48TC*D
Single Package Rooftop
Gas Heating/Electric Cooling Unit
with Puron® (R−410A) Refrigerant
Sizes: 20, 24, 28

Electrical Data Supplement

NOTE: Read the entire instruction manual before starting the installation

This supplement only applies to 48TC*D size 20, 24 & 28 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
4	8	T	C	D	D	2	4	A	**2**	A	6	-	0	A	0	A	0

Unit Heat Type
48 = Gas Heat
Packaged Rooftop

Model Series - WeatherMaker
TC = Standard Efficiency

Heat Size
D = Low Gas Heat
E = Medium Gas Heat
F = High Gas Heat
S = Low Stainless Gas Heat
R = Medium Stainless Gas Heat
T = High Stainless Gas Heat

Refrig. Systems Options
D = Two Stage Cooling Models

Cooling Tons
17 = 15 ton
20 = 17.5 ton
24 = 20 ton
28 = 25 ton

Indoor Fan Options & Air Flow Configuration:
17.5, 20 & 25 Ton Models Only
1 = Standard Static / Vertical Supply, Return Air Flow
2 = Medium Static / Vertical Supply, Return Air Flow
3 = High Static / Vertical Supply, Return Air Flow

5 = Standard Static / Horizontal Supply, Return Air Flow
6 = Medium Static / Horizontal Supply, Return Air Flow
7 = High Static / Horizontal Supply, Return Air Flow

Sensor Options
A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO2
F = RA Smoke Detector and CO2
G = SA Smoke Detector and CO2
H = RA + SA Smoke Detector and CO2

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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 48TC size 20, 24 and 28 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.

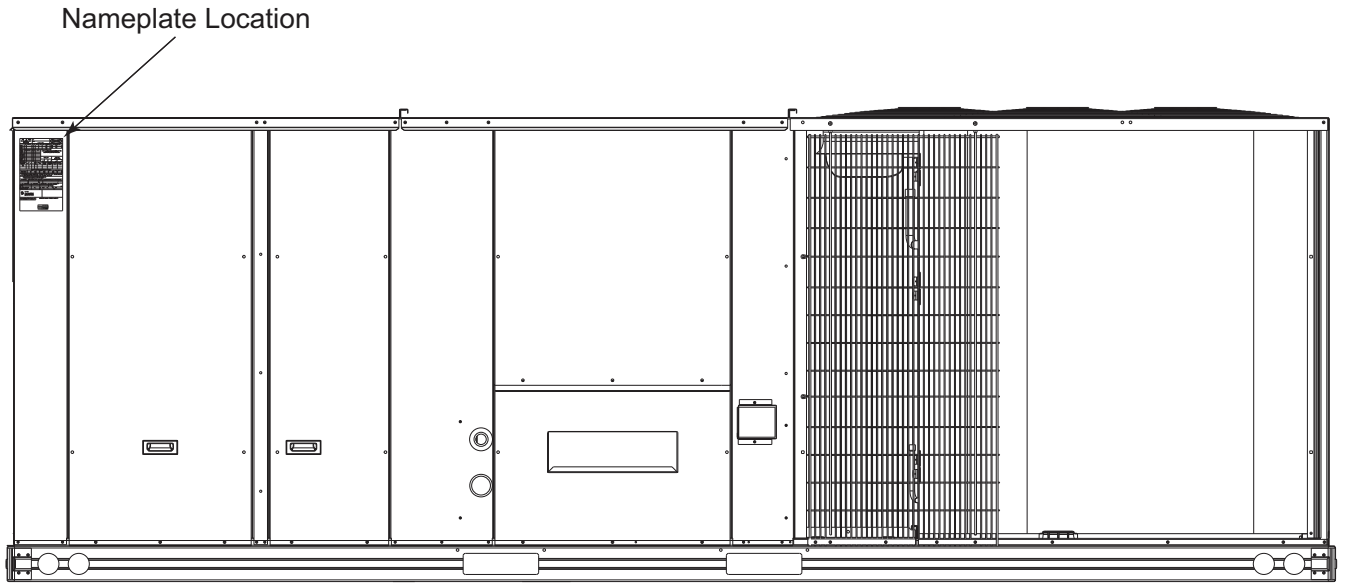

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Fig. 1 - Location of Unit Nameplate

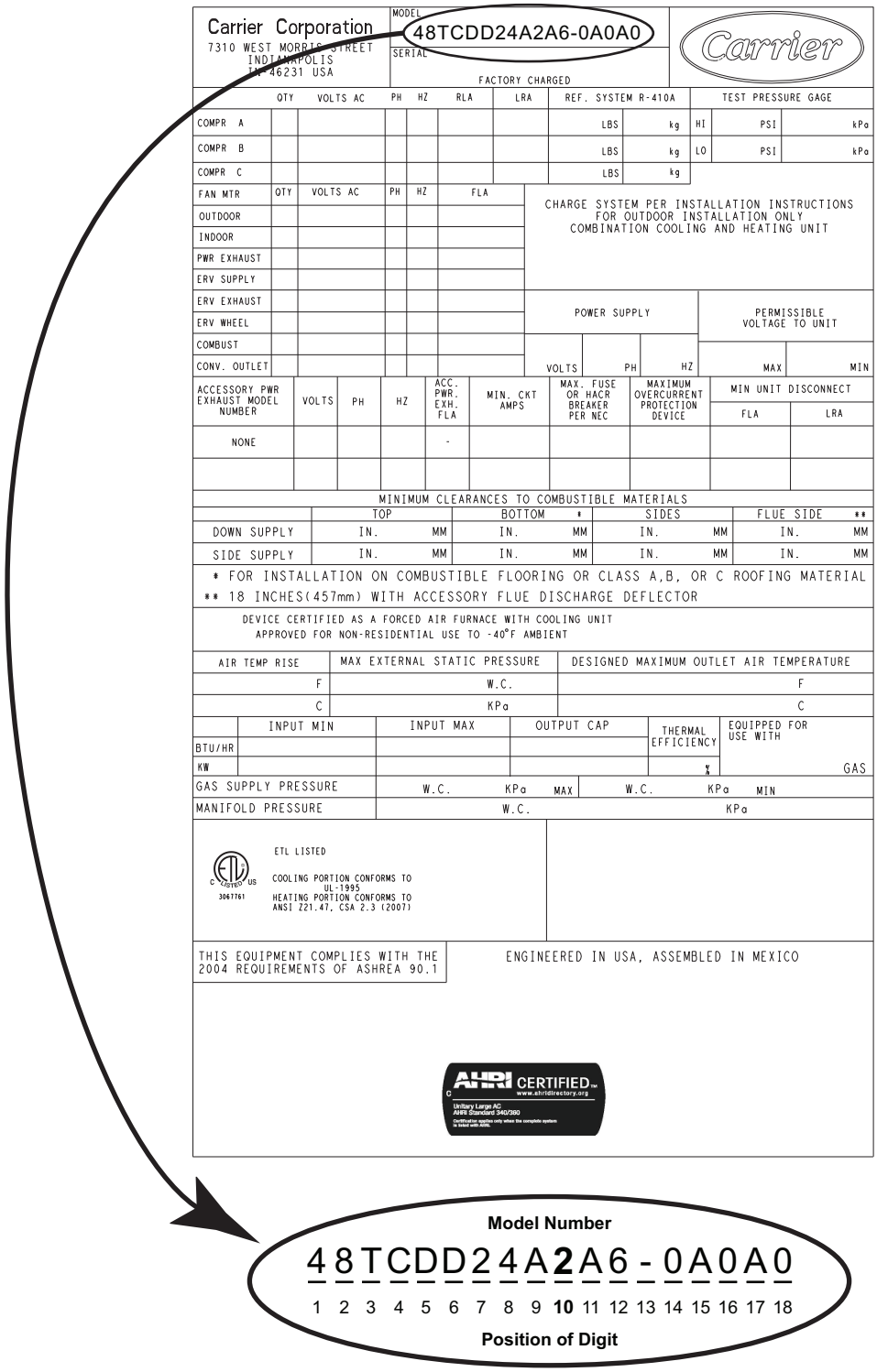

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Fig. 2 - Example of Nameplate with Model Number

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

UNIT	NOM. V–Ph–Hz	IFM TYPE	COMBUSTION FAN MOTOR	POWER EXHAUST	NO C.O. or UNPWR C.O.							
					NO P.E.				w/ P.E. (pwrd fr/ unit)			
			FLA	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
							FLA	LRA			FLA	LRA
48TC*D20	208/230–3–60	STD	0.52	5.9	81.8	100.0	85	502	93.6	110.0	99	502
		MED			86.6	100.0	91	511	98.4	125.0	105	511
		HIGH			84.4	100.0	88	513	96.2	125.0	102	513
	460–3–60	STD	0.3	3.1	43.1	50	45	252	49.3	60	52	252
		MED			45.7	60.0	48	256	51.9	60.0	55	256
		HIGH			44.7	60.0	47	257	50.9	60.0	54	257
	575–3–60	STD	0.24	2.4	32.1	40	33	188	36.9	45	39	188
		MED			34.9	45.0	37	202	39.7	50.0	42	202
		HIGH			34.4	45	36	191	39.2	50	42	191
48TC*D24	208/230–3–60	STD	0.52	5.9	110.6	150.0	113	534	122.4	150.0	127	534
		MED			108.4	150.0	111	536	120.2	150.0	124	536
		HIGH			115.0	150.0	118	572	126.8	150.0	132	572
	460–3–60	STD	0.3	3.1	49	60	51	269	55.2	60	58	269
		MED			48.0	60.0	50	270	54.2	60.0	57	270
		HIGH			51.3	60.0	54	288	57.5	70.0	61	288
	575–3–60	STD	0.24	2.4	38.6	50	40	224	43.4	50	46	224
		MED			38.1	50.0	40	213	42.9	50.0	45	213
		HIGH			40.8	50	43	239	45.6	60	48	239
48TC*D28	208/230–3–60	STD	0.52	5.9	129.2	175.0	135	584	141.0	175.0	148	584
		MED			127.0	175.0	132	586	138.8	175.0	146	586
		HIGH			133.6	175.0	140	622	145.4	175.0	153	622
	460–3–60	STD	0.3	3.1	52.9	60	55	299	59.1	70	63	299
		MED			51.9	60.0	54	300	58.1	70.0	61	300
		HIGH			55.2	60.0	58	318	61.4	70.0	65	318
	575–3–60	STD	0.24	2.4	41.1	50	43	244	45.9	60	49	244
		MED			40.6	50.0	42	233	45.4	60.0	48	233
		HIGH			43.3	50	46	259	48.1	60	51	259

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	COMBUSTION FAN MOTOR	POWER EXHAUST	w/ PWRD C.O.							
					NO P.E.				w/ P.E. (pwrd fr/ unit)			
			FLA	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
							FLA	LRA			FLA	LRA
48TC*D20	208/230–3–60	STD	0.52	5.9	81.8	100.0	85	502	93.6	110.0	99	502
		MED			86.6	100.0	91	511	98.4	125.0	105	511
		HIGH			84.4	100.0	88	513	96.2	125.0	102	513
	460–3–60	STD	0.3	3.1	45.3	60.0	47	254	51.5	60	54	254
		MED			47.9	60.0	50	258	54.1	60.0	57	258
		HIGH			46.9	60.0	49	259	53.1	60.0	56	259
	575–3–60	STD	0.24	2.4	33.8	45.0	35	190	38.6	50	41	190
		MED			36.6	45.0	39	204	41.4	50.0	44	204
		HIGH			36.1	45	38	193	40.9	50	43	193
48TC*D24	208/230–3–60	STD	0.52	5.9	110.6	150.0	113	534	122.4	150.0	127	534
		MED			108.4	150.0	111	536	120.2	150.0	124	536
		HIGH			115.0	150.0	118	572	126.8	150.0	132	572
	460–3–60	STD	0.3	3.1	51.2	60.0	53	271	57.4	70	61	271
		MED			50.2	60.0	52	272	56.4	70.0	59	272
		HIGH			53.5	60.0	56	290	59.7	70.0	63	290
	575–3–60	STD	0.24	2.4	40.3	50.0	42	226	45.1	50	48	226
		MED			39.8	50.0	42	215	44.6	50.0	47	215
		HIGH			42.5	50	45	241	47.3	60	50	241
48TC*D28	208/230–3–60	STD	0.52	5.9	129.2	175.0	135	584	141.0	175.0	148	584
		MED			127.0	175.0	132	586	138.8	175.0	146	586
		HIGH			133.6	175.0	140	622	145.4	175.0	153	622
	460–3–60	STD	0.3	3.1	55.1	60.0	58	301	61.3	70	65	301
		MED			54.1	60.0	57	302	60.3	70.0	64	302
		HIGH			57.4	70.0	61	320	63.6	80.0	68	320
	575–3–60	STD	0.24	2.4	42.8	50.0	45	246	47.6	60	50	246
		MED			42.3	50.0	44	235	47.1	60.0	50	235
		HIGH			45	50	47	261	49.8	60	53	261

NOTE: See page 6 for table legend and notes

Legend and Notes for Table 1

LEGEND:

BRKR	–	Circuit breaker
CO	–	Convenient outlet
DISC	–	Disconnect
FLA	–	Full load amps
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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 Replaces: New