RGS/RAS 121
SINGLE PACKAGE ROOFTOP
GAS HEATING/ELECTRIC COOLING UNIT
& COOLING ONLY/ELECTRIC HEAT UNIT
WITH R-410A REFRIGERANT

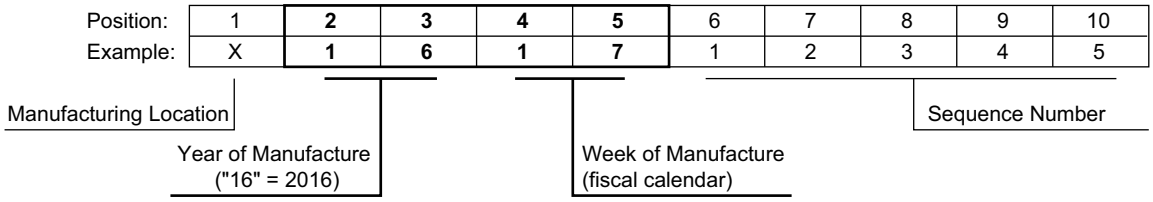
ELECTRICAL DATA SUPPLEMENT

FOR MODELS PRODUCED ON OR AFTER APRIL 18, 2016 ONLY!

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

This supplement only applies to RGS/RAS 121 units manufactured on or after April 18, 2016. To confirm the date of manufacture of the unit, locate the unit nameplate and check the second thru fifth digits of the Serial Number. If the number listed in the 2nd thru 5th digits of the Serial Number is 1617 or higher KEEP THIS DOCUMENT and use it along with the furnished Installation Instructions. The Serial Number is located directly below the unit's Model Number.

SERIAL NUMBER NOMENCLATURE



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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/NFPA 70, 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 RGS/RAS 121 units manufactured on or after April 18, 2016. Check the second thru fifth digits of the Serial Number. If the number listed in the 2nd thru 5th digits of the Serial Number is 1617 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 – RGS121 Unit Wire/Fuse or HACR Breaker Sizing Data - Single-Speed Indoor Fan Motor

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	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
RGS121 (1–stage cool)	208/230–3–60	STD	44	60	42	277	48	60	46	281	49	60	47	282	53	60	52	286
		MED	49	60	48	333	53	60	52	337	54	80	54	338	58	80	58	342
		HIGH	52/51	60/60	52/50	335	56/55	80/80	56/55	339	57/56	80/80	57/56	340	61/60	80/80	61/60	344
	460–3–60	STD	23	30	22	149	25	30	24	151	25	30	24	151	27	40	26	153
		MED	26	30	25	177	28	40	27	179	28	40	27	179	30	40	29	181
		HIGH	27	40	26	178	29	40	28	180	29	40	29	180	31	45	31	182
	575–3–60	STD	18	25	17	109	22	30	21	113	19	30	19	111	23	30	23	115
		MED	19	25	18	120	22	30	22	124	20	30	20	122	24	30	24	126
		HIGH	21	30	21	134	25	30	25	138	23	30	23	136	27	30	27	140

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

Table 2 – RAS121 Unit Wire/Fuse or HACR Breaker Sizing Data - Single-Speed Indoor Fan Motor

UNIT	NOM. V–Ph–Hz	IFM-TYPE	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
RAS121 (1–stage cool)	208/230–3–60	STD	NONE	–	–	44	60	42	277	48	60	46	281	49	60	47	282	53	60	52	286
			117A	7.8/10.4	21.7/25.0	44/44	60/60	42/42	277/277	48/48	60/60	46/46	281/281	49/49	60/60	47/47	282/282	53/53	60/60	52/52	286/286
			110A	12.0/16.0	33.4/38.5	49/55	60/60	44/50	277/277	53/60	60/60	49/55	281/281	55/61	60/70	50/56	282/282	59/66	60/80	54/60	286/286
			112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	277/277	95/108	100/110	87/99	281/281	96/109	100/110	88/100	282/282	101/114	110/125	93/104	286/286
			112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	277/277	122/139	125/150	112/128	281/281	123/140	125/150	113/129	282/282	128/145	150/150	118/133	286/286
			112A+110A	37.6/50.0	104.2/120.3	137/127	150/150	126/144	277/277	142/132	150/150	130/149	281/281	143/133	150/150	131/150	282/282	148/138	150/150	136/154	286/286
		MED	NONE	–	–	49	60	48	333	53	60	52	337	54	80	54	338	58	80	58	342
			117A	7.8/10.4	21.7/25.0	49/49	60/60	48/48	333/333	53/53	60/60	52/52	337/337	54/54	80/80	54/54	338/338	58/58	80/80	58/58	342/342
			110A	12.0/16.0	33.4/38.5	55/62	60/70	51/56	333/333	60/67	60/80	55/61	337/337	61/68	80/80	56/62	338/338	66/73	80/80	60/66	342/342
			112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	333/333	102/115	110/125	93/105	337/337	103/116	110/125	94/106	338/338	108/121	110/125	99/111	342/342
			112A+117A	31.8/42.4	88.4/102.0	124/141	125/150	114/129	333/333	129/146	150/150	118/134	337/337	130/147	150/150	119/135	338/338	135/152	150/175	124/139	342/342
			112A+110A	37.6/50.0	104.2/120.3	144/134	150/150	132/151	333/333	149/139	150/150	136/155	337/337	150/140	150/150	138/156	338/338	155/145	175/175	142/160	342/342
		HIGH	NONE	–	–	52/51	60/60	52/50	335	56/55	80/80	56/55	339	57/56	80/80	57/56	340	61/60	80/80	61/60	344
			117A	7.8/10.4	21.7/25.0	52/51	60/60	52/50	335/335	56/55	80/80	56/55	339/339	57/56	80/80	57/56	340/340	61/60	80/80	61/60	344/344
			110A	12.0/16.0	33.4/38.5	59/64	60/70	54/59	335/335	64/69	80/80	58/63	339/339	65/70	80/80	60/64	340/340	70/75	80/80	64/69	344/344
			112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	335/335	106/117	110/125	97/108	339/339	107/119	110/125	98/109	340/340	112/123	125/125	102/113	344/344
			112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	335/335	133/149	150/150	122/136	339/339	134/150	150/150	123/137	340/340	139/155	150/175	127/142	344/344
			112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	335/335	152/141	175/175	140/157	339/339	154/143	175/175	141/158	340/340	158/147	175/175	145/163	344/344
	460–3–60	STD	NONE	–	–	23	30	22	149	25	30	24	151	25	30	24	151	27	40	26	153
			116A	13.9	16.7	25	30	22	149	27	30	24	151	27	30	25	151	30	40	27	153
			113A	16.5	19.8	28	30	26	149	31	35	28	151	31	35	28	151	33	40	30	153
			115A	33.0	39.7	53	60	49	149	56	60	51	151	56	60	51	151	58	60	53	153
			114A+116A	41.7	50.2	66	70	61	149	69	70	63	151	69	70	63	151	71	80	65	153
			115A+113A	50.0	60.1	64	70	72	149	66	70	74	151	67	70	75	151	69	70	77	153
		MED	NONE	–	–	26	30	25	177	28	40	27	179	28	40	27	179	30	40	29	181
			116A	13.9	16.7	28	30	25	177	30	40	27	179	31	40	28	179	33	40	30	181
			113A	16.5	19.8	32	35	29	177	34	40	31	179	35	40	31	179	37	40	33	181
			115A	33.0	39.7	57	60	52	177	59	60	54	179	59	60	54	179	62	70	56	181
			114A+116A	41.7	50.2	70	70	64	177	72	80	66	179	73	80	66	179	75	80	68	181
			115A+113A	50.0	60.1	67	80	75	177	69	80	77	179	70	80	78	179	72	80	80	181
		HIGH	NONE	–	–	27	40	26	178	29	40	28	180	29	40	29	180	31	45	31	182
			116A	13.9	16.7	29	40	27	178	32	40	29	180	32	40	29	180	34	45	31	182
			113A	16.5	19.8	33	40	30	178	35	40	32	180	36	40	33	180	38	45	35	182
			115A	33.0	39.7	58	60	53	178	60	60	55	180	61	70	56	180	63	70	58	182
			114A+116A	41.7	50.2	71	80	65	178	73	80	67	180	74	80	68	180	76	80	70	182
			115A+113A	50.0	60.1	69	80	76	178	71	80	79	180	71	80	79	180	74	80	81	182
	575–3–60	STD	NONE	–	–	18	25	17	109	22	30	21	113	19	30	19	111	23	30	23	115
			118A	18.0	17.3	25	25	22	109	29	30	27	113	27	30	24	111	31	35	29	115
			119A	36.0	34.6	46	50	42	109	51	60	46	113	48	50	44	111	53	60	48	115
			118A+119A	54.0	52.0	55	60	62	109	60	60	66	113	57	60	64	111	62	70	68	115
		MED	NONE	–	–	19	25	18	120	22	30	22	124	20	30	20	122	24	30	24	126
			118A	18.0	17.3	26	30	23	120	30	30	27	124	28	30	25	122	32	35	29	126
			119A	36.0	34.6	47	50	43	120	52	60	47	124	49	50	45	122	54	60	49	126
			118A+119A	54.0	52.0	56	60	63	120	61	70	67	124	58	60	65	122	63	70	69	126
		HIGH	NONE	–	–	21	30	21	134	25	30	25	138	23	30	23	136	27	30	27	140
			118A	18.0	17.3	29	30	26	134	34	35	31	138	31	35	28	136	36	40	33	140
			119A	36.0	34.6	51	60	46	134	55	60	51	138	53	60	48	136	58	60	53	140
			118A+119A	54.0	52.0	59	70	66	134	64	70	71	138	62	70	68	136	66	70	73	140

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

Legend and Notes for Tables 1 and 2

LEGEND:

BRKR	–	Circuit breaker
C.O.	–	Convenience outlet
DISC	–	Disconnect
FLA	–	Full load amps
IFM	–	Indoor fan motor
LRA	–	Locked rotor amps
MCA	–	Minimum circuit amps
P.E.	–	Power exhaust
pwrd fr/ unit	–	Powered from unit
PWRD C.O.	–	Powered convenience outlet
UNPWR C.O.	–	Unpowered convenience 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. For 208/230 v units, where one value is shown it is the same for either 208 or 230 volts.
3. **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.