

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 RGS/RAS180 units manufactured on or after May 18, 2015. To confirm the date of manufacture of a RGS/RAS 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 1521 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

1	2	3	4	5	6	7	8	9	10
U	1	5	2	1	1	2	3	4	5


Manufacture Location		Week of Manufacture (fiscal calendar)	Sequence Number
Year of Manufacture (15 = 2015)			

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 RGS/RAS 180 units manufactured on or after May 18, 2015. 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 1521 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 – RGS180 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.							
			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	
FLA	LRA	FLA			LRA					
RGS180 (2-stage cool)	208/230-3-60	STD	70/70	80/80	72/72	412	73/73	80/80	77/77	416
		MED	72	80	75	426	76	100	79	430
		HIGH	82	100	86	432	85	100	91	436
	460-3-60	STD	35	45	36	242	37	45	38	244
		MED	36	45	38	249	38	50	40	251
		HIGH	41	50	43	252	43	50	45	254
	575-3-60	STD	27	30	28	184	31	40	32	188
		MED	27	30	28	184	31	40	32	188
		HIGH	33	40	35	196	37	45	39	200

See: Legend and Notes for Tables 1 – 4 on page 5.

Table 2 – RGS180 Unit Wire/Fuse or HACR Breaker Sizing Data – 2-Speed Indoor Fan Motor

UNIT	NOM. V-Ph-Hz	IFM TYPE	NO C.O. or UNPWR C.O.							
			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	
FLA	LRA	FLA			LRA					
RGS180 (2-stage cool)	208/230-3-60	STD	70/69	80/80	73/72	393	74/73	80/80	77/76	397
		MED	72/71	80/80	75/74	417	76/75	100/90	79/78	421
		HIGH	82	100	86	432	85	100	91	436
	460-3-60	STD	35	45	36	233	37	45	38	235
		MED	36	45	37	245	38	50	39	247
		HIGH	41	50	43	252	43	50	45	254
	575-3-60	STD	29	35	30	184	32	40	34	188
		MED	29	35	30	184	32	40	34	188
		HIGH	33	40	35	196	37	45	39	200

See: Legend and Notes for Tables 1 – 4 on page 5.

Table 3 – RAS180 Unit Wire/Fuse or HACR Breaker Sizing Data – Single Speed Indoor Fan Motor

UNIT	NO M. V-Ph-HZ	IFM-TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.							
			CRHEATER* **A00	Nom (kW)	FLA	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	
								FLA	LRA			FLA	LRA
RAS180 (2-stage cool)	208/230-3-60	STD	NONE	-	-	70/70	80/80	72/72	412	73/73	80/80	77/77	416
			291A	12.4/16.5	34.4/39.7	70/70	80/80	72/72	412/412	73/73	80/80	77/77	416/416
			294A	25.2/33.5	69.9/80.6	98/112	100/125	90/102	412/412	103/116	110/125	94/107	416/416
			288A+294A	32.7/43.5	90.7/104.7	124/142	125/150	114/130	412/412	129/146	150/150	118/134	416/416
			291A+294A	37.6/50.0	104.3/120.3	141/131	150/150	130/148	412/412	146/136	150/150	134/152	416/416
			294A+294A	50.3/67.0	139.7/161.2	151/172	175/200	170/195	412/412	155/177	175/200	175/199	416/416
		MED	NONE	-	-	72	80	75	426	76	100	79	430
			291A	12.4/16.5	34.4/39.7	72/72	80/80	75/75	426/426	76/76	100/100	79/79	430/430
			294A	25.2/33.5	69.9/80.6	101/114	110/125	93/105	426/426	106/119	110/125	97/109	430/430
			288A+294A	32.7/43.5	90.7/104.7	127/145	150/150	116/133	426/426	132/149	150/150	121/137	430/430
			291A+294A	37.6/50.0	104.3/120.3	144/134	150/150	132/151	426/426	149/139	150/150	137/155	430/430
			294A+294A	50.3/67.0	139.7/161.2	153/175	175/200	173/198	426/426	158/180	175/200	177/202	430/430
	HIGH	NONE	-	-	82	100	86	432	85	100	91	436	
		291A	12.4/16.5	34.4/39.7	82/82	100/100	86/86	432/432	85/85	100/100	91/91	436/436	
		294A	25.2/33.5	69.9/80.6	113/127	125/150	104/116	432/432	118/131	125/150	108/121	436/436	
		288A+294A	32.7/43.5	90.7/104.7	139/157	150/175	128/144	432/432	144/162	150/175	132/148	436/436	
		291A+294A	37.6/50.0	104.3/120.3	156/146	175/175	143/162	432/432	161/151	175/175	148/166	436/436	
		294A+294A	50.3/67.0	139.7/161.2	166/187	175/225	184/209	432/432	170/192	175/225	188/213	436/436	
	460-3-60	STD	NONE	-	-	35	45	36	242	37	45	38	244
			292A	16.5	19.9	35	45	36	242	37	45	38	244
			295A	33.5	40.3	56	60	51	242	58	60	53	244
			289A+295A	43.5	52.3	71	80	65	242	73	80	67	244
			292A+295A	50.0	60.2	66	70	74	242	68	80	76	244
			295A+295A	67.0	80.6	86	100	98	242	89	100	100	244
MED		NONE	-	-	36	45	38	249	38	50	40	251	
		292A	16.5	19.9	36	45	38	249	38	50	40	251	
		295A	33.5	40.3	57	60	52	249	60	60	55	251	
		289A+295A	43.5	52.3	72	80	66	249	75	80	68	251	
		292A+295A	50.0	60.2	67	80	75	249	70	80	77	251	
		295A+295A	67.0	80.6	88	100	99	249	90	100	101	251	
HIGH		NONE	-	-	41	50	43	252	43	50	45	254	
		292A	16.5	19.9	41	50	43	252	43	50	45	254	
		295A	33.5	40.3	64	70	58	252	66	70	60	254	
		289A+295A	43.5	52.3	79	80	72	252	81	90	74	254	
		292A+295A	50.0	60.2	73	80	81	252	76	80	83	254	
		295A+295A	67.0	80.6	94	100	104	252	96	100	106	254	
575-3-60	STD	NONE	-	-	27	30	28	184	31	40	32	188	
		293A	16.5	15.9	27	30	28	184	31	40	32	188	
		296A	33.5	32.2	44	45	40	184	49	50	45	188	
		290A+296A	43.5	41.8	56	60	51	184	61	70	56	188	
		293A+296A	50.0	48.1	52	60	59	184	57	60	63	188	
		296A+296A	67.0	64.4	68	80	77	184	73	80	82	188	
	MED	NONE	-	-	27	30	28	184	31	40	32	188	
		293A	16.5	15.9	27	30	28	184	31	40	32	188	
		296A	33.5	32.2	44	45	40	184	49	50	45	188	
		290A+296A	43.5	41.8	56	60	51	184	61	70	56	188	
		293A+296A	50.0	48.1	52	60	59	184	57	60	63	188	
		296A+296A	67.0	64.4	68	80	77	184	73	80	82	188	
	HIGH	NONE	-	-	33	40	35	196	37	45	39	200	
		293A	16.5	15.9	33	40	35	196	37	45	39	200	
		296A	33.5	32.2	52	60	47	196	57	60	52	200	
		290A+296A	43.5	41.8	64	70	58	196	69	70	63	200	
		293A+296A	50.0	48.1	60	70	66	196	65	70	70	200	
		296A+296A	67.0	64.4	76	80	84	196	81	90	89	200	

See: Legend and Notes for Tables 1 – 4 on page 5.

Table 4 – RAS180 Unit Wire/Fuse or HACR Breaker Sizing Data – 2-Speed Indoor Fan Motor

UNIT	NO M. V-Ph-HZ	IFM-TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.							
			CRHEATER* **A00	Nom (kW)	FLA	I 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	
								FLA	LRA			FLA	LRA
RAS180 (2-stage cool)	208/230-3-60	STD	NONE	-	-	70/69	80/80	73/72	393	74/73	80/80	77/76	397
			291A	12.4/16.5	34.4/39.7	70/69	80/80	73/72	393/393	74/73	80/80	77/76	397/397
			294A	25.2/33.5	69.9/80.6	99/111	100/125	90/102	393/393	103/116	110/125	95/106	397/397
			288A+294A	32.7/43.5	90.7/104.7	125/141	125/150	114/129	393/393	129/146	150/150	119/134	397/397
			291A+294A	37.6/50.0	104.3/120.3	142/131	150/150	130/147	393/393	146/135	150/150	134/152	397/397
			294A+294A	50.3/67.0	139.7/161.2	151/171	175/200	171/194	393/393	156/176	175/200	175/199	397/397
		MED	NONE	-	-	72/71	80/80	75/74	417	76/75	100/90	79/78	421
			291A	12.4/16.5	34.4/39.7	72/71	80/80	75/74	417/417	76/75	100/90	79/78	421/421
			294A	25.2/33.5	69.9/80.6	101/113	110/125	93/104	417/417	106/118	110/125	97/108	421/421
			288A+294A	32.7/43.5	90.7/104.7	127/144	150/150	117/132	417/417	132/148	150/150	121/136	421/421
			291A+294A	37.6/50.0	104.3/120.3	144/133	150/150	132/150	417/417	149/138	150/150	137/154	421/421
			294A+294A	50.3/67.0	139.7/161.2	154/174	175/200	173/197	417/417	158/179	175/200	177/201	421/421
	HIGH	NONE	-	-	82	100	86	432	85	100	91	436	
		291A	12.4/16.5	34.4/39.7	82/82	100/100	86/86	432/432	85/85	100/100	91/91	436/436	
		294A	25.2/33.5	69.9/80.6	113/127	125/150	104/116	432/432	118/131	125/150	108/121	436/436	
		288A+294A	32.7/43.5	90.7/104.7	139/157	150/175	128/144	432/432	144/162	150/175	132/148	436/436	
		291A+294A	37.6/50.0	104.3/120.3	156/146	175/175	143/162	432/432	161/151	175/175	148/166	436/436	
		294A+294A	50.3/67.0	139.7/161.2	166/187	175/225	184/209	432/432	170/192	175/225	188/213	436/436	
	460-3-60	STD	NONE	-	-	35	45	36	233	37	45	38	235
			292A	16.5	19.9	35	45	36	233	37	45	38	235
			295A	33.5	40.3	56	60	51	233	58	60	53	235
			289A+295A	43.5	52.3	71	80	65	233	73	80	67	235
			292A+295A	50.0	60.2	65	70	74	233	68	80	76	235
			295A+295A	67.0	80.6	86	90	97	233	88	100	99	235
MED		NONE	-	-	36	45	37	245	38	50	39	247	
		292A	16.5	19.9	36	45	37	245	38	50	39	247	
		295A	33.5	40.3	57	60	52	245	59	60	54	247	
		289A+295A	43.5	52.3	72	80	66	245	74	80	68	247	
		292A+295A	50.0	60.2	67	80	75	245	69	80	77	247	
		295A+295A	67.0	80.6	87	100	98	245	89	100	100	247	
HIGH	NONE	-	-	41	50	43	252	43	50	45	254		
	292A	16.5	19.9	41	50	43	252	43	50	45	254		
	295A	33.5	40.3	64	70	58	252	66	70	60	254		
	289A+295A	43.5	52.3	79	80	72	252	81	90	74	254		
	292A+295A	50.0	60.2	73	80	81	252	76	80	83	254		
	295A+295A	67.0	80.6	94	100	104	252	96	100	106	254		
575-3-60	STD	NONE	-	-	29	35	30	184	32	40	34	188	
		293A	16.5	15.9	29	35	30	184	32	40	34	188	
		296A	33.5	32.2	46	50	42	184	51	60	47	188	
		290A+296A	43.5	41.8	58	60	53	184	63	70	58	188	
		293A+296A	50.0	48.1	54	60	60	184	59	60	65	188	
		296A+296A	67.0	64.4	70	80	79	184	75	80	84	188	
	MED	NONE	-	-	29	35	30	184	32	40	34	188	
		293A	16.5	15.9	29	35	30	184	32	40	34	188	
		296A	33.5	32.2	46	50	42	184	51	60	47	188	
		290A+296A	43.5	41.8	58	60	53	184	63	70	58	188	
		293A+296A	50.0	48.1	54	60	60	184	59	60	65	188	
		296A+296A	67.0	64.4	70	80	79	184	75	80	84	188	
HIGH	NONE	-	-	33	40	35	196	37	45	39	200		
	293A	16.5	15.9	33	40	35	196	37	45	39	200		
	296A	33.5	32.2	52	60	47	196	57	60	52	200		
	290A+296A	43.5	41.8	64	70	58	196	69	70	63	200		
	293A+296A	50.0	48.1	60	70	66	196	65	70	70	200		
	296A+296A	67.0	64.4	76	80	84	196	81	90	89	200		

See: Legend and Notes for Tables 1 – 4 on page 5.

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
MOCP	–	MAX FUSE or HACR Breaker
PE	–	Power exhaust
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

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

Determine maximum deviation from average voltage.

(AB) 227 – 224 = 3 v

(BC) 231 – 227 = 4 v

(AC) 227 – 226 = 1 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.