

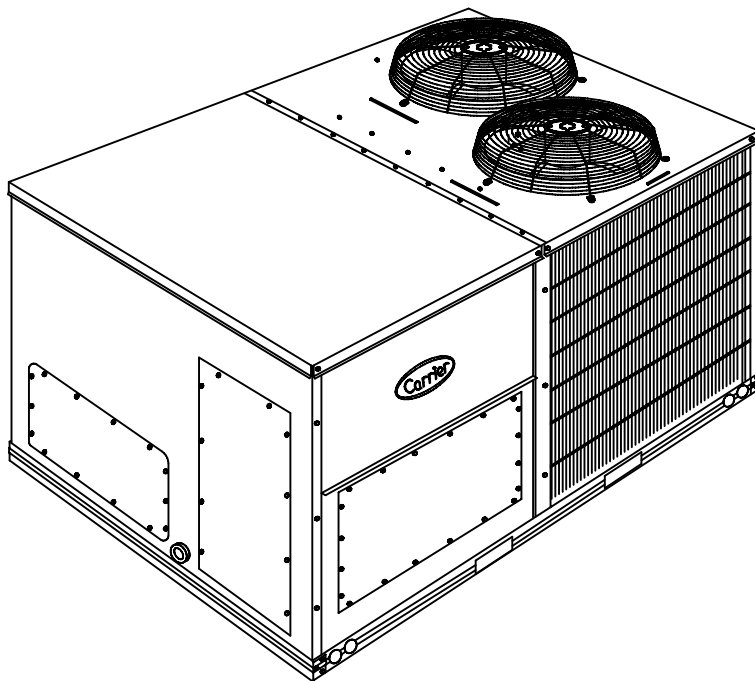
**50LJS/TJS007-014 (50Hz)
Single- Package
Rooftop Units
6 to 12.5 Nominal Tons**



Turn to the Experts.™

Product Data

Single package rooftop cooling units with electric heat option. Compact, horizontal discharge units (vertical discharge option), combining installation flexibility with efficient performance.



Features / Benefits

- **Higher Cooling Capacity.**
- Standard cooling operation at outdoor ambient temperature as high as 50 C (122 F).
- Galvanized steel cabinet with powder paint coat.
- 2-inch (51 mm) return-air filters.
- Commercial strength base rails (full perimeter).
- Corrosion-resistant sloped condensate pan.
- Single power entry to the unit.
- Commercial duty motors with permanently lubricated bearings.

All units feature sloped condensate drain pans in accordance with ASHRAE Standard 62. Also, the new sloped condensate pan permits either an external drain (outside the roof curb) or an internal bottom drain (inside the roof curb). Both options require an external, field-supplied disconnect, if desired.

In addition, these units have a standard filter access door, which permits tool less changes and provides an opening for outdoor air options and accessories (models 007-014). Field installed electrical heaters are available in a wide range of capacities. Single point wiring kit makes installation simple.

Simple electrical connections: Terminal boards, located in the base unit control box, facilitate connections to room thermostat, outdoor thermostat (s), economizer, and electrical heat permitting easy servicing.

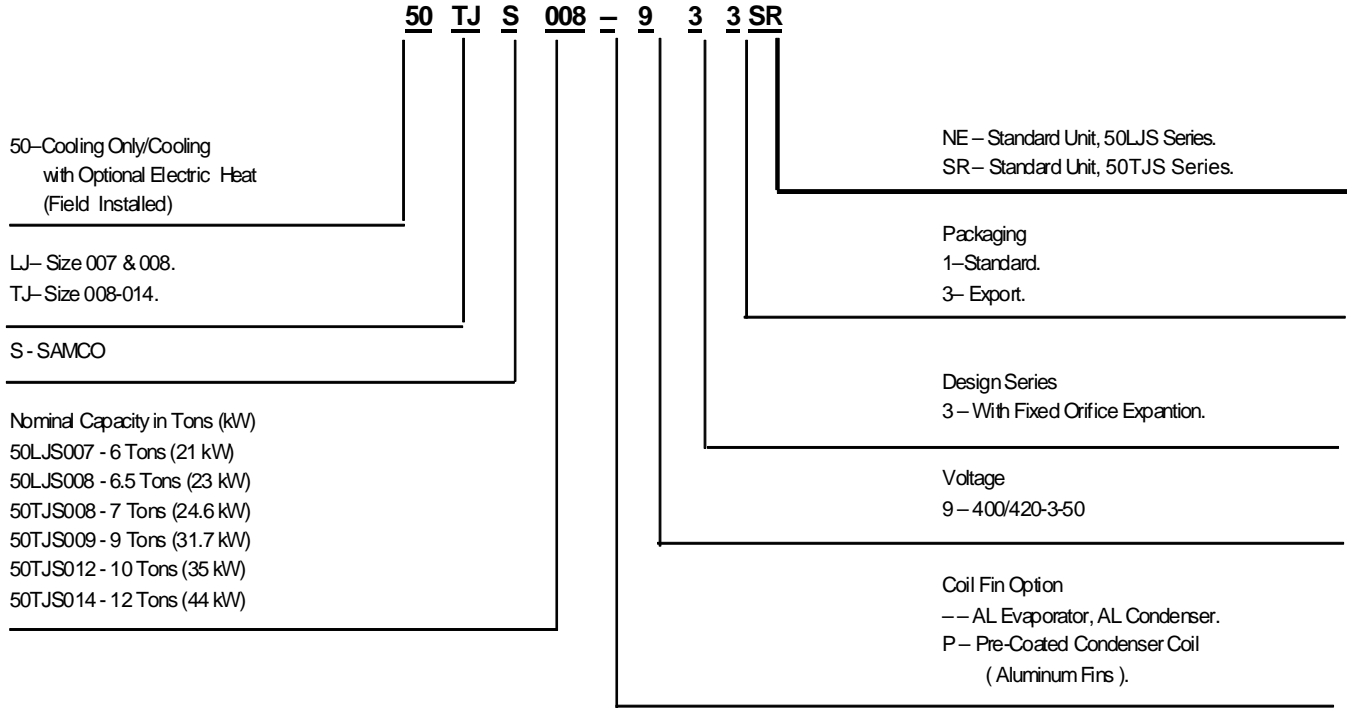
Thru-the-curb service connections accessory allow power and control wiring to be routed through the curb, minimizing roof penetrations. Both power and control connections are made on the same side of the unit to simplify installation.

Quite and efficient operation is provided by belt-driven evaporator fans. The belt-driven evaporator fan with variable pitch pulleys allows adjustment to available static pressure to meet the job requirements of even the most demanding applications.



Model Number Nomenclature

50LJS/TJS



LEGEND
AL Aluminum

Quality Assurance

SAMCO



Approvals :
 ISO 9001 : 2000
 EN ISO 9001 : 2000
 ANSI/ASQC Q9001 : 2000

0410019950420

Table of Contents

	Page
Model Number Nomenclature	2
ARI Capacity Rating	3
Physical Data	4
Performance Data	6
Electrical Data	9
Base Unit Dimensions	10
Fan Performance Data	12
Typical Piping and Wiring	18
Typical Wiring Schematic	19
Controls	25
Guide Specifications	26

ARI Capacity Rating*

UNIT	NOMINAL TONS	STANDARD CFM	GROSS COOLING CAPACITY (Btuh)	NET COOLING CAPACITY (Btuh)	TOTAL kw	EER	SOUND RATING (Bels)
50LJS007	6	2200	67,600	65,000	6.6	9.8	8.4
50LJS008	6.5	2200	78,600	76,000	7.05	10.8	8.4
50TJS008	7	2800	85,300	82,200	9.8	8.4	8.6
50TJS009	9	3000	106,600	103,200	10.9	9.5	8.6
50TJS012	10	4000	122,500	118,350	13.4	8.8	8.8
50TJS014	12	4750	146,700	138,050	14.1	9.8	8.8

Bels - Sound Levels (1 bel = 10 decibels)
 db - dry bulb
 EER - Energy Efficiency Ratio

*ARI - Air Conditioning and Refrigeration Institute.

1. Rated in accordance with ARI Standards 210/240-89 or 360-86 and 270-84.
2. Net values reflecting the effects of circulating fan heat.
3. Ratings are based on:



Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db air entering outdoor unit, Horizontal Discharge, 0.4 iwg External Static.

50LJS/TJS

Physical data (50 Hz) — English

50LJS/TJS

UNIT MODEL 50 SERIES		LJS007	LJS008	TJS008	TJS009	TJS012	TJS014	
Electrical Configuration	V-PH-Hz	400 - 3 – 50 (+/- 10%)						
Nominal Cooling Capacity	TR Kbtu/hr	6 72	6.5 78	7.0 84	9.0 108	10 120	12.0 144	
OPERATING WEIGHT								
Unit	lbs	520	529	755	760	915	930	
Economizer	lbs	34		44				
Roof Curb	lbs	115		143				
COMPRESSOR	type	Scroll		Hermetic, Reciprocating			Scroll	
Quantity	no.	1		2				
Oil (per compressor)	oz	53	53	55		65	53	
REFRIGERANT	type	R -22						
Operating Charge								
Circuit 1	lbs-oz	8 - 0	9 - 6	5 - 4	6 - 3	6 - 5	7 - 12	
Circuit 2	lbs-oz	-	-	5 - 4	6 - 3	6 - 5	7 - 12	
CONDENSER FAN	type	Propellar						
Quantity Diameter	no....in.	1 26			2 22			
Nominal CFM	CFM	4300		8650	8650	9225	9225	
Motor* hp ... rpm	hp...rpm	1/3960		1/2 1100				
CONDENSER COIL	type	Enhanced Copper Tubes, Aluminum Double-Wavy Fins						
Rows ... Fins/inch	no....per in.	2 ...17		1 ...17	2 ...17			
Total Face Area	sq. ft	12.25	13.1	20.5	18	17.42	25	
EVAPORATOR FAN	type	Centrifugal Type						
Quantity Size	no....in.	1 ...10 x 10			1 15 x15			
Drive Type	type	Belt Driven						
Nominal CFM	CFM	2200		2800	3000	4000	4750	
Input Watts @ Nominal CFM	Watts	800		900	1000	1500	2000	
Motor** hp, rpm	hp , rpm	1.5, 1425			2 , 1425		3 , 1425	
Max. Continuous Bhp	hp	2.4		2.4		2.9	3.7	
Motor Pulley Pitch Dia.	in.	4.4		3.4		4.4	5	
Fan Pulley Pitch Dia.	in.	5.19		5.5		7		
EVAPORATOR COIL	type	Enhanced Copper Tubes, Aluminum Double-Wavy Fins						
Rows ... Fins / inch	no....per in.	4 ...15		315			4 15	
Total Face Area	sq. ft	5.5		8		10	11.1	
HIGH PRESSURE SWITCH	Psig							
Standard Compressor IPRV setting		400 - 500						
Cutout / Reset (Auto)		463 - 477 / 300 - 340						
LOW PRESSURE SWITCH	Psig							
Cutout / Reset (Manual)		4 – 10 / 17 – 27			14 / 20 - 30			
FREEZE-PROTECTION SWITCH	°F							
Opens / Closes		25 - 35 / 40 - 50						
OUTDOOR AIR INLET SCREENS	type	Cleanable						
(With Optional Economizer)								
Quantity Size	no....in.	120x24x1			1 ... 20x25x1 + 116x25x1			
RETURN AIR FILTERS	type	Throw away						
Quantity Size	no....in.	216x25x2		4 16x20x2		4 ... 20x20x2		

* Condenser Motor Efficiency: 80%.

**Evaporator Motor Efficiency: LJS007,008 = 81%. TJS008-014 = 85%.

Physical data (50 Hz)— SI

UNIT MODEL 50 SERIES		LJS007	LJS008	TJS008	TJS009	TJS012	TJS014
Electrical Configuration	V-PH-Hz	400 - 3 – 50 (+/- 10%)					
Nominal Cooling Capacity	TR	6	6.5	7.0	9.0	10	12.0
	KW	21.1	23.4	24.6	31.6	36.2	42.0
OPERATING WEIGHT							
Unit	Kg	236.3	240	343.1	345.4	415.9	422.7
Economizer	kg	15.45		20			
Roof Curb	kg	52.2		65			
COMPRESSOR	type	Scroll		Hermetic, Reciprocating			Scroll
Quantity	no.	1		2			
Oil (per compressor)	ml	1567	1567	1627	1627	1922	1567
REFRIGERANT	type	R -22					
Operating Charge							
Circuit 1	kg	3.7	4.3	2.4	2.8	2.9	3.5
Circuit 2	kg	-		2.4	2.8	2.9	3.5
CONDENSER FAN	type	Propellar					
Quantity Diameter	no ...mm	1 660.4		2 558.8	2 558.8	2 558.8	2 558.8
Nominal Airflow	L/s	2029		4082	4082	4353	4353
Motor* KW ... rps	KW ...rps	0.2516		0.37 18.33			
CONDENSER COIL	type	Enhanced Copper Tubes, Aluminum Double-Wavy Fins					
Rows ... Fins/inch	noper 25 mm	2 ...17		1 ...17	2 ...17		
Total Face Area	sq. m	1.14	1.2	1.9	1.67	1.61	2.32
EVAPORATOR FAN	type	Centrifugal Type					
Quantity Size	no....mm x mm	1 ...254 x 254			1 381 x381		
Drive Type	type	Belt Driven					
Nominal Airflow	L/s	1.38		1321	1416	1887	2242
Input Watts @ Nominal L/s	Watts	800		900	1000	1500	2000
Motor** Kw, rps	Kw , rps	1.1 , 23.8				1.5 , 23.8	2.2 , 23.8
Max. Continuous BkW	kW	1.8				2.1	2.7
Motor Pulley Pitch Dia.	mm	111.8		86.4		111.8	127
Fan Pulley Pitch Dia.	mm	132		139.7		177.8	177.8
EVAPORATOR COIL	type	Enhanced Copper Tubes, Aluminum Double-Wavy Fins					
Rows ... Fins / inch	no...per 25 mm	4 ...15		315			4 15
Total Face Area	sq. m	0.51		0.74		0.929	1.03
HIGH PRESSURE SWITCH	kPa	2758 - 3448					
Standard Compressor IPRV setting		3192 - 3289 / 2068 - 2344					
Cutout / Reset (Auto)							
LOW PRESSURE SWITCH	kPa	28 - 69 / 117 - 186					
Cutout / Reset (Manual)		97 / 138 - 207					
FREEZE-PROTECTION SWITCH	°C	(-)4 to 1.66 / 4.44 to 10					
Opens / Closes							
OUTDOOR AIR INLET SCREENS	type	Cleanable					
(With Optional Economizer)							
Quantity Size	no....mm	1508x609.6x25.4		1 ... 508x635x25.4 + 1406.4x635x25.4			
RETURN AIR FILTERS	type	Throw away					
Quantity Size	no....mm	2406.4x635x50.8		4 406.4x508x50.8		4 ... 508x508x50.8	

* Condenser Motor Efficiency: 80%.

**Evaporator Motor Efficiency: LJS007,008 = 81%. TJS008-014 = 85%.

Performance data

COOLING CAPACITIES

50LJS007 (6 TONS)

Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF								
		1600/0.04			2200/0.06			2750/0.07		
		Evaporator Air — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	77.6	71.0	64.8	81.8	74.6	67.7	85.7	76.1	69.9
	SHC	37.3	46.4	55.1	41.5	53.1	64.3	45.7	58.8	69.8
	KW	4.37	4.35	4.32	4.39	4.36	4.33	4.41	4.37	4.35
85	TC	74.7	67.7	60.5	78.6	71.1	63.8	80.8	72.7	67.3
	SHC	36.3	45.1	53.2	40.6	52.0	62.1	44.5	58.0	67.2
	KW	4.77	4.73	4.67	4.81	4.76	4.71	4.83	4.78	4.74
95	TC	71.8	64.4	56.2	75.4	67.6	59.9	76.9	69.3	65.6
	SHC	35.3	43.9	51.4	39.7	50.9	59.9	43.3	57.3	64.5
	KW	5.18	5.11	5.02	5.23	5.16	5.08	5.25	5.18	5.13
105	TC	68.4	60.3	50.8	71.4	63.8	56.2	73.4	65.4	61.2
	SHC	34.2	42.3	48.8	38.4	49.5	56.2	42.5	56.1	61.1
	KW	5.59	5.48	5.37	5.64	5.55	5.46	5.68	5.59	5.53
115	TC	64.7	54.6	45.0	67.7	57.6	52.0	69.4	60.6	57.3
	SHC	32.9	40.1	45.0	37.3	47.3	51.9	41.5	45.2	57.3
	KW	5.99	5.86	5.74	6.06	5.93	5.85	6.10	5.97	5.93
125	TC	60.9	48.9	39.3	64.1	51.5	47.7	65.3	55.8	53.4
	SHC	31.7	37.9	39.3	36.1	45.0	47.7	40.4	52.4	53.4
	KW	6.39	6.23	6.12	6.48	6.31	6.24	6.53	6.36	6.32

50LJS008 (6.5 TONS)

Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF								
		1600/0.04			2200/0.06			2750/0.07		
		Evaporator Air — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	90.3	82.6	75.3	95.2	86.8	78.7	100.8	89.5	82.3
	SHC	41.1	50.2	63.4	45.8	57.5	74.0	61.5	64.7	81.4
	KW	5.12	5.10	5.06	5.14	5.11	5.07	5.17	5.12	5.10
85	TC	86.9	78.7	70.3	91.5	82.7	74.2	95.0	85.6	79.2
	SHC	40.0	48.8	61.2	44.8	56.3	71.5	50.1	63.8	78.4
	KW	5.59	5.54	5.47	5.64	5.58	5.52	5.66	5.60	5.55
95	TC	83.5	74.9	65.3	87.7	78.6	69.6	90.5	81.6	77.3
	SHC	38.9	47.5	59.1	43.8	55.2	66.6	48.8	63.1	76.4
	KW	6.07	5.99	5.88	6.13	5.60	5.95	6.15	6.07	6.01
105	TC	79.5	70.1	59.0	83.0	74.2	65.3	86.4	77.0	72.1
	SHC	37.7	45.8	56.1	42.4	53.6	64.6	47.9	61.8	71.3
	KW	6.55	6.42	6.29	6.61	6.50	6.40	6.65	6.55	6.48
115	TC	75.2	63.4	52.2	78.7	66.9	60.4	81.7	71.4	67.6
	SHC	35.5	43.4	51.7	41.1	51.2	59.7	46.8	49.9	66.9
	KW	7.02	6.87	6.72	7.10	6.95	6.85	7.15	6.99	6.95
122	TC	70.8	56.7	45.5	74.5	59.8	55.3	76.9	65.8	63.0
	SHC	34.9	41.0	45.1	39.8	48.7	54.8	45.6	57.8	62.4
	KW	7.49	7.30	7.17	7.59	7.39	7.31	7.65	7.45	7.40

LEGEND

- BF — Bypass factor
- Edb — Entering Dry-Bulb
- Ewd — Entering Wet-Bulb
- KW — Compressor Motor Power Input
- ldb — Leaving Dry-Bulb
- lwb — Leaving Wet-Bulb
- SHC — Sensible Heat Capacity (1000 Rth) Gross
- TC — Total Capacity (1000 Btuh) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. the following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{Sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

T_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil.

$$h_{ldb} = h_{edb} - \frac{\text{Total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

3. The SHC is based on 80 F edb temperature 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.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	Correction factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.

$$\text{Correction factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

COOLING CAPACITIES (Cont.)

50TJS008 (7.0 TONS)													
Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF											
		2250/0.07			2800/0.09			3000/0.10			3750/0.12		
		Evaporator Air — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	99.2	91.5	83.2	102.1	94.8	86.9	102.7	95.5	87.6	107.5	100.0	92.1
	SHC	47.7	59.6	70.6	50.8	65.4	78.7	51.7	67.4	81.1	57.3	76.2	90.8
	kW	7.40	7.07	6.74	7.55	7.24	6.93	7.59	7.30	6.97	7.74	7.45	7.11
85	TC	94.8	87.0	78.7	98.2	90.3	82.2	99.0	91.1	83.0	103.0	95.3	88.2
	SHC	46.3	58.1	68.7	49.8	64.1	76.8	51.0	66.2	79.1	55.9	74.8	88.0
	kW	7.94	7.61	7.26	8.11	7.78	7.45	8.15	7.82	7.49	8.28	7.96	7.67
95	TC	90.5	82.2	73.9	93.6	85.3	77.2	94.2	85.9	78.4	97.8	89.8	83.9
	SHC	44.8	56.2	66.4	48.4	62.3	74.5	49.6	64.5	76.2	54.7	73.2	83.9
	kW	8.48	8.13	7.76	8.67	8.30	7.92	8.71	8.34	7.98	8.81	8.46	8.21
105	TC	85.3	77.0	68.3	87.8	79.9	72.0	88.4	80.5	73.3	92.3	84.1	79.3
	SHC	43.0	54.2	63.7	46.5	60.4	71.6	47.7	62.5	73.0	53.3	71.3	79.3
	kW	9.00	8.61	8.28	9.13	8.77	8.44	9.19	8.81	8.50	9.31	8.96	8.73
115	TC	82.8	73.8	66.0	85.2	76.8	69.6	85.6	77.4	71.0	89.4	81.0	77.5
	SHC	42.6	53.8	63.2	46.4	60.4	69.6	47.8	62.6	71.0	53.9	71.8	77.3
	kW	9.50	9.10	8.73	9.64	9.25	8.96	9.69	9.29	9.04	9.83	9.44	9.27
122	TC	81.0	71.6	64.4	83.4	74.6	67.9	83.6	75.2	69.4	87.3	78.8	76.2
	SHC	42.3	53.5	62.9	46.3	60.4	68.2	47.9	62.6	69.6	54.2	72.2	75.9
	kW	9.85	9.45	9.05	10.01	9.58	9.32	10.03	9.63	9.42	10.19	9.77	9.65

50LJS/TJS

50TJS009 (9.0 TONS)													
Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF											
		2550/0.08			3000/0.10			3400/0.11			4250/0.135		
		Evaporator Air — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	121.8	113.3	103.5	124.6	116.3	106.4	125.5	117.9	108.3	130.4	122.4	113.3
	SHC	75.1	64.7	79.3	78.6	68.0	85.1	84.1	71.1	89.5	34.9	78.8	100.6
	kW	7.82	7.62	7.42	7.91	10.74	7.48	7.94	6.76	7.56	8.02	7.85	7.65
85	TC	118.4	108.9	98.2	120.9	111.7	101.4	122.5	113.6	103.2	128.0	118.3	108.5
	SHC	56.4	70.7	84.0	58.8	75.8	91.0	60.8	79.8	96.7	67.0	89.7	107.7
	kW	8.51	8.27	8.01	5.57	8.36	8.09	8.65	8.43	8.17	8.77	8.53	8.28
95	TC	114.0	103.8	91.2	116.2	106.6	95.5	117.6	108.3	97.9	122.9	112.8	114.5
	SHC	55.0	68.9	80.9	57.5	74.1	88.7	59.7	78.5	94.4	66.3	88.7	103.7
	kW	8.95	9.02	8.73	9.04	9.11	8.84	9.11	9.17	8.91	4.79	9.30	9.05
105	TC	107.9	98.2	85.1	110.7	100.6	88.4	112.2	102.1	91.9	116.6	106.5	98.9
	SHC	52.8	56.4	77.9	55.9	72.2	85.1	58.3	76.4	90.5	64.4	86.8	98.9
	kW	9.80	9.49	9.13	9.91	9.60	9.27	9.98	9.66	9.35	10.09	9.78	9.54
115	TC	97.7	87.9	75.9	99.9	90.4	78.8	101.3	91.8	82.4	105.0	95.7	90.1
	SHC	48.7	61.7	71.9	51.8	66.9	78.1	54.0	71.2	82.3	59.7	81.0	90.0
	kW	10.33	9.97	9.61	10.46	10.10	9.75	10.54	10.18	9.88	10.61	10.30	10.10
122	TC	90.5	80.7	69.5	92.4	83.2	72.1	93.6	84.6	75.8	96.8	88.1	83.9
	SHC	45.8	65.4	67.7	48.9	63.2	73.2	51.0	67.6	76.6	56.4	76.9	83.7
	kW	10.70	10.31	9.94	10.85	10.45	10.09	10.93	10.55	10.25	10.97	10.67	10.49

LEGEND

- BF – Bypass factor
- Edb – Entering Dry-Bulb
- Ewd – Entering Wet-Bulb
- KW – Compressor Motor Power Input
- ldb – Leaving Dry-Bulb
- lwb – Leaving Wet-Bulb
- SHC – Sensible Heat Capacity (1000 Rtu) Gross
- TC – Total Capacity (1000 Btu) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. the following formulas may be used:

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

tlwb = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil.

$$hldb = hedb - \frac{\text{Total capacity (Btu)}}{4.5 \times \text{cfm}}$$

- Where: hewb = Enthalpy of air entering evaporator coil
3. The SHC is based on 80 F edb temperature 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.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	Correction factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.
Correction factor = 1.10 x (1-BF) x (edb – 80)

Performance data

COOLING CAPACITIES (Cont.)

50LJS/TJS

50TJS012 (10 TONS)										
Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF								
		3000/0.095			4000/0.125			5000/0.15		
		Evaporator Air — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	139.8	128.4	115.3	146.6	134.5	123.3	153.8	140.8	129.8
	SHC	68.7	85.0	100.2	75.3	96.2	116.0	83.7	109.6	129.2
	kW	9.86	9.50	9.19	10.10	9.71	9.36	10.27	9.85	9.50
85	TC	133.8	123.1	107.0	140.0	128.8	117.8	147.0	134.2	124.7
	SHC	66.1	82.8	96.5	73.1	94.5	113.4	81.3	106.9	124.6
	kW	10.51	10.17	9.84	10.78	10.38	10.04	10.95	10.51	10.19
95	TC	127.7	117.0	99.5	133.3	122.5	110.0	139.4	128.1	119.7
	SHC	64.0	80.7	92.6	71.1	92.5	109.0	78.6	105.1	119.6
	kW	11.24	10.89	10.50	11.49	11.10	10.74	11.64	11.25	10.94
105	TC	121.5	107.6	90.4	126.3	115.2	101.4	132.3	120.9	113.3
	SHC	62.1	77.0	87.7	68.8	90.3	101.4	76.7	103.1	113.3
	kW	12.05	11.64	11.21	12.25	11.86	11.52	12.39	12.01	11.77
115	TC	111.5	94.9	81.6	116.3	100.7	90.5	121.2	108.5	101.6
	SHC	57.6	70.2	80.8	64.4	82.3	90.5	72.0	95.5	101.6
	kW	12.63	12.17	11.74	12.85	12.42	12.13	12.98	12.57	12.36
122	TC	104.5	86.1	75.4	109.3	90.6	82.9	113.5	99.9	93.5
	SHC	54.4	65.4	76.0	61.2	76.6	82.9	68.6	90.1	93.5
	kW	13.03	12.55	12.11	13.28	12.82	12.56	13.39	12.96	12.78

50TJS014 (12.5 TONS)													
Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm/BF											
		3750/0.10			4500/0.125			5000/0.15			6250/0.15		
		Evaporator Air — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	166.5	153.9	141.5	171.7	158.8	146.3	173.5	161.5	148.3	181.1	169.0	156.5
	SHC	81.2	101.8	121.5	86.7	110.2	133.1	89.3	115.9	139.0	98.8	130.9	155.5
	kW	9.96	9.68	9.40	10.06	9.78	9.49	10.15	9.87	9.49	10.25	9.96	9.68
85	TC	160.6	147.7	133.3	165.2	152.5	139.4	167.8	154.6	142.0	175.6	161.8	150.8
	SHC	79.6	99.4	117.6	85.0	108.0	130.0	87.9	113.6	136.2	97.6	129.1	150.5
	kW	10.81	10.43	10.15	10.90	10.62	10.34	11.00	10.72	10.34	11.19	10.81	10.53
95	TC	153.6	141.2	125.2	158.2	145.6	131.9	160.8	147.7	135.4	167.6	154.3	144.8
	SHC	77.2	96.7	113.7	82.6	105.4	126.3	86.0	111.2	133.0	95.1	126.6	144.8
	kW	11.66	11.28	10.90	11.84	11.47	11.09	11.94	11.56	11.19	12.03	11.66	11.37
105	TC	146.9	134.0	116.7	150.6	137.9	123.5	152.7	140.0	128.0	159.9	146.3	138.6
	SHC	75.0	94.1	109.5	80.1	102.6	121.5	83.3	108.4	127.9	93.5	123.7	138.5
	kW	12.60	12.13	11.75	12.69	12.31	11.84	12.78	12.41	11.94	12.97	12.50	12.22
115	TC	128.7	116.4	99.5	132.4	120.6	107.7	134.0	122.7	112.5	139.3	128.1	122.1
	SHC	67.0	84.2	97.1	71.9	92.6	107.6	74.8	98.2	112.4	83.4	112.2	122.0
	kW	13.87	13.39	12.90	14.07	13.58	13.10	14.07	13.68	13.19	14.16	13.77	13.48
122	TC	115.9	104.0	87.5	119.7	108.5	96.7	121.0	110.5	101.7	124.9	115.3	110.5
	SHC	61.5	77.3	88.4	66.2	85.6	97.9	68.9	91.1	101.6	76.3	104.1	110.4
	kW	14.76	14.27	13.71	15.03	14.47	13.97	14.96	14.57	14.07	15.00	14.66	14.37

LEGEND

- BF – Bypass factor
- Edb – Entering Dry-Bulb
- Ewd – Entering Wet-Bulb
- KW – Compressor Motor Power Input
- ldb – Leaving Dry-Bulb
- lwb – Leaving Wet-Bulb
- SHC – Sensible Heat Capacity (1000 Rtu/h) Gross
- TC – Total Capacity (1000 Btu/h) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. the following formulas may be used:

$$tlwb = tedb - \frac{\text{Sensible capacity (Btu/h)}}{1.10 \times \text{cfm}}$$

Tlwb = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil.

$$hldb = hedb - \frac{\text{Total capacity (Btu/h)}}{4.5 \times \text{cfm}}$$

- Where: hewb = Enthalpy of air entering evaporator coil
 3. The SHC is based on 80 F edb temperature 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.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	Correction factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.
 Correction factor = 1.10 x (1-BF) x (edb – 80)

Electrical Data – 50LJS007, 50LJS008, 50TJS008 – 014 (50 Hz)

UNIT MODEL	NOMINAL V-Ph-Hz	IFM TYPE	VOLTAGE RANGE		COMPRESSOR (ea)		OFM (ea)			IFM FLA	ELECTRIC HEAT*		POWER SUPPLY		DISCONNECT SIZE	
			MIN	MAX	RLA	LRA	Qty	Hp	FLA		NOMINAL KW**	FLA	MCA	MOCP	FLA	LRA
50LJS007	400-3-50	STD	342	440	10.3	100	1	1/3	1.6	2.4	-	-	16.9	25	--	--
											4.2	6.1	16.9	25	--	
											8	11.5	18.4	30	--	
											9.7	14	21.5	35	--	
											16	23.2	33.0	55	--	
											17.7	25.6	36.0	60	--	
50LJS008	400-3-50	STD	342	440	11	87	1	1/3	1.6	2.4	-	-	17.8	25	--	--
											4.2	6.1	17.8	25	--	
											8	11.5	18.4	30	--	
											9.7	14	21.5	35	--	
											16	23.2	33	55	--	
											17.7	25.6	36	60	--	
50TJS008	400-3-50	STD	342	440	6.6	53	2	1/2	1.8	3.4	-	-	18.8	20	19	130
											9.7	13.9	21.7	20	19	
											11.5	16.5	24.9	25	22	
											19.3	27.8	39.1	40	35	
											22.9	33.1	45.6	45	41	
											29	41.8	56.5	60	51	
50TJS009	400-3-50	STD	342	440	7.5	62	2	1/2	1.8	3.4	-	-	21.5	25	21	147
											9.7	13.9	21.7	25	21	
											11.5	16.5	24.9	25	22	
											19.3	27.8	39.1	40	35	
											22.9	33.1	45.6	45	41	
											29	41.8	56.5	60	51	
50TJS012	400-3-50	STD	342	440	9	82	2	1/2	1.8	3.4	-	-	23.2	30	24	158
											9.7	16.5	23.9	30	24	
											19.3	27.8	38.1	40	35	
											22.9	33.1	44.6	45	41	
											29	41.8	55.5	60	51	
											34.7	50.1	65.9	70	61	
50TJS014	400-3-50	STD	342	440	12	100	2	1/2	1.8	4.8	-	-	33.3	40	35	232
											11.5	18	33.3	40	35	
											19.3	30.3	43.9	45	40	
											22.9	36.1	51.1	60	47	
											29	45.5	62.8	70	58	
											34.7	54.6	74.2	80	68	

50LJS/TJS

LEGEND AND NOTES FOR ELECTRICAL DATA TABLES

LEGEND

- FLA** — Full Load Amps
- HACR** — Heating, Air Conditioning and Refrigeration
- IFM** — Indoor (Evaporator) Fan Motor
- LRA** — Locked Rotor Amps
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection
- NEC** — National Electrical Code
- OFM** — Outdoor (Condenser) Fan Motor
- RLA** — Rated Load Amps

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 600 v. Heaters are rated at 240 v, 480 v, or 600 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly. To determine heater capacity at actual unit voltage, multiply 240 v, 480 v, or 600 v capacity by multipliers found in table on page 51.

†Used to determine minimum disconnect size per NEC.

**Heaters are field installed only.

‡ Fuse or HACR circuit breaker.

||Fusing in single point box provides the required branch circuit protection.

NOTES:

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. The Canadian units may be fuse or circuit breaker.

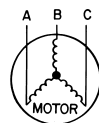
2. Unbalanced 3-Phase Supply Voltage

Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance.

% Voltage Imbalance

$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60.



- AB = 452 v
- BC = 464 v
- AC = 455 v

$$\begin{aligned} \text{Average Voltage} &= \frac{452 + 464 + 455}{3} \\ &= \frac{1371}{3} \\ &= 457 \end{aligned}$$

Determine maximum deviation from average voltage.

- (AB) 457 – 452 = 5 v
- (BC) 464 – 457 = 7 v
- (AC) 457 – 455 = 2 v

Maximum deviation is 7 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{7}{457} \\ &= 1.53\% \end{aligned}$$

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

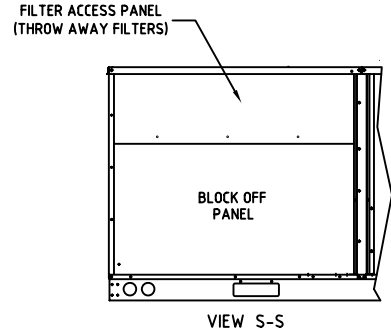
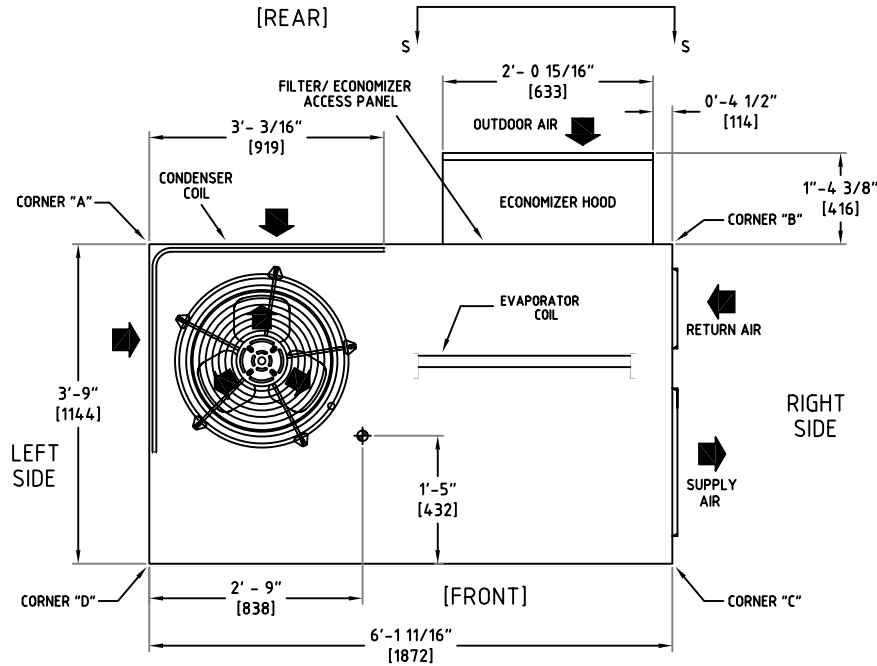
IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.



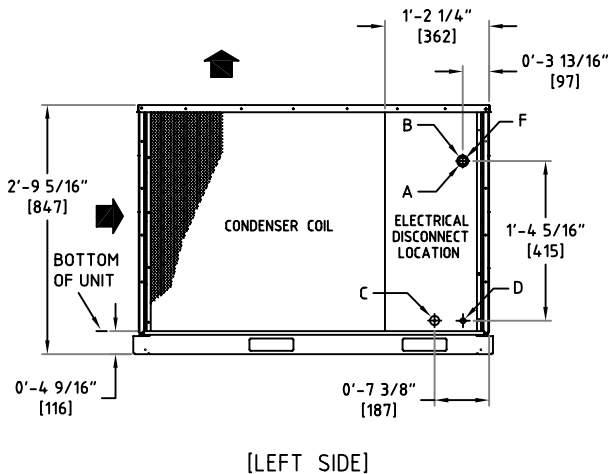
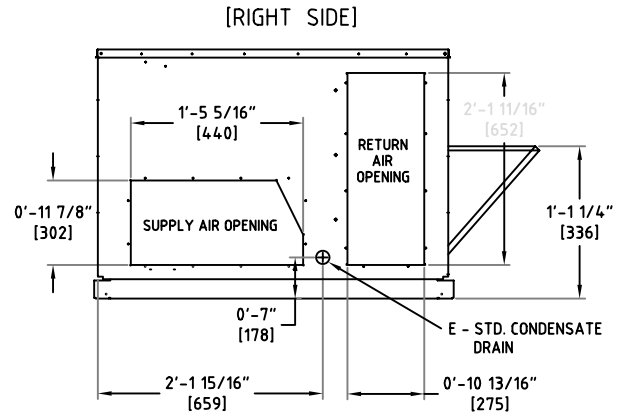
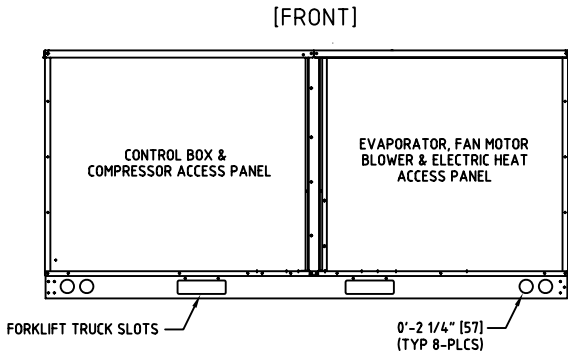
Base unit dimensions — 50LJS007,008

50LJS/TJS

UNIT 50TJ	STANDARD UNIT WEIGHT		ECONOMIZER WEIGHT		CORNER WEIGHT							
					A		B		C		D	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
007	520	236	34	15.4	108	49	88	40	145	65.8	178	80.7
008	529	240	34	15.4	110	49.8	89.5	40.7	147.5	66.9	181	82



	CONNECTION SIZES
A	1-3/8" dia [35] Field power supply hole.
B	2-1/2" dia [64] power supply knock-out
C	1-3/4" dia [44] charging port hole
D	7/8" dia [22] field control wiring hole
E	3/4"-14 NPT condensate drain
F	2" dia [51] power supply knock-out



NOTES :

- Dimensions in [] are in millimeters.
- Center of gravity
- Direction of airflow
- Ductwork to be attached to accessory roof curb only.
- Minimum clearance (local codes or jurisdiction may prevail):
 - Bottom to combustible surfaces (when not using curb) 0 inches. On horizontal Condenser coil, for proper airflow, 36 in. one side, 12 in. the other. The side getting the greater clearance is optional.
 - Overhead, 60 in. to assure proper condenser fan operation.
 - Between units, control box side, 42 in. per NEC (National Electrical Code).
 - Between unit and underground surfaces, control box side, 36 in. per NEC.
 - Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC.
 - Horizontal supply and return end, 0 inches.
- With the exception of the clearance for the condenser coil as stated in notes 5b and C, a removable fence or barricade requires no clearance
- Units may be installed on combustible floors made from wood or class A, B, or C roof covering material.

Base unit dimensions — 50TJS008-014

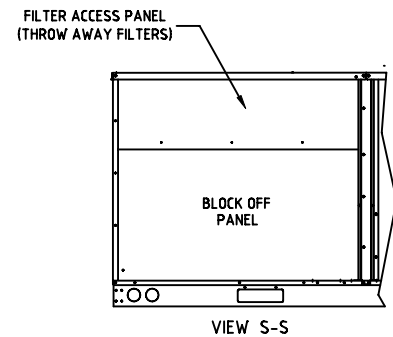
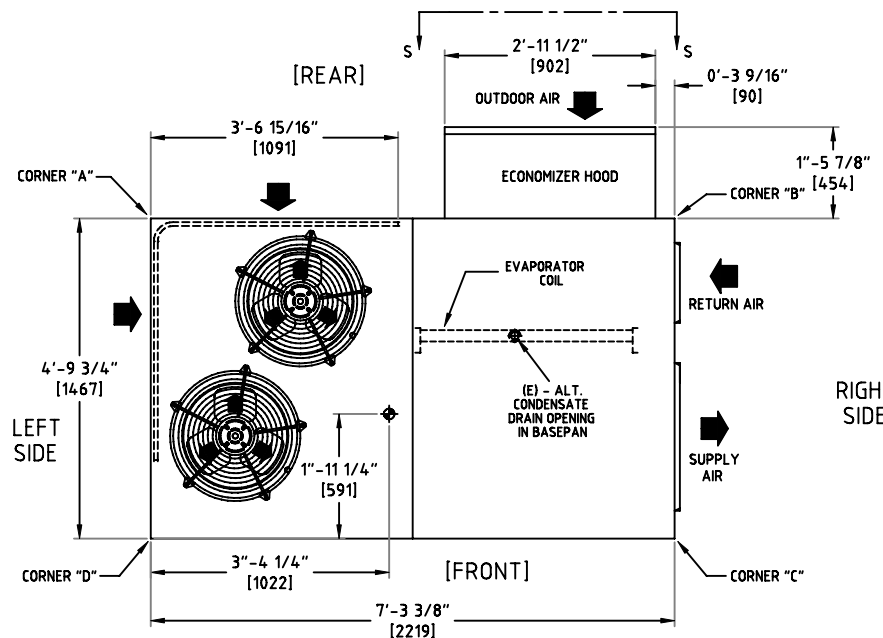
UNIT 50TJ	CORNER WEIGHT								DIMENSIONS					
	A		B		C		D		"H"		"J"		"K"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Ft-in.	mm	Ft-in.	mm	Ft-in.	mm
008	164	74	140	64	208	94	243	110	1-2 7/8	378	3-5 5/16	1050	2-9 11/16	856
009	165	75	141	64	209	94	245	111	3-3 7/8	1013	3-5 5/16	1050	2-9 11/16	856
012	199	90	170	77	252	114	294	134	2-5 7/8	759	4-1 5/16	1253	3-0 3/8	924
014	202	92	172	78	256	116	300	136	1-2 7/8	378	4-1 5/16	1253	3-0 3/8	924

*Weights are for unit only (aluminum plate fins) and do not include options or crating.

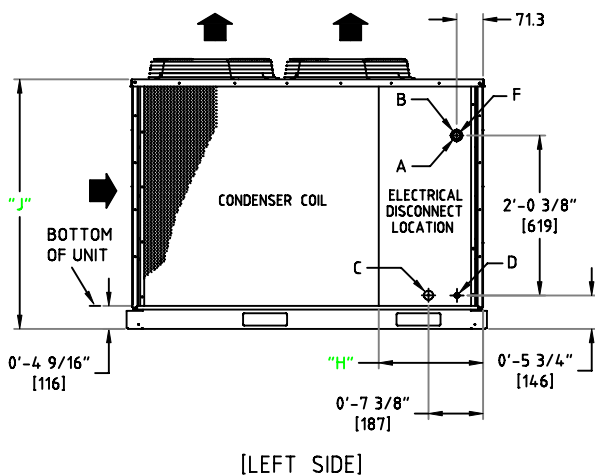
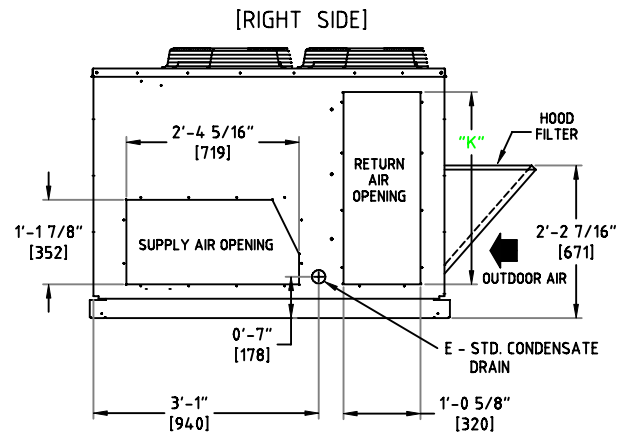
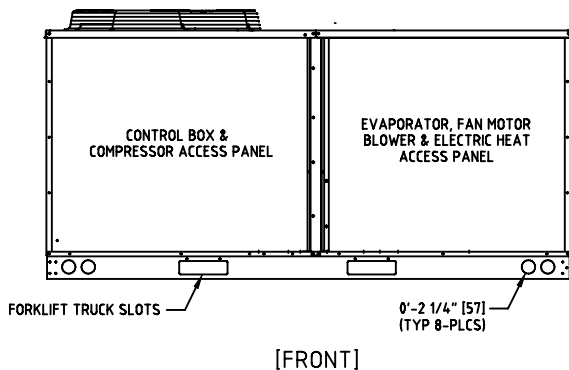
BOTTOM POWER CHART: THESE HOLES REQUIRED FOR USE WITH ACCESSORY PACKAGES -
CRBTMPWR001A00 (1/2", 3/4")
CRBTMPWR002A00 (1/2", 1-1/4")

THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
1/2"	24 V POWER*	7/8" [22.2]
3/4"	POWER*	1-1/8" [28.4]
1-1/4"	POWER*	1-3/4" [44.4]

*Select either 3/4" or 1 1/4" for power, depending on wire size.



CONNECTION SIZES	
A	1-3/8" dia [35] Field power supply hole.
B	2-1/2" dia [64] power supply knock-out
C	1-3/4" dia [44] charging port hole
D	7/8" dia [22] field control wiring hole
E	3/4"-14 NPT condensate drain
F	2" dia [51] power supply knock-out



NOTES:

- Dimensions in [] are in millimeters.
- Center of gravity
- Direction of airflow
- Ductwork to be attached to accessory roof curb only.
- Minimum clearance (local codes or jurisdiction may prevail):
 - Bottom to combustible surfaces (when not using curb) 0 inches. On horizontal
 - Condenser coil, for proper airflow, 36 in. one side, 12 in. the other. The side getting the greater clearance is optional.
 - Overhead, 60 in. to assure proper condenser fan operation.
 - Between units, control box side, 42 in. per NEC (National Electrical Code).
 - Between unit and underground surfaces, control box side, 36 in. per NEC.
 - Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC.
 - Horizontal supply and return end, 0 inches.
- With the exception of the clearance for the condenser coil or combustibles as stated
- Units may be installed on combustible floors made from wood or class A, B, or C roof covering material.
- The vertical center of gravity is 1'-7 1/2" [495] for 008 and 009, 2'-0" [610] for 012 and 014 up from the bottom of the base rail. Horizontal center of gravity is shown.

Performance data (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS

50LJS007 (6 TONS)/ 50LJS008(6.5 TONS) — STANDARD MOTOR (BELT DRIVE)*

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.1			0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	765	0.45	487	821	0.51	532	923	0.65	638	1019	0.81	843	1099	0.96	883
1900	802	0.45	539	854	0.58	585	953	0.73	700	1046	0.90	835	1126	1.06	965
2000	840	0.60	600	888	0.66	646	984	0.82	771	1073	0.99	907	1154	1.16	1047
2100	878	0.69	669	923	0.75	716	1015	0.91	843	1101	1.08	981	1182	1.27	1140
2200	916	0.78	739	958	0.85	795	1046	1.01	924	1129	1.19	1072	1209	1.39	1241
2300	954	0.89	827	993	0.96	883	1079	1.13	1022	1160	1.31	1173	1237	1.51	1344
2400	993	1.00	916	1029	1.07	973	1112	1.25	1123	1190	1.43	1275	1264	1.63	1447
2500	1031	1.13	1022	1066	1.20	1081	1145	1.39	1241	1220	1.57	1396	1292	1.77	1569
2600	1070	1.26	1131	1103	1.34	1199	1179	1.52	1353	1251	1.71	1517	1322	1.92	1700
2700	1109	1.41	1258	1140	1.48	1318	1212	1.67	1482	1283	1.87	1656	1352	2.09	1849
2800	1148	1.57	1396	1177	1.64	1456	1246	1.83	1621	1316	2.04	1805	1383	2.26	1997
2900	1188	1.74	1543	1215	1.81	1604	1281	2.00	1770	1349	2.22	1962	1413	2.44	2154
3000	1227	1.92	1700	1253	2.00	1770	1316	2.19	1936	1382	2.42	2136	1444	2.63	2317

50LJS007 (6 TONS)/ 50LJS008(6.5 TONS) — STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.0			1.2			1.4			1.6		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	1178	1.14	1031	1249	1.32	1182	1316	1.52	1353	1382	1.72	1526
1900	1201	1.23	1106	1274	1.43	1275	1338	1.62	1439	1402	1.83	1621
2000	1226	1.33	1190	1297	1.53	1361	1363	1.73	1534	1424	1.94	1718
2100	1252	1.45	1292	1320	1.64	1456	1388	1.85	1639	1448	2.07	1831
2200	1280	1.58	1404	1345	1.77	1569	1410	1.97	1744	1473	2.20	1945
2300	1309	1.71	1517	1372	1.91	1691	1434	2.11	1866	1496	2.34	2067
2400	1336	1.85	1639	1400	2.06	1823	1459	2.26	1997	1519	2.48	2188
2500	1363	2.00	1770	1428	2.22	1962	1486	2.43	2145	1543	2.65	2335
2600	1390	2.15	1901	1456	2.38	2102	1514	2.61	2300	1569	2.83	2487
2700	1418	2.31	2041	1483	2.56	2257	1543	2.80	2462	—	—	—
2800	1446	2.48	2188	1510	2.73	2403	—	—	—	—	—	—
2900	1476	2.67	2352	1537	2.92	2562	—	—	—	—	—	—
3000	1506	2.88	2529	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
FIOP — Factory-Installed Option
Watts — Input Watts to Motor

*Motor drive range: 1070 to 1460 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** Out of Drive Package or Motor range .

2. Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

3. Values include losses for filters, unit casing, and wet coils.

4. Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative for details.

5. Interpolation is permissible. Do not extrapolate.

6. Motor Efficiency: 81%.

50LJS/TJS

Performance data (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS

50TJS008 (7½/TONS) — STANDARD MOTOR (BELT DRIVE)*

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	465	0.43	473	554	0.64	630	630	0.86	803	695	1.09	989	757	1.34	1199
2300	471	0.45	487	559	0.66	646	635	0.89	827	699	1.12	1014	760	1.37	1224
2400	482	0.50	524	569	0.71	684	645	0.95	875	708	1.18	1064	768	1.44	1284
2500	494	0.54	554	581	0.76	723	654	1.01	924	717	1.25	1123	776	1.51	1344
2550	501	0.57	577	587	0.79	747	659	1.05	956	722	1.29	1156	780	1.55	1378
2660	507	0.59	592	592	0.82	771	663	1.08	981	727	1.32	1182	784	1.58	1404
2700	520	0.65	638	604	0.89	827	672	1.14	1031	737	1.40	1250	793	1.66	1473
2800	533	0.71	684	615	0.95	875	683	1.20	1081	747	1.49	1327	802	1.75	1552
2900	546	0.77	731	626	1.02	932	693	1.27	1140	756	1.57	1396	813	1.84	1630
3000	559	0.83	779	637	1.09	989	704	1.35	1207	765	1.66	1473	823	1.94	1718
3100	572	0.90	835	648	1.17	1056	715	1.43	1275	775	1.74	1543	832	2.05	1814
3200	585	0.96	883	660	1.24	1114	727	1.52	1353	785	1.83	1627	841	2.15	1901
3300	598	1.03	940	671	1.32	1182	739	1.62	1439	795	1.91	1691	851	2.26	1997
3400	610	1.10	998	682	1.41	1258	750	1.72	1526	806	2.01	1779	860	2.36	2084
3500	623	1.17	1056	694	1.50	1335	761	1.82	1613	817	2.11	1866	870	2.47	2180
3600	636	1.25	1123	707	1.60	1422	772	1.93	1709	828	2.23	1971	880	2.57	2266
3700	649	1.33	1190	720	1.71	1517	783	2.03	1796	840	2.35	2076	890	2.69	2369
3750	655	1.37	1224	727	1.77	1569	789	2.09	1849	846	2.42	2136	896	2.75	2420

50LJS/TJS

50TJS008 (7½/TONS) — STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	810	1.62	1439	850	1.91	1691	873	2.20	1945	883	2.50	2206	895	2.78	2445
2300	816	1.65	1465	859	1.94	1718	888	2.24	1980	903	2.55	2249	911	2.85	2504
2400	824	1.72	1526	872	2.01	1779	909	2.32	2050	931	2.64	2326	935	2.96	2595
2500	832	1.79	1587	882	2.09	1849	925	2.40	2119	955	2.72	2394	972	3.06	2678
2550	836	1.83	1621	887	2.13	1884	931	2.45	2162	964	2.77	2436	986	3.11	2718
2660	839	1.87	1656	891	2.17	1919	936	2.49	2197	973	2.82	2479	999	3.16	2759
2700	846	1.95	1726	898	2.26	1997	946	2.58	2275	987	2.91	2554	1019	3.26	2839
2800	855	2.04	1805	906	2.35	2076	954	2.67	2352	997	3.01	2637	1034	3.36	2917
2900	863	2.13	1884	913	2.44	2154	961	2.77	2436	1006	3.12	2727	—	—	—
3000	872	2.22	1962	921	2.54	2240	969	2.88	2529	1014	3.22	2807	—	—	—
3100	882	2.33	2058	930	2.65	2335	976	2.99	2620	1021	3.34	2902	—	—	—
3200	892	2.45	2162	939	2.76	2428	984	3.10	2710	—	—	—	—	—	—
3300	902	2.57	2266	948	2.88	2529	993	3.21	2799	—	—	—	—	—	—
3400	912	2.69	2369	958	3.01	2637	1002	3.34	2902	—	—	—	—	—	—
3500	921	2.82	2479	968	3.15	2751	—	—	—	—	—	—	—	—	—
3600	930	2.95	2587	978	3.29	2862	—	—	—	—	—	—	—	—	—
3700	940	3.07	2686	—	—	—	—	—	—	—	—	—	—	—	—
3750	945	3.14	2743	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

- Bhp** — Brake Horsepower Input to Fan
- FIOP** — Factory-Installed Option
- Watts** — Input Watts to Motor

*Motor drive range: 590 to 840 rpm.
All other rpms require field-supplied drive.

NOTES:

1. **Boldface** Out of Drive Package or Motor range .

2. Maximum usable watts input is 2120 and maximum continuous bhp is 2.90. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

3. Values include losses for filters, unit casing, and wet coils.
4. Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative for details.
5. Interpolation is permissible. Do not extrapolate.
6. Motor Efficiency: 85%.

Performance data (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS

50TJS009 (8 1/2 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	501	0.57	577	587	0.79	747	659	1.05	956	722	1.29	1156	780	1.55	1378
2660	507	0.59	592	592	0.82	771	663	1.08	981	727	1.32	1182	784	1.58	1404
2700	520	0.65	638	604	0.89	827	672	1.14	1031	737	1.40	1250	793	1.66	1473
2800	533	0.71	684	615	0.95	875	683	1.20	1081	747	1.49	1327	802	1.75	1552
2900	546	0.77	731	626	1.02	932	693	1.27	1140	756	1.57	1396	813	1.84	1630
3000	559	0.83	779	637	1.09	989	704	1.35	1207	765	1.66	1473	823	1.94	1718
3100	572	0.90	835	648	1.17	1056	715	1.43	1275	775	1.74	1543	832	2.05	1814
3200	585	0.96	883	660	1.24	1114	727	1.52	1353	785	1.83	1321	841	2.15	1901
3300	598	1.03	940	671	1.32	1182	739	1.62	1439	795	1.91	1691	851	2.26	1997
3400	610	1.10	998	682	1.41	1258	750	1.72	1526	806	2.01	1779	860	2.36	2084
3500	623	1.17	1056	694	1.50	1335	761	1.82	1613	817	2.11	1866	870	2.47	2180
3600	636	1.25	1123	707	1.60	1422	772	1.93	1709	828	2.23	1971	880	2.57	2266
3700	649	1.33	1190	720	1.71	1517	783	2.03	1796	840	2.35	2076	890	2.69	2369
3750	655	1.37	1224	727	1.77	1569	789	2.09	1849	846	2.42	2136	896	2.75	2420
3800	661	1.41	1258	733	1.82	1613	795	2.15	1901	852	2.48	2188	901	2.80	2462
3900	674	1.49	1327	746	1.93	1709	806	2.26	1997	863	2.61	2300	912	2.93	2571
4000	687	1.57	1396	759	2.05	1814	817	2.38	2102	874	2.75	2420	923	3.08	2694
4100	699	1.60	1473	772	2.17	1919	828	2.50	2206	885	2.88	2529	935	3.23	2815
4200	712	1.75	1552	785	2.30	2032	840	2.64	2326	897	3.03	2653	947	3.39	2940
4250	719	1.80	1595	792	2.37	2093	846	2.71	2386	903	3.10	2710	—	—	—

50TJS009 (8 1/2 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	836	1.83	1621	887	2.13	1884	931	2.45	2162	964	2.77	2436	986	3.11	2718
2660	839	1.87	1656	891	2.17	1919	936	2.49	2197	973	2.82	2479	999	3.16	2759
2700	846	1.95	1726	898	2.26	1997	946	2.58	2275	987	2.91	2554	1019	3.26	2839
2800	855	2.04	1805	906	2.35	2076	954	2.67	2352	997	3.01	2637	1034	3.36	2917
2900	863	2.13	1884	913	2.44	2154	961	2.77	2436	1006	3.12	2727	—	—	—
3000	872	2.22	1962	921	2.54	2240	969	2.88	2529	1014	3.22	2807	—	—	—
3100	882	2.33	2058	930	2.65	2335	976	2.99	2620	1021	3.34	2902	—	—	—
3200	892	2.45	2162	939	2.76	2428	984	3.10	2710	—	—	—	—	—	—
3300	902	2.57	2266	948	2.88	2529	993	3.21	2799	—	—	—	—	—	—
3400	912	2.69	2369	958	3.01	2637	1002	3.34	2902	—	—	—	—	—	—
3500	921	2.82	2479	968	3.15	2751	—	—	—	—	—	—	—	—	—
3600	930	2.95	2587	978	3.29	2862	—	—	—	—	—	—	—	—	—
3700	940	3.07	2686	—	—	—	—	—	—	—	—	—	—	—	—
3750	945	3.14	2743	—	—	—	—	—	—	—	—	—	—	—	—
3800	949	3.20	2781	—	—	—	—	—	—	—	—	—	—	—	—
3900	959	3.33	2894	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
FIOP — Factory-Installed Option
Watts — Input Watts to Motor

*Motor drive range: 685 to 935 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** Out of Drive Package or Motor range .

2. Maximum usable watts input is 2120 and maximum continuous bhp is 2.90. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

3. Values include losses for filters, unit casing, and wet coils.

4. Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative for details.

5. Interpolation is permissible. Do not extrapolate.

6. Motor Efficiency: 85%.

Performance data (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS

50TJS012 (10 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	532	0.64	630	605	0.81	763	670	0.97	891	725	1.12	1014	778	1.28	1148	825	1.43	1275
3100	544	0.70	677	616	0.86	803	680	1.03	940	735	1.20	1081	787	1.36	1216	835	1.52	1353
3200	557	0.75	716	628	0.93	859	690	1.10	998	746	1.28	1148	796	1.44	1284	844	1.61	1430
3300	570	0.81	763	639	0.99	907	700	1.18	1064	757	1.36	1216	805	1.52	1353	854	1.70	1508
3400	583	0.88	818	651	1.06	965	711	1.25	1123	767	1.44	1284	815	1.61	1430	863	1.79	1587
3500	596	0.94	867	663	1.14	1031	721	1.33	1190	777	1.52	1353	826	1.71	1517	871	1.88	1665
3600	609	1.01	924	674	1.22	1097	732	1.42	1267	787	1.61	1430	836	1.80	1595	880	1.98	1753
3700	622	1.09	989	686	1.30	1165	744	1.50	1335	797	1.70	1508	847	1.91	1691	890	2.09	1849
3800	635	1.16	1047	698	1.39	1241	755	1.59	1413	808	1.80	1595	857	2.01	1779	901	2.20	1945
3900	649	1.25	1123	713	1.48	1318	767	1.68	1491	818	1.90	1683	867	2.11	1866	912	2.32	2050
4000	662	1.33	1190	722	1.57	1396	778	1.78	1578	829	2.01	1779	878	2.22	1962	922	2.44	2203
4100	675	1.42	1267	734	1.67	1482	790	1.89	1674	839	2.12	1875	888	2.33	2058	933	2.56	2309
4200	689	1.52	1353	746	1.77	1569	801	1.99	1761	851	2.23	1971	898	2.45	2212	943	2.69	2424
4300	702	1.61	1430	759	1.88	1665	813	2.11	1866	862	2.34	2067	908	2.58	2326	953	2.81	2533
4400	715	1.72	1526	772	1.99	1761	825	2.22	1962	873	2.46	2221	919	2.71	2442	963	2.94	2651
4500	729	1.83	1621	785	2.10	1858	837	2.35	2076	885	2.59	2335	929	2.85	2569	973	3.08	2782
4600	742	1.94	1718	797	2.22	1962	848	2.48	2238	896	2.72	2451	940	2.98	2688	984	3.22	2914
4700	756	2.06	1823	810	2.34	2067	860	2.61	2353	908	2.86	2578	951	3.12	2727	994	3.38	3068
4800	770	2.18	1927	823	2.46	2221	872	2.75	2505	919	3.00	2707	963	3.27	2847	1003	3.43	3202
4900	783	2.31	2041	836	2.60	2344	884	2.89	2605	931	3.14	2838	974	3.41	2956	1013	3.59	3349
5000	797	2.44	2203	849	2.73	2460	897	3.04	2661	943	3.30	2870	984	3.44	3211	1023	3.75	3501

50LJS/TJS

50TJS012 (10 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	874	1.60	1422	926	1.82	1613	974	2.11	1920	1012	2.41	2134
3100	880	1.68	1491	933	1.87	1656	983	2.16	1963	1017	2.44	2177
3200	888	1.77	1569	934	1.94	1718	988	2.18	1980	1025	2.47	2230
3300	897	1.86	1648	940	2.03	1853	989	2.24	2031	1032	2.53	2282
3400	907	1.97	1744	947	2.14	1946	991	2.32	2099	1038	2.57	2318
3500	916	2.07	1831	956	2.25	2039	997	2.43	2195	1043	2.64	2380
3600	926	2.18	1927	966	2.41	2134	1004	2.54	2291	1045	2.74	2478
3700	934	2.28	2015	976	2.48	2238	1013	2.66	2397	1051	2.85	2569
3800	943	2.41	2160	985	2.60	2334	1023	2.79	2514	1059	2.98	2688
3900	952	2.51	2265	994	2.72	2451	1032	2.92	2633	1068	3.12	2819
4000	962	2.63	2371	1003	2.84	2560	1042	3.06	2763	1078	3.26	2952
4100	973	2.77	2496	1011	2.97	2679	1051	3.20	2895	1087	3.41	3097
4200	983	2.91	2624	1021	3.11	2810	1060	3.34	3029	1090	3.51	3276
4300	994	3.05	2754	1031	3.25	2943	1068	3.48	3166	1097	3.70	3453
4400	1004	3.19	2885	1042	3.41	3097	1080	3.63	3388	1105	3.91	3642
4500	1015	3.33	2020	1051	3.45	3218	1090	3.75	3493	1112	4.12	3843
4600	1025	3.48	3166	1060	3.61	3369	1100	3.92	3655	1119	4.35	4057
4700	1037	3.58	3335	1070	3.84	3325	1111	4.10	3822	1126	4.59	4284
4800	1048	3.75	3494	1080	3.95	3686	1121	4.28	3995	1133	4.85	4523
4900	1060	3.92	3659	1089	4.13	3854	1132	4.48	4174	1140	5.12	4775
5000	1072	4.11	3830	1099	4.32	4027	1144	4.67	4359	—	—	—

LEGEND

- Bhp** — Brake Horsepower Input to Fan
- FLOP** — Factory-Installed Option
- Watts** — Input Watts to Motor

electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

*Standard motor drive range: 685 to 935 rpm.

All other rpms require field-supplied drive.

NOTES:

1. **Boldface** Out of Motor and Drive Package range.
2. Maximum usable watts input is 2120 with standard motor, Maximum continuous bhp is 2.90 with standard motor.

3. Values include losses for filters, unit casings, and wet coils.
4. Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative for details.
5. Interpolation is permissible. Do not extrapolate.
6. Motor Efficiency: 85%

Performance data (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS

50TJS014 (12½ TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	607	0.97	947	670	1.18	1113	732	1.37	1267	782	1.56	1423	833	1.73	1565
3800	621	1.05	1010	681	1.25	1170	742	1.45	1332	795	1.66	1506	842	1.82	1641
3900	636	1.13	1073	693	1.32	1226	751	1.53	1398	808	1.76	1590	851	1.92	1725
4000	650	1.21	1137	705	1.40	1291	761	1.61	1464	819	1.86	1674	861	2.02	1811
4100	665	1.30	1210	717	1.48	1357	772	1.71	1548	830	1.96	1759	871	2.13	1905
4200	680	1.39	1283	728	1.57	1431	783	1.81	1632	839	2.05	1836	883	2.25	2009
4300	696	1.49	1365	739	1.66	1506	794	1.91	1717	848	2.14	1914	896	2.38	2123
4400	711	1.60	1456	750	1.75	1582	805	2.02	1811	857	2.24	2000	908	2.51	2237
4500	727	1.70	1540	762	1.85	1666	817	2.12	1897	867	2.35	2096	919	2.63	2343
4600	742	1.82	1641	774	1.96	1759	828	2.23	1992	877	2.46	2193	929	2.75	2450
4700	758	1.94	1742	786	2.07	1854	840	2.34	2088	888	2.59	2307	938	2.87	2557
4800	773	2.06	1845	799	2.18	1948	852	2.46	2193	899	2.72	2423	947	2.98	2656
4900	789	2.19	1957	812	2.30	2053	863	2.57	2290	910	2.86	2548	957	3.11	2773
5000	805	2.32	2070	826	2.43	2166	875	2.70	2405	921	2.99	2665	966	3.24	2891
5100	821	2.47	2202	840	2.57	2290	887	2.83	2521	932	3.13	2792	976	3.38	3019
5200	837	2.61	2325	854	2.71	2414	898	2.96	2638	943	3.28	2928	987	3.53	3157
5300	853	2.76	2459	868	2.85	2539	909	3.09	2755	955	3.42	3056	998	3.69	3304
5400	869	2.92	2602	882	3.01	2683	920	3.24	2891	967	3.57	3193	1009	3.86	3461
5500	885	3.09	2755	897	3.17	2828	932	3.38	3019	978	3.72	3331	1029	4.03	3618
5600	901	3.26	2910	911	3.33	2973	943	3.54	3166	990	3.87	3470	1031	4.20	3775
5700	917	3.44	3074	926	3.50	3129	956	3.70	3313	1002	4.03	3618	1042	4.38	3943
5800	933	3.62	3239	941	3.68	3294	968	3.87	3470	1013	4.20	3775	1053	4.56	4111
5900	949	3.81	3414	956	3.87	3470	981	4.05	3637	1025	4.37	3934	1065	4.74	4279
6000	965	4.01	3600	972	4.06	3646	995	4.23	3804	1037	4.55	4102	1076	4.92	4447
6100	981	4.21	3785	987	4.26	3832	1008	4.42	3981	1042	4.73	4270	1088	5.10	4614
6200	997	4.42	3981	1002	4.46	4018	1022	4.62	4167	1058	4.91	4437	—	—	—
6300	1014	4.64	4186	1018	4.68	4223	1036	4.83	4363	1070	5.11	4624	—	—	—

50TJS014 (12½ TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	879	1.95	1751	927	2.17	1940	973	2.38	2123	1013	2.57	2290	1046	2.73	2432
3800	889	2.03	1819	934	2.26	2018	980	2.48	2210	1022	2.69	2396	1058	2.87	2557
3900	898	2.12	1897	942	2.36	2105	987	2.59	2307	1030	2.81	2503	1068	3.01	2683
4000	908	2.21	1974	950	2.46	2193	994	2.70	2405	1037	2.92	2602	1077	3.14	2801
4100	917	2.32	2070	960	2.55	2272	1001	2.81	2503	1045	3.04	2710	1085	3.21	2919
4200	925	2.44	2175	969	2.65	2370	1009	2.92	2602	1051	3.17	2828	1092	3.40	3037
4300	935	2.56	2281	979	2.77	2468	1018	3.03	2701	1058	3.29	2937	1100	3.53	3157
4400	945	2.68	2387	988	2.89	2575	1028	3.14	2801	1066	3.41	3047	1106	3.67	3285
4500	955	2.82	2512	996	3.02	2692	1037	3.25	2901	1074	3.54	3166	1113	3.81	3414
4600	967	2.96	2638	1005	3.16	2819	1046	3.38	3019	1084	3.66	3276	1121	3.95	3544
4700	980	3.11	2773	1015	3.30	2946	1056	3.52	3147	1093	3.79	3396	1129	4.09	3674
4800	992	3.26	2910	1025	3.45	3083	1064	3.67	3285	1103	3.92	3516	1137	4.22	3795
4900	1003	3.41	3047	1036	3.61	3230	1073	3.83	3433	1112	4.07	3655	1147	4.36	3925
5000	1014	3.56	3184	1049	3.79	3396	1083	4.00	3590	1121	4.23	3804	1157	4.50	4055
5100	1024	3.71	3322	1061	3.96	3553	1093	4.17	3748	1129	4.40	3962	1166	4.66	4202
5200	1033	3.84	3442	1073	4.14	3720	1103	4.34	3906	1138	4.58	4130	1175	4.82	4354
5300	1042	3.98	3572	1084	4.31	3878	1115	4.53	4157	1148	4.76	4326	1184	5.01	4531
5400	1051	4.14	3720	1095	4.49	4046	1128	4.74	4279	1158	4.95	4475	1193	5.20	4707
5500	1061	4.30	3818	1105	4.66	4204	1140	4.94	4465	1168	5.15	4661	—	—	—
5600	1071	4.46	4018	1114	4.81	4344	1152	5.14	4652	—	—	—	—	—	—
5700	1081	4.64	4186	1123	4.98	4503	—	—	—	—	—	—	—	—	—
5800	1092	4.84	4372	1132	5.15	4661	—	—	—	—	—	—	—	—	—
5900	1103	5.04	4558	—	—	—	—	—	—	—	—	—	—	—	—
6000	1114	5.24	4745	—	—	—	—	—	—	—	—	—	—	—	—
6100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
FIOP — Factory-Installed Option
Watts — Input Watts to Motor

*Standard motor drive range: 860 to 1080 rpm. Alternate motor drive range: 900 to 1260 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** Out of Drive Package or Motor range .

- Maximum usable watts input is 3313 with standard motor. Maximum continuous bhp is 3.70 with standard motor. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
- Values include losses for filters, unit casing, and wet coils.
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative for details.
- Interpolation is permissible. Do not extrapolate.
- Motor Efficiency: 85%

FAN RPM AT MOTOR PULLEY SETTINGS*— 50 Hz

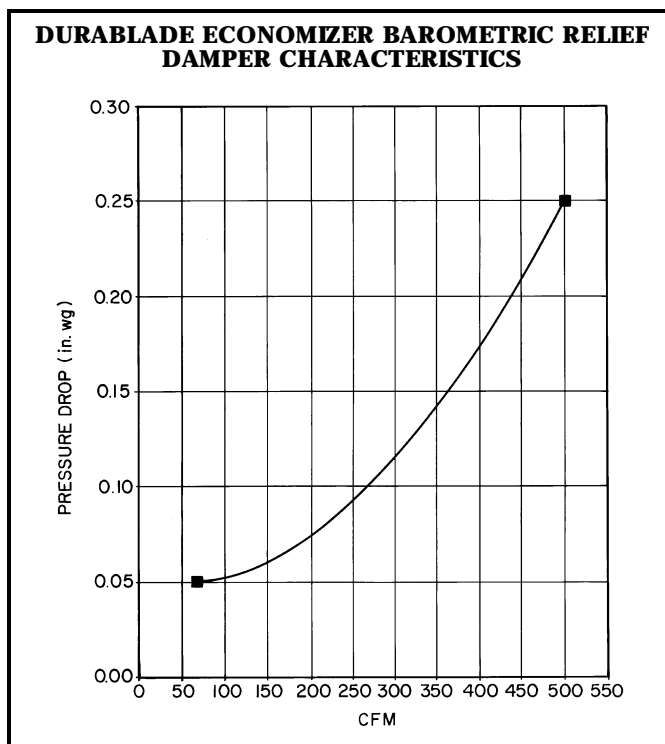
UNIT	MOTOR PULLEY TURNS OPEN										
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
50LJS007,008	1205	1180	1150	1125	1095	1070	1040	1015	985	960	930
50TJS008	880	855	830	800	775	750	725	700	675	650	620
50TJS009	880	855	830	800	775	750	725	700	675	650	620
50TJS012	900	875	855	835	815	795	775	755	735	715	690
50TJS014	1017	992	972	952	932	912	892	872	852	832	814

* Approximate fan RPM shown

OUTDOORS SOUND POWER

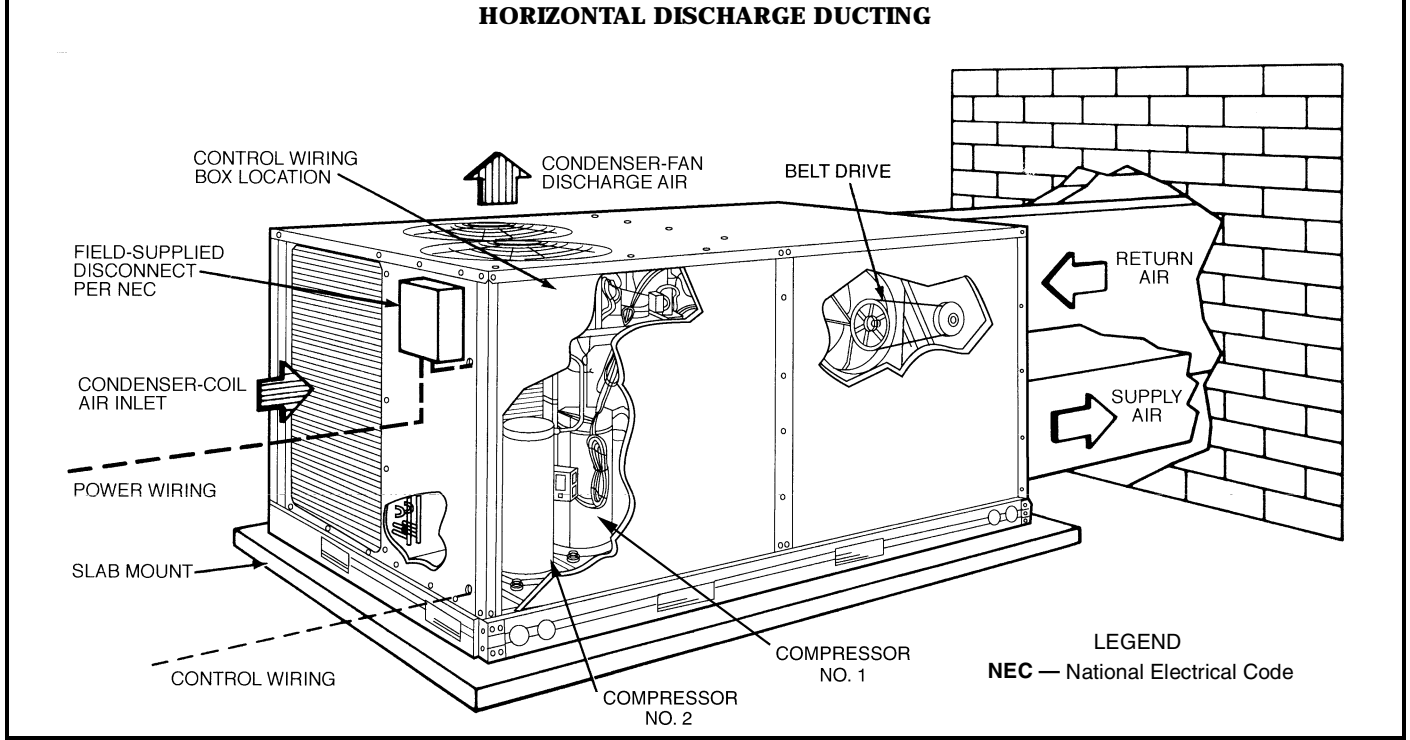
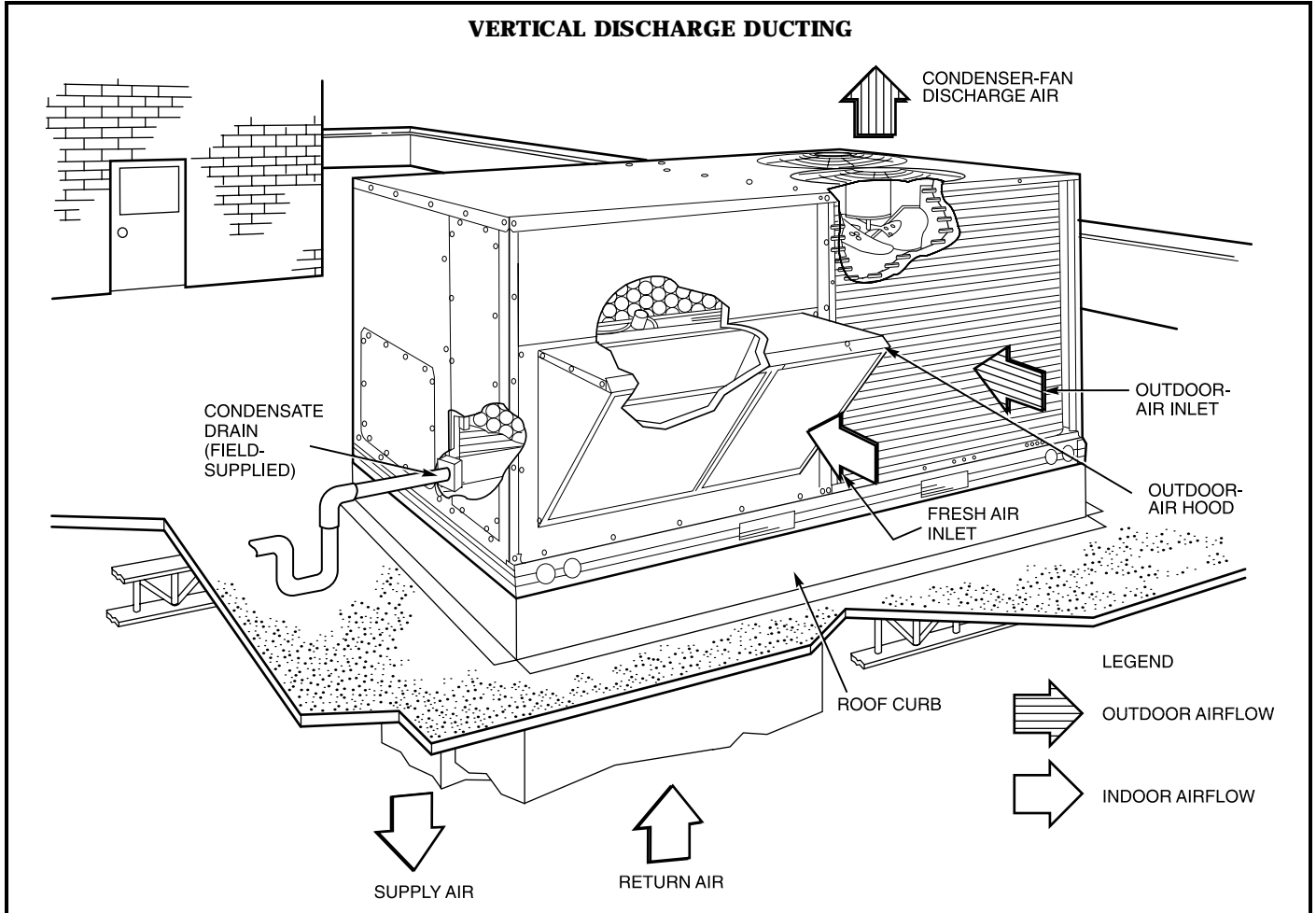
UNIT	SOUND RATING (Bels)	OCTAVE BANDS							
		63	125	250	500	1000	2000	4000	8000
50LJS007,008	8.2	78.5	84	77.5	73	70.5	72	65	58.5
50TJS008,009	8.6	83.2	87.4	83.5	82.8	83	77.7	71.8	67
50TJS012	8.8	97.6	90.4	85.7	84.8	83.9	77.5	71.3	65.8
50TJS014	8.8	83.7	87.2	83.4	82.8	83	77.7	71.8	67

50LJS/TJS

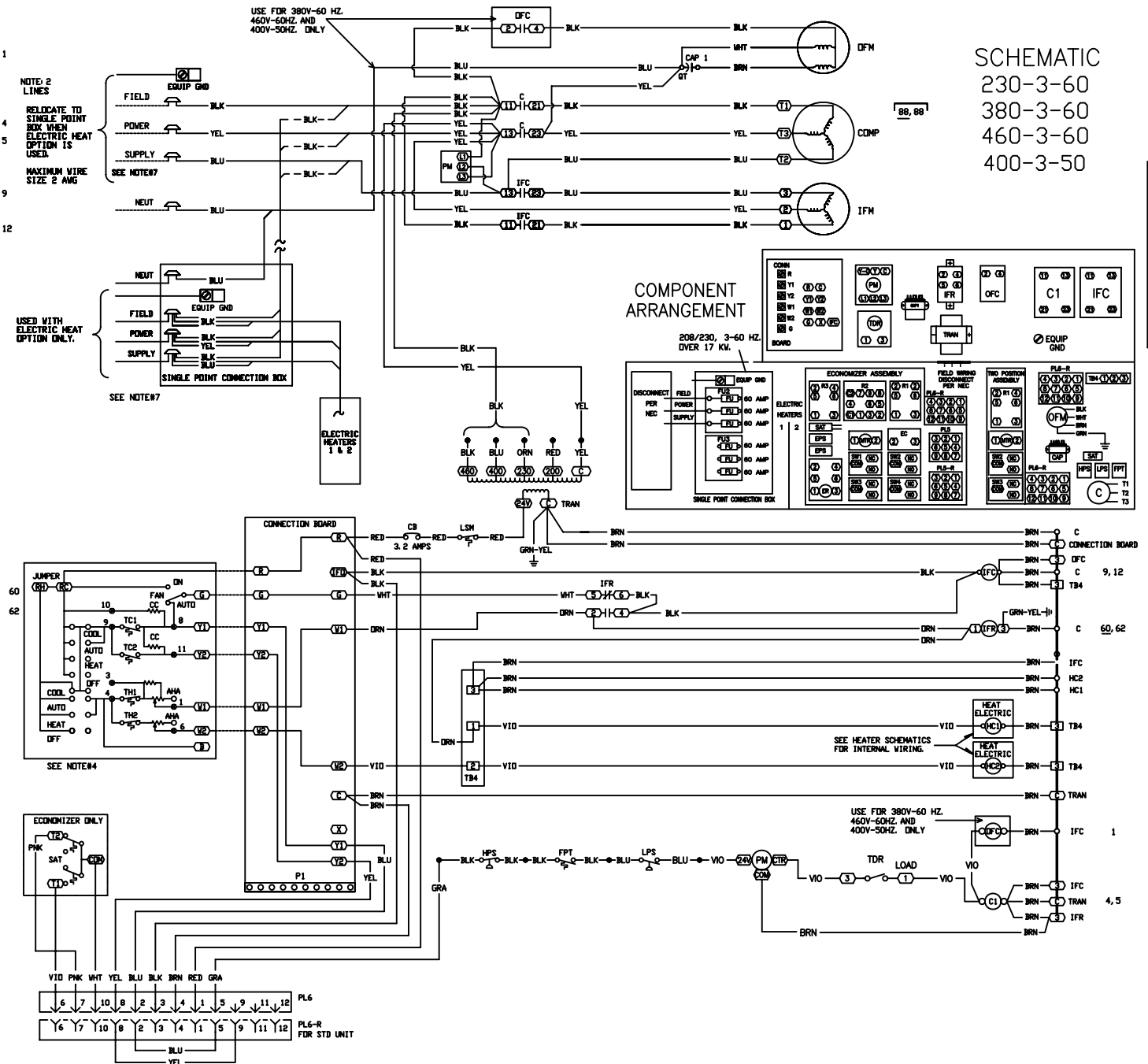


Typical piping and wiring — 50LJS/TJS (50TJS 008-014 shown)

50LJS/TJS



Typical wiring schematic — 50LJS007



SCHEMATIC
 230-3-60
 380-3-60
 460-3-60
 400-3-50

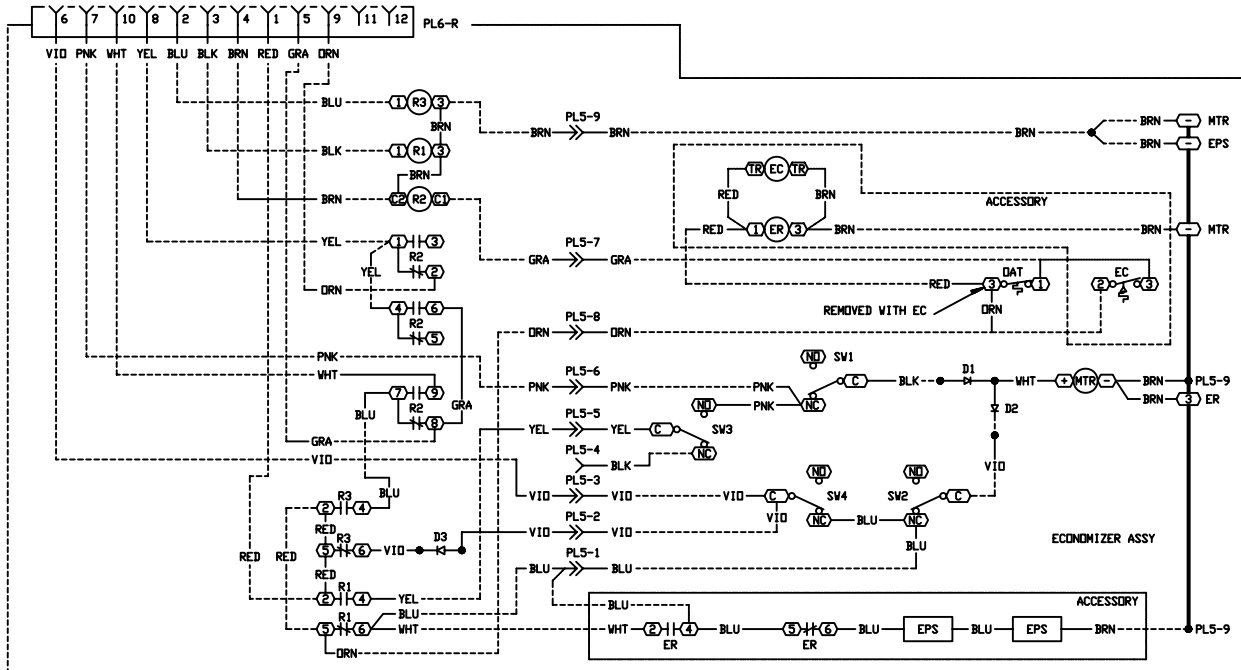
50LJS/TJS

NOTES :

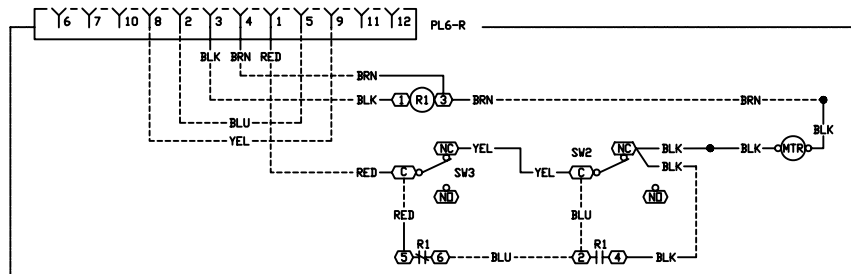
- IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
- NUMBER(S) INDICATES THE LINE LOCATION OF CONTACTS, A BRACKET OVER (2) NUMBERS SIGNIFIES SINGLE POLE DOUBLE THROW CONTACTS. AN UNDERLINED NUMBER SIGNIFIES A NORMALLY CLOSED CONTACT. PLAIN NUMBERS (NO LINES), SIGNIFIES A NORMALLY OPEN CONTACT.
- THREE PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS. THERMOSTAT:
- HH07AT170, 172, 174 & P272-2783
 SUBBASE:
 HH93AZ176, 178 & P272-1882, 1883
- SET HEAT ANTICIPATOR AT 1 AMP.
- USE COPPER CONDUCTORS ONLY.
- USE COPPER, COPPER CLAD ALUMINUM OR ALUMINUM CONDUCTORS.

Typical wiring schematic — 50LJS007 (Cont.)

FOR ECONOMIZER ASSEMBLY



FOR TWO POSITION DAMPER ASSEMBLY



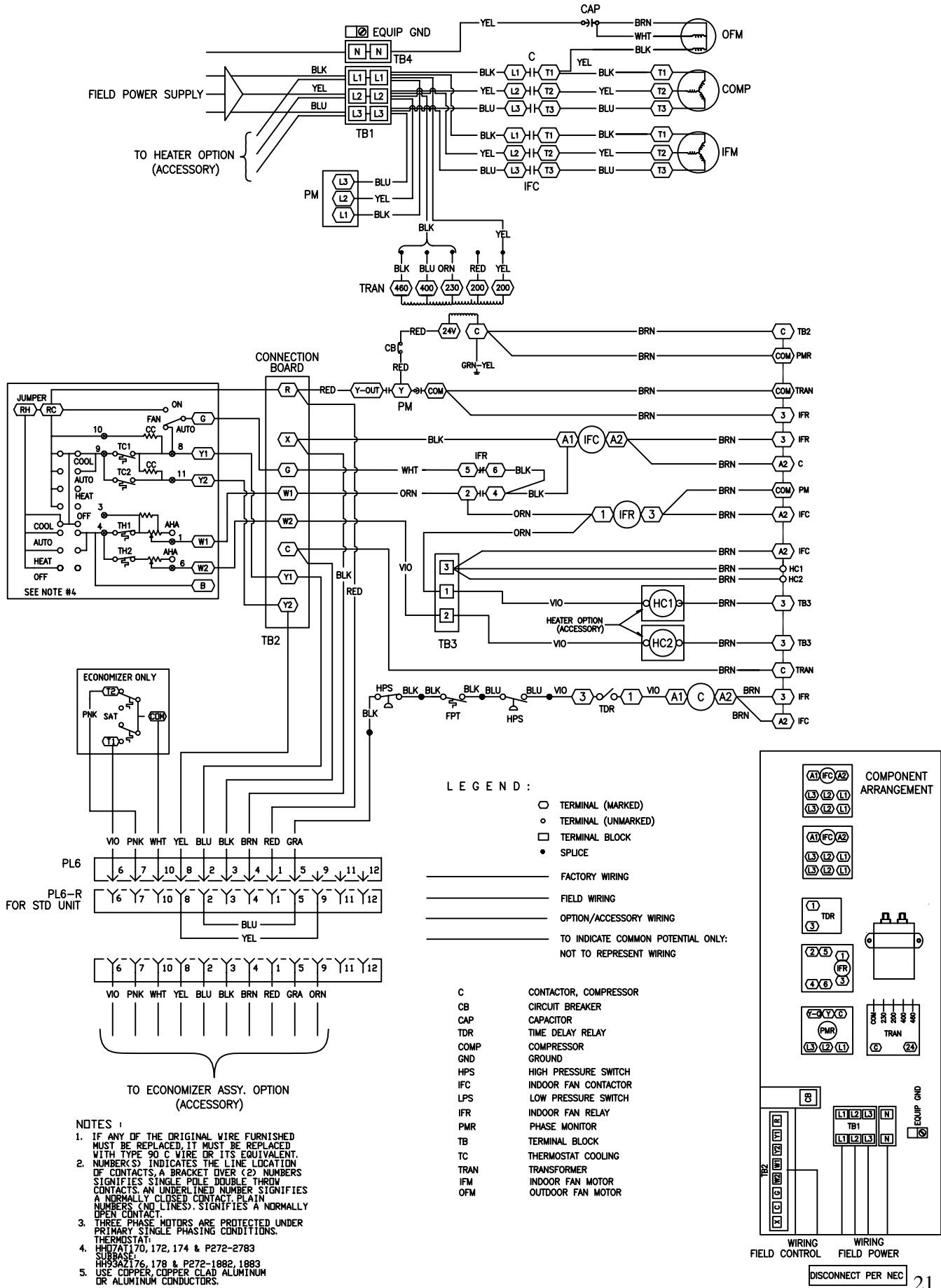
LEGEND :

OFM	OUTDOOR FAN MOTOR	CC	COOLING COMPENSATOR
P	PLUG	COMP	COMPRESSOR MOTOR
PL	PLUG ASSEMBLY	D	DIOIDE
QT	QUADRUPLE TERMINAL	EC	ENTHALPY CONTROL
R	RELAY	EPS	EMERGENCY POWER SUPPLY
RS	ROLLOUT SWITCH	EQUIP	EQUIPMENT
SAT	SUPPLY AIR THERMOSTAT	ER	ECONOMIZER RELAY
SEN	SENSOR	FPT	FREEZE UP PROTECTION THERMOSTAT
SW1	SWITCH FULLY OPEN	FU	FUSE
SW2	SWITCH FULLY CLOSED	GND	GROUND
SW3	SWITCH MIN. VENT POSITION	HC	HEATER CONTACTOR (STRIP HEAT)
SW4	SWITCH MAX. VENT POSITION	HPS	HIGH PRESSURE SWITCH
TB	TERMINAL BLOCK	IFC	INDOOR FAN CONTACTOR
TC	THERMOSTAT-COOLING	IFM	INDOOR FAN MOTOR
TH	THERMOSTAT-HEATING	IFR	INDOOR FAN RELAY
TRAN	TRANSFORMER	LPS	LOW PRESSURE SWITCH
PM	PHASE MONITOR	LSM	LIMIT SWITCH (MANUAL RESET)
TDR	TIME DELAY RELAY	MGV	MAIN GAS VALVE
AHA	ADJUSTABLE HEAT ANTICIPATOR	MTR	MOTOR
C	CONTACTOR, COMPRESSOR	DAT	OUTDOOR AIR THERMOSTAT
CAP	CAPACITOR	DFC	OUTDOOR FAN CONTACTOR
CB	CIRCUIT BREAKER		

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

Typical wiring schematic — 50LJS008

50LJS/TJS



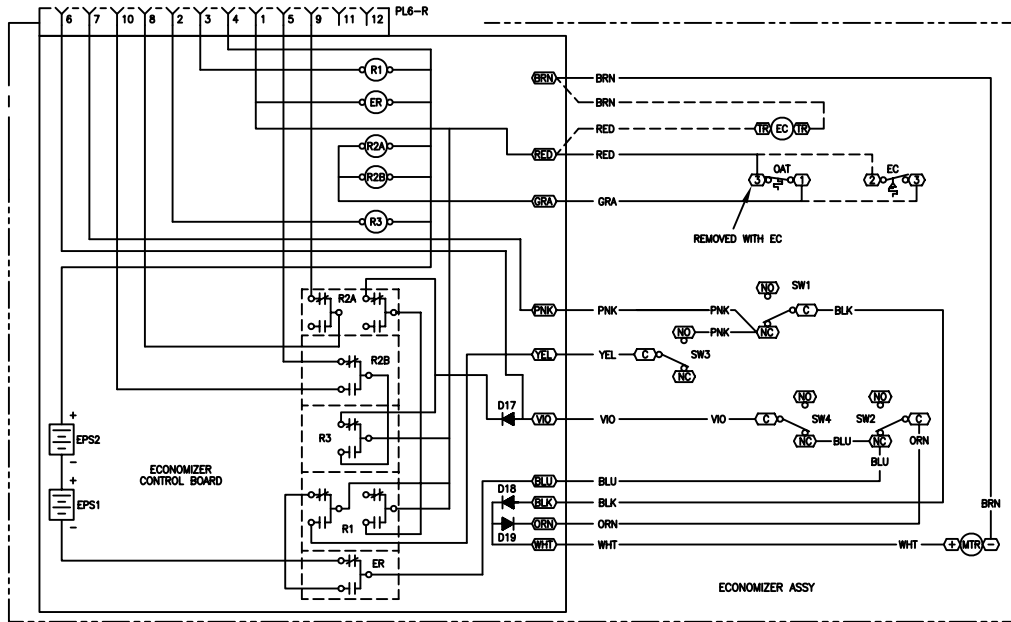
- NOTES :**
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT. NUMBER(S) INDICATES THE LINE LOCATION OF CONTACTS, A BRACKET OVER (2) NUMBERS SIGNIFIES SINGLE POLE DOUBLE THROW CONTACTS, AN UNDERLINED NUMBER SIGNIFIES A NORMALLY CLOSED CONTACT, PLAIN NUMBERS (NO LINES), SIGNIFIES A NORMALLY OPEN CONTACT.
 2. THREE PHASE MOTORS ARE PROTECTED UNDER PRIMARY SINGLE PHASING CONDITIONS. THERMOSTAT: H107A170, 172, 174 & P272-2783 SUBBASE: H195A2176, 178 & P272-1882, 1883.
 3. USE COPPER, COPPER CLAD ALUMINUM OR ALUMINUM CONDUCTORS.

DISCONNECT PER NEC 21

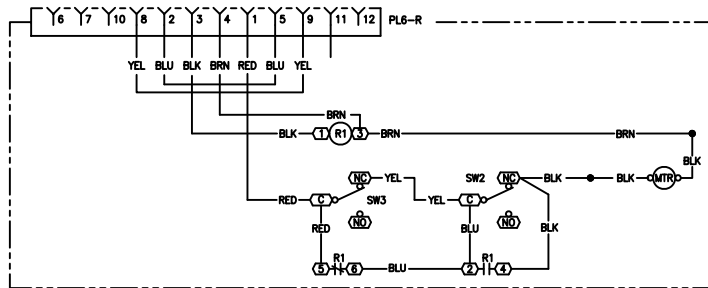
Typical wiring schematic — 50TJS008-014 (Cont.)

50LJS/TJS

FOR ECONOMIZER ASSEMBLY



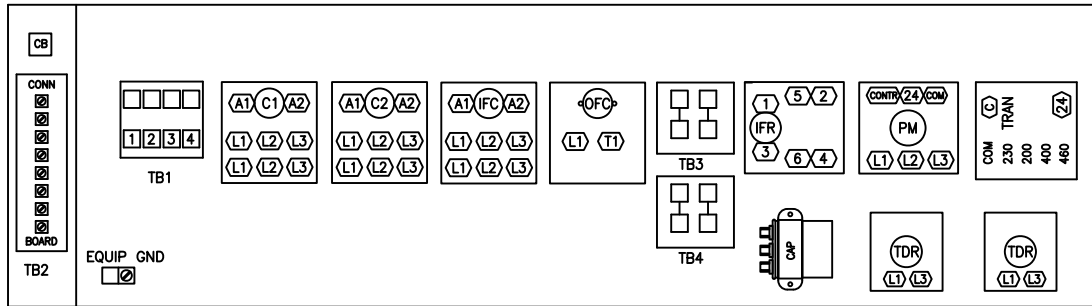
FOR TWO POSITION DAMPER ASSEMBLY



Typical wiring schematic — 50TJS008-014 (Cont.)

50LJS/TJS

COMPONENT ARRANGEMENT



LEGEND

- FIELD SPLICE
- MARKED WIRE
- TERMINAL (MARKED)
- TERMINAL (UNMARKED)
- TERMINAL BLOCK
- SPLICE
- SPLICE (MARKED)
- FACTORY WIRING
- FIELD WIRING
- ACCESSORY WIRING
- OPTIONAL WIRING
- TO INDICATE COMMON
- POTENTIAL ONLY:
NOT TO REPRESENT WIRING
- SW1 SWITCH FULLY OPEN
- SW2 SWITCH FULLY CLOSED
- SW3 SWITCH MIN. VENT POSITION
- SW4 SWITCH MAX. VENT POSITION
- TB TERMINAL BLOCK
- TC THERMOSTAT-COOLING
- TH THERMOSTAT-HEATING
- TRAN TRANSFORMER
- PM PHASE MONITOR
- TDR TIME DELAY RELAY

- AHA ADJUSTABLE HEAT ANTICIPATOR
- C CONTACTOR, COMPRESSOR
- CAP CAPACITOR
- CB CIRCUIT BREAKER
- CC COOLING COMPENSATOR
- COMP COMPRESSOR MOTOR
- D DIODE
- EC ENTHALPY CONTROL
- ECON ECONOMIZER
- EPS EMERGENCY POWER SUPPLY (NINE VOLT BATTERY)
- EQUIP EQUIPMENT
- ER ECONOMIZER RELAY
- FPT FREEZE UP PROTECTION THERMOSTAT
- FU FUSE
- GND GROUND
- HC HEATER CONTACTOR (STRIP HEAT)
- HPS HIGH PRESSURE SWITCH
- IFC INDOOR FAN CONTACTOR
- IFM INDOOR FAN MOTOR
- IFR INDOOR FAN RELAY
- LPS LOW PRESSURE SWITCH
- MTR MOTOR
- OAT OUTDOOR AIR THERMOSTAT
- OFM OUTDOOR FAN MOTOR
- PL-R RECEPTACLE ASSY.
- PL PLUG ASSEMBLY
- QT QUADRUPLE TERMINAL
- R RELAY
- SAT SUPPLY AIR THERMOSTAT
- SEN SENSOR

Controls

Operating sequence

Cooling, units without economizer

-

When thermostat calls for cooling, terminal G and Y1 are energized. The indoor (evaporator) fan contactor (IFC), and compressor contactor no 1 (C1) are energized and evaporator-fan motor, compressor no. 1 (50TJS008-014), and condenser fans start. The condenser-fan motor runs continuously while unit is cooling. On 50TJS008 – 014 units, if the thermostat calls for a secondary stage of cooling by energizing Y2, compressor contactor no.2 (C2) is energized and compressor no. 2 starts.

Heating, units without economizer (If Accessory or Optional Heater is Installed) -

Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

Cooling, units with economizer (50LJ007- 008, 50TJS008 – 014) –

When the outdoor-air temperature is above the outdoor-air thermostat (OAT) setting and the room thermostat calls for cooling, compressor contactor no.1 is energized to start compressor no. 1 and the condenser-fan motor. The evaporator-fan motor is energized and the economizer damper moves to the minimum position. Upon a further call for cooling, compressor contactor no. 2 will be energized (50TJS008 – 014), starting compressor no. 2. After the thermostat is satisfied, the damper moves to the fully closed position.

When the outdoor-air temperature is below the OAT setting and the thermostats call for cooling, the economizer damper moves to

the minimum position. If the supply air temperature is above 57 F, the damper continues to open until it reaches the fully open position or until the supply-air temperature drops below 57 F.

When the supply-air temperature falls to between 57 F and 52 F, the damper will remain at an intermediate open position. If the supply –air temperature falls below 52 F, the damper will modulate closed until it reaches the minimum position or until the supply-air temperature is above 52 F. when the thermostat is satisfied, the damper will move to the fully closed position.

If the outdoor air alone can not satisfy the cooling requirements of the conditioned space, economizer cooling is integrated with mechanical cooling, providing second-stage cooling. Compressor no. 1 and the condenser fan will be energized and the position of the economizer damper will be determined by the supply-air temperature. Compressor no. 2 (50TJS008 – 014) is locked out.

When the second stage of cooling is satisfied, the compressor and condenser-fan motor will be deenergized. The damper position will be determined by the supply-air temperature.

When the first stage of cooling is satisfied, the damper will move to fully closed position.

Heating, units with economizer (50LJ007-008,50TJS008-014)

(If Accessory Heater is Installed) -

When the room thermostat calls for heat through terminal W1, the evaporator-fan contactor and heater contactor no. 1 are energized. On units equipped with 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2. The economizer damper moves to the minimum position during heating. When the thermostat is satisfied, the damper moves to the fully closed position.

Guide specifications

Packaged Rooftop Cooling Unit with Electric Heat Option — Constant Volume Application

HVAC Guide Specifications

Carrier Model: 50LJS007- 008/TJS008 - 014

Part 1 — General

1.01 SYSTEM DESCRIPTION

Outdoor rooftop- or slab-mounted, electrically controlled cooling unit with optional heat utilizing a hermetic compressor for cooling duty and electric resistance coils for heating duty. Unit shall discharge supply air vertically or horizontally as shown on contract drawings, Vertical discharge is a factory option Unit shall have Fixes Orifice for refrigerant control.

1.02 QUALITY ASSURANCE

A. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

B. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).

C. Unit shall be manufactured in a facility registered to ISO 9001:2000.

1.03 DELIVERY, STORAGE, AND HANDLING

Unit(s) shall be stored and handled as per manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT (STANDARD)

A. General:

Factory-assembled, single-piece cooling unit with optional heat. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-22), and special features required prior to field startup.

B. Unit Cabinet:

1. Unit cabinet shall be constructed of galvanized steel, shall be bonderized and coated with a baked enamel finish on all externally exposed surfaces.

2. Evaporator fan cabinet interior shall be insulated with a minimum 1/2-in. thick, 1-lb density Aluminum faced, flexible fiberglass insulation.

3. Cabinet panels shall be easily removable for servicing.

4. Holes shall be provided in the base rails for rigging shackles to facilitate overhead rigging,

and forklift slots shall be provided to facilitate maneuvering.

5. Unit shall have a factory-installed, sloped condensate drain pan made of a noncorrosive plastic material, providing a minimum 3/4-in. connection with both vertical and horizontal drains and shall comply with ASHRAE 62.

6. Unit shall have factory-installed filter access panel to provide filter access with tool-less removal.

C. Fans:

1. Indoor blower (evaporator fan) shall be of the belt-driven, double inlet, forward curved, centrifugal type. Belt drive shall include an adjustable-pitch motor pulley.

2. Indoor blower (evaporator fan) shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.

3. Bearings shall be of the sealed, permanently lubricated, ball-bearing type for longer life and lower maintenance.

4. Condenser fan shall be of the direct-driven propeller type and shall discharge air vertically.

5. Condenser fan shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

D. Compressor(s):

1. Reciprocating or scroll type, fully hermetic type, internally protected.

2. Factory mounted on rubber grommets and internally spring mounted for vibration isolation.

3. Two independent circuits (TJ 008-014).

E. Coils:

1. Condenser coils shall have aluminum plate fins mechanically bonded to enhanced copper tubes with all joints brazed.

2. Tube sheet openings shall be belled to prevent tube wear.

3. Evaporator coil shall be of the full face active design.

4. Condenser coils shall be protected by a wire grill.

F. Refrigerant Components:

Refrigerant circuit components shall include:

1. Fixed Expansion Orifices.

2. Refrigerant filter.

3. Service gage connections on suction, discharge, and liquid line.

G. Filter Section:

1. Standard filter section shall consist of factory installed low-velocity, throwaway 2-in.

thick fiberglass filters of commercially available sizes.

2. Filter face velocity shall not exceed 320 fpm at nominal airflows.
3. Filter section shall use only one size filter.
4. Filters shall be accessible through an access panel with “no-tool” removal.

H. Controls and Safeties:

1. Unit Controls:

Unit shall be complete with self-contained low voltage control circuit.

2. Standard Safeties:

- a. Unit shall incorporate compressor over temperature and over current safety devices to shut off compressor.
- b. Contain high pressure as well as loss of charge/low pressure and freeze protection switches.
- c. For models with Scroll compressors, unit shall have phase monitor to prevent reverse rotation.
- d. Compressor Cycle Delay:
Unit shall be prevented from restarting for a minimum of 5 minutes after shutdown.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125 F ambient outdoor temperature, meeting maximum load criteria of ARI Standard 210/ 240 or 360 at $\pm 10\%$ voltage.
2. Compressor with standard controls shall be capable of operation down to 40 F ambient outdoor temperature.

3. Optional crankcase heater should be installed where temperature falls below 45°F and cooling operation is required.

J. Electrical Requirements:

All unit power wiring shall enter unit cabinet at a single factory-predrilled location.

K. Motors:

1. Compressor motors shall be cooled by refrigerant passing through motor windings and shall have line break thermal and current overload protection.
2. Indoor blower (evaporator fan) motor shall have permanently lubricated bearings and inherent automatic-reset thermal overload protection.
3. Totally enclosed condenser-fan motor shall have permanently lubricated bearings, and inherent automatic-reset thermal overload protection.
4. (50TJS008-014): High-static motor(s) and drive(s) shall be factory- installed to provide an additional performance range.
5. Outdoor motor shall have F – Class Insulation.

L. Special Options:

1. Condenser coil shall pre-coated aluminum-fin coils shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. 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. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.



Turn to the Experts.™

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations