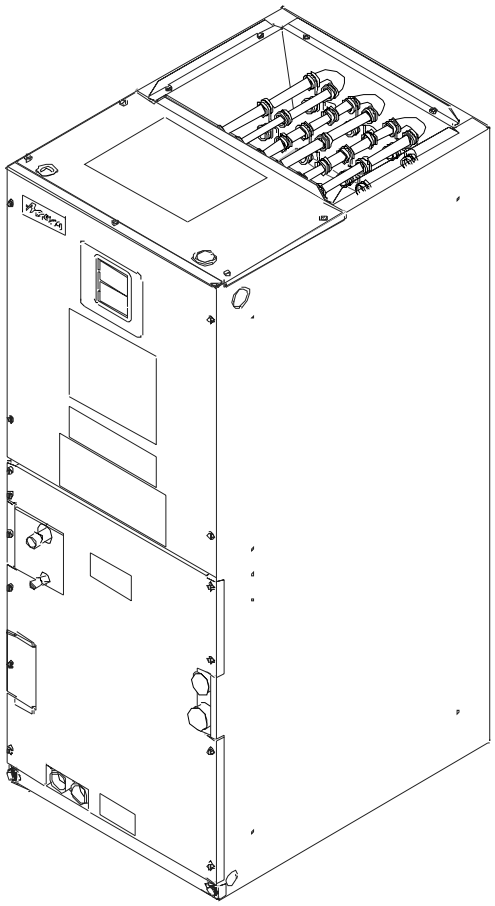
Technical Information

BMA
Airhandler

Model and Manufacturing numbers listed in this manual.

MODEL	M/N
BMA24F00A	P1232301C
BMA24F05A	P1232302C
BMA30F00A	P1232303C
BMA30F07A	P1232309C
BMA36F00A	P1232305C
BMA36F10A	P1232306C
BMA42F00A	P1232307C
BMA42F10A	P1232308C

- Refer to Service Manual RS6200003 for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.



This manual is to be used by qualified HVAC technicians only. Amana does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

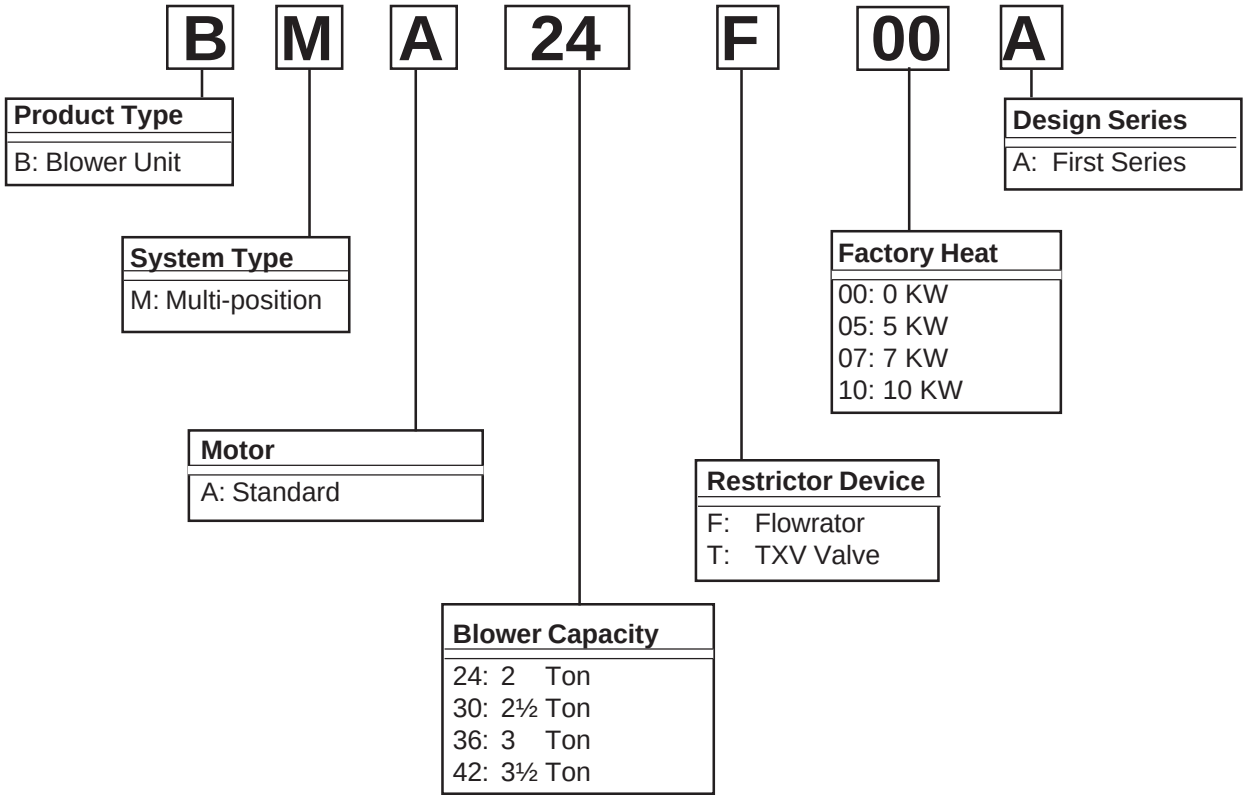
Heating & Air Conditioning
Amana®
Built Better Than It Has To Be

RT6221003
November 2000

PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. At which time engineering and manufacturing changes take place where interchangeability of components are affected, the manufacturing number will change.

It is very important to use the model and manufacturing numbers at all times when requesting service or parts information.



WARNING **IF REPAIRS ARE ATTEMPTED BY UNQUALIFIED PERSONS, DANGEROUS CONDITIONS (SUCH AS EXPOSURE TO ELECTRICAL SHOCK) MAY RESULT. THIS MAY CAUSE SERIOUS INJURY OR DEATH.**

CAUTION **AMANA WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU PERFORM SERVICE ON YOUR OWN PRODUCT, YOU ASSUME RESPONSIBILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE WHICH MAY RESULT.**

PRODUCT DESIGN

The BMA one-piece multi-position airhandler is an indoor blower/coil unit primarily used with remote air conditioners and heat pumps. But, it can also be used as an electric furnace. This unit can be positioned for upflow, downflow, horizontal right or horizontal left operation.

Units with factory installed heat will show the kW amount in the model number; (i.e. BMA24F05A for 5 kW heat). For models without factory installed heat, electric heat kits EDK and EDB are available as sales accessories for supplemental electric heat.

All units are constructed with R-4.2 Tuf-Skin© insulation. In areas of extreme humidity (greater than 80% consistently,) the installer should insulate the exterior of the blower with insulation having a vapor barrier equivalent to the insulation used on the ductwork.

Filtering is required for this unit. Filters are not shipped with the unit and must be provided. BMA24*/30* models require a 15x20x1 or larger filter. BMA30*/42* models require a 18x20x1 or larger filter. As an alternative, the filter may be installed in the return air grille.

PRODUCT DESIGN

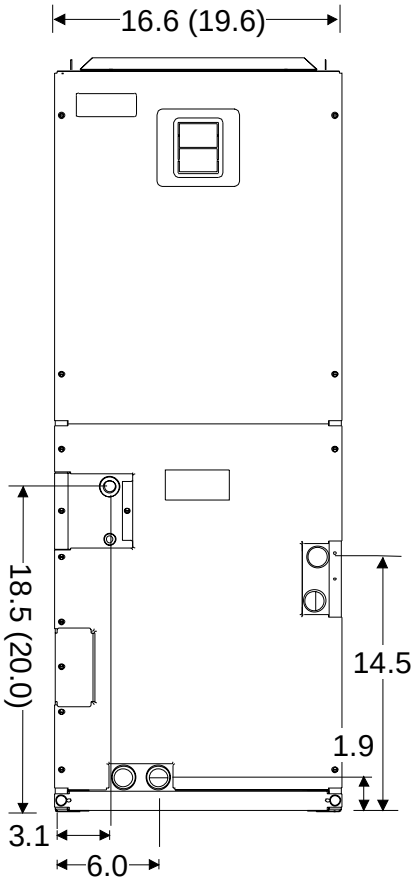
If the unit is being installed above the ceiling of a finished area, install a secondary drain pan with a separate drain connection under the entire unit per FHA and local codes.

A trap must be provided in the condensate drain line as near the unit as possible. Only one trap per line should be provided. The top of the trap must be 2" lower than the bottom of the unit drain pan.

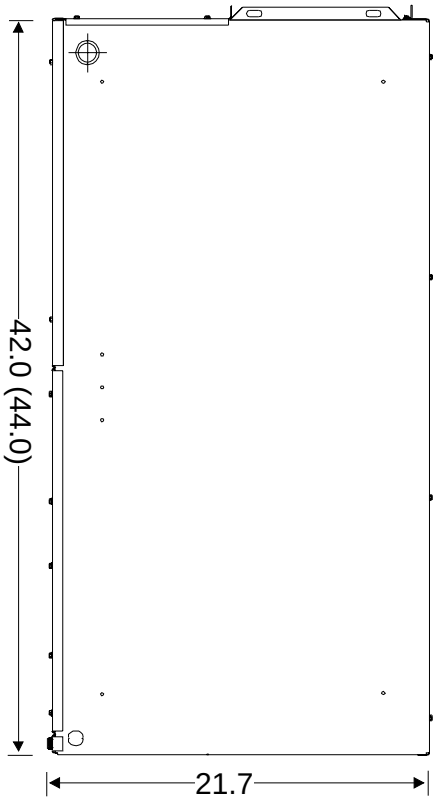
Electrical wiring must meet local code requirements in addition to the National Electric Code or the Canadian Electrical Code.

Ductwork must comply with the National Fire Protection Association (NFPA 90A & 90B). Refer to ASHRAE recommendations or manual "D" of the Air Conditioning Contractors of America. Duct connections at the unit should be flexible to reduce operating sound and vibration transmission.

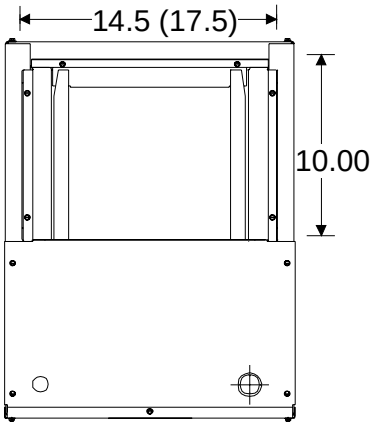
BMA AIRHANDLER DIMENSIONS



FRONT VIEW



SIDE VIEW



TOP VIEW

All dimensions are in inches.

Dimensions in brackets "( )", indicate large chassis (BMA36-42) dimentions.

		BMA24F00A	BMA24F05A	BMA30F00A	BMA30F07A	BMA36F00A	BMA36F10A	BMA42F00A	BMA42F10A
ELECTRICAL	HIGH VOLTAGE	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1	208-230/60/1
	LOW VOLTAGE	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac	24 Vac
BLOWER MOTOR	HORSEPOWER	1/4	1/4	1/3	1/3	1/3	1/3	1/2	1/2
	NO. OF BLOWER SPEEDS	3	3	2	2	2	2	2	2
	NOM. CFM	600 & 800	600 & 800	1000	1000	1200	1200	1400	1400
GENERAL INFORMATION	NOM. COOLING CAPACITY (TONS)	1.5 & 2	1.5 & 2	2.5	2.5	3	3	3.5	3.5
	SUCTION LINE	5/8	5/8	3/4	3/4	3/4	3/4	3/4	3/4
	LIQUID LINE	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
	DRAIN CONNECTION	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
	REFRIGERANT	R22	R22	R22	R22	R22	R22	R22	R22
	FACTORY INSTALLED ORIFICE	0.062	0.062	0.064	0.064	0.068	0.068	0.073	0.073
	FACTORY INSTALLED HEATER	none	5 kW	none	7 kW	none	10 kW	none	10 kW
	UNIT SIZE (WxDxH) (IN.)	16.6x21.7x42	16.6x21.7x42	16.6x21.7x42	16.6x21.7x42	19.6x21.7x44	19.6x21.7x44	19.6x21.7x44	19.6x21.7x44
	SUPPLY DUCT OPENING (IN.)	14.5 x 10	14.5 x 10	14.5 x 10	14.5 x 10	17.5 x 10	17.5 x 10	17.5 x 10	17.5 x 10
	RETURN DUCT OPENING (IN.)	20 x 12.5	20 x 12.5	20 x 12.5	20 x 12.5	20 x 15.5	20 x 15.5	20 x 15.5	20 x 15.5
	AIR FILTER (Field Supplied)	15 x 20 x 1	15 x 20 x 1	15 x 20 x 1	15 x 20 x 1	18 x 20 x 1	18 x 20 x 1	18 x 20 x 1	18 x 20 x 1
	UNIT WEIGHT (LBS.)	106	107	120	121	125	126	125	126
ACCESSORIES	THERMOSTATIC EXPANSION VALVE	TXV04A	TXV04A	TXV05A	TXV05A	TXV05A	TXV05A	TXV06A	TXV06A
	NO HEAT KIT	NHK01A	----	NHK01A	----	NHK01A	----	NHK01A	----
	HEAT KIT WITHOUT BREAKER	EDK05A	----	EDK05A	----	EDK05A	----	EDK05A	----
		EDK07A	----	EDK07A	----	EDK07A	----	EDK07A	----
		EDK10A	----	EDK10A	----	EDK10A	----	EDK10A	----
		----	----	EDK15A	----	EDK15A	----	EDK15A	----
		----	----	----	----	EDK20A	----	EDK20A	----
	HEAT KIT WITH BREAKER	EDB05A	----	EDB05A	----	EDB05A	----	EDB05A	----
		EDB07A	----	EDB07A	----	EDB07A	----	EDB07A	----
		EDB10A	----	EDB10A	----	EDB10A	----	EDB10A	----
		----	----	EDB15A	----	EDB15A	----	EDB15A	----
		----	----	----	----	EDB20A	----	EDB20A	----
	DOWNFLOW KIT	DFL01	DFL01	DFL01	DFL01	DFL02	DFL02	DFL02	DFL02
	AMBIENT THERMOSTAT KIT	ATK03A	ATK03A	ATK03A	ATK03A	ATK03A	ATK03A	ATK03A	ATK03A

Factory installed orifice is for the RHA--B*A heat pump models, refer to the Installation Instructions for other OD unit models.

Line set connection is determined by the OD unit and not by the ID coil connection.

BMA AIRHANDLER SPECIFICATIONS

EDK/EDB ELECTRIC HEATER DATA

			General Electrical Data					
			SINGLE CIRCUIT		DUAL CIRCUIT			
Heater Kit Model	Volt	kW	Minimum Circuit Ampacity (MCA)	Maximum Overcurrent Protection (MOP)	Minimum Circuit Ampacity (MCA)	Maximum Overcurrent Protection (MOP)	Minimum Circuit Ampacity (MCA)	Maximum Overcurrent Protection (MOP)
NHK01A	240	none	3.4	15	--	--	--	--
(no heat kit)	208	none	2.9	15	--	--	--	--
EDK05A or	240	4.8	29.6	30	--	--	--	--
EDB05A	208	3.6	25.6	30	--	--	--	--
EDK07A or	240	7.0	41.0	45	--	--	--	--
EDB07A	208	5.3	35.5	40	--	--	--	--
EDK10A or	240	9.5	55.9	60	--	--	--	--
EDB10A	208	7.1	48.4	50	--	--	--	--
EDK15A or	240	14.3	--	--	29.6	30	52.5	60
EDB15A	208	10.7	--	--	25.6	30	45.5	45
EDK20A or	240	17.5	--	--	34.6	35	60.0	60
EDB20A	208	13.1	--	--	30.0	30	52.0	60

Use only copper wires, 75 °C minimum.

Install and size wires per NEC (National Electrical Code) and local codes.

Please refer to the name plate data for the specific model electrical data.

CAUTION

To avoid the risk of fire, overcurrent protection must not exceed the value listed above.

BMA AIR FLOW DATA

Dry Air Flow Data w/o air filter (CFM)

external static (in.w.c.)	BMA24			BMA30		BMA36		BMA42	
	low	med.	high	low	high	low	high	low	high
0.1	630	850	1060	1120	1390	1270	1430	1510	1650
0.2	600	790	1000	1090	1350	1210	1360	1440	1580
0.3	550	750	930	1080	1300	1160	1290	1360	1500
0.4	500	700	860	1050	1240	1090	1250	1300	1420
0.5	440	640	790	1020	1180	1030	1120	1210	1320
0.6		530	700	970	1110	940	1020	1130	1240

Air flow data is ± 5%; data obtained at 230 VAC in upflow position.

Clean air filter static is appx. 0.1; Electric heater static is negligible

Listed data is with horizontal drain pan installed.

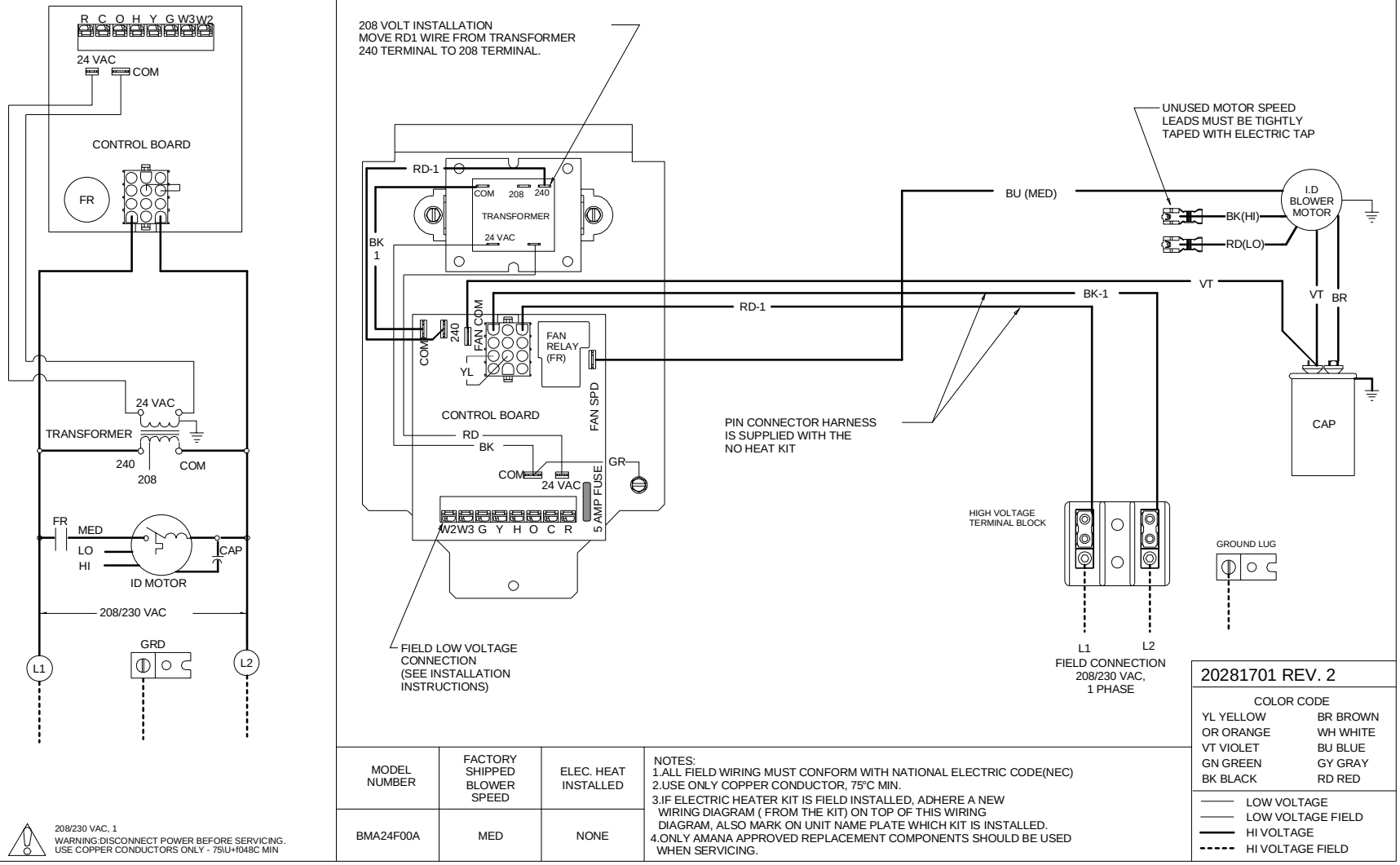
Subtract 0.5" static if removed (upflow/downflow only)

	5 kW	7 kW	10 kW	15 kW	20 kW
BMA24	low	med	med	Do not use	Do not use
BMA30	low	low	low	high	Do not use
BMA36	low	low	low	high	high
BMA42	low	low	low	low	low

Minimum speed allowed with electric heat

WIRING DIAGRAMS

BMA24F00A W/No Heat Kit



MODEL NUMBER	FACTORY SHIPPED BLOWER SPEED	ELEC. HEAT INSTALLED
BMA24F00A	MED	NONE

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20281701 REV. 2

COLOR CODE

YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

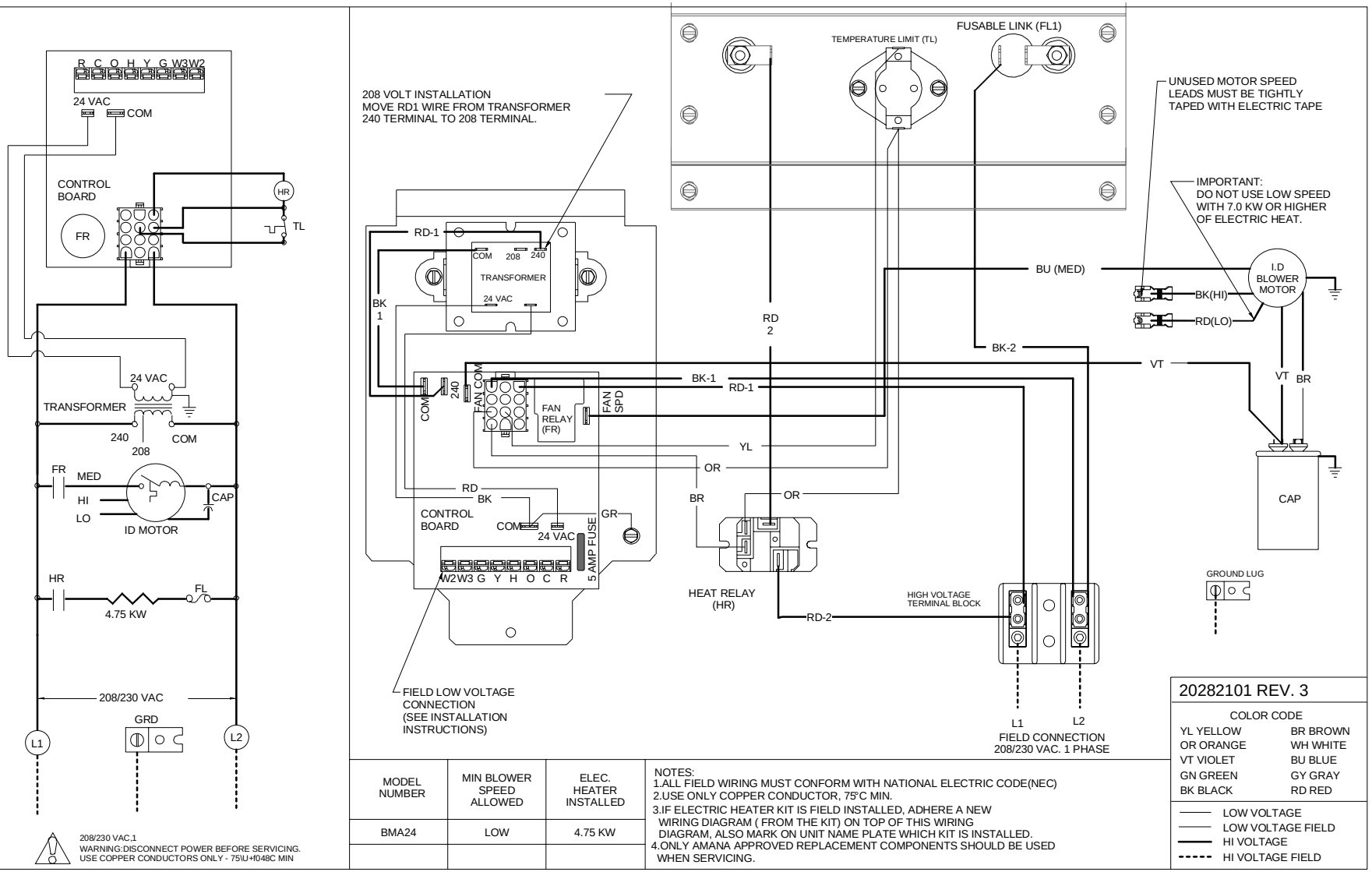
LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

208/230 VAC, 1
WARNING:DISCONNECT POWER BEFORE SERVICING.
USE COPPER CONDUCTORS ONLY - 75\U+f048C MIN

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS

BMA24F00A W/5 Kw. Heat



MODEL NUMBER	MIN BLOWER SPEED ALLOWED	ELEC. HEATER INSTALLED
BMA24	LOW	4.75 KW

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20282101 REV. 3

COLOR CODE

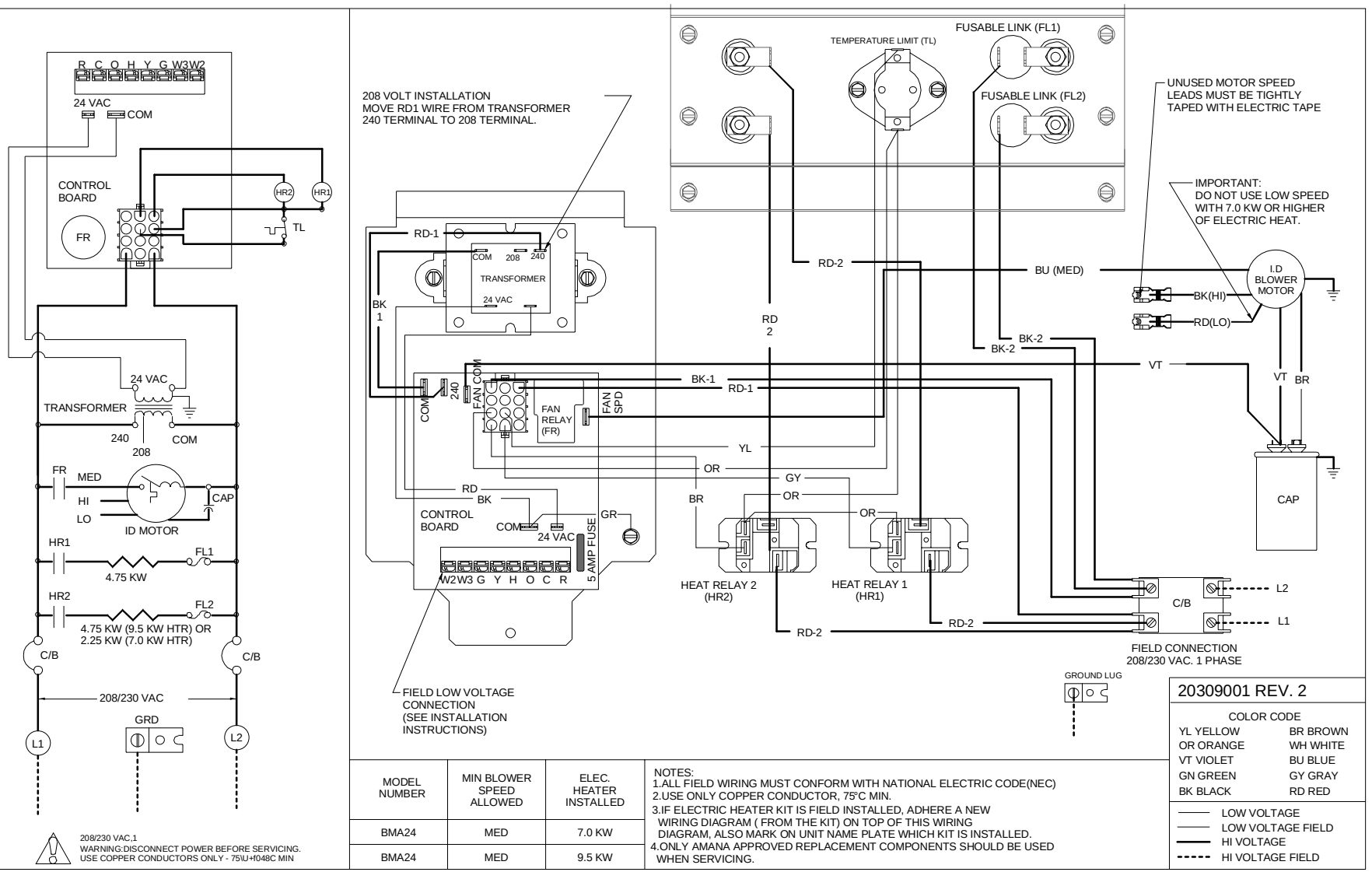
YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS

BMA24F00A W/7 or 10 Kw. Heat



MODEL NUMBER	MIN BLOWER SPEED ALLOWED	ELEC. HEATER INSTALLED
BMA24	MED	7.0 KW
BMA24	MED	9.5 KW

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

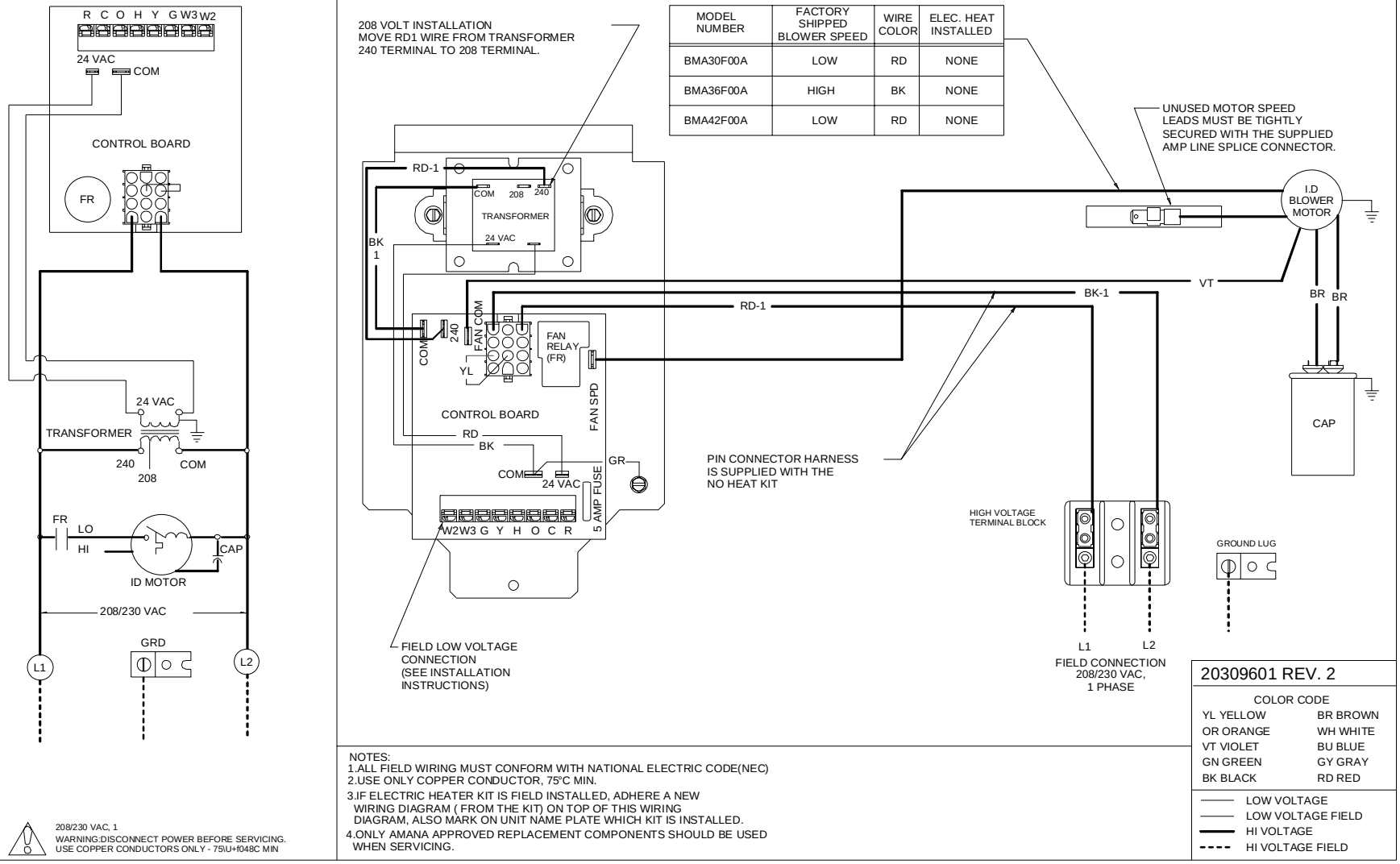
20309001 REV. 2

COLOR CODE

YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**



MODEL NUMBER	FACTORY SHIPPED BLOWER SPEED	WIRE COLOR	ELEC. HEAT INSTALLED
BMA30F00A	LOW	RD	NONE
BMA36F00A	HIGH	BK	NONE
BMA42F00A	LOW	RD	NONE

208/230 VAC, 1
WARNING:DISCONNECT POWER BEFORE SERVICING.
USE COPPER CONDUCTORS ONLY - 75\U+f048C MIN

NOTES:
1.ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2.USE ONLY COPPER CONDUCTOR, 75°C MIN.
3.IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4.ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20309601 REV. 2

COLOR CODE

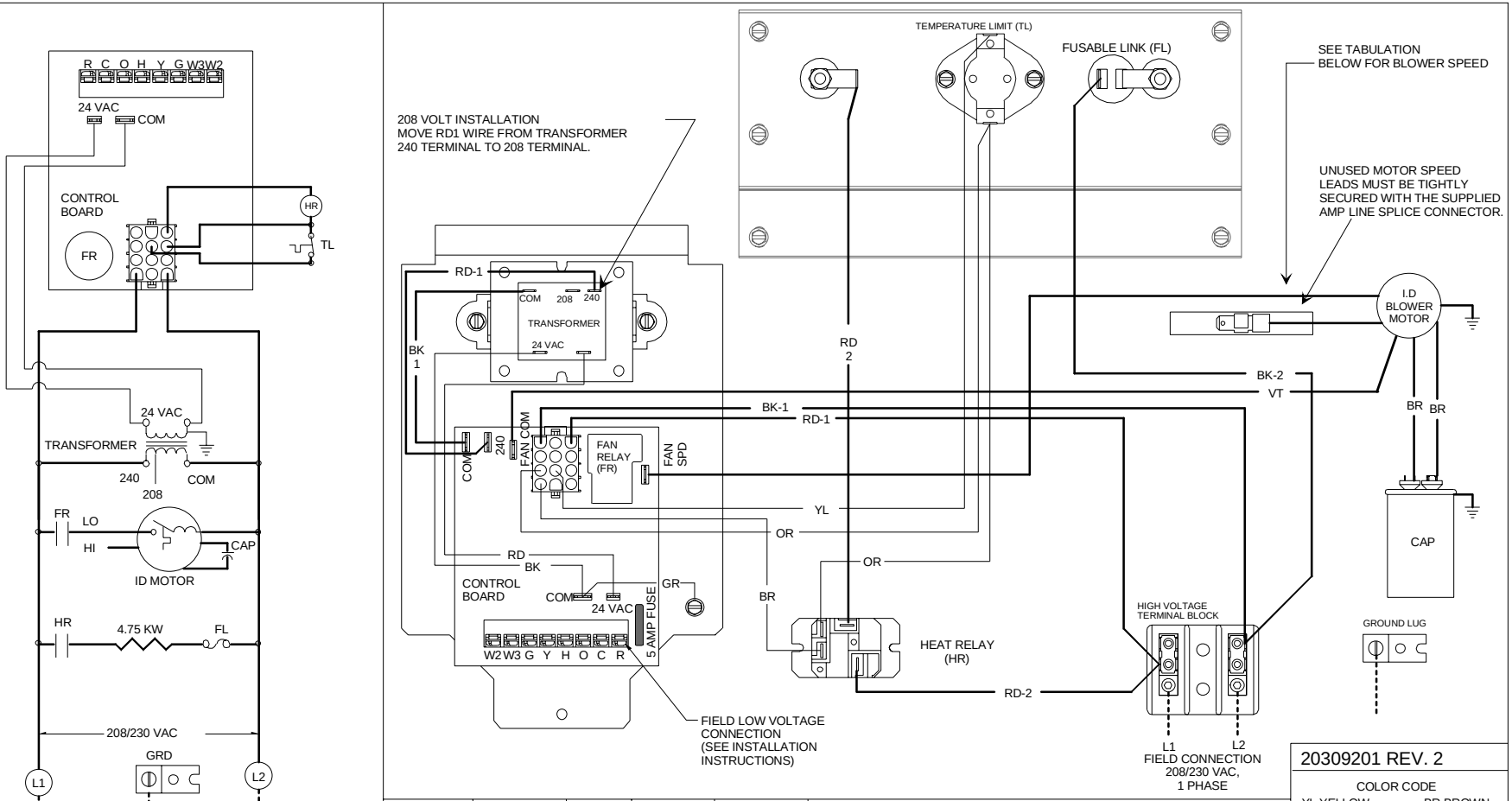
YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS

BMA(30-42)F00A W/5 Kw. Heat



MODEL NUMBER	FACTORY SHIPPED BLOWER SPEED	WIRE COLOR	ELEC. HEATER INSTALLED	MIN BLOWER SPEED ALLOWED
BMA30	LOW	RD	4.75 KW	LOW
BMA36	HIGH	BK	4.75 KW	LOW
BMA42	LOW	RD	4.75 KW	LOW

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20309201 REV. 2

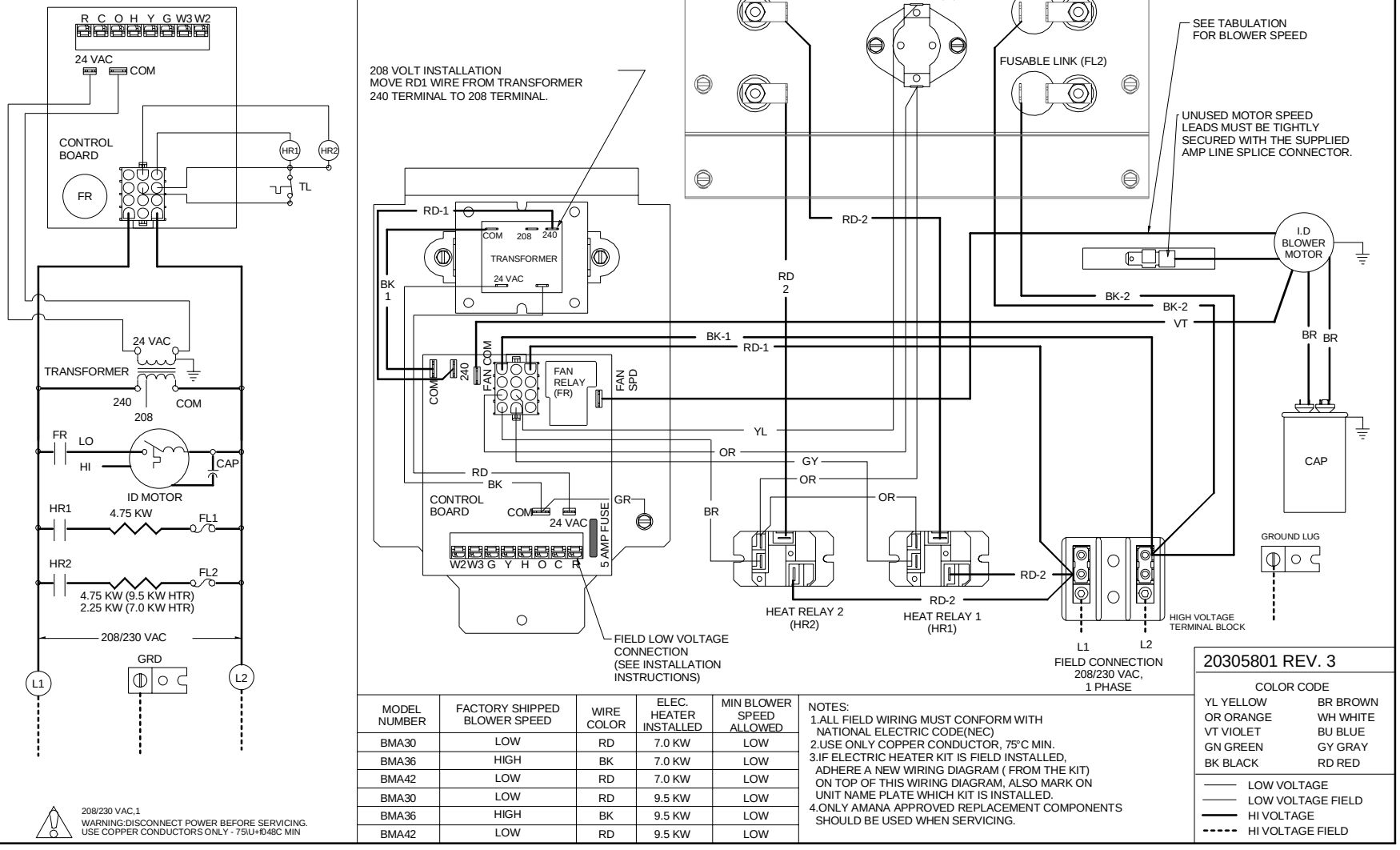
COLOR CODE	
YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

208/230 VAC,1
WARNING:DISCONNECT POWER BEFORE SERVICING.
USE COPPER CONDUCTORS ONLY - 75\U+f048C MIN

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS



MODEL NUMBER	FACTORY SHIPPED BLOWER SPEED	WIRE COLOR	ELEC. HEATER INSTALLED	MIN BLOWER SPEED ALLOWED
BMA30	LOW	RD	7.0 KW	LOW
BMA36	HIGH	BK	7.0 KW	LOW
BMA42	LOW	RD	7.0 KW	LOW
BMA30	LOW	RD	9.5 KW	LOW
BMA36	HIGH	BK	9.5 KW	LOW
BMA42	LOW	RD	9.5 KW	LOW

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20305801 REV. 3

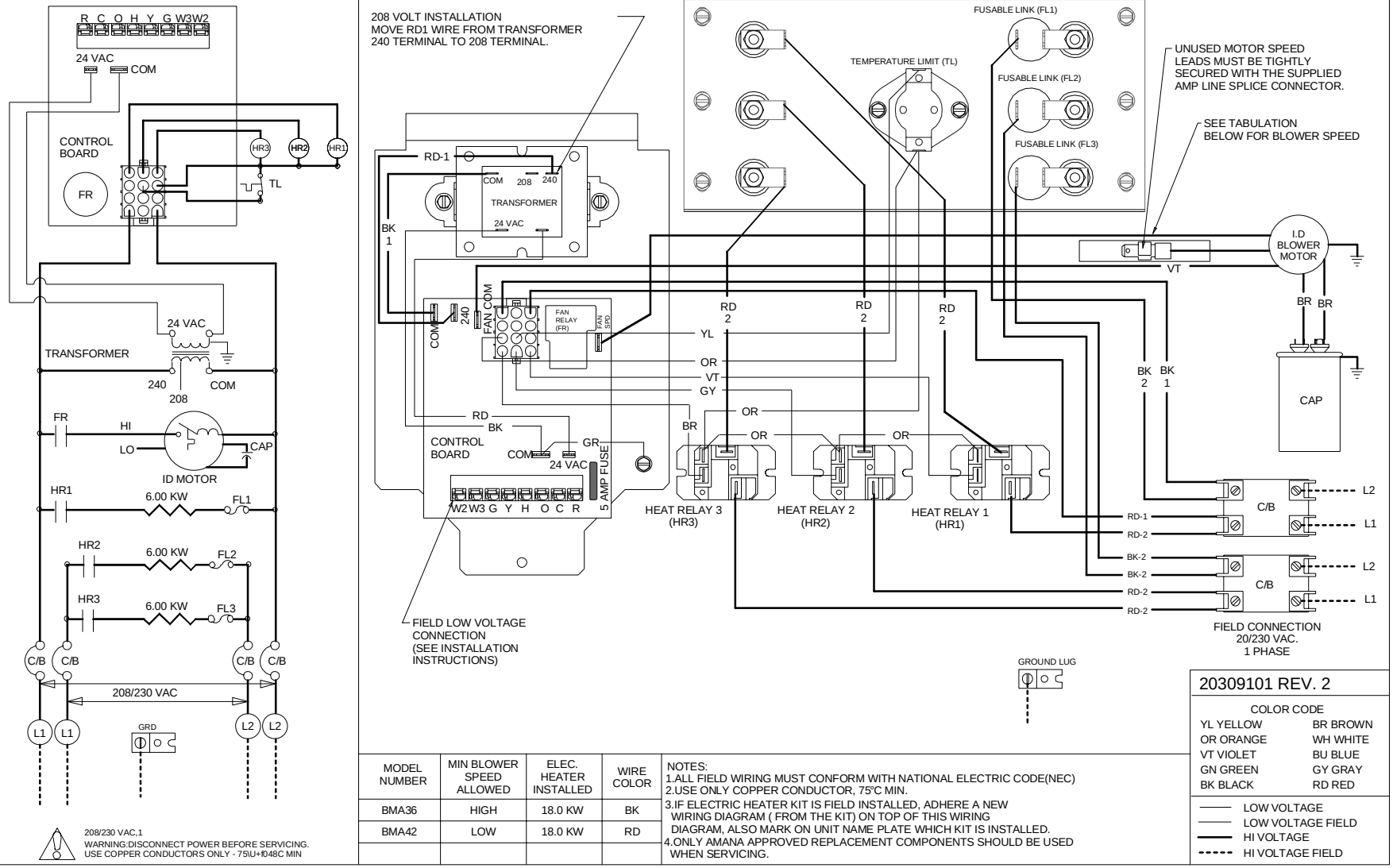
COLOR CODE

YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS



MODEL NUMBER	MIN BLOWER SPEED ALLOWED	ELEC. HEATER INSTALLED	WIRE COLOR
BMA36	HIGH	18.0 KW	BK
BMA42	LOW	18.0 KW	RD

NOTES:
1. ALL FIELD WIRING MUST CONFORM WITH NATIONAL ELECTRIC CODE(NEC)
2. USE ONLY COPPER CONDUCTOR, 75°C MIN.
3. IF ELECTRIC HEATER KIT IS FIELD INSTALLED, ADHERE A NEW WIRING DIAGRAM (FROM THE KIT) ON TOP OF THIS WIRING DIAGRAM, ALSO MARK ON UNIT NAME PLATE WHICH KIT IS INSTALLED.
4. ONLY AMANA APPROVED REPLACEMENT COMPONENTS SHOULD BE USED WHEN SERVICING.

20309101 REV. 2

COLOR CODE

YL YELLOW	BR BROWN
OR ORANGE	WH WHITE
VT VIOLET	BU BLUE
GN GREEN	GY GRAY
BK BLACK	RD RED

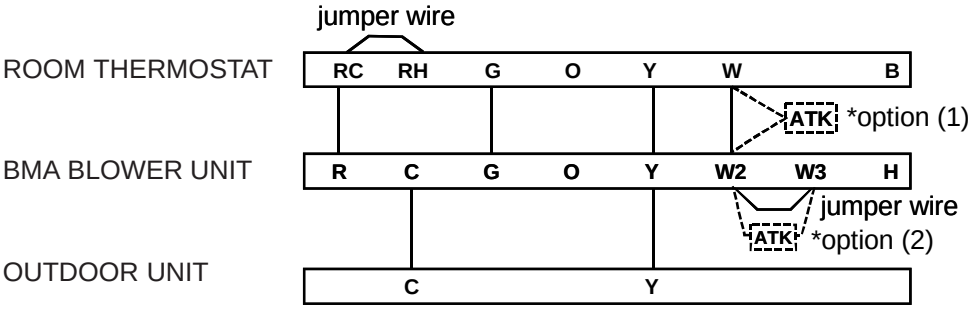
LOW VOLTAGE
LOW VOLTAGE FIELD
HI VOLTAGE
HI VOLTAGE FIELD

WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS

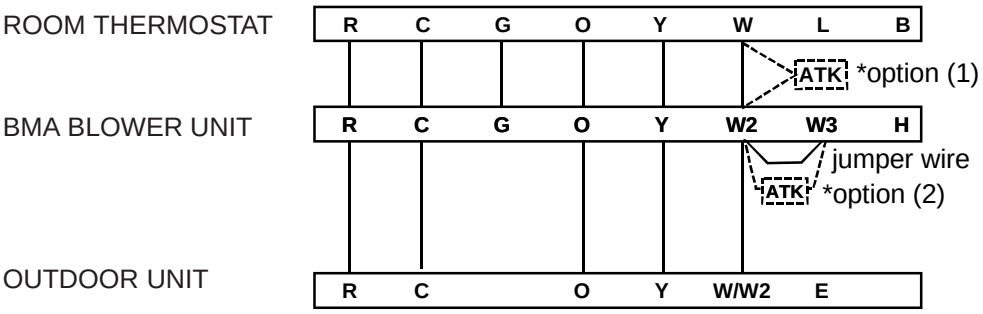
A) Cooling Units

Connections shown are for Amana thermostat 1213401 and 1213402.



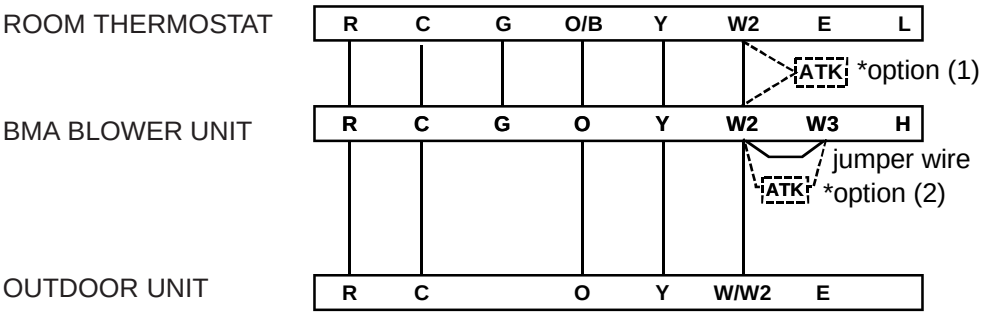
B) Heat Pumps

1. Connections shown are for Amana thermostat 1213403.



E & W2 on RHA models

2. Connections shown are for Amana thermostat 1213404 and 1213405



E & W2 on RHA models

***Optional ambient thermostat kit can be mounted as either option (1) or (2). If mounted as option (2), remove jumper wire. Option 1: Controls supplemental or electric heat input from thermostat. Option 2: Controls heat above 5 kW.**

Approved Thermostats are:

Heat Pumps:	1213403	Analog
	1213404	Digital - Nonprogrammable
	1213405	Digital - Programmable
Cooling Units:	1213402	Digital - Nonprogammable
	1213401	Digital - Programmable

Thermostats shown with required connections only. Thermostats may have other terminals not shown in diagrams.

WARNING

TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.