

Technical Information

BBC_A2[A/C] BLOWERS

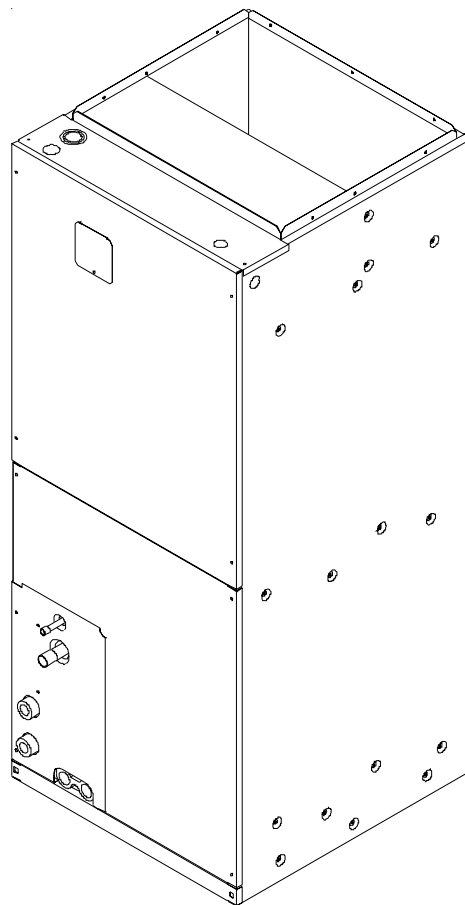
Model and Manufacturing
numbers listed in this manual.

MODEL	M/N
BBC36A2A	P1206405C
BBC48A2A	P1206407C
BBC60A2A	P1206406C

BBC36A2A	P1206419C
BBC48A2A	P1206421C
BBC60A2A	P1206420C

BBC36A2C	P1253601C
BBC48A2C	P1253602C
BBC60A2C	P1253603C

- 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 replaces RT6223001 Rev. 0 June 1999.

REV. 1 - New BBC_A2A models added to manual (blower housing scroll hole relocation). Added "D" model electric heater kit information. New wiring diagrams. Added BBC__A2C models that can be matched with two speed outdoor products.



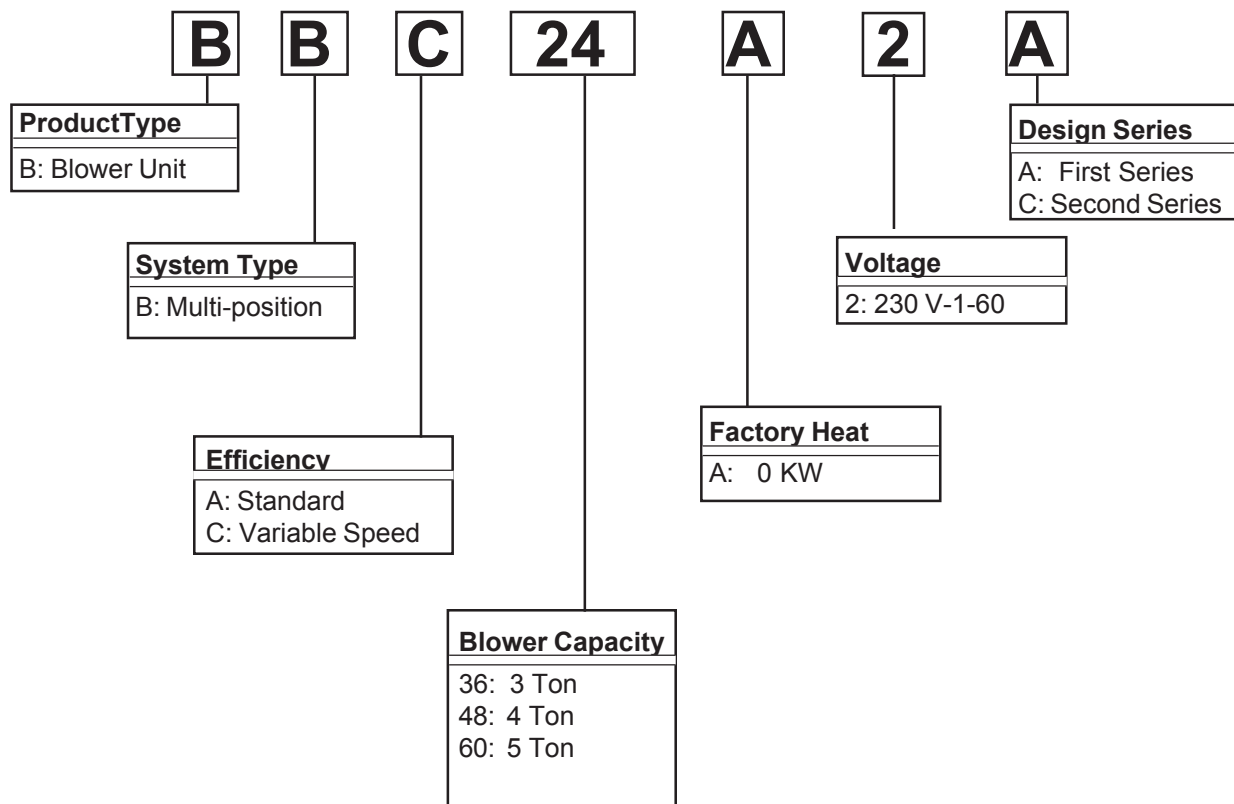
This manual is to be used by qualified HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures performed by an unqualified person.

RT6223001
Revision 1
August 2004

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

GOODMAN DOES NOT ACCEPT RESPONSIBILITY 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

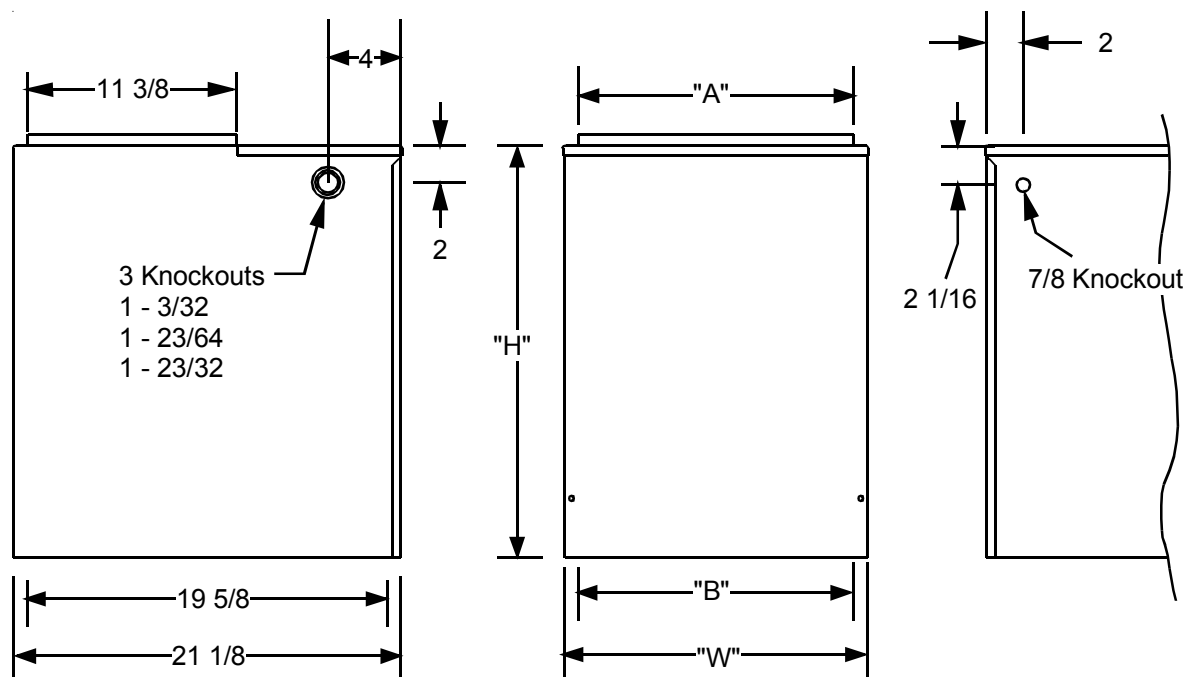
BBC blower cabinets are designed as a two-piece blower coil. BBC blower section can be attached to a CCA_FC_, CHA_TC_, or CHF_TC_ cased evaporator coil. This two piece arrangement allows for a variety of mix-matching possibilities providing greater flexibility.

The BBC blower cabinet uses a variable speed motor that maintains a constant airflow despite duct static. It is approved for applications with cooling coils of up to 0.8 inches W.C. external static pressure and includes a feature that allows airflow to be changed by $\pm 15\%$.

The BBC is intended to be used with a cased evaporator coil and a condensing unit or heat pump. The blower section of the cabinet can also be used as an electric furnace. The electric heating elements are field-installed. Electric heater kits (EHK-B/C/D and ECB-B/C/D) are available as sales accessories for supplemental electric heat.

The BBC blower cabinets can be positioned for upflow, counterflow, horizontal right or horizontal left operation. All units are constructed with R-4.2 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 ductwork insulation, providing local codes permit.

BBC BLOWER COIL SPECIFICATIONS



MODEL	Dimensions, inches (mm)				Shipping Weight lbs.(kg)	Physical Information			
	W	H	A	B		Blower Wheel (D x W)	Blower Motor (HP)	MCA ¹	MOP ¹
BBC36A2 [A/C]	$16 \frac{1}{2}$ (419)	$22 \frac{1}{4}$ (565)	15 (381)	15 (381)	72 (32.6)	10 x 7 (254 x 177.8)	1/2	5.4	15
BBC48A2A [A/C]	$20 - \frac{1}{2}$ (521)	$22 \frac{1}{4}$ (565)	19 (483)	19 (483)	82 (37.2)	10 x 10 (254 x 254)	3/4	8.8	15
BBC60A2A [A/C]	$24 \frac{1}{2}$ (622)	$26 \frac{1}{4}$ (667)	23 (584)	23 (584)	94 (42.6)	11 x 10 (279.4 x 254)	3/4	8.8	15

¹ Minimum Circuit Ampacity (MCA) and Maximum Overcurrent Protection (MOP) for blower without supplemental heat installed. Refer to unit nameplate for MCA and MOP with approved accessory heaters installed.

BBC BLOWER COIL SPECIFICATIONS

EHK/ECB ELECTRIC HEATER DATA

CAUTION

TO AVOID THE RISK OF FIRE, OVERCURRENT PROTECTION MUST NOT EXCEED THE VALUE LISTED.

MINIMUM CIRCUIT AMPACITY

Model	Heater	EHK05B/C ECB05B/C	EHK07B/C ECB07B/C	EHK10B/C ECB10B/C	EHK15B/C ECB15B/C	EHK20B/C ECB20B/C	EHK25B/C ECB25B/C	EHK30B/C ECB30B/C	ECB15B/C + SPK02A	ECB20B/C + SPK02A	ECB25B/C + SPK03A	ECB30B/C + SPK03A
BBC36A2A	L1/L2	31.3	44.8	57.3	57.3	57.3	57.3	57.3	83.3	109.2	135.2	161.2
	L3/L4				26	55	55	52				
	L5/L6						26	55				
BBC48A2A	L1/L2	33.9	44.6	55.7	55.7	55.7	55.7	55.7	85.9	111.9	137.9	163.9
	L3/L4				26	55	55	52				
	L5/L6						26	55				
BBC60A2A	L1/L2	34.7	48.2	60.7	60.7	60.7	60.7	60.7	86.6	112.6	138.6	164.5
	L3/L4				26	55	55	52				
	L5/L6						26	55				

Model	Heater	EHK05D ECB05D	EHK07D ECB07D	EHK10D ECB10D	EHK15D ECB15D	EHK20D ECB20D	EHK25D ECB25D	ECB15D + SPK02A	ECB20D + SPK02A	ECB25D + SPK03A
BBC36A2 [A/C]	L1/L2	30.0	42.5	55.0	55.0	55.0		83.1	105.0	
	L3/L4				25.0	50.0				
	L1/L2		45.0	57.5	57.5	57.5	57.5	85.6	107.5	137.9
BBC48A2 [A/C]	L3/L4				25.0	50.0	50.0			
	L5/L6						25.0			
	L1/L2		45.0	57.5	57.5	57.5	57.5	85.6	107.5	137.9
BBC60A2 [A/C]	L3/L4				25.0	50.0	50.0			
	L5/L6						25.0			

MAXIMUM OVERCURRENT PROTECTION

Model	Heater	EHK05B/C ECB05B/C	EHK07B/C ECB07B/C	EHK10B/C ECB10B/C	EHK15B/C ECB15B/C	EHK20B/C ECB20B/C	EHK25B/C ECB25B/C	EHK30B/C ECB30B/C	ECB15B/C + SPK02A	ECB20B/C + SPK02A	ECB25B/C + SPK03A	ECB30B/C + SPK03A
BBC36A2A	L1/L2	35	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6						30	60				
BBC48A2A	L1/L2	35	50	60	60	60	60	60	90	125	150	175
	L3/L4				30	60	60	60				
	L5/L6						30	60				
BBC60A2A	L1/L2	35	50	70	70	70	70	70	90	125	150	175
	L3/L4				30	60	60	60				
	L5/L6						30	60				

Model	Heater	EHK05D ECB05D	EHK07D ECB07D	EHK10D ECB10D	EHK15D ECB15D	EHK20D ECB20D	EHK25D ECB25D	ECB15D + SPK02A	ECB20D + SPK02A	ECB25D + SPK03A
BBC36A2 [A/C]	L1/L2	30.0	45.0	60.0	60.0	60.0		90.0	110.0	
	L3/L4				30.0	60.0				
	L1/L2		45.0	60.0	60.0	60.0	60.0	90.0	110.0	150.0
BBC48A2 [A/C]	L3/L4				30.0	60.0	60.0			
	L5/L6						30.0			
	L1/L2		45.0	60.0	60.0	60.0	60.0	90.0	110.0	150.0
BBC60A2 [A/C]	L3/L4				30.0	60.0	60.0			
	L5/L6						30.0			

BLOWER PERFORMANCE DATA

BBC36A2A						
Application	Tonnage Pin Setting	Heating or Cooling Operation ¹			Fan Only	
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	"MAN FAN" Jumper In Place ²	"MAN FAN" Jumper Removed ²
1½ Ton (18)	A*	550	640	720	320	640
2 Ton (24)	B*	700	820	950	410	820
2½ Ton (30)	C*	880	1020	1140	510	1020
3 Ton (36)	D*	1050	1230	1400	615	1230
3½ Ton (42)	D ^{3*}		1230	1400		

BBC48A2A						
Application	Tonnage Pin Setting	Heating or Cooling Operation ¹			Fan Only	
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	"MAN FAN" Jumper In Place ²	"MAN FAN" Jumper Removed ²
2½ Ton (30)	A*	850	1000	1150	500	1000
3 Ton (36)	B*	1020	1200	1380	600	1200
3½ Ton (42)	C*	1200	1420	1630	710	1420
4Ton (48)	D*	1360	1600	1800	800	1600

BBC60A2A						
Application	Tonnage Pin Setting	Heating or Cooling Operation ¹			Fan Only	
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	Jumper In Place ²	Jumper Removed ²
2½ Ton (30)	D ^{4*}	1070				
3 Ton (36)	D*	1070	1280	1460	640	1280
3½ Ton (42)	C*	1250	1490	1680	745	1490
4 Ton (48)	B*	1440	1680	1950	840	1680
5 Ton (60)	A*	1580	1880	2050	940	1880

* Refer to unit installation instructions for changing speed.

¹ These airflows will be held constant up to 0.8" w.c. E.S.P. with a coil. In order to provide maximum comfort levels the BBC attempts to maintain a supply temperature of 50° F to 65° F during cooling and 90° F to 105° F during heat pump heating. Airflow may be adjusted 10% to maintain the supply temperature.

² Fan only airflows will also increase or decrease 15% if the "ADJUST" pin is set on "+" or "-".

³ This application should not be used with the "Tonnage" selector on "D" and the "Adjust" selector on "-".

⁴ This application should be used only with the "Tonnage" selector on "D" and the "Adjust" selector on "-".

BLOWER PERFORMANCE DATA

BBC36A2C							
Application	Tonnage and Table 2 Pin Setting ⁵	Heating or Cooling Operation ¹			Fan Only		First Stage Cooling Operation ⁶
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	"MAN FAN" Jumper In Place ²	"MAN FAN" Jumper Removed ²	
1½ Ton (18)	A*	550	600	700	300	600	420
2 Ton (24)	B*	680	800	920	400	800	550
2½ Ton (30)	C*	850	1000	1150	500	1000	700
3 Ton (36)	D*	1020	1200	1380	600	1200	840
3½ Ton (42)	D ^{3*}		1200	1380			

BBC48A2C							
Application	Tonnage and Table 2 Pin Setting ⁵	Heating or Cooling Operation ¹			Fan Only		First Stage Cooling Operation ⁶
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	"MAN FAN" Jumper In Place ²	"MAN FAN" Jumper Removed ²	
2½ Ton (30)	A*	850	1000	1150	500	1000	700
3 Ton (36)	B*	1020	1200	1380	600	1200	840
3½ Ton (42)	C*	1200	1400	1630	700	1400	980
4Ton (48)	D*	1360	1600	1840	800	1600	1100

BBC60A2C							
Application	Tonnage Table 2 Pin Setting ⁵	Heating or Cooling Operation ¹			Fan Only		First Stage Cooling Operation ⁶
		Adjust Pin on "-"	Nominal (All Modes)	Adjust Pin on "+"	Jumper In Place ²	Jumper Removed ²	
2½ Ton (30)	D ^{4*}	1070					
3 Ton (36)	D*	1070	1280	1460	640	1280	840
3½ Ton (42)	C*	1250	1490	1680	745	1490	980
4 Ton (48)	B*	1440	1680	1950	840	1680	1100
5 Ton (60)	A*	1580	1880	2050	940	1880	1250

* Refer to unit installation instructions for changing speed.

¹ These airflows will be held constant up to 0.8" w.c. E.S.P. with a coil. In order to provide maximum comfort levels the BBC attempts to maintain a supply temperature of 50° F to 65° F during cooling and 90° F to 105° F during heat pump heating. Airflow may be adjusted 10% to maintain the supply temperature.

² Fan only airflows will also increase or decrease 15% if the "ADJUST" pin is set on "+" or "-".

³ This application should not be used with the "Tonnage" selector on "D" and the "Adjust" selector on "-".

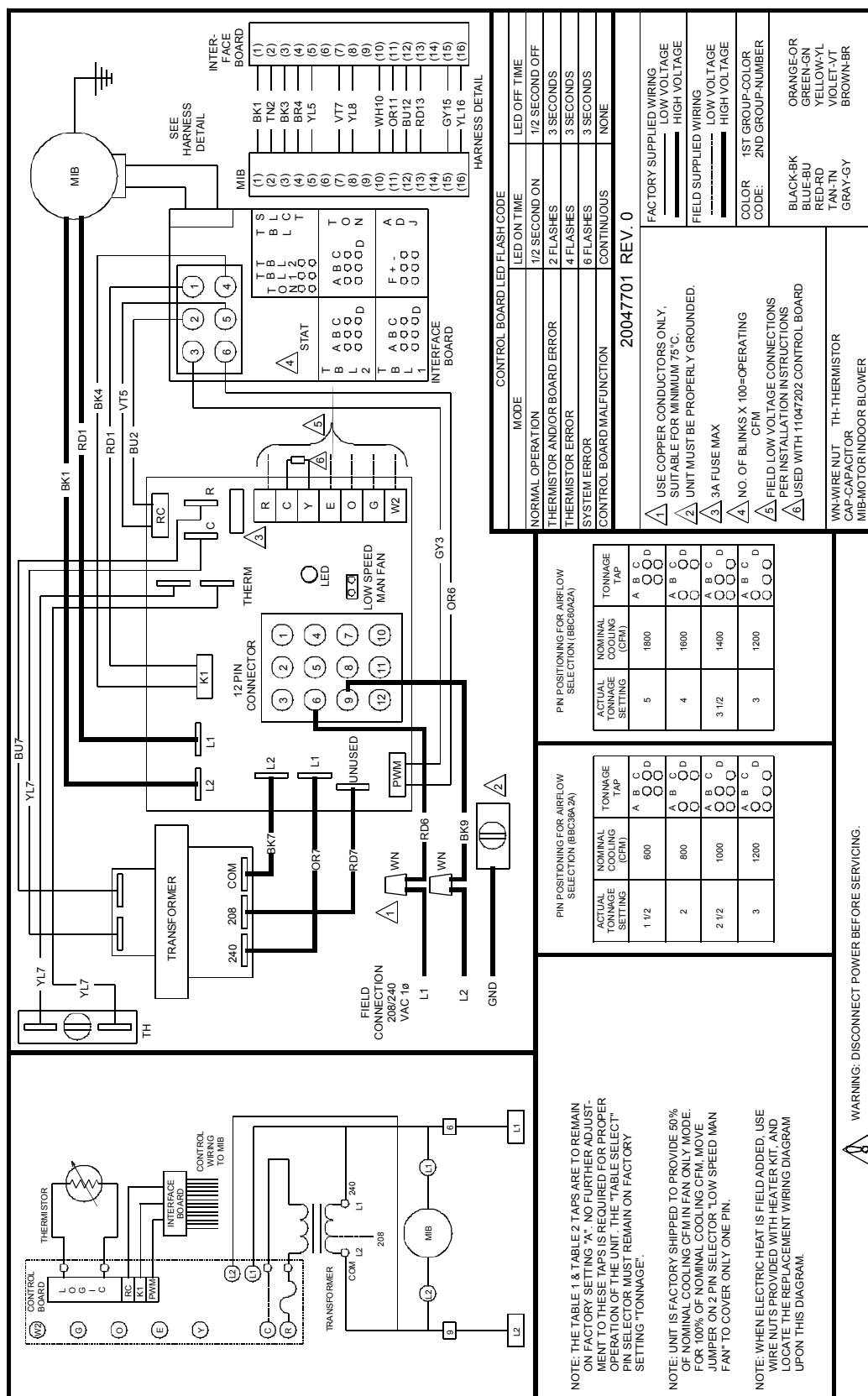
⁴ This application should be used only with the "Tonnage" selector on "D" and the "Adjust" selector on "-".

⁵ Pin selectors for "Tonnage" and "Table 2" must be set to the same setting. Pin Selector with option for "Tonnage, Table 1, or Table 2" must remain on "Tonnage".

⁶ These airflows only apply when matched with a two-stage cooling outdoor unit. These airflows will also increase or decrease a15% if "ADJUST" pin is set on "+" or "-".

WARNING

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

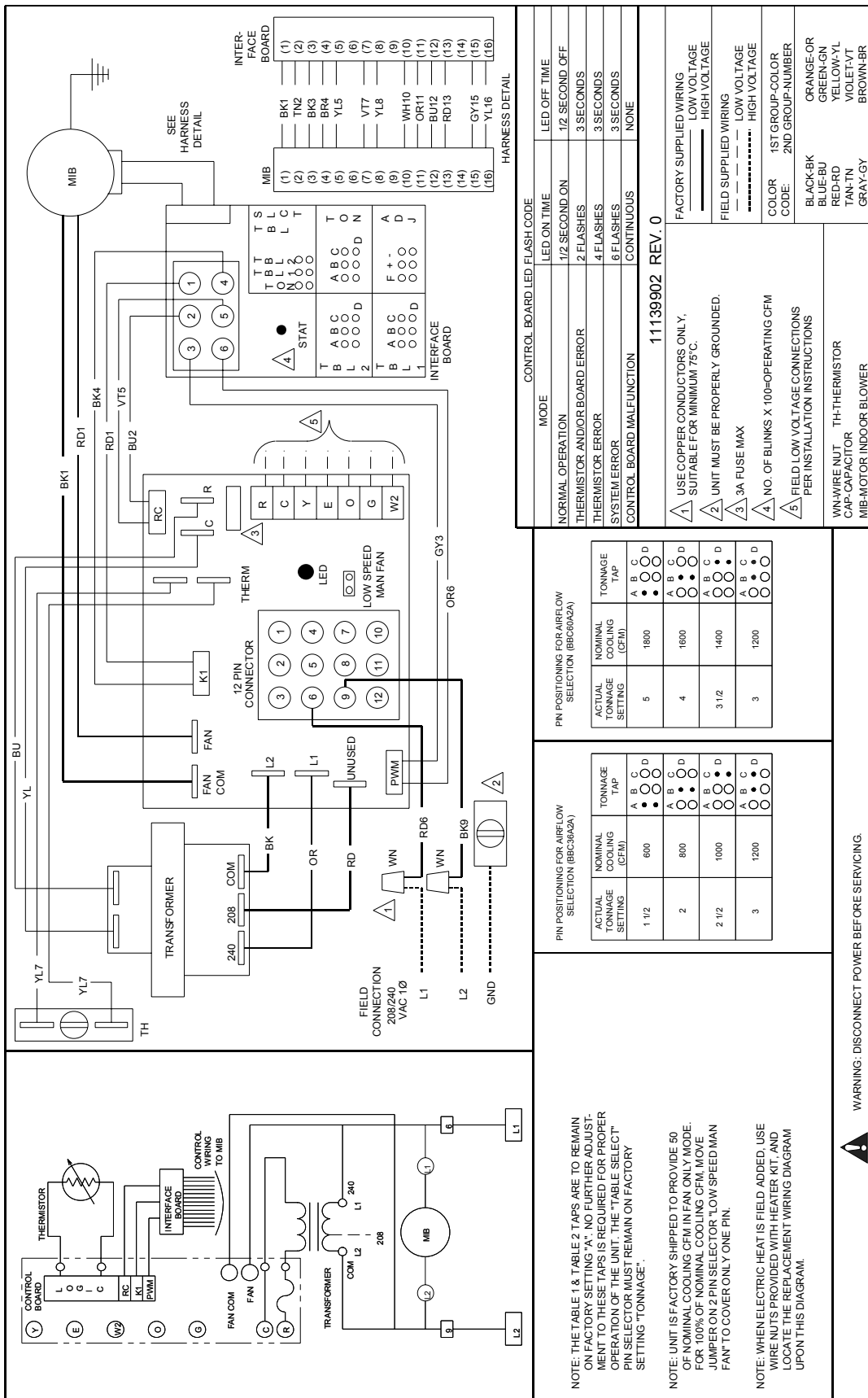


BBC A2A (Manufacturing Numbers P1206405-07C)

WIRING DIAGRAMS



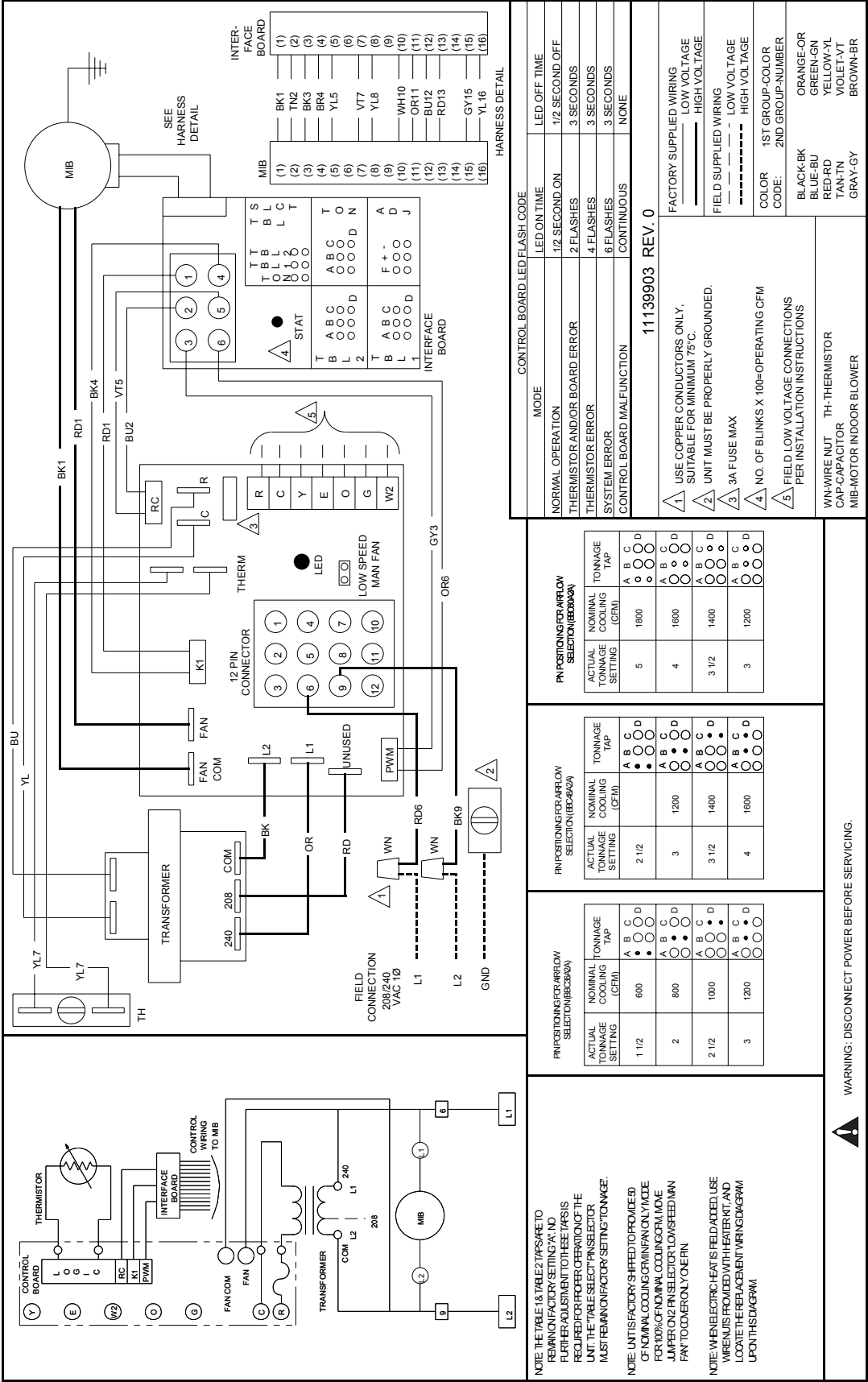
**TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY,
OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**



WIRING DIAGRAMS

**WARNING**

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

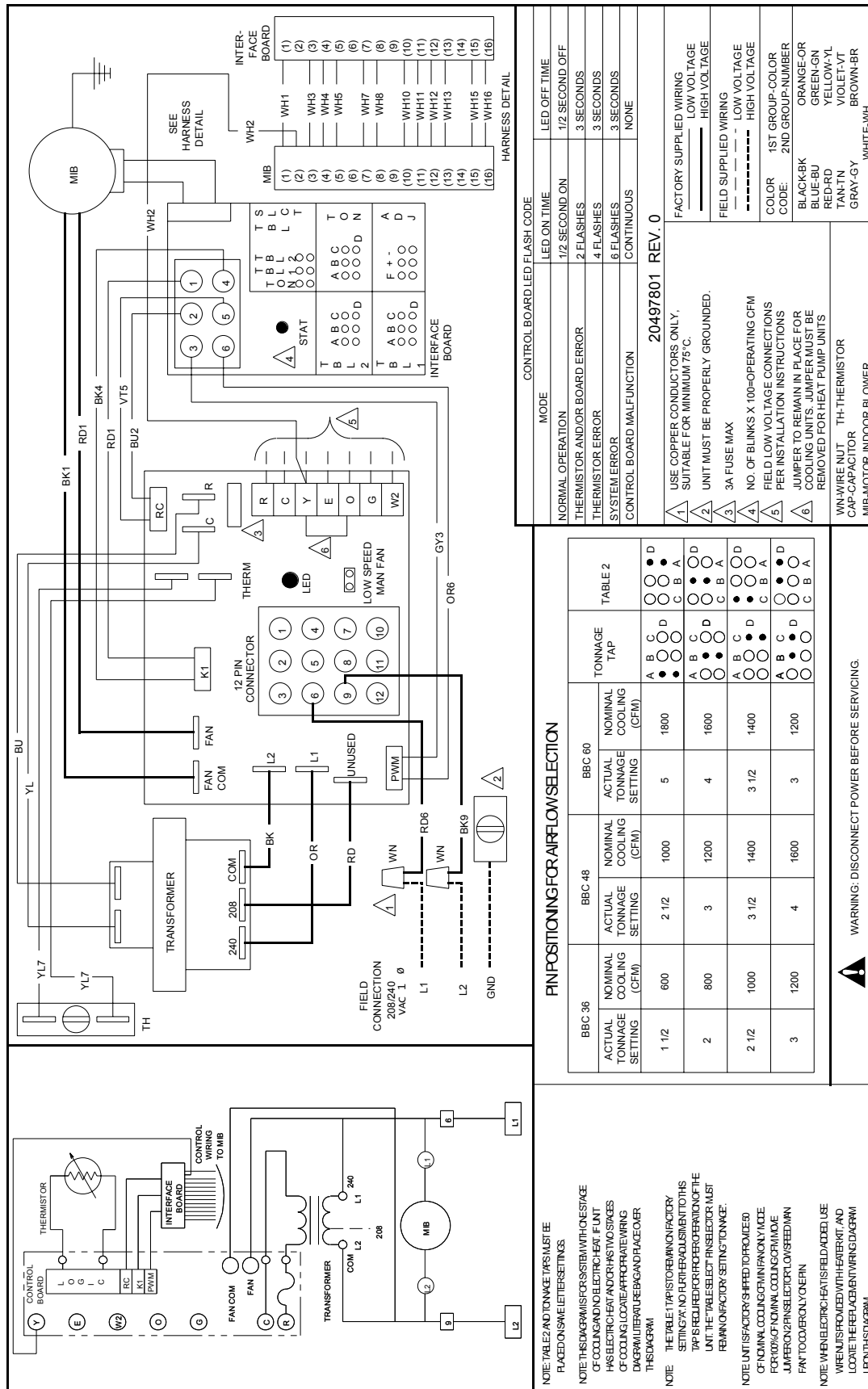


WIRING DIAGRAMS



WARNING

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



BBC_A2C (Manufacturing Numbers P1253601-03C)

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



WIRING DIAGRAMS



WARNING

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

RH-HEAT PUMP WITH INDOOR BLOWER COIL WITH APPROVED THERMOSTATS*

With Outdoor Thermostat - ATK Controlling ALL Electric Heat

Morning Warmup Could be Slow -

4.8 to 28.8KW

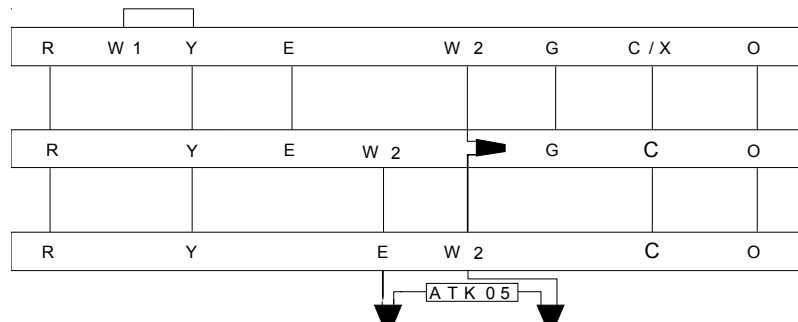
ROOM THERMOSTAT

(6 wires)

BBA or BBC BLOWER COIL

(6 wires)

RH OUTDOOR UNIT



ATK Controlling ALL Electric Heat Except In The
Defrost Mode

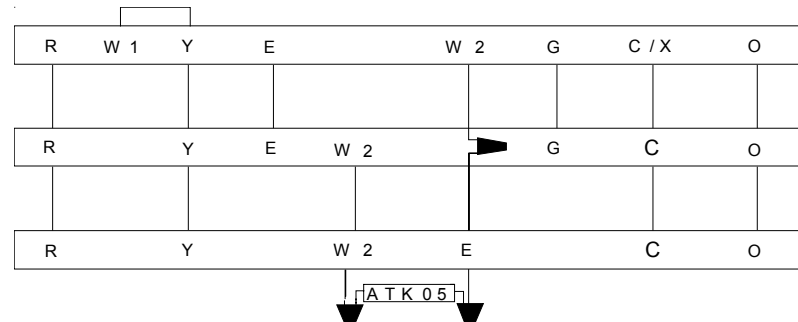
ROOM THERMOSTAT

(6 wires)

BBA or BBC BLOWER COIL

(6 wires)

RH OUTDOOR UNIT



* Approved Thermostats are: D9945804
10636702
10636701
D9807605

COLOR CODE	
1ST GROUP COLOR	
2ND GROUP NUMBER	
OR-ORANGE	BK-BLACK
YL-YELLOW	BU-BLUE
VT-VIOLET	RD-RED
BR-BROWN	TN-TAN
GN-GREEN	GY-GRAY

WIRING DIAGRAMS

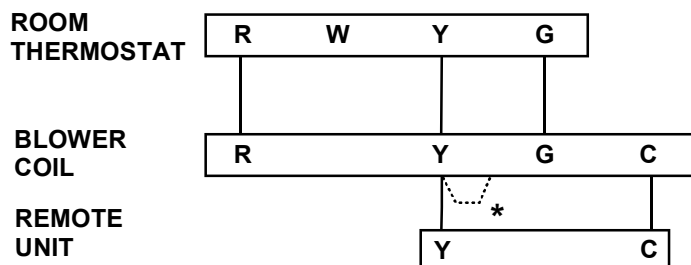


WARNING

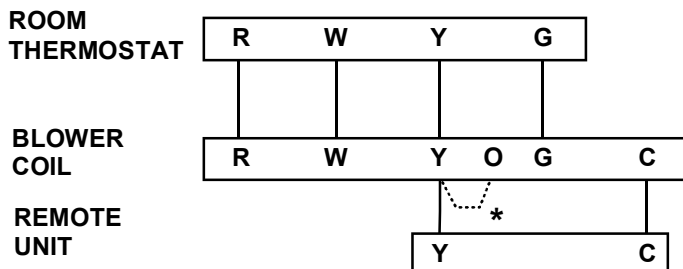
TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.

THERMOSTATS WITH ONE STAGE COOLING AND ONE STAGE HEATING

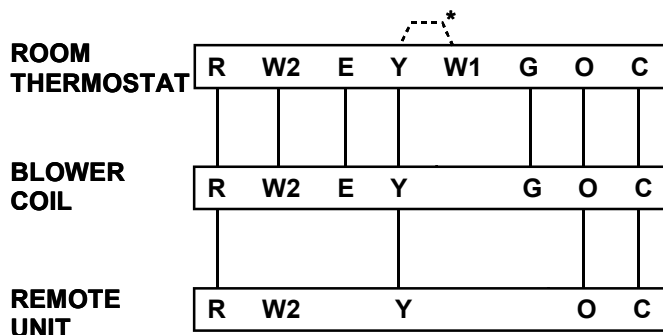
A.) No Electric Heat



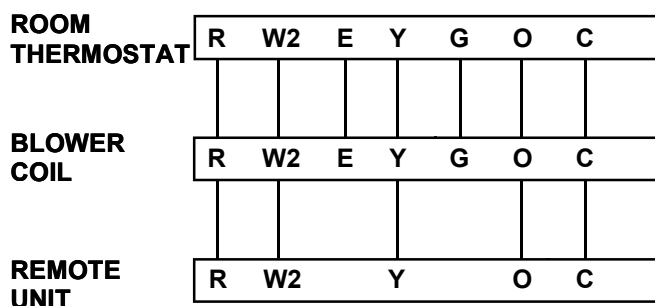
B.) With Electric Heat



A.) No Electric Heat



B.) With Electric Heat



*Y & O must be jumpered on BBA/BBC models installed in cooling only applications.

Approved Thermostats are:

(HEAT PUMP)

1213403
1213404
1213405
1213406

(COOLING ONLY)

1213402
1213401
M0380101
1213408

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

WIRING DIAGRAMS

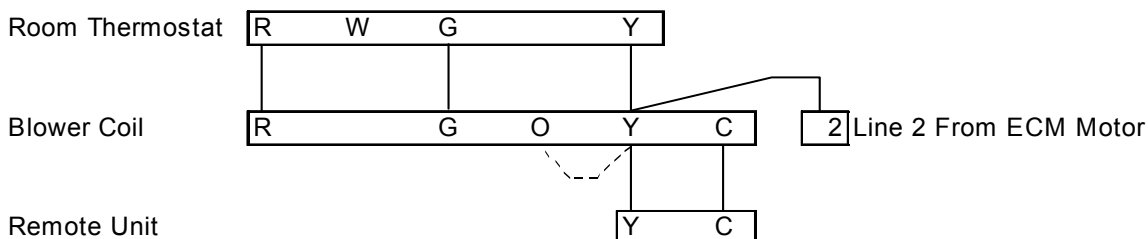


WARNING

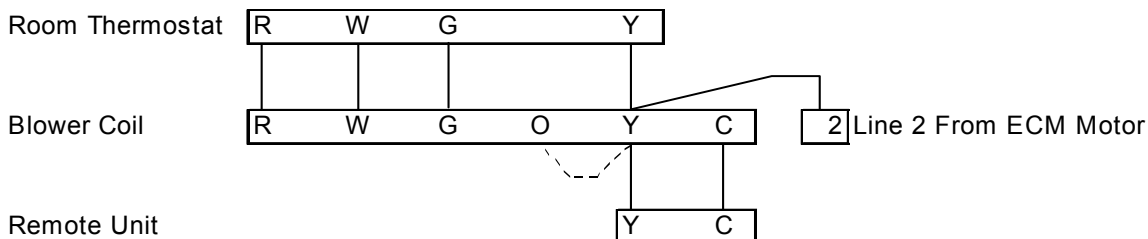
TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.

COOLING WITH/WITHOUT ELECTRIC HEAT THERMOSTAT CONNECTIONS

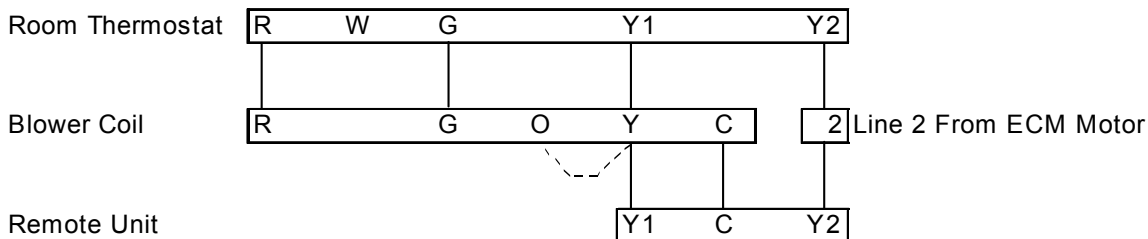
Cooling Only - Single Stage Cool without Electric Heat



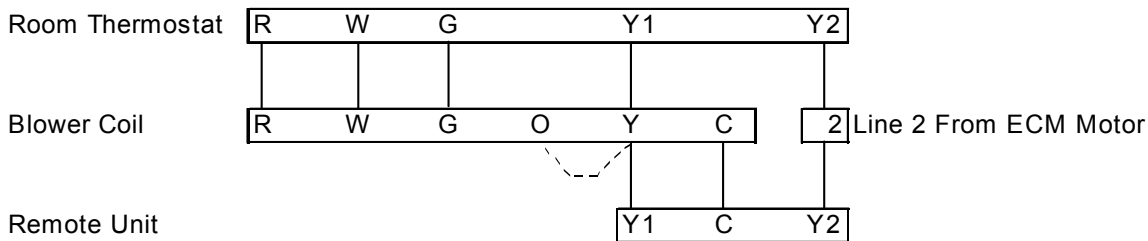
Cooling Only - Single Stage Cool with Electric Heat



Cooling Only - Two Stage Cool without Electric Heat



Cooling Only - Two Stage Cool with Electric Heat



Approved Thermostats are:

(HEAT PUMP)

1213403

1213404

1213405

1213406 (2 stage cool)

1213412 (2 stage cool)

(COOLING ONLY)

1213402

1213401

M0380101

1213408

1213411 (2 stage cool)

WIRING DIAGRAMS

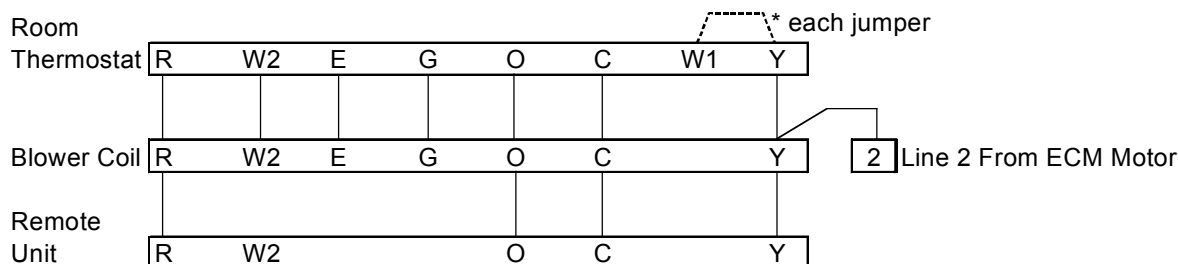


WARNING

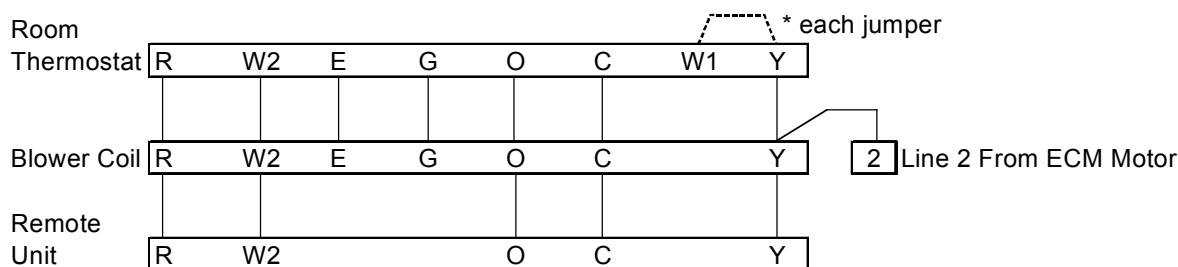
TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.

HEAT PUMP WITH/WITHOUT ELECTRIC HEAT THERMOSTAT CONNECTIONS

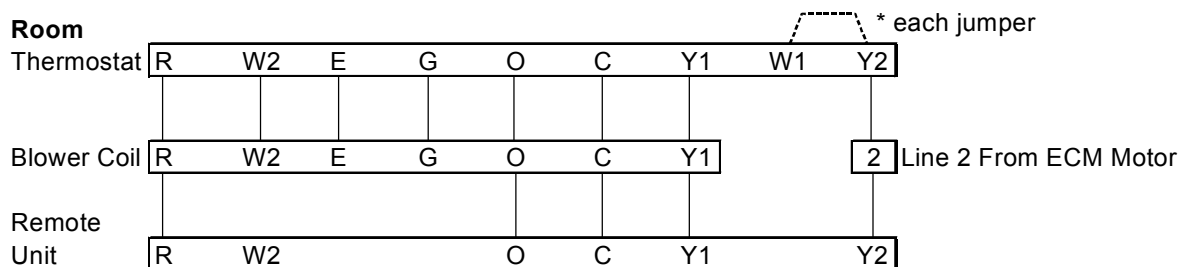
Heat Pump - Single Stage Cool without Electric Heat



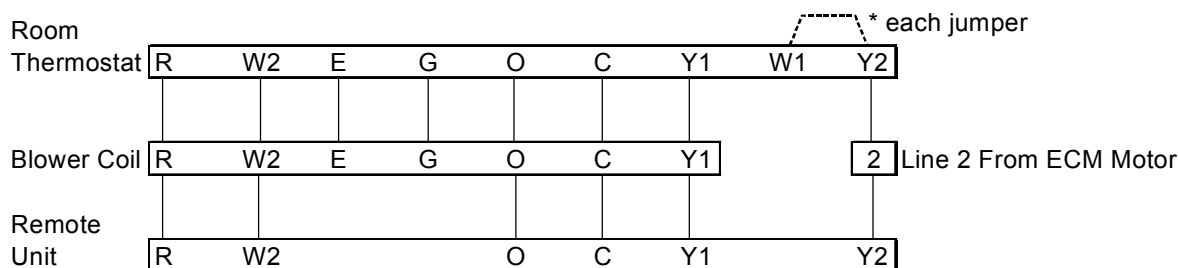
Heat Pump - Single Stage Cool with Electric Heat



Heat Pump - Two Stage Cool without Electric Heat



Heat Pump - Two Stage Cool with Electric Heat



*Jumper is necessary only when required by the thermostat. See thermostat instructions for details.

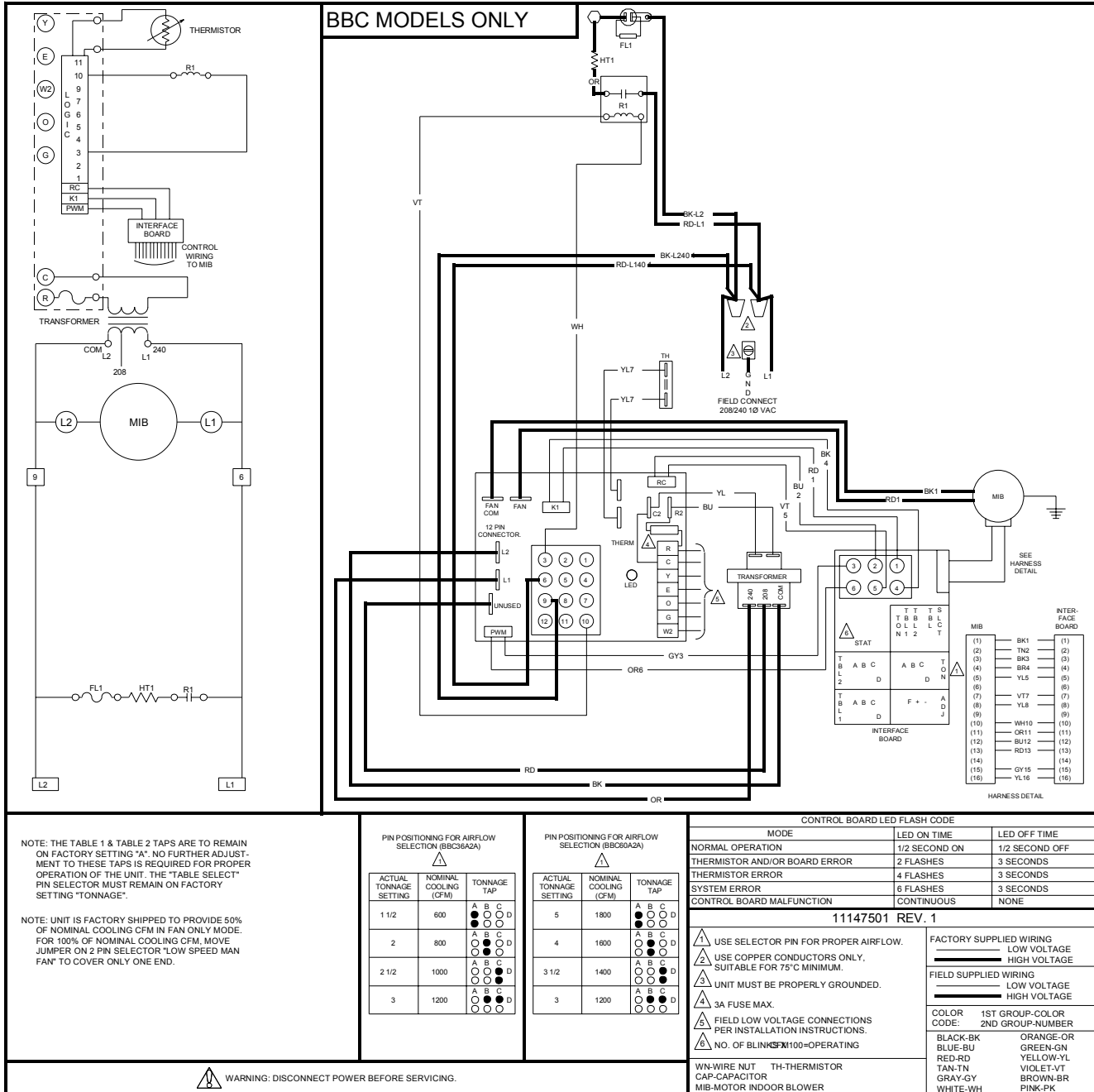
Thermostats shown with required connections only. Thermostats may have other terminals not shown in diagrams.

WIRING DIAGRAMS



WARNING

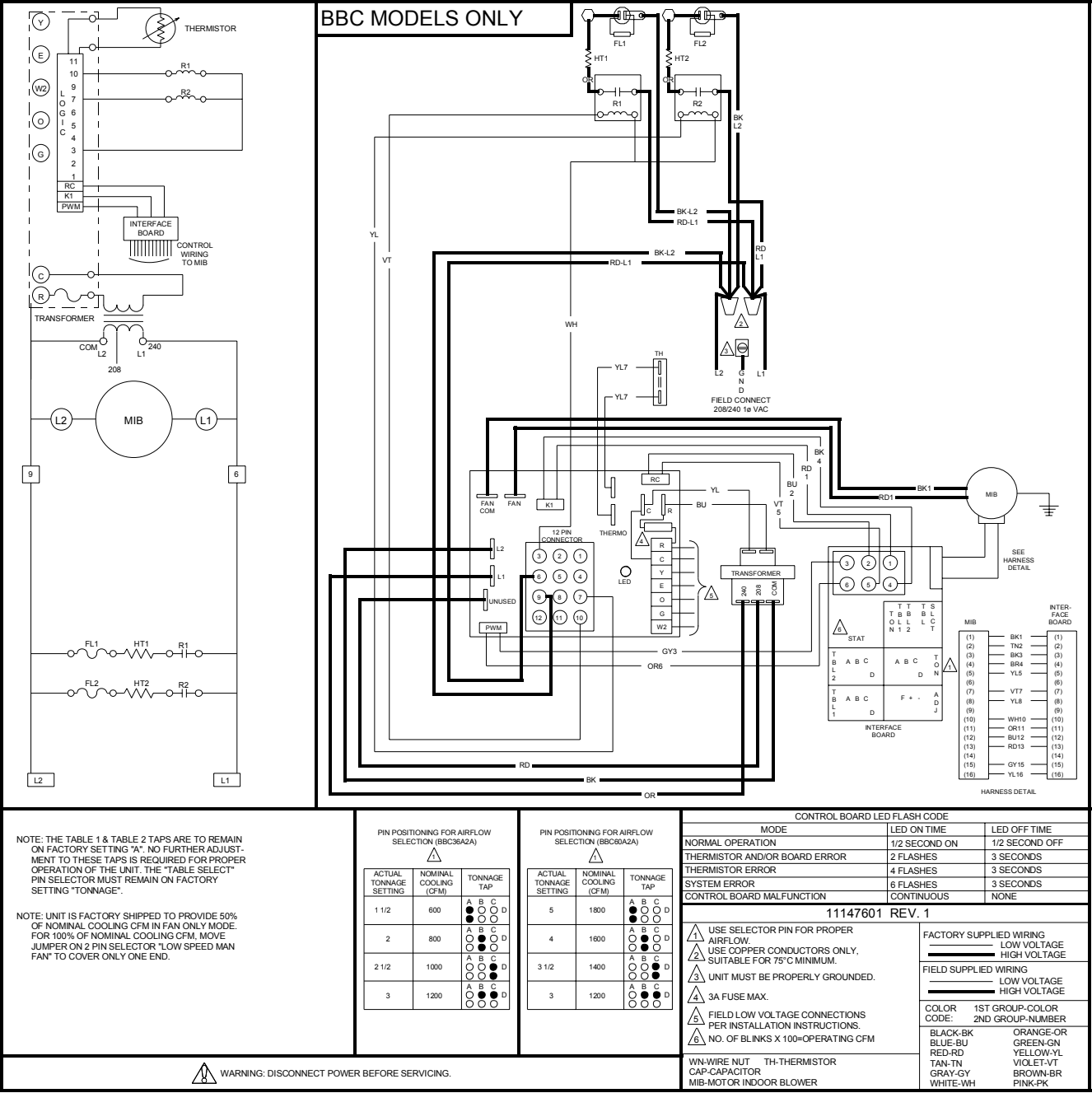
TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.



WIRING DIAGRAMS

**WARNING**

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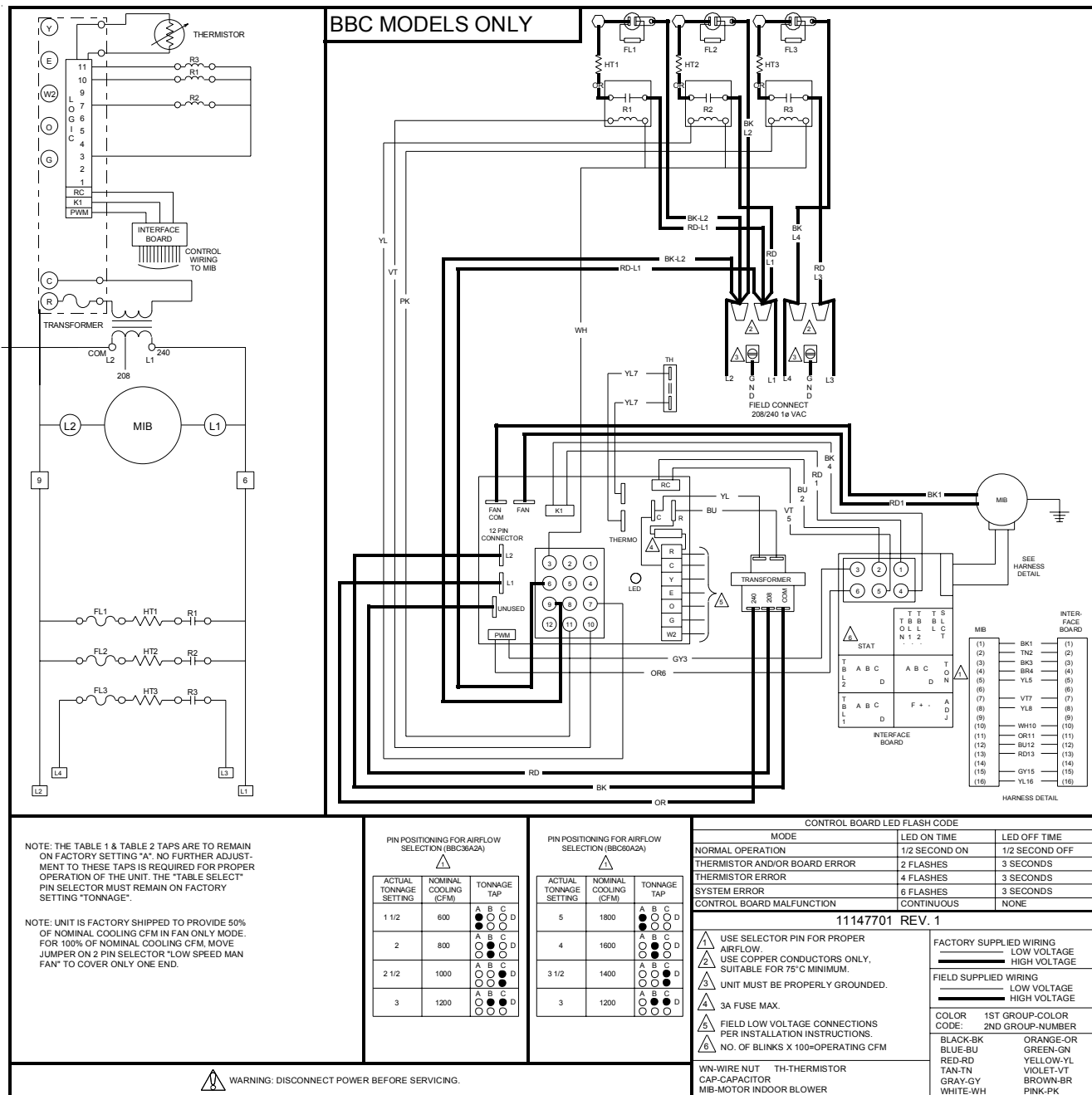


BBC w/ EHK07/10B/C/D

WIRING DIAGRAMS



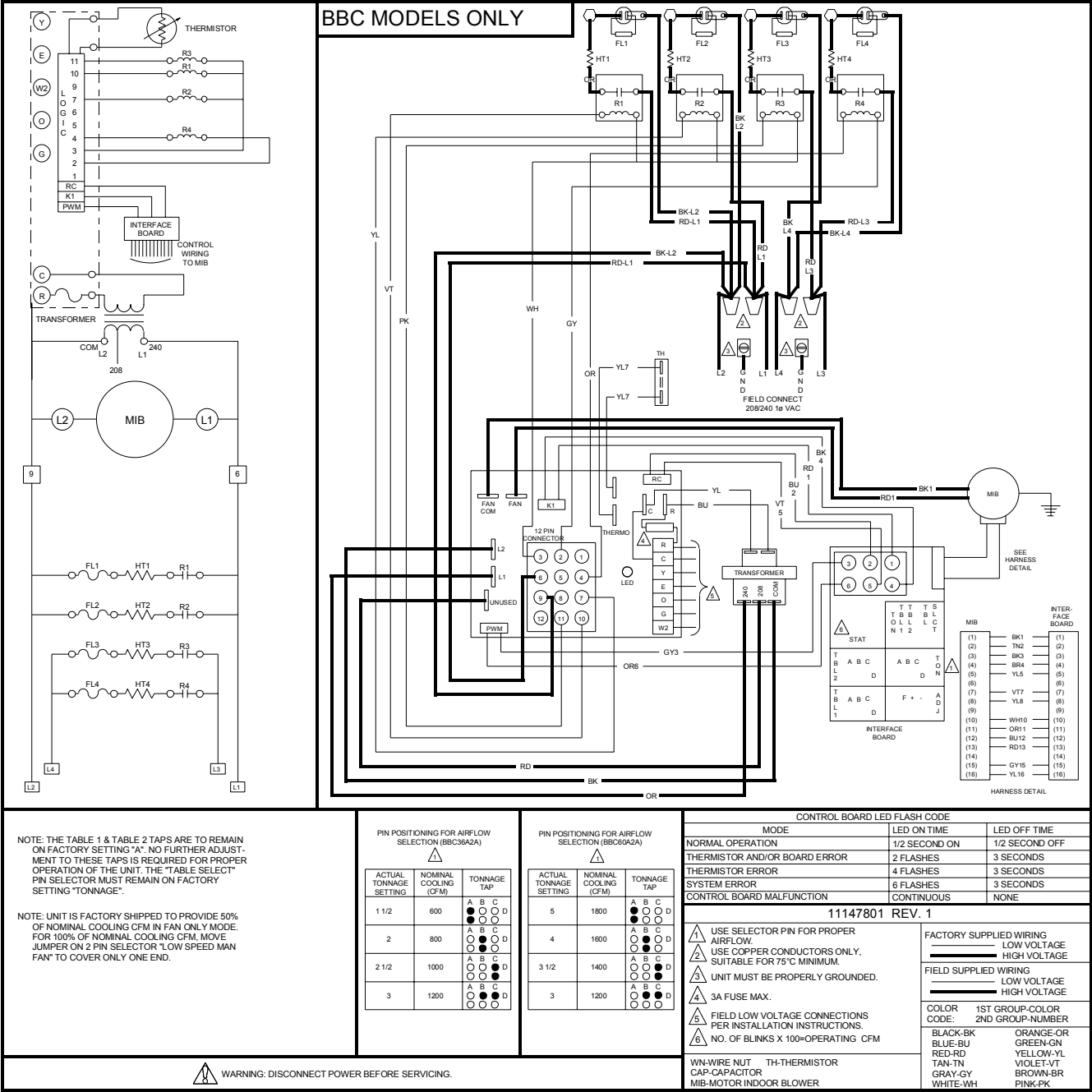
TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.



WIRING DIAGRAMS

**WARNING**

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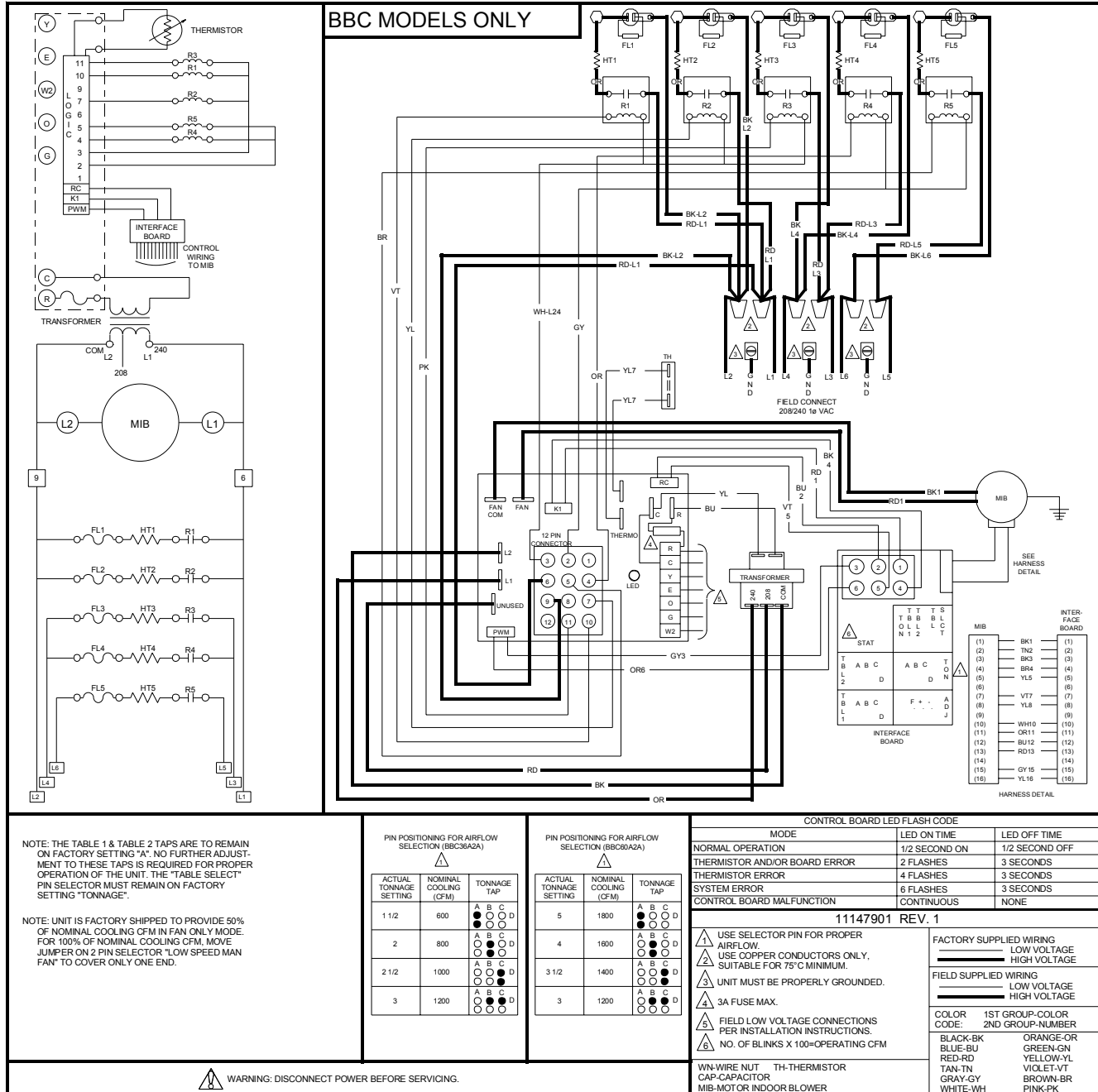
BBC w/ EHK20B/C/D

WIRING DIAGRAMS



WARNING

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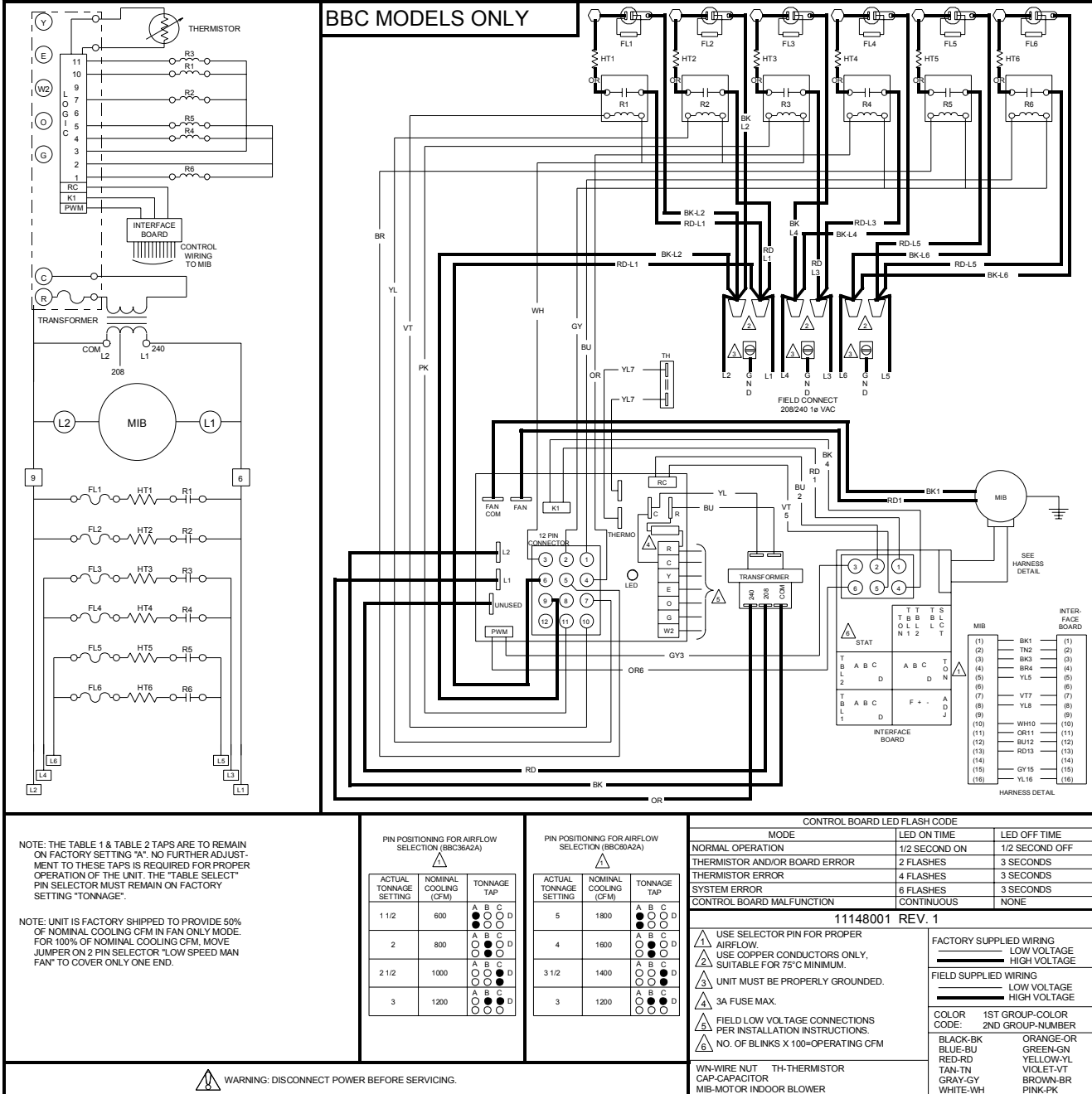


WIRING DIAGRAMS



WARNING

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



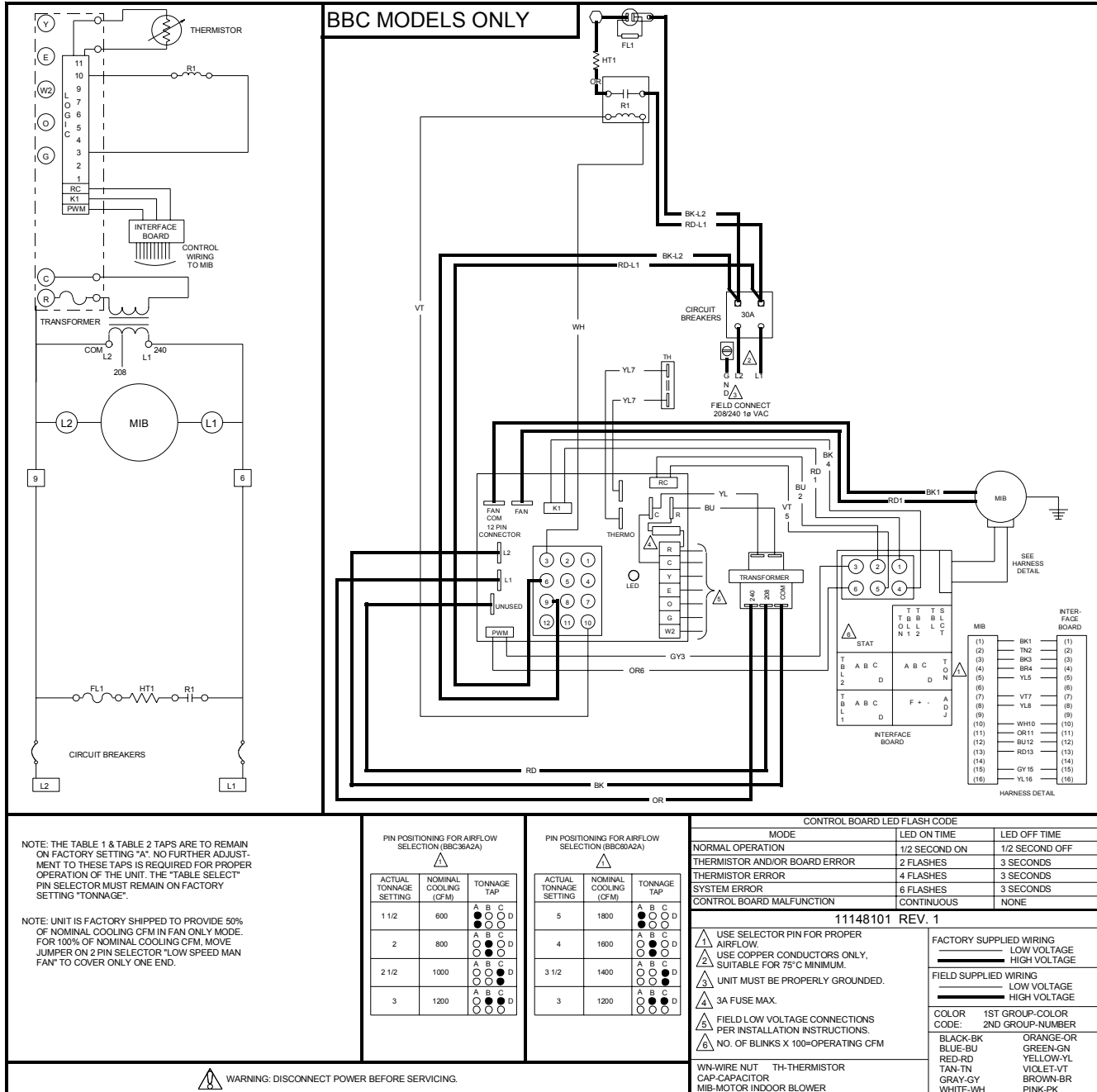
BBC w/ EHK30B/C/D

WIRING DIAGRAMS



WARNING

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



BBC w/ ECB05B/C/D

23 Rev. 1

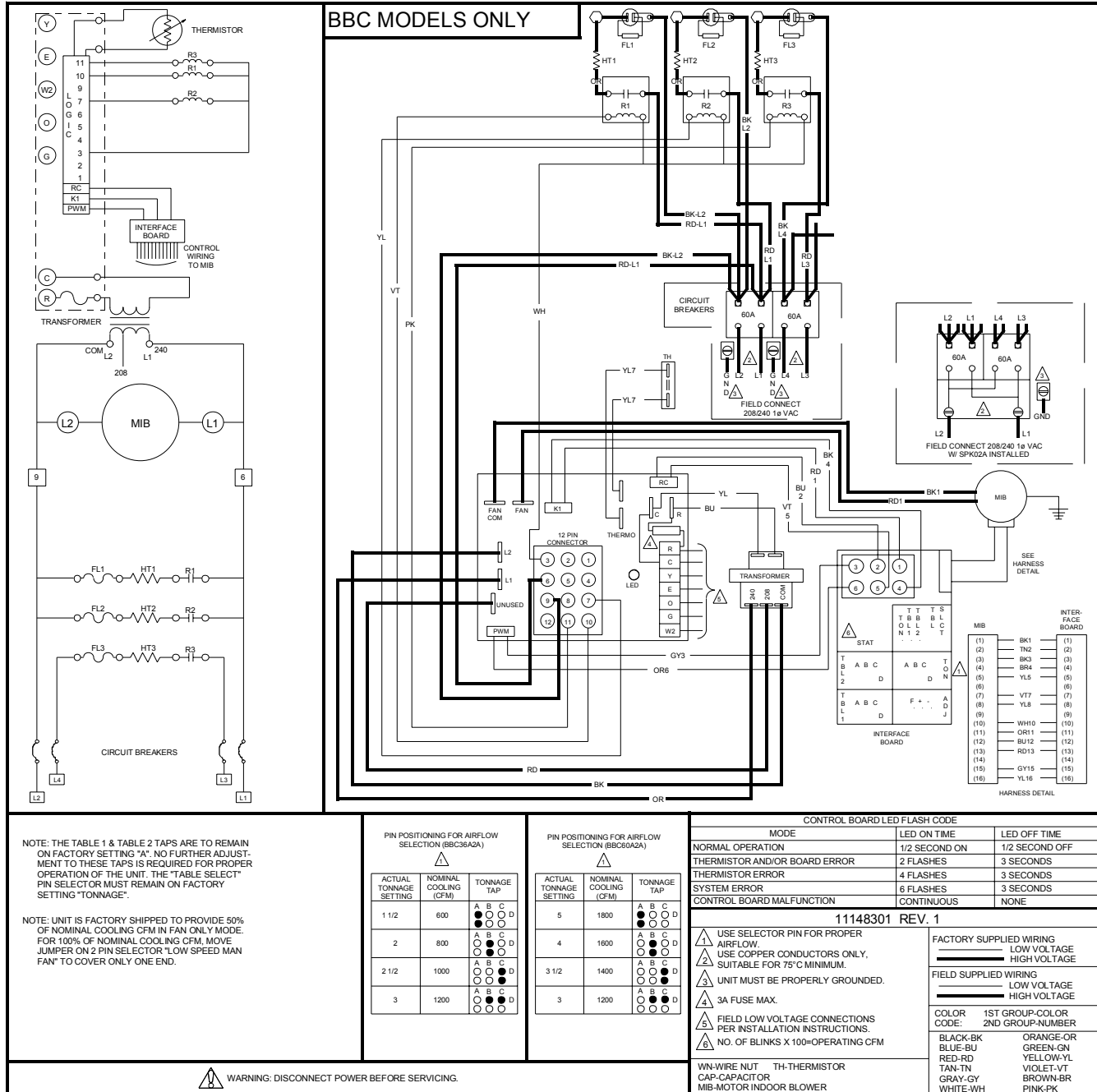
**TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY,
OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WIRING DIAGRAMS



WARNING

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

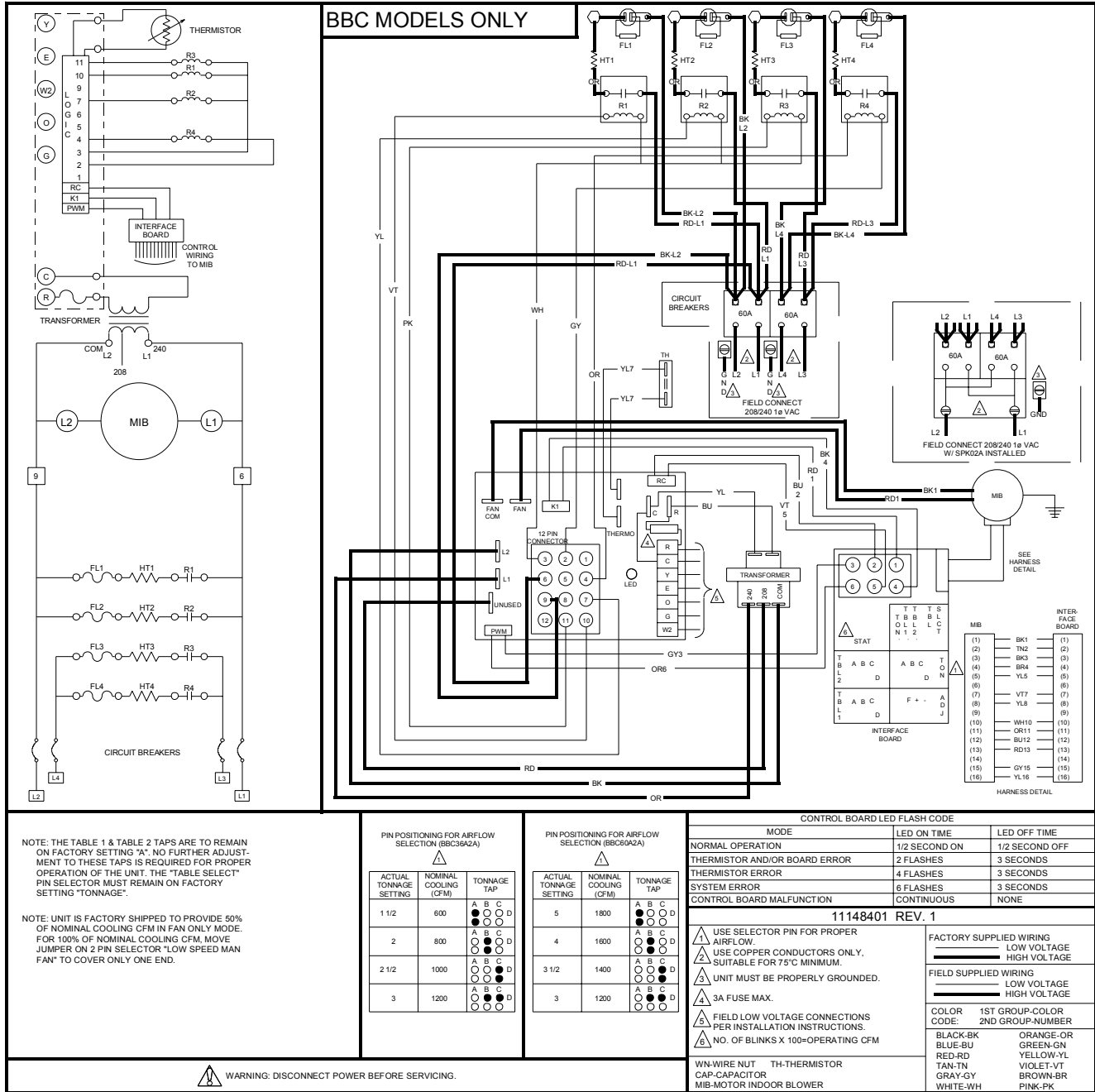


WIRING DIAGRAMS



WARNING

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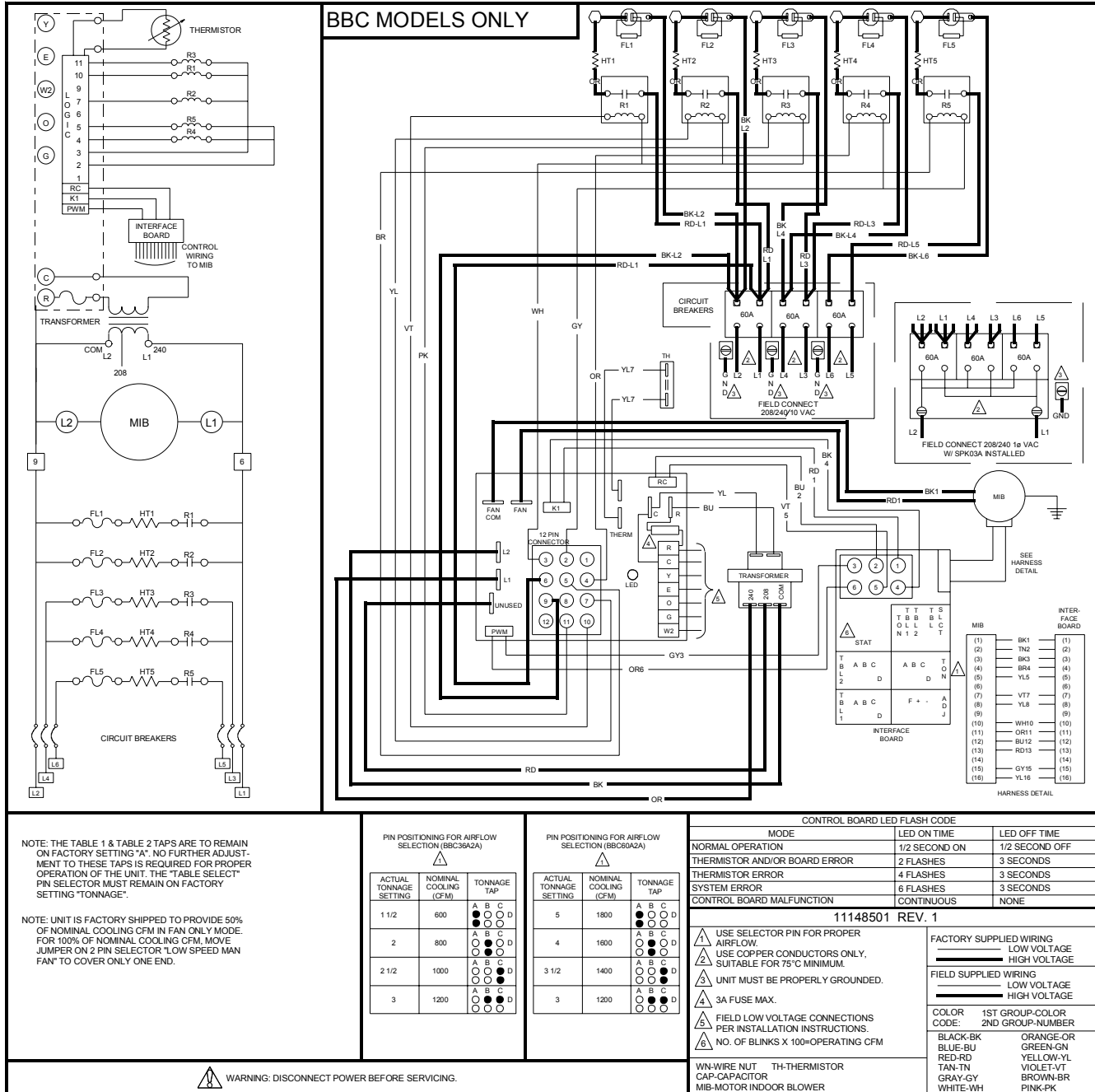
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WIRING DIAGRAMS



WARNING

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

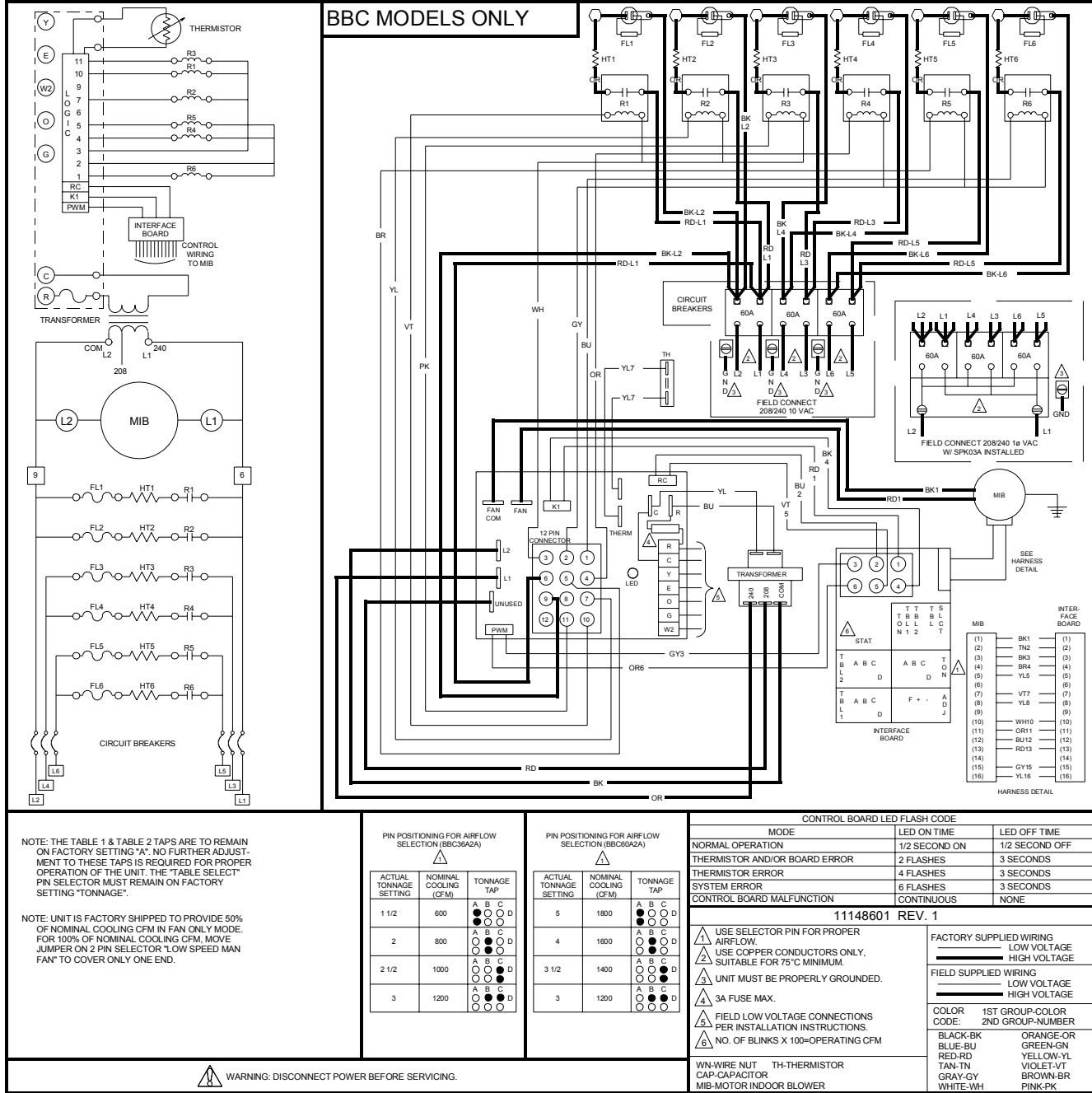


WIRING DIAGRAMS



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