

48HC14**
Single Package Rooftop
Gas Heating/Electric Cooling unit
with Puron® (R-410A) Refrigerant
Size 14



Electrical Data Supplement

NOTE: Read the entire instruction manual before starting the installation

This supplement only applies to 48HC size 14 units when the 10th digit of the Model Number is a “3”, 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 a “3” 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	H	C	D	D	1	4	A	3	A	5	-	0	A	0	A	0

Unit Heat Type

48 = Gas Heat Packaged
 Rooftop

Model Series - WeatherMaster

HC = High Efficiency

Heat Size

- D = Low Gas Heat
- E = Medium Gas Heat
- F = High Gas Heat
- L = Low Nox – Low Gas Heat
- M = Low Nox – Medium Gas Heat
- N = Low Nox – High Gas Heat
- S = Low Heat with Stainless Steel Exchanger
- R = Medium Heat with Stainless Steel Exchanger
- T = High Heat with Stainless Steel Exchanger (Low Nox models include – Stainless Steel HX)

Indoor Fan Options: 12.5 Ton Models Only

- 1 = Standard Static Option – Belt Drive
- 2 = Medium Static Option – Belt Drive
- 3 = High Static Option – Belt Drive

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

Cooling Tons

14 = 12.5 ton


Refrig. Systems Options

- A = Single stage cooling models
- B = Single stage cooling models with Humidi-MiZer
- D = Two stage cooling models
- E = Two stage cooling models with Humidi-MiZer

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 48HC size 14 units which display a “3” 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.

48HC**14

Nameplate Location

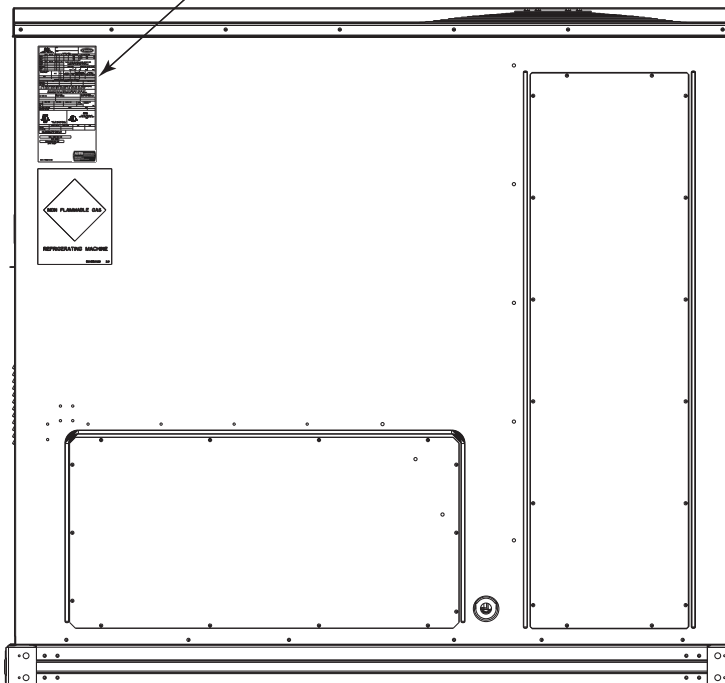





Fig. 1 - Location of Unit Nameplate

C101278

Carrier Corporation 731 WEST MORRIS STREET INDIANAPOLIS, IN 46231 U.S.A.		MODEL 48HCDD14A3A5-0A0A0		SERIAL		FACTORY CHARGED		Carrier		
QTY	VOLTS AC	PH	HZ	RLA	LRA	REF. SYSTEM R-410A	TEST PRESSURE GAGE			
COMPR A						LBS	kg	HI	PSI	kPa
COMPR B						LBS	kg	LO	PSI	kPa
COMPR C						LBS	kg			
FAN MTR	QTY	VOLTS AC	PH	HZ	FLA	CHARGE SYSTEM PER INSTALLATION INSTRUCTIONS FOR OUTDOOR INSTALLATION ONLY COMBINATION COOLING AND HEATING UNIT				
OUTDOOR										
INDOOR										
PWR EXHAUST						POWER SUPPLY		PERMISSIBLE VOLTAGE TO UNIT		
COMBUST						VOLTS	PH	HZ	MAX	MIN
OTHER										
ACCESSORY POWER EXHAUST MODEL		VOLTS	PH	HZ	ACCESSORY POWER EXHAUST FLA	MINIMUM CIRCUIT AMPS	MAX FUSE OR HACR BREAKER PER NEC	MAXIMUM OVERCURRENT PROTECTION DEVICE	MINIMUM UNIT DISCONNECT FLA	LRA
NONE										
MINIMUM CLEARANCE TO COMBUSTIBLE MATERIALS										
TOP			BOTTOM *			SIDES			FLUE SIDE **	
DOWN SUPPLY										
SIDE SUPPLY										
* FOR INSTALLATION ON COMBUSTIBLE FLOORING OR CLASS A,B, OR C ROOFING MATERIAL ** 18 INCHES (457mm) WITH ACCESSORY FLUE DISCHARGE DEFLECTOR										
DEVICE CERTIFIED AS A FORCED AIR FURNACE WITH COOLING UNIT CSA APPROVED FOR NON-RESIDENTIAL USE TO -40° F AMBIENT.										
AIR TEMP RISE				MAX EXTERNAL STATIC PRESSURE				DESIGNED MAXIMUM OUTLET AIR TEMPERATURE		
	INPUT MIN	INPUT MAX	OUTPUT CAP	THERMAL EFFICIENCY	EQUIPED FOR USE WITH					
BTU/HR					GAS					
KW										
GAS SUPPLY PRESSURE				MAX			MIN			
MANIFOLD PRESSURE										
 GAS-FIRED LISTED ANSI 221.47-CAN/CGA-2.3-(2003) CENTRAL FURNACE					 LISTED COOLING PORTION OF HEATING AND COOLING UNIT 36N2					
CAPACITY Btu/Hr		CAPACITY KW		EER		COP				
COOLING										
HP HEATING										
THIS EQUIPMENT COMPLIES WITH THE 2004 REQUIREMENTS OF ASHRAE 90.1										
<div style="border: 1px dashed black; padding: 2px; display: inline-block;">MODEL NUMBER BAR CODE</div> <div style="border: 1px dashed black; padding: 2px; display: inline-block;">MODEL NUMBER</div> <div style="border: 1px dashed black; padding: 2px; display: inline-block;">SERIAL NUMBER BAR CODE</div> <div style="border: 1px dashed black; padding: 2px; display: inline-block;">SERIAL NUMBER</div>										
DATE OF MANUFACTURE:										
 AHRI CERTIFIED www.ahridirectory.org Unitary Large AC AHRI Standard 340/360 Certification applies only when the complete system is listed with AHRI.										

48HC**14

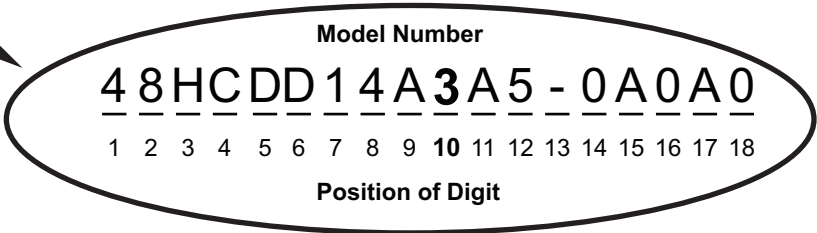


Fig. 2 - Example of Nameplate with Model Number

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.							
			FLA	FLA	NO PE.				w/ PE. (pwrd fr/ unit)			
					MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
							FLA	LRA			FLA	LRA
48HC*D14	208/230–3–60	STD	0.48	3.8	54.8	60	58	314	58.6	70	62	318
		MED			57.3	70	60	331	61.1	80	65	335
		HIGH			64.0/62.5	80/80	68/66	342	67.8/66.3	80/80	72/71	346
	460–3–60	STD	0.25	1.8	27.6	35	29	158	29.4	35	31	160
		MED			28.6	35	30	167	30.4	40	32	169
		HIGH			31.8	40	34	172	33.6	40	36	174
	575–3–60	STD	0.24	3.8	21.6	25	23	128	25.4	30	27	132
		MED			21.6	25	23	128	25.4	30	27	132
		HIGH			24.9	30	26	131	28.7	35	31	135

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.							
			FLA	FLA	NO PE.				w/ PE. (pwrd fr/ unit)			
					MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
							FLA	LRA			FLA	LRA
48HC*D14	208/230–3–60	STD	0.48	3.8	59.6	70	63	319	63.4	80	67	323
		MED			62.1	80	66	336	65.9	80	70	340
		HIGH			68.8/67.3	80/80	74/72	347	72.6/71.1	80/80	78/76	351
	460–3–60	STD	0.25	1.8	29.8	35	32	160	31.6	40	34	162
		MED			30.8	40	33	169	32.6	40	35	171
		HIGH			34.0	40	36	174	35.8	45	38	176
	575–3–60	STD	0.24	3.8	23.3	30	25	130	27.1	30	29	134
		MED			23.3	30	25	130	27.1	30	29	134
		HIGH			26.6	30	28	133	30.4	35	33	137

Legend and Notes for Table 1

LEGEND:

- BRKR – Circuit breaker
- CO – Convenience outlet
- 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



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.

NOTES:

- 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.
- 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.

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