

**48HC 15 to 25 Nominal Tons  
Single Package Rooftop  
Gas Heating/Electric Cooling Unit  
with Puron® (R-410A) Refrigerant  
Sizes: 17-28**



## Electrical Data Supplement

**FOR MODELS PRODUCED ON OR AFTER JULY 30, 2012 ONLY!**

**NOTE:** Read the entire instruction manual before starting the installation

This supplement only applies to 48HC size 17 to 28 units manufactured on or after July 30, 2012. To confirm the date of manufacture of a 48HC unit, locate the unit nameplate and check the first four digits of the Serial Number. If the number listed in the first 4 digits of the Serial Number is 3112 or higher KEEP THIS DOCUMENT and use it along with the furnished Installation Instructions. See Fig. 1 for location of the nameplate; the Serial Number is located directly below the unit's Model Number.

### SERIAL NUMBER NOMENCLATURE

Position:	1	2	3	4	5	6	7	8	9	10
Example:	3	1	1	2	U	1	2	3	4	5

Week of manufacture (fiscal calendar)					Sequence number					
Year of manufacture ("12" = 2012)					Manufacturing location					

C12562

To select which tables apply to a given unit, check the 7<sup>th</sup> and 8<sup>th</sup> digits of the Model Number to determine the unit's size (Cooling Tons) and the 17<sup>th</sup> digit to determine the unit's electrical option(s).

### MODEL NUMBER NOMENCLATURE

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	4	8	H	C	D	D	2	4	A	3	A	5	A	0	A	3	G	0

**Cooling Tons**  
17 - 15 ton  
20 - 17.5 ton  
24 - 20 ton  
28 - 25 ton

**Electrical Options**


A = None  
B = HACR Breaker  
C = Non-Fused Disconnect  
G = 2-Speed Indoor Fan (VFD) Controller  
H = 2-Speed Indoor Fan (VFD) Controller and HACR Breaker  
J = 2-Speed Indoor Fan Controller (VFD) and Non-Fused Disconnect (NFD)

C12585

## 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 17 to 28 units manufactured on or after July 30, 2012. Check the first 4 digits of the unit's Serial Number (located on the unit's nameplate) if the number listed is 3112 or higher keep this document.

See Fig. 1 for location of the unit's nameplate. The Serial Number is located directly below the unit's 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.

Nameplate Location

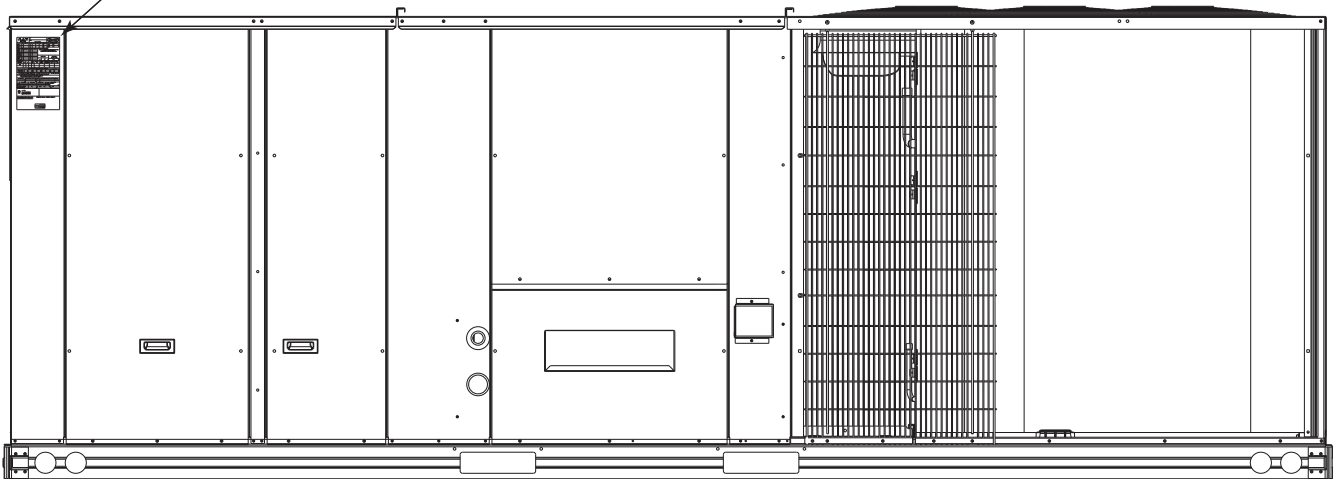


Fig. 1 - Location of Unit Nameplate

C101294

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

UNIT	NOM. V-Ph-Hz	IFM TYPE	NO C.O. or UNPWR C.O.						w/ PWRD C.O.										
			NO PE.			w/ P.E. (pwrd fr/ unit)			NO PE.			w/ P.E. (pwrd fr/ unit)							
			MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE					
		FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA				
48HC**17	208/230-3-60	STD	69.2/69.1	90/90	72/72	409	81.0/80.9	100/100	86/86	429	74.0/73.9	90/90	78/78	414	85.8/85.7	100/100	91/91	434	
		MED	71.4	90	75	423	83.2	100	88	443	76.2	100	80	428	88.0	100	94	448	
	460-3-60	HIGH	74.4/73.5	90/90	78/77	425	86.2/85.3	100/100	92/91	445	79.2/78.3	100/100	84/83	430	91.0/90.1	100/100	97/96	450	
		STD	35.7	45	37	242	41.9	50	45	254	37.9	50	40	244	44.1	50	47	256	
	48HC**20	575-3-60	MED	36.8	45	39	249	43.0	50	46	261	39.0	50	41	251	45.2	50	48	263
			HIGH	37.9	50	40	250	44.1	50	47	262	40.1	50	42	252	46.3	50	50	264
208/230-3-60		STD	26.2	30	27	184	31	40	33	192	27.9	35	29	186	32.7	40	35	194	
		MED	26.2	30	27	184	31.0	40	33	192	27.9	35	29	186	32.7	40	35	194	
48HC**24		575-3-60	HIGH	29	35	31	198	33.8	40	36	206	30.7	40	33	200	35.5	45	38	208
			STD	76.1	100	80	453	87.9	100	93	473	80.9	100	85	458	92.7	100	99	478
	208/230-3-60	MED	79.1/78.2	100/100	83/82	455	90.9/90.0	100/100	97/96	475	83.9/83.0	100/100	89/88	460	95.7/94.8	110/110	102/101	480	
		HIGH	82.6	100	87	451	94.4	110	101	471	87.4	100	93	456	99.2	125	106	476	
	48HC**28	460-3-60	STD	37.1	45	39	251	43.3	50	46	263	39.3	50	42	253	45.5	50	49	265
			MED	38.2	50	40	252	44.4	50	47	264	40.4	50	43	254	46.6	50	50	266
208/230-3-60		HIGH	40.4	50	43	250	46.6	50	50	262	42.6	50	45	252	48.8	60	52	264	
		STD	26.2	30	27	186	31	40	33	194	27.9	35	29	188	32.7	40	35	196	
48HC**22		575-3-60	MED	29.0	35	31	200	33.8	40	36	208	30.7	40	33	202	35.5	45	38	210
			HIGH	31	40	33	198	35.8	45	38	206	32.7	40	35	200	37.5	45	40	208
	208/230-3-60	STD	87.3/86.4	100/100	92/91	550	99.1/98.2	125/125	105/104	570	92.1/91.2	100/100	97/96	555	103.9/103.0	125/125	111/110	575	
		MED	90.8	100	96	546	102.6	125	109	566	95.6	125	101	551	107.4	125	115	571	
	48HC**24	460-3-60	HIGH	102.2	125	109	625	114.0	125	122	645	107.0	125	114	630	118.8	150	128	650
			STD	47.6	60	50	280	53.8	60	57	292	49.8	60	52	282	56	70	60	294
208/230-3-60		MED	49.8	60	52	278	56.0	70	60	290	52.0	60	55	280	58.2	70	62	292	
		HIGH	55.5	60	59	318	61.7	70	66	330	57.7	70	62	320	63.9	80	69	332	
48HC**28		575-3-60	STD	35.5	45	37	204	40.3	50	43	212	37.2	45	39	206	42	50	45	214
			MED	37.5	45	40	202	42.3	50	45	210	39.2	50	42	204	44.0	50	47	212
	208/230-3-60	HIGH	39.4	50	42	229	44.2	50	47	237	41.1	50	44	231	45.9	50	49	239	
		STD	116.0/115.1	150/150	120/119	590	127.8/126.9	175/175	133/132	610	120.8/119.9	150/150	125/124	595	132.6/131.7	175/175	139/138	615	
	48HC**24	575-3-60	MED	119.5	150	124	586	131.3	175	137	606	124.3	150	129	591	136.1	175	143	611
			HIGH	130.9	175	137	665	142.7	175	150	685	135.7	175	142	670	147.5	175	156	690
208/230-3-60		STD	53	60	56	306	59.2	70	63	318	55.2	60	58	308	61.4	70	65	320	
		MED	55.2	60	58	304	61.4	70	65	316	57.4	70	61	306	63.6	80	68	318	
48HC**28		460-3-60	HIGH	60.9	70	65	344	67.1	80	72	356	63.1	80	67	346	69.3	80	74	358
			STD	40.4	50	42	228	45.2	50	48	236	42.1	50	44	230	46.9	60	50	238
	208/230-3-60	MED	42.4	50	45	226	47.2	60	50	234	44.1	50	46	228	48.9	60	52	236	
		HIGH	44.3	50	47	253	49.1	60	52	261	46	60	49	255	50.8	60	54	263	

See: "Legend and Notes for Tables 1 - 4" on page 7.

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Table 2 – Unit Wire Sizing Data with Factory Installed HACR Breaker

UNIT	NOM. V-Ph-Hz	IFM TYPE	NO C.O. or UNPWR C.O.						w/ PWRD C.O.							
			NO PE.			w/ PE. (pwrdr fr/ unit)			NO PE.			w/ PE. (pwrdr fr/ unit)				
			MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA		
48HC**17	208/230-3-60	STD	69.2/69.2	90/90	72/72	409	81.0/81.0	100/100	86/86	429	78/78	414	85.8/85.8	100/100	91/91	434
		MED	71.4	90	75	423	83.2	100	88	443	80	428	88.0	100	94	448
		HIGH	74.4/74.4	90/90	78/77	425	86.2/86.2	100/100	92/91	445	84/83	430	91.0/91.0	100/100	97/96	450
48HC**20	460-3-60	STD	35.7	45	37	242	41.9	50	45	254	40	244	44.1	50	47	256
		MED	36.8	45	39	249	43.0	50	46	261	41	251	45.2	50	48	263
		HIGH	37.9	50	40	250	44.1	50	47	262	42	252	46.3	50	50	264
48HC**24	575-3-60	STD	26.2	30	27	184	31	40	33	192	29	186	32.7	40	35	194
		MED	26.2	30	27	184	31.0	40	33	192	29	186	32.7	40	35	194
		HIGH	29	35	31	198	33.8	40	36	206	30	200	35.5	45	38	208
48HC**28	208/230-3-60	STD	76.1	100	80	453	87.9	100	93	473	80	458	92.7	100	99	478
		MED	79.1/79.1	100/100	83/82	455	90.9/90.9	100/100	97/96	475	89/88	460	95.7/95.7	110/110	102/101	480
		HIGH	82.6	100	87	451	94.4	110	101	471	93	456	99.2	125	106	476
48HC**28	460-3-60	STD	37.1	45	39	251	43.3	50	46	263	42	253	45.5	50	49	265
		MED	38.2	50	40	252	44.4	50	47	264	43	254	46.6	50	50	266
		HIGH	40.4	50	43	250	46.6	50	50	262	45	252	48.8	60	52	264
48HC**28	575-3-60	STD	26.2	30	27	186	31	40	33	194	29	188	32.7	40	35	196
		MED	29.0	35	31	200	33.8	40	36	208	33	202	35.5	45	38	210
		HIGH	31	40	33	198	35.8	45	38	206	35	200	37.5	45	40	208
48HC**28	208/230-3-60	STD	87.3/87.3	100/100	92/91	550	99.1/99.1	125/125	105/104	570	92.1/92.1	100/100	97/96	125/125	111/110	575
		MED	90.8	100	96	546	102.6	125	109	566	95.6	125	101	107.4	125	571
		HIGH	102.2	125	109	625	114.0	125	122	645	107.0	125	114	118.8	150	650
48HC**28	460-3-60	STD	47.6	60	50	280	53.8	60	57	292	49.8	60	52	282	60	294
		MED	49.8	60	52	278	56.0	70	60	290	52.0	60	55	280	70	292
		HIGH	55.5	60	59	318	61.7	70	66	330	57.7	70	62	63.9	80	332
48HC**28	575-3-60	STD	35.5	45	37	204	40.3	50	43	212	37.2	45	39	206	45	214
		MED	37.5	45	40	202	42.3	50	45	210	39.2	50	42	204	50	212
		HIGH	39.4	50	42	229	44.2	50	47	237	41.1	50	44	231	50	239
48HC**28	208/230-3-60	STD	116.0/116.0	150/150	120/119	590	127.8/127.8	175/175	133/132	610	120.8/120.8	150/150	125/124	175/175	139/138	615
		MED	119.5	150	124	586	131.3	175	137	606	124.3	150	129	136.1	175	611
		HIGH	130.9	175	137	665	142.7	175	150	685	135.7	175	142	147.5	175	690
48HC**28	460-3-60	STD	53	60	56	306	59.2	70	63	318	55.2	60	58	308	65	320
		MED	55.2	60	58	304	61.4	70	65	316	57.4	70	61	306	68	318
		HIGH	60.9	70	65	344	67.1	80	72	356	63.1	80	67	346	74	358
48HC**28	575-3-60	STD	40.4	50	42	228	45.2	50	48	236	42.1	50	44	230	60	238
		MED	42.4	50	45	226	47.2	60	50	234	44.1	50	46	228	60	236
		HIGH	44.3	50	47	253	49.1	60	52	261	46	60	49	255	60	263

See: Legend and Notes for Tables 1 - 4 on page 7.

**Table 3 – Unit Wire Sizing Data with Factory Installed 2 Speed Indoor Fan Option**

UNIT	NOM. V-Ph-Hz	IFM TYPE	NO C.O. or UNPWR C.O.						w/ PWRD C.O.											
			NO P.E.			w/ P.E. (pwrd fr/ unit)			NO P.E.			w/ P.E. (pwrd fr/ unit)								
			MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA						
48HC**17	208/230-3-60	STD	69.4/68.6	90/90	73/72	390	81.2/80.4	100/100	86/85	410	86/85	410	74.2/73.4	90/90	78/77	395	86.0/85.2	100/100	92/91	415
		MED	71.6/70.6	90/90	75/74	414	83.4/82.4	100/100	89/88	434	89/88	434	76.4/75.4	100/100	81/79	419	88.2/87.2	100/100	94/93	439
		HIGH	74.4/73.5	90/90	78/77	425	86.2/85.3	100/100	92/91	445	92/91	445	79.2/78.3	100/100	84/83	430	91.0/90.1	100/100	97/96	450
	460-3-60	STD	35.3	45	37	233	41.5	50	44	245	44	245	37.5	50	39	235	43.7	50	47	247
		MED	36.4	45	38	245	42.6	50	45	257	45	257	38.6	50	41	247	44.8	50	48	259
		HIGH	37.9	50	40	250	44.1	50	47	262	47	262	40.1	50	42	252	46.3	50	50	264
	575-3-60	STD	27.9	35	29	184	32.7	40	35	192	35	192	29.6	35	31	186	34.4	40	37	194
		MED	27.9	35	29	184	32.7	40	35	192	35	192	29.6	35	31	186	34.4	40	37	194
		HIGH	29.6	35	31	198	34.4	40	37	206	37	206	31.3	40	33	200	36.1	45	39	208
48HC**20	208/230-3-60	STD	76.3/75.3	100/100	80/79	444	88.1/87.1	100/100	93/92	464	93/92	464	81.1/80.1	100/100	85/84	449	92.9/91.9	100/100	99/98	469
		MED	79.1/78.2	100/100	83/82	455	90.9/90.0	100/100	97/96	475	97/96	475	83.9/83.0	100/100	89/88	480	95.7/94.8	110/110	102/101	480
		HIGH	82.6	100	87	451	94.4	110	101	471	101	471	87.4	100	93	456	99.2	125	106	476
	460-3-60	STD	36.7	45	39	247	42.9	50	46	259	46	259	38.9	50	41	249	45.1	50	48	261
		MED	38.2	50	40	252	44.4	50	47	264	47	264	40.4	50	43	254	46.6	50	50	266
		HIGH	40.4	50	43	250	46.6	50	50	262	50	262	42.6	50	45	252	48.8	60	52	264
	575-3-60	STD	27.9	35	29	186	32.7	40	35	194	35	194	29.6	35	31	188	34.4	40	37	196
		MED	29.6	35	31	200	34.4	40	37	208	37	208	31.3	40	33	202	36.1	45	39	210
		HIGH	31.0	40	33	198	35.8	45	38	206	38	206	32.7	40	35	200	37.5	45	40	208
48HC**24	208/230-3-60	STD	87.3/86.4	100/100	92/91	550	99.1/98.2	125/125	105/104	570	105/104	570	92.1/91.2	100/100	97/96	555	103.9/103.0	125/125	111/110	575
		MED	90.8	100	96	546	102.6	125	109	566	109	566	95.6	125	101	551	107.4	125	115	571
		HIGH	102.2	125	109	625	114.0	125	122	645	122	645	107.0	125	114	630	118.8	150	128	650
	460-3-60	STD	47.6	60	50	280	53.8	60	57	292	57	292	49.8	60	52	282	56.0	70	60	294
		MED	49.8	60	52	278	56.0	70	60	290	60	290	52.0	60	55	280	58.2	70	62	292
		HIGH	55.5	60	59	318	61.7	70	66	330	66	330	57.7	70	62	320	63.9	80	69	332
	575-3-60	STD	36.1	45	38	204	40.9	50	43	212	43	212	37.8	45	40	206	42.6	50	45	214
		MED	37.5	45	40	202	42.3	50	45	210	45	210	39.2	50	42	204	44.0	50	47	212
		HIGH	39.4	50	42	229	44.2	50	47	237	47	237	41.1	50	44	231	45.9	50	49	239
208/230-3-60	STD	116.0/115.1	150/150	120/119	590	127.8/126.9	175/175	133/132	610	133/132	610	120.8/119.9	150/150	125/124	595	132.6/131.7	175/175	139/138	615	
	MED	119.5	150	124	586	131.3	175	137	606	137	606	124.3	150	129	591	136.1	175	143	611	
	HIGH	130.9	175	137	665	142.7	175	150	685	150	685	135.7	175	142	670	147.5	175	156	690	
48HC**28	460-3-60	STD	53.0	60	56	306	59.2	70	63	318	63	318	55.2	60	58	308	61.4	70	65	320
		MED	55.2	60	58	304	61.4	70	65	316	65	316	57.4	70	61	306	63.6	80	68	318
		HIGH	60.9	70	65	344	67.1	80	72	356	72	356	63.1	80	67	346	69.3	80	74	358
575-3-60	STD	41.0	50	43	228	45.8	60	48	236	48	236	42.7	50	45	230	47.5	60	50	238	
	MED	42.4	50	45	226	47.2	60	50	234	50	234	44.1	50	46	228	48.9	60	52	236	
	HIGH	44.3	50	47	253	49.1	60	52	261	52	261	46.0	60	49	255	50.8	60	54	263	

See: "Legend and Notes for Tables 1 - 4" on page 7.

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Table 4 – Unit Wire Sizing Data with Factory Installed HACR Breaker and 2 Speed Indoor Fan Option

UNIT	NOM. V-Ph-Hz	IFM TYPE	NO C.O. or UNPWR C.O.						w/ PWRD C.O.							
			NO PE.			w/ PE. (pwrd fr/ unit)			NO PE.			w/ PE. (pwrd fr/ unit)				
			MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA		
48HC**17	208/230-3-60	STD	69.4/69.4	90/90	73/72	390	81.2/81.2	100/100	86/85	410	78/77	395	86.0/86.0	100/100	92/91	415
		MED	71.6/71.6	90/90	75/74	414	83.4/83.4	100/100	89/88	434	81/79	419	88.2/88.2	100/100	94/93	439
		HIGH	74.4/74.4	90/90	78/77	425	86.2/86.2	100/100	92/91	445	84/83	430	91.0/91.0	100/100	97/96	450
	460-3-60	STD	35.3	45	37	233	41.5	50	44	245	39	235	43.7	50	47	247
		MED	36.4	45	38	245	42.6	50	45	257	41	247	44.8	50	48	259
		HIGH	37.9	50	40	250	44.1	50	47	262	42	252	46.3	50	50	264
575-3-60	STD	27.9	35	29	184	32.7	40	35	192	31	186	34.4	40	37	194	
	MED	27.9	35	29	184	32.7	40	35	192	31	186	34.4	40	37	194	
	HIGH	29.6	35	31	198	34.4	40	37	206	33	200	36.1	45	39	208	
48HC**20	208/230-3-60	STD	76.3/76.3	100/100	80/79	444	88.1/88.1	100/100	93/92	464	85/84	449	92.9/92.9	100/100	99/98	469
		MED	79.1/79.1	100/100	83/82	455	90.9/90.9	100/100	97/96	475	89/88	460	95.7/95.7	110/110	102/101	480
		HIGH	82.6	100	87	451	94.4	110	101	471	93	456	99.2	125	106	476
	460-3-60	STD	36.7	45	39	247	42.9	50	46	259	41	249	45.1	50	48	261
		MED	38.2	50	40	252	44.4	50	47	264	43	254	46.6	50	50	266
		HIGH	40.4	50	43	250	46.6	50	50	262	45	252	48.8	60	52	264
575-3-60	STD	27.9	35	29	186	32.7	40	35	194	31	188	34.4	40	37	196	
	MED	29.6	35	31	200	34.4	40	37	208	33	202	36.1	45	39	210	
	HIGH	31	40	33	198	35.8	45	38	206	35	200	37.5	45	40	208	
48HC**24	208/230-3-60	STD	87.3/87.3	100/100	92/91	550	99.1/99.1	125/125	105/104	570	97/96	555	103.9/103.9	125/125	111/110	575
		MED	90.8	100	96	546	102.6	125	109	566	101	551	107.4	125	115	571
		HIGH	102.2	125	109	625	114.0	125	122	645	114	630	118.8	150	128	650
	460-3-60	STD	47.6	60	50	280	53.8	60	57	292	52	282	56	70	60	294
		MED	49.8	60	52	278	56.0	70	60	290	55	280	58.2	70	62	292
		HIGH	55.5	60	59	318	61.7	70	66	330	62	320	63.9	80	69	332
575-3-60	STD	36.1	45	38	204	40.9	50	43	212	40	206	42.6	50	45	214	
	MED	37.5	45	40	202	42.3	50	45	210	42	204	44.0	50	47	212	
	HIGH	39.4	50	42	229	44.2	50	47	237	44	231	45.9	50	49	239	
48HC**28	208/230-3-60	STD	116.0/116.0	150/150	120/119	590	127.8/127.8	175/175	133/132	610	125/124	595	132.6/132.6	175/175	139/138	615
		MED	119.5	150	124	586	131.3	175	137	606	129	591	136.1	175	143	611
		HIGH	130.9	175	137	665	142.7	175	150	685	142	670	147.5	175	156	690
	460-3-60	STD	53	60	56	306	59.2	70	63	318	58	308	61.4	70	65	320
		MED	55.2	60	58	304	61.4	70	65	316	61	306	63.6	80	68	318
		HIGH	60.9	70	65	344	67.1	80	72	356	67	346	69.3	80	74	358
575-3-60	STD	41	50	43	228	45.8	60	48	236	45	230	47.5	60	50	238	
	MED	42.4	50	45	226	47.2	60	50	234	46	228	48.9	60	52	236	
	HIGH	44.3	50	47	253	49.1	60	52	261	49	255	50.8	60	54	263	

See: Legend and Notes for Tables 1 - 4 \* on page 7.

## Legend and Notes for Tables 1 - 4

### 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.

