

**50HCQD12
Single Package Rooftop
Heat Pump
with Puron® (R-410A) Refrigerant
Size 12**



Electrical Data Supplement

NOTE: Read the entire instruction manual before starting the installation

This supplement only applies to 50HCQ size 12 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
5	0	H	C	Q	D	1	2	A	3	A	5	-	0	A	0	A	0

Unit Heat Type

50HC = Packaged Rooftop
High Efficiency

Heat Size

Q = Heat Pump

Refrig. Systems Options

A = Single stage cooling models
D = Two stage cooling models

Indoor Fan Options

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

12 = 10 ton

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.

Nameplate Location

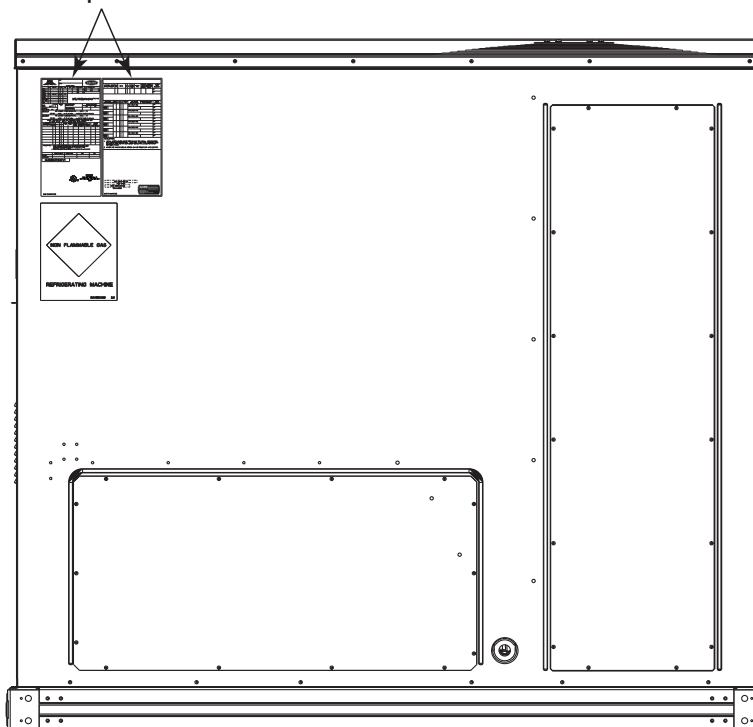


Fig. 1 - Location of Unit Nameplate

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 50HCQ size 12 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.

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.								
			CRHEATER ***A00	Nom (kW)	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
50HCQD12	208/230 – 3 – 60	STD	NONE	–	–	3.8	45.2	60	47	262	49.0	60	52	266	
			288A00	7.5/10.0	20.9/24.1		71.3/75.3	80/80	71/75	283/286	75.1/79.1	80/80	76/79	287/290	
			291A00	12.4/16.5	34.4/39.7		88.2/94.8	90/100	87/93	296/302	92.0/98.6	100/100	91/97	300/306	
			294A00	25.2/33.5	69.9/80.6		132.6/145.9	150/150	128/140	332/343	136.4/149.7	150/150	132/144	336/347	
			288A00,294A00	32.7/43.5	90.7/104.7		158.6/176.1	175/200	152/168	443/471	162.4/179.9	175/200	156/172	447/475	
			291A00,294A00	37.6/50.0	104.3/120.3		175.6/165.5	200/175	167/186	471/503	179.4/169.3	200/175	172/190	475/507	
		MED	NONE	–	–	3.8	47.5	60	50	288	51.3	60	54	292	
			288A00	7.5/10.0	20.9/24.1		73.6/77.6	80/80	74/78	309/312	77.4/81.4	80/90	78/82	313/316	
			291A00	12.4/16.5	34.4/39.7		90.5/97.1	100/100	90/96	322/328	94.3/100.9	100/110	94/100	326/332	
			294A00	25.2/33.5	69.9/80.6		134.9/148.2	150/150	130/143	358/369	138.7/152.0	150/175	135/147	362/373	
			288A00,294A00	32.7/43.5	90.7/104.7		160.9/178.4	175/200	154/170	469/497	164.7/182.2	175/200	159/175	473/501	
			291A00,294A00	37.6/50.0	104.3/120.3		177.9/167.8	200/175	170/188	497/529	181.7/171.6	200/200	174/193	501/533	
	HIGH	NONE	–	–	3.8	56.9/55.2	70/60	61/59	316	60.7/59.0	70/70	65/63	320		
		288A00	7.5/10.0	20.9/24.1		83.0/85.3	90/90	85/87	337/340	86.8/89.1	90/90	89/91	341/344		
		291A00	12.4/16.5	34.4/39.7		99.9/104.8	100/110	100/105	350/356	103.7/108.6	110/110	105/109	354/360		
		294A00	25.2/33.5	69.9/80.6		144.3/155.9	150/175	141/152	386/397	148.1/159.7	150/175	145/156	390/401		
		288A00,294A00	32.7/43.5	90.7/104.7		170.3/186.1	175/200	165/179	497/525	174.1/189.9	175/200	169/184	501/529		
		291A00,294A00	37.6/50.0	104.3/120.3		187.3/175.5	200/200	181/197	525/557	191.1/179.3	200/200	185/202	529/561		
	460 – 3 – 60	STD	NONE	–	–	1.8	22.3	30	23	125	24.1	30	26	127	
			289A00	10.0	12.0		37.3	40	37	137	39.1	40	39	139	
			292A00	16.5	19.9		47.2	50	46	145	49.0	50	48	147	
			295A00	33.5	40.3		72.7	80	70	165	74.5	80	72	167	
			289A00,295A00	43.5	52.3		87.7	90	84	230	89.5	90	86	232	
			292A00,295A00	50.0	60.2		82.5	90	93	245	84.3	90	95	247	
MED		NONE	–	–	1.8	23.1	30	24	138	24.9	30	26	140		
		289A00	10.0	12.0		38.1	40	38	150	39.9	40	40	152		
		292A00	16.5	19.9		48.0	50	47	158	49.8	50	49	160		
		295A00	33.5	40.3		73.5	80	71	178	75.3	80	73	180		
		289A00,295A00	43.5	52.3		88.5	90	85	243	90.3	100	87	245		
		292A00,295A00	50.0	60.2		83.3	90	94	258	85.1	90	96	260		
HIGH	NONE	–	–	1.8	27.3	30	29	152	29.1	35	31	154			
	289A00	10.0	12.0		42.3	45	43	164	44.1	45	45	166			
	292A00	16.5	19.9		52.2	60	52	172	54.0	60	54	174			
	295A00	33.5	40.3		77.7	80	76	192	79.5	80	78	194			
	289A00,295A00	43.5	52.3		92.7	100	89	257	94.5	100	91	259			
	292A00,295A00	50.0	60.2		87.5	90	98	272	89.3	100	101	274			
575 – 3 – 60	STD	NONE	–	–	3.8	17.1	20	18	95	20.9	25	22	99		
		290A00	10.0	9.6		29.1	30	29	105	32.9	35	33	109		
		293A00	16.5	15.9		36.9	40	36	111	40.7	45	41	115		
		296A00	33.5	32.2		57.3	60	55	127	61.1	70	59	131		
		290A00,296A00	43.5	41.8		69.3	70	66	179	73.1	80	70	183		
		293A00,296A00	50.0	48.1		65.2	70	73	191	69.0	80	78	195		
	MED	NONE	–	–	3.8	17.9	20	19	106	21.7	25	23	110		
		290A00	10.0	9.6		29.9	30	30	116	33.7	35	34	120		
		293A00	16.5	15.9		37.7	40	37	122	41.5	45	42	126		
		296A00	33.5	32.2		58.1	60	56	138	61.9	70	60	142		
		290A00,296A00	43.5	41.8		70.1	80	67	190	73.9	80	71	194		
		293A00,296A00	50.0	48.1		66.0	70	74	202	69.8	80	79	206		
HIGH	NONE	–	–	3.8	21.2	25	23	109	25.0	30	27	113			
	290A00	10.0	9.6		33.2	35	34	119	37.0	40	38	123			
	293A00	16.5	15.9		41.1	45	41	125	44.9	45	45	129			
	296A00	33.5	32.2		61.5	70	60	141	65.3	70	64	145			
	290A00,296A00	43.5	41.8		73.5	80	71	193	77.3	80	75	197			
	293A00,296A00	50.0	48.1		69.3	80	78	205	73.1	80	82	209			

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.								
			CRHEATER ***A00	Nom (kW)	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
50HCQD12	208/230-3-60	STD	NONE	–	–	3.8	50.0	60	53	267	53.8	60	57	271	
			288A00	7.5/10.0	20.9/24.1		76.1/80.1	80/90	77/81	288/291	79.9/83.9	80/90	81/85	292/295	
			291A00	12.4/16.5	34.4/39.7		93.0/99.6	100/100	92/99	301/307	96.8/103.4	100/110	97/103	305/311	
			294A00	25.2/33.5	69.9/80.6		137.4/150.7	150/175	133/146	337/348	141.2/154.5	150/175	138/150	341/352	
			288A00,294A00	32.7/43.5	90.7/104.7		163.4/180.9	175/200	157/173	448/476	167.2/184.7	175/200	162/178	452/480	
			291A00,294A00	37.6/50.0	104.3/120.3		180.4/170.3	200/175	173/191	476/508	184.2/174.1	200/200	177/196	480/512	
		MED	NONE	–	–	3.8	52.3	60	56	293	56.1	70	60	297	
			288A00	7.5/10.0	20.9/24.1		78.4/82.4	80/90	80/83	314/317	82.2/86.2	90/90	84/88	318/321	
			291A00	12.4/16.5	34.4/39.7		95.3/101.9	100/110	95/101	327/333	99.1/105.7	100/110	99/106	331/337	
			294A00	25.2/33.5	69.9/80.6		139.7/153.0	150/175	136/148	363/374	143.5/156.8	150/175	140/153	367/378	
			288A00,294A00	32.7/43.5	90.7/104.7		165.7/183.2	175/200	160/176	474/502	169.5/187.0	175/200	164/180	478/506	
			291A00,294A00	37.6/50.0	104.3/120.3		182.7/172.6	200/200	175/194	502/534	186.5/176.4	200/200	180/198	506/538	
	HIGH	NONE	–	–	3.8	61.7/60.0	70/70	66/64	321	65.5/63.8	80/70	70/69	325		
		288A00	7.5/10.0	20.9/24.1		87.8/90.1	90/100	90/92	342/345	91.6/93.9	100/100	95/96	346/349		
		291A00	12.4/16.5	34.4/39.7		104.7/109.6	110/110	106/110	355/361	108.5/113.4	110/125	110/114	359/365		
		294A00	25.2/33.5	69.9/80.6		149.1/160.7	150/175	147/157	391/402	152.9/164.5	175/175	151/161	395/406		
		288A00,294A00	32.7/43.5	90.7/104.7		175.1/190.9	200/200	170/185	502/530	178.9/194.7	200/200	175/189	506/534		
		291A00,294A00	37.6/50.0	104.3/120.3		192.1/180.3	200/200	186/203	530/562	195.9/184.1	200/200	190/207	534/566		
	460-3-60	STD	NONE	–	–	1.8	24.5	30	26	127	26.3	30	28	129	
			289A00	10.0	12.0		39.5	40	40	139	41.3	45	42	141	
			292A00	16.5	19.9		49.4	50	49	147	51.2	60	51	149	
			295A00	33.5	40.3		74.9	80	72	167	76.7	80	74	169	
			289A00,295A00	43.5	52.3		89.9	90	86	232	91.7	100	88	234	
			292A00,295A00	50.0	60.2		84.7	90	95	247	86.5	90	97	249	
MED		NONE	–	–	1.8	25.3	30	27	140	27.1	30	29	142		
		289A00	10.0	12.0		40.3	45	41	152	42.1	45	43	154		
		292A00	16.5	19.9		50.2	60	50	160	52.0	60	52	162		
		295A00	33.5	40.3		75.7	80	73	180	77.5	80	75	182		
		289A00,295A00	43.5	52.3		90.7	100	87	245	92.5	100	89	247		
		292A00,295A00	50.0	60.2		85.5	90	96	260	87.3	90	98	262		
HIGH	NONE	–	–	1.8	29.5	35	32	154	31.3	35	34	156			
	289A00	10.0	12.0		44.5	45	46	166	46.3	50	48	168			
	292A00	16.5	19.9		54.4	60	55	174	56.2	60	57	176			
	R295A00	33.5	40.3		79.9	80	78	194	81.7	90	80	196			
	289A00,295A00	43.5	52.3		94.9	100	92	259	96.7	100	94	261			
	292A00,295A00	50.0	60.2		89.7	100	101	274	91.5	100	103	276			
575-3-60	STD	NONE	–	–	3.8	18.8	25	20	97	22.6	25	24	101		
		290A00	10.0	9.6		30.8	35	31	107	34.6	35	35	111		
		293A00	16.5	15.9		38.6	40	38	113	42.4	45	43	117		
		296A00	33.5	32.2		59.0	60	57	129	62.8	70	61	133		
		290A00,296A00	43.5	41.8		71.0	80	68	181	74.8	80	72	185		
		293A00,296A00	50.0	48.1		66.9	70	75	193	70.7	80	80	197		
	MED	NONE	–	–	3.8	19.6	25	21	108	23.4	25	25	112		
		290A00	10.0	9.6		31.6	35	32	118	35.4	40	36	122		
		293A00	16.5	15.9		39.4	40	39	124	43.2	45	43	128		
		296A00	33.5	32.2		59.8	60	58	140	63.6	70	62	144		
		290A00,296A00	43.5	41.8		71.8	80	69	192	75.6	80	73	196		
		293A00,296A00	50.0	48.1		67.7	70	76	204	71.5	80	81	208		
HIGH	NONE	–	–	3.8	22.9	25	25	111	26.7	30	29	115			
	290A00	10.0	9.6		34.9	35	36	121	38.7	40	40	125			
	R293A00	16.5	15.9		42.8	45	43	127	46.6	50	47	131			
	296A00	33.5	32.2		63.2	70	62	143	67.0	70	66	147			
	290A00,296A00	43.5	41.8		75.2	80	73	195	79.0	80	77	199			
	293A00,296A00	50.0	48.1		71.0	80	80	207	74.8	80	84	211			

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NOTE: See page 6 for table legend and notes.

7 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



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.

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

$$\begin{aligned} \text{Average Voltage} &= \frac{(224 + 231 + 226)}{3} = \frac{681}{3} \\ &= 227 \end{aligned}$$

Determine maximum deviation from average voltage.

$$(AB) 227 - 224 = 3 \text{ v}$$

$$(BC) 231 - 227 = 4 \text{ v}$$

$$(AC) 227 - 226 = 1 \text{ v}$$

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{4}{227} \\ &= 1.76\% \end{aligned}$$

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.

50HCQD12