50HCQ 10 Nominal Tons
Single Package Rooftop
Heat Pump
with Puron® (R−410A) Refrigerant
Size: 12

Electrical Data Supplement

FOR MODELS PRODUCED ON OR AFTER MAY 18, 2015 ONLY!

NOTE: Read the entire instruction manual before starting the installation

This supplement only applies to 50HCQ size 12 units manufactured on or after May 18, 2015. To confirm the date of manufacture of the unit, locate the unit nameplate and check the first four digits of the Serial Number which is located directly below the unit's Model Number at the top of the nameplate. If the number listed in the first 4 digits of the Serial Number is 2115 or higher KEEP THIS DOCUMENT and use it along with the furnished Installation Instructions.

SERIAL NUMBER NOMENCLATURE

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

Week of manufacture (fiscal calendar)

Year of manufacture ("15" = 2015)

Manufacturing location

Sequence number

C150230

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 50HCQ size 12 units manufactured on or after May 18, 2015. Check the first 4 digits of the unit's Serial Number (located on the unit's nameplate) if the number listed is 2115 or higher keep this document.

⚠ 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 – 50HCQ 12 Unit Wire/Fuse or HACR Breaker Sizing Data - Single Speed Indoor Fan Motor

UNIT	NO M. V–Ph–HZ	IFMTYPE	ELEC. HTR			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)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50HCQD12	208/230–3–60	STD	NONE	–	–	46	60	47	262	49	60	52	266	50	60	53	267	54	60	57	271
			288A	7.5/10.0	20.9/24.1	72/76	80/80	71/75	283/286	76/80	80/80	76/79	287/290	77/81	80/90	77/81	288/291	80/84	80/90	81/85	292/295
			291A	12.4/16.5	34.4/39.7	89/95	90/100	87/93	296/302	92/99	100/100	91/97	300/306	93/100	100/100	92/99	301/307	97/104	100/110	97/103	305/311
			294A	25.2/33.5	69.9/80.6	133/146	150/150	128/140	332/343	137/150	150/150	132/144	336/347	138/151	150/175	133/146	337/348	142/155	150/175	138/150	341/352
			288A+294A	32.7/43.5	90.7/104.7	159/177	175/200	152/168	443/471	163/180	175/200	156/172	447/475	164/181	175/200	157/173	448/476	168/185	175/200	162/178	452/480
			291A+294A	37.6/50.0	104.3/120.3	176/166	200/175	167/186	471/503	180/170	200/175	172/190	475/507	181/171	200/175	173/191	476/508	185/175	200/200	177/196	480/512
		MED	NONE	–	–	49/49	60/60	51/51	304	53/53	60/60	55/55	308	54/54	60/60	57/56	309	57/57	70/70	61/61	313
			288A	7.5/10.0	20.9/24.1	75/79	80/80	75/79	325/328	79/83	80/90	79/83	329/332	80/84	80/90	81/84	330/333	84/87	90/90	85/89	334/337
			291A	12.4/16.5	34.4/39.7	92/98	100/100	91/97	338/344	96/102	100/110	95/101	342/348	97/103	100/110	96/102	343/349	100/107	100/110	101/106	347/353
			294A	25.2/33.5	69.9/80.6	136/149	150/150	131/144	374/385	140/153	150/175	136/148	378/389	141/154	150/175	137/149	379/390	145/158	150/175	141/154	383/394
			288A+294A	32.7/43.5	90.7/104.7	162/180	175/200	155/171	485/513	166/183	175/200	160/176	489/517	167/184	175/200	161/177	490/518	171/188	175/200	165/181	494/522
			291A+294A	37.6/50.0	104.3/120.3	179/169	200/175	171/189	513/545	183/173	200/200	175/194	517/549	184/174	200/200	177/195	518/550	188/178	200/200	181/199	522/554
		HIGH	NONE	–	–	62	80	65	324	66	80	69	328	67	80	70	329	71	80	75	333
			288A	7.5/10.0	20.9/24.1	88/92	100/100	89/93	345/348	92/96	100/100	93/97	349/352	93/97	100/100	94/98	350/353	97/101	100/110	99/102	354/357
			291A	12.4/16.5	34.4/39.7	105/112	110/125	104/111	358/364	109/115	110/125	109/115	362/368	110/116	110/125	110/116	363/369	114/120	125/125	114/120	367/373
			294A	25.2/33.5	69.9/80.6	149/163	150/175	145/158	394/405	153/167	175/175	150/162	398/409	154/168	175/175	151/163	399/410	158/171	175/175	155/167	403/414
			288A+294A	32.7/43.5	90.7/104.7	175/193	175/200	169/185	505/533	179/197	200/200	174/190	509/537	180/198	200/200	175/191	510/538	184/201	200/225	179/195	514/542
			291A+294A	37.6/50.0	104.3/120.3	192/182	200/200	185/203	533/565	196/186	200/200	189/208	537/569	197/187	200/200	190/209	538/570	201/191	225/200	195/213	542/574
	460–3–60	STD	NONE	–	–	23	30	23	125	25	30	26	127	25	30	26	127	27	30	28	129
			289A	10.0	12.0	38	40	37	137	40	40	39	139	40	40	40	139	42	45	42	141
			292A	16.5	19.9	48	50	46	145	49	50	48	147	50	50	49	147	52	60	51	149
			295A	33.5	40.3	73	80	70	165	75	80	72	167	75	80	72	167	77	80	74	169
			289A+295A	43.5	52.3	88	90	84	230	90	90	86	232	90	90	86	232	92	100	88	234
			292A+295A	50.0	60.2	83	90	93	245	85	90	95	247	85	90	95	247	87	90	97	249
		MED	NONE	–	–	24	30	25	146	26	30	27	148	27	30	28	148	28	30	30	150
			289A	10.0	12.0	39	40	39	158	41	45	41	160	42	45	42	160	43	45	44	162
			292A	16.5	19.9	49	50	48	166	51	60	50	168	51	60	51	168	53	60	53	170
			295A	33.5	40.3	75	80	72	186	77	80	74	188	77	80	74	188	79	80	76	190
			289A+295A	43.5	52.3	90	90	85	251	92	100	88	253	92	100	88	253	94	100	90	255
			292A+295A	50.0	60.2	85	90	95	266	86	90	97	268	87	90	97	268	89	100	99	270
		HIGH	NONE	–	–	31	40	32	156	33	40	34	158	33	40	35	158	35	40	37	160
			289A	10.0	12.0	46	50	46	168	48	50	48	170	48	50	49	170	50	50	51	172
			292A	16.5	19.9	56	60	55	176	58	60	57	178	58	60	58	178	60	60	60	180
			295A	33.5	40.3	81	90	79	196	83	90	81	198	84	90	81	198	85	90	83	200
			289A+295A	43.5	52.3	96	100	92	261	98	100	94	263	99	100	95	263	100	100	97	265
			292A+295A	50.0	60.2	91	100	101	276	93	100	104	278	93	100	104	278	95	100	106	280
	575–3–60	STD	NONE	–	–	18	20	18	95	21	25	22	99	19	25	20	97	23	25	24	101
			290A	10.0	9.6	30	30	29	105	33	35	33	109	31	35	31	107	35	35	35	111
			293A	16.5	15.9	37	40	36	111	41	45	41	115	39	40	38	113	43	45	43	117
			296A	33.5	32.2	58	60	55	127	62	70	59	131	59	60	57	129	63	70	61	133
			290A+296A	43.5	41.8	70	70	66	179	74	80	70	183	71	80	68	181	75	80	72	185
			293A+296A	50.0	48.1	66	70	73	191	69	80	78	195	67	70	75	193	71	80	80	197
		MED	NONE	–	–	18	20	19	106	22	25	23	110	20	25	21	108	24	25	25	112
			290A	10.0	9.6	30	30	30	116	34	35	34	120	32	35	32	118	36	40	36	122
			293A	16.5	15.9	38	40	37	122	42	45	42	126	40	40	39	124	44	45	43	128
			296A	33.5	32.2	59	60	56	138	62	70	60	142	60	60	58	140	64	70	62	144
			290A+296A	43.5	41.8	71	80	67	190	74	80	71	194	72	80	69	192	76	80	73	196
			293A+296A	50.0	48.1	66	70	74	202	70	80	79	206	68	70	76	204	72	80	81	208
		HIGH	NONE	–	–	25	30	26	118	29	35	30	122	27	30	28	120	31	35	32	124
			290A	10.0	9.6	37	40	37	128	41	45	41	132	39	45	39	130	43	45	43	134
			293A	16.5	15.9	45	45	44	134	49	50	49	138	47	50	46	136	51	60	51	140
			296A	33.5	32.2	66	70	63	150	69	70	67	154	67	70	65	152	71	80	69	156
			290A+296A	43.5	41.8	78	80	74	202	81	90	78	206	79	80	76	204	83	90	80	208
			293A+296A	50.0	48.1	73	80	81	214	77	80	86	218	75	80	83	216	79	90	88	220

See: “Legend and Notes for Tables 1 and 2” on page 4.

Table 2 – 50HCQ 12 Unit Wire/Fuse or HACR Breaker Sizing Data - 2-Speed Indoor Fan Motor

UNIT	NO M. V–Ph–HZ	IFMTYPE	ELEC. HTR			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)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50HCQD12	208/230–3–60	STD	NONE	–	–	48/47	60/60	50/49	259	51/51	60/60	54/54	263	52/52	60/60	55/55	264	56/56	60/60	59/59	268
			288A	7.5/10.0	20.9/24.1	74/77	80/80	74/77	280/283	77/81	80/90	78/81	284/287	78/82	80/90	79/82	285/288	82/86	90/90	83/87	289/292
			291A	12.4/16.5	34.4/39.7	91/97	100/100	89/95	293/299	94/101	100/110	93/99	297/303	95/102	100/110	95/100	298/304	99/105	100/110	99/105	302/308
			294A	25.2/33.5	69.9/80.6	135/148	150/150	130/142	329/340	139/152	150/175	134/146	333/344	140/153	150/175	135/147	334/345	144/157	150/175	140/152	338/349
			288A+294A	32.7/43.5	90.7/104.7	161/178	175/200	154/170	440/468	165/182	175/200	158/174	444/472	166/183	175/200	159/175	445/473	170/187	175/200	164/180	449/477
			291A+294A	37.6/50.0	104.3/120.3	178/168	200/175	170/188	468/500	182/171	200/175	174/192	472/504	183/172	200/200	175/193	473/505	187/176	200/200	179/197	477/509
		MED	NONE	–	–	49/48	60/60	51/50	285	53/52	60/60	56/55	289	54/53	60/60	57/56	290	58/57	70/70	61/60	294
			288A	7.5/10.0	20.9/24.1	75/78	80/80	75/78	306/309	79/82	80/90	80/82	310/313	80/83	80/90	81/84	311/314	84/87	90/90	85/88	315/318
			291A	12.4/16.5	34.4/39.7	92/98	100/100	91/96	319/325	96/102	100/110	95/100	323/329	97/103	100/110	96/102	324/330	101/106	110/110	101/106	328/334
			294A	25.2/33.5	69.9/80.6	136/149	150/150	132/143	355/366	140/153	150/175	136/147	359/370	141/154	150/175	137/149	360/371	145/158	150/175	142/153	364/375
			288A+294A	32.7/43.5	90.7/104.7	162/179	175/200	156/171	466/494	166/183	175/200	160/175	470/498	167/184	175/200	161/176	471/499	171/188	175/200	165/181	475/503
			291A+294A	37.6/50.0	104.3/120.3	179/169	200/175	171/189	494/526	183/172	200/200	176/193	498/530	184/173	200/200	177/194	499/531	188/177	200/200	181/199	503/535
		HIGH	NONE	–	–	62	80	65	324	66	80	69	328	67	80	70	329	71	80	75	333
			288A	7.5/10.0	20.9/24.1	88/92	100/100	89/93	345/348	92/96	100/100	93/97	349/352	93/97	100/100	94/98	350/353	97/101	100/110	99/102	354/357
			291A	12.4/16.5	34.4/39.7	105/112	110/125	104/111	358/364	109/115	110/125	109/115	362/368	110/116	110/125	110/116	363/369	114/120	125/125	114/120	367/373
			294A	25.2/33.5	69.9/80.6	149/163	150/175	145/158	394/405	153/167	175/175	150/162	398/409	154/168	175/175	151/163	399/410	158/171	175/175	155/167	403/414
			288A+294A	32.7/43.5	90.7/104.7	175/193	175/200	169/185	505/533	179/197	200/200	174/190	509/537	180/198	200/200	175/191	510/538	184/201	200/225	179/195	514/542
			291A+294A	37.6/50.0	104.3/120.3	192/182	200/200	185/203	533/565	196/186	200/200	189/208	537/569	197/187	200/200	190/209	538/570	201/191	225/200	195/213	542/574
	460–3–60	STD	NONE	–	–	24	30	24	124	25	30	26	126	26	30	27	126	28	30	29	128
			289A	10.0	12.0	39	40	38	136	40	40	40	138	41	45	41	138	43	45	43	140
			292A	16.5	19.9	48	50	47	144	50	50	49	146	51	60	50	146	52	60	52	148
			295A	33.5	40.3	74	80	71	164	76	80	73	166	76	80	73	166	78	80	75	168
			289A+295A	43.5	52.3	89	90	85	229	91	100	87	231	91	100	87	231	93	100	89	233
			292A+295A	50.0	60.2	84	90	94	244	86	90	96	246	86	90	96	246	88	90	98	248
		MED	NONE	–	–	24	30	25	137	26	30	27	139	26	30	27	139	28	30	29	141
			289A	10.0	12.0	39	40	39	149	41	45	41	151	41	45	41	151	43	45	43	153
			292A	16.5	19.9	49	50	48	157	51	60	50	159	51	60	50	159	53	60	52	161
			295A	33.5	40.3	74	80	71	177	76	80	73	179	77	80	74	179	78	80	76	181
			289A+295A	43.5	52.3	89	90	85	242	91	100	87	244	92	100	88	244	93	100	90	246
			292A+295A	50.0	60.2	84	90	94	257	86	90	96	259	86	90	97	259	88	90	99	261
		HIGH	NONE	–	–	31	40	32	156	33	40	34	158	33	40	35	158	35	40	37	160
			289A	10.0	12.0	46	50	46	168	48	50	48	170	48	50	49	170	50	50	51	172
			292A	16.5	19.9	56	60	55	176	58	60	57	178	58	60	58	178	60	60	60	180
			295A	33.5	40.3	81	90	79	196	83	90	81	198	84	90	81	198	85	90	83	200
			289A+295A	43.5	52.3	96	100	92	261	98	100	94	263	99	100	95	263	100	100	97	265
			292A+295A	50.0	60.2	91	100	101	276	93	100	104	278	93	100	104	278	95	100	106	280
	575–3–60	STD	NONE	–	–	19	25	20	97	23	25	24	101	21	25	22	99	25	30	26	103
			290A	10.0	9.6	31	35	31	107	35	35	35	111	33	35	33	109	37	40	37	113
			293A	16.5	15.9	39	40	38	113	43	45	42	117	41	45	40	115	44	45	44	119
			296A	33.5	32.2	59	60	57	129	63	70	61	133	61	70	59	131	65	70	63	135
			290A+296A	43.5	41.8	71	80	68	181	75	80	72	185	73	80	70	183	77	80	74	187
			293A+296A	50.0	48.1	67	70	75	193	71	80	79	197	69	70	77	195	73	80	81	199
		MED	NONE	–	–	20	25	21	106	24	25	25	110	22	25	23	108	26	30	27	112
			290A	10.0	9.6	32	35	32	116	36	40	36	120	34	35	34	118	38	40	38	122
			293A	16.5	15.9	40	40	39	122	44	45	43	126	42	45	41	124	45	45	45	128
			296A	33.5	32.2	60	60	58	138	64	70	62	142	62	70	60	140	66	70	64	144
			290A+296A	43.5	41.8	72	80	69	190	76	80	73	194	74	80	71	192	78	80	75	196
			293A+296A	50.0	48.1	68	70	76	202	72	80	81	206	70	80	78	204	74	80	82	208
		HIGH	NONE	–	–	25	30	26	118	29	35	30	122	27	30	28	120	31	35	32	124
			290A	10.0	9.6	37	40	37	128	41	45	41	132	39	45	39	130	43	45	43	134
			293A	16.5	15.9	45	45	44	134	49	50	49	138	47	50	46	136	51	60	51	140
			296A	33.5	32.2	66	70	63	150	69	70	67	154	67	70	65	152	71	80	69	156
			290A+296A	43.5	41.8	78	80	74	202	81	90	78	206	79	80	76	204	83	90	80	208
			293A+296A	50.0	48.1	73	80	81	214	77	80	86	218	75	80	83	216	79	90	88	220

See: “Legend and Notes for Tables 1 and 2” on page 4.

Legend and Notes for Tables 1 and 2

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
MOCP	–	MAX FUSE or HACR Breaker
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.

Edition Date: 05/15

Catalog No: 50HCQ–12–01SS

Replaces: New