

*MULTI-POSITION, VARIABLE-SPEED,
 ECM-BASED AIR HANDLER WITH
 INTERNAL EEV, COMFORTBRIDGE™
 AND INVERTER COMPATIBLE
 2 TO 5 TONS*



Contents

Nomenclature 2
 Product Specifications 3
 Dimensions 4
 Airflow Data 5
 Heat Kit Data 6
 Wiring Diagram 8
 Accessories 9

Product Features

- Electronic Expansion Valve (EEV) for cooling and heat pump applications.
- Variable-speed ECM blower motor
- Suitable for operation with inverter-driven products
- Integrated communicating ComfortBridge™ Technology
- Commissioning and diagnostics via on board Bluetooth with the CoolCloud™ phone and tablet application
- Provides constant CFM over a wide range of static pressure conditions independent of duct system
- CFM indicator
- Provides adjustable low CFM for efficient fan-only operation
- All-aluminum evaporator coil
- Fault recall of six most recent faults
- Improved humidity and comfort control
- 3 kW – 25 kW electric heater kits
- AHRI certified; ETL listed
- Cabinet air leakage less than 2.0% at 1.0 inch H₂O when tested in accordance with ASHRAE standard 193
- Cabinet air leakage less than 1.4% at 0.5 inch H₂O when tested in accordance with ASHRAE standard 193
- Horizontal or vertical configuration capabilities
- 21" depth for easier attic access
- DecaBDE-free thermoplastic drain pan with secondary drain connections
- Screw-less sides and back helps to reduce condensation when installed in humid locations
- Foil-faced insulation covers the internal casing to reduce cabinet condensation
- Galvanized, leather grain-embossed finish
- Glue-less cabinet insulation retention
- Tool-less filter access



* Complete warranty details available from your local dealer or at www.amana-hac.com. To receive the 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec.

	A	V	P	E	C	25	B	1	4	AA		
	1	2	3	4	5	6,7	8	9	10	11,12		
BRAND											ENGINEERING*	
A Single-Piece Air Handler											Major/Minor Revisions *Not used for inventory management	
UNIT APPLICATION											REFRIGERANT CHARGE	
R Multi Position PSC Motor S Multi Position EEM Motor V Multi Position Variable-Speed Motor- Communicating											4 = R-410A	
CABINET FINISH											ELECTRICAL	
U Unpainted P Painted											1 208/230V, 1 Phase, 60 Hz	
EXPANSION DEVICE											CABINET WIDTH	
E Electronic Expansion Valve T Expansion Device V Inverter Tuned Expansion Valve											B = 17½" C = 21" D = 24½"	
							NOMINAL CAPACITY @ 13 SEER					
							24 = 2 Tons	31 = 2½ Tons	48 = 4 Tons			
							25 = 2 Tons	36 = 3 Tons	49 = 3-3½ Tons			
							29 = 2 Tons	37 = 3½ Tons	59 = 4-5 Tons			
							30 = 2½ Tons	42 = 3½ Tons	60 = 5 Tons			
												61 = 4-5 Tons
											COMMUNICATING	
											C = Yes	

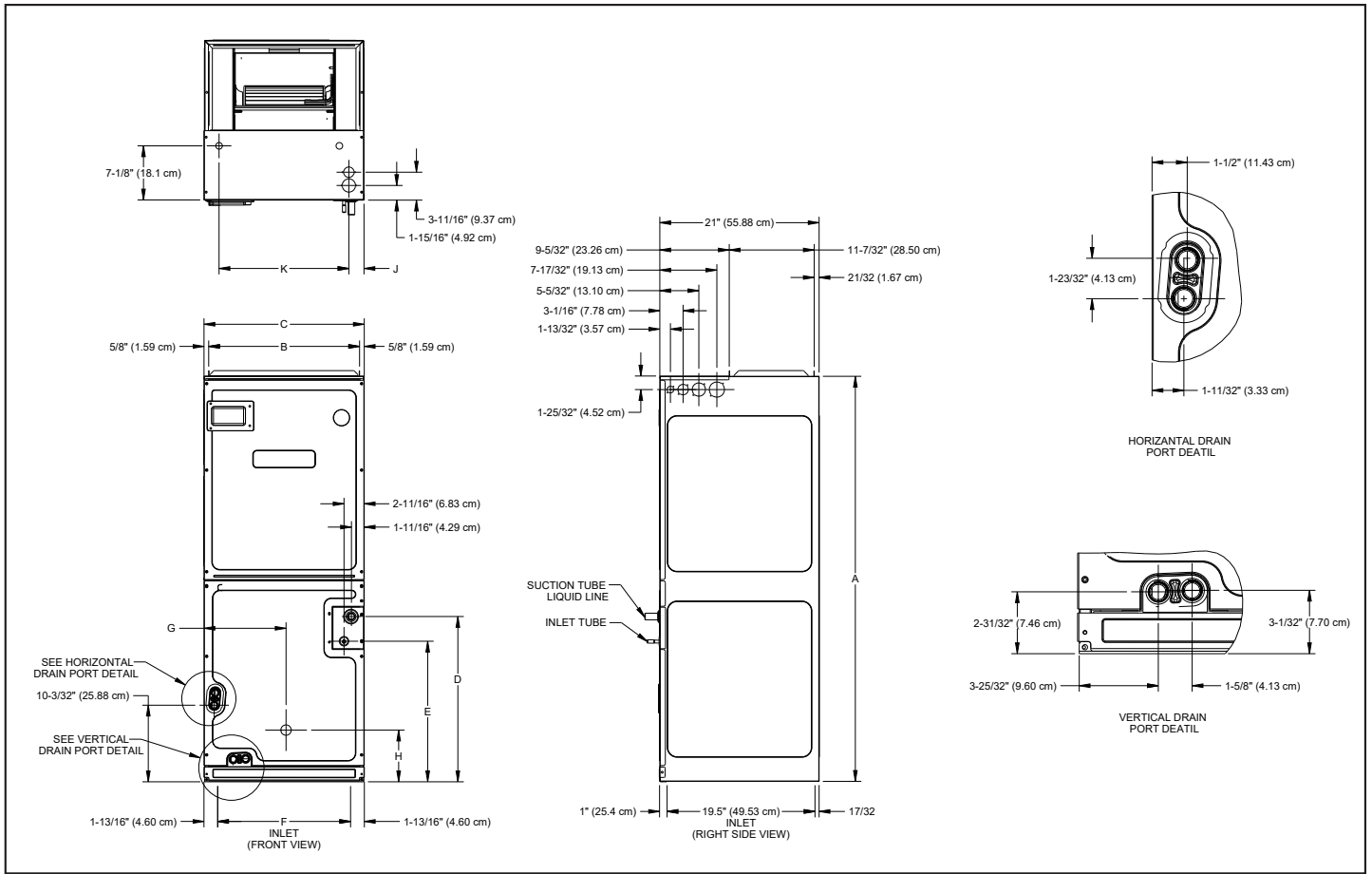
	HKS	X	03	X	A	AA	
	1	2	3	4	5	6,7	
UNIT TYPE							REVISIONS
HKS Heat Kit for Air Handlers							Engineering Revisions
CIRCUIT BREAKER							PHASE
X No circuit breaker C Circuit Breaker							A Single Phase 208 V B Single Phase 240 V C Single Phase 208/240 V D Three Phase 208 V H Special case 208 V*
HEATING CAPACITY @ 240 VOLTS							CABINET SIZE (MAX)
03 3.0 kW 15 14.4 kW 05 4.5 kW 19 19.2 kW wth 150F limit 06 6.0 kW 20 19.2 kW with 170F limit 08 8.0 kW 25 25.0 kW 10 9.6 kW							C C Cabinet D D Cabinet X All Cabinet Sizes

*Refer S&R Plate

	AVPEC25 B14A*	AVPEC37 C14A*	AVPEC59 D14A*	AVPEC61 D14A*
NOMINAL RATINGS				
Cooling (BTU/h)	24,000	36,000	48,000	60,000
CFM (High range)	1200/600	1700/800	1800/1350	2000/1600
BLOWER				
Diameter	10 $\frac{5}{8}$ "	10 $\frac{5}{8}$ "	11 $\frac{5}{8}$ "	11 $\frac{5}{8}$ "
Width	6"	10 $\frac{5}{8}$ "	10 $\frac{5}{8}$ "	10 $\frac{5}{8}$ "
Coil Drain Connection FPT	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "
SERVICE VALVE				
Liquid	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "
Suction	$\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "
ELECTRICAL DATA				
Voltage	208/240	208/240	208/240	208/240
Electric Heat Capacity (kW)	3, 5, 6, 8, 10	5, 6, 8, 10, 15, 19	5, 6, 8, 10, 15, 20	5, 6, 8, 10, 15, 20, 25
Min Circuit Ampacity	4.9/4.9	6.5/6.5	8.6/8.6	8.6/8.6
Max. Overcurrent Device (Amps)	15/15	15/15	15/15	15/15
Minimum VAC	197	197	197	197
Maximum VAC	253	253	253	253
BLOWER MOTOR				
Full Load Amps (FLA)	3.9	5.2	6.9	6.9
Horsepower (HP)	$\frac{1}{2}$	$\frac{3}{4}$	1	1
SHIP WEIGHT (LBS.)	128	150	160	177

Note: Minimum Circuit Ampacity (MCA) and Maximum Overcurrent Protection (MOP) for blower without supplemental heat installed. Refer to unit nameplate and/or Heat Kit Data for specification with approved accessory heaters installed.

DIMENSIONS



MODEL	A	B	C	D	E	F	G	H
AVPEC25B14	53 ⁷ / ₁₆	16 ³ / ₈	17 ¹ / ₂	20	21 ¹ / ₂	14 ⁷ / ₈	9 ⁷ / ₈	7 ⁵ / ₈
AVPEC37C14	53 ⁷ / ₁₆	19 ⁷ / ₈	21	21 ¹³ / ₁₆	18 ⁵ / ₈	17 ¹¹ / ₁₆	10 ¹³ / ₁₆	6 ¹³ / ₁₆
AVPEC59D14	53 ⁷ / ₁₆	23 ⁵ / ₁₆	24 ¹ / ₂	21 ¹ / ₂	18 ⁵ / ₁₆	21 ³ / ₁₆	12 ⁵ / ₈	6 ⁷ / ₈
AVPEC61D14	58	23 ⁵ / ₁₆	24 ¹ / ₂	26 ⁷ / ₈	22 ⁷ / ₈	21 ³ / ₁₆	12 ⁵ / ₁₆	25 ⁵ / ₈

MODEL	STAGE	AIRFLOW CFM								
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
AVPEC25B14A*	High	700	690	690	685	680	670	665	660	655
	Low	520	505	495	490	470	455	445	435	425
AVPEC37C14A*	High	1190	1170	1165	1160	1145	1130	1120	1105	1100
	Low	820	810	795	785	765	740	730	720	710
AVPEC59D14A*	High	1445	1440	1430	1415	1405	1390	1380	1375	1370
	Low	880	875	870	870	860	845	840	835	830
AVPEC61D14A*	High	1645	1640	1640	1635	1630	1625	1620	1620	1615
	Low	1080	1075	1070	1070	1060	1055	1050	1050	1045

Note: During cooling operation outdoor will determine the indoor airflow

COOLING/HEAT PUMP AIRFLOW TABLE

MODEL	AIRFLOW LEVEL	CFM
AVPEC25B14A*	High	690
	Low	495
AVPEC37C14A*	High	1165
	Low	795
AVPEC59D14A*	High	1430
	Low	870
AVPEC61D14A*	High	1640
	Low	1070

HEAT KIT DATA

MODEL		CIRCUIT 1			CIRCUIT 2			SINGLE-POINT KIT	
		AMPS	MCA ¹	MOP ²	AMPS	MCA ¹	MOP ²	MCA ¹	MOP ²
AVPEC25B14AC		0.0/0.0	4.9/4.9	15/15	---	---	---	---	---
HKSX03XC- 208 V	No Breaker	10.8	18	20	---	---	---	---	---
HKSX05XC- 208 V		17.3	27	30	---	---	---	---	---
HKSX06XC- 208 V		21.7	32	35	---	---	---	---	---
HKSX08XC- 208 V		28.9	41	45	---	---	---	---	---
HKSX10XC- 208 V		34.7	48	50	---	---	---	---	---
HKSC05XC- 208 V	Breaker	17.3	27	30	---	---	---	---	---
HKSC08XC- 208 V		28.9	41	45	---	---	---	---	---
HKSC10XC- 208 V		34.7	48	50	---	---	---	---	---
HKSX03XC- 240 V	No Breaker	12.5	21	25	---	---	---	---	---
HKSX05XC- 240 V		20	30	30	---	---	---	---	---
HKSX06XC- 240 V		25	36	40	---	---	---	---	---
HKSX08XC- 240 V		33.3	47	50	---	---	---	---	---
HKSX10XC- 240 V		40	55	60	---	---	---	---	---
HKSC05XC- 240 V	Breaker	20	30	30	---	---	---	---	---
HKSC08XC- 240 V		33.3	47	50	---	---	---	---	---
HKSC10XC- 240 V		40	55	60	---	---	---	---	---
AVPEC37C14AC		0/0	6.5/6.5	15/15	---	---	---	---	---
HKSX05XC- 208 V	No Breaker	17.3	28	30	---	---	---	---	---
HKSX06XC- 208 V		21.7	34	35	---	---	---	---	---
HKSX08XC- 208 V		28.9	43	45	---	---	---	---	---
HKSX10XC- 208 V		34.7	50	50	---	---	---	---	---
HKSC05XC- 208 V	Breaker	17.3	28	30	---	---	---	---	---
HKSC08XC- 208 V		28.9	43	45	---	---	---	---	---
HKSC10XC- 208 V		34.7	50	50	---	---	---	---	---
HKSC15XA- 208 V		34.7	49.8	50	17.3	21.7	25	71.5	80
HKSC19CA- 208 V		34.7	49.8	50	34.7	43.3	45	93.2	100
HKSC15XF- 208 V ^		0	6.5	15	30	38	40	---	---
HKSX05XC- 240 V	No Breaker	20	32	35	---	---	---	---	---
HKSX06XC- 240 V		25	38	40	---	---	---	---	---
HKSX08XC- 240 V		33.3	48	50	---	---	---	---	---
HKSX10XC- 240 V		40	57	60	---	---	---	---	---
HKSC05XC- 240 V	Breaker	20	32	35	---	---	---	---	---
HKSC08XC- 240 V		33.3	48	50	---	---	---	---	---
HKSC10XC- 240 V		40	57	60	---	---	---	---	---
HKSC15XB- 240 V		40	56.5	60	20	25	25	81.5	90
HKSC19CB- 240 V		40	56.5	60	40	50	50	107	110
HKSC15XF- 240 V ^			0	6.5	15	34.6	43	45	---
AVPEC59D14AC		0/0	8.6/8.6	15/15	---	---	---	---	---
HKSX05XC- 208 V	No Breaker	17.3	30.3	35	---	---	---	---	---
HKSX06XC- 208 V		21.7	36	40	---	---	---	---	---
HKSX08XC- 208 V		28.9	45	45	---	---	---	---	---
HKSX10XC- 208 V		34.7	52	60	---	---	---	---	---

See notes on page 7.

MODEL		CIRCUIT 1			CIRCUIT 2			SINGLE-POINT KIT	
		AMPS	MCA ¹	MOP ²	AMPS	MCA ¹	MOP ²	MCA ¹	MOP ²
HKSC05XC- 208 V	Breaker	17.3	30.3	35	---	---	---	---	---
HKSC08XC- 208 V		28.9	45	45	---	---	---	---	---
HKSC10XC- 208 V		34.7	52	60	---	---	---	---	---
HKSC15XB ³ - 208 V		34.7	52	60	17.3	21.7	25	74	80
HKSC20DH- 208 V		34.7	52	60	34.7	43.3	45	95.3	100
HKSC15XF- 208 V ^		0	8.6	15	30	38	40	---	---
HKSC05XC- 240 V	No Breaker	20	34	35	---	---	---	---	---
HKSC06XC- 240 V		25	40	40	---	---	---	---	---
HKSC08XC- 240 V		33.3	50.3	60	---	---	---	---	---
HKSC10XC- 240 V		40	59	60	---	---	---	---	---
HKSC05XC- 240 V	Breaker	20	34	35	---	---	---	---	---
HKSC08XC- 240 V		33.3	50.3	60	---	---	---	---	---
HKSC10XC- 240 V		40	59	60	---	---	---	---	---
HKSC15XB- 240 V		40	58.6	60	20	25	25	83.6	90
HKSC20DB- 240 V		40	58.6	60	40	50	50	109	110
HKSC15XF- 240 V ^		0	8.6	15	34.6	43	45	---	---
AVPEC61D14AC		0/0	8.6/8.6	15/15	---	---	---	---	---
HKSC05XC- 208 V	No Breaker	17.3	30	35	---	---	---	---	---
HKSC06XC- 208 V		21.7	36	40	---	---	---	---	---
HKSC08XC- 208 V		28.9	45	45	---	---	---	---	---
HKSC10XC- 208 V		34.7	52	60	---	---	---	---	---
HKSC05XC- 208 V	Breaker	17.3	30	35	---	---	---	---	---
HKSC08XC- 208 V		28.9	45	45	---	---	---	---	---
HKSC10XC- 208 V		34.7	52	60	---	---	---	---	---
HKSC15XB ³ - 208 V		34.7	52	60	17.3	21.7	25	73.6	80
HKSC20DH- 208 V		34.7	52	60	34.7	43.3	45	95.3	100
HKSC25DA- 208 V		52	73.6	80	35	43.3	45	117	125
HKSC15XF- 208 V ^	0	8.6	15	30	38	40	---	---	
HKSC20XF- 208 V ^	0	8.6	15	38	47	50	---	---	
HKSC05XC- 240 V	No Breaker	20	34	35	---	---	---	---	---
HKSC06XC- 240 V		25	40	40	---	---	---	---	---
HKSC08XC- 240 V		33.3	50.3	60	---	---	---	---	---
HKSC10XC- 240 V		40	59	60	---	---	---	---	---
HKSC05XC- 240 V	Breaker	20	34	35	---	---	---	---	---
HKSC08XC- 240 V		33.3	50.3	60	---	---	---	---	---
HKSC10XC- 240 V		40	59	60	---	---	---	---	---
HKSC15XB- 240 V		40	58.6	60	20	25	25	83.6	90
HKSC20DB- 240 V		40	58.6	60	40.0	50	50	109	110
HKSC25DB- 240 V		60	83.6	90	40	50	50	134	150
HKSC15XF- 240 V ^	0	8.6	15	34.6	43	45	---	---	
HKSC20XF- 240 V ^	0	8.6	15	43.3	54	60	---	---	

¹ Minimum Circuit Ampacity (Heater Amps + Motor Amps) X 1.25

² Maximum Overcurrent Protection = 2.25 X Motor Amps + Heater Amps

³ Notation is correct as XB because technically the 240V heater kit application can be used here without any issues.

^ Three-phase Heater Kits (Circuit 1: Single-phase for Air Handlers Circuit 2: Three-phase for Heater Kits)

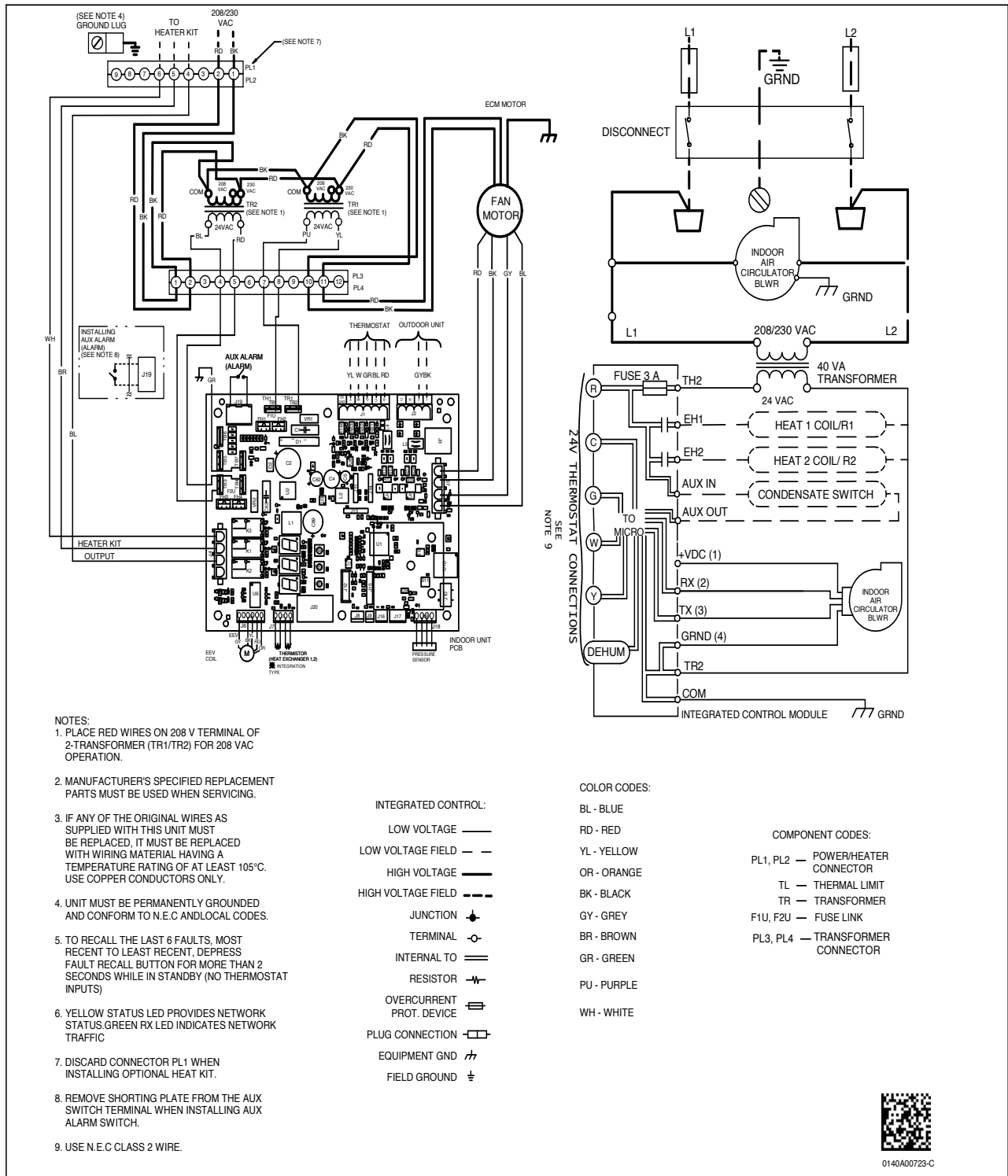
--- indicates Not Required

Note: The 208 or 240 in the heat kit part number field is for clarification of the nominal voltage for this model.

HEATING KW CORRECTION FACTOR

SUPPLY VOLTAGE	240	230	220	210	208
CORRECTION FACTOR	1.00	0.92	0.84	0.77	0.75

Multiply the 240-volt heating capacity by correction factors.



- NOTES:
1. PLACE RED WIRES ON 208 V TERMINAL OF 2-TRANSFORMER (TR1/TR2) FOR 208 VAC OPERATION.
 2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
 3. IF ANY OF THE ORIGINAL WIRES AS SUPPLIED WITH THIS UNIT MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C. USE COPPER CONDUCTORS ONLY.
 4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C AND LOCAL CODES.
 5. TO RECALL THE LAST 6 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS FAULT RECALL BUTTON FOR MORE THAN 2 SECONDS WHILE IN STANDBY (NO THERMOSTAT INPUTS)
 6. YELLOW STATUS LED PROVIDES NETWORK STATUS. GREEN RX LED INDICATES NETWORK TRAFFIC
 7. DISCARD CONNECTOR PL1 WHEN INSTALLING OPTIONAL HEAT KIT.
 8. REMOVE SHORTING PLATE FROM THE AUX SWITCH TERMINAL WHEN INSTALLING AUX ALARM SWITCH.
 9. USE N.E.C CLASS 2 WIRE.

- INTEGRATED CONTROL:
- LOW VOLTAGE ———
 - LOW VOLTAGE FIELD - - -
 - HIGH VOLTAGE ———
 - HIGH VOLTAGE FIELD - - -
 - JUNCTION —●—
 - TERMINAL —○—
 - INTERNAL TO ———
 - RESISTOR —□—
 - OVERCURRENT PROT. DEVICE —■—
 - PLUG CONNECTION —□—
 - EQUIPMENT GND ———
 - FIELD GROUND —⊥—

- COLOR CODES:
- BL - BLUE
 - RD - RED
 - YL - YELLOW
 - OR - ORANGE
 - BK - BLACK
 - GY - GREY
 - BR - BROWN
 - GR - GREEN
 - PU - PURPLE
 - WH - WHITE

- COMPONENT CODES:
- PL1, PL2 — POWER/HEATER CONNECTOR
 - TL — THERMAL LIMIT
 - TR — TRANSFORMER
 - F1U, F2U — FUSE LINK
 - PL3, PL4 — TRANSFORMER CONNECTOR



0140A00723-C

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

WARNING High Voltage: Disconnect all power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury, or death.

DOWNFLOW KITS

DFK-B	DFK-C	DFK-D
AVPEC25B14**	AVPEC37C14**	AVPEC59D14**
		AVPEC61D14**

** (DFK-B, DFK-C, DFK-D) kits need to be broken up by cabinet size

DRAIN PORT PLUG

KIT NUMBER	DESCRIPTION	APPLICATION
DPK1	Side Drain Port Plug	All Models

FILTERS

CHASSIS	PART #	SIZE
B	ALFH16201E	16.0" x 20.0"
C	ALFH1912201E	19.5" x 20.0"
D	ALFH20231E	23.0" x 20.0"

SINGLE POINT KIT **

MODEL	HKR-15C	HKR-20C	HKR-21C
SPW-01	X	X	X

** Must be installed along with any of the above compatible heat kits. This kit will fit any AVPEC air handler as long as a compatible heat kit is installed in the unit.

