50TCQD24
Single Package Rooftop
Heat Pump
with Puron® (R−410A) Refrigerant
Size 24

Electrical Data Supplement

NOTE: Read the entire instruction manual before starting the installation

This supplement only applies to 50TCQ size 24 units when the 10th digit of the Model Number is either a 2, 3, 6, or 7 as shown in the Model Number Nomenclature diagram below. Check the Unit Nameplate (see Figs. 1 & 2). If the digit in the 10th position is not either a 2, 3, 6, or 7 discard this document.

MODEL NUMBER NOMENCLATURE

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

Unit Heat Type
50 = Electric Heat
Packaged Rooftop

Model Series - WeatherMaker
TC = Standard Efficiency

Heat Size
Q = Heat Pump

Refrig. Systems Options
D = Two stage cooling models

Cooling Tons
17 = 15 ton
24 = 20 ton

Indoor Fan Options: 20 Ton Models Only
1 = Standard Static Option, Vertical
2 = Medium Static Option, Vertical
3 = High Static Option, Vertical

5 = Standard Static Option, Horizontal
6 = Medium Static Option, Horizontal
7 = High Static Option, Horizontal

Sensor Options
A = None
B = Temp Econo w/ Baro relief
D = Temp Econo w/ PE (cent)
F = Enthalpy Econo w/ Baro relief
H = Enthalpy Econo w/PE (cent)
K = 2 Position Damper
P = Manual Outdoor Air Damper

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SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloths for brazing operations and have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and appropriate national electrical codes (in USA, ANSI/NFPA70, National Electrical Code (NEC); in Canada, CSA C22.1) for special requirements.

It is important to recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ CAUTION

ELECTRICAL HAZARD

Failure to follow this caution may result in personal injury or product and property damage.

The electrical data contained in this document is only for use with 50TCQ size 24 units which display either a 2, 3, 6, or 7 in the 10th position of the 18 digit model number as displayed on the unit's nameplate.

See Fig. 1 for location of the unit's nameplate.

See Fig. 2 for details of the 18 digit model number.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury or death.

Before performing service or maintenance operations on unit, always turn off main power switch to unit and install lockout tag. Unit may have more than one power switch.

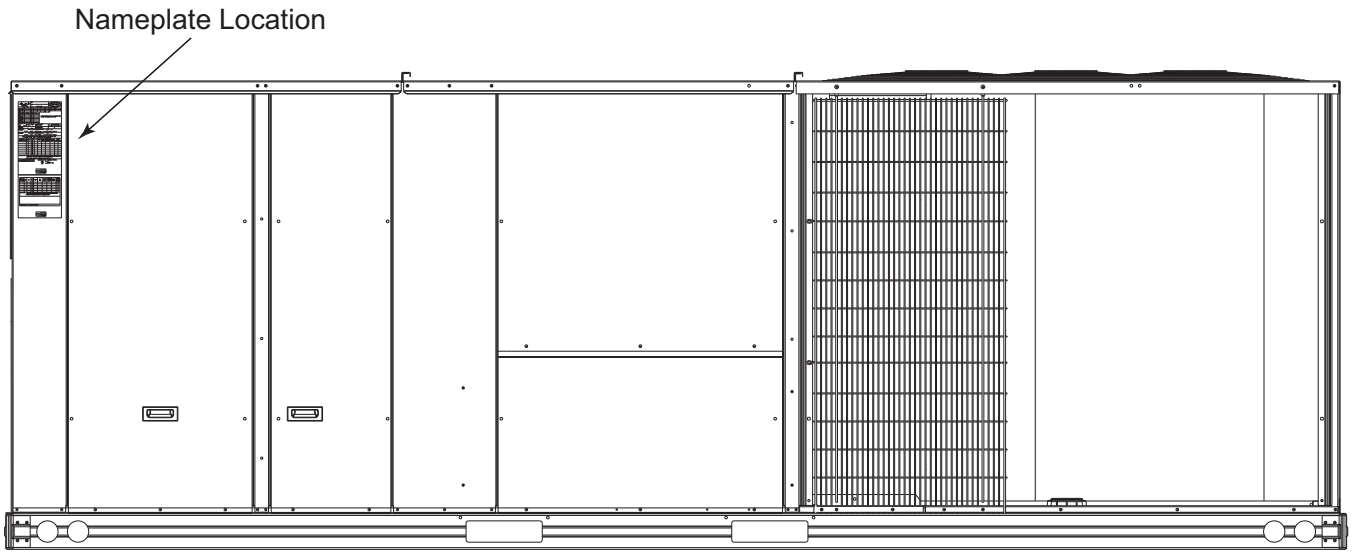

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Fig. 1 - Location of Unit Nameplate

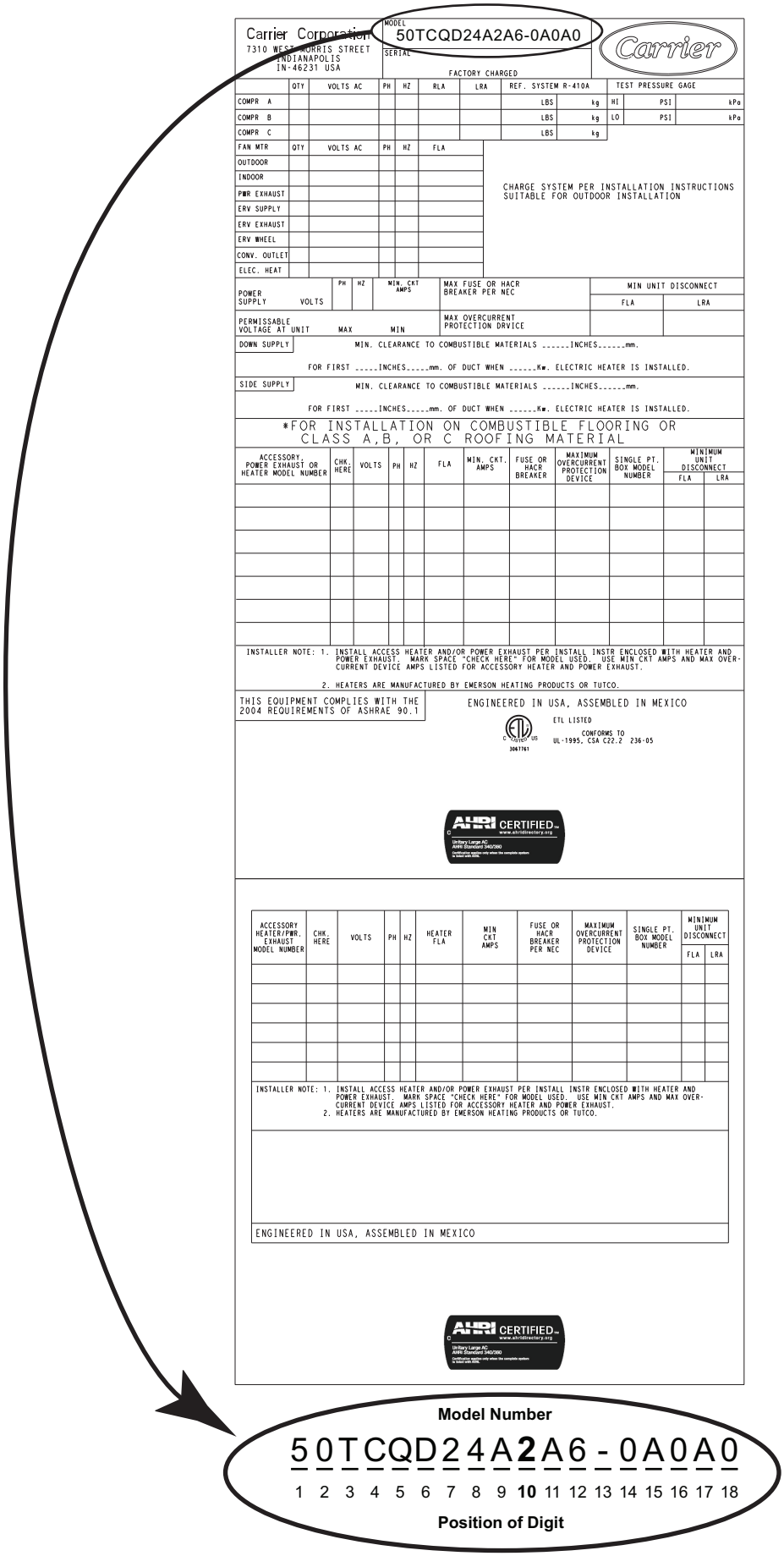

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Fig. 2 - Example of Nameplate with Model Number

Table 1 – Unit Wire/Fuse or HACR Breaker Sizing Data

UNIT	NOM. V–Ph–Hz	IFM TYPE	ELEC. HTR			PE	NO C.O. or UNPWR C.O.							
							NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER ***A00	Nom (kW)	FLA	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
									FLA	LRA			FLA	LRA
50TCQ*24	208/230–3–60	STD	NONE	–	–	5.9	92.7	125.0	97	558	104.5	125.0	111	578
			279A00	18.8/25.0	52.1/60.1		157.9/167.9	175/175	157/166	610/618	169.7/179.7	175/200	171/180	630/638
			280A00	37.6/50.0	104.2/120.3		223.0/213.0	225/225	217/235	662/678	234.8/224.8	250/250	230/249	682/698
			281A00	56.3/75.0	156.4/180.4		249.1/273.1	300/300	277/305	714/738	260.9/284.9	300/300	290/318	734/758
		MED	NONE	–	–	5.9	90.5	100.0	95	560	102.3	125.0	108	580
			279A00	18.8/25.0	52.1/60.1		155.7/165.7	175/175	154/164	612/620	167.5/177.5	175/200	168/177	632/640
			280A00	37.6/50.0	104.2/120.3		220.8/210.8	225/225	214/233	664/680	232.6/222.6	250/250	228/246	684/700
			281A00	56.3/75.0	156.4/180.4		246.9/270.9	300/300	274/302	716/740	258.7/282.7	300/300	288/316	736/760
		HIGH	NONE	–	–	5.9	97.1	125.0	102	596	108.9	125.0	116	616
			279A00	18.8/25.0	52.1/60.1		162.3/172.3	175/175	162/171	648/656	174.1/184.1	175/200	176/185	668/676
			280A00	37.6/50.0	104.2/120.3		227.4/217.4	250/250	222/240	700/716	239.2/229.2	250/250	236/254	720/736
			281A00	56.3/75.0	156.4/180.4		253.5/277.5	300/300	282/310	752/776	265.3/289.3	300/300	296/323	772/796
	460–3–60	STD	NONE	–	–	3.1	50.1	60.0	52	288	56.3	70.0	60	300
			282A00	25.0	30.1		87.7	90.0	87	318	93.9	100.0	94	330
			283A00	50.0	60.1		110.2	125.0	122	348	116.4	125.0	129	360
			284A00	75.0	90.2		140.3	150	156	378	146.5	175	163	390
		MED	NONE	–	–	3.1	49.1	60.0	51	289	55.3	60.0	58	301
			282A00	25.0	30.1		86.7	90.0	86	319	92.9	100.0	93	331
			283A00	50.0	60.1		109.2	125.0	120	349	115.4	125.0	128	361
			284A00	75.0	90.2		139.3	150	155	379	145.5	150	162	391
		HIGH	NONE	–	–	3.1	52.4	60.0	55	307	58.6	70.0	62	319
			282A00	25.0	30.1		90.0	100.0	90	337	96.2	100.0	97	349
			283A00	50.0	60.1		112.5	125.0	124	367	118.7	125.0	131	379
			284A00	75.0	90.2		142.6	150	159	397	148.8	175	166	409
	575–3–60	STD	NONE	–	–	2.4	36.2	45.0	38	204	41.0	50.0	43	212
			285A00	24.8	23.9		66.1	70.0	65	228	70.9	80.0	71	236
			286A00	49.6	47.7		95.8	100.0	93	252	100.6	110.0	98	260
			287A00	74.4	71.6		107.8	125	120	276	112.6	125	126	284
		MED	NONE	–	–	2.4	35.7	45.0	37	193	40.5	50.0	43	201
			285A00	24.8	23.9		65.6	70.0	65	217	70.4	80.0	70	225
			286A00	49.6	47.7		95.3	100.0	92	241	100.1	110.0	98	249
			287A00	74.4	71.6		107.3	125	120	265	112.1	125	125	273
		HIGH	NONE	–	–	2.4	38.4	50.0	40	219	43.2	50.0	46	227
			285A00	24.8	23.9		68.3	70.0	68	243	73.1	80.0	73	251
			286A00	49.6	47.7		98.0	100.0	95	267	102.8	110.0	101	275
			287A00	74.4	71.6		110.0	125	123	291	114.8	125	128	299

NOTE: See page 6 for table legend and notes

Table 1 — Unit Wire/Fuse or HACR Breaker Sizing Data (cont)

UNIT	NOM. V–Ph–Hz	IFM TYPE	ELEC. HTR			PE	w/ PWRD C.O.							
							NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER ***A00	Nom (kW)	FLA	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
									FLA	LRA			FLA	LRA
50TCQ*24	208/230–3–60	STD	NONE	–	–	5.9	97.5	125.0	103	563	109.3	125.0	116	583
			279A00	18.8/25.0	52.1/60.1		162.7/172.7	175/175	162/172	615/623	174.5/184.5	175/200	176/185	635/643
			280A00	37.6/50.0	104.2/120.3		227.8/217.8	250/250	222/241	667/683	239.6/229.6	250/250	236/254	687/703
			281A00	56.3/75.0	156.4/180.4		253.9/277.9	300/300	282/310	719/743	265.7/289.7	300/300	296/324	739/763
		MED	NONE	–	–	5.9	95.3	125.0	100	565	107.1	125.0	114	585
			279A00	18.8/25.0	52.1/60.1		160.5/170.5	175/175	160/169	617/625	172.3/182.3	175/200	174/183	637/645
			280A00	37.6/50.0	104.2/120.3		225.6/215.6	250/225	220/238	669/685	237.4/227.4	250/250	233/252	689/705
			281A00	56.3/75.0	156.4/180.4		251.7/275.7	300/300	280/308	721/745	263.5/287.5	300/300	293/321	741/765
		HIGH	NONE	–	–	5.9	101.9	125.0	108	601	113.7	125.0	121	621
			279A00	18.8/25.0	52.1/60.1		167.1/177.1	175/200	168/177	653/661	178.9/188.9	200/200	181/190	673/681
			280A00	37.6/50.0	104.2/120.3		232.2/222.2	250/250	227/246	705/721	244.0/234.0	250/250	241/260	725/741
			281A00	56.3/75.0	156.4/180.4		258.3/282.3	300/300	288/315	757/781	270.1/294.1	300/350	301/329	777/801
	460–3–60	STD	NONE	–	–	3.1	52.3	60.0	55	290	58.5	70.0	62	302
			282A00	25.0	30.1		89.9	100.0	90	320	96.1	100.0	97	332
			283A00	50.0	60.1		112.4	125.0	124	350	118.6	125.0	131	362
			284A00	75.0	90.2		142.5	150	159	380	148.7	175	166	392
		MED	NONE	–	–	3.1	51.3	60.0	54	291	57.5	70.0	61	303
			282A00	25.0	30.1		88.9	90.0	88	321	95.1	100.0	96	333
			283A00	50.0	60.1		111.4	125.0	123	351	117.6	125.0	130	363
			284A00	75.0	90.2		141.5	150	158	381	147.7	175	165	393
		HIGH	NONE	–	–	3.1	54.6	60.0	58	309	60.8	70.0	65	321
			282A00	25.0	30.1		92.2	100.0	92	339	98.4	100.0	99	351
			283A00	50.0	60.1		114.7	125.0	127	369	120.9	150.0	134	381
			284A00	75.0	90.2		144.8	150	161	399	151.0	175	168	411
	575–3–60	STD	NONE	–	–	2.4	37.9	50.0	40	206	42.7	50.0	45	214
			285A00	24.8	23.9		67.8	70.0	67	230	72.6	80.0	73	238
			286A00	49.6	47.7		97.5	100.0	95	254	102.3	110.0	100	262
			287A00	74.4	71.6		109.5	125	122	278	114.3	125	128	286
		MED	NONE	–	–	2.4	37.4	50.0	39	195	42.2	50.0	45	203
			285A00	24.8	23.9		67.3	70.0	67	219	72.1	80.0	72	227
			286A00	49.6	47.7		97.0	100.0	94	243	101.8	110.0	100	251
			287A00	74.4	71.6		109.0	125	122	267	113.8	125	127	275
		HIGH	NONE	–	–	2.4	40.1	50.0	42	221	44.9	50.0	48	229
			285A00	24.8	23.9		70.0	70.0	70	245	74.8	80.0	75	253
			286A00	49.6	47.7		99.7	100.0	97	269	104.5	110.0	103	277
			287A00	74.4	71.6		111.7	125	125	293	116.5	125	130	301

NOTE: See page 6 for table legend and notes

Legend and Notes for Table 1

LEGEND:

BRKR	–	Circuit breaker
CO	–	Convenient outlet
DD	–	Direct drive indoor fan motor
DISC	–	Disconnect
FLA	–	Full load amps
IFM	–	Indoor fan motor
LRA	–	Locked rotor amps
MCA	–	Minimum circuit amps
PE	–	Power exhaust
PWRD CO	–	Powered convenient outlet
UNPWR CO	–	Unpowered convenient outlet

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. 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 percentage of voltage imbalance.

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

Example: Supply voltage is 230-3-60

AB = 224 v
BC = 231 v
AC = 226 v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3}$$

$$= 227$$

Determine maximum deviation from average voltage.
(AB) 227 – 224 = 3 v
(BC) 231 – 227 = 4 v
(AC) 227 – 226 = 1 v
Maximum deviation is 4 v.
Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{227}$$

$$= 1.76\%$$

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 immediately.

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