBS & WEIGHTS DIMENSIONS - 50TCMD08/09 (cont.)

UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT ***		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50TCMD08	RTPF	760	345	158	71.7	155	70.4	222	100.8	225	102.2	43 3/4 [1111.3]	35 [889]	20 [508]
50TCMD09	RTPF	855	388.2	223	101.2	171	77.6	200	90.8	261	118.5	38 3/8 [975]	32 1/8 [816]	19 1/8 [486]
RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)										*** STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.				



Dimensions 50TCMD08/09



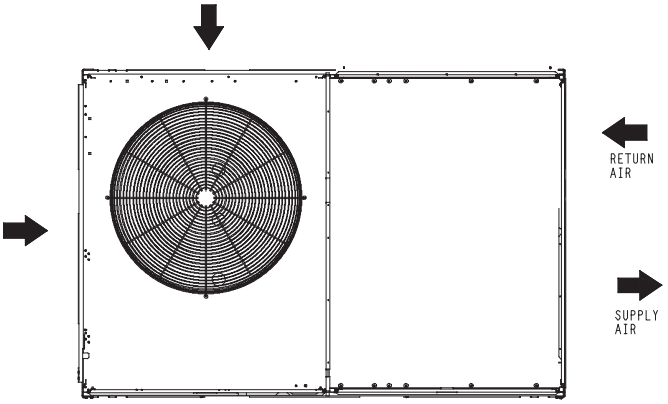
Service Clearance

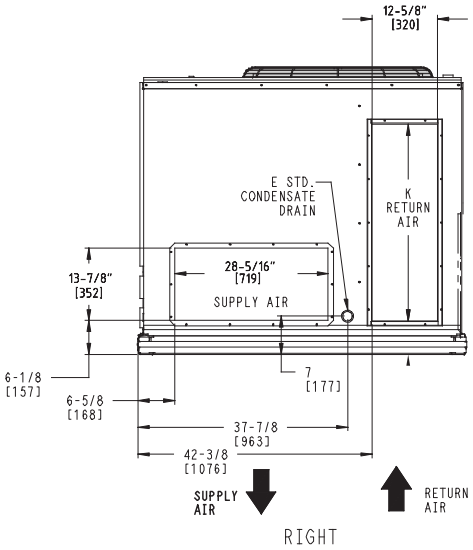
LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	36–in (914 mm)	If dimension–B is 12–in (305 mm)
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance (use electric screwdriver)
	12–in (305 mm)	Minimum clearance (use manual ratchet screwdriver)
B	12–in (305 mm)	If dimension–A is 36–in (914 mm)
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

CURBS & WEIGHTS DIMENSIONS - 50TCMD12/14

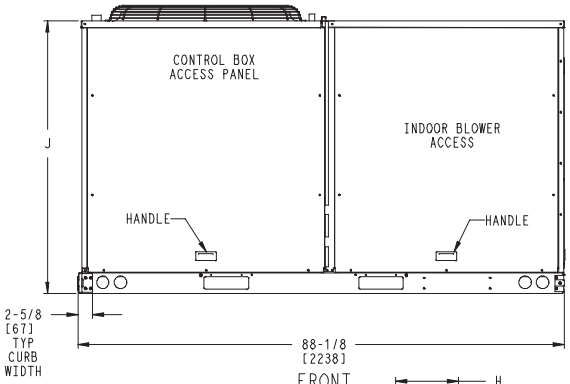
NOTES:

1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN ( ) ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW

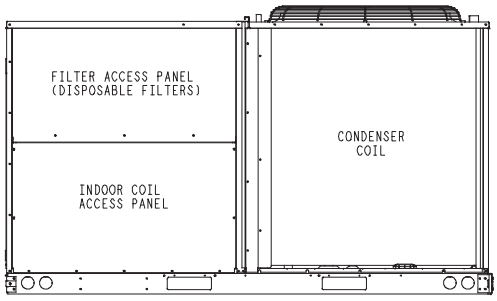




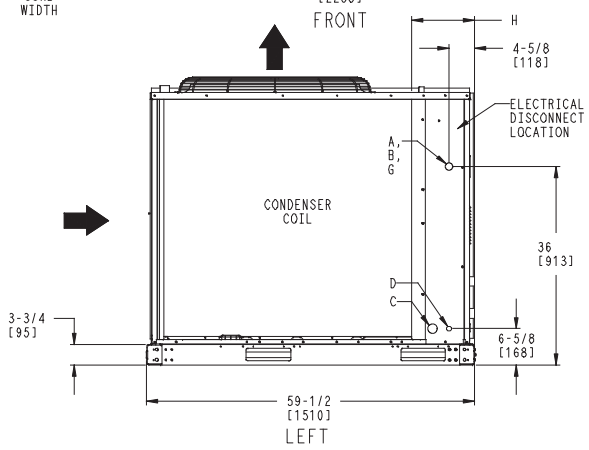
RIGHT



FRONT



BACK



LEFT

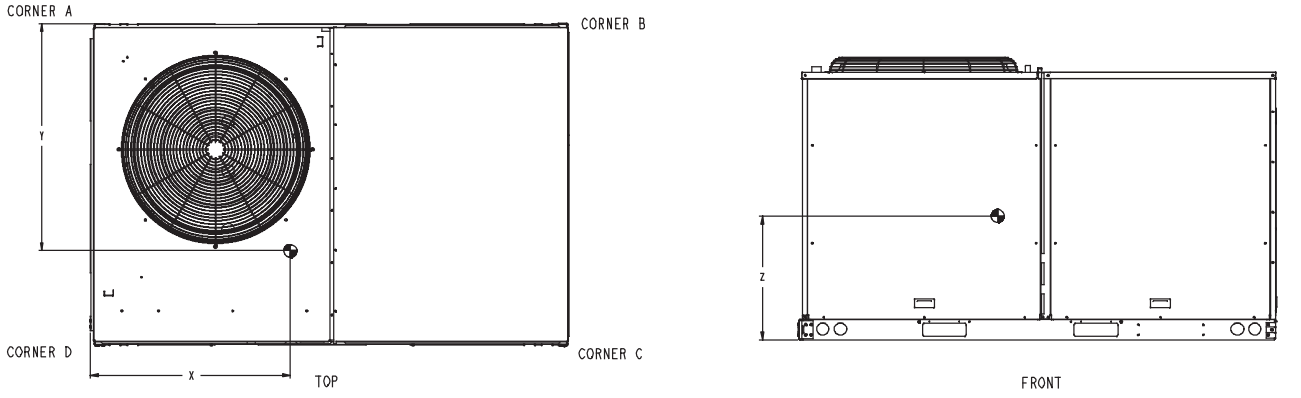
	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2" [51] DIA POWER SUPPLY KNOCK-OUT

UNIT	H	J	K
50TCMD12	11 3/8 [289]	49 3/8 [1253]	36 3/8" [924]
50TCMD14	11 3/8 [289]	2 49 3/8 [1253]	36 3/8" [924]

Dimensions 50TCMD12/14

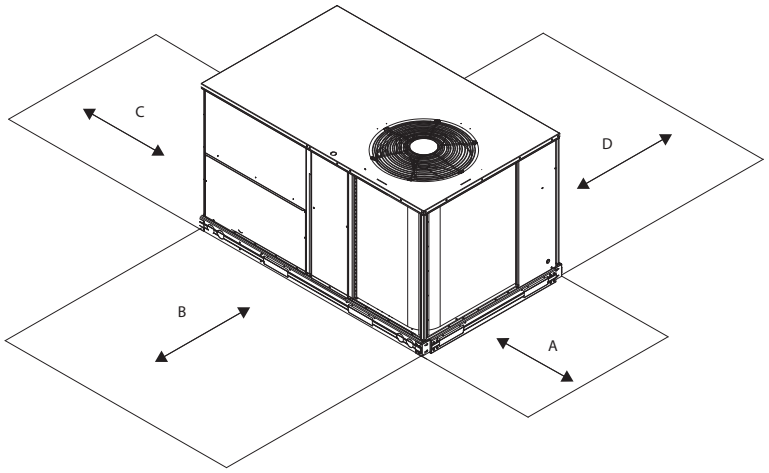
CURBS & WEIGHTS DIMENSIONS - 50TCMD12/14 (cont.)

UNIT	STD. UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		CENTER OF GRAVITY (C.G.)		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50TCMD12	865	393	275	125	125	57	145	66	321	146	28 3/8 (721)	33 1/8(841)	21 3/8 (543)
50TCMD14	1076	489	341	155	156	71	180	82	398	181	28 3/8 (721)	33 1/8(841)	21 3/8 (543)



C10329

Dimensions 50TCMD12/14



Service Clearance

C08337

LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance
	12–in (305 mm)	Minimum clearance
B	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

Cooling Capacities

50TCM - A07 - (230V/400V) - English

Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		1800 / 0.055			2100 / 0.072			2400 / 0.096			2700 / 0.127			3000 / 0.145		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	71,114	77,540	84,547	73,231	79,530	86,649	75,112	81,118	88,290	78,203	82,376	89,639	79,424	83,410	90,753
	SHC	57,932	48,655	39,441	62,974	52,207	41,683	67,588	55,631	43,818	68,385	58,953	45,906	72,586	62,231	47,943
	kW	4.07	4.09	4.11	4.08	4.10	4.12	4.08	4.11	4.13	4.08	4.12	4.14	4.09	4.12	4.14
85	TC	67,772	73,959	80,687	69,822	75,810	82,631	71,661	77,236	84,129	73,891	78,322	85,335	75,676	79,349	86,292
	SHC	56,428	47,220	38,059	61,406	50,790	40,305	65,748	54,223	42,442	68,123	57,414	44,499	70,496	60,800	46,510
	kW	4.56	4.59	4.61	4.57	4.60	4.62	4.58	4.61	4.63	4.58	4.62	4.64	4.59	4.62	4.64
95	TC	65,531	71,553	78,147	67,520	73,257	79,944	69,552	***74,600***	81,316	71,728	75,650	82,402	73,588	76,571	83,306
	SHC	54,819	45,704	36,609	59,642	49,274	38,838	63,422	***52,700***	40,957	65,482	56,050	43,014	67,181	59,249	45,026
	kW	5.09	5.12	5.15	5.10	5.14	5.16	5.11	***5.15***	5.17	5.12	5.15	5.18	5.13	5.16	5.19
105	TC	61,770	67,381	73,634	63,739	68,977	75,271	66,028	70,198	76,479	68,034	71,115	77,469	69,744	71,939	78,250
	SHC	53,172	44,108	35,065	57,622	47,701	37,287	60,278	51,226	39,391	62,110	54,421	41,446	63,671	57,648	43,449
	kW	5.66	5.70	5.73	5.67	5.71	5.74	5.68	5.72	5.75	5.70	5.73	5.76	5.71	5.73	5.77
115	TC	56,057	61,091	66,780	58,243	62,428	68,150	60,376	63,474	69,206	62,147	64,299	70,013	63,665	64,980	69,123
	SHC	48,252	39,895	31,440	51,526	43,234	33,502	53,414	46,465	35,480	54,980	49,539	37,393	56,324	52,522	35,306
	kW	6.37	6.42	6.45	6.39	6.43	6.47	6.41	6.44	6.48	6.42	6.45	6.48	6.43	6.45	6.48
120	TC	53,540	58,228	63,673	55,830	59,495	64,948	57,845	60,425	65,896	59,512	61,194	67,283	60,919	61,860	65,823
	SHC	46,751	38,664	30,320	49,375	42,017	32,354	51,157	45,110	34,297	52,632	48,147	37,975	53,876	51,042	34,129
	kW	6.68	6.73	6.77	6.70	6.74	6.78	6.72	6.75	6.79	6.74	6.76	6.80	6.75	6.76	6.79
125	TC	50,535	54,714	59,854	52,796	55,866	61,016	54,653	56,716	62,573	56,197	57,452	63,202	57,505	58,078	61,792
	SHC	45,225	37,529	29,279	47,327	40,825	31,289	48,992	43,914	35,045	50,376	46,963	36,766	51,548	49,671	33,039
	kW	7.07	7.11	7.15	7.09	7.13	7.16	7.11	7.13	7.18	7.12	7.14	7.19	7.14	7.14	7.17

50TCM - A07 - (230V/400V) - SI

Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		850 / 0.055			991 / 0.072			1133 / 0.096			1274 / 0.127			1416 / 0.145		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	20.8	22.7	24.8	21.5	23.3	25.4	22.0	23.8	25.9	22.9	24.1	26.3	23.3	24.4	26.6
	SHC	17.0	14.3	11.6	18.5	15.3	12.2	19.8	16.3	12.8	20.0	17.3	13.5	21.3	18.2	14.1
	kW	4.07	4.09	4.11	4.08	4.10	4.12	4.08	4.11	4.13	4.08	4.12	4.14	4.09	4.12	4.14
29	TC	19.9	21.7	23.6	20.5	22.2	24.2	21.0	22.6	24.7	21.7	23.0	25.0	22.2	23.3	25.3
	SHC	16.5	13.8	11.2	18.0	14.9	11.8	19.3	15.9	12.4	20.0	16.8	13.0	20.7	17.8	13.6
	kW	4.56	4.59	4.61	4.57	4.60	4.62	4.58	4.61	4.63	4.58	4.62	4.64	4.59	4.62	4.64
35	TC	19.2	21.0	22.9	19.8	21.5	23.4	20.4	21.9	23.8	21.0	22.2	24.2	21.6	22.4	24.4
	SHC	16.1	13.4	10.7	17.5	14.4	11.4	18.6	15.4	12.0	19.2	16.4	12.6	19.7	17.4	13.2
	kW	5.09	5.12	5.15	5.10	5.14	5.16	5.11	5.15	5.17	5.12	5.15	5.18	5.13	5.16	5.19
40.6	TC	18.1	19.7	21.6	18.7	20.2	22.1	19.4	20.6	22.4	19.9	20.8	22.7	20.4	21.1	22.9
	SHC	15.6	12.9	10.3	16.9	14.0	10.9	17.7	15.0	11.5	18.2	15.9	12.1	18.7	16.9	12.7
	kW	5.66	5.70	5.73	5.67	5.71	5.74	5.68	5.72	5.75	5.70	5.73	5.76	5.71	5.73	5.77
46	TC	16.4	17.9	19.6	17.1	18.3	20.0	17.7	18.6	20.3	18.2	18.8	20.5	18.7	19.0	20.3
	SHC	14.1	11.7	9.2	15.1	12.7	9.8	15.7	13.6	10.4	16.1	14.5	11.0	16.5	15.4	10.3
	kW	6.37	6.42	6.45	6.39	6.43	6.47	6.41	6.44	6.48	6.42	6.45	6.48	6.43	6.45	6.48
49	TC	15.7	17.1	18.7	16.4	17.4	19.0	17.0	17.7	19.3	17.4	17.9	19.7	17.9	18.1	19.3
	SHC	13.7	11.3	8.9	14.5	12.3	9.5	15.0	13.2	10.1	15.4	14.1	11.1	15.8	15.0	10.0
	kW	6.68	6.73	6.77	6.70	6.74	6.78	6.72	6.75	6.79	6.74	6.76	6.80	6.75	6.76	6.79
52	TC	14.8	16.0	17.5	15.5	16.4	17.9	16.0	16.6	18.3	16.5	16.8	18.5	16.9	17.0	18.1
	SHC	13.3	11.0	8.6	13.9	12.0	9.2	14.4	12.9	10.3	14.8	13.8	10.8	15.1	14.6	9.7
	kW	7.07	7.11	7.15	7.09	7.13	7.16	7.11	7.13	7.18	7.12	7.14	7.19	7.14	7.14	7.17

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Bold, Italics - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use
0.10	0.98	1.96	2.94	3.92	4.90	formula
0.20	0.87	1.74	2.62	3.49	4.36	shown
0.30	0.76	1.53	2.29	3.05	3.82	below.*

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Cooling Capacities (Continued)

50TCM - D08 - (230V/400V) - English

Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		2250 / 0.074			2625 / 0.093			3000 / 0.117			3375 / 0.144			3750 / 0.173		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	91,678	99,721	107,544	93,488	101,531	109,045	94,807	102,556	109,708	95,815	102,875	109,851	98,274	103,888	110,759
	SHC	75,057	62,676	50,327	80,406	66,513	52,128	85,072	69,930	53,497	88,196	72,871	54,501	90,122	76,491	56,351
	kW	4.43	4.44	4.47	4.43	4.44	4.48	4.44	4.45	4.50	4.44	4.46	4.51	4.44	4.47	4.52
85	TC	87,335	95,447	103,784	89,296	97,228	105,229	90,630	98,237	105,923	91,882	98,556	106,059	94,322	99,567	106,860
	SHC	71,448	59,597	47,901	76,780	63,474	49,784	80,932	66,933	51,264	83,832	69,954	52,400	85,427	73,769	54,282
	kW	5.06	5.10	5.14	5.09	5.11	5.16	5.10	5.12	5.17	5.10	5.13	5.19	5.11	5.14	5.20
95	TC	85,235	93,572	102,305	87,137	95,290	103,796	89,007	***96,200***	104,499	90,650	96,494	104,583	92,732	97,451	105,397
	SHC	74,681	62,261	49,911	80,380	66,470	52,083	83,867	***70,247***	53,799	86,052	73,622	55,132	88,696	77,837	57,320
	kW	5.79	5.86	5.90	5.83	5.87	5.92	5.85	***5.88***	5.94	5.85	5.89	5.95	5.87	5.90	5.96
105	TC	76,889	84,901	93,226	78,959	86,336	94,603	81,070	87,122	95,211	82,562	87,265	95,227	84,639	88,122	95,946
	SHC	67,145	55,987	44,627	72,116	59,872	46,726	74,894	63,438	48,432	76,402	66,654	49,765	78,324	70,409	51,857
	kW	6.38	6.49	6.54	6.43	6.50	6.56	6.48	6.52	6.58	6.50	6.53	6.59	6.51	6.53	6.60
115	TC	65,832	73,198	80,842	68,531	74,405	82,028	70,462	74,930	82,509	71,755	75,055	82,702	73,574	75,870	83,022
	SHC	63,672	53,150	42,120	67,366	57,007	44,202	69,679	60,499	45,928	70,958	63,599	47,289	72,757	67,201	49,401
	kW	7.10	7.27	7.33	7.20	7.29	7.35	7.26	7.30	7.36	7.28	7.31	7.37	7.30	7.32	7.38
120	TC	63,140	70,275	77,909	65,949	71,425	79,035	68,000	71,931	79,449	69,266	72,023	79,624	71,018	72,803	79,914
	SHC	62,150	52,375	41,378	65,795	56,274	43,492	67,842	59,857	45,217	69,105	62,859	46,605	70,853	66,478	48,752
	kW	7.75	7.97	8.03	7.88	7.99	8.05	7.96	8.00	8.07	7.99	8.01	8.08	8.01	8.02	8.09
125	TC	60,388	67,263	74,973	63,380	68,382	76,002	65,483	68,887	76,377	66,711	68,959	76,617	68,436	69,611	76,760
	SHC	60,094	51,279	40,371	63,376	55,238	42,485	65,479	58,720	44,242	66,707	61,689	45,647	68,432	65,176	47,796
	kW	7.94	8.19	8.28	8.09	8.23	8.30	8.19	8.25	8.32	8.24	8.26	8.33	8.26	8.27	8.34

50TCM - D08 - (230V/400V) - SI

Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		1062 / 0.074			1239 / 0.093			1416 / 0.117			1593 / 0.144			1770 / 0.173		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	26.9	29.2	31.5	27.4	29.8	32.0	27.8	30.1	32.2	28.1	30.2	32.2	28.8	30.4	32.5
	SHC	22.0	18.4	14.8	23.6	19.5	15.3	24.9	20.5	15.7	25.8	21.4	16.0	26.4	22.4	16.5
	kW	4.43	4.44	4.47	4.43	4.44	4.48	4.44	4.45	4.50	4.44	4.46	4.51	4.44	4.47	4.52
29	TC	25.6	28.0	30.4	26.2	28.5	30.8	26.6	28.8	31.0	26.9	28.9	31.1	27.6	29.2	31.3
	SHC	20.9	17.5	14.0	22.5	18.6	14.6	23.7	19.6	15.0	24.6	20.5	15.4	25.0	21.6	15.9
	kW	5.06	5.10	5.14	5.09	5.11	5.16	5.10	5.12	5.17	5.10	5.13	5.19	5.11	5.14	5.20
35	TC	25.0	27.4	30.0	25.5	27.9	30.4	26.1	28.2	30.6	26.6	28.3	30.7	27.2	28.6	30.9
	SHC	21.9	18.2	14.6	23.6	19.5	15.3	24.6	20.6	15.8	25.2	21.6	16.2	26.0	22.8	16.8
	kW	5.79	5.86	5.90	5.83	5.87	5.92	5.85	5.88	5.94	5.85	5.89	5.95	5.87	5.90	5.96
40.6	TC	22.5	24.9	27.3	23.1	25.3	27.7	23.8	25.5	27.9	24.2	25.6	27.9	24.8	25.8	28.1
	SHC	19.7	16.4	13.1	21.1	17.5	13.7	22.0	18.6	14.2	22.4	19.5	14.6	23.0	20.6	15.2
	kW	6.38	6.49	6.54	6.43	6.50	6.56	6.48	6.52	6.58	6.50	6.53	6.59	6.51	6.53	6.60
46	TC	19.3	21.5	23.7	20.1	21.8	24.0	20.7	22.0	24.2	21.0	22.0	24.2	21.6	22.2	24.3
	SHC	18.7	15.6	12.3	19.7	16.7	13.0	20.4	17.7	13.5	20.8	18.6	13.9	21.3	19.7	14.5
	kW	7.10	7.27	7.33	7.20	7.29	7.35	7.26	7.30	7.36	7.28	7.31	7.37	7.30	7.32	7.38
49	TC	18.5	20.6	22.8	19.3	20.9	23.2	19.9	21.1	23.3	20.3	21.1	23.3	20.8	21.3	23.4
	SHC	18.2	15.4	12.1	19.3	16.5	12.7	19.9	17.5	13.3	20.3	18.4	13.7	20.8	19.5	14.3
	kW	7.75	7.97	8.03	7.88	7.99	8.05	7.96	8.00	8.07	7.99	8.01	8.08	8.01	8.02	8.09
52	TC	17.7	19.7	22.0	18.6	20.0	22.3	19.2	20.2	22.4	19.6	20.2	22.5	20.1	20.4	22.5
	SHC	17.6	15.0	11.8	18.6	16.2	12.5	19.2	17.2	13.0	19.6	18.1	13.4	20.1	19.1	14.0
	kW	7.94	8.19	8.28	8.09	8.23	8.30	8.19	8.25	8.32	8.24	8.26	8.33	8.26	8.27	8.34

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Bold, Italics - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$tlwb$ = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil ($hlwb$).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: $hewb$ = Enthaply of air entering evaporator coil.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use
0.10	0.98	1.96	2.94	3.92	4.90	formula
0.20	0.87	1.74	2.62	3.49	4.36	shown
0.30	0.76	1.53	2.29	3.05	3.82	below.*

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Cooling Capacities (Continued)

50TCM - D09 - (230V/400V) - English

Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		2550 / 0.022			2975 / 0.036			3500 / 0.045			3825 / 0.113			4250 / 0.154		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	107,731	117,058	126,956	110,890	120,294	130,273	114,222	123,374	132,919	116,431	124,907	134,200	119,389	126,535	135,613
	SHC	97,679	82,191	66,908	105,939	88,273	70,647	114,952	95,566	74,640	118,998	100,007	77,008	122,749	105,521	80,005
	kW	5.24	5.26	5.30	5.26	5.27	5.33	5.25	5.28	5.37	5.26	5.29	5.38	5.27	5.30	5.40
85	TC	102,548	112,233	122,277	105,908	115,296	125,628	109,602	118,176	128,283	111,923	119,676	129,542	114,925	121,164	130,958
	SHC	95,141	80,116	65,105	103,590	86,279	69,017	111,756	93,604	73,314	114,798	98,104	75,795	118,353	103,678	78,940
	kW	5.96	6.03	6.08	6.01	6.04	6.10	6.03	6.06	6.14	6.04	6.06	6.16	6.05	6.08	6.18
95	TC	96,398	106,782	116,796	100,139	109,715	119,918	104,776	***112,422***	122,690	107,185	113,745	123,931	110,143	115,236	125,172
	SHC	92,125	77,769	62,935	100,603	84,010	66,835	107,987	***91,458***	71,361	110,271	95,931	73,985	113,543	101,459	77,247
	kW	6.71	6.87	6.92	6.80	6.88	6.95	6.85	***6.90***	6.98	6.87	6.91	6.99	6.89	6.92	7.02
105	TC	88,622	99,996	110,656	93,052	103,193	113,565	98,756	105,865	116,154	101,685	107,155	117,405	104,680	108,549	118,663
	SHC	87,763	74,915	60,569	95,797	81,362	64,464	101,906	88,889	69,039	104,823	93,383	71,748	108,127	98,939	75,142
	kW	7.30	7.57	7.68	7.40	7.63	7.70	7.55	7.65	7.73	7.62	7.66	7.75	7.64	7.67	7.76
115	TC	79,458	89,348	101,141	84,412	92,386	103,927	89,753	95,351	106,484	92,597	96,742	107,664	95,937	98,300	108,921
	SHC	82,717	71,179	57,746	89,149	77,759	61,735	94,601	85,557	66,407	97,599	90,054	69,182	101,220	95,805	72,710
	kW	8.11	8.35	8.61	8.23	8.43	8.64	8.37	8.53	8.66	8.45	8.57	8.67	8.54	8.60	8.69
120	TC	77,501	86,725	99,071	82,700	89,720	101,851	88,036	92,523	104,318	90,804	93,995	105,507	94,024	95,650	106,816
	SHC	80,214	69,307	56,180	85,594	75,917	60,218	91,026	83,615	64,914	93,973	88,171	67,722	97,315	93,861	71,328
	kW	8.58	8.80	9.13	8.71	8.89	9.16	8.85	8.97	9.18	8.93	9.02	9.19	9.03	9.07	9.20
125	TC	74,133	82,172	94,687	79,198	85,013	97,464	84,372	87,781	99,822	87,080	89,183	100,968	90,196	91,145	102,183
	SHC	76,728	67,438	54,510	81,970	74,000	58,615	87,325	81,705	63,336	90,128	86,178	66,172	93,353	91,283	69,782
	kW	9.06	9.27	9.63	9.19	9.35	9.69	9.34	9.44	9.71	9.42	9.48	9.72	9.52	9.55	9.73

50TCM - D09 - (230V/400V) - SI

Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		1203 / 0.022			1404 / 0.036			1652 / 0.045			1805 / 0.113			2006 / 0.154		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	31.6	34.3	37.2	32.5	35.3	38.2	33.5	36.2	39.0	34.1	36.6	39.3	35.0	37.1	39.7
	SHC	28.6	24.1	19.6	31.0	25.9	20.7	33.7	28.0	21.9	34.9	29.3	22.6	36.0	30.9	23.4
	kW	5.24	5.26	5.30	5.26	5.27	5.33	5.25	5.28	5.37	5.26	5.29	5.38	5.27	5.30	5.40
29	TC	30.1	32.9	35.8	31.0	33.8	36.8	32.1	34.6	37.6	32.8	35.1	38.0	33.7	35.5	38.4
	SHC	27.9	23.5	19.1	30.4	25.3	20.2	32.8	27.4	21.5	33.6	28.8	22.2	34.7	30.4	23.1
	kW	5.96	6.03	6.08	6.01	6.04	6.10	6.03	6.06	6.14	6.04	6.06	6.16	6.05	6.08	6.18
35	TC	28.3	31.3	34.2	29.3	32.2	35.1	30.7	32.9	36.0	31.4	33.3	36.3	32.3	33.8	36.7
	SHC	27.0	22.8	18.4	29.5	24.6	19.6	31.6	26.8	20.9	32.3	28.1	21.7	33.3	29.7	22.6
	kW	6.71	6.87	6.92	6.80	6.88	6.95	6.85	6.90	6.98	6.87	6.91	6.99	6.89	6.92	7.02
40.6	TC	26.0	29.3	32.4	27.3	30.2	33.3	28.9	31.0	34.0	29.8	31.4	34.4	30.7	31.8	34.8
	SHC	25.7	22.0	17.8	28.1	23.8	18.9	29.9	26.1	20.2	30.7	27.4	21.0	31.7	29.0	22.0
	kW	7.30	7.57	7.68	7.40	7.63	7.70	7.55	7.65	7.73	7.62	7.66	7.75	7.64	7.67	7.76
46	TC	23.3	26.2	29.6	24.7	27.1	30.5	26.3	27.9	31.2	27.1	28.4	31.6	28.1	28.8	31.9
	SHC	24.2	20.9	16.9	26.1	22.8	18.1	27.7	25.1	19.5	28.6	26.4	20.3	29.7	28.1	21.3
	kW	8.11	8.35	8.61	8.23	8.43	8.64	8.37	8.53	8.66	8.45	8.57	8.67	8.54	8.60	8.69
49	TC	22.7	25.4	29.0	24.2	26.3	29.9	25.8	27.1	30.6	26.6	27.5	30.9	27.6	28.0	31.3
	SHC	23.5	20.3	16.5	25.1	22.3	17.6	26.7	24.5	19.0	27.5	25.8	19.8	28.5	27.5	20.9
	kW	8.58	8.80	9.13	8.71	8.89	9.16	8.85	8.97	9.18	8.93	9.02	9.19	9.03	9.07	9.20
52	TC	21.7	24.1	27.8	23.2	24.9	28.6	24.7	25.7	29.3	25.5	26.1	29.6	26.4	26.7	29.9
	SHC	22.5	19.8	16.0	24.0	21.7	17.2	25.6	23.9	18.6	26.4	25.3	19.4	27.4	26.8	20.5
	kW	9.06	9.27	9.63	9.19	9.35	9.69	9.34	9.44	9.71	9.42	9.48	9.72	9.52	9.55	9.73

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Bold, Italics - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use
0.10	0.98	1.96	2.94	3.92	4.90	formula
0.20	0.87	1.74	2.62	3.49	4.36	shown
0.30	0.76	1.53	2.29	3.05	3.82	below.*

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Cooling Capacities (Continued)

50TCM - D12 - (230V/400V) - English

Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		3000 / 0.064			3500 / 0.086			4000 / 0.111			4500 / 0.138			5000 / 0.206		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	125,652	135,720	145,622	128,777	139,070	148,363	131,676	141,510	150,551	134,948	143,338	152,324	137,891	144,845	153,784
	SHC	104,119	86,901	69,703	112,331	93,211	73,055	119,320	99,114	76,250	124,219	104,631	79,253	128,415	109,952	82,133
	kW	5.77	5.78	5.86	5.78	5.80	5.89	5.78	5.82	5.92	5.78	5.84	5.94	5.80	5.86	5.96
85	TC	121,255	131,235	142,103	124,484	134,381	144,904	127,489	136,865	147,044	130,822	138,787	148,728	134,207	140,281	150,090
	SHC	102,388	85,369	68,760	110,849	91,701	72,399	117,446	97,848	75,767	122,175	103,909	78,996	124,025	109,476	82,113
	kW	6.64	6.63	6.68	6.63	6.64	6.72	6.64	6.65	6.74	6.64	6.67	6.77	6.65	6.68	6.79
95	TC	114,780	126,004	136,795	119,010	128,954	139,805	122,763	***131,223***	141,986	126,578	133,090	143,594	129,297	134,573	144,919
	SHC	99,609	83,529	66,950	108,354	89,952	70,870	114,522	***96,188***	74,497	117,150	102,331	77,957	120,750	107,974	81,261
	kW	7.47	7.57	7.61	7.55	7.58	7.63	7.57	***7.59***	7.65	7.57	7.60	7.68	7.58	7.60	7.69
105	TC	106,293	118,899	130,530	111,396	122,301	133,492	116,381	124,559	135,694	120,629	126,320	137,357	123,746	127,730	138,580
	SHC	95,996	80,930	64,808	103,690	87,754	68,841	108,689	94,153	72,674	112,656	100,143	76,316	115,566	105,894	79,815
	kW	8.10	8.34	8.44	8.19	8.41	8.45	8.30	8.42	8.47	8.40	8.42	8.48	8.41	8.43	8.50
115	TC	91,063	101,619	114,535	96,419	104,659	117,275	101,058	107,242	119,335	104,983	109,189	120,942	108,310	110,849	122,204
	SHC	90,275	77,034	62,134	96,268	84,005	66,266	100,899	90,604	70,241	104,818	96,874	74,058	108,140	102,916	77,771
	kW	9.37	9.60	9.92	9.49	9.68	9.94	9.60	9.76	9.95	9.70	9.82	9.96	9.80	9.87	9.98
120	TC	87,070	96,572	109,882	92,412	99,547	112,886	96,992	101,968	114,894	100,818	103,873	116,465	104,098	105,694	117,712
	SHC	86,933	75,026	60,428	92,267	81,983	64,749	96,840	88,581	68,772	100,659	94,942	72,664	103,935	100,696	76,467
	kW	9.86	10.08	10.45	9.99	10.17	10.52	10.11	10.24	10.54	10.21	10.29	10.55	10.31	10.35	10.56
125	TC	82,984	91,114	104,678	88,251	94,056	107,715	92,689	96,346	110,008	96,456	98,424	111,542	99,679	100,272	112,748
	SHC	82,853	72,878	58,561	88,112	79,813	62,962	92,543	86,394	67,144	96,305	92,686	71,082	99,522	98,276	74,922
	kW	10.35	10.56	10.94	10.49	10.64	11.04	10.61	10.71	11.12	10.72	10.78	11.13	10.82	10.84	11.14

50TCM - D12 - (230V/400V) - SI

Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		1416 / 0.064			1652 / 0.086			1888 / 0.111			2124 / 0.138			2360 / 0.206		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	36.8	39.8	42.7	37.7	40.8	43.5	38.6	41.5	44.1	39.6	42.0	44.6	40.4	42.5	45.1
	SHC	30.5	25.5	20.4	32.9	27.3	21.4	35.0	29.0	22.3	36.4	30.7	23.2	37.6	32.2	24.1
	kW	5.77	5.78	5.86	5.78	5.80	5.89	5.78	5.82	5.92	5.78	5.84	5.94	5.80	5.86	5.96
29	TC	35.5	38.5	41.6	36.5	39.4	42.5	37.4	40.1	43.1	38.3	40.7	43.6	39.3	41.1	44.0
	SHC	30.0	25.0	20.2	32.5	26.9	21.2	34.4	28.7	22.2	35.8	30.5	23.2	36.3	32.1	24.1
	kW	6.64	6.63	6.68	6.63	6.64	6.72	6.64	6.65	6.74	6.64	6.67	6.77	6.65	6.68	6.79
35	TC	33.6	36.9	40.1	34.9	37.8	41.0	36.0	38.5	41.6	37.1	39.0	42.1	37.9	39.4	42.5
	SHC	29.2	24.5	19.6	31.8	26.4	20.8	33.6	28.2	21.8	34.3	30.0	22.8	35.4	31.6	23.8
	kW	7.47	7.57	7.61	7.55	7.58	7.63	7.57	7.59	7.65	7.57	7.60	7.68	7.58	7.60	7.69
40.6	TC	31.2	34.8	38.3	32.6	35.8	39.1	34.1	36.5	39.8	35.4	37.0	40.3	36.3	37.4	40.6
	SHC	28.1	23.7	19.0	30.4	25.7	20.2	31.9	27.6	21.3	33.0	29.4	22.4	33.9	31.0	23.4
	kW	8.10	8.34	8.44	8.19	8.41	8.45	8.30	8.42	8.47	8.40	8.42	8.48	8.41	8.43	8.50
46	TC	26.7	29.8	33.6	28.3	30.7	34.4	29.6	31.4	35.0	30.8	32.0	35.4	31.7	32.5	35.8
	SHC	26.5	22.6	18.2	28.2	24.6	19.4	29.6	26.6	20.6	30.7	28.4	21.7	31.7	30.2	22.8
	kW	9.37	9.60	9.92	9.49	9.68	9.94	9.60	9.76	9.95	9.70	9.82	9.96	9.80	9.87	9.98
49	TC	25.5	28.3	32.2	27.1	29.2	33.1	28.4	29.9	33.7	29.5	30.4	34.1	30.5	31.0	34.5
	SHC	25.5	22.0	17.7	27.0	24.0	19.0	28.4	26.0	20.2	29.5	27.8	21.3	30.5	29.5	22.4
	kW	9.86	10.08	10.45	9.99	10.17	10.52	10.11	10.24	10.54	10.21	10.29	10.55	10.31	10.35	10.56
52	TC	24.3	26.7	30.7	25.9	27.6	31.6	27.2	28.2	32.2	28.3	28.8	32.7	29.2	29.4	33.0
	SHC	24.3	21.4	17.2	25.8	23.4	18.5	27.1	25.3	19.7	28.2	27.2	20.8	29.2	28.8	22.0
	kW	10.35	10.56	10.94	10.49	10.64	11.04	10.61	10.71	11.12	10.72	10.78	11.13	10.82	10.84	11.14

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Bold, Italics - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use
0.10	0.98	1.96	2.94	3.92	4.90	formula
0.20	0.87	1.74	2.62	3.49	4.36	shown
0.30	0.76	1.53	2.29	3.05	3.82	below.*

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Cooling Capacities (Continued)

50TCM - D14 - (230V/400V) - English

Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		3700 / 0.084			4100 / 0.093			4550 / 0.104			5300 / 0.116			6000 / 0.158		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	156,424	169,175	184,214	159,260	171,869	184,328	161,970	174,348	186,546	166,196	177,655	189,348	170,399	179,946	191,200
	SHC	136,012	114,016	87,697	143,190	119,109	95,028	150,888	124,563	98,196	161,528	133,334	103,121	167,494	141,057	107,319
	kW	8.76	8.80	8.90	8.77	8.81	8.90	8.77	8.82	8.92	8.78	8.85	8.96	8.78	8.87	8.98
85	TC	149,624	162,980	176,147	152,662	165,645	178,686	155,678	168,162	181,049	160,234	171,267	183,971	164,277	173,573	185,939
	SHC	132,754	111,548	90,042	140,204	116,771	93,123	148,058	122,368	96,454	157,939	131,470	101,672	164,376	139,545	106,233
	kW	9.76	9.84	9.91	9.79	9.85	9.94	9.81	9.86	9.96	9.82	9.89	10.00	9.84	9.91	10.03
95	TC	144,371	158,951	172,547	147,846	***161,517***	175,176	151,252	163,887	177,445	156,691	167,138	180,431	160,644	169,321	182,446
	SHC	128,913	108,599	87,444	136,485	***113,833***	90,652	143,681	119,621	94,039	152,679	128,903	99,442	158,902	137,060	104,189
	kW	10.77	10.96	11.04	10.85	***10.98***	11.07	10.89	10.99	11.09	10.95	11.02	11.13	10.96	11.03	11.16
105	TC	131,597	146,195	159,389	135,123	148,477	161,706	139,295	150,609	163,929	144,744	153,540	166,637	148,396	155,703	168,568
	SHC	122,514	103,438	82,918	129,635	108,577	86,071	135,555	114,330	89,530	143,733	123,398	94,916	149,590	131,514	99,721
	kW	11.86	12.16	12.25	11.95	12.18	12.28	12.06	12.20	12.31	12.14	12.22	12.34	12.16	12.24	12.37
115	TC	118,119	132,253	145,247	121,284	134,568	147,294	126,045	136,547	149,229	130,975	139,186	151,636	136,464	141,116	153,336
	SHC	111,331	94,426	75,442	117,803	99,542	78,424	122,841	104,960	81,692	130,252	113,551	86,813	132,996	121,176	91,377
	kW	13.01	13.46	13.57	13.11	13.48	13.59	13.28	13.50	13.62	13.37	13.53	13.65	13.49	13.54	13.67
120	TC	113,355	127,031	140,390	117,056	129,459	142,346	121,650	131,510	144,176	128,009	134,091	146,493	132,161	135,945	148,071
	SHC	109,778	94,362	75,316	116,647	99,699	78,363	121,636	105,290	81,692	127,577	114,104	86,936	131,716	121,789	91,609
	kW	13.73	14.22	14.38	13.85	14.30	14.41	14.03	14.32	14.43	14.26	14.34	14.47	14.32	14.36	14.50
125	TC	108,260	121,323	135,605	112,788	123,852	137,499	117,152	126,219	139,242	123,410	128,933	141,530	127,862	130,875	142,966
	SHC	107,437	92,347	73,814	112,020	97,762	76,898	117,126	103,584	80,236	123,383	112,599	85,550	127,834	120,276	90,202
	kW	14.64	15.13	15.42	14.80	15.24	15.44	14.98	15.33	15.46	15.23	15.37	15.50	15.35	15.39	15.53

50TCM - D14 - (230V/400V) - SI

Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		1746 / 0.084			1935 / 0.093			2147 / 0.104			2501 / 0.116			2832 / 0.158		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	45.8	49.6	54.0	46.7	50.4	54.0	47.5	51.1	54.7	48.7	52.1	55.5	49.9	52.7	56.0
	SHC	39.9	33.4	25.7	42.0	34.9	27.9	44.2	36.5	28.8	47.3	39.1	30.2	49.1	41.3	31.5
	kW	8.76	8.80	8.90	8.77	8.81	8.90	8.77	8.82	8.92	8.78	8.85	8.96	8.78	8.87	8.98
29	TC	43.9	47.8	51.6	44.7	48.5	52.4	45.6	49.3	53.1	47.0	50.2	53.9	48.1	50.9	54.5
	SHC	38.9	32.7	26.4	41.1	34.2	27.3	43.4	35.9	28.3	46.3	38.5	29.8	48.2	40.9	31.1
	kW	9.76	9.84	9.91	9.79	9.85	9.94	9.81	9.86	9.96	9.82	9.89	10.00	9.84	9.91	10.03
35	TC	42.3	46.6	50.6	43.3	47.3	51.3	44.3	48.0	52.0	45.9	49.0	52.9	47.1	49.6	53.5
	SHC	37.8	31.8	25.6	40.0	33.4	26.6	42.1	35.1	27.6	44.7	37.8	29.1	46.6	40.2	30.5
	kW	10.77	10.96	11.04	10.85	10.98	11.07	10.89	10.99	11.09	10.95	11.02	11.13	10.96	11.03	11.16
40.6	TC	38.6	42.8	46.7	39.6	43.5	47.4	40.8	44.1	48.0	42.4	45.0	48.8	43.5	45.6	49.4
	SHC	35.9	30.3	24.3	38.0	31.8	25.2	39.7	33.5	26.2	42.1	36.2	27.8	43.8	38.5	29.2
	kW	11.86	12.16	12.25	11.95	12.18	12.28	12.06	12.20	12.31	12.14	12.22	12.34	12.16	12.24	12.37
46	TC	34.6	38.8	42.6	35.5	39.4	43.2	36.9	40.0	43.7	38.4	40.8	44.4	40.0	41.4	44.9
	SHC	32.6	27.7	22.1	34.5	29.2	23.0	36.0	30.8	23.9	38.2	33.3	25.4	39.0	35.5	26.8
	kW	13.01	13.46	13.57	13.11	13.48	13.59	13.28	13.50	13.62	13.37	13.53	13.65	13.49	13.54	13.67
49	TC	33.2	37.2	41.1	34.3	37.9	41.7	35.7	38.5	42.3	37.5	39.3	42.9	38.7	39.8	43.4
	SHC	32.2	27.7	22.1	34.2	29.2	23.0	35.6	30.9	23.9	37.4	33.4	25.5	38.6	35.7	26.8
	kW	13.73	14.22	14.38	13.85	14.30	14.41	14.03	14.32	14.43	14.26	14.34	14.47	14.32	14.36	14.50
52	TC	31.7	35.6	39.7	33.1	36.3	40.3	34.3	37.0	40.8	36.2	37.8	41.5	37.5	38.4	41.9
	SHC	31.5	27.1	21.6	32.8	28.7	22.5	34.3	30.4	23.5	36.2	33.0	25.1	37.5	35.3	26.4
	kW	14.64	15.13	15.42	14.80	15.24	15.44	14.98	15.33	15.46	15.23	15.37	15.50	15.35	15.39	15.53

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Bold, Italics - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$tlwb$ = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil ($hlwb$).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: $hewb$ = Enthaply of air entering evaporator coil.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use
0.10	0.98	1.96	2.94	3.92	4.90	formula
0.20	0.87	1.74	2.62	3.49	4.36	shown
0.30	0.76	1.53	2.29	3.05	3.82	below.*

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Fan Performance Table

Unit 50TCM - A07 - 230V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
1800	822	0.48	0.51	927	0.62	0.66	1018	0.76	0.82	**1100**	**0.91**	**0.98**	**1174**	**1.07**	**1.15**
1950	872	0.58	0.62	973	0.74	0.79	1061	0.89	0.95	**1140**	**1.05**	**1.13**	**1213**	**1.22**	**1.31**
2100	923	0.70	0.75	1019	0.86	0.92	**1104**	**1.03**	**1.10**	**1182**	**1.20**	**1.29**	**1253**	**1.38**	**1.48**
2250	974	0.84	0.90	1067	1.01	1.08	**1149**	**1.18**	**1.27**	**1224**	**1.36**	**1.46**	**1294**	**1.55**	**1.66**
2400	1026	0.99	1.06	**1115**	**1.17**	**1.26**	**1195**	**1.36**	**1.46**	**1268**	**1.55**	**1.66**	**1336**	**1.74**	**1.87**
2550	**1079**	**1.17**	**1.25**	**1164**	**1.36**	**1.46**	**1241**	**1.56**	**1.67**	**1312**	**1.75**	**1.88**	**1379**	**1.96**	**2.10**
2700	**1132**	**1.36**	**1.46**	**1214**	**1.56**	**1.67**	**1289**	**1.77**	**1.90**	**1358**	**1.98**	**2.12**	**1422**	**2.19**	**2.35**
2850	**1186**	**1.58**	**1.69**	**1264**	**1.79**	**1.92**	**1336**	**2.00**	**2.15**	**1404**	**2.23**	**2.39**	*1467*	*2.42*	*2.63*
3000	**1240**	**1.81**	**1.94**	**1315**	**2.03**	**2.18**	**1385**	**2.27**	**2.43**	*1451*	*2.47*	*2.68*	*1512*	*2.70*	*2.93*

Unit 50TCM - A07 - 230V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
1800	**1244**	**1.24**	**1.33**	**1308**	**1.41**	**1.51**	**1369**	**1.59**	**1.70**	**1427**	**1.77**	**1.90**	**1438**	**1.96**	**2.10**
1950	**1281**	**1.39**	**1.49**	**1345**	**1.57**	**1.68**	**1405**	**1.75**	**1.88**	*1462*	*1.92*	*2.09*	*1517*	*2.12*	*2.30*
2100	**1320**	**1.56**	**1.67**	**1382**	**1.74**	**1.87**	**1441**	**1.94**	**2.08**	*1498*	*2.11*	*2.29*	***1552***	***2.34***	***2.51***
2250	**1359**	**1.74**	**1.87**	**1420**	**1.94**	**2.08**	*1479*	*2.11*	*2.29*	***1534***	***2.34***	***2.51***	***1587***	***2.56***	***2.74***
2400	**1400**	**1.95**	**2.09**	*1460*	*2.13*	*2.31*	*1517*	*2.33*	*2.53*	***1572***	***2.57***	***2.76***	***1624***	***2.79***	***2.99***
2550	**1441**	**2.17**	**2.33**	*1500*	*2.35*	*2.55*	***1557***	***2.60***	***2.79***	***1610***	***2.83***	***3.03***	***1662***	***3.05***	***3.27***
2700	*1483*	*2.42*	*2.59*	***1541***	***2.64***	***2.83***	***1597***	***2.86***	***3.07***	***1650***	***3.10***	***3.32***	***1701***	***3.33***	***3.57***
2850	***1527***	***2.68***	***2.87***	***1583***	***2.91***	***3.12***	***1638***	***3.14***	***3.37***	***1690***	***3.38***	***3.63***	-	-	-
3000	***1571***	***2.97***	***3.18***	***1626***	***3.21***	***3.44***	***1680***	***3.45***	***3.70***	-	-	-	-	-	-

Unit 50TCM - A07 - 400V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
1800	**806**	**0.45**	**0.44**	**908**	**0.61**	**0.61**	**998**	**0.72**	**0.71**	*1078*	*0.87*	*0.86*	*1151*	*1.01*	*1.00*
1950	**855**	**0.54**	**0.54**	**954**	**0.73**	**0.72**	*1040*	*0.83*	*0.83*	*1117*	*0.99*	*0.98*	*1189*	*1.15*	*1.14*
2100	**905**	**0.66**	**0.65**	**999**	**0.84**	**0.84**	*1082*	*0.96*	*0.96*	*1158*	*1.13*	*1.12*	*1228*	*1.29*	*1.29*
2250	**955**	**0.79**	**0.78**	*1046*	*0.98*	*0.97*	*1126*	*1.11*	*1.10*	*1200*	*1.28*	*1.27*	*1268*	*1.45*	*1.44*
2400	**1005**	**0.93**	**0.92**	*1093*	*1.14*	*1.13*	*1171*	*1.28*	*1.27*	*1243*	*1.45*	*1.44*	*1309*	*1.64*	*1.63*
2550	*1057*	*1.09*	*1.09*	*1141*	*1.31*	*1.31*	*1216*	*1.46*	*1.45*	*1286*	*1.64*	*1.64*	*1351*	*1.84*	*1.83*
2700	*1109*	*1.28*	*1.27*	*1190*	*1.52*	*1.51*	*1263*	*1.66*	*1.65*	*1331*	*1.85*	*1.84*	*1394*	*2.06*	*2.04*
2850	*1162*	*1.48*	*1.47*	*1239*	*1.71*	*1.71*	*1309*	*1.88*	*1.87*	*1376*	*2.09*	*2.08*	*1438*	*2.28*	*2.29*
3000	*1215*	*1.70*	*1.69*	*1289*	*1.92*	*1.91*	*1357*	*2.13*	*2.11*	*1421*	*2.32*	*2.33*	***1480***	***2.51***	***2.52***

Unit 50TCM - A07 - 400V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
1800	*1219*	*1.16*	*1.16*	*1282*	*1.32*	*1.31*	*1342*	*1.49*	*1.48*	*1398*	*1.66*	*1.65*	*1409*	*1.84*	*1.83*
1950	*1255*	*1.30*	*1.30*	*1318*	*1.47*	*1.46*	*1377*	*1.64*	*1.64*	*1433*	*1.81*	*1.82*	***1487***	***1.99***	***2.00***
2100	*1294*	*1.46*	*1.45*	*1354*	*1.64*	*1.63*	*1412*	*1.82*	*1.81*	***1468***	***1.98***	***1.99***	***1521***	***2.13***	***2.18***
2250	*1332*	*1.64*	*1.63*	*1392*	*1.82*	*1.81*	*1449*	*1.98*	*1.99*	***1503***	***2.13***	***2.18***	***1555***	***2.33***	***2.38***
2400	*1372*	*1.83*	*1.82*	*1440*	*2.00*	*2.01*	***1487***	***2.19***	***2.20***	***1541***	***2.35***	***2.40***	***1592***	***2.54***	***2.60***
2550	*1412*	*2.04*	*2.03*	***1470***	***2.21***	***2.22***	***1526***	***2.37***	***2.43***	***1578***	***2.58***	***2.64***	***1629***	***2.78***	***2.84***
2700	*1453*	*2.27*	*2.25*	***1510***	***2.41***	***2.46***	***1565***	***2.61***	***2.67***	***1617***	***2.82***	***2.89***	***1667***	***3.03***	***3.11***
2850	***1496***	***2.44***	***2.50***	***1551***	***2.65***	***2.71***	***1605***	***2.86***	***2.93***	***1656***	***3.09***	***3.16***	-	-	-
3000	***1540***	***2.70***	***2.77***	***1593***	***2.92***	***2.99***	***1646***	***3.15***	***3.22***	-	-	-	-	-	-

Legend and Notes:

Normal Font - Field Installed Drive Package

Bold Font - Standard Drive Package + Standard Motor.

Italics Font **-** Medium Drive Package + Medium Static Motor.

Bold , Italics Font **-** High Drive Package + High Static Motor.

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan Performance Table (Continued)

Unit 50TCM - D08 - 230V - 60Hz

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2250	**511**	**0.49**	**0.53**	**591**	**0.68**	**0.73**	**660**	**0.89**	**0.95**	**722**	**1.11**	**1.19**	*779*	*1.33*	*1.44*
2438	**540**	**0.60**	**0.64**	**616**	**0.79**	**0.85**	**683**	**1.01**	**1.08**	**743**	**1.24**	**1.33**	*799*	*1.46*	*1.59*
2625	**569**	**0.71**	**0.76**	**642**	**0.92**	**0.99**	**706**	**1.15**	**1.23**	*765*	*1.37*	*1.49*	*819*	*1.62*	*1.76*
2813	**599**	**0.84**	**0.90**	**669**	**1.06**	**1.14**	**731**	**1.30**	**1.39**	*788*	*1.53*	*1.66*	*841*	*1.79*	*1.94*
3000	**630**	**0.99**	**1.06**	**696**	**1.22**	**1.31**	*756*	*1.46*	*1.58*	*811*	*1.71*	*1.86*	*863*	*1.98*	*2.15*
3188	**661**	**1.15**	**1.23**	**724**	**1.40**	**1.50**	*782*	*1.64*	*1.78*	*836*	*1.91*	*2.07*	*886*	*2.19*	*2.38*
3375	**692**	**1.33**	**1.43**	*753*	*1.57*	*1.71*	*809*	*1.84*	*2.00*	*861*	*2.13*	*2.31*	*910*	*2.41*	*2.62*
3563	**723**	**1.54**	**1.65**	*782*	*1.79*	*1.94*	*836*	*2.07*	*2.25*	*887*	*2.36*	*2.56*	*934*	*2.66*	*2.89*
3750	*755*	*1.74*	*1.89*	*811*	*2.03*	*2.20*	*864*	*2.32*	*2.52*	*913*	*2.62*	*2.84*	***959***	***2.93***	***3.18***

Unit 50TCM - D08 - 230V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2250	*832*	*1.57*	*1.71*	*882*	*1.83*	*1.99*	*928*	*2.11*	*2.29*	*973*	*2.39*	*2.59*	***1015***	***2.69***	***2.92***
2438	*851*	*1.72*	*1.87*	*899*	*1.99*	*2.16*	*945*	*2.27*	*2.46*	***989***	***2.56***	***2.78***	***1031***	***2.86***	***3.11***
2625	*870*	*1.88*	*2.04*	*918*	*2.16*	*2.34*	***963***	***2.45***	***2.66***	***1006***	***2.74***	***2.98***	***1048***	***3.06***	***3.32***
2813	*890*	*2.06*	*2.24*	*937*	*2.35*	*2.55*	***982***	***2.64***	***2.87***	***1024***	***2.96***	***3.21***	***1065***	***3.27***	***3.55***
3000	*912*	*2.27*	*2.46*	***958***	***2.56***	***2.78***	***1001***	***2.86***	***3.11***	***1043***	***3.18***	***3.45***	***1083***	***3.50***	***3.80***
3188	*934*	*2.48*	*2.69*	***979***	***2.78***	***3.02***	***1022***	***3.09***	***3.36***	***1063***	***3.43***	***3.72***	***1102***	***3.76***	***4.08***
3375	***956***	***2.72***	***2.95***	***1000***	***3.03***	***3.29***	***1042***	***3.35***	***3.64***	***1083***	***3.68***	***4.00***	1122	4.03	4.38
3563	***980***	***2.97***	***3.23***	***1023***	***3.30***	***3.58***	***1064***	***3.63***	***3.94***	1104	3.98	4.32	1142	4.33	4.70
3750	***1004***	***3.26***	***3.54***	***1046***	***3.59***	***3.90***	***1088***	***3.93***	***4.27***	1125	4.28	4.65	-	-	-

Unit 50TCM - D08 - 400V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2250	**504**	**0.44**	**0.44**	**583**	**0.61**	**0.60**	**651**	**0.79**	**0.78**	**713**	**0.99**	**0.98**	*769*	*1.18*	*1.19*
2438	**533**	**0.53**	**0.53**	**608**	**0.71**	**0.70**	**674**	**0.90**	**0.89**	**733**	**1.10**	**1.10**	*789*	*1.30*	*1.31*
2625	**562**	**0.63**	**0.63**	**634**	**0.82**	**0.82**	**697**	**1.02**	**1.01**	*755*	*1.22*	*1.23*	*808*	*1.44*	*1.45*
2813	**591**	**0.75**	**0.74**	**660**	**0.95**	**0.94**	**721**	**1.15**	**1.15**	*778*	*1.36*	*1.37*	*830*	*1.59*	*1.60*
3000	**622**	**0.88**	**0.87**	**687**	**1.09**	**1.08**	**746**	**1.30**	**1.30**	*800*	*1.53*	*1.53*	*852*	*1.76*	*1.77*
3188	**652**	**1.02**	**1.01**	**715**	**1.24**	**1.24**	*772*	*1.46*	*1.47*	*825*	*1.70*	*1.71*	*874*	*1.95*	*1.96*
3375	**683**	**1.19**	**1.18**	**743**	**1.40**	**1.41**	*798*	*1.64*	*1.65*	*850*	*1.90*	*1.91*	*898*	*2.15*	*2.16*
3563	**714**	**1.37**	**1.36**	*772*	*1.59*	*1.60*	*825*	*1.85*	*1.86*	*875*	*2.10*	*2.11*	*922*	*2.37*	*2.38*
3750	**745**	**1.55**	**1.56**	*800*	*1.81*	*1.82*	*853*	*2.07*	*2.08*	*901*	*2.33*	*2.34*	*947*	*2.56*	*2.62*

Unit 50TCM - D08 - 400V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2250	*821*	*1.40*	*1.41*	*871*	*1.63*	*1.64*	*916*	*1.88*	*1.89*	*960*	*2.13*	*2.14*	***1002***	***2.35***	***2.41***
2438	*840*	*1.53*	*1.54*	*887*	*1.77*	*1.78*	*933*	*2.02*	*2.03*	***976***	***2.24***	***2.29***	***1018***	***2.51***	***2.57***
2625	*859*	*1.67*	*1.68*	*906*	*1.92*	*1.93*	***950***	***2.14***	***2.19***	***993***	***2.40***	***2.46***	***1034***	***2.68***	***2.74***
2813	*878*	*1.84*	*1.85*	*925*	*2.09*	*2.10*	***969***	***2.31***	***2.37***	***1011***	***2.59***	***2.65***	***1051***	***2.86***	***2.93***
3000	*900*	*2.02*	*2.03*	*946*	*2.24*	*2.29*	***988***	***2.51***	***2.57***	***1029***	***2.78***	***2.85***	***1069***	***3.06***	***3.14***
3188	*922*	*2.21*	*2.22*	***966***	***2.43***	***2.49***	***1009***	***2.71***	***2.77***	***1049***	***3.00***	***3.07***	***1088***	***3.29***	***3.37***
3375	***944***	***2.38***	***2.43***	***987***	***2.65***	***2.71***	***1028***	***2.93***	***3.00***	***1069***	***3.22***	***3.30***	1107	3.53	3.61
3563	***967***	***2.60***	***2.66***	***1010***	***2.89***	***2.95***	***1050***	***3.18***	***3.25***	***1090***	***3.48***	***3.56***	1127	3.79	3.88
3750	***991***	***2.85***	***2.92***	***1032***	***3.14***	***3.22***	***1074***	***3.44***	***3.52***	1110	3.75	3.84	-	-	-

Legend and Notes:

Normal Font - Field Installed Drive Package

Bold Font - Standard Drive Package + Standard Motor.

Italics Font **-** Medium Drive Package + Medium Static Motor.

Bold , Italics Font **-** High Drive Package + High Static Motor.

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan Performance Table (Continued)

Unit 50TCM - D09 - 230V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2550	477	0.40	0.43	**556**	**0.53**	**0.57**	**624**	**0.66**	**0.71**	**685**	**0.79**	**0.85**	*742*	*0.92*	*0.99*
2763	503	0.48	0.52	**578**	**0.62**	**0.67**	**644**	**0.76**	**0.82**	**704**	**0.90**	**0.97**	*759*	*1.05*	*1.13*
2975	**529**	**0.58**	**0.62**	**601**	**0.74**	**0.79**	**665**	**0.89**	**0.95**	**724**	**1.04**	**1.11**	*777*	*1.19*	*1.28*
3188	**556**	**0.69**	**0.74**	**625**	**0.86**	**0.92**	**687**	**1.02**	**1.09**	*744*	*1.17*	*1.26*	*796*	*1.34*	*1.44*
3400	**583**	**0.82**	**0.88**	**650**	**0.99**	**1.06**	**710**	**1.16**	**1.24**	*765*	*1.33*	*1.43*	*816*	*1.51*	*1.62*
3613	**611**	**0.96**	**1.03**	**675**	**1.14**	**1.22**	**733**	**1.32**	**1.42**	*787*	*1.50*	*1.61*	*836*	*1.69*	*1.81*
3825	**639**	**1.11**	**1.19**	**701**	**1.31**	**1.40**	*757*	*1.50*	*1.61*	*809*	*1.69*	*1.81*	*857*	*1.88*	*2.02*
4038	**668**	**1.29**	**1.38**	**727**	**1.49**	**1.60**	*781*	*1.69*	*1.81*	*832*	*1.89*	*2.03*	*879*	*2.10*	*2.25*
4250	**696**	**1.47**	**1.58**	*753*	*1.69*	*1.81*	*806*	*1.90*	*2.04*	*855*	*2.12*	*2.27*	***901***	***2.33***	***2.50***

Unit 50TCM - D09 - 230V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2550	*794*	*1.06*	*1.14*	*842*	*1.20*	*1.29*	*888*	*1.34*	*1.44*	*932*	*1.48*	*1.59*	***973***	***1.63***	***1.75***
2763	*810*	*1.19*	*1.28*	*858*	*1.34*	*1.44*	*903*	*1.49*	*1.60*	***946***	***1.65***	***1.77***	***987***	***1.80***	***1.93***
2975	*827*	*1.34*	*1.44*	*874*	*1.50*	*1.61*	*919*	*1.66*	*1.78*	***961***	***1.82***	***1.95***	***1001***	***1.99***	***2.13***
3188	*845*	*1.51*	*1.62*	*891*	*1.67*	*1.79*	*935*	*1.85*	*1.98*	***977***	***2.01***	***2.16***	***1017***	***2.18***	***2.34***
3400	*864*	*1.68*	*1.80*	*909*	*1.86*	*1.99*	***952***	***2.03***	***2.18***	***993***	***2.22***	***2.38***	***1033***	***2.40***	***2.57***
3613	*883*	*1.87*	*2.01*	*928*	*2.06*	*2.21*	***970***	***2.25***	***2.41***	***1010***	***2.43***	***2.61***	***1049***	***2.63***	***2.82***
3825	*903*	*2.08*	*2.23*	***947***	***2.28***	***2.44***	***988***	***2.47***	***2.65***	***1028***	***2.68***	***2.87***	***1066***	***2.87***	***3.08***
4038	***924***	***2.30***	***2.47***	***967***	***2.52***	***2.70***	***1008***	***2.72***	***2.92***	***1047***	***2.93***	***3.14***	***1084***	***3.14***	***3.37***
4250	***945***	***2.55***	***2.73***	***987***	***2.77***	***2.97***	***1027***	***2.98***	***3.20***	***1066***	***3.20***	***3.43***	1103	3.42	3.67

Unit 50TCM - D09 - 400V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2550	489	0.47	0.46	**570**	**0.62**	**0.62**	**640**	**0.77**	**0.77**	**702**	**0.92**	**0.92**	*761*	*1.07*	*1.07*
2763	**518**	**0.56**	**0.56**	**592**	**0.73**	**0.72**	**660**	**0.89**	**0.89**	**722**	**1.05**	**1.05**	*778*	*1.22*	*1.22*
2975	**542**	**0.67**	**0.67**	**616**	**0.86**	**0.85**	**682**	**1.03**	**1.03**	*742*	*1.21*	*1.20*	*796*	*1.38*	*1.38*
3188	**570**	**0.80**	**0.80**	**641**	**1.00**	**0.99**	**704**	**1.18**	**1.18**	*763*	*1.36*	*1.36*	*816*	*1.55*	*1.56*
3400	**598**	**0.96**	**0.95**	**666**	**1.15**	**1.14**	**728**	**1.35**	**1.34**	*784*	*1.54*	*1.54*	*836*	*1.75*	*1.75*
3613	**626**	**1.12**	**1.11**	**692**	**1.32**	**1.32**	*751*	*1.54*	*1.53*	*807*	*1.74*	*1.74*	*857*	*1.95*	*1.95*
3825	**655**	**1.29**	**1.29**	**719**	**1.52**	**1.51**	*776*	*1.74*	*1.74*	*829*	*1.95*	*1.95*	*878*	*2.18*	*2.18*
4038	**685**	**1.50**	**1.49**	*745*	*1.74*	*1.73*	*801*	*1.95*	*1.95*	*853*	*2.19*	*2.19*	*901*	*2.43*	*2.43*
4250	**713**	**1.66**	**1.65**	*772*	*1.95*	*1.95*	*826*	*2.20*	*2.20*	*876*	*2.45*	*2.45*	***924***	***2.69***	***2.70***

Unit 50TCM - D09- 400V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
2550	*814*	*1.23*	*1.23*	*863*	*1.39*	*1.39*	*910*	*1.55*	*1.56*	*955*	*1.71*	*1.72*	***997***	***1.88***	***1.89***
2763	*830*	*1.38*	*1.38*	*879*	*1.55*	*1.56*	*926*	*1.73*	*1.73*	***970***	***1.90***	***1.91***	***1012***	***2.07***	***2.08***
2975	*848*	*1.55*	*1.56*	*896*	*1.74*	*1.74*	*942*	*1.92*	*1.92*	***985***	***2.09***	***2.11***	***1026***	***2.29***	***2.30***
3188	*866*	*1.75*	*1.75*	*913*	*1.93*	*1.93*	*958*	*2.14*	*2.14*	***1001***	***2.32***	***2.33***	***1042***	***2.51***	***2.53***
3400	*886*	*1.94*	*1.94*	*932*	*2.15*	*2.15*	***976***	***2.34***	***2.35***	***1018***	***2.56***	***2.57***	***1059***	***2.76***	***2.78***
3613	*905*	*2.17*	*2.17*	*951*	*2.38*	*2.39*	***994***	***2.59***	***2.60***	***1035***	***2.80***	***2.82***	1075	3.03	3.05
3825	*926*	*2.41*	*2.41*	***971***	***2.62***	***2.64***	***1013***	***2.85***	***2.86***	1054	3.08	3.10	1093	3.31	3.33
4038	***947***	***2.65***	***2.67***	***991***	***2.90***	***2.92***	1033	3.14	3.15	1073	3.37	3.39	1111	3.62	3.64
4250	***969***	***2.93***	***2.95***	1012	3.19	3.21	1053	3.44	3.46	1093	3.68	3.70	1131	3.94	3.96

Legend and Notes:

Normal Font - Field Installed Drive Package

Bold Font - Standard Drive Package + Standard Motor.

Italics Font **-** Medium Drive Package + Medium Static Motor.

Bold , Italics Font **-** High Drive Package + High Static Motor.

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan Performance Table (Continued)

Unit 50TCM - D12 - 230V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	556	0.61	0.65	**623**	**0.75**	**0.80**	**684**	**0.89**	**0.95**	**738**	**1.04**	**1.11**	**789**	**1.17**	**1.26**
3250	590	0.74	0.79	**655**	**0.90**	**0.96**	**713**	**1.05**	**1.13**	**766**	**1.20**	**1.29**	**815**	**1.36**	**1.46**
3500	**625**	**0.90**	**0.96**	**687**	**1.06**	**1.14**	**742**	**1.23**	**1.32**	**794**	**1.40**	**1.50**	*841*	*1.55*	*1.68*
3750	**661**	**1.08**	**1.16**	**719**	**1.26**	**1.35**	**773**	**1.44**	**1.54**	**822**	**1.61**	**1.73**	*869*	*1.78*	*1.93*
4000	**697**	**1.28**	**1.37**	**753**	**1.47**	**1.58**	**804**	**1.67**	**1.79**	*852*	*1.86*	*1.99*	*897*	*2.03*	*2.20*
4250	**733**	**1.51**	**1.62**	**787**	**1.72**	**1.84**	**836**	**1.92**	**2.06**	*883*	*2.13*	*2.28*	*926*	*2.29*	*2.49*
4500	**770**	**1.76**	**1.89**	**821**	**1.99**	**2.13**	*869*	*2.17*	*2.36*	*914*	*2.39*	*2.59*	*956*	*2.60*	*2.82*
4750	**807**	**2.05**	**2.20**	*856*	*2.26*	*2.45*	*902*	*2.48*	*2.69*	*945*	*2.71*	*2.94*	*986*	*2.93*	*3.18*
5000	*844*	*2.34*	*2.54*	*891*	*2.58*	*2.80*	*936*	*2.82*	*3.06*	*978*	*3.05*	*3.31*	*1018*	*3.29*	*3.57*

Unit 50TCM - D12 - 230V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	836	1.32	1.42	*881*	*1.45*	*1.57*	*923*	*1.59*	*1.73*	*963*	*1.74*	*1.89*	*1001*	*1.89*	*2.05*
3250	*861*	*1.50*	*1.63*	*904*	*1.65*	*1.79*	*945*	*1.81*	*1.96*	*985*	*1.96*	*2.13*	*1023*	*2.12*	*2.30*
3500	*886*	*1.71*	*1.86*	*929*	*1.88*	*2.04*	*969*	*2.04*	*2.22*	*1008*	*2.21*	*2.40*	*1045*	*2.38*	*2.58*
3750	*912*	*1.95*	*2.12*	*954*	*2.13*	*2.31*	*994*	*2.30*	*2.50*	*1031*	*2.49*	*2.70*	*1068*	*2.66*	*2.89*
4000	*940*	*2.21*	*2.40*	*980*	*2.40*	*2.61*	*1019*	*2.59*	*2.81*	*1056*	*2.78*	*3.02*	***1092***	***2.97***	***3.22***
4250	*968*	*2.50*	*2.71*	*1007*	*2.70*	*2.93*	*1045*	*2.90*	*3.15*	*1081*	*3.09*	*3.36*	***1117***	***3.30***	***3.58***
4500	*996*	*2.81*	*3.05*	*1035*	*3.02*	*3.28*	*1072*	*3.23*	*3.51*	***1108***	***3.44***	***3.74***	***1142***	***3.66***	***3.97***
4750	*1026*	*3.15*	*3.42*	*1063*	*3.37*	*3.66*	***1100***	***3.60***	***3.91***	***1135***	***3.82***	***4.15***	***1168***	***4.04***	***4.39***
5000	***1056***	***3.52***	***3.82***	***1093***	***3.76***	***4.08***	***1128***	***4.00***	***4.34***	***1162***	***4.23***	***4.59***	-	-	-

Unit 50TCM - D12 - 400V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	556	0.65	0.65	**623**	**0.80**	**0.80**	**684**	**0.95**	**0.95**	**738**	**1.11**	**1.11**	**789**	**1.26**	**1.26**
3250	590	0.79	0.79	**655**	**0.96**	**0.96**	**713**	**1.13**	**1.13**	**766**	**1.29**	**1.29**	**815**	**1.46**	**1.46**
3500	**625**	**0.96**	**0.96**	**687**	**1.14**	**1.14**	**742**	**1.32**	**1.32**	**794**	**1.50**	**1.50**	*841*	*1.64*	*1.68*
3750	**661**	**1.16**	**1.16**	**719**	**1.35**	**1.35**	**773**	**1.54**	**1.54**	**819**	**1.73**	**1.73**	*869*	*1.89*	*1.93*
4000	**697**	**1.37**	**1.37**	**753**	**1.58**	**1.58**	**804**	**1.79**	**1.79**	*852*	*1.99*	*1.99*	*897*	*2.15*	*2.20*
4250	**733**	**1.62**	**1.62**	**787**	**1.84**	**1.84**	*838*	*2.06*	*2.06*	*883*	*2.28*	*2.28*	*926*	*2.43*	*2.49*
4500	**770**	**1.89**	**1.89**	**821**	**2.13**	**2.13**	*869*	*2.31*	*2.36*	*914*	*2.53*	*2.59*	*956*	*2.76*	*2.82*
4750	**807**	**2.20**	**2.20**	*856*	*2.39*	*2.45*	*902*	*2.63*	*2.69*	*945*	*2.87*	*2.94*	*986*	*3.11*	*3.18*
5000	*844*	*2.48*	*2.54*	*891*	*2.74*	*2.80*	*936*	*2.99*	*3.06*	*978*	*3.23*	*3.31*	*1018*	*3.49*	*3.57*

Unit 50TCM - D12 - 400V - (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	*838*	*1.42*	*1.42*	*881*	*1.53*	*1.57*	*923*	*1.69*	*1.73*	*963*	*1.85*	*1.89*	*1001*	*2.00*	*2.05*
3250	*861*	*1.59*	*1.63*	*904*	*1.75*	*1.79*	*945*	*1.92*	*1.96*	*985*	*2.08*	*2.13*	*1023*	*2.25*	*2.30*
3500	*886*	*1.82*	*1.86*	*929*	*1.99*	*2.04*	*969*	*2.17*	*2.22*	*1008*	*2.34*	*2.40*	*1045*	*2.52*	*2.58*
3750	*912*	*2.07*	*2.12*	*954*	*2.26*	*2.31*	*994*	*2.44*	*2.50*	*1031*	*2.64*	*2.70*	*1068*	*2.82*	*2.89*
4000	*940*	*2.34*	*2.40*	*980*	*2.55*	*2.61*	*1019*	*2.75*	*2.81*	*1056*	*2.95*	*3.02*	***1092***	***3.15***	***3.22***
4250	*968*	*2.65*	*2.71*	*1007*	*2.86*	*2.93*	*1045*	*3.08*	*3.15*	*1081*	*3.28*	*3.36*	***1117***	***3.50***	***3.58***
4500	*996*	*2.98*	*3.05*	*1035*	*3.20*	*3.28*	*1072*	*3.43*	*3.51*	***1108***	***3.65***	***3.74***	***1142***	***3.88***	***3.97***
4750	*1026*	*3.34*	*3.42*	*1063*	*3.58*	*3.66*	***1100***	***3.82***	***3.91***	***1135***	***4.05***	***4.15***	***1168***	***4.29***	***4.39***
5000	***1056***	***3.73***	***3.82***	***1093***	***3.99***	***4.08***	***1128***	***4.24***	***4.34***	***1162***	***4.48***	***4.59***	-	-	-

Legend and Notes:

Normal Font - Field Installed Drive Package

Bold Font - Standard Drive Package + Standard Motor.

Italics Font **-** Medium Drive Package + Medium Static Motor.

Bold , Italics Font **-** High Drive Package + High Static Motor.

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan Performance Table (Continued)

Unit 50TCM - D14 - 230V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3600	580	0.76	0.82	642	0.91	0.99	**700**	**1.07**	**1.16**	**756**	**1.23**	**1.34**	**809**	**1.41**	**1.53**
3750	621	0.95	1.03	**679**	**1.11**	**1.21**	**734**	**1.29**	**1.40**	**786**	**1.46**	**1.59**	**837**	**1.65**	**1.79**
4063	**663**	**1.18**	**1.28**	**717**	**1.35**	**1.47**	**769**	**1.54**	**1.67**	**818**	**1.73**	**1.88**	*866*	*1.92*	*2.09*
4375	**706**	**1.44**	**1.56**	**757**	**1.63**	**1.77**	**805**	**1.82**	**1.98**	*852*	*2.03*	*2.20*	*897*	*2.24*	*2.43*
4688	**749**	**1.74**	**1.89**	**797**	**1.94**	**2.11**	**843**	**2.16**	**2.34**	*887*	*2.37*	*2.57*	*930*	*2.59*	*2.81*
5000	**793**	**2.08**	**2.26**	**838**	**2.30**	**2.50**	*881*	*2.52*	*2.74*	*923*	*2.74*	*2.98*	*965*	*2.97*	*3.23*
5313	**837**	**2.48**	**2.69**	*880*	*2.70*	*2.93*	*921*	*2.94*	*3.19*	*961*	*3.17*	*3.44*	1000	3.42	3.71
5625	*882*	*2.91*	*3.16*	*922*	*3.15*	*3.42*	*961*	*3.39*	*3.68*	999	3.64	3.95	***1037***	***3.90***	***4.23***
5938	*926*	*3.39*	*3.68*	964	3.65	3.96	1001	3.90	4.23	***1038***	***4.16***	***4.52***	-	-	-
6000	936	3.50	3.80	974	3.76	4.09	1011	4.02	4.36	1049	4.29	4.66	-	-	-

Unit 50TCM - D14 - 230V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3600	*860*	*1.58*	*1.72*	*910*	*1.77*	*1.92*	*957*	*1.95*	*2.12*	*1003*	*2.14*	*2.32*	*1048*	*2.34*	*2.54*
3750	*885*	*1.83*	*1.99*	*932*	*2.03*	*2.20*	*978*	*2.23*	*2.42*	*1022*	*2.43*	*2.64*	*1065*	*2.63*	*2.86*
4063	*912*	*2.13*	*2.31*	*957*	*2.33*	*2.53*	*1001*	*2.53*	*2.75*	*1043*	*2.74*	*2.98*	*1084*	*2.97*	*3.22*
4375	*941*	*2.45*	*2.66*	*984*	*2.66*	*2.89*	*1026*	*2.88*	*3.13*	*1066*	*3.10*	*3.37*	***1106***	***3.33***	***3.62***
4688	*972*	*2.81*	*3.05*	*1013*	*3.03*	*3.29*	*1053*	*3.26*	*3.54*	***1092***	***3.50***	***3.80***	***1130***	***3.74***	***4.06***
5000	*1005*	*3.21*	*3.49*	***1044***	***3.44***	***3.74***	***1082***	***3.69***	***4.01***	***1119***	***3.93***	***4.27***	***1156***	***4.19***	***4.55***
5313	***1038***	***3.66***	***3.97***	***1076***	***3.90***	***4.24***	***1113***	***4.16***	***4.52***	-	-	-	-	-	-
5625	***1073***	***4.15***	***4.51***	-	-	-	-	-	-	-	-	-	-	-	-
5938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Unit 50TCM - D14 - 400V

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3600	595	0.82	0.83	**658**	**0.99**	**1.00**	**718**	**1.17**	**1.17**	**775**	**1.35**	**1.35**	**829**	**1.54**	**1.55**
3750	637	1.03	1.04	**696**	**1.22**	**1.22**	**752**	**1.41**	**1.41**	**806**	**1.60**	**1.61**	*858*	*1.80*	*1.81*
4063	**680**	**1.29**	**1.29**	**735**	**1.48**	**1.48**	**788**	**1.68**	**1.69**	**838**	**1.89**	**1.90**	*888*	*2.06*	*2.11*
4375	**724**	**1.57**	**1.58**	**776**	**1.78**	**1.79**	**825**	**1.99**	**2.00**	*873*	*2.17*	*2.22*	*919*	*2.40*	*2.45*
4688	**768**	**1.90**	**1.91**	**817**	**2.12**	**2.13**	*864*	*2.35*	*2.36*	*909*	*2.54*	*2.60*	*953*	*2.77*	*2.84*
5000	**813**	**2.27**	**2.28**	*859*	*2.51*	*2.53*	*903*	*2.70*	*2.77*	*946*	*2.94*	*3.01*	*989*	*3.19*	*3.26*
5313	**858**	**2.70**	**2.72**	*902*	*2.89*	*2.96*	*944*	*3.15*	*3.22*	*985*	*3.39*	*3.47*	*1025*	*3.66*	*3.75*
5625	*904*	*3.12*	*3.19*	*945*	*3.38*	*3.45*	*985*	*3.63*	*3.72*	*1024*	*3.90*	*3.99*	*1063*	*4.17*	*4.27*
5938	*949*	*3.63*	*3.72*	*988*	*3.91*	*4.00*	*1026*	*4.17*	*4.27*	*1064*	*4.46*	*4.57*	-	-	-
6000	*959*	*3.75*	*3.83*	*998*	*4.03*	*4.13*	*1037*	*4.31*	*4.41*	*1075*	*4.60*	*4.71*	-	-	-

Unit 50TCM - D14 - 400V (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3600	*882*	*1.70*	*1.74*	*933*	*1.89*	*1.94*	*981*	*2.09*	*2.14*	*1028*	*2.29*	*2.34*	*1074*	*2.51*	*2.57*
3750	*907*	*1.96*	*2.01*	*955*	*2.17*	*2.22*	*1002*	*2.39*	*2.44*	*1048*	*2.61*	*2.67*	***1092***	***2.82***	***2.89***
4063	*935*	*2.28*	*2.33*	*981*	*2.50*	*2.56*	*1026*	*2.71*	*2.78*	*1069*	*2.94*	*3.01*	***1111***	***3.18***	***3.25***
4375	*965*	*2.63*	*2.69*	*1009*	*2.85*	*2.92*	*1052*	*3.09*	*3.16*	***1093***	***3.33***	***3.40***	***1134***	***3.57***	***3.66***
4688	*996*	*3.01*	*3.08*	*1038*	*3.25*	*3.32*	*1079*	*3.49*	*3.58*	***1119***	***3.75***	***3.84***	***1158***	***4.01***	***4.10***
5000	*1030*	*3.44*	*3.52*	*1070*	*3.69*	*3.78*	***1109***	***3.96***	***4.05***	***1147***	***4.21***	***4.31***	***1185***	***4.49***	***4.60***
5313	*1064*	*3.92*	*4.01*	***1103***	***4.18***	***4.28***	***1141***	***4.46***	***4.57***	-	-	-	-	-	-
5625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend and Notes:

Normal Font - Field Installed Drive Package

Bold Font - Standard Drive Package + Standard Motor.

Italics Font **-** Medium Drive Package + Medium Static Motor.

Bold , Italics Font **-** High Drive Package + High Static Motor.

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan RPM at Motor Pulley Settings

Freq.	Unit 50TCM	Application	Drive Package	MOTOR PULLEY TURNS OPEN - ENGLISH										
				0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
60Hz	A07	230V	Standard Static	1457	1419	1380	1342	1303	1265	***1227***	1188	1150	1111	1073
		400V	Standard Static	-	-	***1035***	997	958	920	882	843	805	767	728
		230V	Medium Static	1518	1484	1449	1415	1380	1346	***1311***	1277	1242	1208	1173
		400V	Medium Static	1457	1418	1380	1342	1303	1265	***1227***	1188	1150	1112	1073
		All	High Static	1788	1757	1725	1694	1662	1631	***1600***	1568	1537	1505	1474
	D08	All	Standard Static	747	721	695	670	644	618	592	566	***541***	515	489
			Medium Static	949	927	906	884	863	841	819	798	***776***	755	733
			High Static	1102	1083	1063	1044	1025	1006	986	967	***948***	928	909
	D09	All	Standard Static	733	712	690	669	647	626	604	583	***561***	540	518
			Medium Static	936	911	887	862	838	813	788	764	***739***	715	690
			High Static	1084	1059	1035	1010	986	961	936	912	***887***	863	838
	D12	230V	Standard Static	838	813	789	764	739	715	690	665	***640***	616	591
		400V	Standard Static	819	798	776	755	733	712	690	668	***647***	625	604
		All	Medium Static	1084	1059	1035	1010	986	961	936	912	***887***	863	838
		230V	High Static	1240	1218	1196	1175	1153	1131	1109	1087	***1066***	1044	1022
		400V	High Static	1229	1208	1186	1164	1143	1121	1100	1078	***1057***	1035	1013
	D14	All	Standard Static	843	824	805	786	767	748	728	709	***690***	671	652
			Medium Static	1084	1060	1035	1010	986	961	936	912	***887***	863	838
		230V	High Static	1240	1218	1196	1175	1153	1131	1109	1087	***1066***	1044	1022
		400V	High Static	1229	1208	1186	1164	1143	1121	1100	1078	***1057***	1035	1013

Freq.	Unit 50TCM	Application	Drive Package	MOTOR PULLEY TURNS OPEN - SI										
				0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
60Hz	D07	230V	Standard Static	24.3	23.7	23.0	22.4	21.7	21.1	***20.5***	19.8	19.2	18.5	17.9
		400V	Standard Static	-	-	***17.3***	16.6	16.0	15.3	14.7	14.1	13.4	12.8	12.1
		230V	Medium Static	25.3	24.7	24.2	23.6	23.0	22.4	***21.9***	21.3	20.7	20.1	19.6
		400V	Medium Static	24.3	23.6	23.0	22.4	21.7	21.1	***20.4***	19.8	19.2	18.5	17.9
		All	High Static	29.8	29.3	28.8	28.2	27.7	27.2	***26.7***	26.1	25.6	25.1	24.6
	D08	All	Standard Static	12.5	12.0	11.6	11.2	10.7	10.3	9.9	9.4	***9.0***	8.6	8.2
			Medium Static	15.8	15.5	15.1	14.7	14.4	14.0	13.7	13.3	***12.9***	12.6	12.2
			High Static	18.4	18.1	17.7	17.4	17.1	16.8	16.4	16.1	***15.8***	15.5	15.2
	D09	All	Standard Static	12.2	11.9	11.5	11.2	10.8	10.4	10.1	9.7	***9.4***	9.0	8.6
			Medium Static	15.6	15.2	14.8	14.4	14.0	13.6	13.1	12.7	***12.3***	11.9	11.5
			High Static	18.1	17.7	17.3	16.8	16.4	16.0	15.6	15.2	***14.8***	14.4	14.0
	D12	230V	Standard Static	14.0	13.6	13.2	12.7	12.3	11.9	11.5	11.1	***10.7***	10.3	9.9
		400V	Standard Static	13.7	13.3	12.9	12.6	12.2	11.9	11.5	11.1	***10.8***	10.4	10.1
		All	Medium Static	18.1	17.7	17.3	16.8	16.4	16.0	15.6	15.2	***14.8***	14.4	14.0
		230V	High Static	20.7	20.3	19.9	19.6	19.2	18.9	18.5	18.1	***17.8***	17.4	17.0
		400V	High Static	20.5	20.1	19.8	19.4	19.0	18.7	18.3	18.0	***17.6***	17.3	16.9
	D14	All	Standard Static	14.1	13.7	13.4	13.1	12.8	12.5	12.1	11.8	***11.5***	11.2	10.9
			Medium Static	18.1	17.7	17.3	16.8	16.4	16.0	15.6	15.2	***14.8***	14.4	14.0
		230V	High Static	20.7	20.3	19.9	19.6	19.2	18.9	18.5	18.1	***17.8***	17.4	17.0
		400V	High Static	20.5	20.1	19.8	19.4	19.0	18.7	18.3	18.0	***17.6***	17.3	16.9

Bold, Italics RPM is the factory setting . In range of +- 5 % due to different voltage application (230V and 400V)
The standard belt size may not cover all the above range. Other RPMs require field supplied drive package.

Sound Rating Data

Unit 50TCM	Cooling Stages	Unit Sound (dB) - Based on cooling mode								
		A-Weighted	63	125	250	500	1000	2000	4000	8000
A07	1	91.2	97.2	88.5	89.4	88.4	86.6	83.4	78.1	72.6
D08	2	80.0	97.2	83.9	78.1	75.5	75.3	70.3	66.5	62.1
D09	2	80.3	97.4	84.1	78.2	75.8	75.7	70.7	66.7	62.2
D12	2	91.9	97.2	90.0	90.1	88.0	87.0	84.3	81.3	77.0
D14	2	92.3	97.5	90.2	90.4	88.6	87.6	84.6	81.6	77.3

dB – Decibel

NOTES:

1. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure accounts for specific environment factors which do not match individual applications. Sound power values are independent of the environment and therefore
2. A–Weighted sound ratings filter out very high and very low frequencies, to better approximate the response of an “average” human ear.

Electrical Data

50TCM - 230/3/60Hz application			Compressor				OFM			IFM		Electric Heater			MCA	MOCP
Unit Size 50TCM	Power Supply V / Ph / Hz	Drive package Indoor Motor	No.1		No.2											
			RLA	LRA	RLA	LRA	Qty	HP	FLA	HP	FLA	P.N. CRHEATERXXXXXX	APP (KW)	FLA		
A07	230/3/60	Standard	19	123	-	-	1	1/3	2.8	2.4	5.2	-	-	-	31.8	50
			19	123	-	-	1	1/3	2.8	2.4	5.2	102A00	6.0	15.6	31.8	50
			19	123	-	-	1	1/3	2.8	2.4	5.2	104B00	9.6	25.3	38.1	50
			19	123	-	-	1	1/3	2.8	2.4	5.2	105A00	14.7	38.5	54.6	60
			19	123	-	-	1	1/3	2.8	2.4	5.2	104B00, 104B00	19.3	50.5	69.6	70
			19	123	-	-	1	1/3	2.8	2.4	5.2	104B00, 105A00	24.3	63.8	86.3	90
		Medium	19	123	-	-	1	1/3	2.8	2.9	7.5	-	-	-	34.1	50
			19	123	-	-	1	1/3	2.8	2.9	7.5	102A00	6.0	15.6	34.1	50
			19	123	-	-	1	1/3	2.8	2.9	7.5	104B00	9.6	25.3	41.0	50
			19	123	-	-	1	1/3	2.8	2.9	7.5	105A00	14.7	38.5	57.5	60
			19	123	-	-	1	1/3	2.8	2.9	7.5	104B00, 104B00	19.3	50.5	72.5	80
			19	123	-	-	1	1/3	2.8	2.9	7.5	104B00, 105A00	24.3	63.8	89.1	90
		High	19	123	-	-	1	1/3	2.8	3.7	10	-	-	-	36.6	50
			19	123	-	-	1	1/3	2.8	3.7	10	102A00	6.0	15.6	36.6	50
			19	123	-	-	1	1/3	2.8	3.7	10	104B00	9.6	25.3	44.1	50
			19	123	-	-	1	1/3	2.8	3.7	10	105A00	14.7	38.5	60.6	70
			19	123	-	-	1	1/3	2.8	3.7	10	104B00, 104B00	19.3	50.5	75.6	80
			19	123	-	-	1	1/3	2.8	3.7	10	104B00, 105A00	24.3	63.8	92.3	100
D08	230/3/60	Standard	13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	-	-	-	38.6	50
			13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	117A00	9.6	25	38.6	50
			13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	110A00	14.7	38.5	54.6	60
			13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	111A00	22.8	59.7	81.1	90
			13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	112A00	29.4	77	102.8	110
			13.6	83	13.6	83	2	1/4	1.4	1.7	5.2	112A00, 117A00	38.9	102	134.0	150
		Medium	13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	-	-	-	40.9	50
			13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	117A00	9.6	25	40.9	50
			13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	110A00	14.7	38.5	57.5	60
			13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	111A00	22.8	59.7	84.0	90
			13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	112A00	29.4	77	105.6	110
			13.6	83	13.6	83	2	1/4	1.4	2.9	7.5	112A00, 117A00	38.9	102	136.9	150
		High	13.6	83	13.6	83	2	1/4	1.4	4.7	15	-	-	-	48.4	60
			13.6	83	13.6	83	2	1/4	1.4	4.7	15	117A00	9.6	25	50.0	60
			13.6	83	13.6	83	2	1/4	1.4	4.7	15	110A00	14.7	38.5	66.9	70
			13.6	83	13.6	83	2	1/4	1.4	4.7	15	111A00	22.8	59.7	93.4	100
			13.6	83	13.6	83	2	1/4	1.4	4.7	15	112A00	29.4	77	115.0	125
			13.6	83	13.6	83	2	1/4	1.4	4.7	15	112A00, 117A00	38.9	102	146.3	150
D09	230/3/60	Standard	14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	-	-	-	39.8	50
			14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	117A00	9.6	25	39.8	50
			14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	110A00	14.7	38.5	54.6	60
			14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	111A00	22.8	59.7	81.1	90
			14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	112A00	29.4	77	102.8	110
			14.5	98	13.7	83	2	1/4	1.4	1.7	5.2	112A00, 117A00	38.9	102	134.0	150
		Medium	14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	-	-	-	39.8	50
			14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	117A00	9.6	25	39.8	50
			14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	110A00	14.7	38.5	54.6	60
			14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	111A00	22.8	59.7	81.1	90
			14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	112A00	29.4	77	102.8	110
			14.5	98	13.7	83	2	1/4	1.4	2.4	5.2	112A00, 117A00	38.9	102	134.0	150
		High	14.5	98	13.7	83	2	1/4	1.4	3.7	10	-	-	-	44.6	50
			14.5	98	13.7	83	2	1/4	1.4	3.7	10	117A00	9.6	25	44.6	50
			14.5	98	13.7	83	2	1/4	1.4	3.7	10	110A00	14.7	38.5	60.6	70
			14.5	98	13.7	83	2	1/4	1.4	3.7	10	111A00	22.8	59.7	87.1	90
			14.5	98	13.7	83	2	1/4	1.4	3.7	10	112A00	29.4	77	108.8	110
			14.5	98	13.7	83	2	1/4	1.4	3.7	10	112A00, 117A00	38.9	102	140.0	150

Electrical Data (Continued)

50TCM - 230/3/60Hz application			Compressor				OFM			IFM		Electric Heater			MCA	MOCP
Unit Size 50TCM	Power Supply V / Ph / Hz	Drive package Indoor Motor	No.1		No.2											
			RLA	LRA	RLA	LRA	Qty	HP	FLA	HP	FLA	P.N. CRHEATERXXXXXX	APP (KW)	FLA		
D12	230/3/60	Standard	15.9	110	15.9	110	1	1	6.6	2.4	5.2	-	-	-	47.6	60
			15.9	110	15.9	110	1	1	6.6	2.4	5.2	117A00	9.6	25	47.6	60
			15.9	110	15.9	110	1	1	6.6	2.4	5.2	110A00	14.7	38.5	54.6	60
			15.9	110	15.9	110	1	1	6.6	2.4	5.2	112A00	29.4	77	102.8	110
			15.9	110	15.9	110	1	1	6.6	2.4	5.2	112A00, 117A00	38.9	102	134.0	150
			15.9	110	15.9	110	1	1	6.6	2.4	5.2	112A00, 110A00	45.9	120.3	156.9	175
		Medium	15.9	110	15.9	110	1	1	6.6	3.7	10	-	-	-	52.4	60
			15.9	110	15.9	110	1	1	6.6	3.7	10	117A00	9.6	25	52.4	60
			15.9	110	15.9	110	1	1	6.6	3.7	10	110A00	14.7	38.5	60.6	70
			15.9	110	15.9	110	1	1	6.6	3.7	10	112A00	29.4	77	108.8	110
			15.9	110	15.9	110	1	1	6.6	3.7	10	112A00, 117A00	38.9	102	140.0	150
			15.9	110	15.9	110	1	1	6.6	3.7	10	112A00, 110A00	45.9	120.3	162.9	175
		High	15.9	110	15.9	110	1	1	6.6	4.7	15	-	-	-	57.4	70
			15.9	110	15.9	110	1	1	6.6	4.7	15	117A00	9.6	25	57.4	70
			15.9	110	15.9	110	1	1	6.6	4.7	15	110A00	14.7	38.5	66.9	70
			15.9	110	15.9	110	1	1	6.6	4.7	15	112A00	29.4	77	115.0	125
			15.9	110	15.9	110	1	1	6.6	4.7	15	112A00, 117A00	38.9	102	146.3	150
			15.9	110	15.9	110	1	1	6.6	4.7	15	112A00, 110A00	45.9	120.3	169.1	175
D14	230/3/60	Standard	19	123	22.4	149	1	1	6.6	2.9	7.5	-	-	-	60.3	70
			19	123	22.4	149	1	1	6.6	2.9	7.5	117A00	9.6	25	60.3	70
			19	123	22.4	149	1	1	6.6	2.9	7.5	110A00	14.7	38.5	60.3	70
			19	123	22.4	149	1	1	6.6	2.9	7.5	112A00	29.4	77	105.6	110
			19	123	22.4	149	1	1	6.6	2.9	7.5	112A00, 117A00	38.9	102	136.9	150
			19	123	22.4	149	1	1	6.6	2.9	7.5	112A00, 110A00	45.9	120.3	159.8	175
		Medium	19	123	22.4	149	1	1	6.6	3.7	10	-	-	-	62.8	80
			19	123	22.4	149	1	1	6.6	3.7	10	117A00	9.6	25	62.8	80
			19	123	22.4	149	1	1	6.6	3.7	10	110A00	14.7	38.5	62.8	80
			19	123	22.4	149	1	1	6.6	3.7	10	112A00	29.4	77	108.8	110
			19	123	22.4	149	1	1	6.6	3.7	10	112A00, 117A00	38.9	102	140.0	150
			19	123	22.4	149	1	1	6.6	3.7	10	112A00, 110A00	45.9	120.3	162.9	175
		High	19	123	22.4	149	1	1	6.6	4.7	15	-	-	-	67.8	80
			19	123	22.4	149	1	1	6.6	4.7	15	117A00	9.6	25	67.8	80
			19	123	22.4	149	1	1	6.6	4.7	15	110A00	14.7	38.5	67.8	80
			19	123	22.4	149	1	1	6.6	4.7	15	112A00	29.4	77	115.0	125
			19	123	22.4	149	1	1	6.6	4.7	15	112A00, 117A00	38.9	102	146.3	150
			19	123	22.4	149	1	1	6.6	4.7	15	112A00, 110A00	45.9	120.3	169.1	175

Legend and Notes for Electrical Data Table

FLA - Full Load Amps
IFM - Indoor (Evaporator) Fan Motor
LRA - Locked Rotor Amps
MCA - Minimum Circuit Amps
OFM - Outdoor (Condenser) Fan Motor
RLA - Rated Load Amps
APP - Application power at rated power supply voltage
MOCP - Maximum Overcurrent Protection

Minimum Voltage: 360V, Maximum Voltage: 420 on 400V/3Ph/60Hz

For ordering electric heater: Include complete heater part number in the order placement e.g CRHEATER116A00.

Unbalanced 3-Phase Supply Voltage

Never operate a motor where phase imbalance in supply voltage is greater than 2%.

Use the following formula to determine the percentage of voltage imbalance

$$= 100 \times \frac{\text{Maximum Deviation From Average Voltage}}{\text{Average Voltage}}$$

Example: Supply Voltage is 400V - 3ph - 60Hz

AB = 392v
BC = 404v
AC = 395v

$$\text{Average Voltage} = \frac{392 + 404 + 395}{3}$$

$$= \frac{1191}{3} = 397V$$

Determine maximum deviation from average voltage.

(AB) 397 - 392 =5v
(BC) 404 - 397 =7v
(AC) 457 - 397 =2v

Maximum Deviation is 7v.

Determine Percentage Voltage Imbalance.

$$\text{\% Voltage Imbalance} = 100 \times \frac{7}{397} = 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%

IMPORTANT: If the supply voltage phase imbalance is more than 2% contact your local electric utility company

Electrical Data (Continued)

50TCM-400/3/60Hz application			Compressor				OFM			IFM		Electric Heater			MCA	MOCP
Unit Size 50TCM	Power Supply V / Ph / Hz	Drive package Indoor Motor	No.1		No.2											
			RLA	LRA	RLA	LRA	Qty	HP	FLA	HP	FLA	P.N. CRHEATERXXXXXX	APP (KW)	FLA		
A07	400/3/60	Standard	10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	-	-	-	19.0	30
			10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	106A00	4.2	6	19.0	30
			10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	108A00	8	11.5	19.0	30
			10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	109A00	9.7	14	21.0	30
			10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	108A00, 108A00	16	23.1	32.4	35
			10.7	78.0	-	-	1	1/3	2.8	1.7	2.8	108A00, 109A00	17.7	25.6	35.5	40
		Medium	10.7	78.0	-	-	1	1/3	2.8	3	5	-	-	-	21.2	30
			10.7	78.0	-	-	1	1/3	2.8	3	5	106A00	4.2	6	21.2	30
			10.7	78.0	-	-	1	1/3	2.8	3	5	108A00	8	11.5	21.2	30
			10.7	78.0	-	-	1	1/3	2.8	3	5	109A00	9.7	14	23.8	30
			10.7	78.0	-	-	1	1/3	2.8	3	5	108A00, 108A00	16	23.1	35.1	40
			10.7	78.0	-	-	1	1/3	2.8	3	5	108A00, 109A00	17.7	25.6	38.3	40
		High	10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	-	-	-	23.7	30
			10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	106A00	4.2	6	23.7	30
			10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	108A00	8	11.5	23.8	30
			10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	109A00	9.7	14	26.9	30
			10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	108A00, 108A00	16	23.1	38.3	40
			10.7	78.0	-	-	1	1/3	2.8	4.7	7.5	108A00, 109A00	17.7	25.6	41.4	45
D08	400/3/60	Standard	7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	-	-	-	22.7	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	116A00	9.7	13.9	22.7	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	113A00	11.5	16.5	24.1	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	114A00	19.3	27.9	38.4	40
			7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	115A00	22.9	33.1	44.9	45
			7.6	51.8	7.6	51.8	2	1/4	1.42	1.7	2.8	114A00, 116A00	29	41.8	55.8	60
		Medium	7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	-	-	-	24.9	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	116A00	9.7	13.9	24.9	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	113A00	11.5	16.5	26.9	30
			7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	114A00	19.3	27.9	41.1	45
			7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	115A00	22.9	33.1	47.6	50
			7.6	51.8	7.6	51.8	2	1/4	1.42	3	5	114A00, 116A00	29	41.8	58.5	60
		High	7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	-	-	-	27.4	35
			7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	116A00	9.7	13.9	27.4	35
			7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	113A00	11.5	16.5	30.0	35
			7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	114A00	19.3	27.9	44.3	45
			7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	115A00	22.9	33.1	50.8	60
			7.6	51.8	7.6	51.8	2	1/4	1.42	4.7	7.5	114A00, 116A00	29	41.8	61.6	70
D09	400/3/60	Standard	8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	-	-	-	25.4	30
			8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	116A00	9.7	13.9	25.4	30
			8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	113A00	11.5	16.5	25.4	30
			8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	114A00	19.3	27.9	38.4	40
			8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	115A00	22.9	33.1	44.9	45
			8.8	64	8.8	64.0	2	1/4	1.42	1.7	2.8	114A00, 116A00	29	41.8	55.8	60
		Medium	8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	-	-	-	26.8	35
			8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	116A00	9.7	13.9	26.8	35
			8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	113A00	11.5	16.5	26.8	35
			8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	114A00	19.3	27.9	40.1	45
			8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	115A00	22.9	33.1	46.6	50
			8.8	64	8.8	64.0	2	1/4	1.42	2.5	4.2	114A00, 116A00	29	41.8	57.5	60
		High	8.8	64	8.8	64.0	2	1/4	1.42	3	5	-	-	-	27.6	35
			8.8	64	8.8	64.0	2	1/4	1.42	3	5	116A00	9.7	13.9	27.6	35
			8.8	64	8.8	64.0	2	1/4	1.42	3	5	113A00	11.5	16.5	27.6	35
			8.8	64	8.8	64.0	2	1/4	1.42	3	5	114A00	19.3	27.9	41.1	45
			8.8	64	8.8	64.0	2	1/4	1.42	3	5	115A00	22.9	33.1	47.6	50
			8.8	64	8.8	64.0	2	1/4	1.42	3	5	114A00, 116A00	29	41.8	58.5	60

Electrical Data (Continued)

50TCM-400/3/60Hz application			Compressor				OFM			IFM		Electric Heater			MCA	MOCP
Unit Size 50TCM	Power Supply V / Ph / Hz	Drive package Indoor Motor	No.1		No.2											
			RLA	LRA	RLA	LRA	Qty	HP	FLA	HP	FLA	P.N CRHEATERXXXXXX	APP (KW)	FLA		
D12	400/3/60	Standard	7.9	66	7.9	66	1	1	3.9	2.5	4.2	-	-	-	25.9	30
			7.9	66	7.9	66	1	1	3.9	2.5	4.2	116A00	9.7	13.9	25.9	30
			7.9	66	7.9	66	1	1	3.9	2.5	4.2	113A00	11.5	16.5	25.9	30
			7.9	66	7.9	66	1	1	3.9	2.5	4.2	115A00	22.9	33.1	46.6	50
			7.9	66	7.9	66	1	1	3.9	2.5	4.2	114A00, 116A00	29	41.8	57.5	60
			7.9	66	7.9	66	1	1	3.9	2.5	4.2	115A00, 113A00	34.7	50.1	67.9	70
		Medium	7.9	66	7.9	66	1	1	3.9	4.7	7.5	-	-	-	29.2	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	116A00	9.7	13.9	29.2	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	113A00	11.5	16.5	30.0	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	115A00	22.9	33.1	50.8	60
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	114A00, 116A00	29	41.8	61.6	70
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	115A00, 113A00	34.7	50.1	72.0	80
		High	7.9	66	7.9	66	1	1	3.9	4.7	7.5	-	-	-	29.2	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	116A00	9.7	13.9	29.2	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	113A00	11.5	16.5	30.0	35
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	115A00	22.9	33.1	50.8	60
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	114A00, 116A00	29	41.8	61.6	70
			7.9	66	7.9	66	1	1	3.9	4.7	7.5	115A00, 113A00	34.7	50.1	72.0	80
D14	400/3/60	Standard	10.7	78.0	11.0	88.0	1	1	3.9	3	5	-	-	-	33.3	40
			10.7	78.0	11.0	88.0	1	1	3.9	3	5	116A00	9.7	13.9	33.3	40
			10.7	78.0	11.0	88.0	1	1	3.9	3	5	113A00	11.5	16.5	33.3	40
			10.7	78.0	11.0	88.0	1	1	3.9	3	5	115A00	22.9	33.1	47.6	50
			10.7	78.0	11.0	88.0	1	1	3.9	3	5	114A00, 116A00	29	41.8	58.5	60
			10.7	78.0	11.0	88.0	1	1	3.9	3	5	115A00, 113A00	34.7	50.1	68.9	70
		Medium	10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	-	-	-	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	116A00	9.7	13.9	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	113A00	11.5	16.5	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	115A00	22.9	33.1	50.8	60
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	114A00, 116A00	29	41.8	61.6	70
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	115A00, 113A00	34.7	50.1	72.0	80
		High	10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	-	-	-	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	116A00	9.7	13.9	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	113A00	11.5	16.5	35.8	45
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	115A00	22.9	33.1	50.8	60
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	114A00, 116A00	29	41.8	61.6	70
			10.7	78.0	11.0	88.0	1	1	3.9	4.7	7.5	115A00, 113A00	34.7	50.1	72.0	80

Legend and Notes for Electrical Data Table

FLA - Full Load Amps
IFM - Indoor (Evaporator) Fan Motor
LRA - Locked Rotor Amps
MCA - Minimum Circuit Amps
OFM - Outdoor (Condenser) Fan Motor
RLA - Rated Load Amps
APP - Application power at rated power supply voltage
MOCP - Maximum Overcurrent Protection

Minimum Voltage: 360V, Maximum Voltage: 420 on 400V/3Ph/60Hz

For ordering electric heater: Include complete heater part number in the order placement e.g CRHEATER116A00.

Unbalanced 3-Phase Supply Voltage

Never operate a motor where phase imbalance in supply voltage is greater than 2%.

Use the following formula to determine the percentage of voltage imbalance

$$= 100 \times \frac{\text{Maximum Deviation From Average Voltage}}{\text{Average Voltage}}$$

Example: Supply Voltage is 400V - 3ph - 60Hz

AB = 392v
BC = 404v
AC = 395v

$$\text{Average Voltage} = \frac{392 + 404 + 395}{3}$$

$$= \frac{1191}{3} = 397V$$

Determine maximum deviation from average voltage.

(AB) 397 - 392 =5v
(BC) 404 - 397 =7v
(AC) 457 - 397 =2v

Maximum Deviation is 7v.

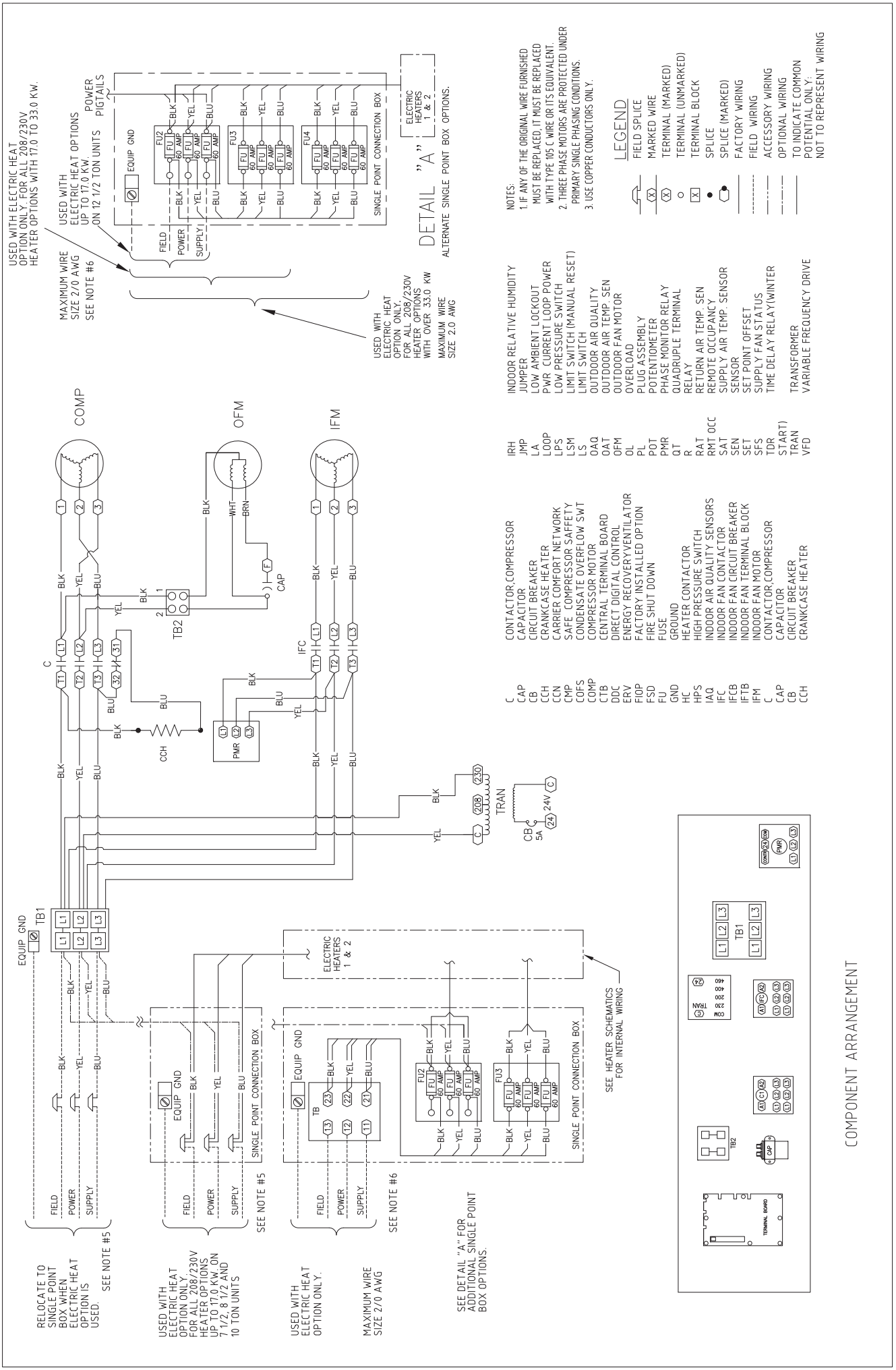
Determine Percentage Voltage Imbalance.

$$\text{\% Voltage Imbalance} = 100 \times \frac{7}{397} = 1.76\%$$

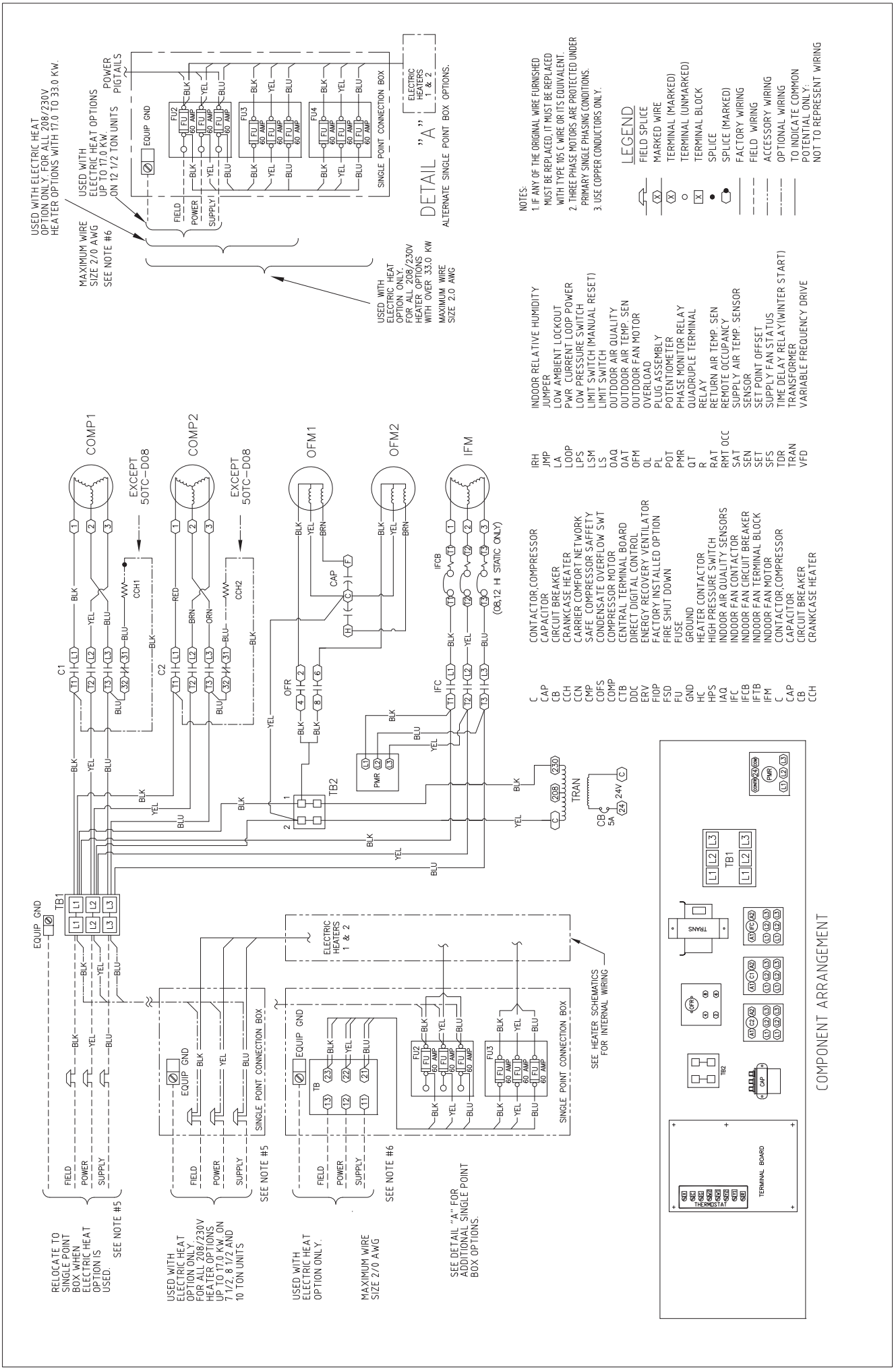
This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%

IMPORTANT: If the supply voltage phase imbalance is more than 2% contact your local electric utility company

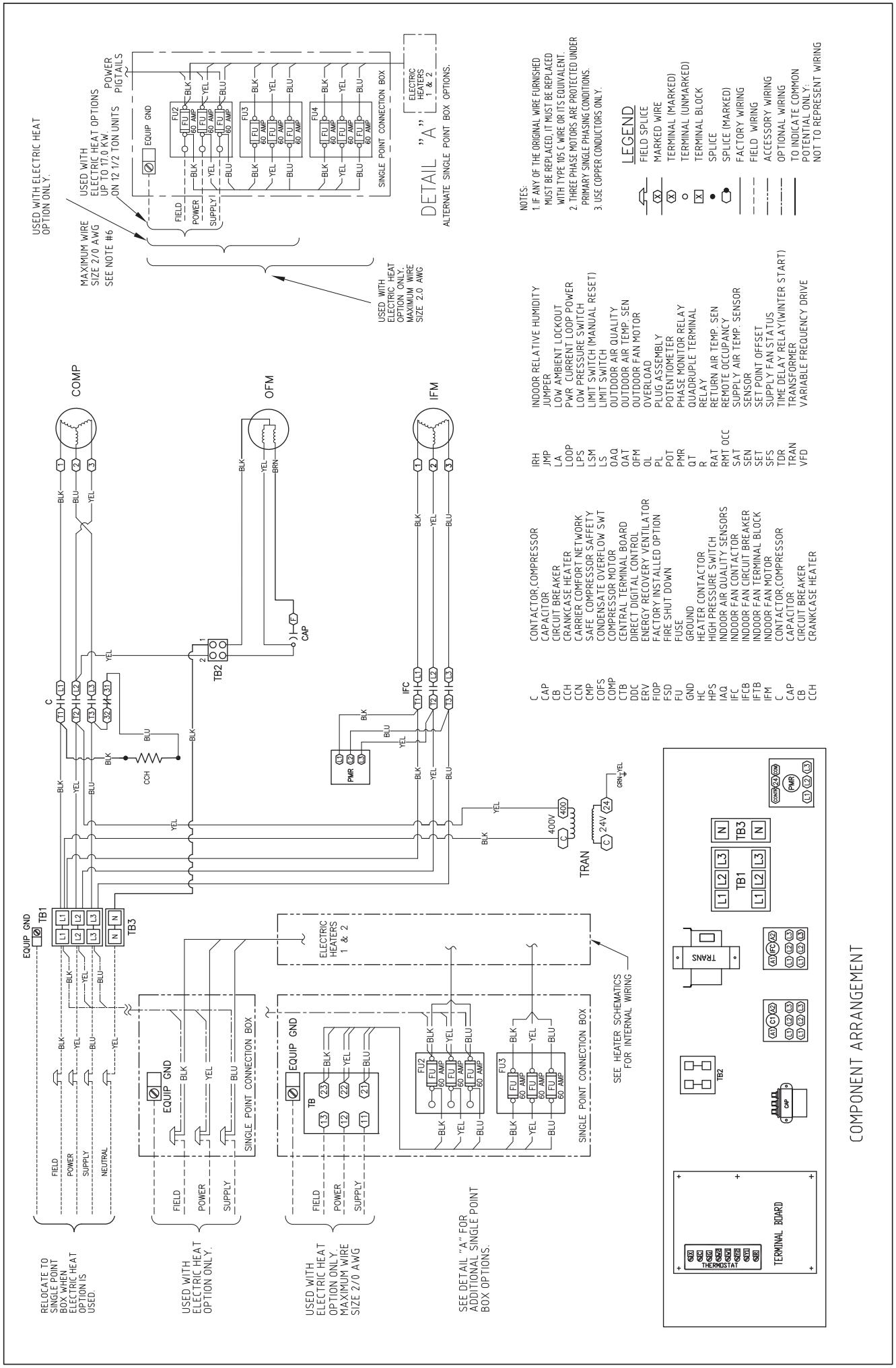
Typical Wiring Schematic 50TCMA07 230V (Series A)



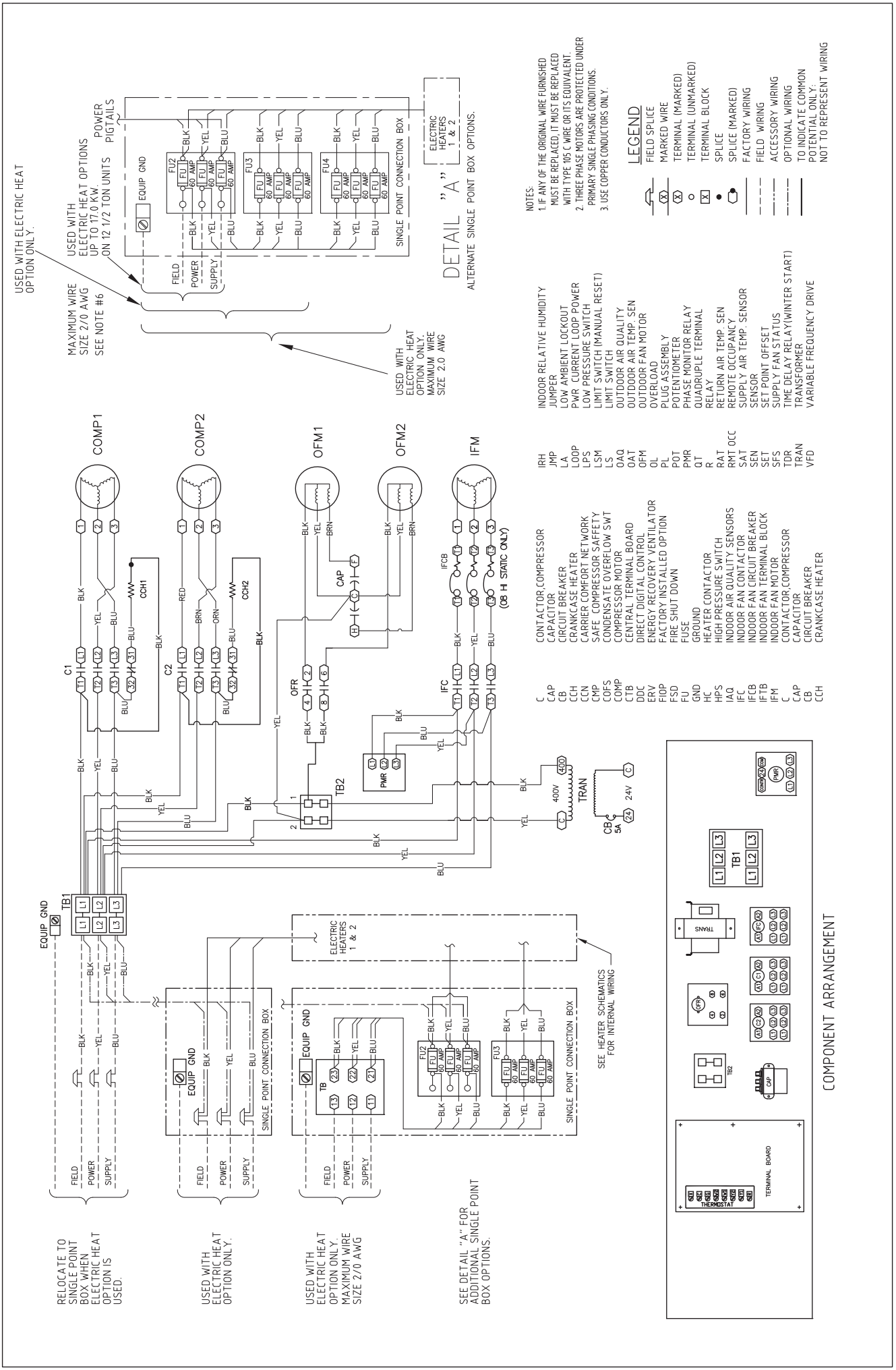
Typical Wiring Schematic 50TCMD 08-09 230V (Series A)



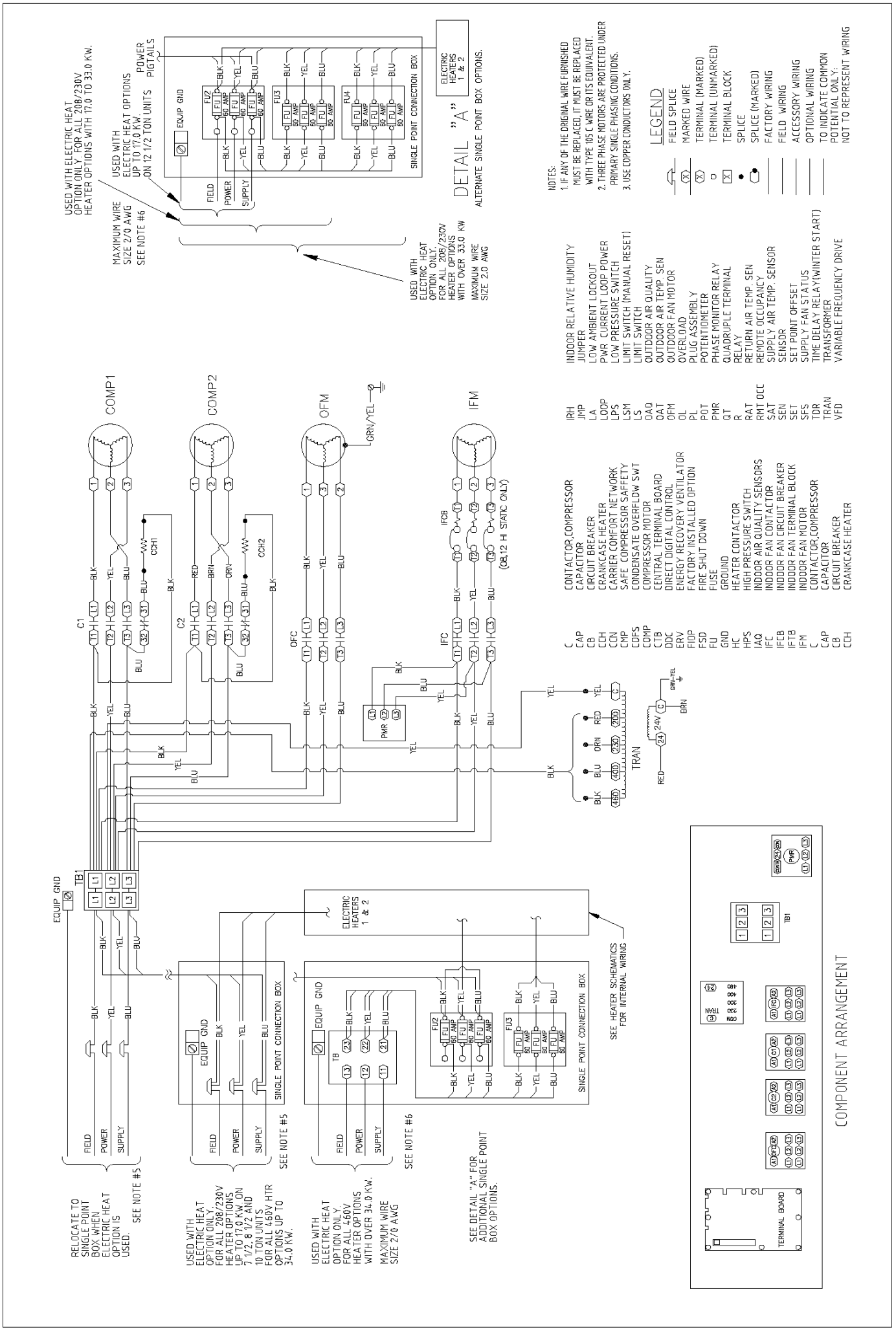
Typical Wiring Schematic 50TCMA07 400V (Series A)



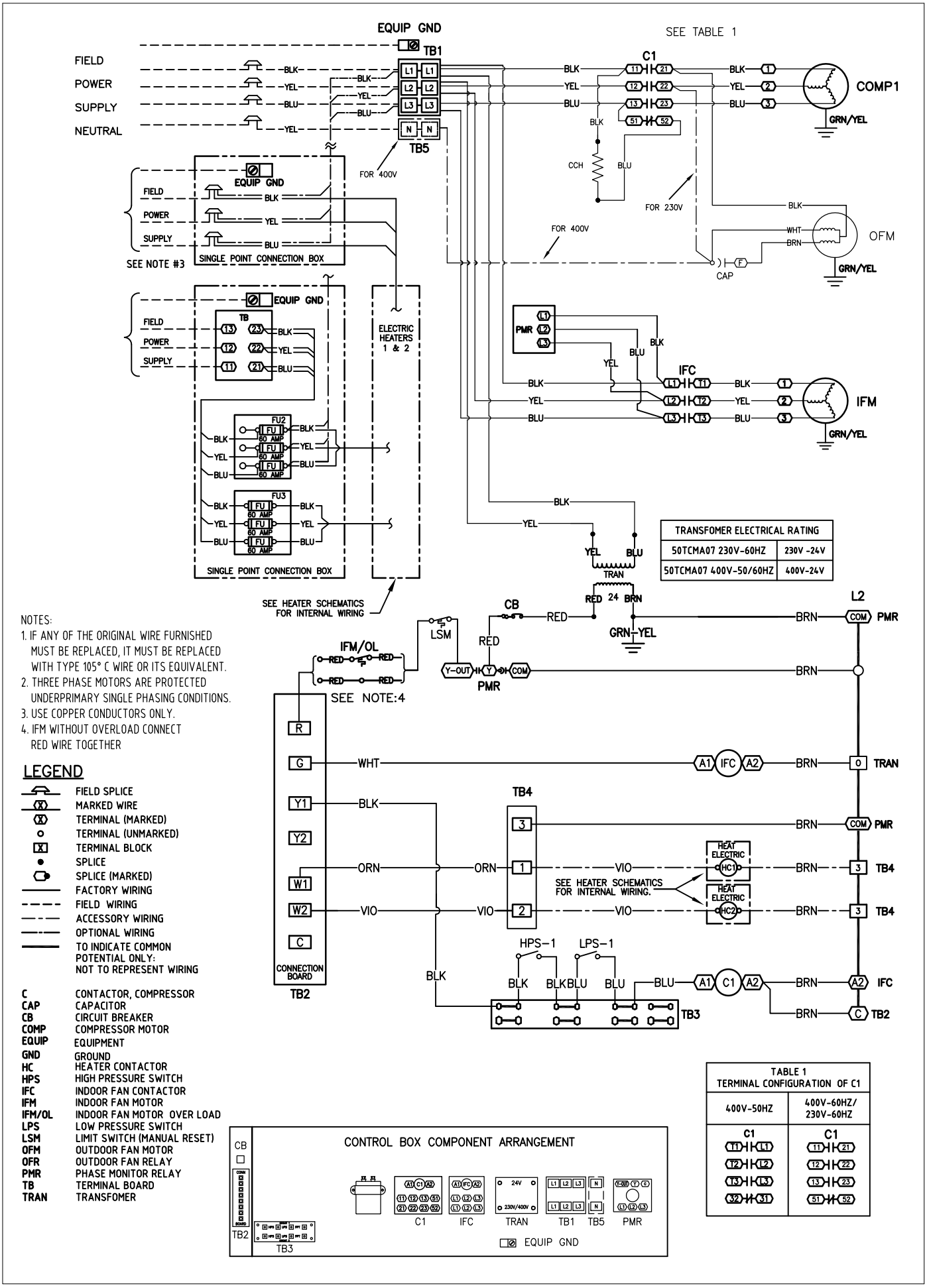
Typical Wiring Schematic 50TCMD 08/09 400V (Series A)



Typical Wiring Schematic 50TCMD 12/14 230V/400V (Series A)



Typical Wiring Schematics 50TCMA 07-230V/400V-60Hz (Series B)



NOTES:
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 105° C WIRE OR ITS EQUIVALENT.
2. THREE PHASE MOTORS ARE PROTECTED UNDERPRIMARY SINGLE PHASING CONDITIONS.
3. USE COPPER CONDUCTORS ONLY.
4. IFM WITHOUT OVERLOAD CONNECT RED WIRE TOGETHER

LEGEND

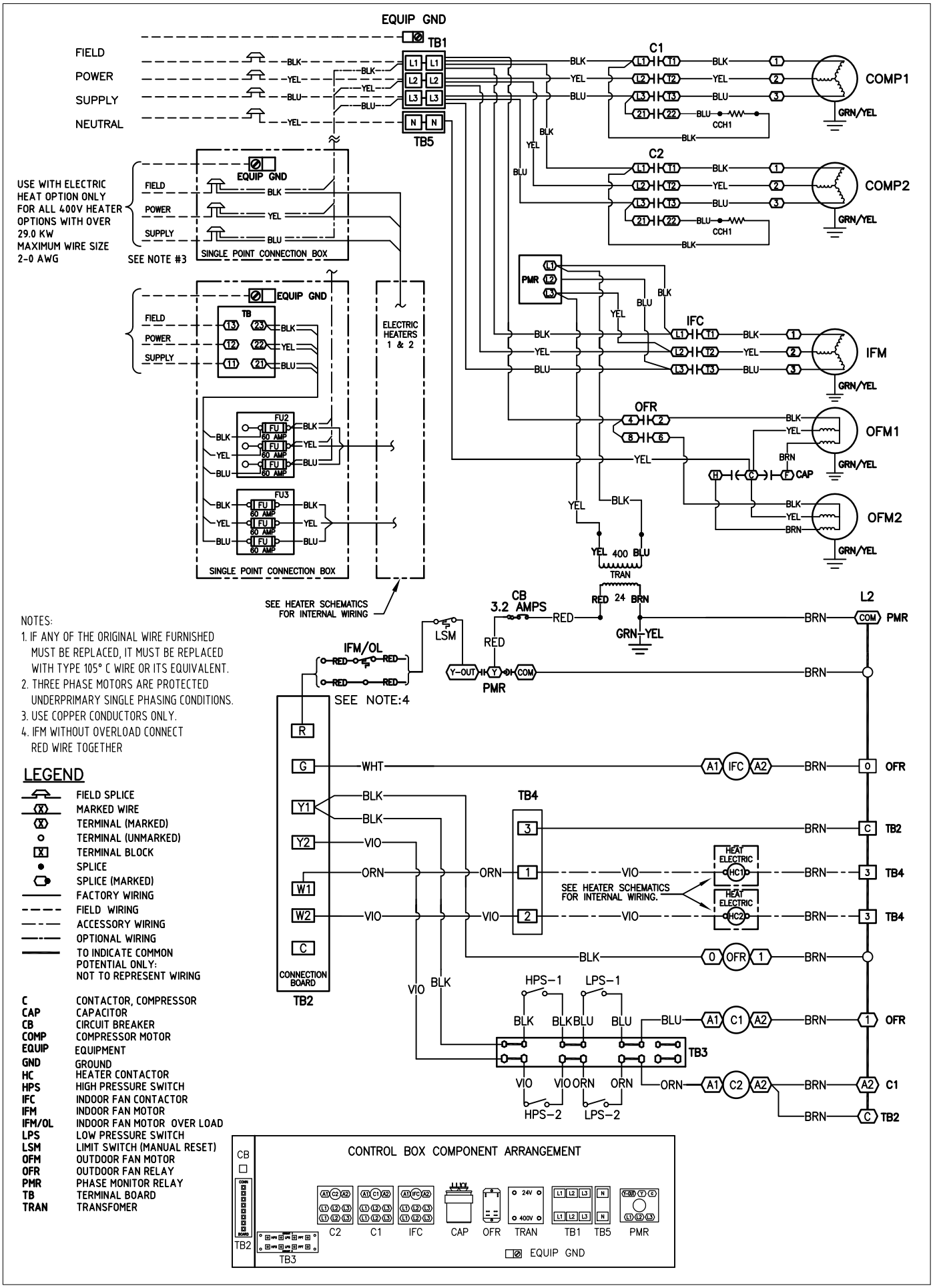
	FIELD SPLICE
X	MARKED WIRE
X	TERMINAL (MARKED)
	TERMINAL (UNMARKED)
X	TERMINAL BLOCK
	SPLICE
	SPLICE (MARKED)
	FACTORY WIRING
	FIELD WIRING
	ACCESSORY WIRING
	OPTIONAL WIRING
	TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

C	CONTACTOR, COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
COMP	COMPRESSOR MOTOR
EQUIP	EQUIPMENT
GND	GROUND
HC	HEATER CONTACTOR
HPS	HIGH PRESSURE SWITCH
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IFM/OL	INDOOR FAN MOTOR OVER LOAD
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
OFM	OUTDOOR FAN MOTOR
OFR	OUTDOOR FAN RELAY
PMR	PHASE MONITOR RELAY
TB	TERMINAL BOARD
TRAN	TRANSFOMER

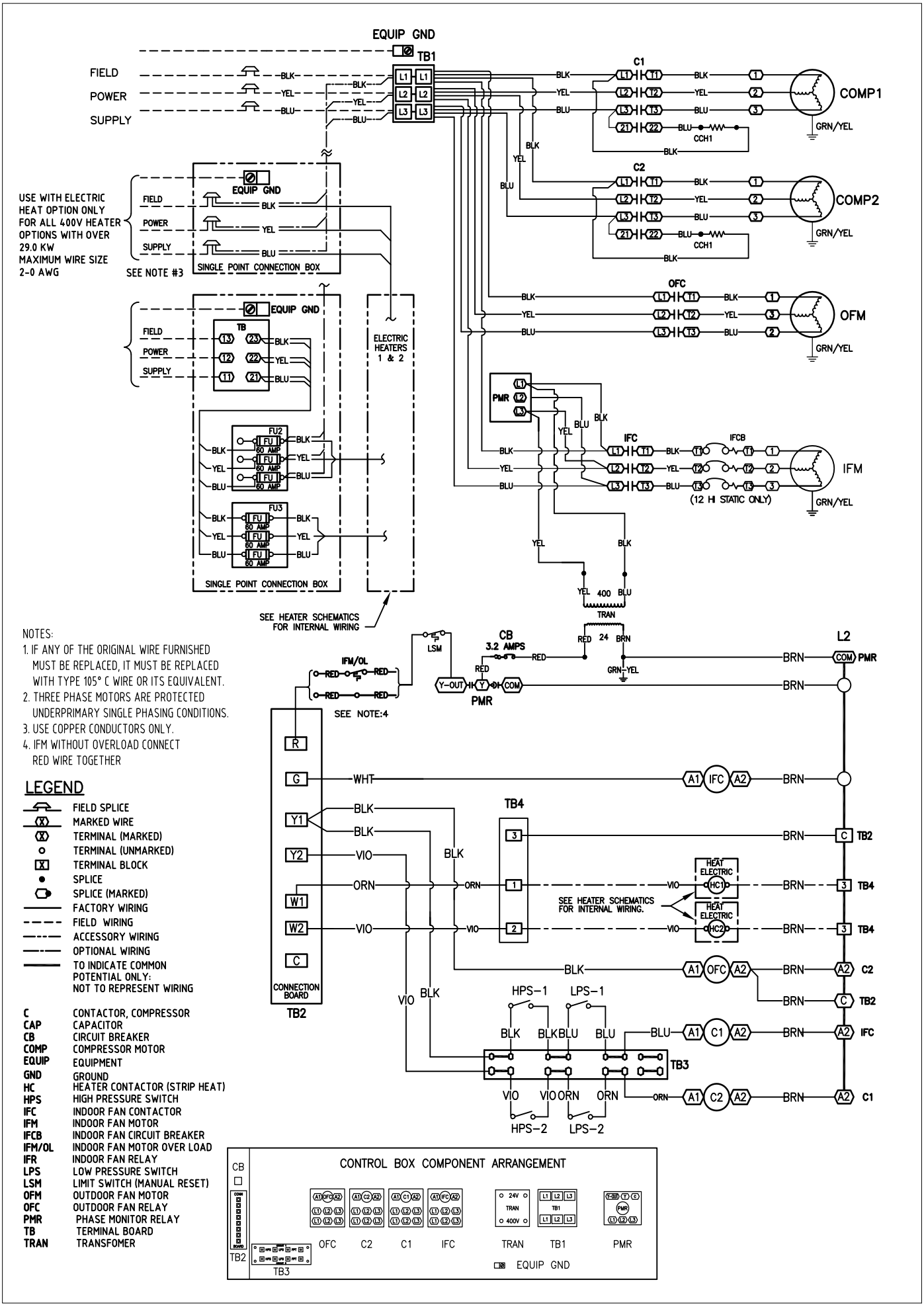
TABLE 1
TERMINAL CONFIGURATION OF C1

400V-50HZ	400V-60HZ/ 230V-60HZ
C1	C1

Typical Wiring Schematics 50TCMD 08/09-400V-60Hz (Series B)



Typical Wiring Schematics 50TCMD 12/14-400V-60Hz (Series B)



NOTES:

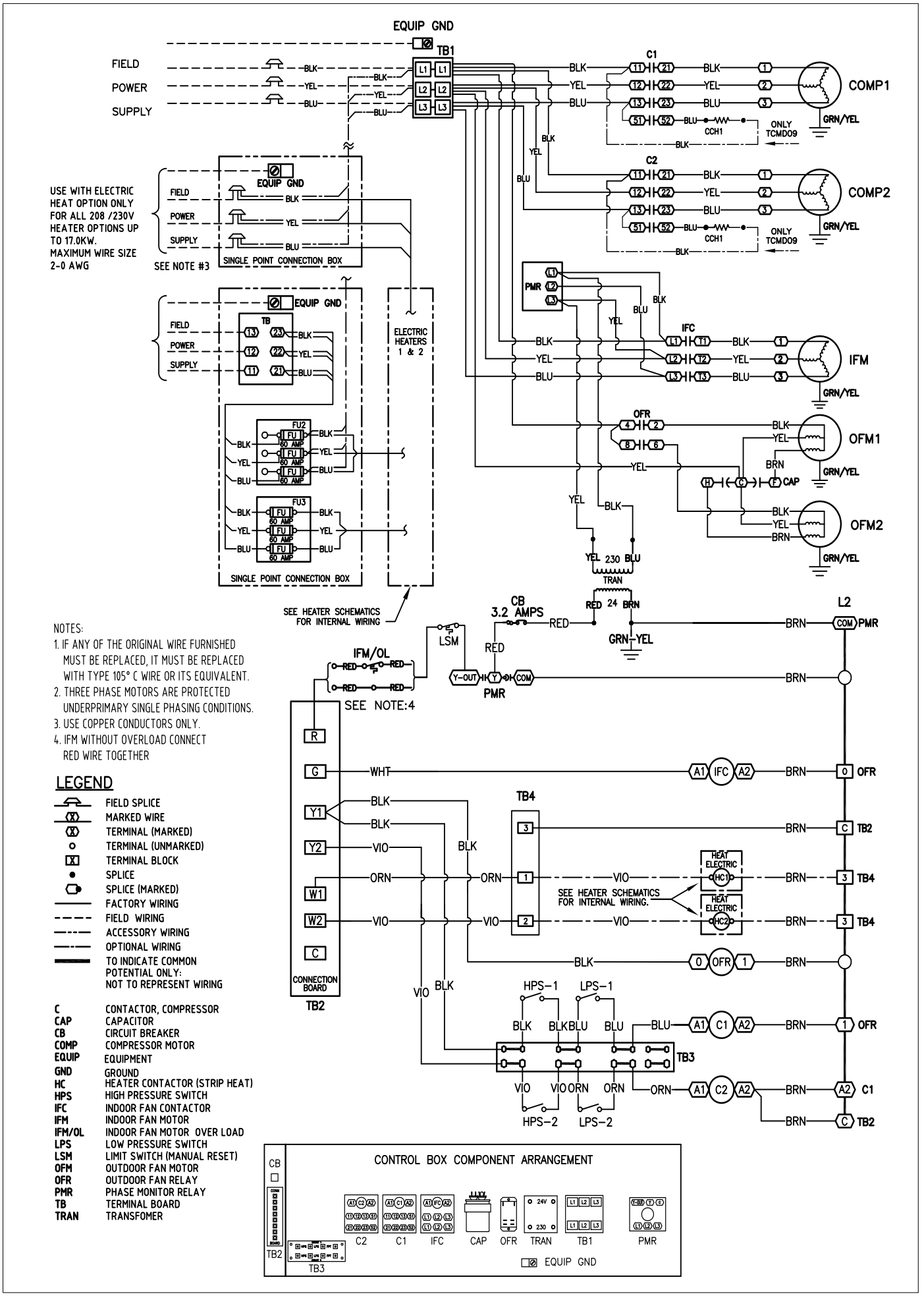
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 105° C WIRE OR ITS EQUIVALENT.
2. THREE PHASE MOTORS ARE PROTECTED UNDERPRIMARY SINGLE PHASING CONDITIONS.
3. USE COPPER CONDUCTORS ONLY.
4. IFM WITHOUT OVERLOAD CONNECT RED WIRE TOGETHER

LEGEND

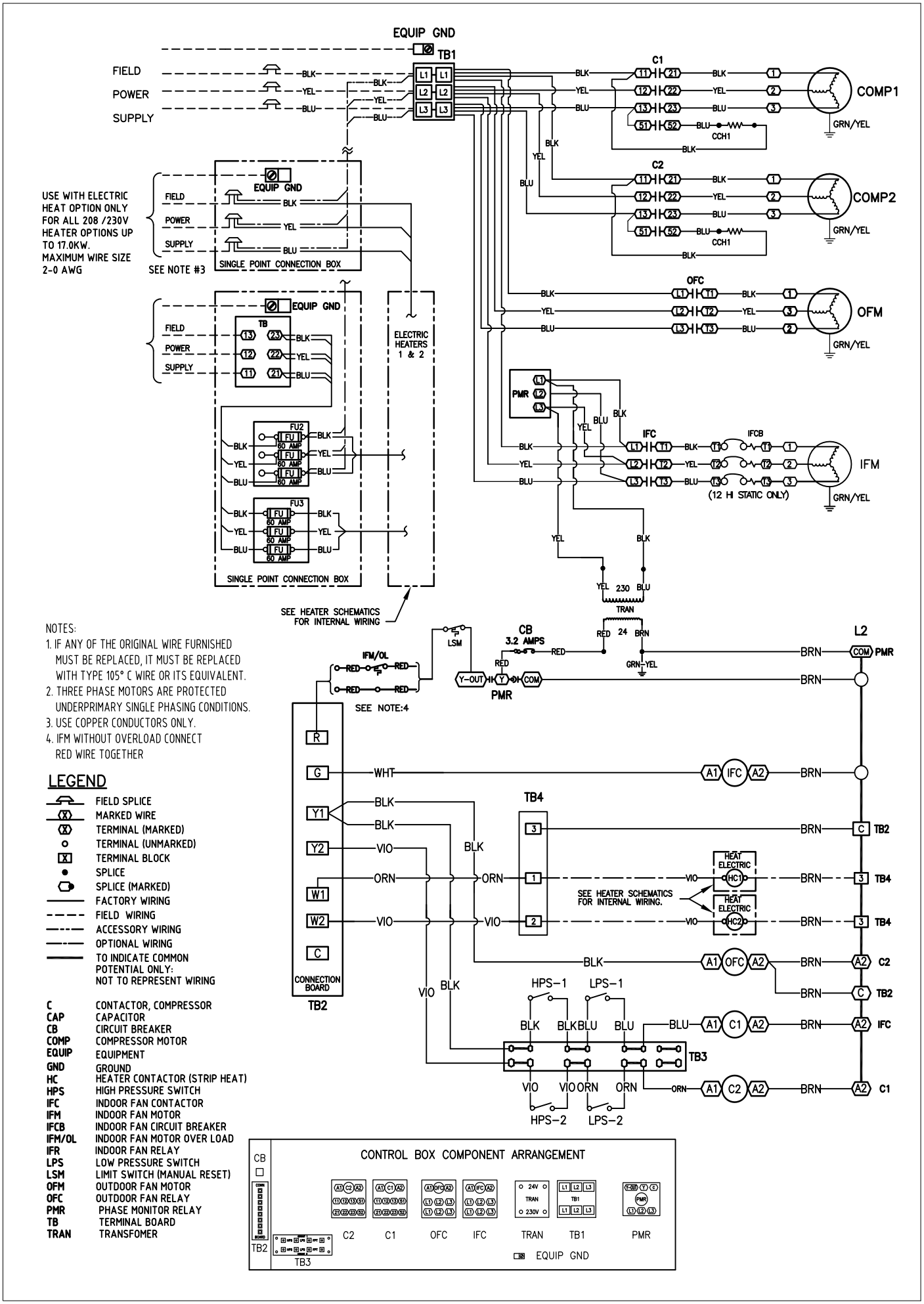
	FIELD SPLICE
X	MARKED WIRE
X	TERMINAL (MARKED)
	TERMINAL (UNMARKED)
X	TERMINAL BLOCK
	SPLICE
	SPLICE (MARKED)
	FACTORY WIRING
	FIELD WIRING
	ACCESSORY WIRING
	OPTIONAL WIRING
	TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

C	CONTACTOR, COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
COMP	COMPRESSOR MOTOR
EQUIP	EQUIPMENT
GND	GROUND
HC	HEATER CONTACTOR (STRIP HEAT)
HPS	HIGH PRESSURE SWITCH
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IFCB	INDOOR FAN CIRCUIT BREAKER
IFM/OL	INDOOR FAN MOTOR OVER LOAD
IFR	INDOOR FAN RELAY
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
OFM	OUTDOOR FAN MOTOR
OFC	OUTDOOR FAN RELAY
PMR	PHASE MONITOR RELAY
TB	TERMINAL BOARD
TRAN	TRANSFOMER

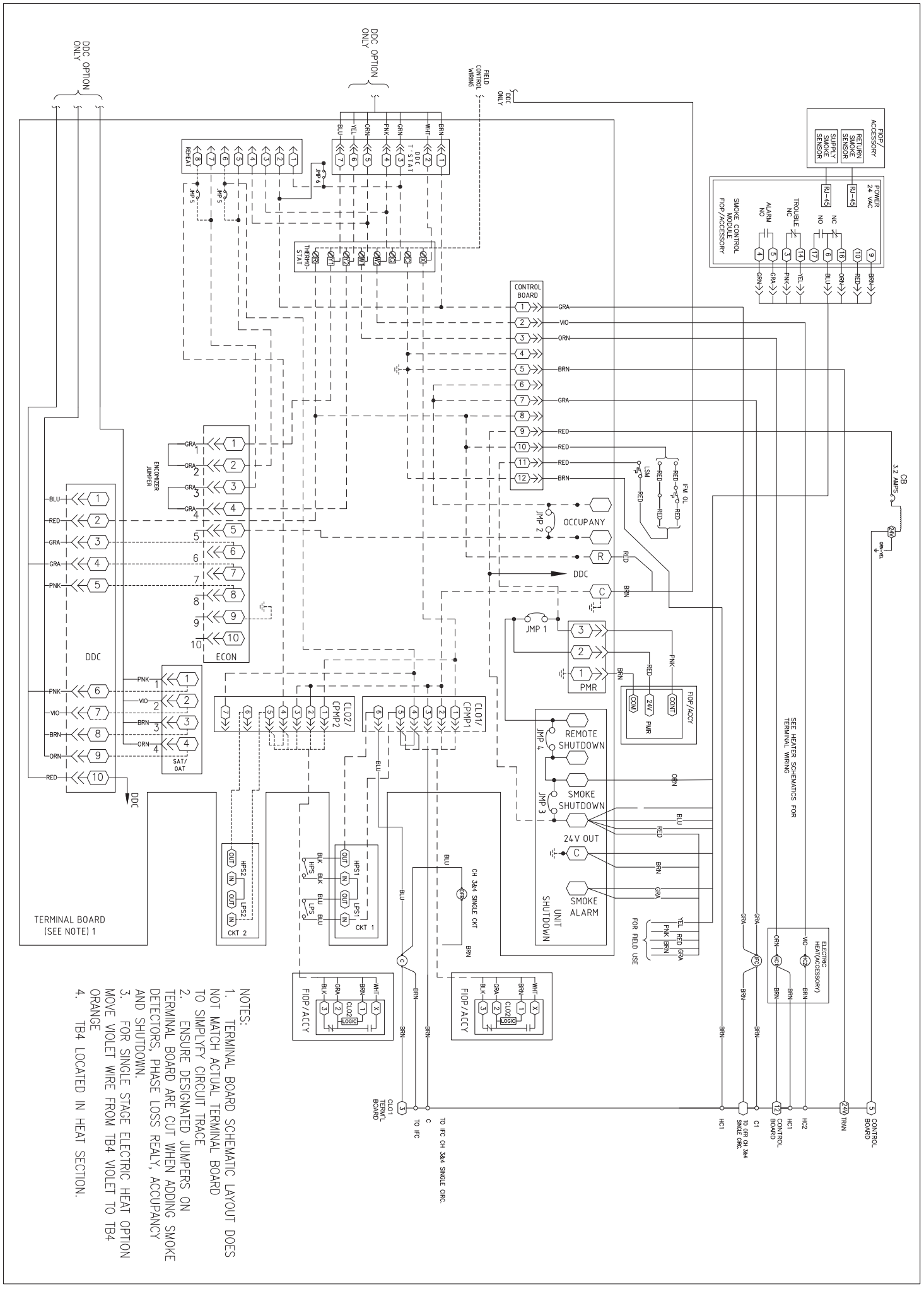
Typical Wiring Schematics 50TCMD 08/09-230V-60Hz (Series B)



Typical Wiring Schematics 50TCMD 12/14-230V-60Hz (Series B)



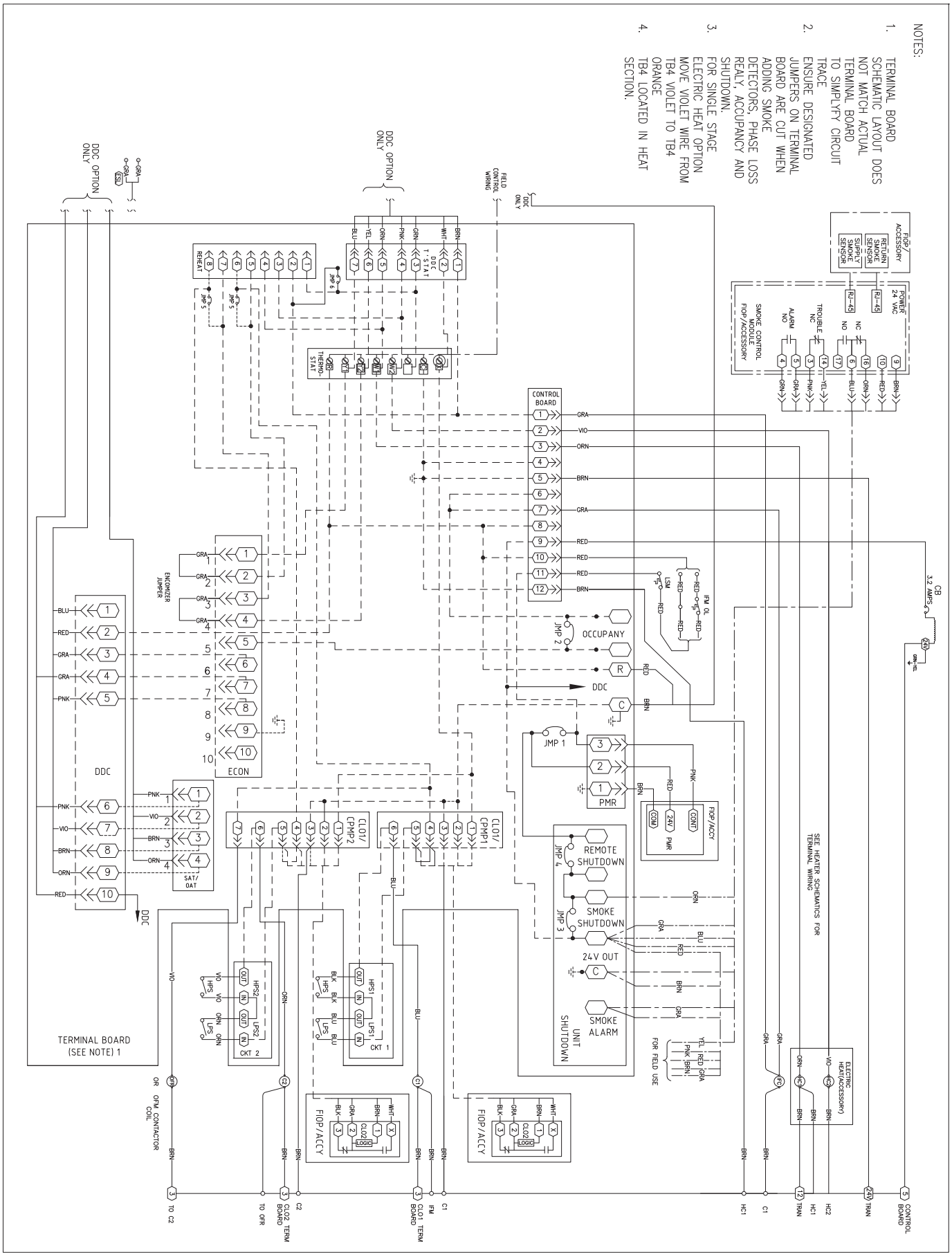
Typical Control Schematic 50TCMA Series



NOTES:

1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD TO SIMPLYFY CIRCUIT TRACE
2. ENSURE DESIGNATED JUMPERS ON TERMINAL BOARD ARE CUT WHEN ADDING SMOKE DETECTORS, PHASE LOSS REALY, ACCUPANCY AND SHUTDOWN.
3. FOR SINGLE STAGE ELECTRIC HEAT OPTION MOVE VIOLET WIRE FROM TB4 VIOLET TO TB4 ORANGE
4. TB4 LOCATED IN HEAT SECTION.

Typical Control Schematic 50TCMD Series



Application Data

Min operating ambient temp (cooling)

In mechanical cooling mode, your Carrier rooftop can safely operate down to an outdoor ambient temperature of 40°F (4°C) and 25°F (- 4°C), with an accessory winter start kit.

Max operating ambient temp (cooling)

The maximum operating ambient temperature for cooling mode is 125°F (52°C).

Airflow

All units are draw-through in cooling mode.

Motor limits; Brake horsepower (BHP)

Due to Carrier's internal unit design, air path, and specially designed motors, the full horsepower (maximum continuous BHP) band, can be used with the utmost confidence. There is no need for extra safety factors, as Carrier's motors are designed and rigorously tested to use the entire, listed BHP range without either nuisance tripping or premature motor failure.

Sizing a rooftop

Bigger isn't necessarily better. While an air conditioner needs to have enough capacity to meet the load, it doesn't need excess capacity. In fact, having excess capacity typically results in very poor part load performance and humidity control.

Using higher design temperatures than ASHRAE recommends for your location, adding "safety factors" to the calculated load, and rounding up to the next largest unit, are all signs of oversizing air conditioners. Oversizing can cause short-cycling, and short cycling leads to poor humidity control, reduced efficiency, higher utility bills, drastic indoor temperature swings, excessive noise, and increased wear and tear on the air conditioner.

Rather than oversizing an air conditioner, wise contractors and engineers "right-size" or even slightly undersize air conditioners. Correctly sizing an air conditioner controls humidity better; promotes efficiency; reduces utility bills; extends equipment life, and maintains even, comfortable temperatures.

Winter start

Carrier's winter start kit extends the low ambient limit of your rooftop to 25°F (- 4°C). The kit bypasses the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Packaged Rooftop Electric Cooling, Electric Heat

50TCM Side – Discharge Package Units

Size Range**: 6.0 to 12.5 Tons**

System Description

Small-Capacity Self-Contained Air Conditioners (50TCM)

Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing hermetic scroll compressor(s) for cooling duty and electric for heating duty.

Quality Assurance

1. Unit shall achieve ASHRAE 90.1 minimum efficiency requirements (2015 version).
2. Unit shall be designed to conform to ASHRAE 15, 2001.
3. Unit shall be rated in accordance with AHRI Standards 340/360 and SASO 2874/2016.
4. Unit shall be in compliance with SASO 2874/2016.
5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
6. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
7. Unit shall be designed and manufactured in a facility in accordance and registered by ISO 9001:2015.
8. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
9. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.

Delivery, Storage, and Handling

1. Unit shall be stored and handled per manufacturer's recommendations.
2. Lifted by crane requires either shipping top panel or spreader bars.
3. Unit shall only be stored or positioned in the upright position.

Product General

1. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
2. Unit shall use environmentally safe, Puron refrigerant.
3. Unit shall be installed in accordance with the manufacturer's instructions.
4. Unit must be selected and installed in compliance with local, state, and federal codes.
5. Interior cabinet surfaces shall be insulated with closed cell foam minimum ½ -in. thick, minimum density 3.1lb/ft^3.

Unit Cabinet

1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
2. Unit cabinet exterior paint shall be: film thickness, (dry) 76mm minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 or 340/360 minimum exterior sweat criteria.
4. Base of unit shall have a minimum of four locations for thru-the-base gas and electrical connections (factory installed or field installed), standard.
5. Base Rail
   a) Unit shall have base rails on a minimum of 2 sides.
   b) Holes shall be provided in the base rails for rigging shackles to ease maneuvering and overhead rigging.
   c) Holes shall be provided in the base rail for moving the rooftop by fork truck.
   d) Base rail shall be a minimum of 16 gauge thickness.
6. Condensate pan and connections:
   a) Shall be a sloped condensate drain pan made of a non-corrosive material.
   b) Shall comply with ASHRAE Standard 62.
   c) Shall use a 3/4" -14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
7. Top panel:
   Shall be a single piece top panel on 07 size, two piece on 08 thru 14 size.
8. Electrical Connections:
   All unit power wiring shall enter unit cabinet at a single, factory-prepared, knock out location.

9. Component access panels (standard):
   a) Cabinet panels shall be easily removable for servicing.
   b) Unit shall have one factory installed; tool-less, removable, filter access panel.
   c) Panels covering control box, indoor fan, indoor fan motor, and compressors shall have molded composite handles.
   d) Handles shall be UV modified, composite, permanently attached, and recessed into the panel.
   e) Screws on the vertical portion of all removable access panels shall engage into heat resistant, molded composite collars.
   f) Collars shall be removable and easily replaceable using manufacturer recommended parts.

Coils

Standard Aluminum fin-Copper Tube Coils:

1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seam- less internally grooved copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3. Condenser coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1980 psig.

Optional Pre-coated aluminum-fin condenser coils:

1. Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments.
2. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
3. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.

Optional Copper-fin evaporator and condenser coils:

Shall be constructed of copper fins mechanically bonded to copper tubes

Refrigerant Components

1. Refrigerant circuit shall include the following control, safety, and maintenance features:
   a) Refrigerant system shall include fixed orifice or TXV metering system.
   b) Fixed orifice metering system shall prevent mal-distribution of two-phase refrigerant by including multiple fixed orifice devices in each refrigeration circuit. Each orifice is to be optimized to the coil circuit it serves.
   c) Refrigerant filter drier.
   d) Service gauge connections on suction and discharge lines.
2. There shall be gauge line access, covered cap:
   a) The plug shall be easy to remove and replace.
   b) When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
   c) This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
   d) The plug shall be made of a leak proof, UV-resistant, composite material.
3. Compressors:
   a) Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
   b) Compressor motors shall be cooled by refrigerant gas passing through motor windings.
   c) Compressors shall be internally protected from high discharge temperature conditions.
   d) Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
   e) Compressor shall be factory mounted on rubber grommets.
   f) Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
   g) Crankcase heaters shall not be required for normal operating range, unless provided by compressor manufacturer due to refrigerant charge limits.

Evaporator Fan and Motor

Evaporator Fan Motor:

1. Shall have permanently lubricated bearings.
2. Shall have inherent automatic-reset thermal overload protection.
3. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.

Belt- driven Evaporator Fan:

1. Belt drive shall include an adjustable pitch motor pulley.
2. Shall use sealed, permanently lubricated ball- bearing type.
3. Blower fan shall be double-inlet type with forward-curved blades.
4. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

Condenser Fans and Motors

Condenser Fan Motors:

1. Shall be a totally enclosed motor.
2. Shall use permanently lubricated bearings.
3. Shall have inherent thermal overload protection with an automatic reset feature.
4. Shall use a shaft-down design on 07 to 09 models and shaft-up design on 12, 14 sizes with rain shield.

Condenser Fans:

1. Shall be a direct-driven propeller type fan.
2. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

Electric and Electronic Control System for HVAC

General:

1. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24V transformer side. Transformer shall have 75VA capability.
2. Shall utilize color-coded wiring.
3. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

Safeties:

1. Compressor over-temperature, over current.
2. Low pressure switch:
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross wiring of the safety switches between circuits 1 and 2.
   b. Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
3. High pressure switch:
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross wiring of the safety switches between circuits 1 and 2.
   b. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
4. Automatic reset, motor thermal overload protector.

Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity; throw-away 2 -in. thick fiberglass filters with G4 classification.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

Operating Characteristics

1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 340/360 at ± 10% voltage.
2. Compressor with standard controls shall be capable of operation down to 40°F (4°C), ambient outdoor temperatures. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures down to 25°F (- 4°C).
3. Unit shall discharge supply air horizontally as shown on contract drawings.
4. Unit shall be factory configured for horizontal supply and return configurations.

Thermostats

Thermostat must:

1. Energize both “W” and “G” when calling for heat.
2. Have capability to energize 2 different stages of cooling, and 2 different stages of heating.
3. Include capability for occupancy scheduling.

Electrical Requirements

Main power supply voltage, phase, and frequency must match those required by the manufacturer.

Special Features: Options and Accessories

Open protocol, direct digital controller:

1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18-30VAC, 50-60Hz, and consumer 15VA or less power.
3. Shall have an operating temperature range from - 40°F (- 40°C) to 130°F (54°C), 10% - 90% RH (non-condensing).
4. Shall include built-in protocol for BACNET (MS/TP and PTP modes), Modbus (RTU and ASCII), Johnson N2 and LonWorks. LonWorks Echelon processor required for all Lon applications shall be contained in separate communication board.
5. Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers
6. Baud rate Controller shall be selectable using a dipswitch.
7. Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital outputs, and all analog inputs.
8. Shall accept the following inputs: space temperature, set point adjustment, outdoor air temperature, indoor air quality, outdoor air quality, compressor lock-out, fire shutdown, enthalpy switch, and fan status/filter status/ humidity/ remote occupancy.
9. Shall provide the following outputs: Fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, heat stage 3/ exhaust.
10. Shall have built-in surge protection circuitry through solid state polyswitches. Polyswitches shall be used on in-coming power and network connections. Polyswitches will return to normal when the “trip” condition clears.
11. Shall have a battery backup capable of a minimum of 10,000 hours of data and time clock retention during power outages.
12. Shall have built- in support for Carrier technician tool.
13. Shall include an EIA-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an EIA-485 port for network communication to intelligent space sensors and displays, and a port to connect an optional LonWorks communications card.
14. Software upgrades will be accomplished by either local or remote download. No software upgrades through chip replacements are allowed.

Manual damper:
Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 50% outdoor air for year round ventilation.

Head Pressure Control Package:

1. Controller shall control coil head pressure by condenser-fan speed modulation or condenser-fan cycling and wind baffles.
2. Shall consist of solid-state control and condenser-coil temperature sensor to maintain condensing temperature between 90°F (32°C) and 110°F (43°C) at outdoor ambient temperatures down to -20°F (-29°C).

High/Medium-Static Indoor Fan Motor(s) and Drive(s):
Shall be factory-installed to provide additional performance range.

Smoke detectors:

1. Shall be a Four-Wire Controller and Detector.
2. Shall be environmental compensated with differential sensing for reliable, stable, and drift-free sensitivity.
3. Shall use magnet-activated test/reset sensor switches.
4. Shall have tool-less connection terminal access.
5. Shall have a recessed momentary switch for testing and resetting the detector.
6. Controller shall include:
   a) One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
   b) Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment.
   c) One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
   d) Capable of direct connection to two individual detector modules.
   e) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.

Winter start kit:

1. Shall contain a bypass device around the low pressure switch.
2. Shall be required when mechanical cooling is required down to 25°F (-4°C).

Time Guard:

1. Shall prevent compressor short-cycling by providing a 5-minute delay (±2 minutes) before restarting a compressor after shutdown for any reason.
2. One device shall be required per compressor.

Electric Heat:

1. Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
2. Heater assemblies are provided with integral fusing for protection of internal heater circuits. Auto reset thermo limit controls, magnetic heater contactors (24V coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.