TEMPSTAR®
Heating and Cooling Products

ISO 9001:2000 QMI REGISTERED

N2AE – 60 Hz

PRODUCT SPECIFICATIONS

FOR EXPORT USE

For Use With R–22 Refrigerant, Dry Charge

UNITS FACTORY SHIPPED WITH NO REFRIGERANT, DRY NITROGEN CHARGED ONLY

60 Hz AIR CONDITIONING CONDENSING UNIT

208/230 Volt, 1–phase, 60 Hz, 3, 4 and 5 tons

208/230 Volt, 3–phase, 60 Hz, 3, 4, and 5 tons

REFRIGERATION CIRCUIT

- High efficiency compressors – durable, proven technology
- Copper tube / aluminum fin coil
- Approved for operation to 52 °C outdoor ambient

BUILT TO LAST

- Triple–step paint process over galvanized steel – one of the toughest finishes in the industry
- Epoxy–Phenolic coated fins for enhanced corrosion protection

EASY TO INSTALL AND SERVICE

- External service valves with gauge ports
- Low profile rectangular design for easy site placement
- Factory charged with R–22 refrigerant

OUTDOOR UNIT MODEL NUMBER IDENTIFICATION GUIDE

Digit Position:	1	2	3	4	5, 6	7	8	9	10	11	12
Example Part Number:	**N**	**2**	**A**	**E**	**36**	**A**	**K**	**R**	**1**	**0**	**0**

N = Tempstar **BRANDING**

2 = R–22 **REFRIGERANT**

A = Air Conditioner
H = Heat Pump **TYPE**

E = Export **TYPE**

36 = 36,000 BTUH = 3 tons
48 = 48,000 BTUH = 4 tons
60 = 60,000 BTUH = 5 tons **NOMINAL CAPACITY**

A = Standard
P = High and Low Pressure Switches Factory Installed **FEATURES**

K = 208/230–1–60
H = 208/230–3–60
W = 230–1–50
Z = 400–3–50 **VOLTAGE**

Dry Charged

Engineering Revision

Extra Digit

Extra Digit

UNIT SPECIFICATIONS				
Base Model		**36–AKR**	**48–AKR**	**60–AKR**
Electrical Data				
Volts–Phase–Hz.		208/230–1–60		
Voltage Utilization Range		197 – 253		
Minimum Circuit Ampacity		21.4	30.0	37.4
Compressor				
Quantity – Type		1 – Reciprocating	1 – Scroll	
Model Number		H29B33	ZR48K5	ZR61K3
Rated Load Amps		16.0	22.9	28.8
Locked Rotor Amps		82	137	148
Fan				
HP		1/4	1/4	1/4
Full Load Amps		1.4	1.4	1.4
Motor Dia. (in / mm)		5.7 / 145		
RPM		1100	1100	1100
Airflow	(CFM)	2500	2500	3400
	(l/s)	1180	1180	1605
Coil				
Face Area	(ft^2)	8.3	12.4	18.5
	(m^2)	0.77	1.15	1.71
Fins per inch – rows		25 – 1	25 – 1	25 – 1
Tube Diameter (in)		3/8		
Refrigerant				
Type		R–22		
Shipping Charge	(lb)	4.60	6.25	7.19
	(kg)	2.09	2.83	3.26
Operating Charge line length		15 ft / 4.6 m		
Connection size, liquid–suction (in)		3/8 – 3/4	3/8 – 7/8	3/8 – 7/8
Piston Identification Number*		73	82	90
Unit				
Sound Level (predicted at 1 m)		82 dBA	82 dBA	82 dBA
Shipping Wt.	(lb)	134	175	238
	(kg)	60.8	79.4	108.0
Height (in / mm)		24 / 608	34 / 862	30 / 760
Width	(in)	22.5	22.5	30
	(mm)	572	572	762
Depth	(in)	22.5	22.5	30
	(mm)	572	572	762

* Piston listed is for any approved, non–capillary tube indoor coil combination. Piston is shipped with outdoor unit and must be installed in an approved indoor coil.

AVAILABLE MATCHES	36–AKR	48–AKR	60–AKR
Standard Ducted Fan Coil 	FSM2X36	FSM2X48	FSM2X60
	FSM2X42	FSM2X60	
	EBP3600E	EBP4800E EBP6000E	EBP6000E

UNIT SPECIFICATIONS				
	Base Model	**36–AHR**	**48–AHR**	**60–AHR**
Electrical Data	Volts–Phase–Hz	208/230–3–60		
	Voltage Utilization Range	187 – 253		
	Minimum Circuit Ampacity	13.9	20.7	24.3
Compressor	Quantity – Type	1–Recip	1– Scroll	
	Copeland Model Number	CR32K6	ZR48K5	ZR61K3
	Rated Load Amps	10.0	15.4	18.3
	Locked Rotor Amps	70	114	137
Fan	HP	1/5	1/4	1/4
	Full Load Amps	1.4	1.4	1.4
	Diameter (in / mm)	5.7 / 145		
	RPM	1100		
	Airflow (CFM / l/sec)	2500 / 1180		3400 / 1605
Coil	Face Area (ft^2 / m^2)	9.1 / 0.84	12.4 / 1.15	18.5 / 1.71
	Fins per inch – rows	25 – 1		
	Tube Diameter (in)	3/8		
Refrigerant	Type	R–22		
	Shipping Charge (lb / kg)	5.0 / 2.27	6.25 / 2.83	7.19 / 3.26
	Operating Charge line length	15 ft / 4.6 m		
	Connection size, liquid – suction (in)	3/8 – 3/4	3/8 – 7/8	3/8 – 7/8
	Piston Identification Number*	70	82	90
Unit	Sound Level (predicted at 1 m)	82 dBA	82 dBA	82 dBA
	Shipping Weight (lb / kg)	140 / 63.5	175 / 79.4	238 / 108.0
	Height (in / mm)	26 / 659	34 / 862	30 / 760
	Width (in / mm)	22.5 / 572	22.5 / 572	30 / 762
	Depth (in / mm)	22.5 / 572	22.5 / 572	30 / 762

* Piston listed is for any approved, non–capillary tube indoor coil combination. Piston is shipped with outdoor unit and must be installed in an approved indoor coil.

AVAILABLE MATCHES		36–AHR	48–AHR	60–AHR
Standard Ducted Fan Coil		FSM2X36	FSM2X48	FSM2X60
		FSM2X42	FSM2X60	
		EBP3600E	EBP4800E EBP6000E	EBP6000E

DESIGN CONSIDERATIONS
Minimum outdoor operating temperature without low ambient control accessory = 55 °F / 12.8 °C.
Maximum outdoor ambient operating temperature for continuous operation = 125 °F / 52 °C.
Consult Long Line Application Guideline when vertical separation between indoor and outdoor unit is greater than 20 ft / 6.1 m.
Factory refrigerant connection sizes good for up to 80 ft / 24.4 m line length.
Consult Long Line Application Guideline for line lengths beyond 80 ft / 24.4 m.
Units designed and manufactured in accordance with Underwriters Laboratories UL1995.
Factory installed orifice expansion device in the indoor unit is suitable for matched indoor/outdoor.
If indoor/outdoor units are mix–matched, change indoor unit orifice to the one supplied with the outdoor unit.

Electrical

MODEL SIZE–SERIES	V–Phase	OPERATING VOLTS*		COMPRESSOR		FAN FLA	MIN WIRE SIZE	MAX WIRE LENGTH (Ft / m)		MCA	MAX FUSE OR CKT BKR AMPS†
		Max	Min	LRA	RLA		60 / 75 °C**	60 °C‡	75°C‡		
36–AKR	208/230–1	253	197	82.0	16.0	1.4	12 / 12	58 / 17.7	55 / 16.8	21.4	30
48–AKR				137.0	22.9	1.4	8 / 10	104 / 31.7	63 / 19.2	30.0	50
60–AKR				148.0	28.8	1.4	8 / 8	82 / 25.0	78 / 23.8	37.4	60
36–AHR	208/230–3	253	187	70.0	10.0	1.4	14 / 14	65 / 19.8	62 / 18.9	13.9	20
48–AHR				114.0	15.4	1.4	14 / 14	52 / 15.8	49 / 14.9	20.7	30
60–AHR				137.0	18.3	1.4	12 / 12	66 / 20.1	63 / 19.2	24.3	35

* Permissible limits of the voltage range at which unit will operate satisfactorily. Operation outside these limits may result in unit failure.

** If wire is applied at ambient greater than 30° C (86° F), consult Table 310–16 of the NEC (ANSI/NFPA 70). The ampacity of nonmetallic–sheathed cable (NM), trade name ROMEX, shall be that of 60° C (140° F) conductors, per the NEC (ANSI/NFPA 70) Article 336–26. If other than uncoated (non–plated), 60 or 75° C (140 or 167° F) insulation, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

† Time–delay fuse.

‡ Length shown is as measured 1 way along wire path between the unit and service panel for a voltage drop not to exceed 2%.

FLA = Full Load Amps

LRA = Locked Rotor Amps

MCA = Minimum Circuit Amps

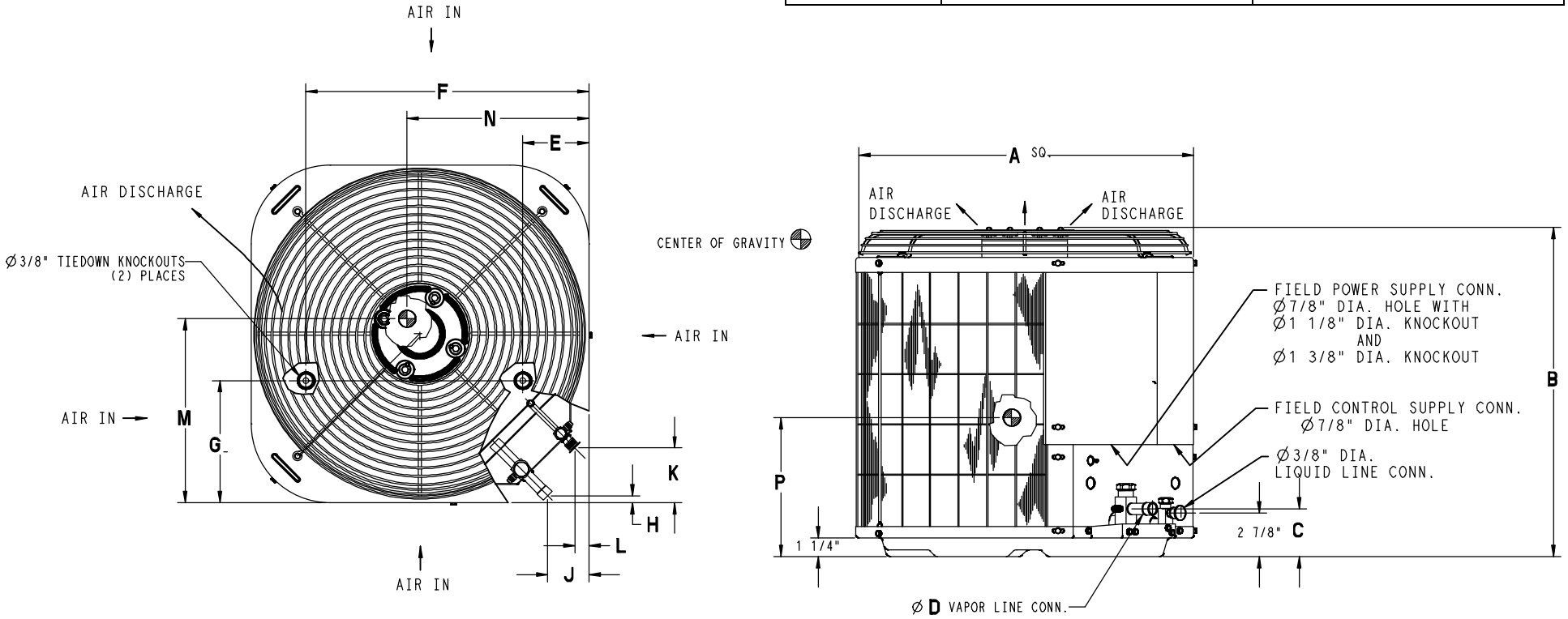
RLA = Rated Load Amps

NOTES:

1. Control circuit is 24VAC on all units and requires external power source.
2. Copper wire must be used from service disconnect to unit.
3. All motors/compressors contain internal overload protection.

Dimensions

MODEL SIZE	MINIMUM MOUNTING PAD DIMENSIONS (mm)	MINIMUM MOUNTING PAD DIMENSIONS (In.)
36, 48	572 x 572	22–1/2 x 22–1/2
60	762 x 762	30 x 30



NOTES:

1. Allow 30 In. (762.0 mm) clearance to service side of unit, 48 In. (1219.2 mm) above unit, 6 In. (152.4 mm) on one side, 12 In. (308.8mm) on remaining side, and 24 In. (609.6 mm) between units for proper airflow.
2. Minimum outdoor operating ambient in cooing mode is 55 °F(13 °C), max 125 °F(52 °C).
3. Center of gravity dimensions M, N, P.

Dimensions – continued

MODEL SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P
	MM (SI Metric)													
36 – AKR	572	608	81	19	94	460	206	11	70	48	6	298	308	279
36 – AHR	572	658	81	19	94	460	206	11	70	48	6	298	308	292
48	572	862	83	22	94	460	206	11	70	48	6	298	308	381
60	762	760	83	22	165	597	254	11	70	48	6	406	368	356

MODEL SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Inches (English)													
36 – AKR	22–1/2	24	3–3/16	3/4	3–11/16	18–1/8	8–1/8	7/16	2–3/4	2–15/16	1/4	11–3/4	12–1/8	11
36 – AHR	22–1/2	26	3–3/16	3/4	3–11/16	18–1/8	8–1/8	7/16	2–3/4	2–15/16	1/4	11–3/4	12–1/8	11–1/2
48	22–1/2	34	3–1/4	7/8	3–11/16	18–1/8	8–1/8	7/16	2–3/4	2–15/16	1/4	11–3/4	12–1/8	15
60	30	30	3–1/4	7/8	6–1/2	23–1/2	10	7/16	2–3/4	2–15/16	1/4	16	14–1/2	14

Combination Ratings‡

N2AE Size	Indoor Unit	Nominal Air Flow		Cooling Capacity @ 95°F (35°C)				Cooling Capacity @ 115°F (46°C)			
		CFM	L/s	Rated BTUH	Capacity kW	Power kW	Efficiency W/W	Rated BTUH	Capacity kW	Power kW	Efficiency W/W
036–AKR/ AHR	EBP3600E	1200	550	33400	9.79	3.84	2.55	27800	8.15	4.28	1.90
	FSM2X36	1200	550	33400	9.79	3.84	2.55	28500	8.35	4.32	1.93
	FSM2X42	1200	550	33800	9.90	3.84	2.58	29200	8.56	4.36	1.96
048–AKR/ AHR	EBP4800E	1600	750	46500	13.62	5.17	2.64	41000	12.01	6.00	2.00
	EBP6000E	1600	750	48000	14.06	5.33	2.64	42000	12.31	6.00	2.05
	FSM2X48	1600	750	46500	13.62	5.17	2.64	42800	12.54	6.40	1.96
	FSM2X60	1600	750	48000	14.06	5.33	2.64	43800	12.83	6.50	1.97
060–AKR/ AHR	EBP6000E	2000	919	57500	16.85	6.39	2.64	48000	14.06	8.00	1.76
	FSM2X60	2000	919	58500	17.14	6.50	2.64	49600	14.53	8.27	1.76

‡ Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on: **Cooling Standard:** 80 ° F (27 ° C) DB, 67 ° F (19 ° C) WB indoor entering air temperature and 95 ° F (35 ° C) DB air entering outdoor unit.

A–Weighted Sound Power (dBA)

MODEL SIZE – SERIES	SOUND RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM, WITHOUT TONE ADJUSTMENT (Hz)						
		125	250	500	1000	2000	4000	8000
36–AKR	82	55.5	66.5	70.5	74.5	73.5	70.0	63.5
36–AHR	82	57.0	64.5	73.0	74.0	72.0	73.0	65.5
48–AKR/AHR	82	61.9	67.5	71.8	77.1	76.5	72.9	66.9
60–AKR/AHR	82	58.0	67.5	72.0	76.0	76.0	73.0	67.0

Detailed Cooling Capacities (S.I.)

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °C																	
		24			29			35			41			46			52		
L/S	EWB °C	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW
36–AKR/AHR Outdoor Section With FS(M,U)2X36 Indoor Section																			
495	14	9.61	9.61	3.03	9.06	9.06	3.25	8.49	8.49	3.49	7.92	7.92	3.75	7.34	7.34	4.02	6.73	6.73	4.30
	17	10.09	9.12	3.07	9.40	8.73	3.31	8.70	8.32	3.52	8.00	7.88	3.76	7.33	7.33	4.02	6.73	6.73	4.29
	19	11.17	7.76	3.17	10.49	7.45	3.42	9.75	7.12	3.69	8.98	6.76	3.96	8.20	6.41	4.21	7.38	6.04	4.46
	22	12.18	6.31	3.26	11.55	6.06	3.54	10.85	5.79	3.82	10.09	5.49	4.12	9.28	5.17	4.43	8.43	4.84	4.74
565	14	10.05	10.05	3.13	9.48	9.48	3.38	8.88	8.88	3.63	8.28	8.28	3.89	7.67	7.67	4.16	7.04	7.04	4.45
	17	10.34	9.74	3.15	9.65	9.33	3.40	8.91	8.91	3.63	8.28	8.28	3.89	7.67	7.67	4.16	7.03	7.03	4.45
	19	11.40	8.21	3.25	10.71	7.92	3.51	9.96	7.60	3.78	9.16	7.24	4.06	8.35	6.86	4.32	7.52	6.48	4.57
	22	12.38	6.55	3.35	11.75	6.32	3.62	11.05	6.06	3.91	10.28	5.77	4.21	9.45	5.46	4.53	8.59	5.13	4.85
635	14	10.40	10.40	3.22	9.83	9.83	3.48	9.21	9.21	3.75	8.58	8.58	4.02	7.95	7.95	4.30	7.29	7.29	4.59
	17	10.55	10.27	3.23	9.86	9.86	3.48	9.21	9.21	3.75	8.58	8.58	4.02	7.94	7.94	4.30	7.29	7.29	4.59
	19	11.56	8.62	3.33	10.88	8.35	3.59	10.12	8.04	3.86	9.30	7.68	4.15	8.47	7.29	4.42	7.62	6.88	4.68
	22	12.52	6.76	3.42	11.90	6.55	3.70	11.19	6.30	3.99	10.42	6.04	4.30	9.58	5.73	4.61	8.70	5.40	4.94

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity kW (Total)	Total System kW
	EBP3600(B,E)	.99	.99
	FS(M,U)2X42	1.02	1.02

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °C																	
		24			29			35			41			46			52		
L/S	EWB °C	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW
48–AKR/AHR Outdoor Section With FS(M,U)2X48 Indoor Section																			
660	14	12.76	12.76	3.94	12.30	12.30	4.44	11.82	11.82	5.00	11.28	11.28	5.62	10.69	10.69	6.29	10.05	10.05	7.03
	17	13.61	12.00	4.01	12.98	11.69	4.52	12.35	11.37	5.07	11.65	11.01	5.67	10.88	10.59	6.33	10.07	10.07	7.04
	19	14.99	10.21	4.10	14.41	9.99	4.63	13.78	9.72	5.22	13.07	9.41	5.88	12.28	9.08	6.54	11.41	8.73	7.27
	22	16.27	8.35	4.19	15.79	8.18	4.73	15.20	7.96	5.33	14.53	7.70	6.01	13.79	7.42	6.75	12.93	7.08	7.56
755	14	13.32	13.32	4.08	12.84	12.84	4.59	12.34	12.34	5.16	11.78	11.78	5.78	11.17	11.17	6.47	10.50	10.50	7.21
	17	13.92	12.78	4.11	13.28	12.46	4.64	12.64	12.12	5.20	11.93	11.71	5.80	11.18	11.18	6.47	10.49	10.49	7.21
	19	15.29	10.77	4.20	14.72	10.57	4.73	14.06	10.31	5.33	13.35	10.02	6.00	12.54	9.69	6.69	11.65	9.33	7.42
	22	16.54	8.64	4.30	16.07	8.51	4.84	15.47	8.30	5.45	14.79	8.06	6.12	14.04	7.78	6.87	13.19	7.47	7.68
850	14	13.80	13.80	4.18	13.30	13.30	4.72	12.78	12.78	5.31	12.20	12.20	5.94	11.57	11.57	6.63	10.88	10.88	7.38
	17	14.17	13.47	4.20	13.54	13.14	4.74	12.85	12.85	5.32	12.20	12.20	5.94	11.57	11.57	6.63	10.88	10.88	7.38
	19	15.51	11.26	4.30	14.95	11.11	4.83	14.28	10.87	5.43	13.56	10.59	6.10	12.74	10.26	6.83	11.82	9.89	7.55
	22	16.73	8.91	4.39	16.26	8.78	4.94	15.68	8.62	5.55	14.99	8.39	6.23	14.23	8.12	6.98	13.37	7.82	7.80

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity kW (Total)	Total System kW
	EBP4800(B,E)	.98	.98
	EBP6000(B,E)	1.01	1.01
	FS(M,U)2X60	1.02	.97

Detailed Cooling Capacities (S.I.) – continued

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °C																	
		24			29			35			41			46			52		
L/S	EWB °C	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW	Capacity kW Total	Capacity kW Sens	Total Sys. KW
60–AKR/AHR Outdoor Section With FS(M,U)2X60 Indoor Section																			
825	14	17.08	17.08	4.93	15.93	15.93	5.50	14.79	14.79	6.15	13.63	13.63	6.85	12.44	12.44	7.60	11.24	11.24	8.41
	17	18.14	16.09	5.03	16.75	15.18	5.61	15.38	14.27	6.24	13.99	13.34	6.91	12.59	12.37	7.64	11.24	11.24	8.41
	19	20.03	13.72	5.17	18.56	12.95	5.78	17.10	12.17	6.48	15.61	11.37	7.24	14.10	10.57	7.99	12.58	9.77	8.78
	22	21.81	11.22	5.30	20.37	10.59	5.95	18.85	9.92	6.65	17.32	9.25	7.44	15.75	8.56	8.30	14.14	7.87	9.21
945	14	17.81	17.81	5.10	16.61	16.61	5.70	15.41	15.41	6.35	14.19	14.19	7.06	12.95	12.95	7.83	11.70	11.70	8.66
	17	18.55	17.13	5.15	17.11	16.16	5.76	15.71	15.18	6.40	14.26	14.26	7.08	12.95	12.95	7.83	11.70	11.70	8.66
	19	20.43	14.46	5.29	18.94	13.70	5.91	17.43	12.90	6.61	15.92	12.09	7.38	14.36	11.26	8.17	12.79	10.43	8.97
	22	22.17	11.63	5.43	20.71	11.01	6.08	19.17	10.35	6.79	17.61	9.67	7.58	16.01	8.98	8.44	14.37	8.27	9.37
1060	14	18.44	18.44	5.24	17.19	17.19	5.87	15.94	15.94	6.55	14.67	14.67	7.27	13.39	13.39	8.05	12.09	12.09	8.89
	17	18.88	18.07	5.27	17.43	17.04	5.88	15.99	15.99	6.56	14.67	14.67	7.27	13.38	13.38	8.05	12.09	12.09	8.89
	19	20.73	15.16	5.41	19.23	14.41	6.04	17.69	13.61	6.74	16.14	12.78	7.51	14.55	11.93	8.34	12.94	11.06	9.14
	22	22.44	12.01	5.55	20.97	11.40	6.20	19.42	10.76	6.91	17.83	10.07	7.71	16.21	9.38	8.58	14.54	8.67	9.51

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity kW (Total)	Total System kW
	EBP6000(B,E)	.98	.98

Detailed Cooling Capacities (English)

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
CFM	°F	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW
36–AKR/AHR Outdoor Section With FS(M,U)2X36 Indoor Section																			
1050	57	32.80	32.80	3.03	30.91	30.91	3.25	28.99	28.99	3.49	27.05	27.05	3.75	25.04	25.04	4.02	22.98	22.98	4.30
	62	34.44	31.12	3.07	32.09	29.80	3.31	29.68	28.40	3.52	27.29	26.90	3.76	25.03	25.03	4.02	22.97	22.97	4.29
	67	38.12	26.48	3.17	35.81	25.44	3.42	33.29	24.31	3.69	30.64	23.08	3.96	27.97	21.86	4.21	25.20	20.61	4.46
	72	41.57	21.53	3.26	39.43	20.69	3.54	37.04	19.75	3.82	34.43	18.74	4.12	31.68	17.65	4.43	28.78	16.51	4.74
1200	57	34.29	34.29	3.13	32.35	32.35	3.38	30.32	30.32	3.63	28.27	28.27	3.89	26.18	26.18	4.16	24.01	24.01	4.45
	62	35.29	33.23	3.15	32.92	31.85	3.40	30.43	30.43	3.63	28.26	28.26	3.89	26.17	26.17	4.16	24.01	24.01	4.45
	67	38.89	28.01	3.25	36.56	27.02	3.51	34.00	25.93	3.78	31.26	24.69	4.06	28.50	23.42	4.32	25.66	22.11	4.57
	72	42.25	22.35	3.35	40.11	21.57	3.62	37.70	20.67	3.91	35.08	19.70	4.21	32.26	18.63	4.53	29.32	17.51	4.85
1350	57	35.50	35.50	3.22	33.55	33.55	3.48	31.44	31.44	3.75	29.30	29.30	4.02	27.12	27.12	4.30	24.88	24.88	4.59
	62	36.00	35.06	3.23	33.65	33.65	3.48	31.43	31.43	3.75	29.29	29.29	4.02	27.11	27.11	4.30	24.87	24.87	4.59
	67	39.46	29.42	3.33	37.12	28.50	3.59	34.53	27.46	3.86	31.73	26.21	4.15	28.90	24.87	4.42	26.01	23.49	4.68
	72	42.73	23.08	3.42	40.60	22.37	3.70	38.18	21.52	3.99	35.55	20.60	4.30	32.68	19.54	4.61	29.69	18.43	4.94

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity MBtuh (Total)	Total System kW
	EBP3600(B,E)	.99	.99
	FS(M,U)2X42	1.02	1.02

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
CFM	°F	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW	Total	Sens	KW
48–AKR/AHR Outdoor Section With FS(M,U)2X48 Indoor Section																			
1400	57	43.54	43.54	3.94	41.99	41.99	4.44	40.34	40.34	5.00	38.51	38.51	5.62	36.50	36.50	6.29	34.30	34.30	7.03
	62	46.46	40.96	4.01	44.31	39.88	4.52	42.16	38.80	5.07	39.76	37.57	5.67	37.14	36.15	6.33	34.36	34.36	7.04
	67	51.16	34.86	4.10	49.19	34.08	4.63	47.02	33.17	5.22	44.60	32.13	5.88	41.91	31.01	6.54	38.95	29.79	7.27
	72	55.54	28.49	4.19	53.91	27.92	4.73	51.86	27.15	5.33	49.58	26.28	6.01	47.05	25.31	6.75	44.14	24.17	7.56
1600	57	45.46	45.46	4.08	43.81	43.81	4.59	42.10	42.10	5.16	40.20	40.20	5.78	38.11	38.11	6.47	35.83	35.83	7.21
	62	47.52	43.61	4.11	45.33	42.52	4.64	43.14	41.35	5.20	40.72	39.96	5.80	38.15	38.15	6.47	35.82	35.82	7.21
	67	52.20	36.75	4.20	50.24	36.07	4.73	48.00	35.20	5.33	45.57	34.21	6.00	42.80	33.07	6.69	39.75	31.84	7.42
	72	56.44	29.50	4.30	54.86	29.03	4.84	52.81	28.34	5.45	50.49	27.50	6.12	47.93	26.57	6.87	45.03	25.50	7.68
1800	57	47.09	47.09	4.18	45.38	45.38	4.72	43.61	43.61	5.31	41.64	41.64	5.94	39.49	39.49	6.63	37.15	37.15	7.38
	62	48.35	45.97	4.20	46.20	44.84	4.74	43.86	43.86	5.32	41.64	41.64	5.94	39.48	39.48	6.63	37.13	37.13	7.38
	67	52.94	38.43	4.30	51.01	37.91	4.83	48.74	37.10	5.43	46.27	36.15	6.10	43.47	35.03	6.83	40.34	33.77	7.55
	72	57.09	30.40	4.39	55.49	29.97	4.94	53.51	29.41	5.55	51.17	28.63	6.23	48.57	27.73	6.98	45.64	26.70	7.80

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity MBtuh (Total)	Total System kW
	EBP4800(B,E)	.98	.98
	EBP6000(B,E)	1.01	1.01
	FS(M,U)2X60	1.02	.97

Detailed Cooling Capacities (English) – continued

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
CFM	EWB °F	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW	Capacity MBtuh Total	Capacity MBtuh Sens	Total Sys. KW
60–AKR/AHR Outdoor Section With FS(M,U)2X60 Indoor Section																			
1750	57	58.31	58.31	4.93	54.38	54.38	5.50	50.48	50.48	6.15	46.51	46.51	6.85	42.47	42.47	7.60	38.38	38.38	8.41
	62	61.91	54.91	5.03	57.16	51.80	5.61	52.50	48.71	6.24	47.76	45.54	6.91	42.98	42.22	7.64	38.37	38.37	8.41
	67	68.37	46.81	5.17	63.36	44.19	5.78	58.37	41.52	6.48	53.28	38.79	7.24	48.14	36.08	7.99	42.92	33.36	8.78
	72	74.45	38.31	5.30	69.52	36.14	5.95	64.33	33.87	6.65	59.11	31.57	7.44	53.76	29.23	8.30	48.27	26.84	9.21
2000	57	60.80	60.80	5.10	56.67	56.67	5.70	52.59	52.59	6.35	48.42	48.42	7.06	44.21	44.21	7.83	39.94	39.94	8.66
	62	63.30	58.47	5.15	58.40	55.16	5.76	53.62	51.81	6.40	48.68	48.68	7.08	44.19	44.19	7.83	39.92	39.92	8.66
	67	69.72	49.36	5.29	64.64	46.75	5.91	59.50	44.03	6.61	54.32	41.27	7.38	49.00	38.43	8.17	43.64	35.61	8.97
	72	75.67	39.71	5.43	70.68	37.57	6.08	65.43	35.34	6.79	60.10	33.02	7.58	54.65	30.66	8.44	49.05	28.24	9.37
2250	57	62.95	62.95	5.24	58.67	58.67	5.87	54.39	54.39	6.55	50.07	50.07	7.27	45.70	45.70	8.05	41.28	41.28	8.89
	62	64.44	61.69	5.27	59.48	58.14	5.88	54.57	54.57	6.56	50.05	50.05	7.27	45.68	45.68	8.05	41.26	41.26	8.89
	67	70.76	51.75	5.41	65.62	49.20	6.04	60.37	46.44	6.74	55.10	43.63	7.51	49.67	40.72	8.34	44.16	37.74	9.14
	72	76.59	40.99	5.55	71.56	38.90	6.20	66.27	36.72	6.91	60.84	34.38	7.71	55.32	32.01	8.58	49.64	29.58	9.51

Multipliers for determining performance when this outdoor section is used with different indoor sections:	Indoor Section	Capacity MBtuh (Total)	Total System kW
	EBP6000(B,E)	.98	.98

Condenser Only Ratings (S.I.)

36–AKR/AHR									
–1	TCG	9.40	8.70	7.90	7.10	6.30	5.40	4.50	3.50
	SDT	29.00	33.00	38.00	42.00	47.00	51.00	56.00	60.00
	KW	2.22	2.35	2.47	2.59	2.70	2.79	2.84	2.87
2	TCG	10.60	9.80	9.00	8.20	7.30	6.40	5.50	4.50
	SDT	30.00	35.00	39.00	44.00	48.00	53.00	57.00	62.00
	KW	2.33	2.47	2.60	2.73	2.86	2.97	3.05	3.11
4	TCG	11.80	11.00	10.10	9.30	8.40	7.50	6.50	5.50
	SDT	32.00	36.00	41.00	45.00	50.00	55.00	59.00	63.00
	KW	2.43	2.59	2.76	2.88	3.02	3.15	3.26	3.34
7	TCG	13.10	12.20	11.30	10.50	9.50	8.60	7.60	6.60
	SDT	34.00	38.00	43.00	47.00	52.00	56.00	61.00	65.00
	KW	2.53	2.70	2.88	3.06	3.21	3.35	3.48	3.58
10	TCG	14.50	13.60	12.70	11.70	10.70	9.70	8.70	7.70
	SDT	36.00	40.00	45.00	49.00	53.00	58.00	62.00	67.00
	KW	2.64	2.82	3.00	3.20	3.39	3.58	3.73	3.85
13	TCG	16.20	15.10	14.10	13.10	12.10	11.00	9.90	8.80
	SDT	37.00	42.00	47.00	51.00	55.00	60.00	64.00	69.00
	KW	2.75	2.94	3.14	3.34	3.55	3.75	3.96	4.16
48–AKR/AHR									
–1	TCG	13.80	13.00	12.20	11.40	10.50	9.50	8.40	7.20
	SDT	27.00	32.00	37.00	42.00	47.00	52.00	57.00	62.00
	KW	2.95	3.23	3.54	3.88	4.24	4.61	4.98	5.34
2	TCG	15.40	14.50	13.60	12.70	11.80	10.80	9.70	8.50
	SDT	28.00	33.00	38.00	43.00	48.00	53.00	58.00	63.00
	KW	3.05	3.36	3.67	4.01	4.39	4.78	5.18	5.57
4	TCG	16.90	16.00	15.10	14.20	13.20	12.20	11.10	9.80
	SDT	29.00	34.00	40.00	45.00	50.00	55.00	59.00	64.00
	KW	3.16	3.49	3.84	4.18	4.57	4.97	5.39	5.81
7	TCG	18.70	17.80	16.80	15.80	14.80	13.70	12.60	11.30
	SDT	30.00	36.00	41.00	46.00	51.00	56.00	61.00	65.00
	KW	3.25	3.59	3.94	4.33	4.76	5.19	5.61	6.05
10	TCG	20.70	19.60	18.60	17.50	16.40	15.40	14.20	13.00
	SDT	32.00	37.00	42.00	47.00	52.00	57.00	61.00	66.00
	KW	3.35	3.68	4.05	4.45	4.88	5.35	5.85	6.34
13	TCG	23.10	21.80	20.70	19.50	18.30	17.20	16.00	14.70
	SDT	33.00	38.00	43.00	48.00	53.00	58.00	63.00	67.00
	KW	3.44	3.79	4.16	4.56	5.01	5.48	5.99	6.53

SST = Saturated Temperature Entering Compressor (°C)

TCG = Gross Cooling Capacity (kW)

kW = Total Power (kW)

SDT = Saturated Temperature Leaving Compressor (°C)

Condenser Only Ratings (S.I.)

60–AKR/AHR									
–1	TCG	18.20	17.20	16.00	14.90	13.70	12.40	11.00	9.40
	SDT	31.00	36.00	41.00	46.00	51.00	56.00	60.00	65.00
	KW	3.54	3.92	4.34	4.80	5.29	5.79	6.27	6.74
2	TCG	20.10	19.00	17.80	16.70	15.40	14.10	12.70	11.10
	SDT	32.00	37.00	42.00	47.00	52.00	57.00	62.00	67.00
	KW	3.70	4.09	4.51	4.98	5.50	6.02	6.54	7.06
4	TCG	22.10	21.00	19.80	18.50	17.20	15.90	14.40	12.80
	SDT	34.00	39.00	44.00	49.00	54.00	59.00	64.00	68.00
	KW	3.82	4.25	4.73	5.21	5.75	6.30	6.85	7.40
7	TCG	24.30	23.10	21.80	20.50	19.10	17.70	16.20	14.50
	SDT	36.00	41.00	46.00	50.00	56.00	61.00	65.00	70.00
	KW	3.96	4.40	4.89	5.42	6.01	6.64	7.23	7.81
10	TCG	26.70	25.40	24.00	22.60	21.10	19.70	18.10	16.40
	SDT	38.00	43.00	47.00	52.00	57.00	62.00	67.00	72.00
	KW	4.12	4.57	5.07	5.63	6.22	6.87	7.56	8.27
13	TCG	29.40	27.90	26.50	25.00	23.40	21.80	20.20	18.40
	SDT	40.00	45.00	50.00	54.00	59.00	64.00	69.00	74.00
	KW	4.31	4.76	5.28	5.85	6.45	7.13	7.84	8.58

SST = Saturated Temperature Entering Compressor (°C)

TCG = Gross Cooling Capacity (kW)

kW = Total Power (kW)

SDT = Saturated Temperature Leaving Compressor (°C)

Condenser Only Ratings (English)

36–AKR/AHR									
30	TCG	32.20	29.70	27.10	24.30	21.50	18.50	15.30	11.90
	SDT	83.60	91.90	100.10	108.30	116.60	124.70	132.50	140.20
	KW	2.22	2.35	2.47	2.59	2.70	2.79	2.84	2.87
35	TCG	36.00	33.50	30.80	27.90	24.90	21.90	18.70	15.20
	SDT	86.40	94.60	102.90	111.00	119.20	127.40	135.30	143.00
	KW	2.33	2.47	2.60	2.73	2.86	2.97	3.05	3.11
40	TCG	40.20	37.40	34.60	31.60	28.60	25.50	22.20	18.70
	SDT	89.30	97.50	105.80	113.90	122.00	130.20	138.20	146.00
	KW	2.43	2.59	2.76	2.88	3.02	3.15	3.26	3.34
45	TCG	44.70	41.70	38.70	35.70	32.40	29.20	25.90	22.40
	SDT	92.60	100.70	108.80	117.10	125.10	133.20	141.20	149.00
	KW	2.53	2.70	2.88	3.06	3.21	3.35	3.48	3.58
50	TCG	49.60	46.40	43.20	40.00	36.60	33.10	29.80	26.20
	SDT	96.00	104.10	112.10	120.30	128.30	136.40	144.40	152.30
	KW	2.64	2.82	3.00	3.20	3.39	3.58	3.73	3.85
55	TCG	55.30	51.50	48.10	44.60	41.10	37.40	33.80	30.10
	SDT	99.00	107.50	115.70	123.80	131.80	139.70	147.80	155.70
	KW	2.75	2.94	3.14	3.34	3.55	3.75	3.96	4.16
48–AKR/AHR									
30	TCG	47.10	44.50	41.70	38.80	35.80	32.40	28.60	24.40
	SDT	80.90	89.70	98.60	107.60	116.60	125.50	134.30	143.00
	KW	2.95	3.23	3.54	3.88	4.24	4.61	4.98	5.34
35	TCG	52.70	49.40	46.50	43.40	40.40	36.90	33.10	28.90
	SDT	82.30	92.00	100.90	109.80	118.80	127.80	136.60	145.20
	KW	3.05	3.36	3.67	4.01	4.39	4.78	5.18	5.57
40	TCG	57.70	54.60	51.50	48.30	45.10	41.70	37.80	33.60
	SDT	84.90	94.10	103.30	112.10	121.20	130.10	139.00	147.70
	KW	3.16	3.49	3.84	4.18	4.57	4.97	5.39	5.81
45	TCG	63.80	60.80	57.30	53.80	50.40	46.90	43.00	38.70
	SDT	86.90	96.00	105.00	114.00	123.00	132.00	141.00	149.80
	KW	3.25	3.59	3.94	4.33	4.76	5.19	5.61	6.05
50	TCG	70.80	67.00	63.50	59.80	56.10	52.50	48.60	44.30
	SDT	88.80	98.00	107.00	116.00	124.90	133.80	142.70	151.50
	KW	3.35	3.68	4.05	4.45	4.88	5.35	5.85	6.34
55	TCG	78.70	74.40	70.50	66.70	62.50	58.70	54.70	50.30
	SDT	90.80	100.00	109.10	118.00	126.90	135.80	144.60	153.30
	KW	3.44	3.79	4.16	4.56	5.01	5.48	5.99	6.53

SST = Saturated Temperature Entering Compressor (°F)

TCG = Gross Cooling Capacity (x1000 BTU/hr)

kW = Total Power (kW)

SDT = Saturated Temperature Leaving Compressor (°F)

Condenser Only Ratings (English)

60–AKR/AHR									
30	TCG	62.10	58.50	54.70	50.90	46.90	42.40	37.50	32.20
	SDT	87.20	96.10	105.10	114.10	123.20	132.10	140.80	149.30
	KW	3.54	3.92	4.34	4.80	5.29	5.79	6.27	6.74
35	TCG	68.50	64.80	60.90	56.80	52.70	48.20	43.20	37.80
	SDT	90.10	98.90	107.80	116.80	125.90	134.90	143.60	152.20
	KW	3.70	4.09	4.51	4.98	5.50	6.02	6.54	7.06
40	TCG	75.50	71.50	67.40	63.10	58.80	54.20	49.10	43.60
	SDT	93.00	101.90	110.90	119.70	128.90	137.90	146.60	155.20
	KW	3.82	4.25	4.73	5.21	5.75	6.30	6.85	7.40
45	TCG	83.00	78.80	74.50	69.80	65.20	60.40	55.30	49.70
	SDT	96.30	105.10	114.00	122.90	131.90	141.00	149.80	158.40
	KW	3.96	4.40	4.89	5.42	6.01	6.64	7.23	7.81
50	TCG	91.30	86.70	82.00	77.30	72.20	67.20	61.70	55.90
	SDT	99.90	108.60	117.40	126.30	135.10	144.20	153.10	161.90
	KW	4.12	4.57	5.07	5.63	6.22	6.87	7.56	8.27
55	TCG	100.20	95.30	90.30	85.20	79.70	74.50	68.80	62.80
	SDT	103.90	112.40	121.20	130.00	138.70	147.70	156.60	165.40
	KW	4.31	4.76	5.28	5.85	6.45	7.13	7.84	8.58

SST = Saturated Temperature Entering Compressor (°F)

TCG = Gross Cooling Capacity (x1000 BTU/hr)

kW = Total Power (kW)

SDT = Saturated Temperature Leaving Compressor (°F)

Accessories

PART NO.	DESCRIPTION
KAATD0101TDR	Time−Delay Relay − All Sizes
KSALA0401AAA	MotorMaster®−Low−Ambient Controller − Sizes 36−60
KSALA0201R22	Low Ambient Pressure Switch− All Sizes
HC40GE232 (RCD)	Ball Bearing Fan Motor − Sizes 36−60
KAAFT0101AAA	Evaporator Freeze Thermostat − All Sizes
KAAWS0101AAA	Winter Start Control − All Sizes
KSACG0704CSM	Inlet Grille Kit − Size 36 (AKR)
KSACG0804CSM	Inlet Grille Kit − Size 36 (AHR)
KSACG1204CSM	Inlet Grille Kit − Size 48
KSACG2004CMD	Inlet Grille Kit − Size 60
KSACY0101AAA	Cycle Protector − All Sizes
KSAHS1901AAA	Start Assist − Capacitor and Relay − Size 36
KSAHS1501AAA	Start Assist − Capacitor and Relay − Size 48
KSAHS1601AAA	Start Assist − Capacitor and Relay − Size 60
KAACS0201PTC	Start Assist − PTC − All 1−Phase
KAACH1001AAA	Crankcase Heater − Sizes 36
KAACH1201AAA	Crankcase Heater − Sizes 48, 60
KSASH2001BRL	Sound Hood − Size 36 (AKR)
KSASH2001CYL	Sound Hood − Sizes 48, 60
KAATX0501RPB	Thermostatic Expansion Valve (RPB) − Sizes 36
KAATX0601RPB	Thermostatic Expansion Valve (RPB) − Size 48
KAATX0701RPB	Thermostatic Expansion Valve (RPB) − Size 60
KSATX0601HSO	Thermostatic Expansion Valve (Hard Shutoff) − Sizes 36
KSATX0701HSO	Thermostatic Expansion Valve (Hard Shutoff) − Size 48
KSATX1001HSO	Thermostatic Expansion Valve (Hard Shutoff) − Size 60
KAALP0101LPS	Low−Pressure Switch − All Sizes
KSAHI0101HPS	High−Pressure Switch − All Sizes
P502−8083S (RCD)	Filter Drier − Sizes 36
P502−8163S (RCD)	Filter Drier − Sizes 48−60
KAALS0101LLS*	Liquid−Line Solenoid Valve − All Sizes
KAACF1001MED	Coastal Filter − Sizes 36−48
KAACF1101LRG	Coastal Filter − Size 60

* Start assist capacitor and relay required when using liquid solenoid valve or hard shutoff TXV (except 48 & 60 Series AKA single phase, and all 3−phase units). Do not use hard shutoff TXV with liquid solenoid valve.

Accessory Usage Guideline

ACCESSORY	REQUIRED FOR LOW−AMBIENT APPLICATION* (Below 55 °F / 12.8 °C)	REQUIRED FOR LONG−LINE APPLICATIONS* (Over 80 Ft / 24.4 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 Mi / 3.2 km)
Crankcase Heater	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No
Winter Start Control	Yes†	No	No
Accumulator	No	No	No
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
MotorMaster□ Low Ambient Controller or Low−Ambient Pressure Switch	Yes	No	No
Wind Baffle	See low−ambient Instructions	No	No
Coastal Filter	No	No	Yes
Support Feet	Recommended	No	Recommended
Liquid−Line Solenoid Valve or Hard Shutoff TXV	No	See Long−Line Application Guideline	No
Ball Bearing Fan Motor	Yes‡	No	No

* For tubing line sets longer than 80 ft (24.4 m) or more than 20 ft (6.1 m) vertical differential, refer to Long Line Application Guideline.

† Only when low−pressure switch is used.

‡ Required for Low−Ambient Controller (full modulation feature) and MotorMaster□ Control only.

Accessory Description and Usage (listed alphabetically)

1. Ball−Bearing Fan Motor

A fan motor with ball bearings, which permits speed reduction while maintaining bearing lubrication.

SUGGESTED USE: Required on all units when Motor Master□ Low−Ambient Controller is installed.

2. Coastal Filter

A mesh screen inserted under the top cover and inside the base pan to protect the condenser coil from salt damage without restricting airflow.

SUGGESTED USE: In geographic areas where salt damage could occur.

3. Compressor Start Assist − Capacitor/Relay Type

Start capacitor and start relay gives “hard” boost to compressor motor at each start−up.

SUGGESTED USE: Required for reciprocating compressors in the following applications:
- Long line
- Low ambient
- Hard shut off expansion valve on indoor coil
- Liquid line solenoid on indoor coil

Required for scroll compressors in the following applications:
- Long line
- Low ambient

All compressors in areas with a history of low voltage problems.

4. Compressor Start Assist − PTC Type

Solid−state electrical device which gives a “soft” boost to the compressor at each start−up.

SUGGESTED USE: Installations with marginal power supply.
Replacement installations with rapid pressure balance (RPB) expansion valve on indoor coil.

(continued)

Accessory Description and Usage (continued)

5. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes chance of refrigerant slugging. May or may not include a thermostat control.

SUGGESTED USE: Required in low ambient applications.
Required in long line applications.
All commercial applications.

6. Cycle Protector

Solid−state timing device which prevents compressor rapid recycling. Control provides an approximate 5−minute delay after power to the compressor has been interrupted for any reason, including normal room thermostat cycling.

SUGGESTED USE: Installations in areas where power interruptions are frequent.
Where user is likely to “play” with the room thermostat.
All commercial installations.
Installations where interconnecting tube length exceeds 50 ft (15.24 m).
High−rise applications.

7. Evaporator Freeze Thermostat

A SPST temperature actuated switch which stops unit operation when evaporator reaches freeze−up conditions.

SUGGESTED USE: All units where winter start control has been added.
Required when low ambient kit has been added.

8. Filter Drier

A device for removing contaminants from refrigerant circulating in an air conditioning system: single−direction flow.

SUGGESTED USE: All field−connected split−system air conditioners.

9. High−Pressure Switch

Auto reset SPST switch activated by refrigerant pressure on high side of refrigerant circuit. Cycles compressor off if refrigerant pressure rises to 426 ± 10 psig and resets at 320 ± 20 psig. Provides protection against compressor damage due to loss of outdoor airflow.

SUGGESTED USE: Installations exposed to ”very dirty” outdoor air. Suggested in installations where condenser inlet air temperature exceeds 125 °F. (51.7 °C)

10. Liquid−Line Solenoid Valve (LSV)

This device serves two purposes. It is an electrically operated shutoff valve which stops and starts refrigerant liquid flow in response to compressor operation. It maintains a column of refrigerant liquid ready for action at next compressor operation cycle. It also provides system protection against off−cycle refrigerant migration.

NOTE: When LLS is used with reciprocating compressors, Compressor Start Assist − Capacitor & Relay is required.

SUGGESTED USE: Required in air conditioner long line applications with a piston indoor metering device to prevent off cycle refrigerant migration. A hard shut off TXV can be used instead of LLS in single flow air conditioner applications. See Long Line Application Guideline.

11. Low−Ambient Pressure Switch

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits (approximately 100 psig to 225 psig). The control will maintain working head pressure at low−ambient temperatures down to 0 °F(−17.8 °C) when properly installed.

SUGGESTED USE: A Low−Ambient Pressure Switch or Motor Master□−Low−Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55 °F (12.8 °C).

12. MotorMaster□ Low−Ambient Controller

A fan speed control device activated by a temperature sensor. Designed to control condenser fan motor speed in response to the saturated condensing temperature during operation in cooling mode only. For outdoor temperatures down to −20 °F (−28.9 °C), it maintains condensing temperature at 100 °F ± 10 °F (37.8 °C ± 12.2 °C).

SUGGESTED USE: Cooling operation at outdoor temperatures below 55 °F (12.8 °C).
All commercial installations.

13. Sound Hood

Wraparound sound reducing cover for the compressor. Reduces the sound level by about 2 dBA.

SUGGESTED USE: When unit is installed closer than 15 ft (4.6 m) to quiet areas − bedrooms, etc.
When unit is installed between two houses less than 10 ft (3 m) apart.

(continued)

Accessory Description and Usage (continued)

14. Support Feet

Four stick−on plastic feet which raise the unit 4 in. (10.16 cm) above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base; minimizes corrosion.

SUGGESTED USE: Coastal installations.
Windy areas or where debris is normally circulating.
Rooftop installations.

15. Thermostatic Expansion Valve (TXV)

A modulating flow−control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator. Kit includes valve, adapter tubes, and external equalizer tube. Both hard shutoff and RPB valves are available.

NOTE: When using a hard shut off TXV with single phase reciprocating compressors, a Compressor Start Assist − Capacitor and Relay is required.

SUGGESTED USE: Required to achieve ARI ratings in certain equipment combinations. Refer to combination ratings.
Hard shut off TXV or LLS required in air conditioner long line applications.
Required for use on all zoning systems.

16. Time−Delay Relay

A SPST delay relay which briefly continues operation of the indoor blower motor to provide additional cooling after the compressor cycles off.

SUGGESTED USE: For improved efficiency ratings for certain combinations of indoor and outdoor units. Refer to ARI Unitary Directory.

17. Winter Start Control

A SPST delay relay which bypasses the low−pressure switch for approximately 3 minutes to permit start−up for cooling operation under low−load conditions.

SUGGESTED USE: All air conditioners where low−ambient controller has been added.