



MULTI-POSITION, VARIABLE-SPEED, ECM-BASED AIR HANDLER WITH INTERNAL EEV, COMMUNICATING FOR S-SERIES MATCHUPS 1½ TO 5 TONS

Contents

Nomenclature	2
Product Specifications	3
Dimensions	4
Heat Kit Data	5
Wiring Diagram	7
Accessories	8



Product Features

- Electronic Expansion Valve (EEV) for cooling and heat pump applications.
- 7mm evaporator coil tube size
- Variable-speed ECM blower motor
- Compatible with Goodman brand smart thermostat
- Provides constant CFM over a wide range of static pressure conditions independent of duct system
- CFM indicator
- Thermostat 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
- AHRI certified; ETL listed
- Coil mounting track for quick repositioning
- Rigid SmartFrame™ cabinet

Cabinet Features

- 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.goodmanmfg.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. The duration of warranty coverage in Texas and Florida differs in some cases.

	A	H	V	E	60	D	P	1	4	00	B	A	
	1	2	3	4	5,6	7	8	9	10	11,12	13	14	
BRAND													MINOR REVISION
A - CORPORATE AIR HANDLER													MAJOR REVISION
APPLICATION													FACTORY INSTALLED ELECTRIC HEAT KW
C - CEILING MOUNTED													00 - NO ELECTRIC HEAT
M - MULTI-POSITIONAL													
W - WALL MOUNTED													
F - FIT COMPATIBLE MULTI-POSITIONAL													
H - HORIZONTAL DISCHARGE COMPATIBLE													
MULTI-POSITIONAL													
MOTOR													REFRIGERANT
S - MS-ECM													3 - R32
V - VS-ECM COMMUNICATING													4 - R4 10A
													6 R410A or R22
EXPANSION DEVICE													ELECTRICAL
E - ELECTRONIC EXPANSION VALVE													1 208/230 V, 1 PHASE, 60 Hz
F - FLOWRATOR													
T - THERMAL EXPANSION VALVE													
NOMINAL CAPACITY													CABINET
12 - 1.0 TON													N - UNCASED
18 - 1.5 TONS													P - PAINTED
24 - 2.0 TONS													U - UNPAINTED
30 - 2.5 TONS													
36 - 3.0 TONS													
42 - 3.5 TONS													
48 - 4.0 TONS													
60 - 5.0 TONS													
													CABINET WIDTH
													AC* Series
													M - 43.25"
													L - 49.25"
													AM* Series
													B - 17.5"
													C - 21.0"
													D - 24.5"
													AW* Series
													S - 20.2"
													L - 36.05"

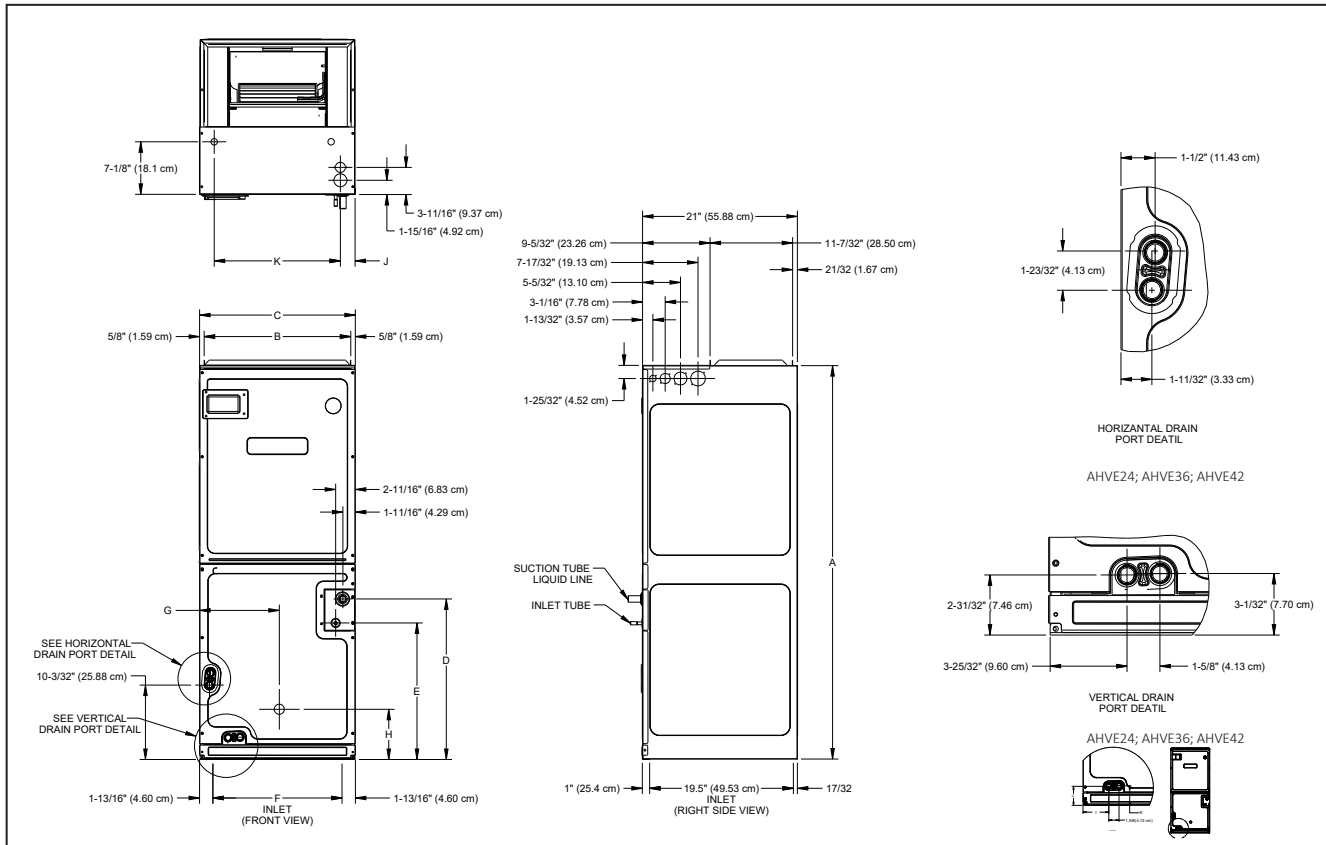
	H	K	T	S	D	2	5	D	1	
	1	2	3	4	5	6	7	8	9	
Unit Type										
HKTS - Electric heater										
Kit for air handlers										
Service Disconnect										Electrical
D - Service disconnect										A - Single phase 208 V
N - No service disconnect										B - Single phase 240 V
										1 - Single phase 208/240 V
										3 - Three phase 208/240 V
										Cabinet Size
										X - All Cabinets
										C - C Cabinet
										D - D Cabinet
										Heating Capacity @ 240 V
										3 3.0 kW
										10 9.6 kW
										5 4.8 kW
										15 14.4 kW
										6 6.0 kW
										19 19.2 kW with 170°F limit
										8 8.0 kW
										20 19.2 kW with 160°F limit
										25 24.0 kW

Note: 20X3 = 18.0 kW with 160°F limit

*Refer S&R Plate

	AHVE24 BP1400	AHVE36 CP1400	AHVE42 CP1400	AHVE48 DP1400	AHVE60 DP1400
NOMINAL TONS	2.0Ton	3.0Ton	3.5Ton	4.0Ton	5.0Ton
Blower					
Diameter	9½"	10⅝"	10⅝"	12"	12"
Width	6"	10⅝"	10⅝"	10⅝"	10⅝"
TUBING CONNECTION					
Liquid - Refrigerant	⅜"	⅜"	⅜"	⅜"	⅜"
Suction - Refrigerant	¾"	⅞"	⅞"	⅞"	⅞"
Coil Drain Connection (NPT)	¾"	¾"	¾"	¾"	¾"
ELECTRICAL DATA					
Voltage - Phase	208/230-1	208/230-1	208/230-1	208/230-1	208/230-1
Min Circuit Ampacity	4.9/4.9	6.5/6.5	6.5/6.5	6.5/6.5	6.5/6.5
Max. Overcurrent Device (amps)	15/15	15/15	15/15	15/15	15/15
Minimum VAC	197	197	197	197	197
Maximum VAC	253	253	253	253	253
BLOWER MOTOR					
FLA	3.9	5.2	5.2	5.2	5.2
HP	½	¾	¾	¾	¾
SHIP WEIGHT (LBS)	115	140	140	150	167

DIMENSIONS



MODEL	A	B	C	D	E	F	G	H	I	J	K
AHVE24BP1400	45	16 ³ / ₈	17 ¹ / ₂	15 ⁵ / ₈	12	14 ¹ / ₈	9	12 ³ / ₄	3 ¹³ / ₁₆	2 ⁷ / ₈	2 ¹⁵ / ₁₆
AHVE36CP1400	53 ⁷ / ₁₆	19 ⁹ / ₈	21	21 ¹³ / ₁₆	18 ⁵ / ₈	17 ¹¹ / ₁₆	10 ¹³ / ₁₆	6 ¹³ / ₁₆	3 ¹³ / ₁₆	2 ⁷ / ₈	2 ¹⁵ / ₁₆
AHVE42CP1400	53 ⁷ / ₁₆	19 ⁹ / ₈	21	21 ¹³ / ₁₆	18 ⁵ / ₈	17 ¹¹ / ₁₆	10 ¹³ / ₁₆	6 ¹³ / ₁₆	3 ¹³ / ₁₆	2 ⁷ / ₈	2 ¹⁵ / ₁₆
AHVE48DP1400	53 ⁷ / ₁₆	23 ⁵ / ₁₆	24 ¹ / ₂	21 ¹ / ₂	18 ⁵ / ₁₆	21 ³ / ₁₆	12 ⁵ / ₈	6 ⁷ / ₈	4	3	3 ³ / ₃₂
AHVE60DP1400	58	23 ⁵ / ₁₆	24 ¹ / ₂	26 ⁵ / ₈	22 ⁷ / ₈	21 ³ / ₁₆	12 ⁵ / ₁₆	13 ³ / ₄	4	3	3 ³ / ₃₂

RATED INDOOR AIRFLOW RATE [SCFM]

		STATIC PRESSURE [wc]								
ID unit	OD unit	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
AHVE24BP1400	ASZS601810A*/GSZS601810A*	610	610	610	610	610	610	610	610	610
	ASZS602410A*/GSZS602410A*	800	800	800	800	800	800	800	800	800
AHVE36CP1400	ASZS60241EA*	800	800	800	800	800	800	800	800	800
	ASZS603010A*/GSZS603010A*	1010	1010	1010	1010	1010	1010	1010	1010	1010
	ASZS603610* / GSZS603610*	1260	1260	1260	1260	1260	1260	1260	1260	1260
AHVE42CP1400	ASZS603610A*/GSZS603610A*/ASZS60361EA*	1260	1260	1260	1260	1260	1260	1260	1260	1260
	ASZS604210A*/GSZS604210A*	1320	1320	1320	1320	1320	1320	1320	1320	1320
AHVE48DP1400	ASZS60361EA*	1260	1260	1260	1260	1260	1260	1260	1260	1260
	ASZS604210A*/GSZS604210A*	1320	1320	1320	1320	1320	1320	1320	1320	1320
	ASZS604810A*/GSZS604810A*	1380	1380	1380	1380	1380	1380	1380	1380	1380
AHVE60DP1400	ASZS60361EA*	1260	1260	1260	1260	1260	1260	1260	1260	1260
	ASZS604210A*/ASZS60421EA*/GSZS604210A*	1320	1320	1320	1320	1320	1320	1320	1320	1320
	ASZS604810A*/ASZS60481EA*/GSZS604810A*	1380	1380	1380	1380	1380	1380	1380	1380	1380
	ASZS606010A*/GSZS606010A*	1640	1640	1640	1640	1640	1640	1640	1640	1640

*The chart is for information only. For satisfactory operation, external static pressure must not exceed 0.5 wc.

*Unit may provide different SCFM during electrical heater operation. See IO manual for the airflow rate.

MODELS	CIRCUIT 1 (208V/240V)			CIRCUIT 2 (208V/240V)			SINGLE-POINT KIT (208V/240V)	
	HEATER AMPS	MCA ¹	MOP ²	HEATER AMPS	MCA ¹	MOP ²	MCA ¹	MOP ²
AHVE24BP1400BA	0.0/0.0	4.9/4.9	15/15	---	---	---	---	---
HKTSN03X1	10.8/12.5	18/21	20/25	---	---	---	---	---
HKTS*05X1	17.3/20.0	27/29.9	30/30	---	---	---	---	---
HKTSN06X1	21.7/25	32/36.1	35/40	---	---	---	---	---
HKTS*08X1	28.9/33.3	41/46.5	45/50	---	---	---	---	---
HKTS*10X1	34.7/40.0	48/54.9	50/60	---	---	---	---	---
AHVE36CP1400BA	0.0/0.0	6.5/6.5	15/15	---	---	---	---	---
HKTS*05X1	17.3/20.0	28/32	30/35	---	---	---	---	---
HKTSN06X1	21.7/25.0	34/38	35/40	---	---	---	---	---
HKTS*08X1	28.9/33.3	43/48	45/50	---	---	---	---	---
HKTS*10X1	34.7/40.0	50/57	50/60	---	---	---	---	---
HKTS*15X3 ^	0/0	6.5/6.5	15/15	30/34.6	37.5/43	40/45	---	---
HKTSN15XA/B	34.7/40	49.8/56.5	50/60	17.3/20	21.7/25	25/25	71.5/81.5	80/90
HKTSN19CA/B	34.7/40	49.8/56.5	50/60	34.7/40	43.3/50	45/50	93.2/107	100/110
AHVE42CP1400BA	0.0/0.0	6.5/6.5	15/15	---	---	---	---	---
HKTS*05X1	17.3/20.0	28/32	30/35	---	---	---	---	---
HKTSN06X1	21.7/25.0	34/38	35/40	---	---	---	---	---
HKTS*08X1	28.9/33.3	43/48	45/50	---	---	---	---	---
HKTS*10X1	34.7/40.0	50/57	50/60	---	---	---	---	---
HKTS*15X3 ^	0/0	6.5/6.5	15/15	30/34.6	37.5/43	40/45	---	---
HKTSN15XA/B	34.7/40	49.8/56.5	50/60	17.3/20	21.7/25	25/25	71.5/81.5	80/90
HKTSN19CA/B	34.7/40	49.8/56.5	50/60	34.7/40	43.3/50	45/50	93.2/107	100/110
AHVE48DP1400BA	0.0/0.0	6.5/6.5	15/15	---	---	---	---	---
HKTS*05X1	17.3/20.0	28/32	30/35	---	---	---	---	---
HKTSN06X1	21.7/25.0	34/38	35/40	---	---	---	---	---
HKTS*08X1	28.9/33.3	43/48	45/50	---	---	---	---	---
HKTS*10X1	34.7/40.0	50/57	50/60	---	---	---	---	---
HKTS*15X3 ^	0/0	6.5/6.5	15/15	30/34.6	37.5/43	40/45	---	---
HKTSN15XA/B	34.7/40	49.8/56.5	50/60	17.3/20	21.7/25	25/25	71.5/81.5	80/90
HKTS*20X3 ^	0/0	6.5/6.5	15/15	37.5/43.3	47/54	50/60	---	---
HKTSN20DA/B	34.7/40	49.8/56.5	50/60	34.7/40	43.3/50	45/50	93.2/107	100/110
AHVE60DP1400BA	0.0/0.0	6.5/6.5	15/15	---	---	---	---	---
HKTS*05X1	17.3/20.0	28/31.5	30/35	---	---	---	---	---
HKTSN06X1	21.7/25.0	34/37.8	35/40	---	---	---	---	---
HKTS*08X1	28.9/33.4	43/48.2	45/50	---	---	---	---	---
HKTS*10X1	34.7/40.0	49.8/57	50/60	---	---	---	---	---
HKTSN15XA/B	34.7/40	49.8/57	50/60	17.4/20	21.7/25	25/25	71.5/81.5	80/90
HKTSN20DA/B	34.7/40	49.8/57	50/60	34.7/40	43.3/50	45/50	93.2/107	100/110
HKTSN25DA/B	52/60	72/81.5	80/90	35/40	43.3/50	45/50	115/132	125/150

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

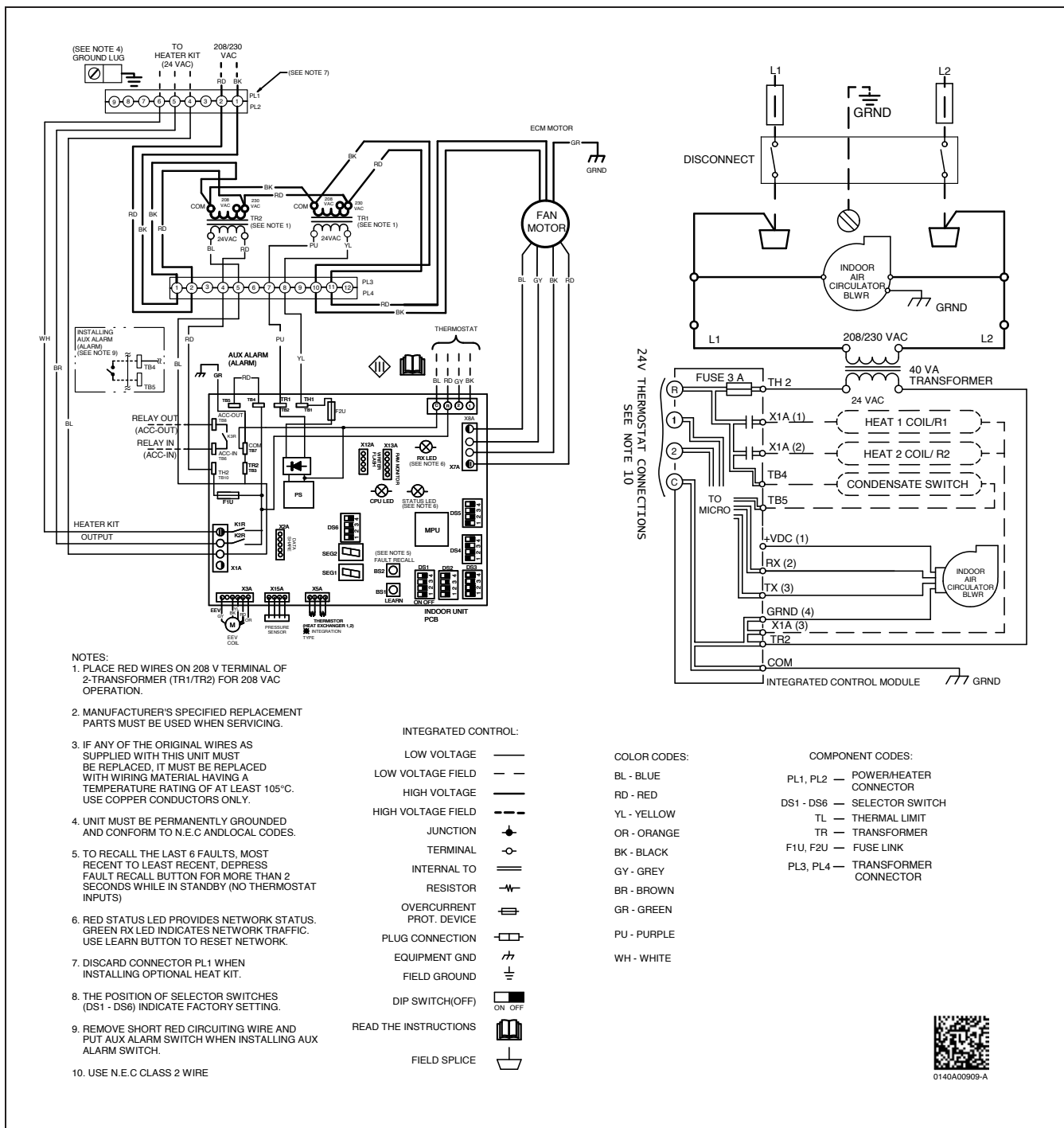
² Maximum Overcurrent Protection = 2.25 X Motor Amps + Heater Amps

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

* D - Service disconnect, N - No service disconnect

--- indicates Not Required

WIRING DIAGRAM



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

DFKE-02
AHVE24BP1400
AHVE36CP1400
AHVE42CP1400
AHVE48DP1400
AHVE60DP1400

CONDENSATE MANAGEMENT KITS*

CMK0015	CMK0016	CMK0017
AHVE24BP1400	AHVE36CP1400	AHVE60DP1400
	AHVE42CP1400	
	AHVE48DP1400	

*For Horizontal application only.

PERMANENT 1" 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"

HIGH HUMIDITY KITS

HHK0001	HHK0002	HHK0003
AHVE24BP1400	AHVE36CP1400	AHVE60DP1400
	AHVE42CP1400	AHVE48DP1400

SINGLE POINT KIT **

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

DRAIN PORT PLUG

KIT NUMBER	DESCRIPTION	APPLICATION
DPK1	Side Drain Port Plug	All Models

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

SINGLE POINT WIRING KITS (SPW-01)

HEATER KIT MODEL	SPWK-B	SPWK-C	SPWK-D
HKTSD15XA		AHVE36CP1400** AHVE42CP1400**	AHVE48DP1400**
HKTSD15XB			AHVE60DP1400**
HKTSD19CA			
HKTSD19CB			
HKTSD20DA			AHVE48DP1400**
HKTSD20DB			AHVE60DP1400**
HKTSD25DA			
HKTSD25DB			AHVE60DP1400**

