

# Bosch BVA Series Air Handler

2-3-4-5 Ton Capacity

R410A



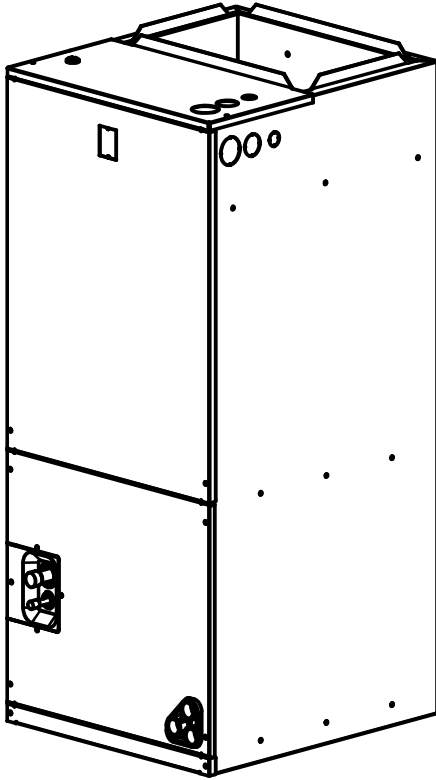
# BOSCH

## Product Specifications



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## BVA Series Air Handler 2-3-4-5 Ton Capacity R410A

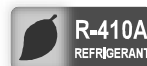


### Air Handler Features

- Multi-speed ECM blower motor.
- Factory-installed TXV metering.
- Multiposition Installation - upflow or horizontal right standard; field convertible to horizontal left or downflow.
- Multiple electrical entry locations.
- Field Installed heater kits 5, 8, 10, 15, 20KW available as an accessory.
- Dual front panel design for ease of maintenance.
- Blower and coil easy slide out design for ease of maintenance.
- Fully-insulated cabinet design.
- Horizontal and vertical condensate drain pans standard.
- Condensate drain pan is polymer with UVC inhibitor.
- Primary and secondary condensate drain fittings.
- Factory-sealed cabinet certified to achieve 2% or less leakage rate at 1.0 inch water column.
- Integrated filter rack with tool-less door access.
- AHRI and ETL Listed.

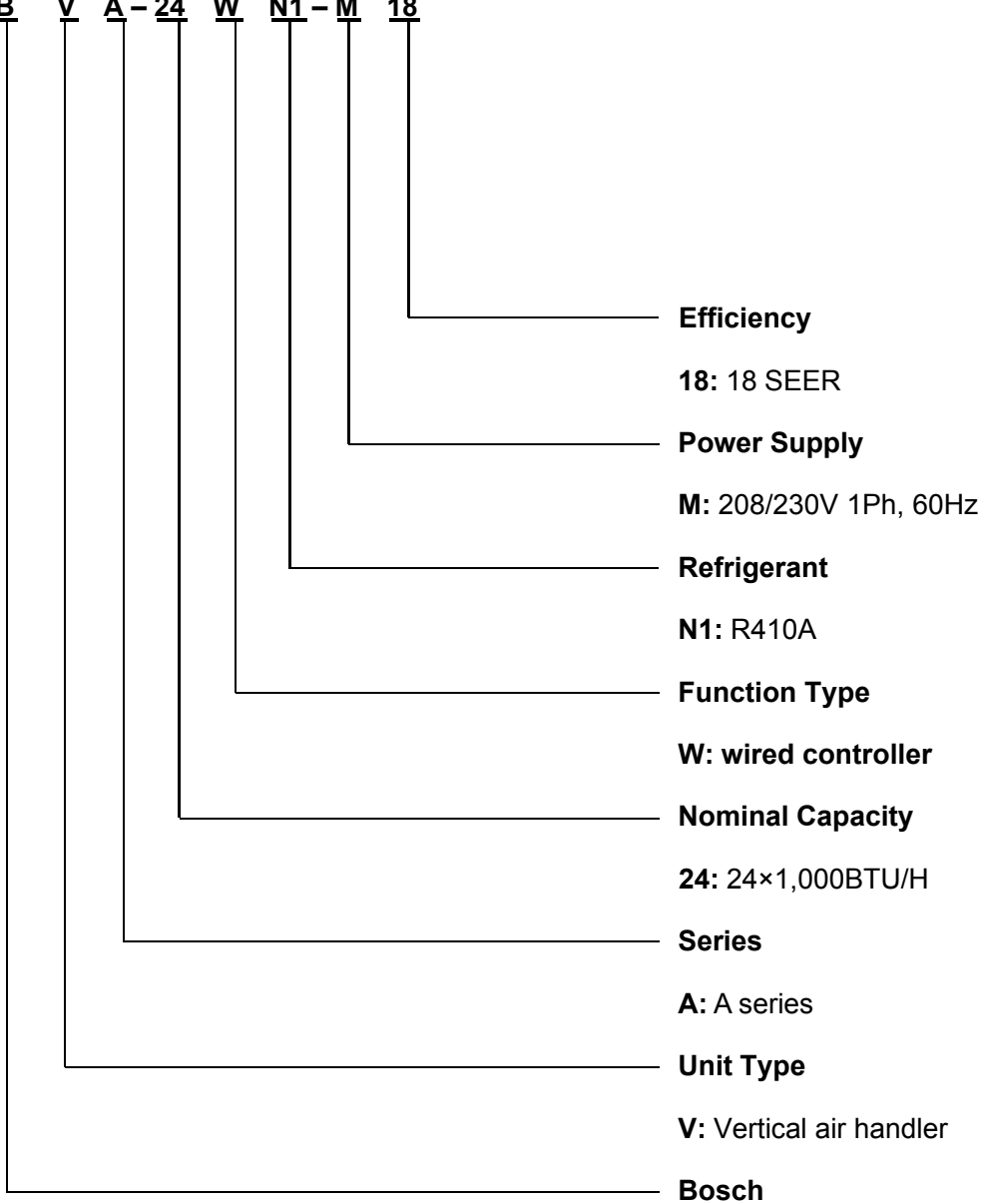
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**BOSCH CONDENSING UNIT NOMENCLATURE**

**B V A - 24 W N1 - M 18**



# Product Specifications

## Specifications

	BVA-24WN1-M18	BVA-36WN1-M18	BVA-48WN1-M18	BVA-60WN1-M18
<b>Cooling Capacity</b>				
Nominal Cooling (BTU/h)	24,000	34,600	47,000	57,000
Nominal Heating (BTU/h)	24,000	33,600	46,500	55,000
<b>Blower</b>				
Diameter	10 $\frac{5}{8}$ "	11"	11"	11"
Width	8"	10 $\frac{5}{8}$ "	10 $\frac{5}{8}$ "	10 $\frac{5}{8}$ "
<b>Fan Motor</b>				
Horsepower (HP)	1/3	1/2	3/4	3/4
FLA	2.8	4.1	6.0	6.0
<b>Refrigeration System</b>				
Refrigerant Line Size <sup>1</sup>				
Liquid Line Size ("O.D.)	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "
Suction Line Size ("O.D.)	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "
Refrigerant Connection Size				
Liquid Valve Size ("O.D.)	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{8}$ "
Suction Line Size ("O.D.)	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "
Expansion Device	TXV	TXV	TXV	TXV
Decibels				
High dB(A)	62	64	67	68
Medium dB(A)	59	60	63	64
Low dB(A)	55	56	59	60
<b>Electrical Data</b>				
Voltage-Phase-Hz	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
Minimum Circuit Ampacity <sup>2</sup>	3.5	5.1	7.5	7.5
Max. Overcurrent Protection <sup>3</sup>	15	15	15	15
Min / Max Volts	187 / 253	187 / 253	187 / 253	187 / 253
<b>Air Filter Sizes</b>	18" x 20"	20" x 22"	20" x 22"	20" x 22"
<b>Equipment Weight (lbs)</b>	119	161	162	170
<b>Ship Weight (lbs)</b>	132	178	180	188

1 Tested and rated in accordance with AHRI Standard 210/240

2 Wire size should be determined in accordance with National

Electrical Codes; extensive wire runs will require larger wire sizes

3 Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.

# Dimensions

NOTE: 25" CLEARANCE IS REQUIRED IN THE FRONT OF THE UNIT FOR FILTER AND COIL MAINTENANCE.

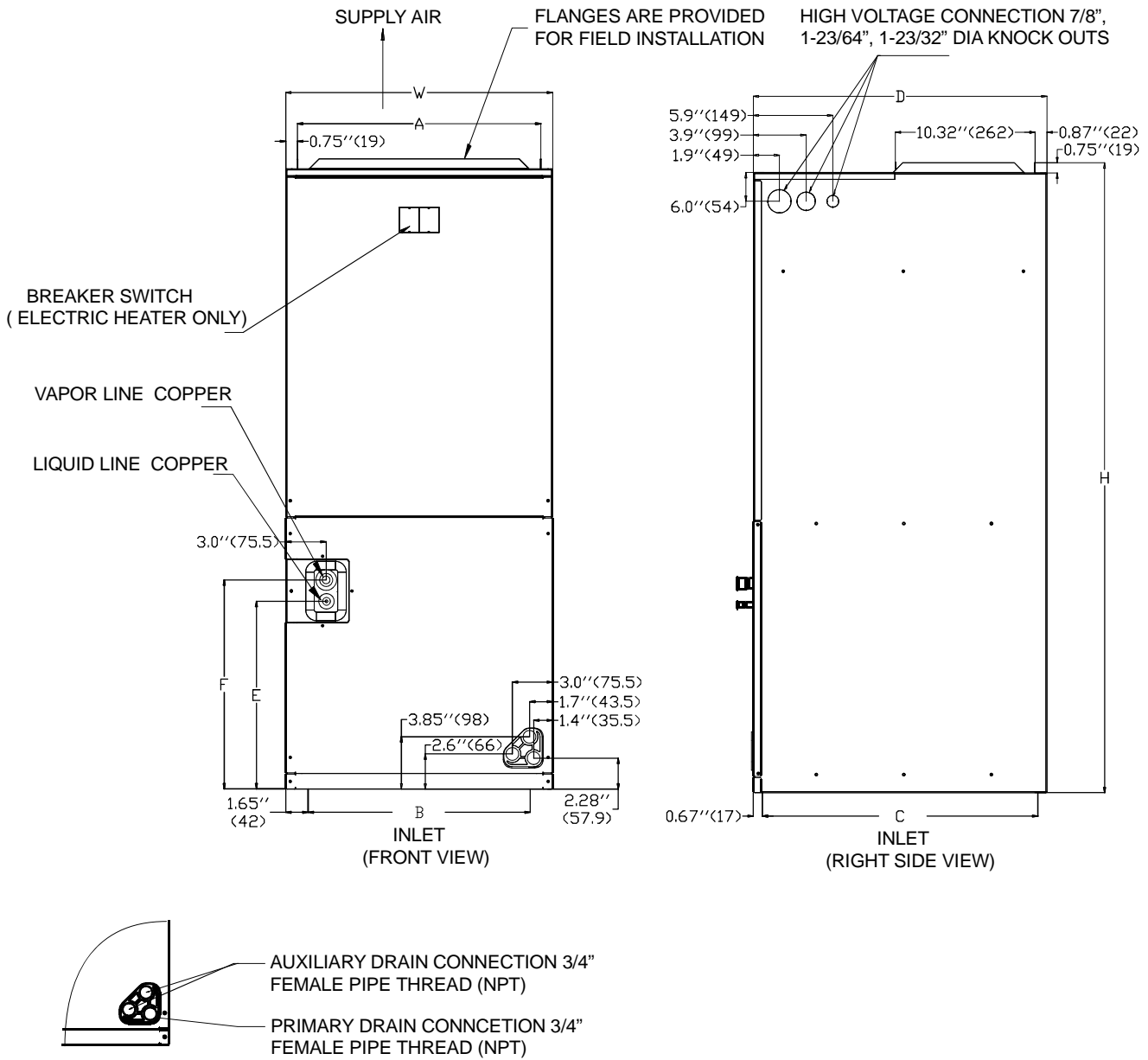


Fig.1 DIMENSIONS

MODEL SIZE	Dimensions inch [mm]			Dimensions inch [mm]					
	"H" IN. [mm]	"W" IN.[mm]	"D" IN.[mm]	"A" IN.[mm]	"B" IN.[mm]	"C" IN.[mm]	"E" IN.[mm]	"F" IN.[mm]	
24	46½"[1180]	19⅞"[500]	21⅝"[550]	18"[456]	16⅞"[416]	20⅞"[516]	13¾"[350]	15⅞"[390]	
36	54½"[1385]	22"[560]	24"[610]	19½"[496]	18¾"[476]	22¾"[576]	19⅞"[492]	21"[532]	
48	54½"[1385]	22"[560]	24"[610]	19½"[496]	18¾"[476]	22¾"[576]	19⅞"[492]	21"[532]	
60	54½"[1385]	22"[560]	24"[610]	19½"[496]	18¾"[476]	22¾"[576]	19⅞"[492]	21"[532]	

## Blower Data

### Airflow Performance

Airflow performance data is based on cooling performance with a coil and no filter in place. Select performance table for appropriate unit size external static applied to unit allows operation within the minimum and maximum limits shown in table below for both cooling and electric heat operation.

Model Number	Motor Speed		SCFM(Watts)									
			External Static Pressure-Inches W.C.[kPa]									
			0[0]	0.1[.02]	0.16[.04]	0.2[.05]	0.3[.07]	0.4[.10]	0.5[.12]	0.6[.15]	0.7[.17]	0.8[.20]
24	Tap(5)	SCFM	1016	955	924	914	870	827	790	741	691	657
		Watts	139	146	156	157	165	174	185	195	202	209
	Tap(4)	SCFM	955	892	863	853	804	768	729	671	630	---
		Watts	118	125	134	135	142	152	162	169	178	---
	Tap(3) -Factory	SCFM	927	829	791	789	739	701	643	597	---	---
		Watts	109	105	112	113	121	131	137	147	---	---
	Tap(2)	SCFM	887	766	683	671	631	567	522	465	---	---
		Watts	97	87	82	83	93	99	108	112	---	---
	Tap(1)	SCFM	829	698	589	547	366	347	277	234	---	---
		Watts	81	71	63	60	54	60	64	72	---	---
36	Tap(5)	SCFM	1532	1471	1428	1386	1372	1327	1271	1210	1159	1101
		Watts	233	247	262	266	270	275	281	290	298	310
	Tap(4)	SCFM	1408	1343	1297	1265	1246	1197	1141	1073	1015	880
		Watts	197	209	214	219	222	227	238	245	256	273
	Tap(3) -Factory	SCFM	1326	1230	1174	1151	1107	1024	896	828	807	726
		Watts	148	165	172	175	183	190	202	217	221	225
	Tap(2)	SCFM	1236	1175	1100	1075	1029	963	835	736	661	582
		Watts	124	130	133	137	142	146	157	168	176	187
	Tap(1)	SCFM	1182	1141	1020	995	944	818	648	553	461	363
		Watts	124	112	105	103	107	112	124	129	140	149
48	Tap(5)	SCFM	2072	2013	1970	1935	1923	1878	1830	1783	1736	1688
		Watts	447	464	483	489	497	514	530	545	558	570
	Tap(4)	SCFM	1860	1816	1783	1735	1679	1640	1591	1542	1504	1481
		Watts	348	364	378	383	395	408	418	429	451	463
	Tap(3) -Factory	SCFM	1702	1651	1598	1560	1547	1497	1438	1385	1331	1280
		Watts	268	281	296	304	312	325	337	349	361	375
	Tap(2)	SCFM	1393	1358	1197	1179	1155	1139	1074	1020	964	896
		Watts	227	234	248	258	269	270	283	296	313	325
	Tap(1)	SCFM	1365	1239	1148	1078	1050	965	904	886	831	797
		Watts	220	226	231	243	264	269	281	293	301	317
60	Tap(5)	SCFM	2054	2015	1970	1947	1928	1886	1846	1804	1742	1654
		Watts	470	495	512	518	528	542	553	569	567	548
	Tap(4) -Factory	SCFM	1883	1840	1797	1783	1754	1712	1670	1622	1579	1541
		Watts	367	388	406	411	420	422	445	454	466	479
	Tap(3)	SCFM	1721	1674	1625	1582	1566	1528	1484	1443	1401	1345
		Watts	289	305	319	327	330	341	353	365	378	387
	Tap(2)	SCFM	1515	1463	1407	1386	1358	1308	1262	1215	1153	1073
		Watts	205	218	229	235	239	251	263	276	285	301
	Tap(1)	SCFM	1337	1265	1208	1156	1148	1095	984	955	963	789
		Watts	145	157	167	173	178	186	197	212	225	235

--- Shaded boxes represent airflow outside the required 300-450 cfm/ton.

NOTES: Airflow based upon cooling coil at 230V with no electric heat and no filter. Airflow at 208V is approximately the same as 230V because the multi-tap ECM motor is a constant torque motor. The torque doesn't drop off at the speeds in which the motor operates.

## Heater Kit Data

### Electric Kit MCA/MOP Data

Heat Kit Model	Air Handler Model	(kW)Electric Heat	MIN. Circuit Ampacity		MAX.Fuse or Breaker (HACR) Ampacity		Fan speed					
			240	208	240	208	1	2	3	4	5	
WEHK05A	24	5	28.5	24.9	30	25	●	●	●	●	●	
WEHK08A		7.5	41.5	36.3	45	40	X	X	●	●	●	
WEHK10A		10	54.5	47.6	60	50	X	X	●	●	●	
WEHK05A	36	5	29.7	26.2	30	30	●	●	●	●	●	
WEHK08A		7.5	42.7	37.5	45	40	X	●	●	●	●	
WEHK10A		10	55.8	48.8	60	50	X	X	●	●	●	
WEHK15B	15	15	55.8+26.1	48.8+22.6	60+30	50+25	X	X	●	●	●	
			81.8※	75.3※	90※	80※						
WEHK05A	48	5	33.6	30.1	35	35	●	●	●	●	●	
WEHK08A		7.5	46.6	41.4	50	45	●	●	●	●	●	
WEHK10A		10	59.6	52.7	60	60	X	●	●	●	●	
WEHK15B		15	15	59.6+26.1	52.7+22.6	60+30	60+25	X	X	●	●	●
				85.7※	75.3※	90※	80※					
WEHK20B		20	20	59.6+52.1	52.7+45.2	60+60	60+50	X	X	X	●	●
	111.7※			97.8※	125※	100※						
WEHK05A	60	5	33.6	30.1	35	35	X	X	●	●	●	
WEHK08A		7.5	46.6	41.4	50	45	X	X	●	●	●	
WEHK10A		10	59.6	52.7	60	60	X	X	●	●	●	
WEHK15B		15	15	59.6+26.1	52.7+22.6	60+30	60+25	X	X	●	●	●
				85.7※	75.3※	90※	80※					
WEHK20B		20	20	59.6+52.1	52.7+45.2	60+60	60+50	X	X	X	●	●
	111.7※			97.8※	125※	100※						

Heat kit suitable for AHU 4-way position installation[● means available, X means not available, ※ means single circuit ]

### Heater Kit Accessories

Model	Description	24	36	48	60
WEHK05A	5kW Heat Kit,Double Pole Breaker	o	o	o	o
WEHK08A	7.5kW Heat Kit,Double Pole Breaker	o	o	o	o
WEHK10A	10kW Heat Kit,Double Pole Breaker	o	o	o	o
WEHK15B	15kW Heat Kit,Double Pole Breaker	X	o	o	o
WEHK20B	20kW Heat Kit,Double Pole Breaker	X	X	o	o

Note: 1、● means available, X means not available.

## 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.

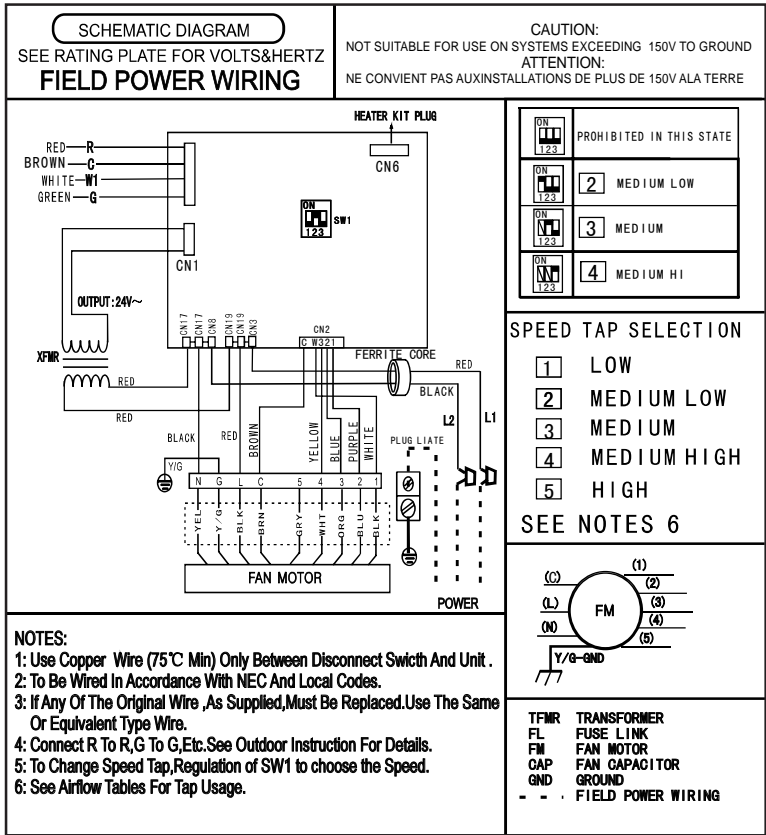


Fig.2: Indoor Unit Wiring Diagram for ECM Motor (24K/36K/48K).

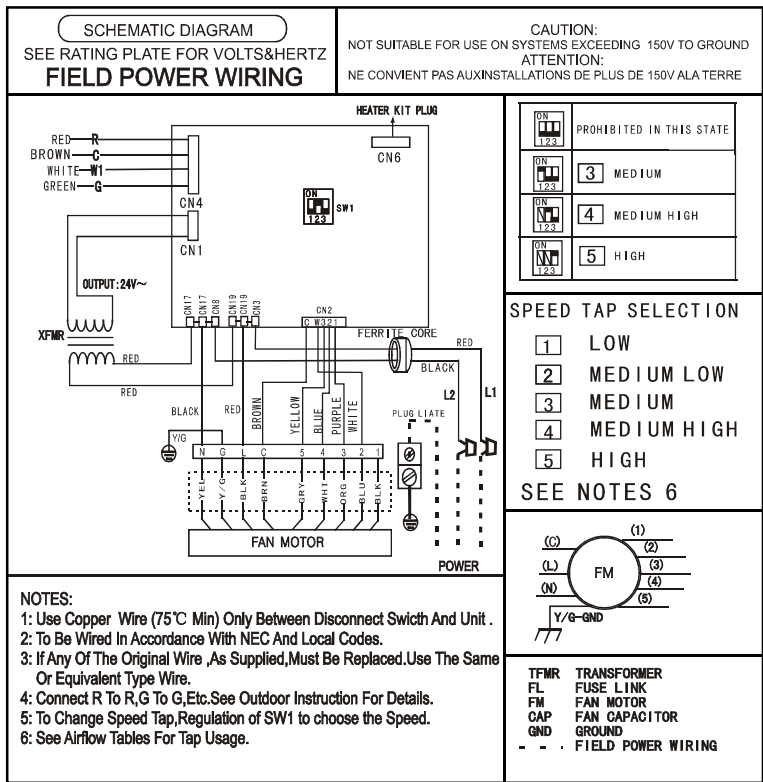


Fig.3: Indoor Unit Wiring Diagram for ECM Motor (60K).



# Wiring Diagram

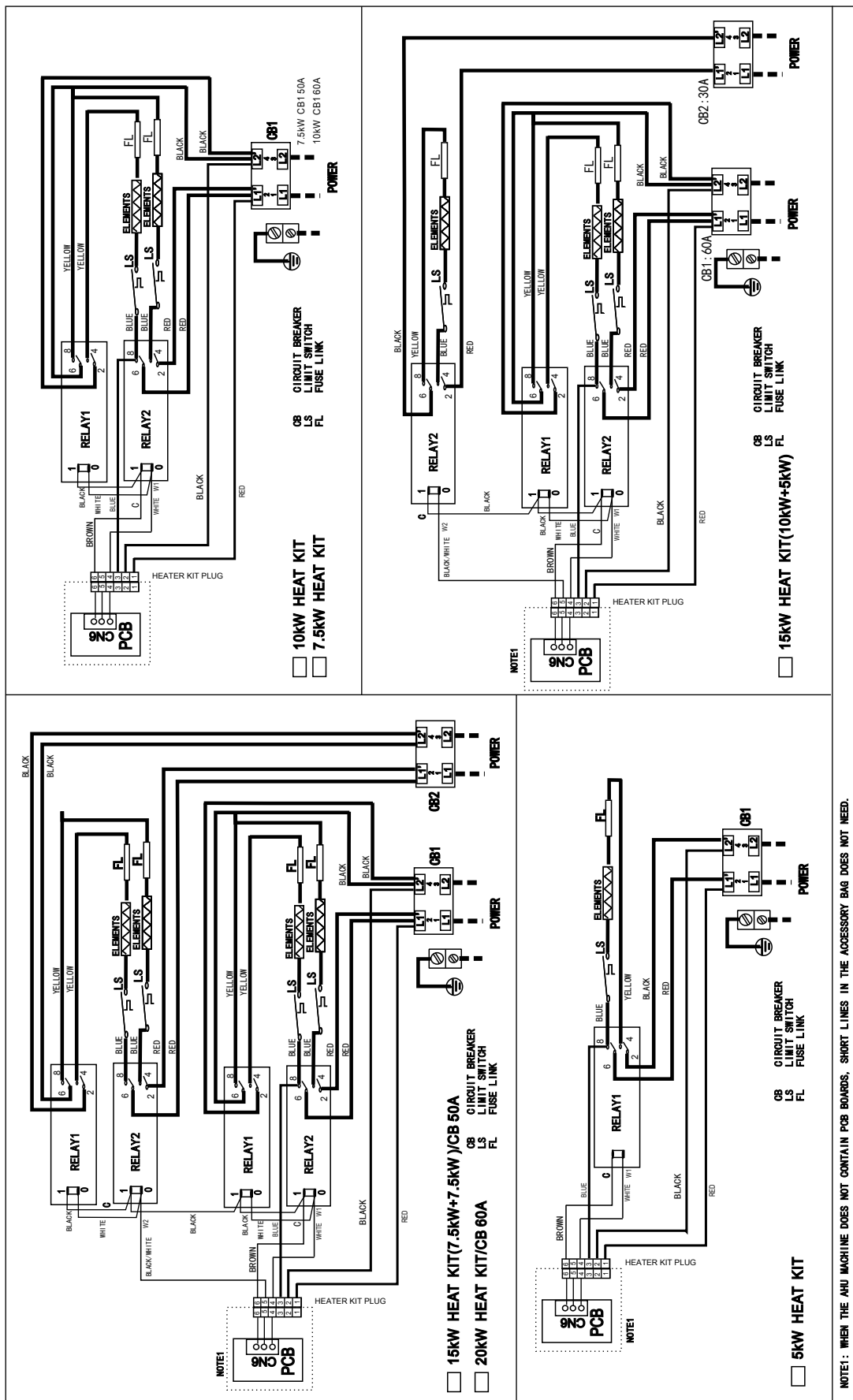
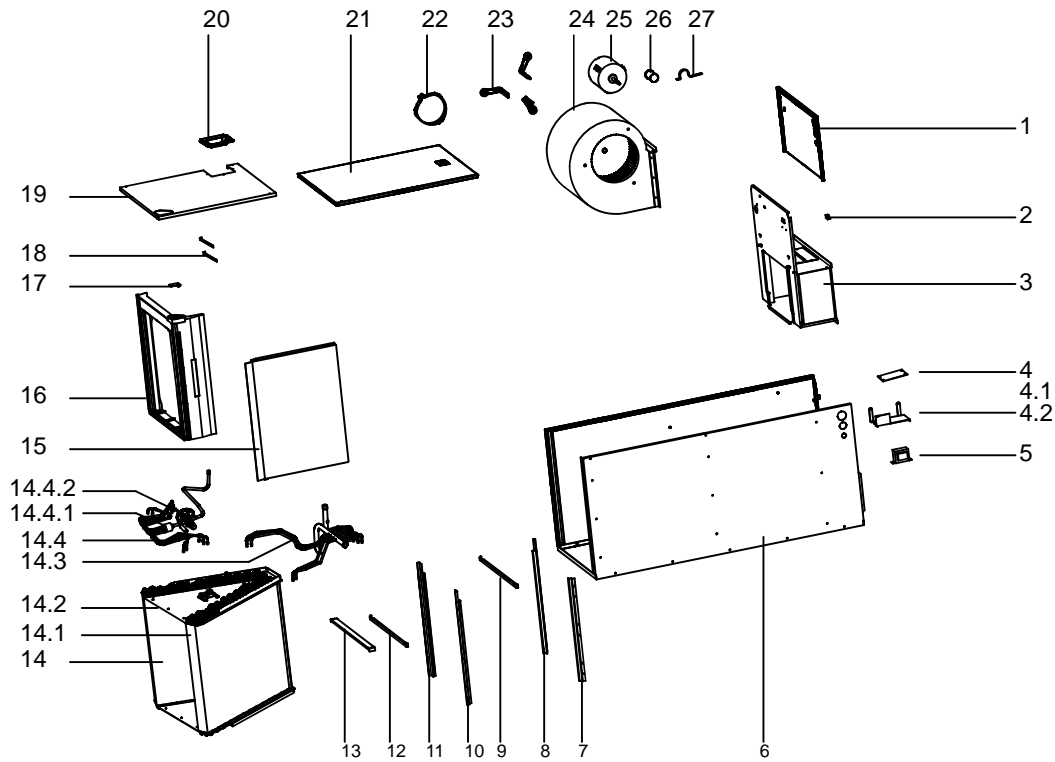


Fig. 4: Indoor Unit Wiring Diagram for Electric Heat.

**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.

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

# Parts List



No.	Part Name	Qty	2T	3T	4T	5T
1	Top Pan, Cabinet	1	201270590079	201270890064	201270890064	201270890064
2	Ground Lug	1	202301440007	202301440007	202301440007	202301440007
3	Duct, Discharge	1	201270490108	201270890101	201270890101	201270890101
4	Main Control Board, Assy	1	203370390083	203370390083	203370390083	203370390083
4.1	Main Control Board	1	201370390077	201370390077	201370390077	201370390077
4.2	Bracket, Mounting	1	201270590096	201270590096	201270590096	201270590096
5	Transformer	1	202300930295	202300930295	202300930295	202300930295
6	Wrapper, Cabinet	1	201270590088	201270890076	201270890076	201270890076
7	Downflow Coil Support (Right)	1	201270590081	201270890067	201270890067	201270890067
8	Downflow Coil Support (Left)	1	201270590153	201270890135	201270890135	201270890135
9	Support Bracket (Middle)	1	201270590403	201270890107	201270890107	201270890107
10	Upflow Coil Support (Right)	1	201270590082	201270890066	201270890066	201270890066
11	Upflow Coil Support (Left)	1	201270590151	201270890133	201270890133	201270890133
12	Support Bracket (Lower)	1	201270590083	201270890069	201270890069	201270890069
13	Cover, Filter	1	201270590080	201270890065	201270890065	201270890065
14	Evaporator Assy	1	201570390087	201570590127	201570790132	201570890133
14.4.1	Distributor	1	201600500030	201600500118	201600500118	201600500118
14.4.2	Expansion valve	1	201601300510	201601300510	201601300508	201601300513
15	Drain Pan, Horizontal	1	201270590091	201270890068	201270890068	201270890068
16	Drain Pan, Vertical	1	201170590002	201170890002	201170890002	201170890002
17	Drain Pan Clamp	1	201270390194	201270390194	201270390194	201270390194
18	Drain Pan Support	2	201270390363	201270390363	201270390363	201270390363
19	Coil Door, Cabinet	1	201270590086	201270890074	201270890074	201270890074
20	Plate, Refrig Line Access	1	201270390192	201270390192	201270390192	201270390192
21	Blower Door, Cabinet	1	201270590087	201270890075	201270890075	201270890075
22	Mounting Bracket, Motor	1	201270390273	201270390273	201270390273	201270390273
23	Mounting Legs, Motor	3	201270290059	201270290059	201270290059	201270290059
24	Blower Assy, Wrapper/Wheel	1	201200300834	201200300894	201200300894	201200300894
25	Blower Motor	1	202400300548	202400300549	202400300560	202400300560

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**NOTES:**









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