



Wiring Diagrams

INDEX

UNIT LABEL DIAGRAM

UNIT 50TJ	Unit Series*	V- Hz (3 Phase)	Type	Number	Fig. No.
016	501	208/230-60	Component Arrangement	50DP506364	1
	601	460-60	Component Arrangement	50DP506384	2
	101	575-60	Component Arrangement	50DP506374	3
	803	230-50	Component Arrangement	50DP506354	4
	203,903	380-60, 400-50	Component Arrangement	50DP506394	5
	501	208/230-60	Schematic	50DP506364	6
	601	460-60	Schematic	50DP506384	7
	101	575-60	Schematic	50DP506374	8
	803	230-50	Schematic	50DP506354	9
	203,903	380-60, 400-50	Schematic	50DP506394	10
016	511	208/230-60	Component Arrangement	50TJ500032	11
	611	460-60	Component Arrangement	50TJ500035	12
	111	575-60	Component Arrangement	50TJ500033	13
	213,913	380-60, 400-50	Component Arrangement	50TJ500104	14
	511	208/230-60	Schematic	50TJ500032	15
	611	460-60	Schematic	50TJ500035	16
	111	575-60	Schematic	50TJ500033	17
	213,913	380-60, 400-50	Schematic	50TJ500104	18
020	501	208/230-60	Component Arrangement	50DP505894	19
	601	460-60	Component Arrangement	50DP505904	20
	101	575-60	Component Arrangement	50DP505914	21
	903	400-60	Component Arrangement	50DP507114	22
	501	208/230-60	Schematic	50DP505894	23
	601	460-60	Schematic	50DP505904	24
	101	575-60	Schematic	50DP505914	25
	903	400-50	Schematic	50DP507114	26
020	511	208/230-60	Component Arrangement	50TJ500045	27
	611	460-60	Component Arrangement	50TJ500046	28
	111	575-60	Component Arrangement	50TJ500047	29
	511	208/230-60	Schematic	50TJ500045	30
	611	460-60	Schematic	50TJ500046	31
	111	575-60	Schematic	50TJ500047	32
024	501	208/230-60	Component Arrangement	50DP504234	33
	601,101	460,575-60	Component Arrangement	50DP504224	34
	903	400-50	Component Arrangement	50DP504294	35
	501	208/230-60	Schematic	50DP504234	36
	601,101	460,575-60	Schematic	50DP504224	37
	903	400-50	Schematic	50DP504294	38
024	511	208/230-60	Component Arrangement	50DP505894	19
	611	460-60	Component Arrangement	50DP505904	20
	111	575-60	Component Arrangement	50DP505914	21
	913	400-50	Component Arrangement	50DP507114	22
	511	208/230-60	Schematic	50DP505894	23
	611	460-60	Schematic	50DP505904	24
	111	575-60	Schematic	50DP505914	25
	913	400-50	Schematic	50DP507114	26
028	501	208/230-60	Component Arrangement	50DP506844	39
	601	460-60	Component Arrangement	50DP506854	40
	101	575-60	Component Arrangement	50DP506864	41
	903	400-50	Component Arrangement	50DP507204	42
	501	208/230-60	Schematic	50DP506844	43
	601	460-60	Schematic	50DP506854	44
	101	575-60	Schematic	50DP506864	45
	903	400-50	Schematic	50DP507204	46

*Unit series numbers indicate the following physical features:

UNIT	FEATURE
TJ016-01 or 03	2 Condenser Fans
TJ016-11 or 13	3 Condenser Fans
TJ020-01 or 03	2 Condenser Fans
TJ020-11 or 13	3 Condenser Fans
TJ024-01 or 03	Semi-Hermetic Compressors
TJ024-11 or 13	Hermetic Compressors
TJ028-01 or 03	Original Design - No Major Changes

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

ACCESSORY WIRING

Item	Fig. No.
Power Exhaust	47 - 49
Remote Control Panel	50
Time Guard® II Device	51
Smoke Control/Fire Shutdown*	52

* Requires both economizer and power exhaust

LOWER OUTDOOR AMBIENT OPERATION ACCESSORIES

UNIT 50TJ	UNIT SERIES NO.	STANDARD MIN. OPERATING TEMP	MILD AMBIENT CONTROL				LOW AMBIENT CONTROL				
			Min. Operating Temp (F)	Accessory Kit Part No. Required	Accessory Name	Wiring Fig. No.	Min. Operating Temp (F)	Accessory Kit Part No. Required	Accessory Name	Wiring Fig. No.	Sensor Location Fig. No.
016	101, 203, 501, 601, 803, 903	40	25	50DP900201	25 F Ambient Kit	54	-20	50DP900201*	25 F Ambient Kit, -20 F Motormaster® I	55, 56	58
016	111, 213, 511, 611, 913	40	0	38AE900021, 48TJ900002	Winter Start Kit, 0° F Ambient Kit	53, 55	-20	38AE900021, 48TJ900002, 32LT900301 OR 32LT900611**	Winter Start Kit, 0° F Ambient Kit, -20 F Motormaster I	53, 55, 56	59
020	101, 501, 601 903	25	-	-	-	-	-20	38AE900021, 30GT910079	Winter Start Kit, -20 F Motormaster III	53, 57	60
020	111, 511, 611	40	0	38AE900021†, 48TJ900002	Winter Start Kit, 0° F Ambient Kit	53, 55	-20	38AE900021†, 48TJ900002, 32LT900301 OR 32LT900611**	Winter Start Kit, 0° F Ambient Kit, -20 F Motormaster I	53, 55, 56	59
024	101, 501, 601, 903	40	-	-	-	-	-20	38AE900021, 30GT910079	Winter Start Kit, -20 F Motormaster III	53, 57	61
024	111, 511, 611 913	25	-	-	-	-	-20	38AE900021†, 30GT910079	Winter Start Kit, -20 F Motormaster III	53, 57	60
028	101, 501, 601, 903	48	25	38AE900021, 50DP900201	Winter Start Kit, 25 F Ambient Kit	53, 54	-20	38AE900021, 30GT910079	Winter Start Kit, -20 F Motormaster III	53, 57	60

* To determine which -20 F Motormaster I accessory is required, use the following table:

ACCESSORY KIT PART NO.	UNIT VOLTAGE	MOTOR PART NO.	CAPACITOR PART NO.	SPEED CONTROL PART NO.
50DJ902801	208/230, 220, 575	HC52AE235	HC91CA050	32LT900301
50DJ902811	400, 460	HC52AE465	HC91DA012	32LT900611

† Not required on models with the loss-of-charge switch on the liquid line

** Use the 32LT900301 for 208/230, 575-v units, and the 32LT900611 for 380 and 460-v units

NOTE: For high-ambient operation (operation between 116 F [46.7 C] and 125 F [51.7 C]) on 50TJ016 50 Hz units only, use accessory high-ambient kit part no. 50TJ900061

OPERATING SEQUENCE

Cooling, Units Without Economizer — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC), and compressor contactor no. 1 (C1) are energized and evaporator-fan motor, compressor no. 1 (50TJ020-028) or unloaded compressor (50TJ016), and condenser fans start. The condenser-fan motor runs continuously while unit is cooling. If the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts (50TJ020-028), or compressor no. 1 runs fully loaded (50TJ016).

Heating, Units Without Economizer (If Accessory or Optional Heater is Installed) — Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

Cooling, Units With Economizer — Upon a call for cooling, when outdoor ambient is above the temperature control setting, the evaporator and condenser fans and compressor energize. The economizer damper moves to VENT position.

Upon a first-stage call for cooling, when outdoor ambient temperature is below the temperature control setting, the evaporator fan starts and economizer damper modulates to maintain mixed-air temperature. The compressor(s) remains off.

Upon a second-stage call for cooling, compressor no. 1 (50TJ020-028) or unloaded compressor (50TJ016) is energized and mechanical cooling is integrated with economizer cooling. If the air temperature is below 50 F, a cooling lockout switch prevents the compressor(s) from running.

When supply-air temperature drops below a fixed set point, the economizer damper modulates to maintain the temperature at the fixed set point.

A freeze protection thermostat (FPT) is located on the evaporator coil. It detects frost build-up and turns off the compressors, allowing the coil to clear. Once frost has melted, the compressors can be reenergized.

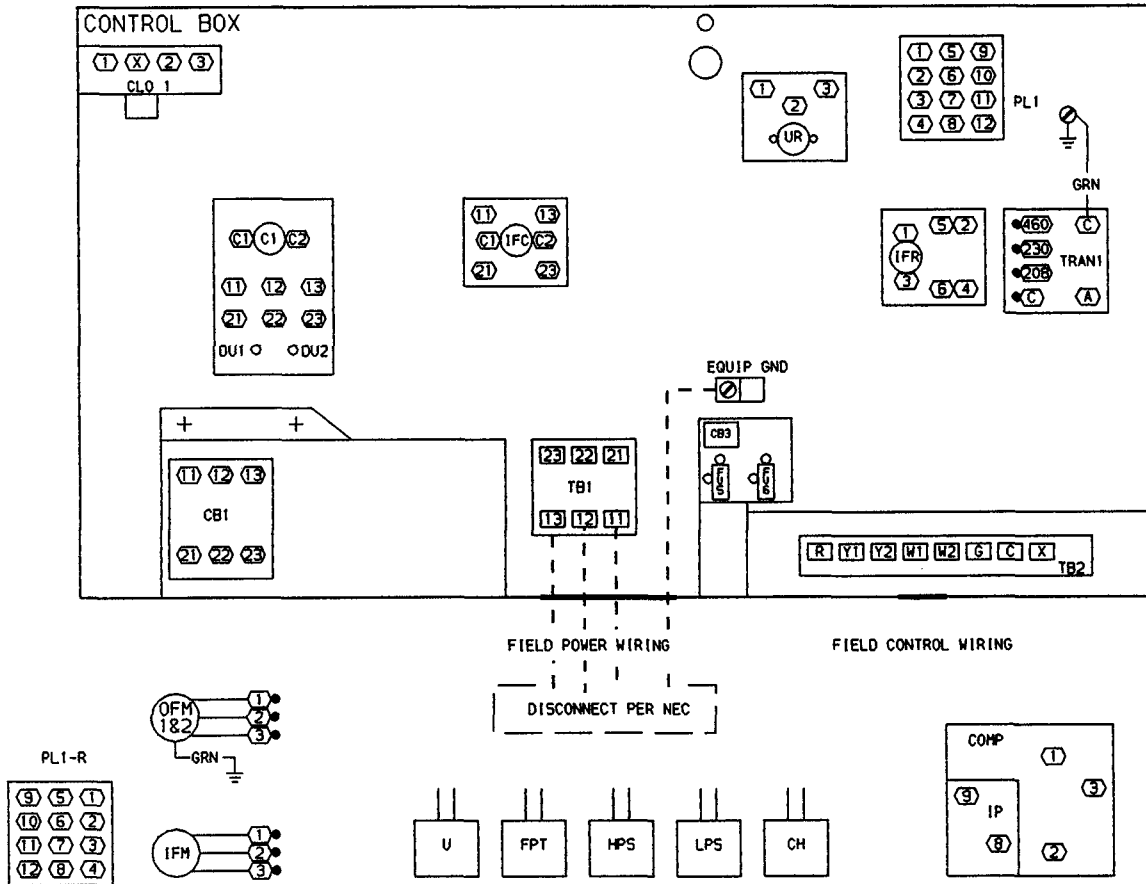
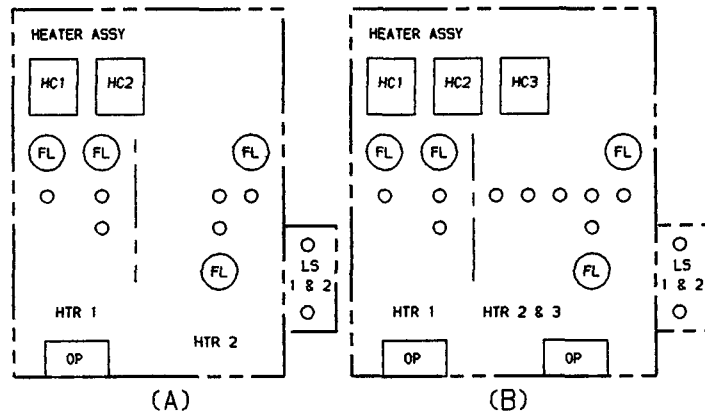
Heating, Units With Economizer (If Accessory or Optional Heater is Installed) — The outdoor air damper stays at VENT position while evaporator fan is operating. Refer to Heating, Units with Economizer section, above, for remainder of operating sequence.

LEGEND (Fig. 1 - 46, and 52)

AHA	– Adjustable Heat Anticipator	LS	– Limit Switch
BRK W/AT	– Breaks With Amp Turns	MAT	– Mixed-Air Thermostat
C	– Contactor, Compressor	NEC	– National Electrical Code
CAP	– Capacitor	NEUT	– Neutral
CB	– Circuit Breaker	OAT	– Outdoor-Air Thermostat
CC	– Cooling Compensator	OFC	– Outdoor (Condenser) Fan Contactor
CH	– Crankcase Heater	OFM	– Outdoor (Condenser) Fan Motor
CLO	– Compressor Lockout	OP	– Overcurrent Protector
CLS	– Cooling Lockout Switch	PL	– Plug Assembly
COMP	– Compressor	PRI	– Primary
COP	– Compressor Overcurrent Protection	QT	– Quadruple Terminal
CR	– Control Relay	SR	– Solenoid Relay
CT	– Current Transformer	SW	– Switch
DM	– Damper Motor	TB	– Terminal Block
DU	– Dummy Terminal	TC	– Thermostat, Cooling
EAS	– Economizer Actuator Auxiliary Switch	TH	– Thermostat, Heating
EC	– Enthalpy Control	TRAN	– Transformer
EQUIP	– Equipment	U	– Unloader
FL	– Fuse Link	UR	– Unloader Relay
FPT	– Freeze Protection Thermostat		Terminal (Marked)
FU	– Fuse		Terminal (Unmarked)
GND	– Ground		Terminal Block
HC	– Heater Contactor		Splice
HPS	– High-Pressure Switch		Factory Wiring
HTR	– Heater		Field Wiring
IFC	– Indoor (Evaporator) Fan Contactor		To indicate common potential only, not to represent wiring.
IFCB	– Indoor (Evaporator) Fan Circuit Breaker		Option/Accessory Wiring
IFM	– Indoor (Evaporator) Fan Motor		
IFR	– Indoor (Evaporator) Fan Relay		
IP	– Internal Protector		
L	– Light		
LLS	– Liquid Line Solenoid		
LOR	– Lockout Relay		
LPS	– Low-Pressure Switch		

NOTES (Fig. 1-46)

- Compressor and/or fan motor(s) thermally protected. Three-phase motors protected against primary single phasing conditions.
- If any of the original wire furnished must be replaced, it must be replaced with type 90° C or its equivalent.
- Jumpers are omitted when unit is equipped with economizer.
- Set thermostat heat anticipator(s) according to electric heat chart.
- CB must trip amps are equal to or less than 140% FLA.
- TRAN1 is wired for 230-v unit. If 208/230-v unit is to be run with 208-v power supply, TRAN1 must be rewired as follows:
 - Disconnect the black wire on TRAN1 230-v terminal and connect it to 208-v terminal.
 - Insulate the end of the 230-v terminal.
- Number(s) indicates the line location of used contacts. A bracket over 2 numbers signifies a single pole, double throw contact. An underlined number signifies a normally-open contact.
- TRAN1 is wired for 230-v unit. If 208/230-v unit is to be run with 208-v power supply, TRAN1 must be rewired as follows:
 - Disconnect the blue wire from the orange TRAN1 wire.
 - Connect the blue wire to the red TRAN1 wire.
 - Apply wirenuts to the wires.
- TRAN1 and economizer TRAN are wired for 230-v unit. If 208/230-v unit is to be run with 208-v power supply, both TRANs must be rewired as follows:
 - Disconnect the black wire on TRAN1 230-v terminal and connect it to 208-v terminal.
 - Disconnect the black wire on the economizer TRAN 230-v lead and connect it to the 208-v lead.
 - Insulate the end of the 230-v terminal/lead.
- The CLO locks out the compressor to prevent short cycling on compressor overload and safety devices. Before replacing CLO, check these devices.
- Fuse no. 1, 2, and 3 are class K-5, 30 amp, 250-v fuses (Fig. 1, 4, 6, 9, 11, 15, 33, 36).



ECONOMIZER OPTION/ACCESSORY

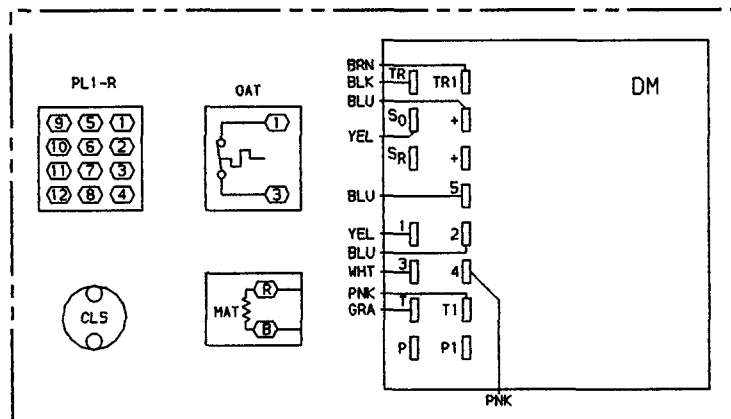


**Fig. 2 — Label Diagram, Component Arrangement;
50TJ016, 460 V — 601 Series Unit**

**Fig. 3 — Label Diagram, Component Arrangement;
50TJ016, 575 V — 101 Series Unit**

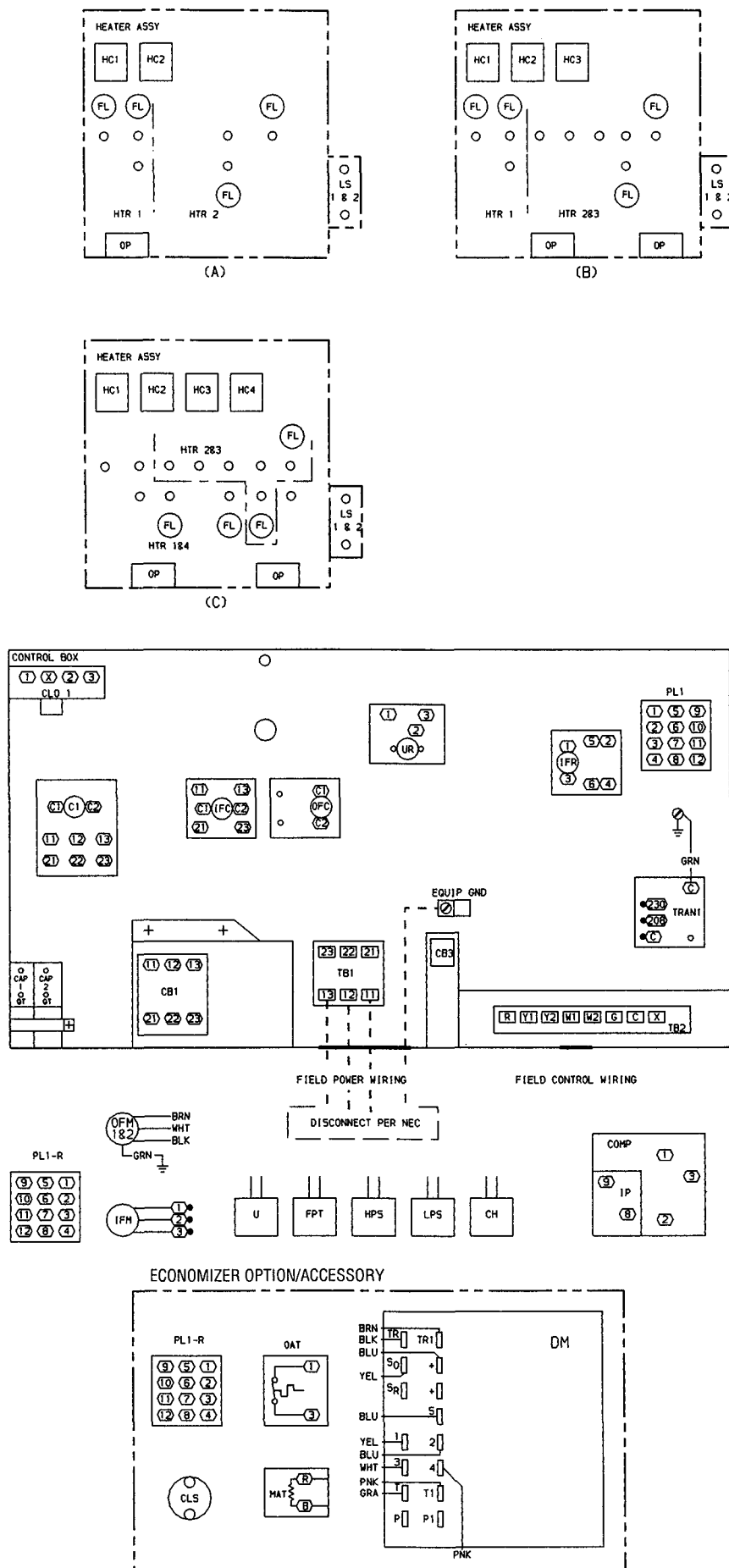
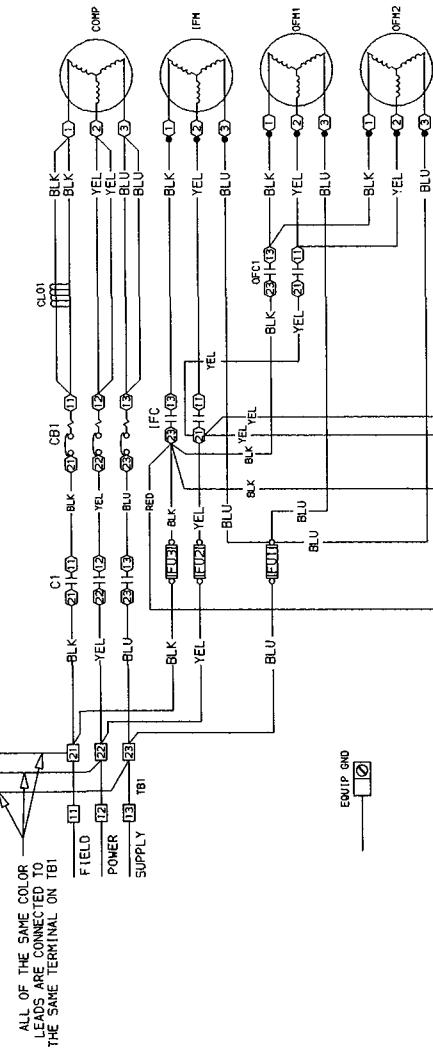
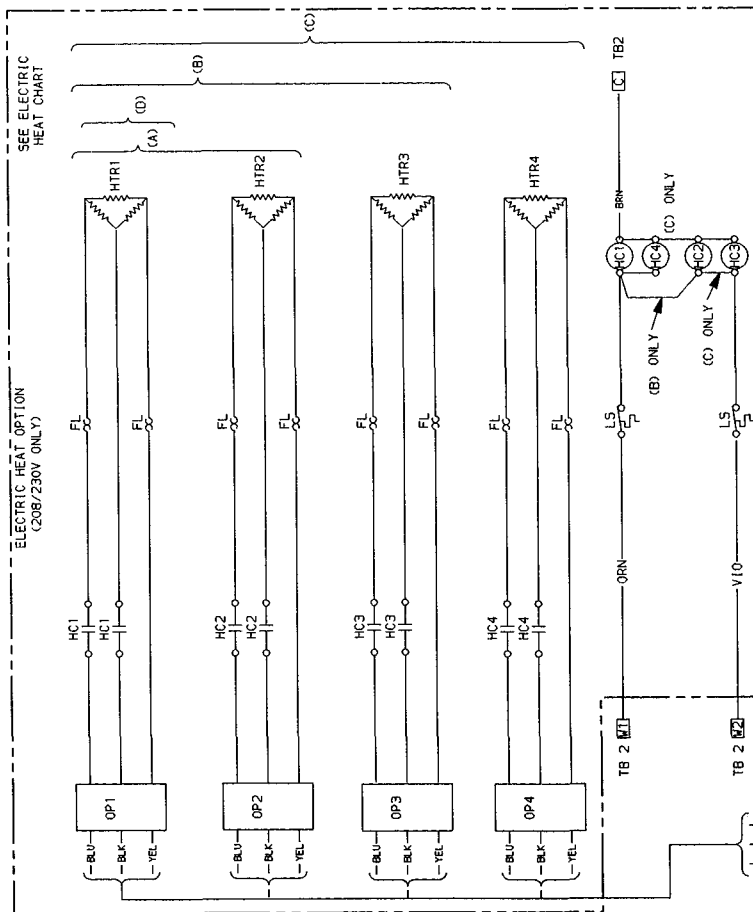


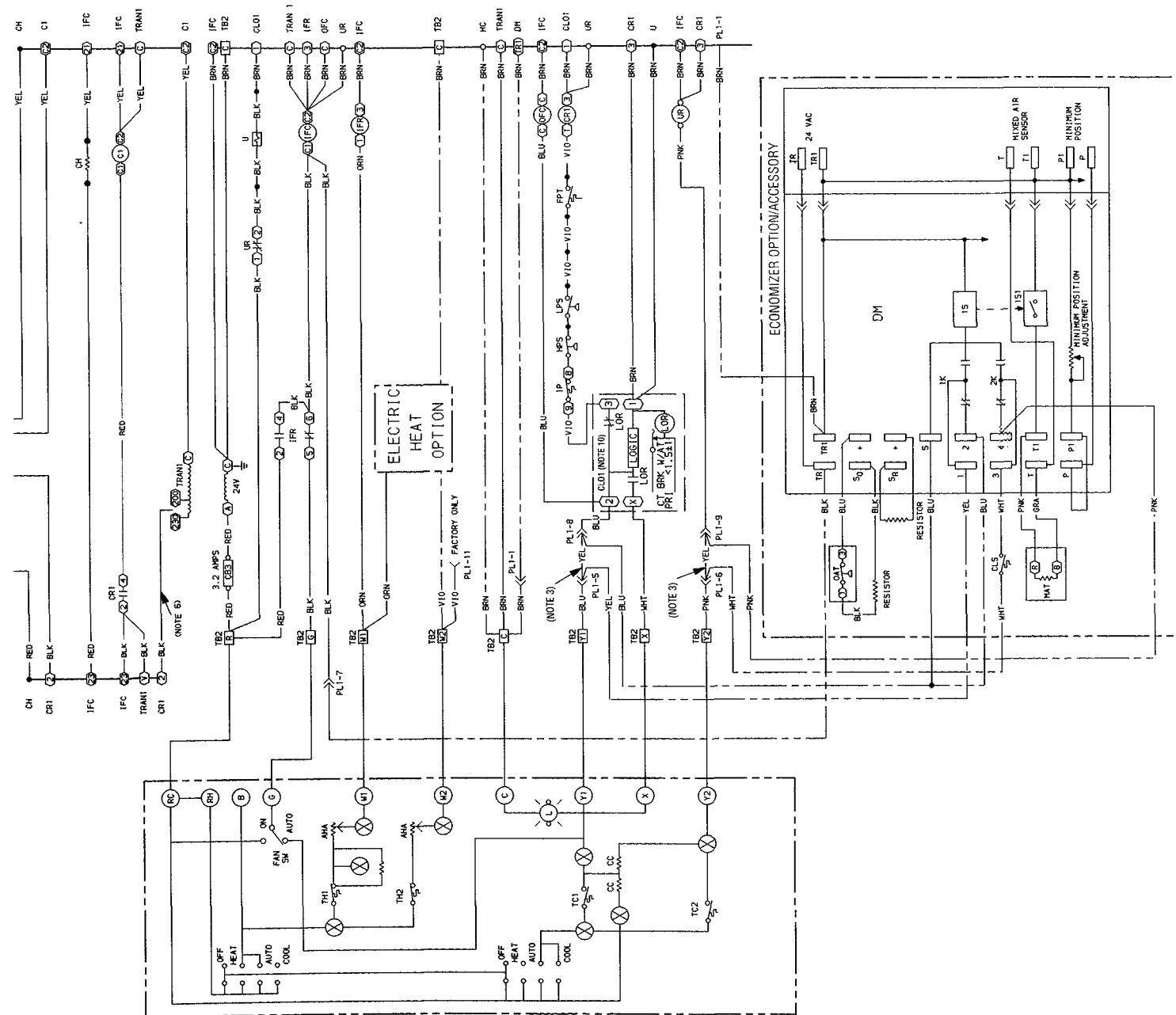
**Fig. 5 — Label Diagram, Component Arrangement;
50TJ016, 380 V, 60 Hz and 400 V, 50 Hz — 203 and 903 Series Units**



LINE
1
2
3
5
6
9
10
13
14
15

NOTE 7

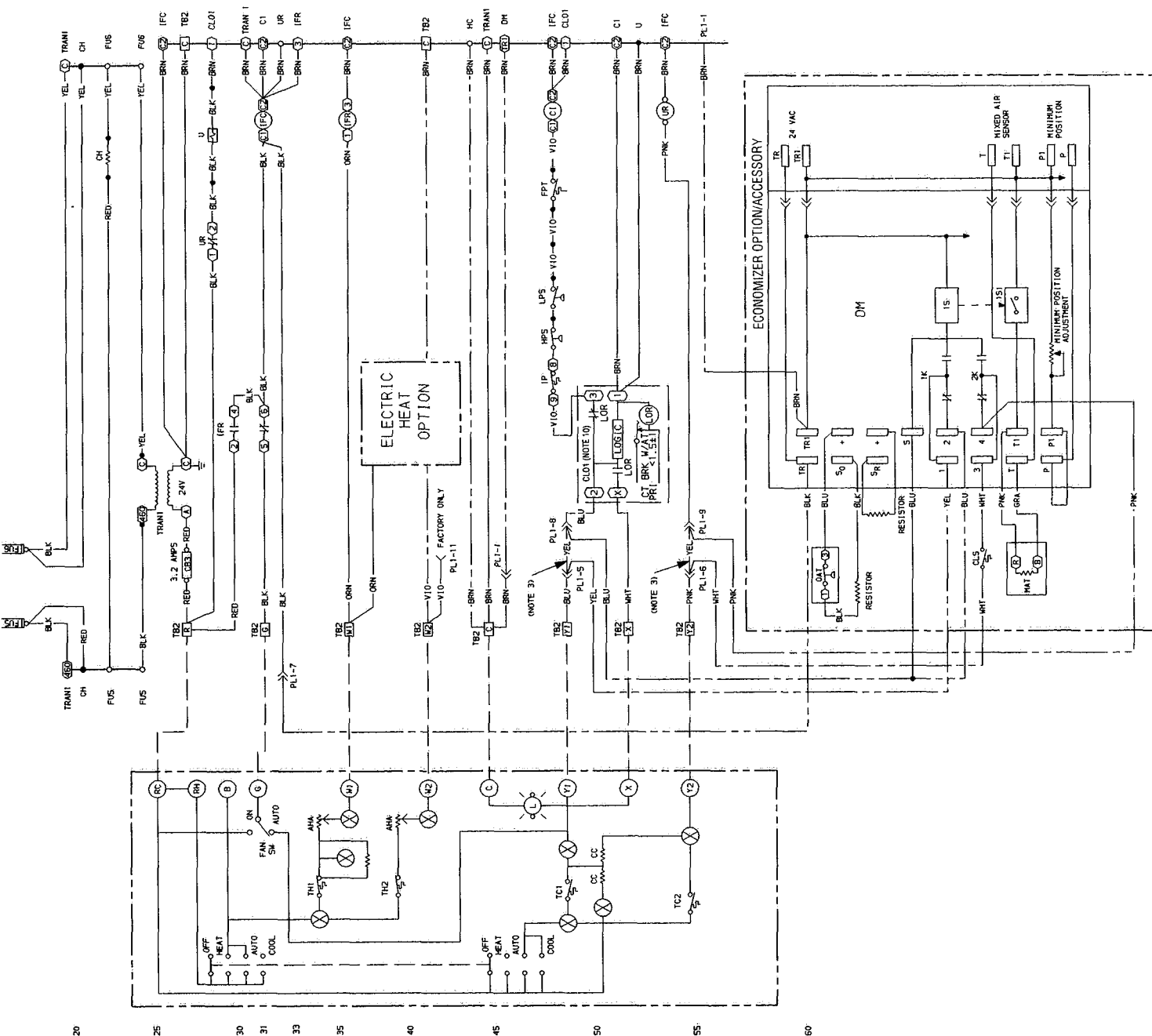
EQUIP GND



ELECTRIC HEAT CHART 208/230V

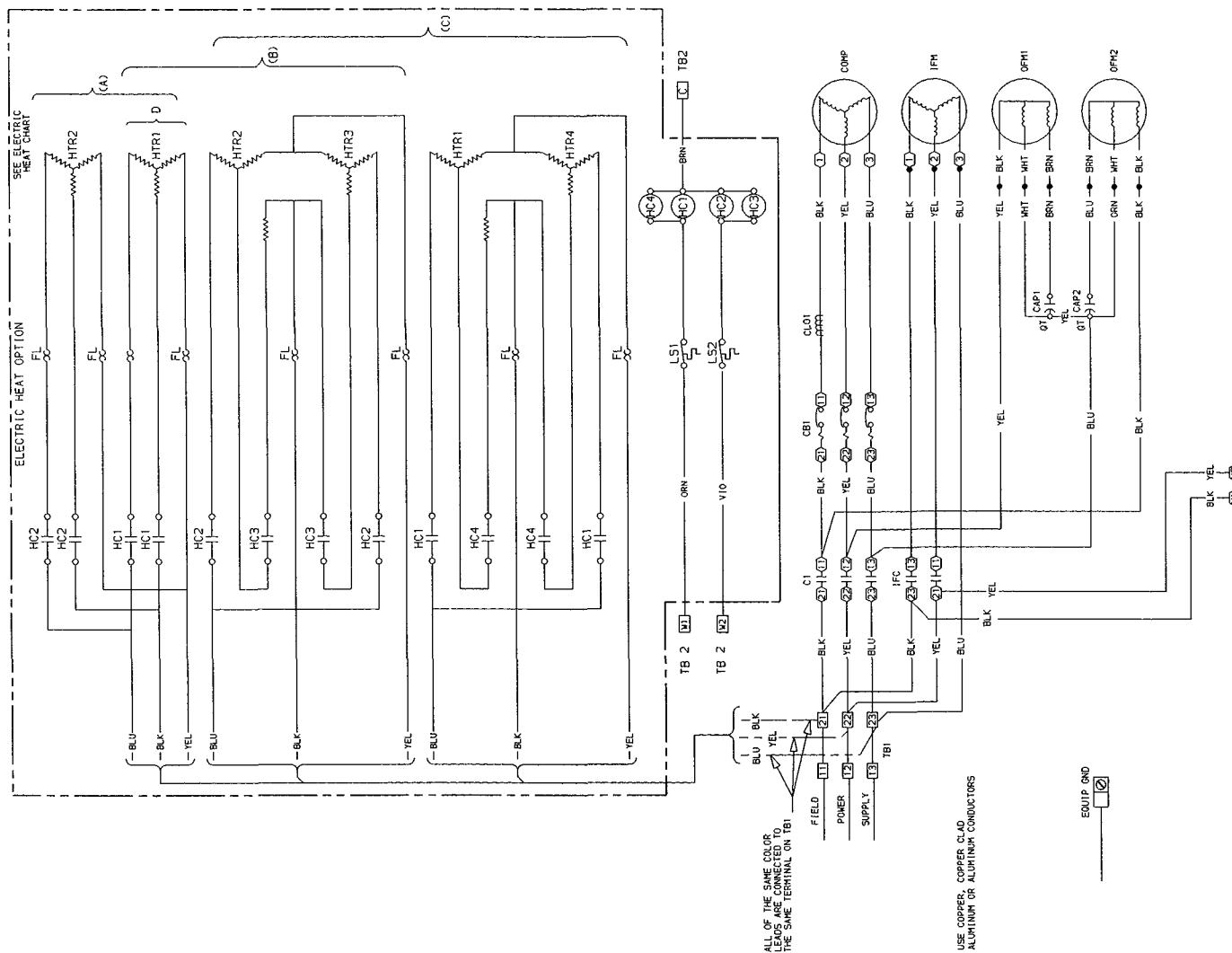
	208/240V AMPS	200/230V KW	AHA SETTING	
			1ST	2ND
A	72/82	25.7/34.2	40	.52
B	117/135	42.3/56.1	.66	.26
C	156/180	56.2/74.8	.66	.52

Fig. 6 — Label Diagram, Schematic;
501J016, 208/230 V — 501 Series Unit



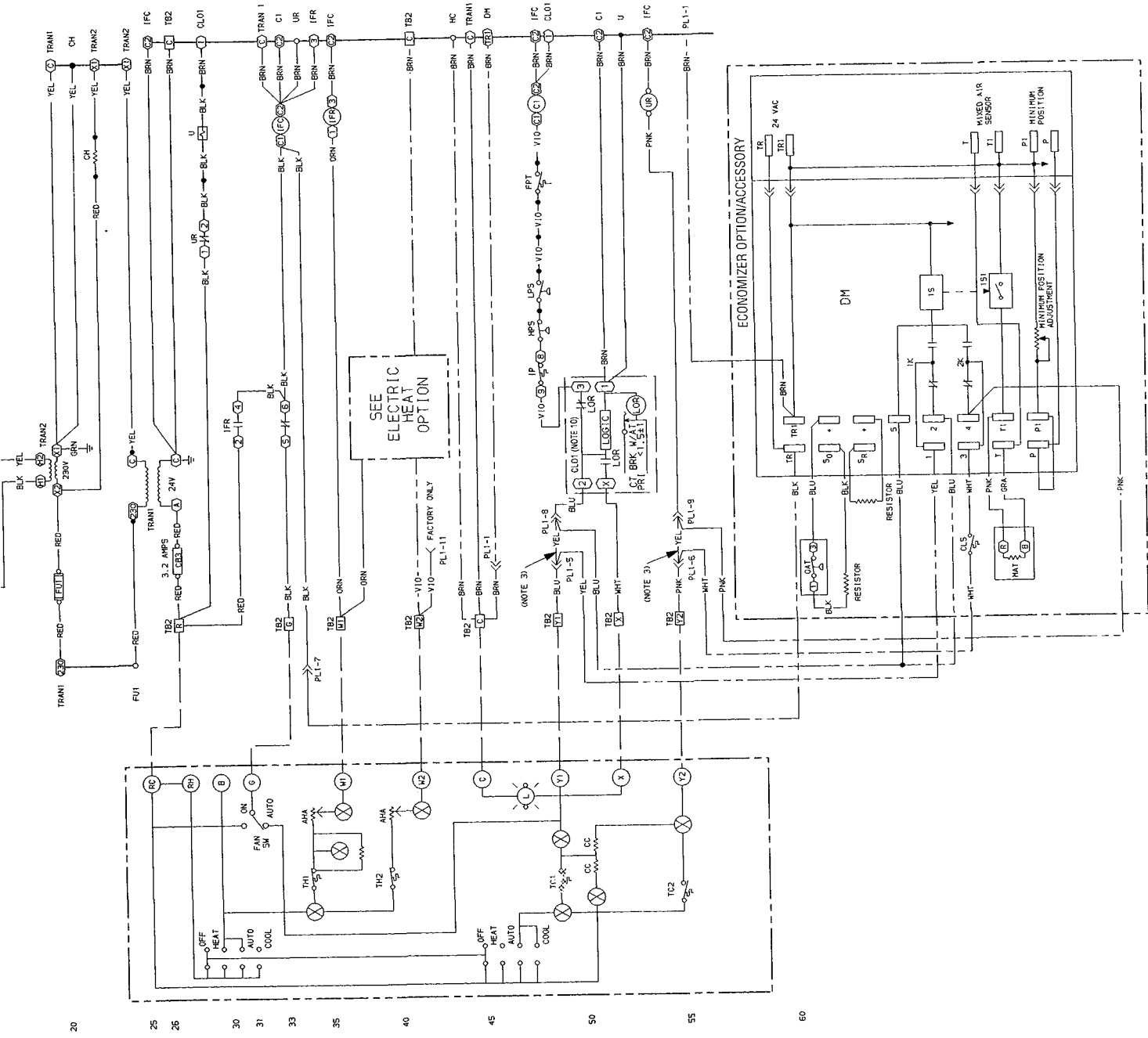
ELECTRIC HEAT CHART 460V			
	480V AMPS	460V KW	AHA SETTING
			1ST 2ND
A	39	32.4	.40 .26
B	66	54.9	.40 .52

Fig. 7 — Label Diagram, Schematic;
50TJ016, 460 V — 601 Series Unit



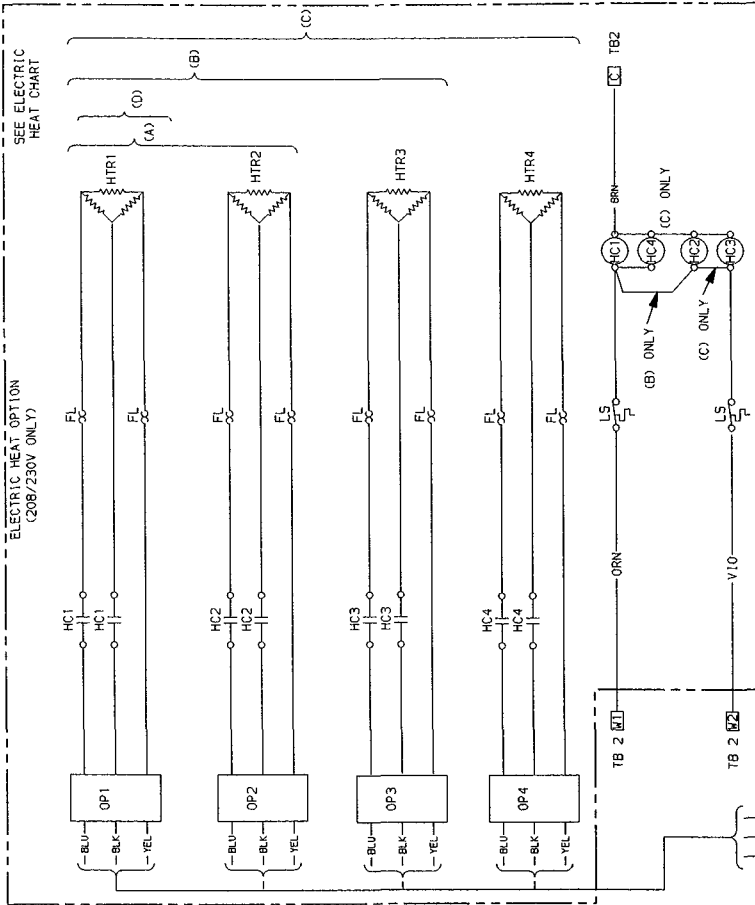
LINE
1
2
3
5
6
10
15

NOTE 7



ELECTRIC HEAT CHART			
AMPS	KW	AHA SETTING	
575V	575V	1ST	2ND
C	50	49.6	66
			52

Fig. 8 — Label Diagram, Schematic;
50TJ016, 575 V — 101 Series Unit



ALL OF THE SAME COLOR
LEADS ARE CONNECTED TO
THE SAME TERMINAL ON TB1

LINE

1

2

3

NOTE 7

5

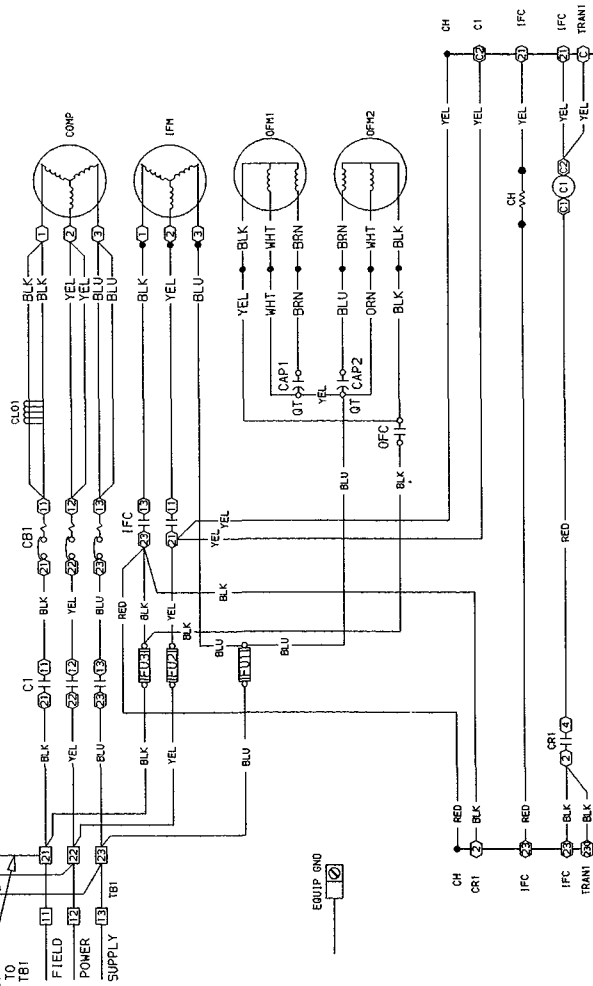
10

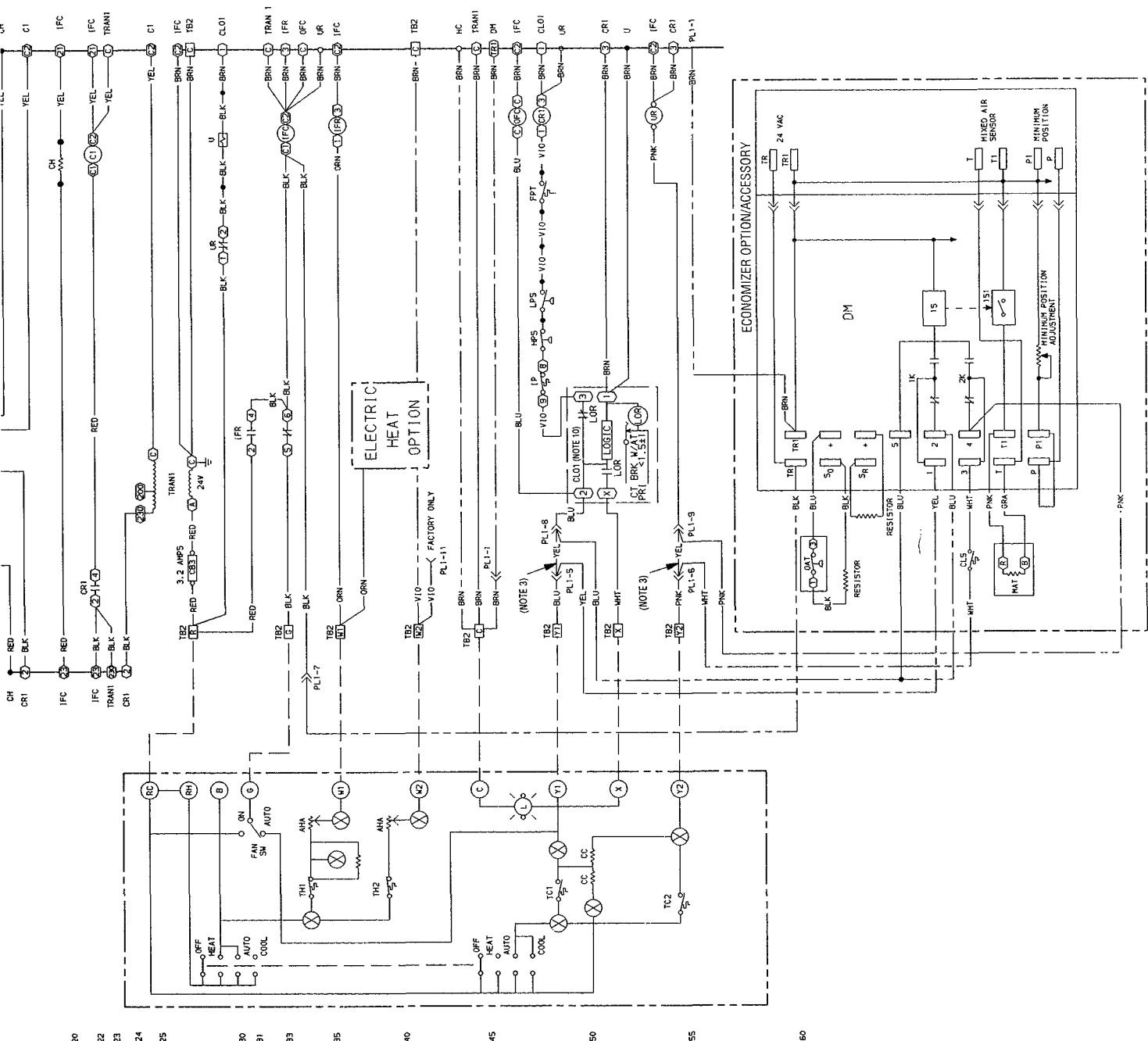
15

20

22

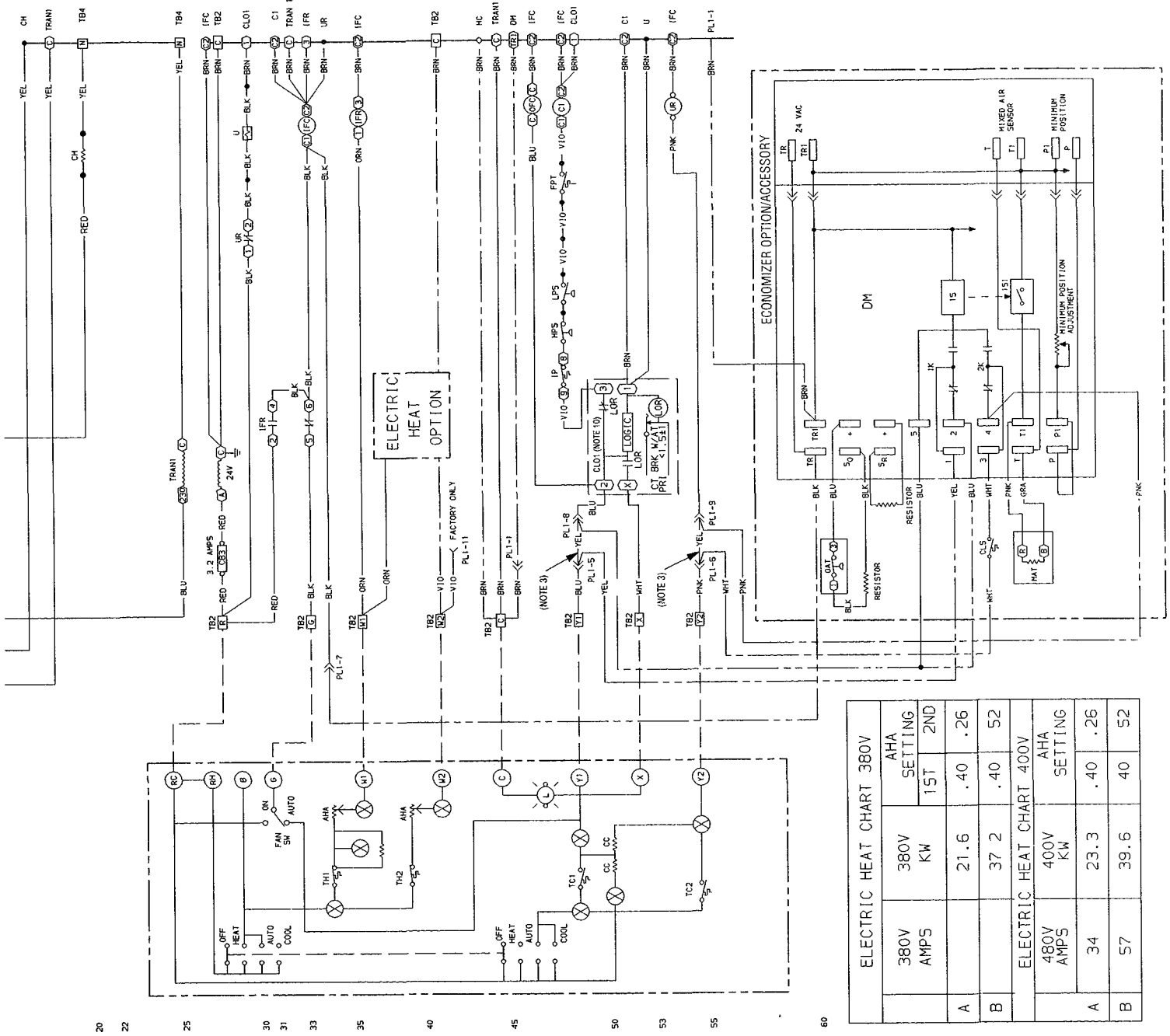
23





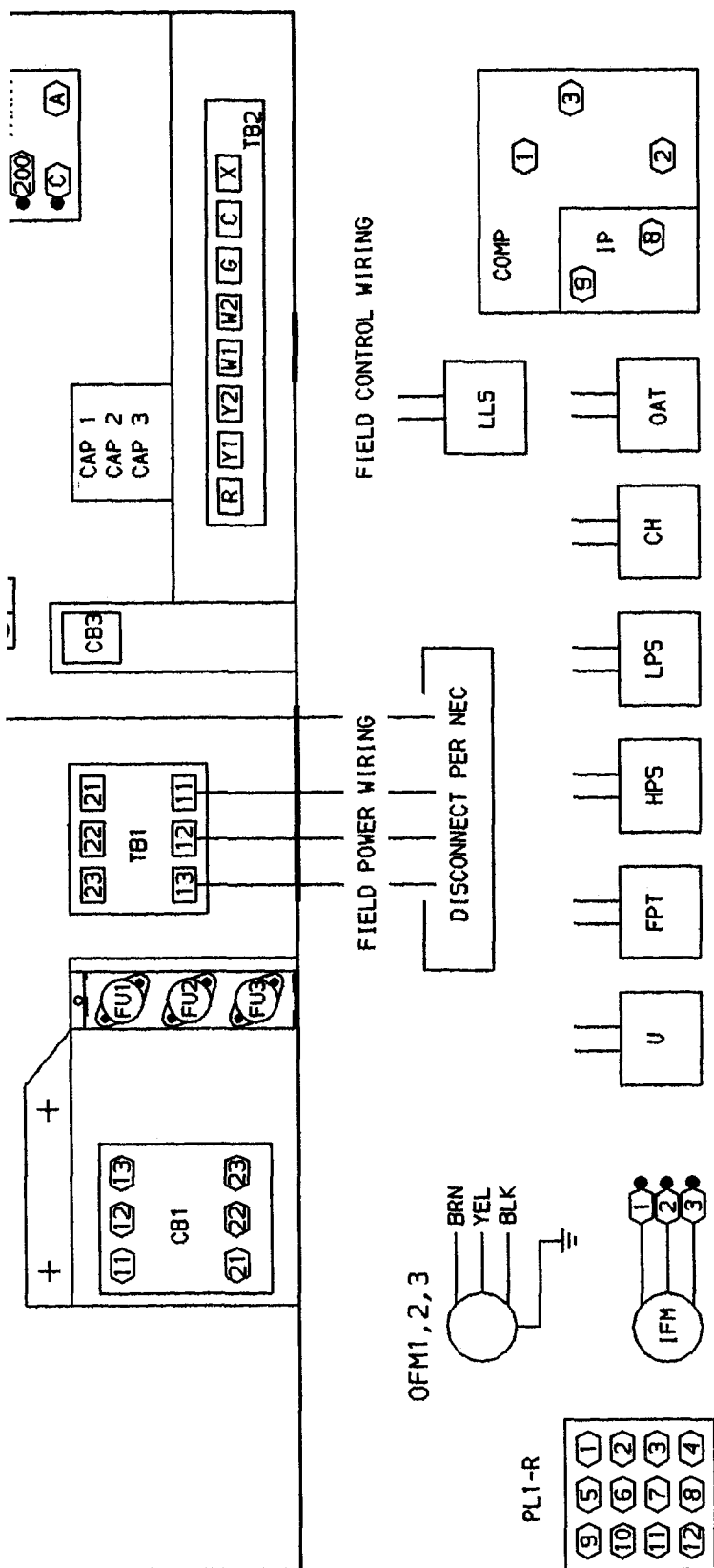
ELECTRIC HEAT CHART 208/230V			
	208/240V AMPS	200/230V KW	AHA SETTING
			1ST 2ND
A	72/82	25.7/34.2	40 .52
B	117/135	42.3/56.1	.66 .26

Fig. 9 — Label Diagram, Schematic;
50TJ016, 230 V, 50 Hz — 803 Series Unit



ELECTRIC HEAT CHART 380V			
	380V AMPS	AHA SETTING	
		1ST	2ND
A	21.6	.40	.26
B	37.2	.40	.52
ELECTRIC HEAT CHART 400V			
	400V AMPS	AHA SETTING	
		1ST	2ND
A	34	.40	.26
B	57	.40	.52

Fig. 10 — Label Diagram, Schematic;
50TJ016, 380 V, 60 Hz and 400 V, 50 Hz — 203 and 903 Series Units



ECONOMIZER OPTION/ACCESSORY

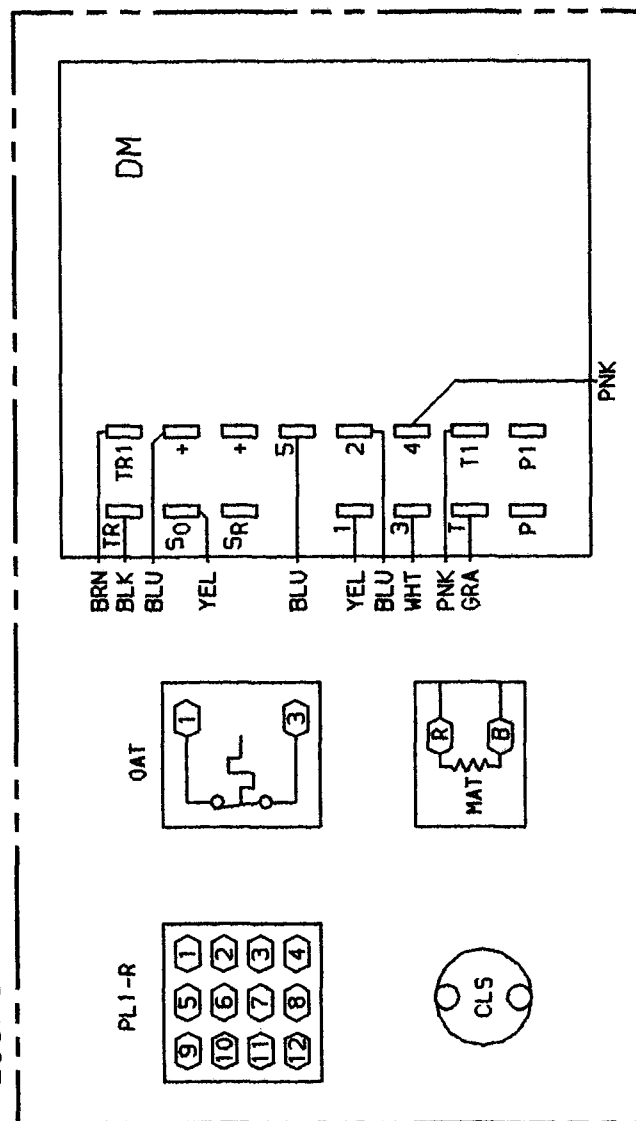
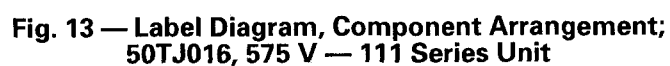
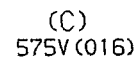
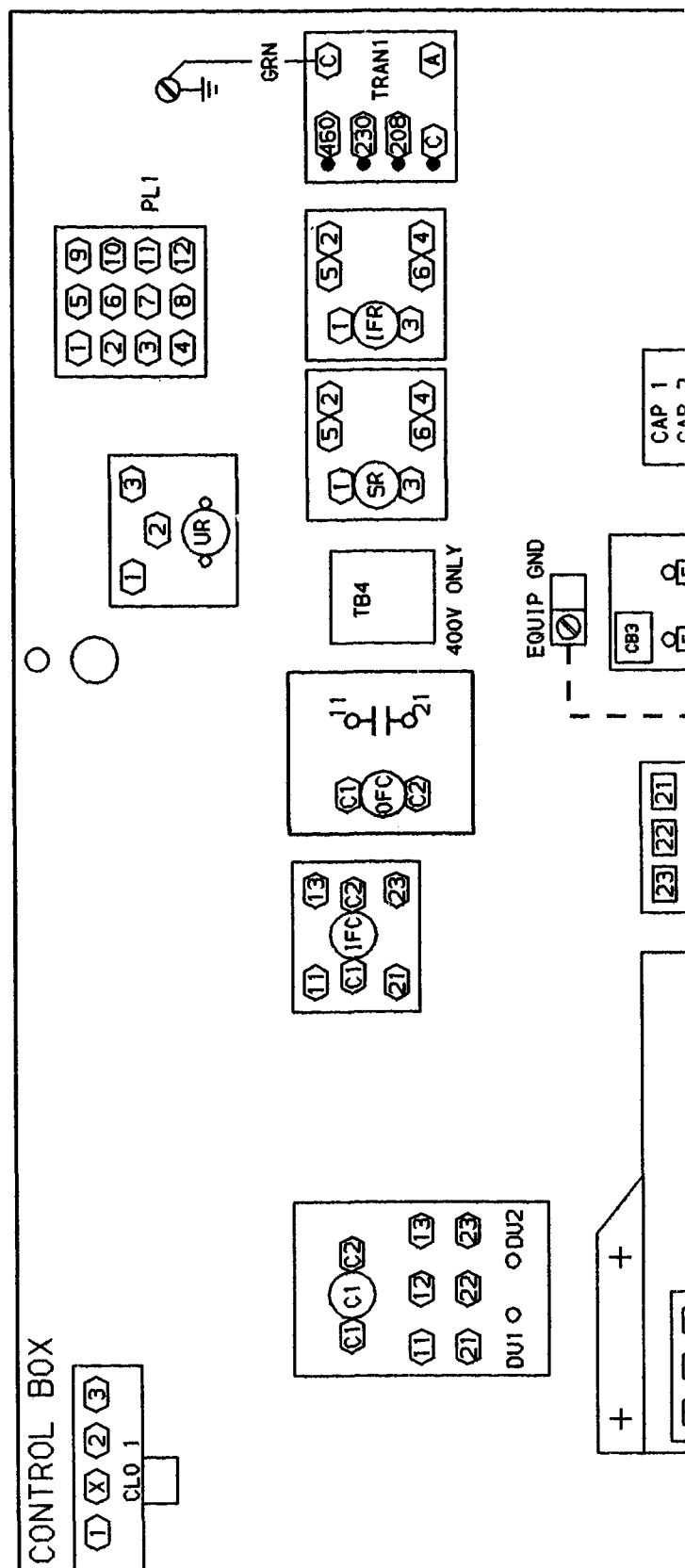
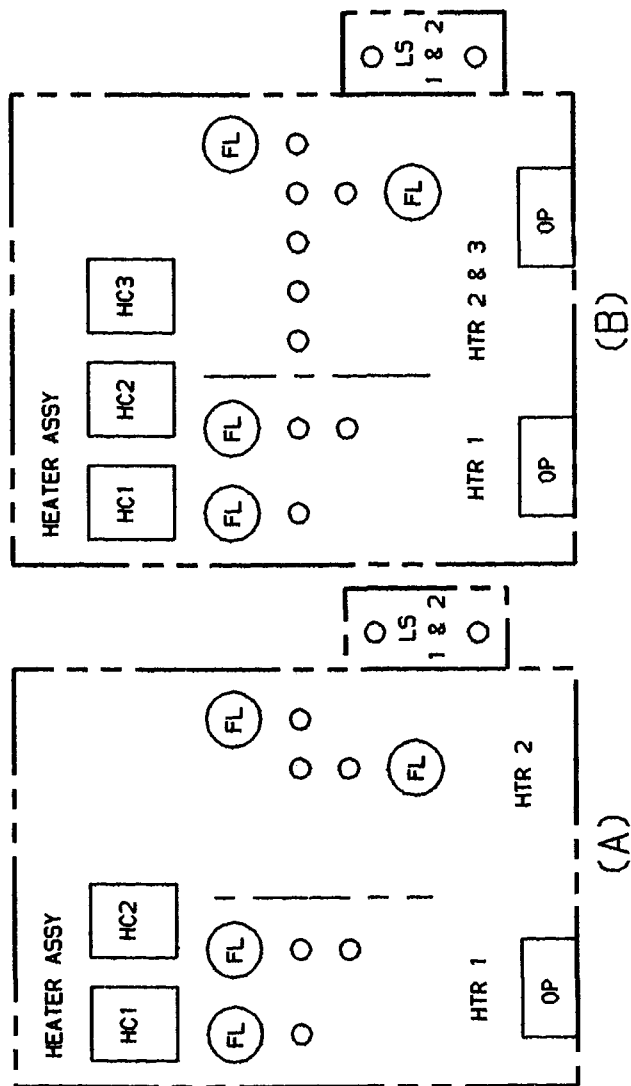


Fig. 11 — Label Diagram, Component Arrangement;
50TJ016, 208/230 V — 511 Series Unit





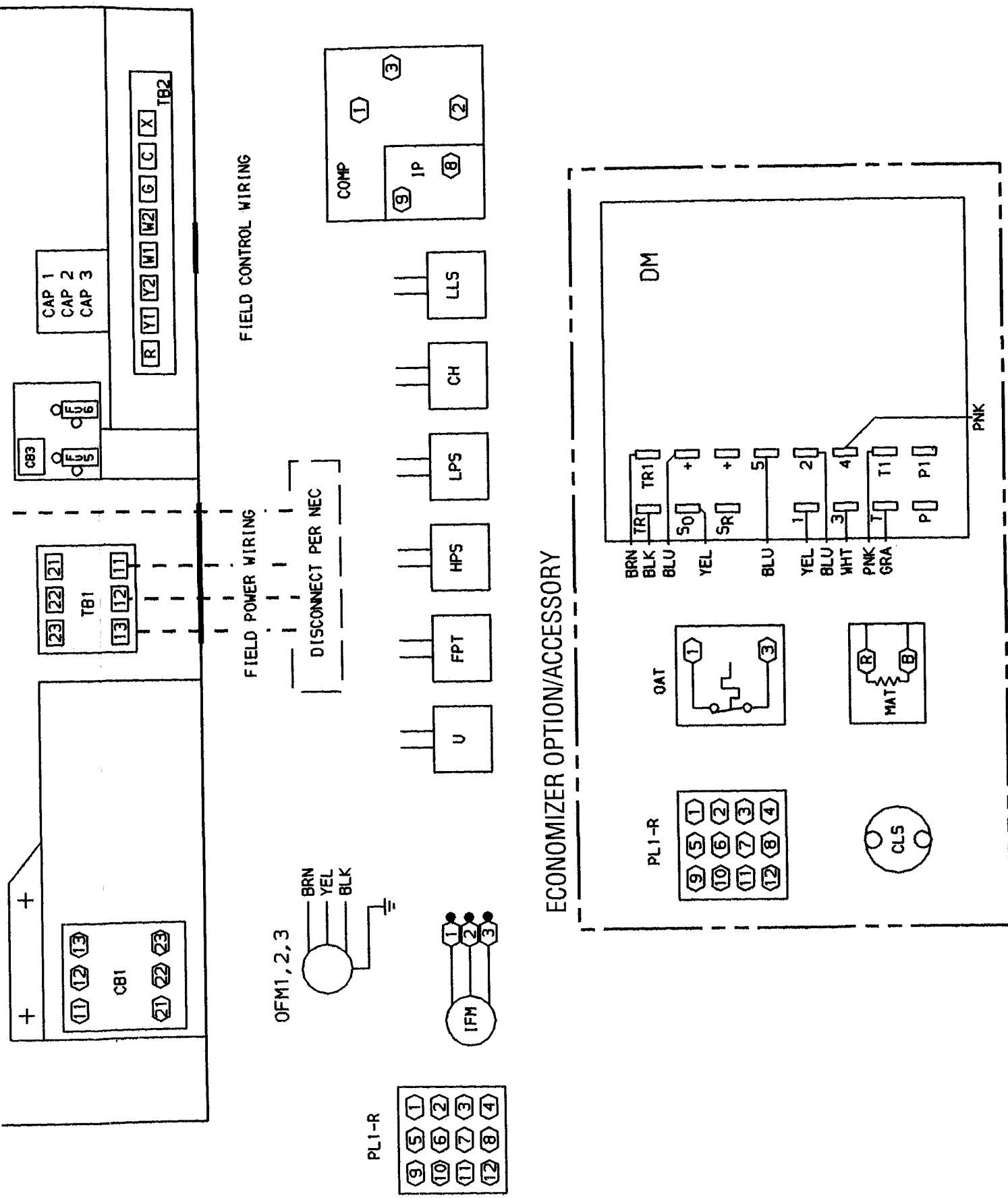
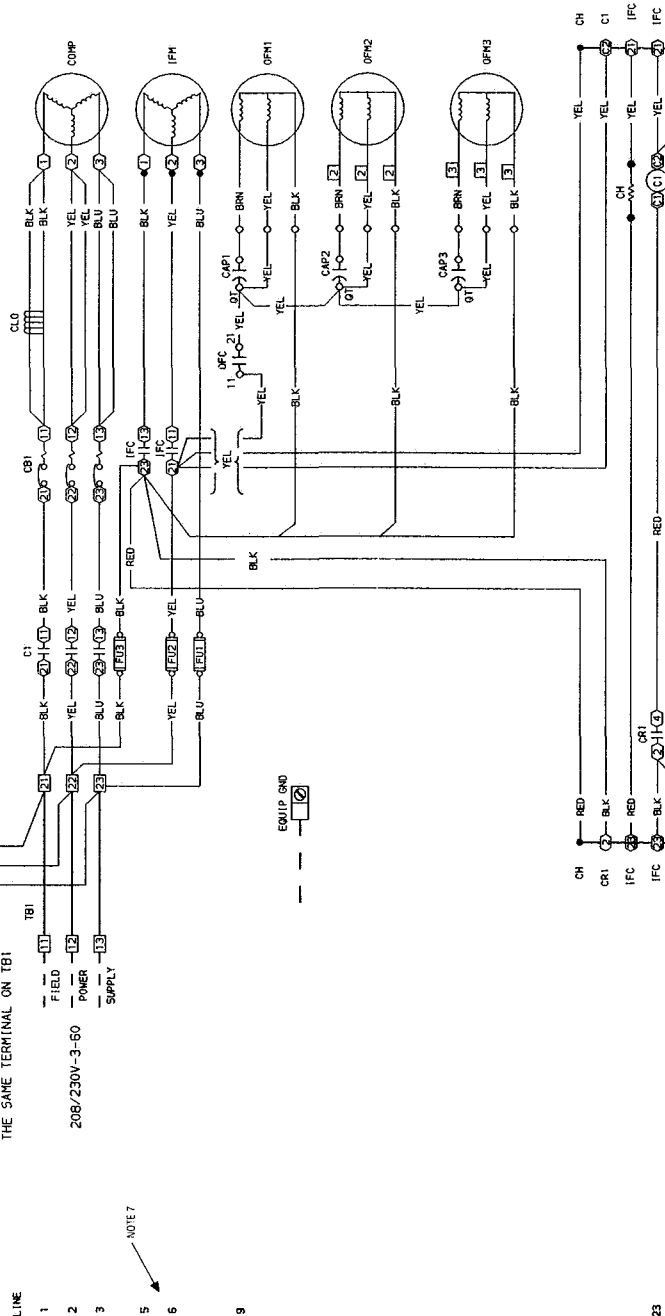


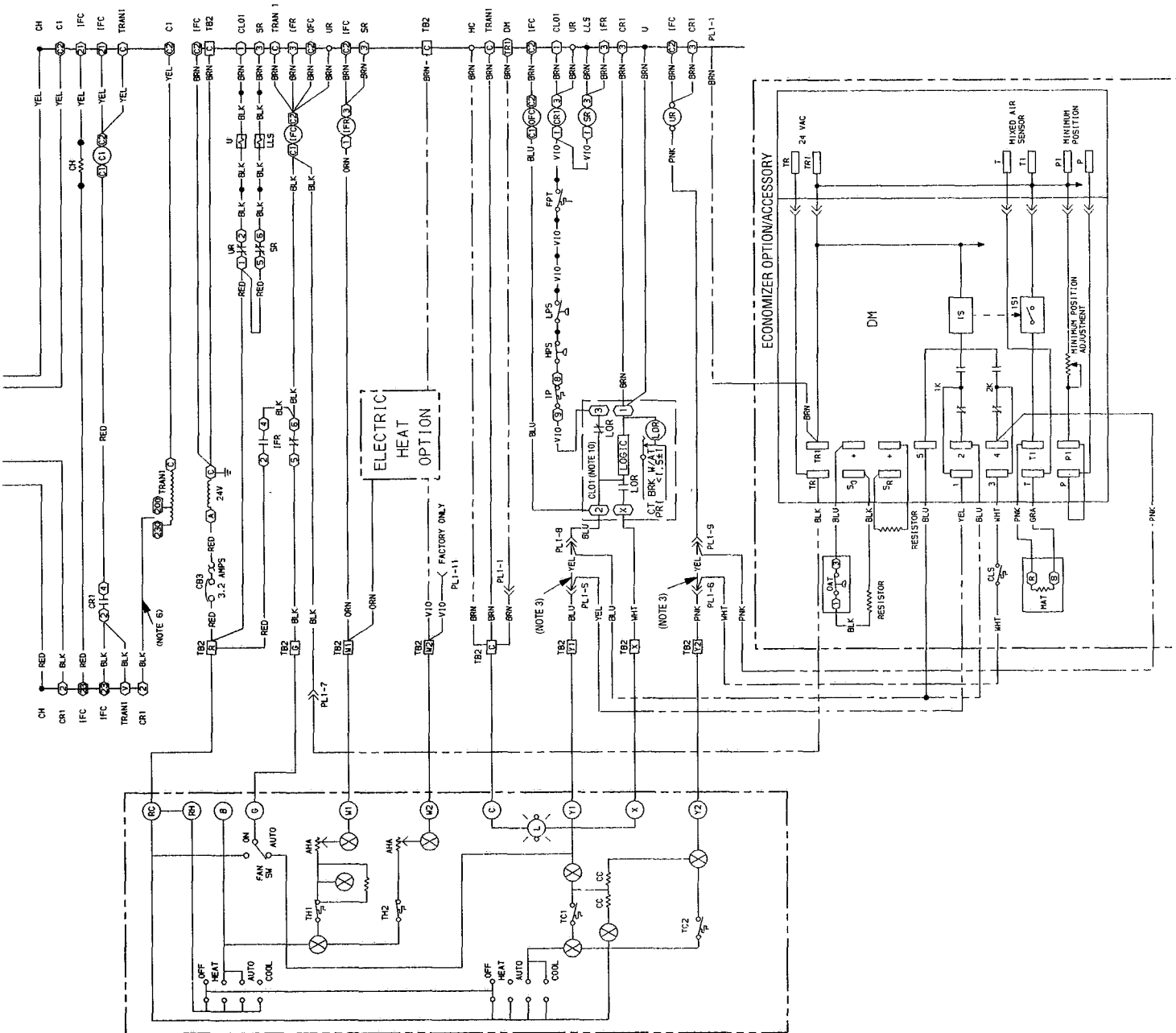
Fig. 14 — Label Diagram, Component Arrangement:
50TJ016; 380 V, 60 Hz and 400 V, 50 Hz — 913 and 213 Series Units

[illegible]

三

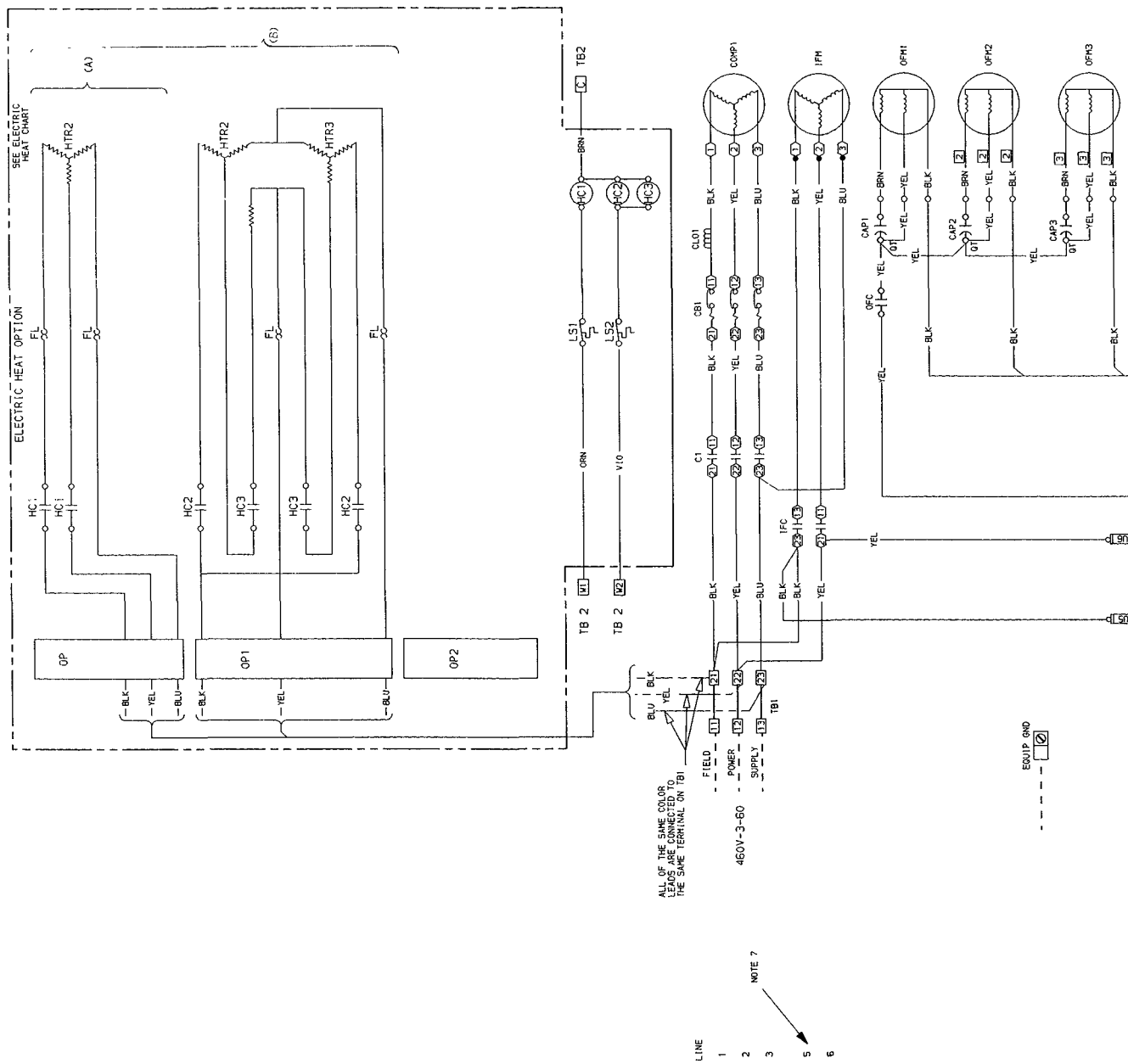
NOTE 7

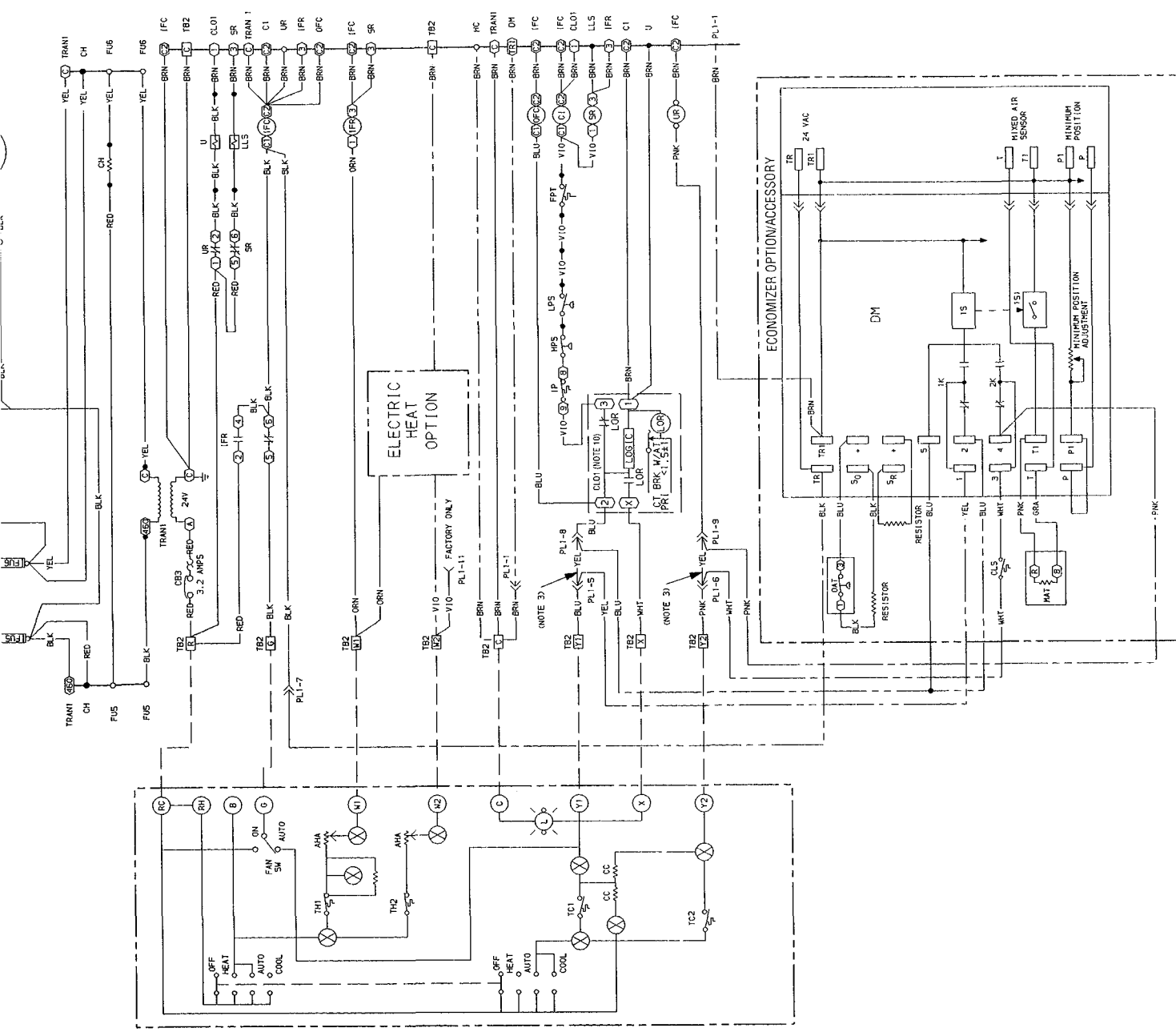




ELECTRIC HEAT CHART 208/230V				
	208/240V AMPS	200/230V KW	AHA SETTING	
			1ST	2ND
A	72/82	25.7/34.2	40	.52
B	117/135	42.3/56.1	.66	.26
C	156/180	56.2/74.8	.66	.52

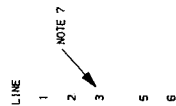
Fig. 15 — Label Diagram, Schematic:
50TJ016, 208/230 V — 511 Series Unit

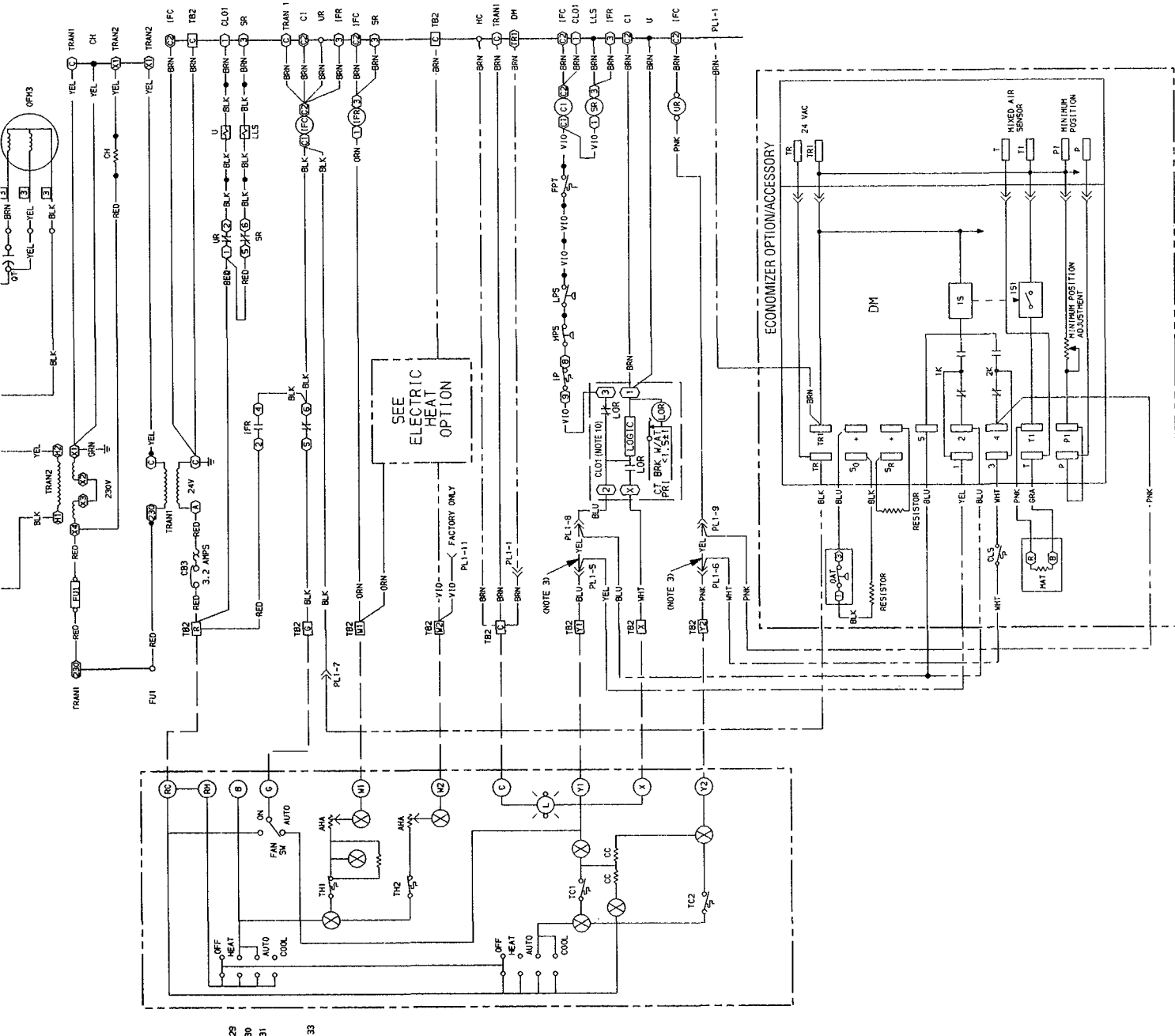




ELECTRIC HEAT CHART 460 V				
	480V AMPS	460V KW	AHA SETTING	
			1ST	2ND
A	39	32.4	40	.26
B	66	54.9	40	.52

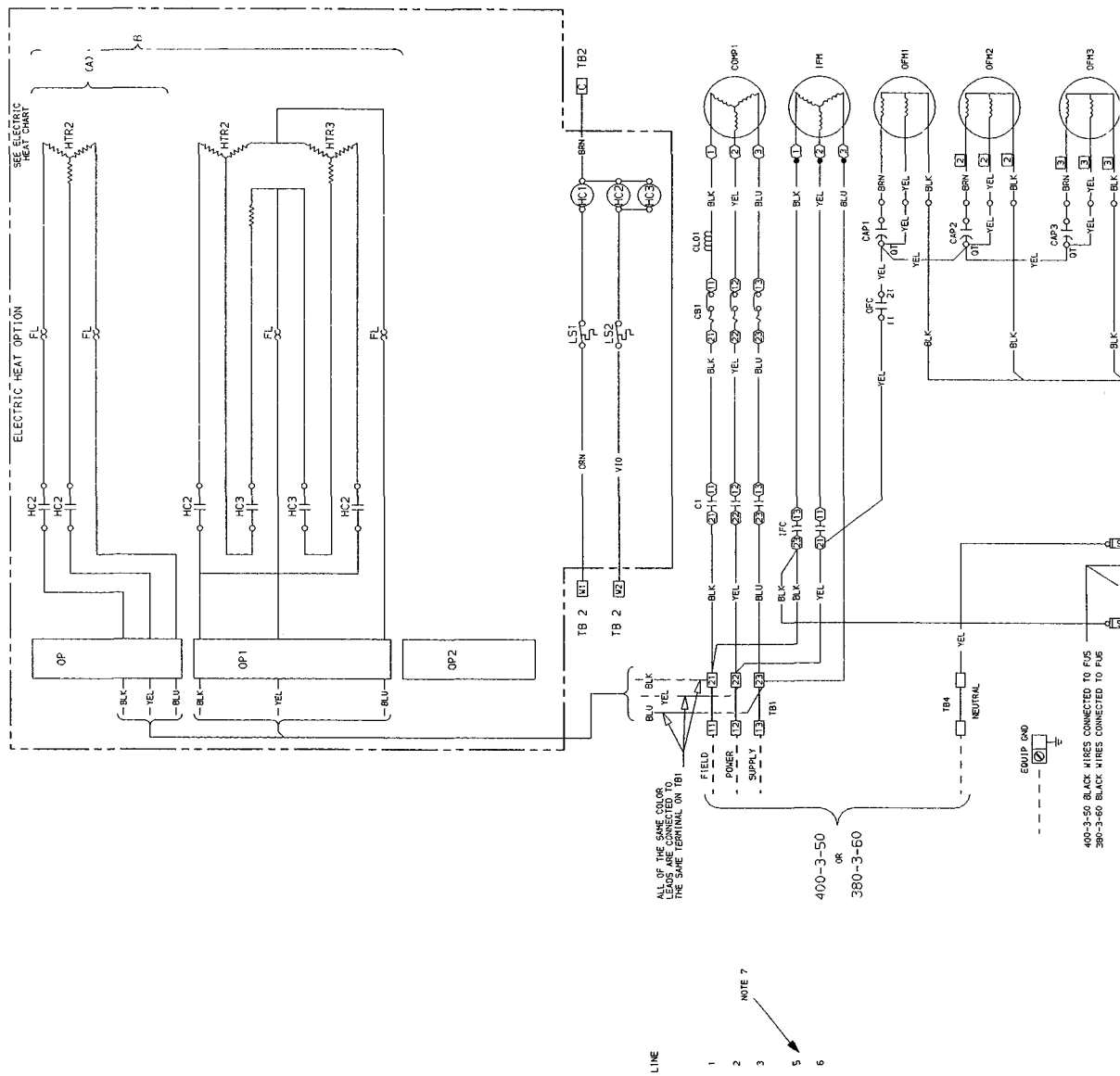
Fig. 16 — Label Diagram, Schematic;
50TJ016, 460 V — 611 Series Unit

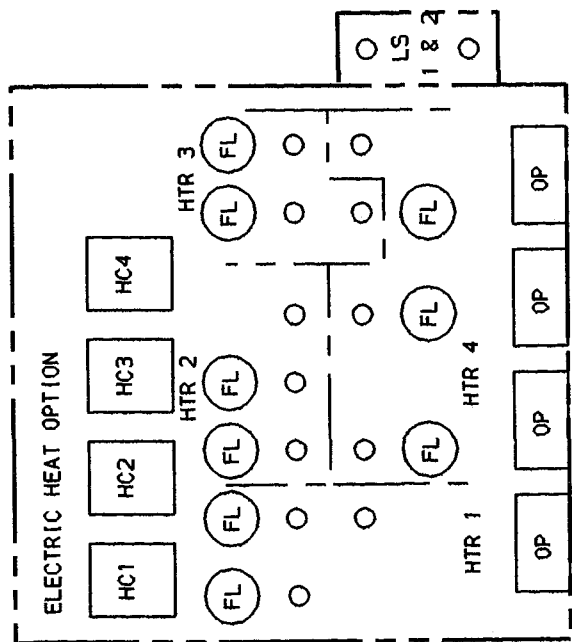




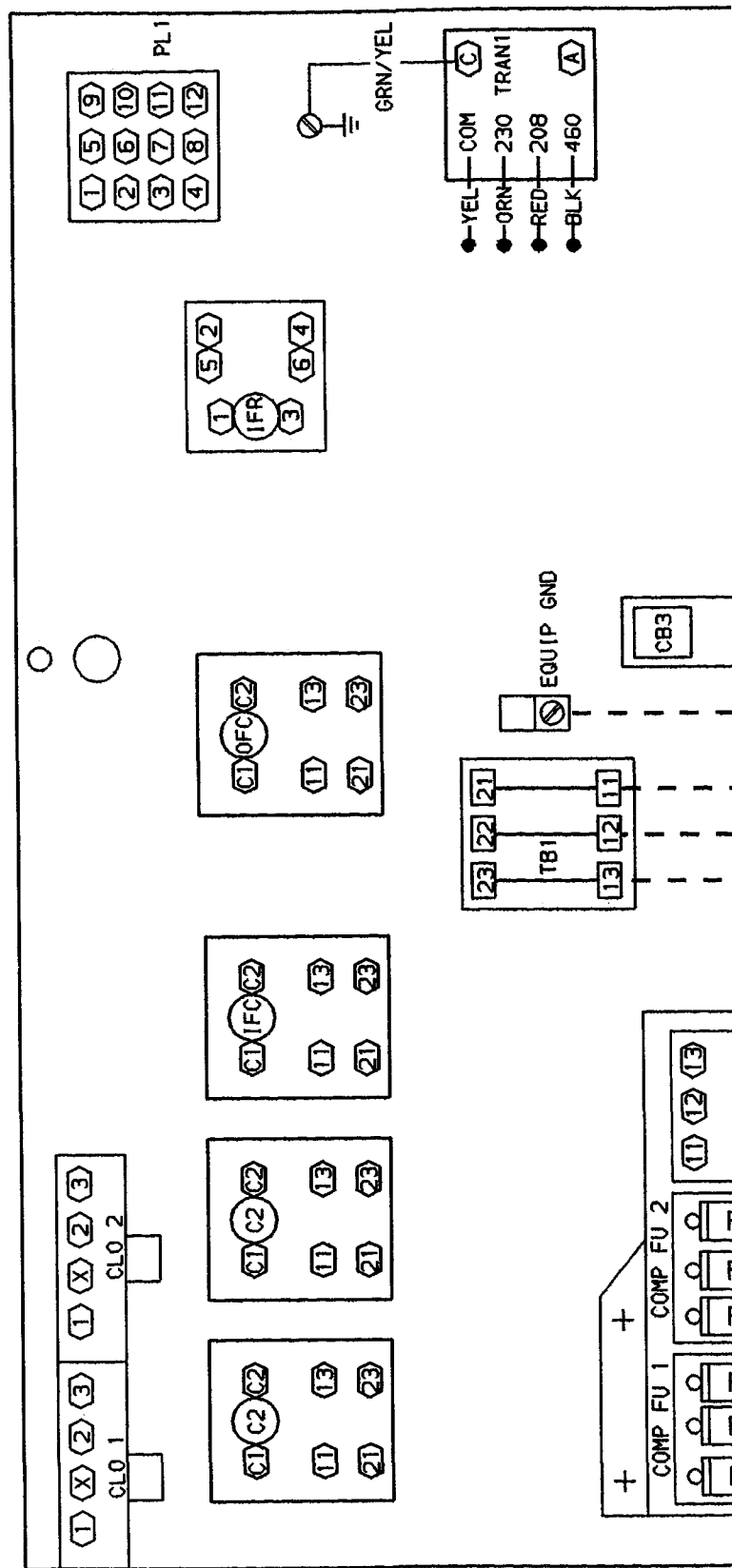
ELECTRIC HEAT CHART			
A	AMPS 575V	KW 575V	AHA SETTING
			1ST 2ND
	50	49.6	.66 .52

Fig. 17 — Label Diagram, Schematic;
50TJ016, 575 V — 111 Series Unit





CONTROL BOX



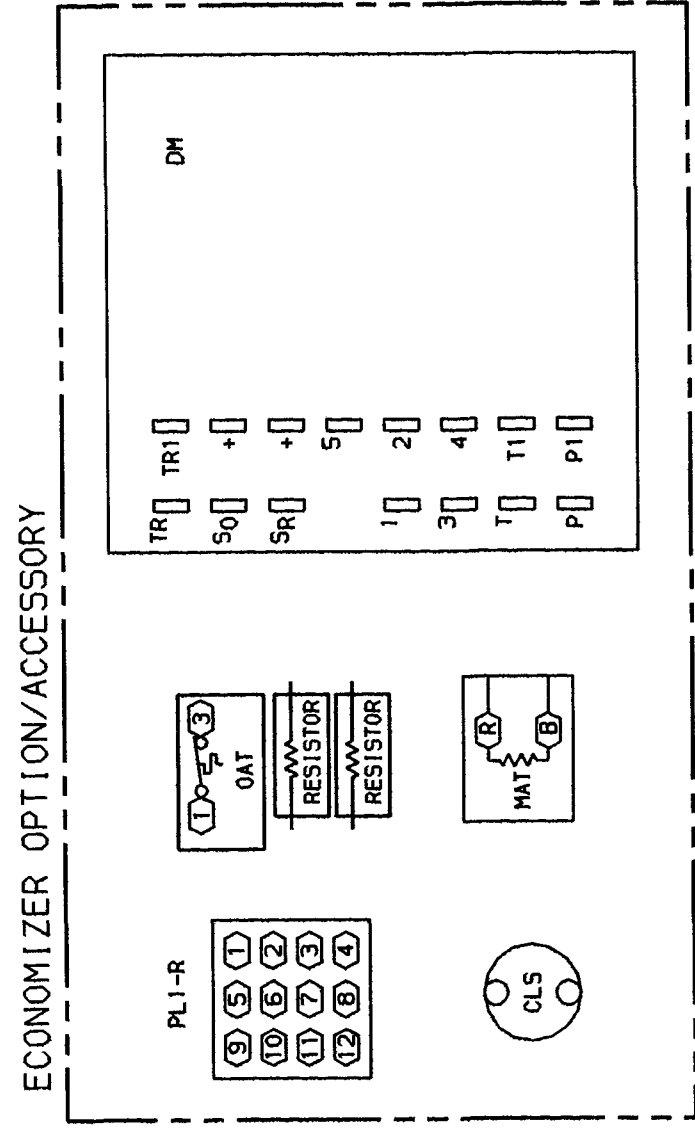
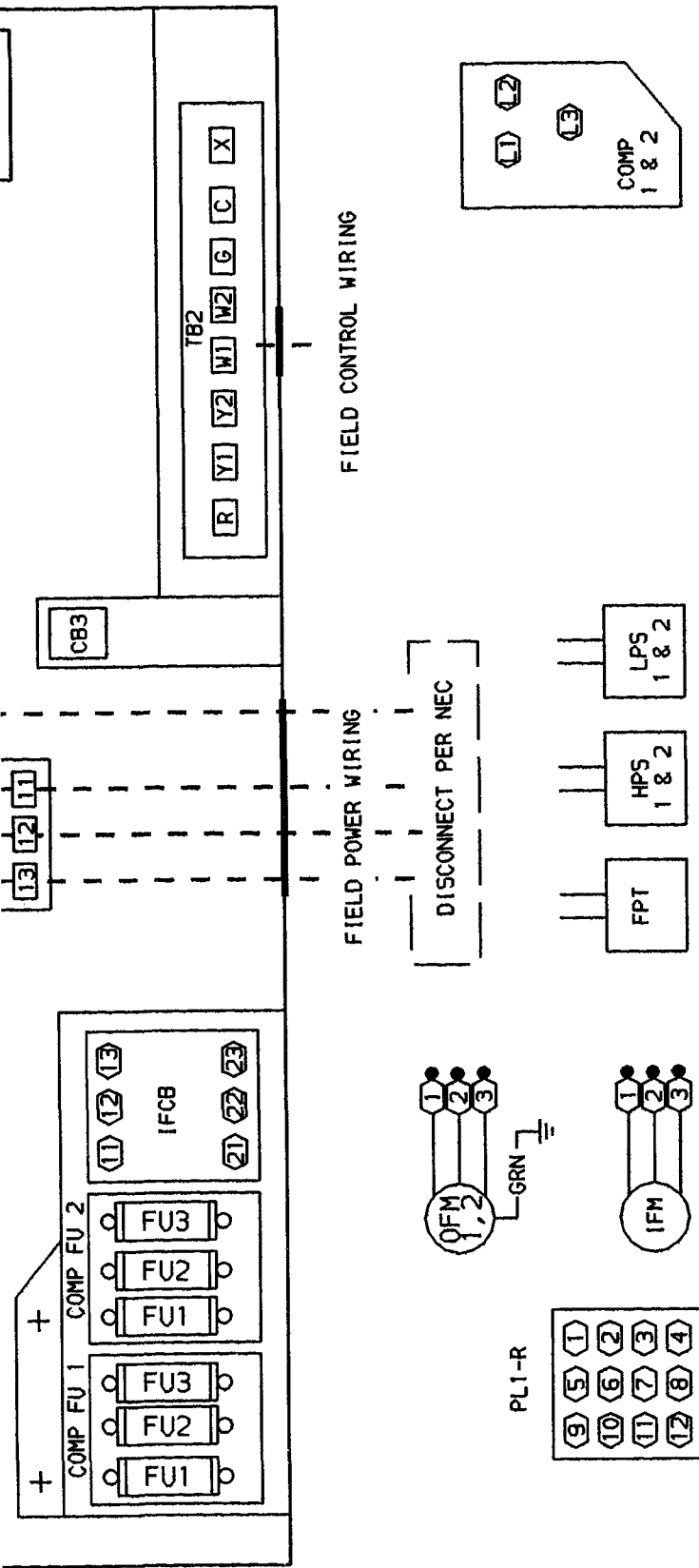
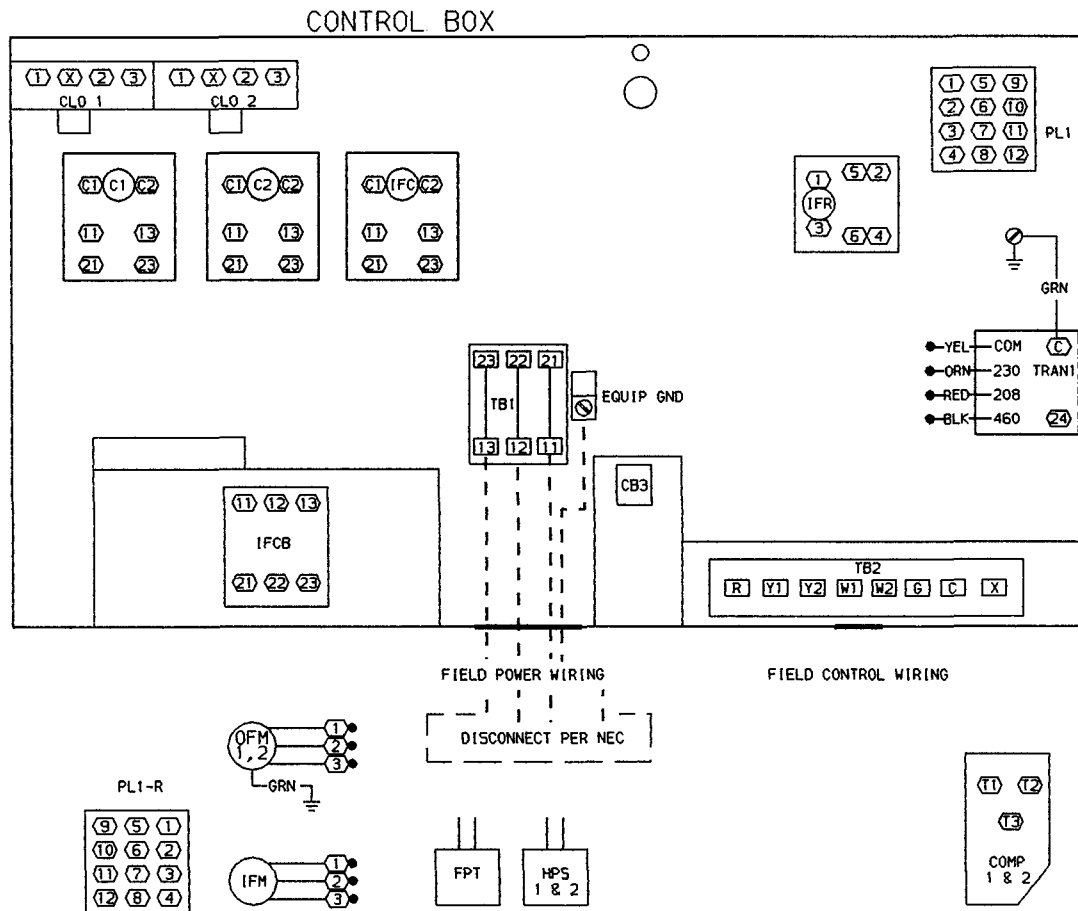
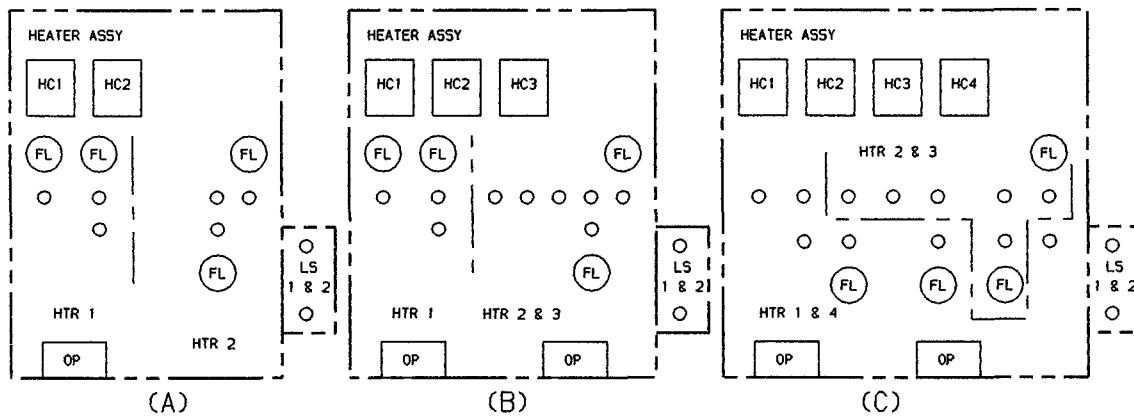


Fig. 19 — Label Diagram, Component Arrangement;
50TJ020,024, 208/230 V — 501 and 511 Series Units



ECONOMIZER OPTION/ACCESSORY

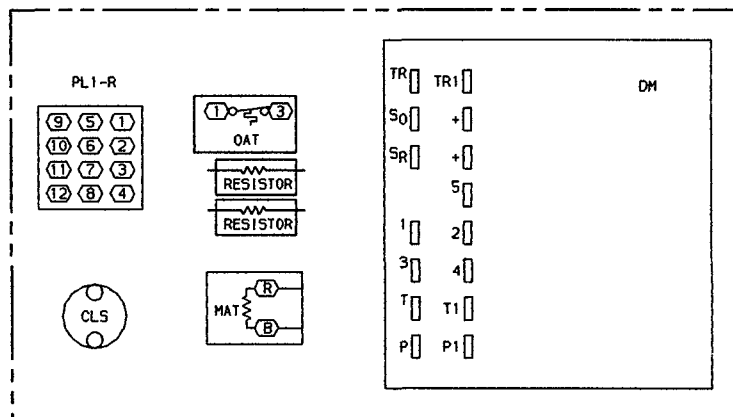


**Fig. 20 — Label Diagram, Component Arrangement;
50TJ020,024, 460 V — 601 and 611 Series Units**

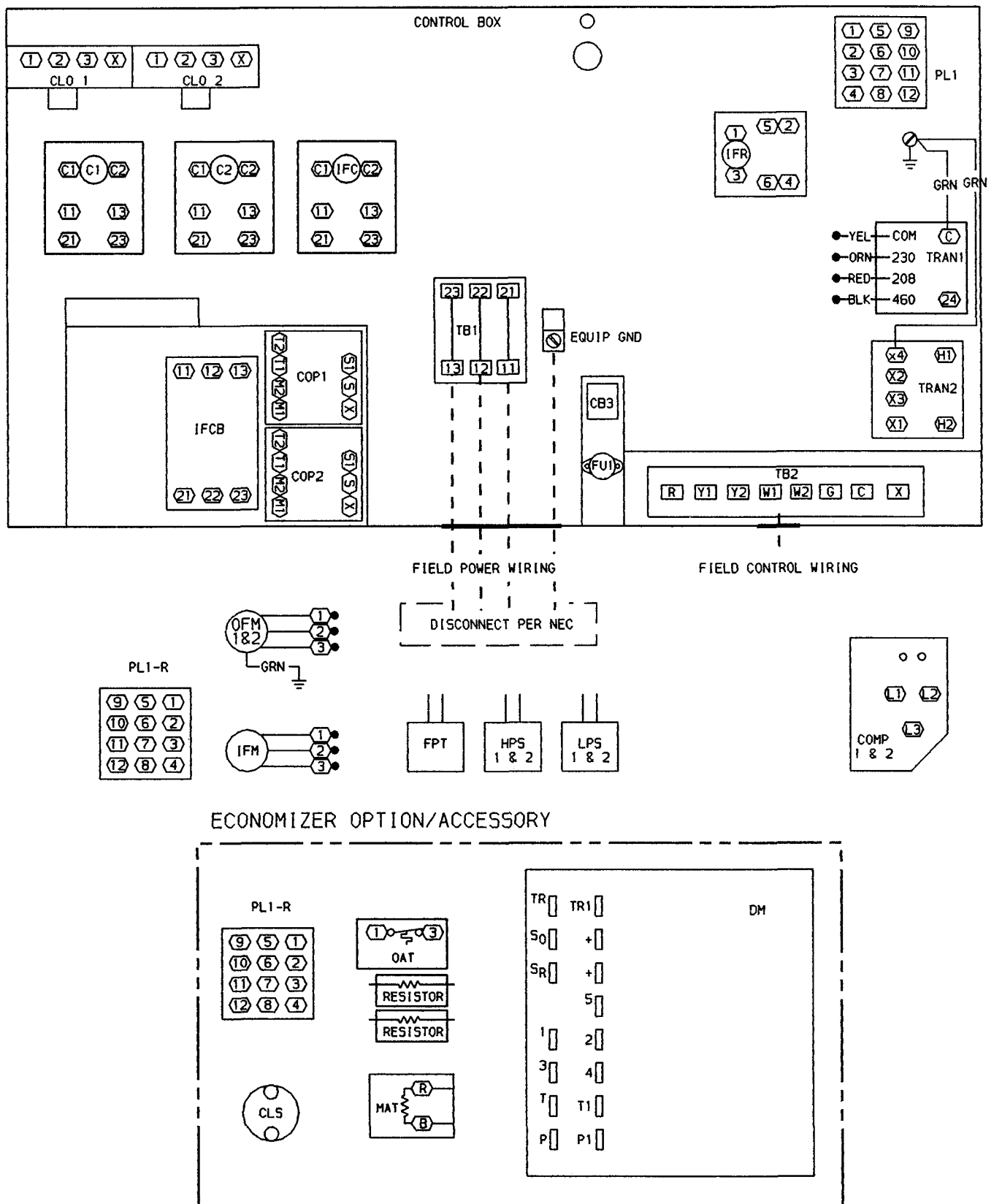


Fig. 21 — Label Diagram, Component Arrangement;
50TJ020,024, 575 V — 101 and 111 Series Units

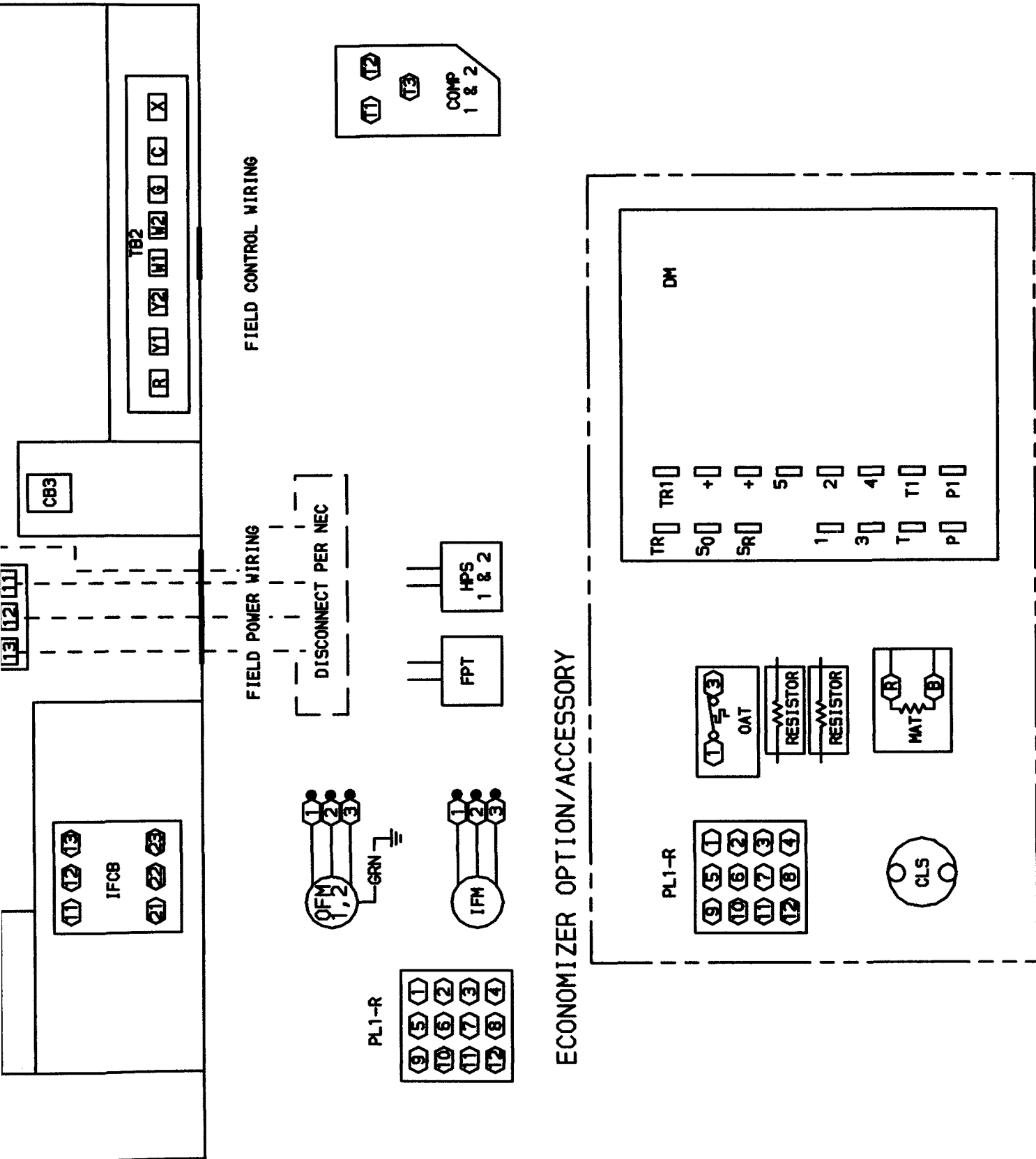
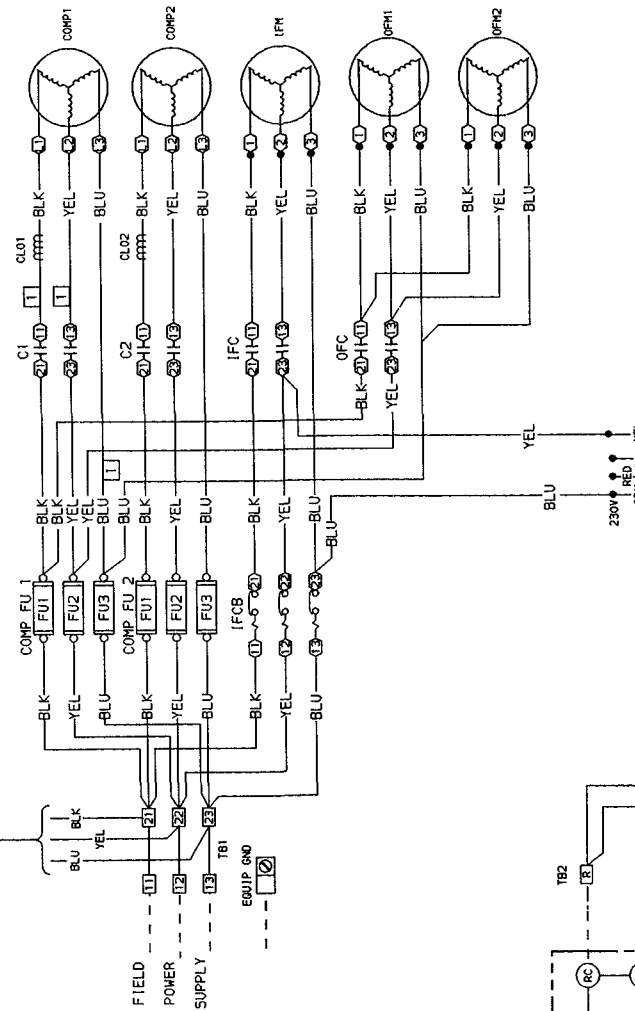
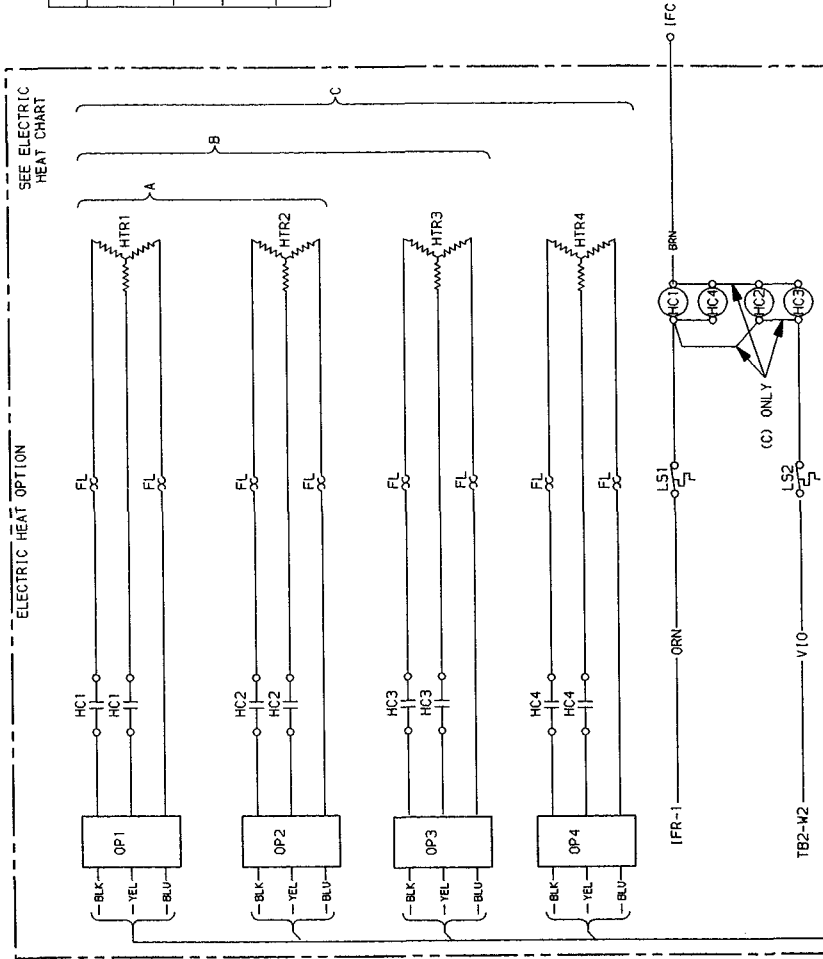


Fig. 22 — Label Diagram, Component Arrangement;
50TJ020,024; 400 V, 50 Hz — 903 and 913 Series Units

ELECTRIC HEAT		
	208/240V AMPS	200/230V KW
A	72/82	25.7/34.2
B	117/135	42.3/56.1
C	156/180	56.2/74.8



1
2
5
6
9
10
13
14

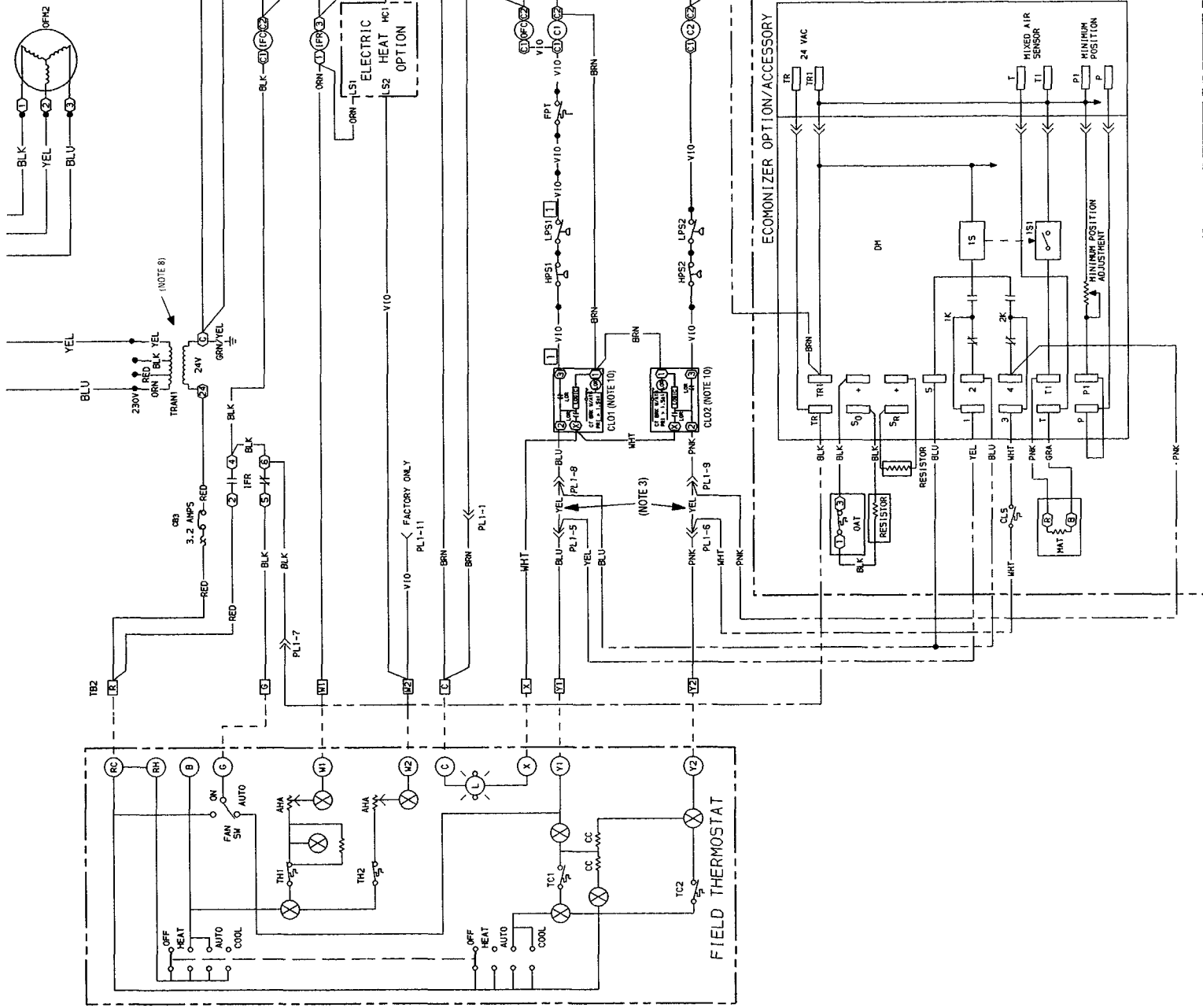
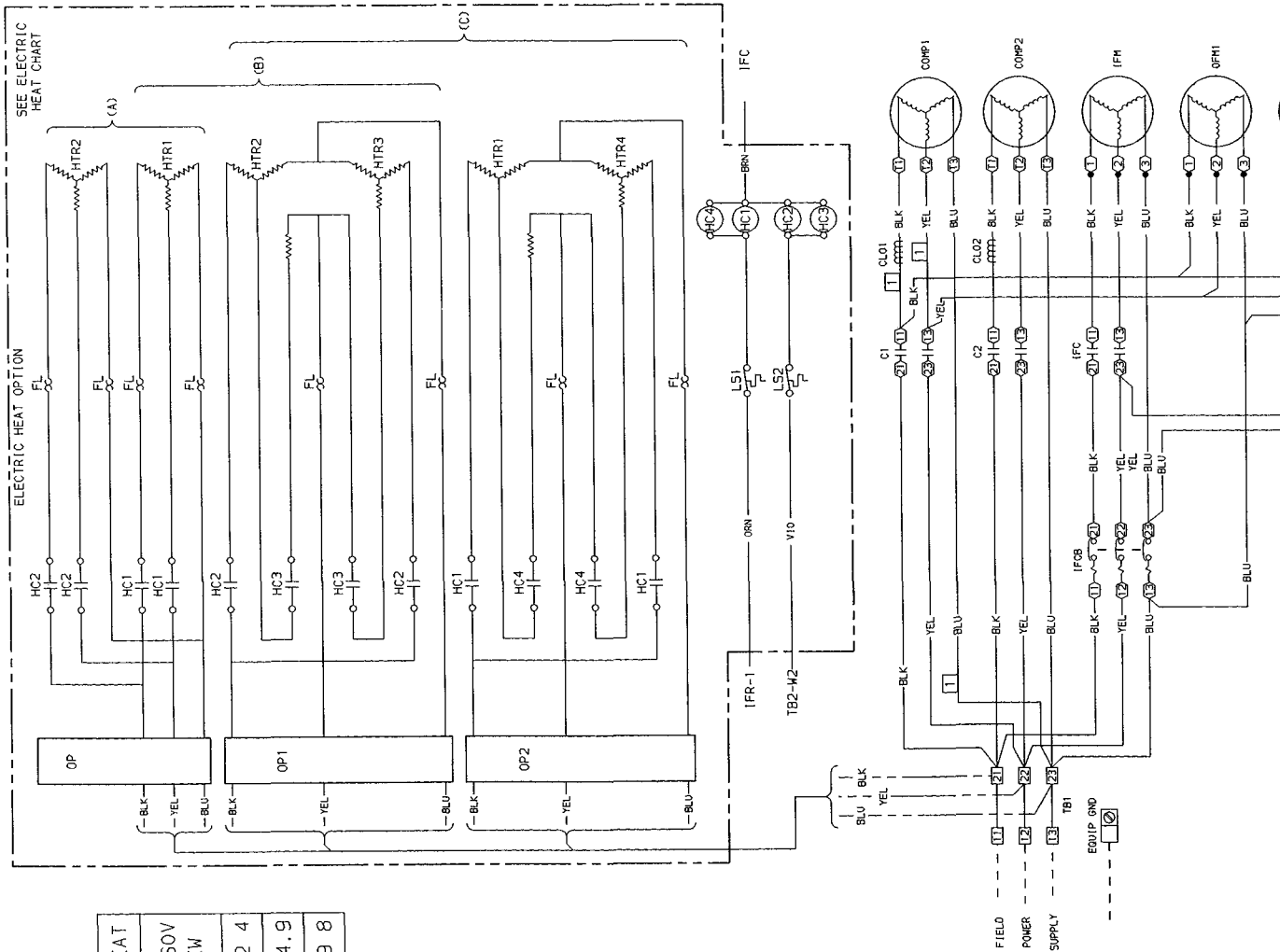


Fig. 23 — Label Diagram, Schematic;
50TJ020,024; 208/230 V — 501 and 511 Series Units

ELECTRIC HEAT		
	480V AMPS	460V KW
A	39	32.4
B	66	54.9
C	96	79.8



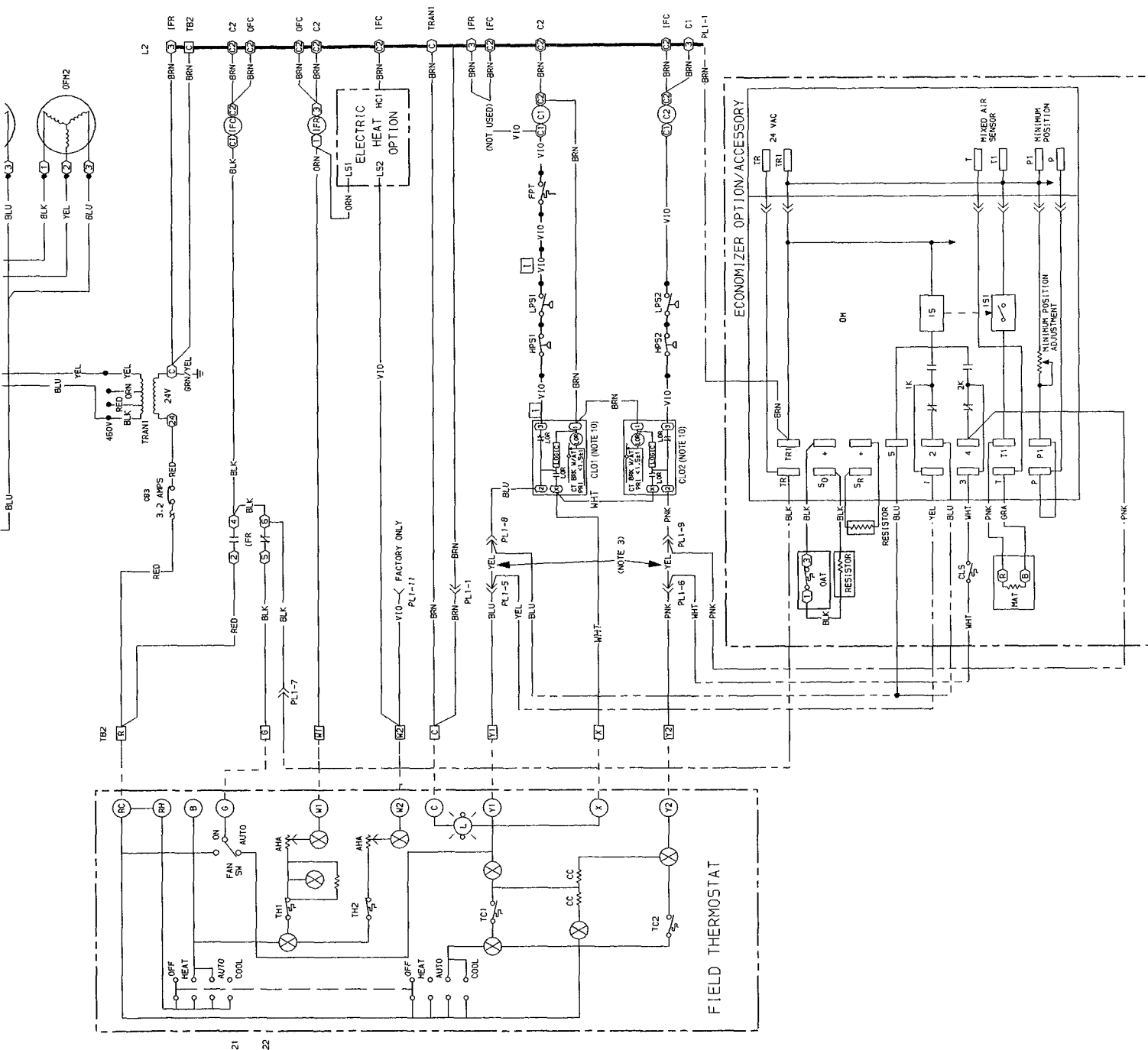
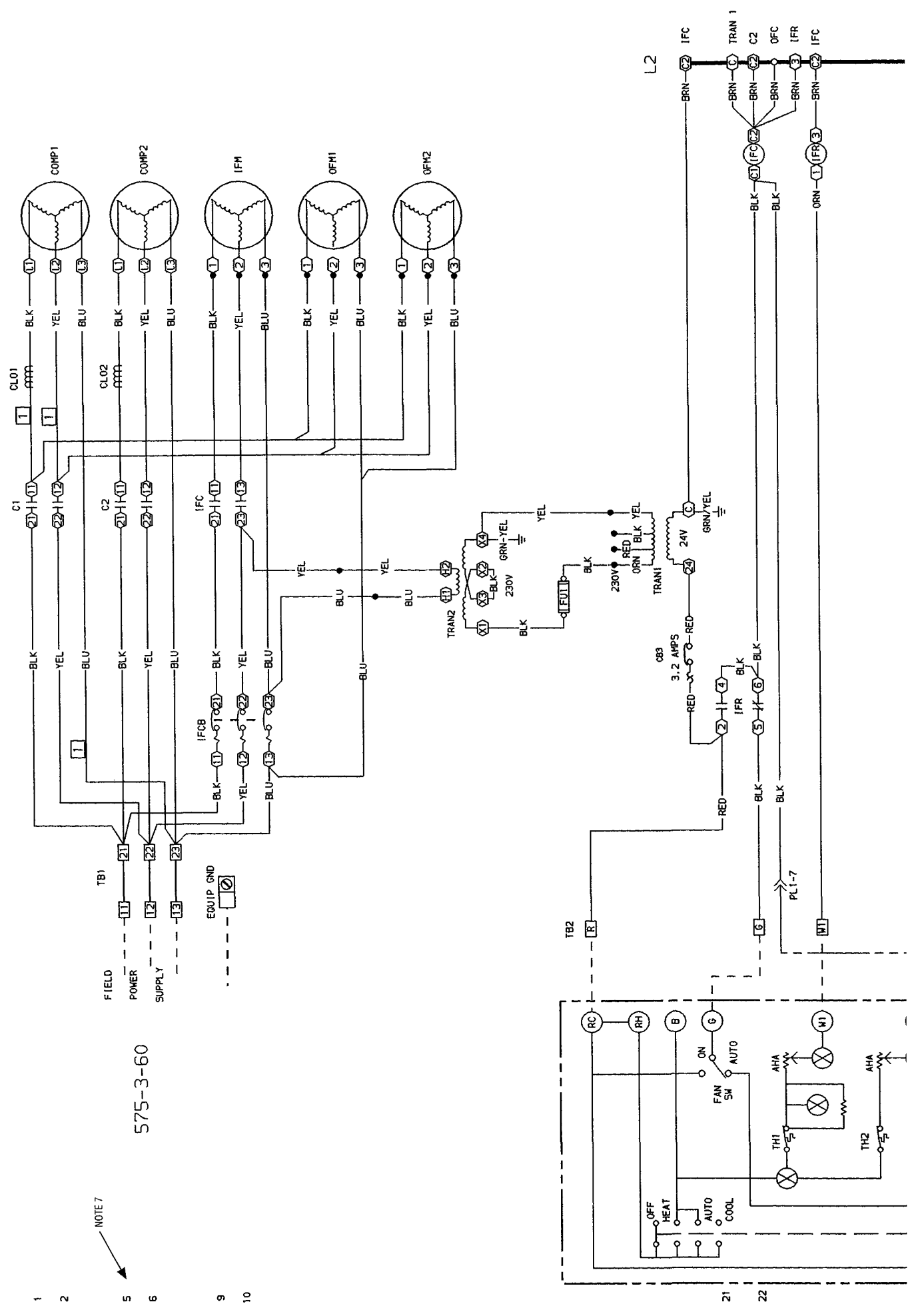


Fig. 24 — Label Diagram, Schematic;
50TJ020,024; 460 V — 601 and 611 Series Units

1
2
5
6
9
10

NOTE 7

575-3-60



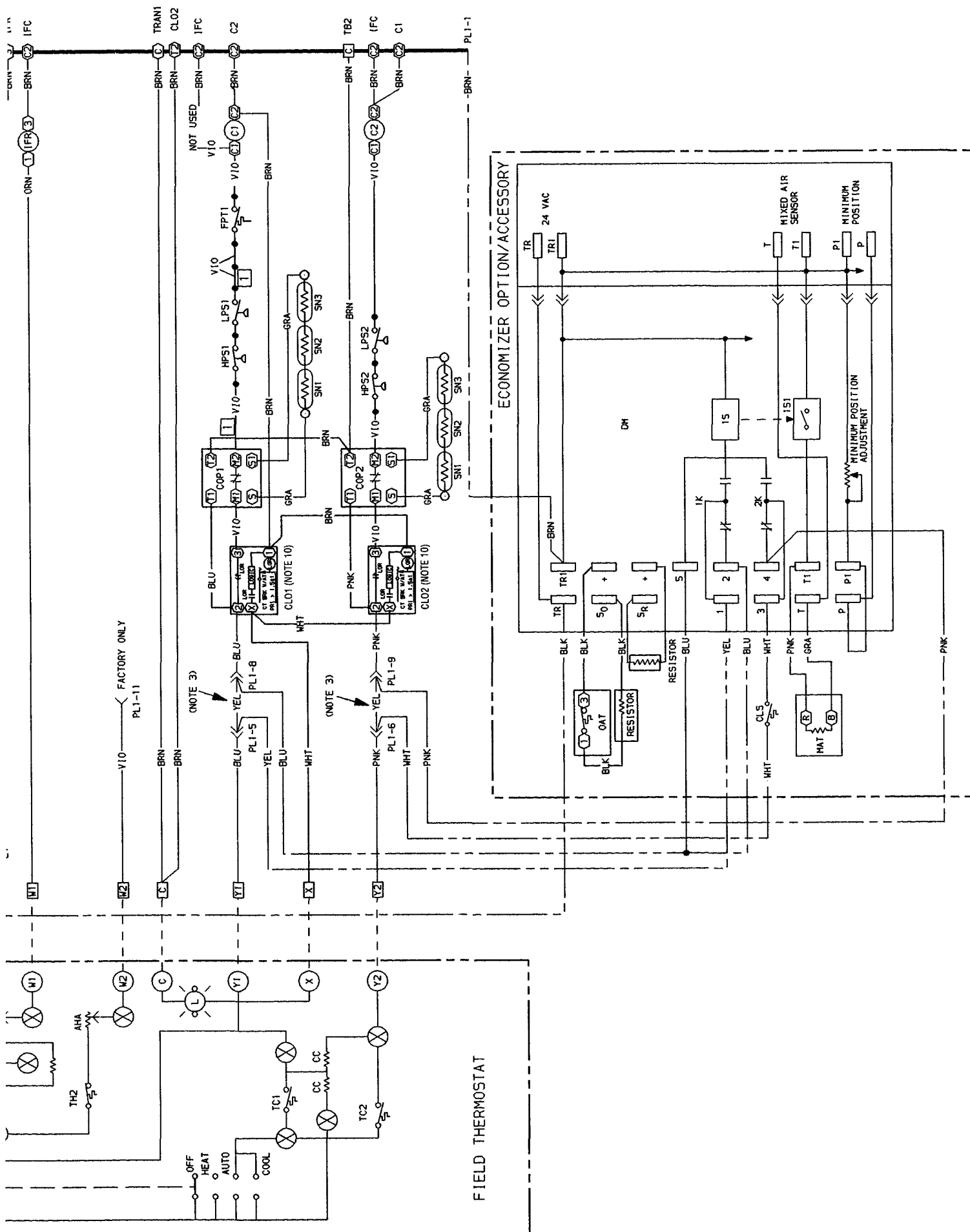


Fig. 25 — Label Diagram, Schematic;
50T J020,024; 575 V — 101 and 111 Series Units

ELECTRIC HEAT OPTION

SEE ELECTRIC
HEAT CHART

(A)

HTR2 HTR1

HTR2 HTR3

HTR1 HTR4

OP OP1 OP2

HC2 HC2 HC1 HC1 HC2 HC3 HC3 HC1 HC4 HC4 HC1

FL FL FL FL FL FL FL FL FL FL FL FL

IFC

BRN

LS1 LS2

V10

IFR-1

TB2-M2

C1 C2

CL01 CL02

YEL BLU YEL BLU YEL BLU

IFCB

IFC

IFM

OPM1

BLK YEL BLU

FIELD POWER SUPPLY

EQUIP GND

TB NEWT

7.4

1

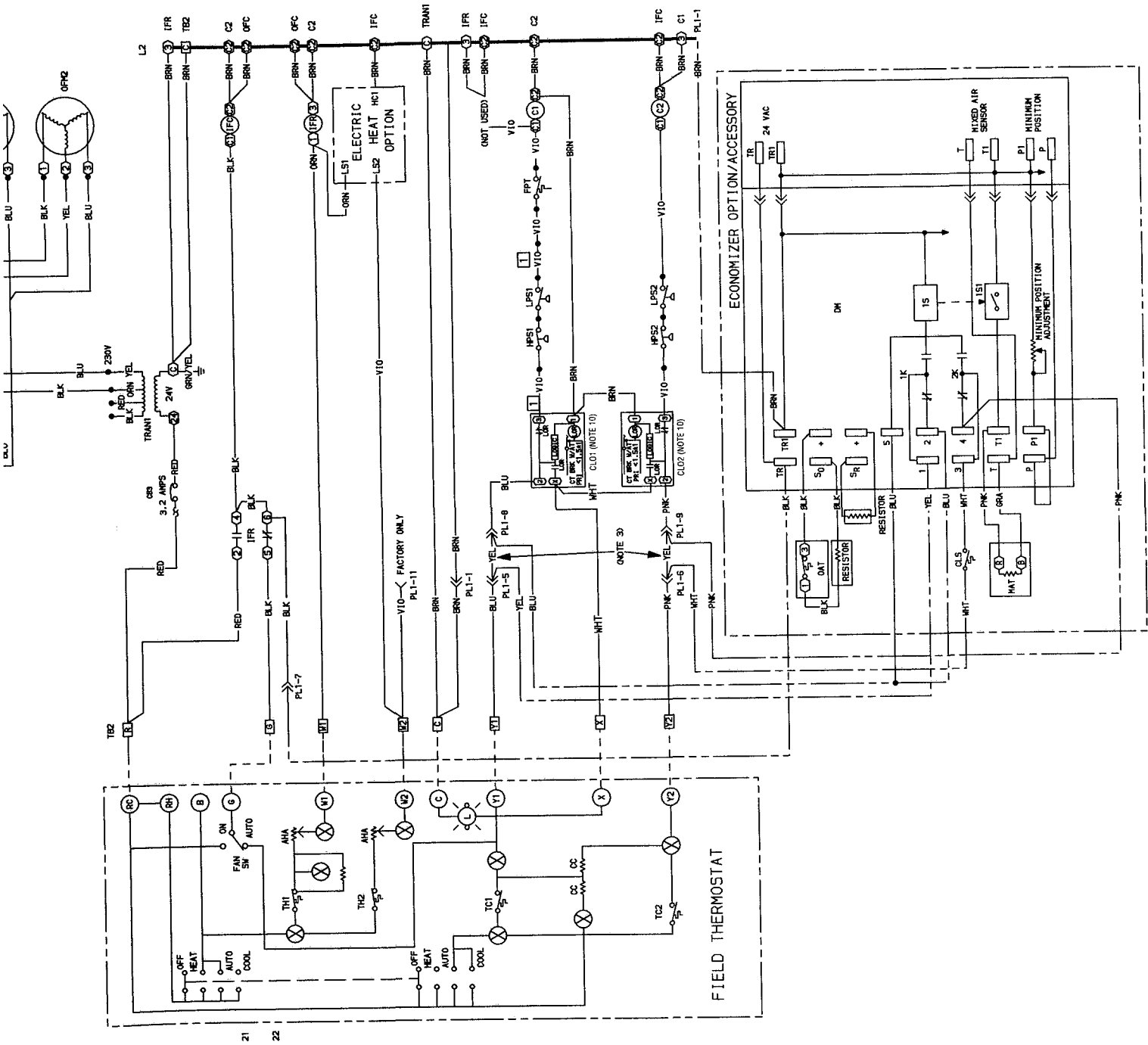
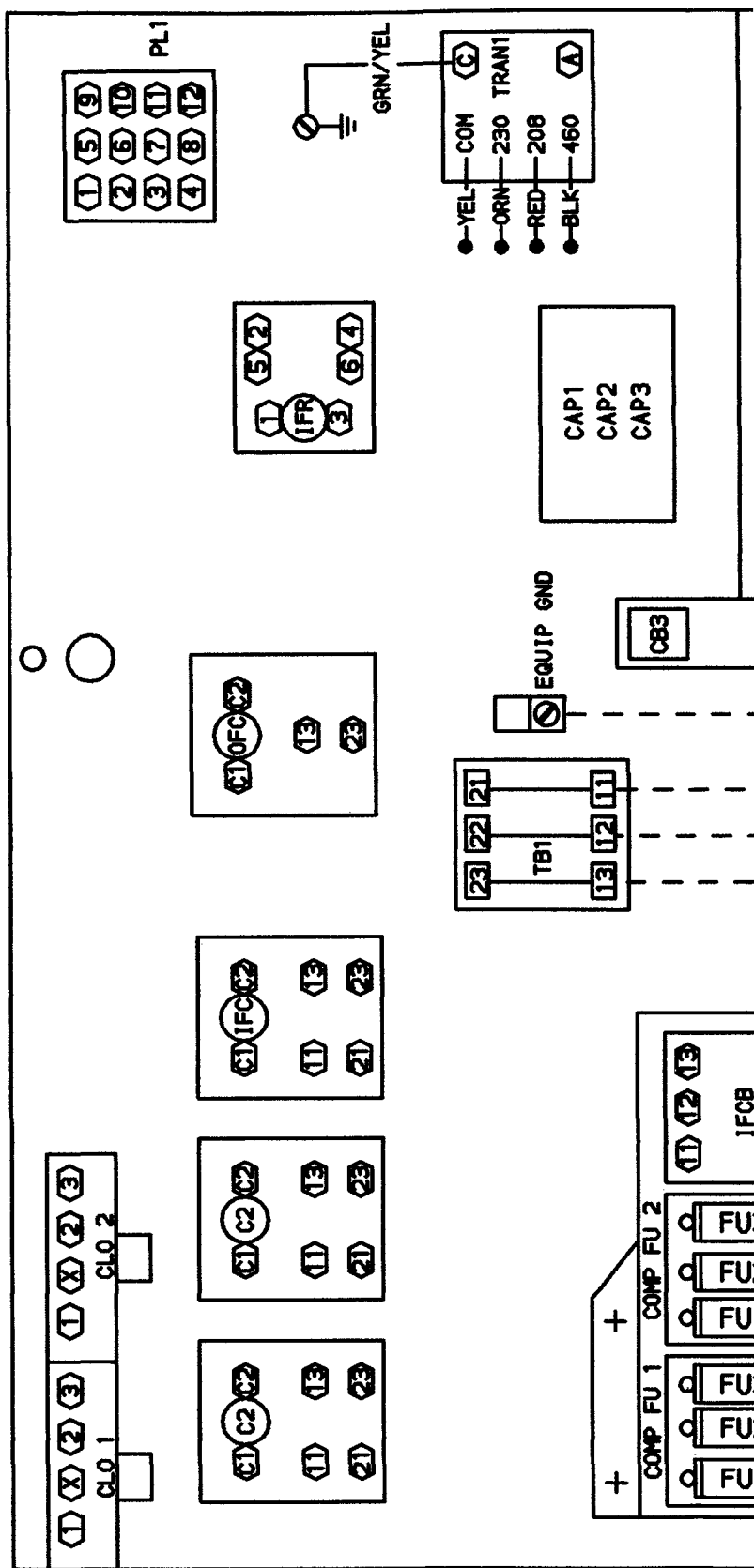
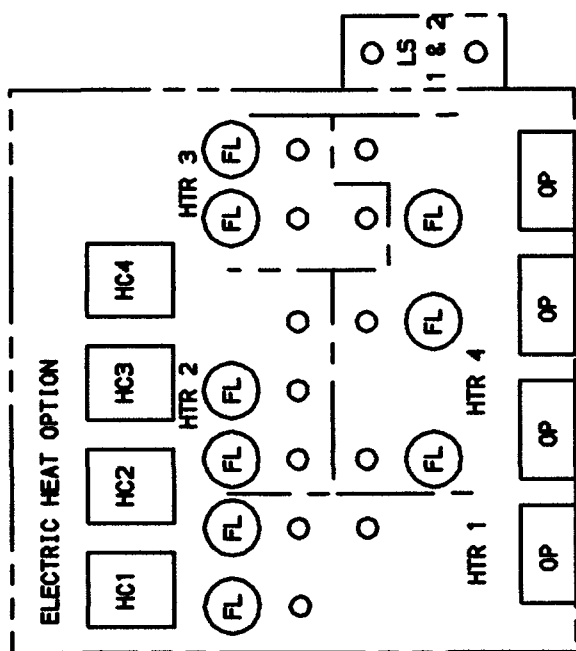


Fig. 26 — Label Diagram, Schematic;
50TJ020,024; 400 V, 50 Hz, — 903 and 913 Series Units



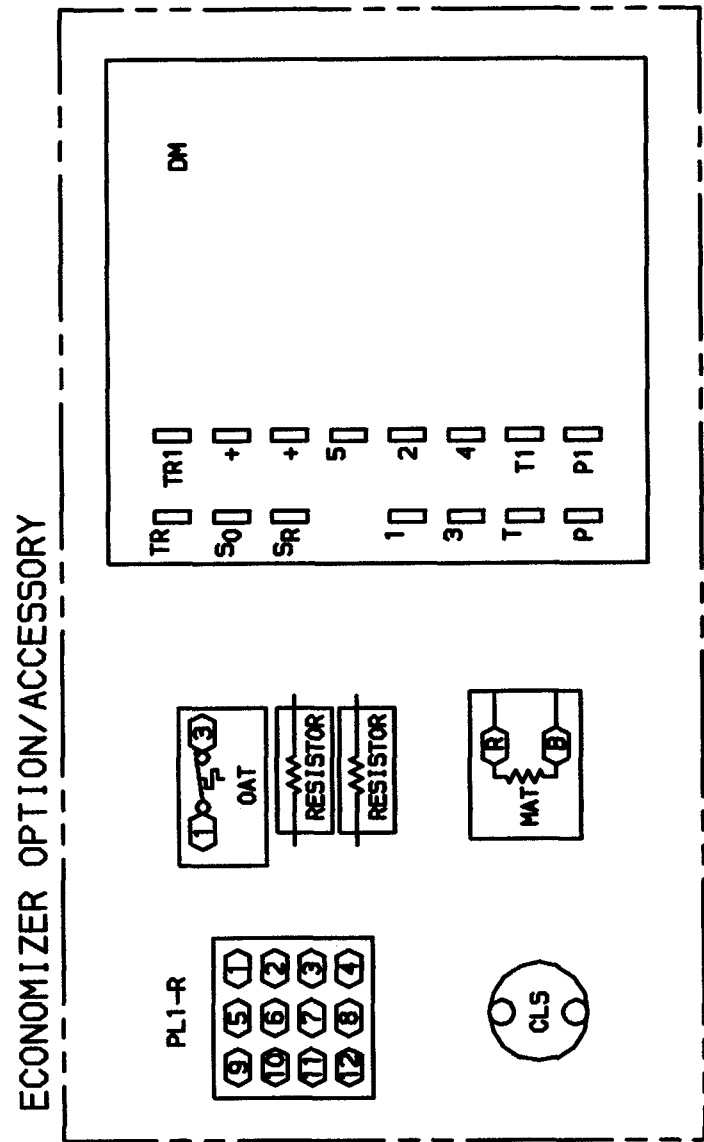
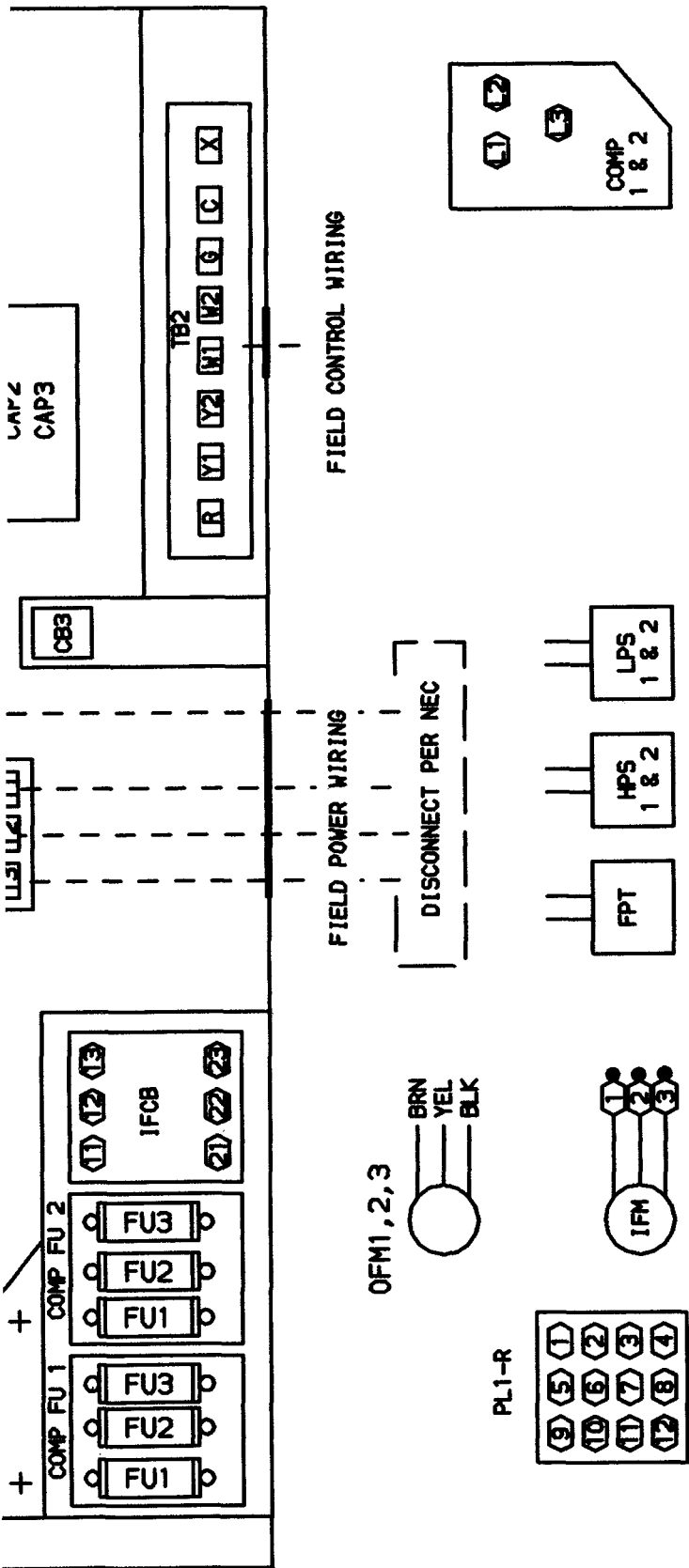
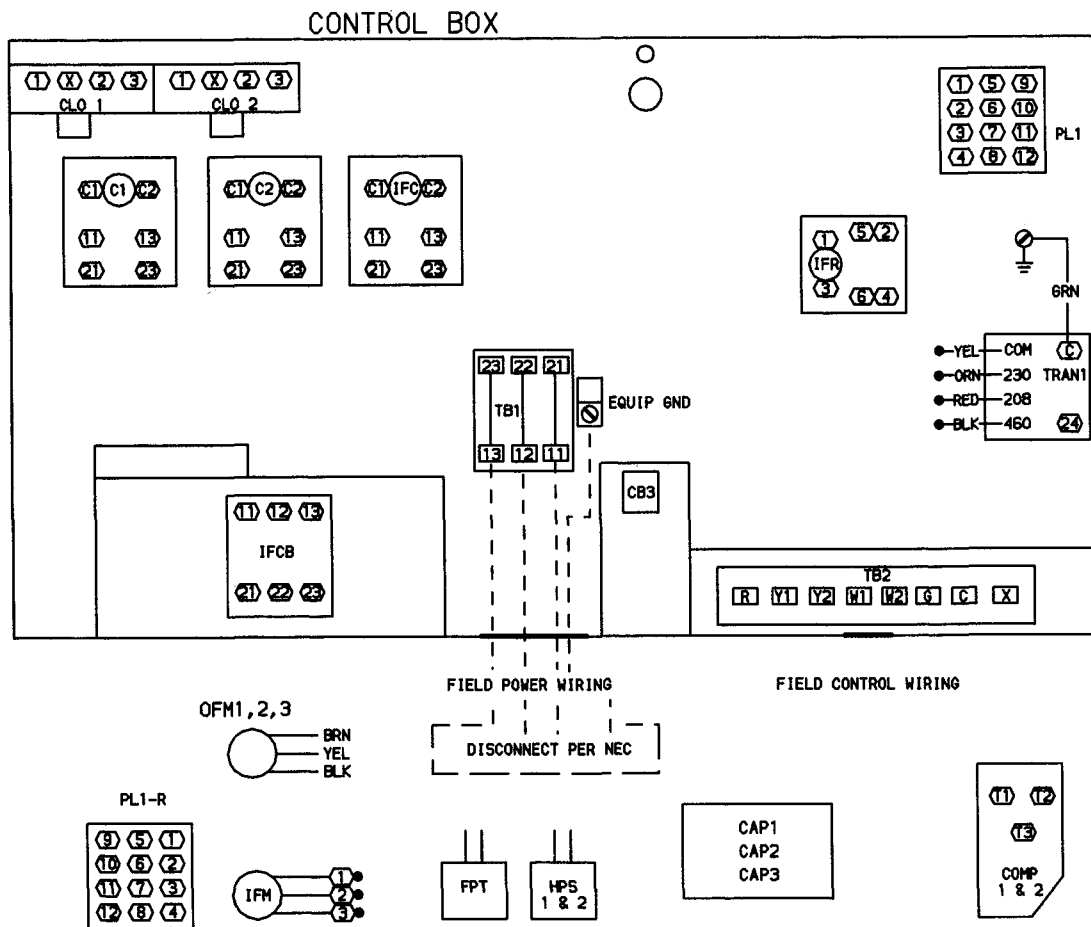
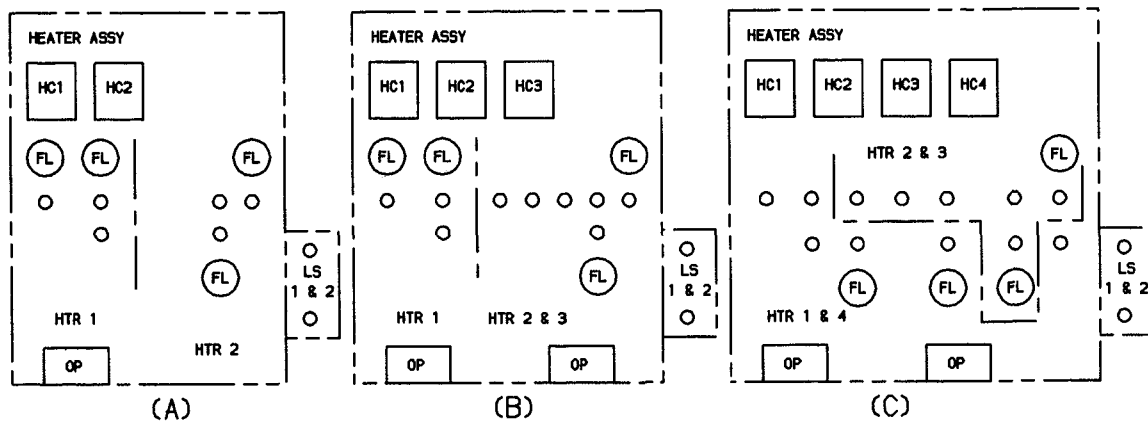


Fig. 27 — Label Diagram, Component Arrangement;
50TJ020, 208/230 V — 511 Series Unit



ECONOMIZER OPTION/ACCESSORY

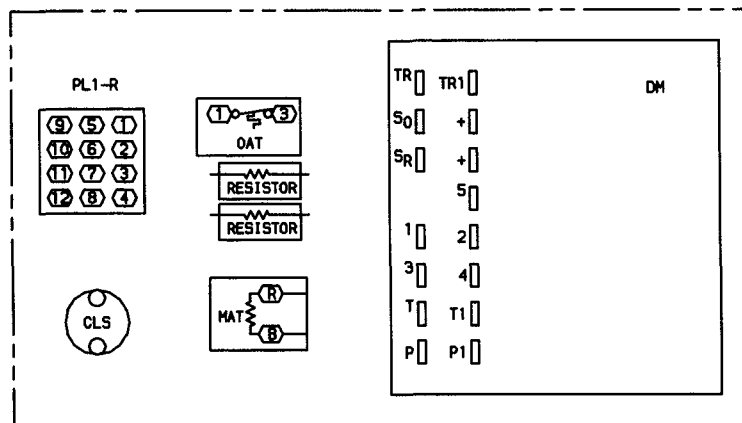
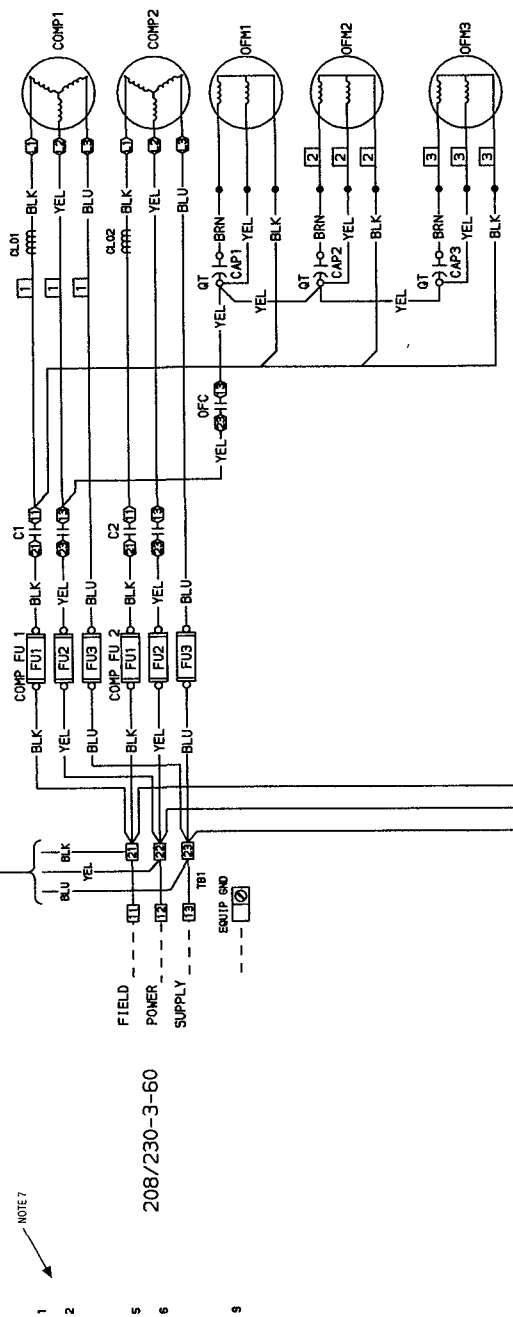
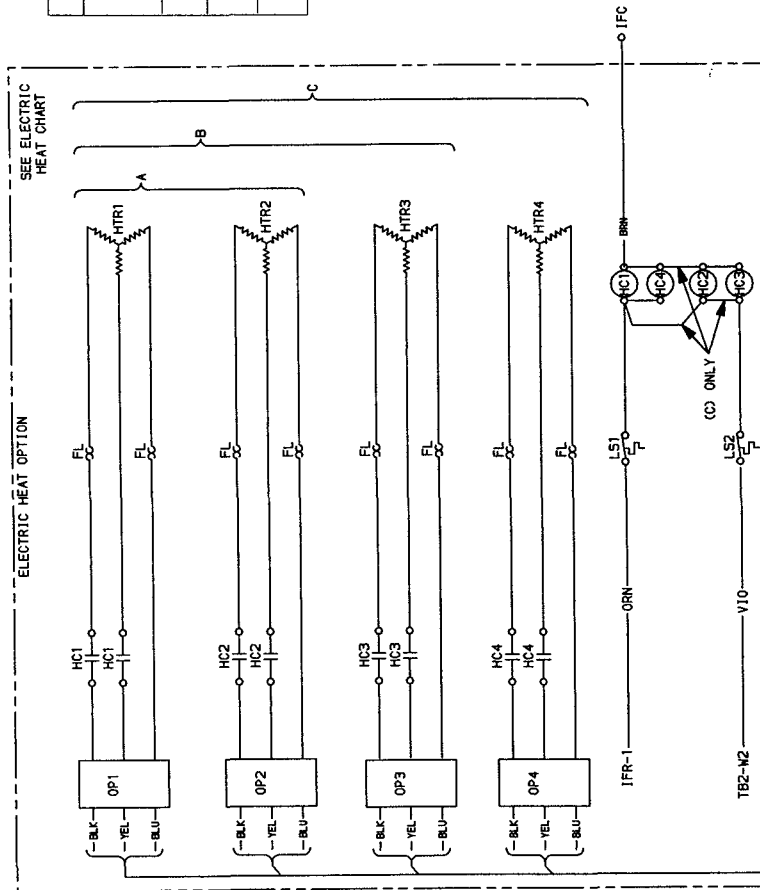


Fig. 28 — Label Diagram, Component Arrangement;
50TJ020, 460 V — 611 Series Unit



	ELECTRIC HEAT	
	208/240V AMPS	200/230V KW
A	72/82	25.7/34.2
B	117/135	42.3/56.1
C	156/180	56.2/74.8

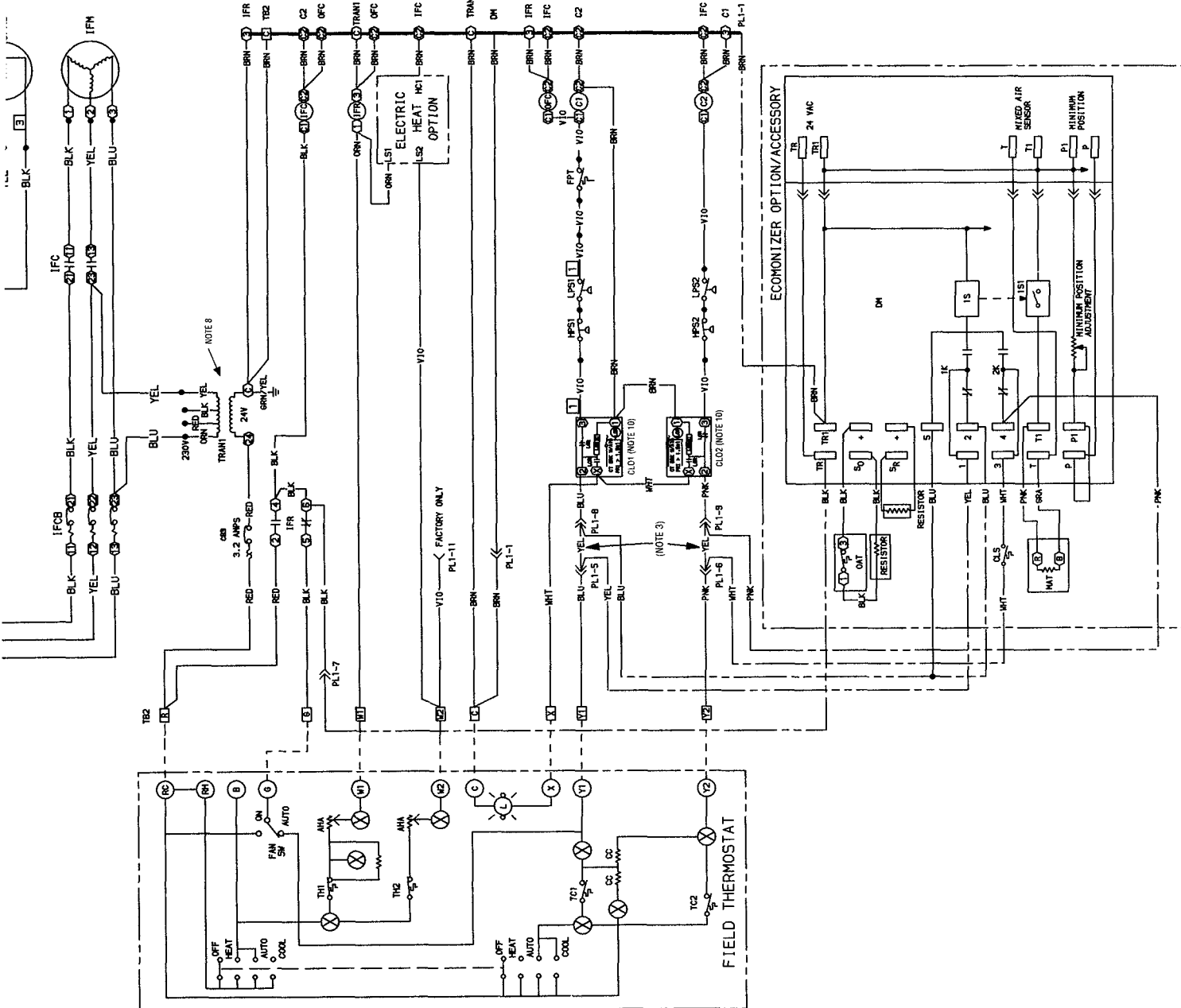


Fig. 30 — Label Diagram, Schematic;
50TJ020, 208/230 V — 511 Series Unit

17

18

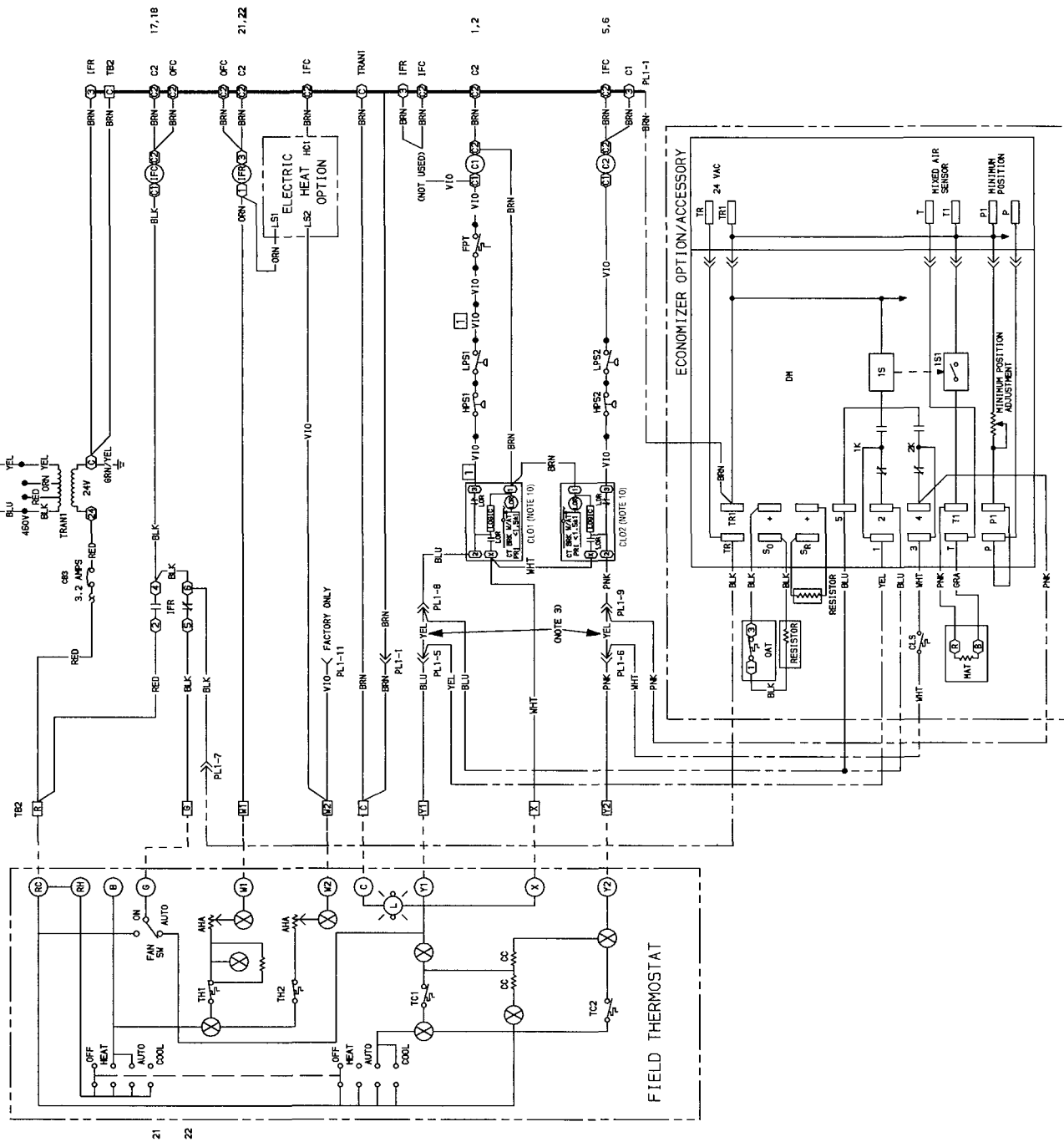
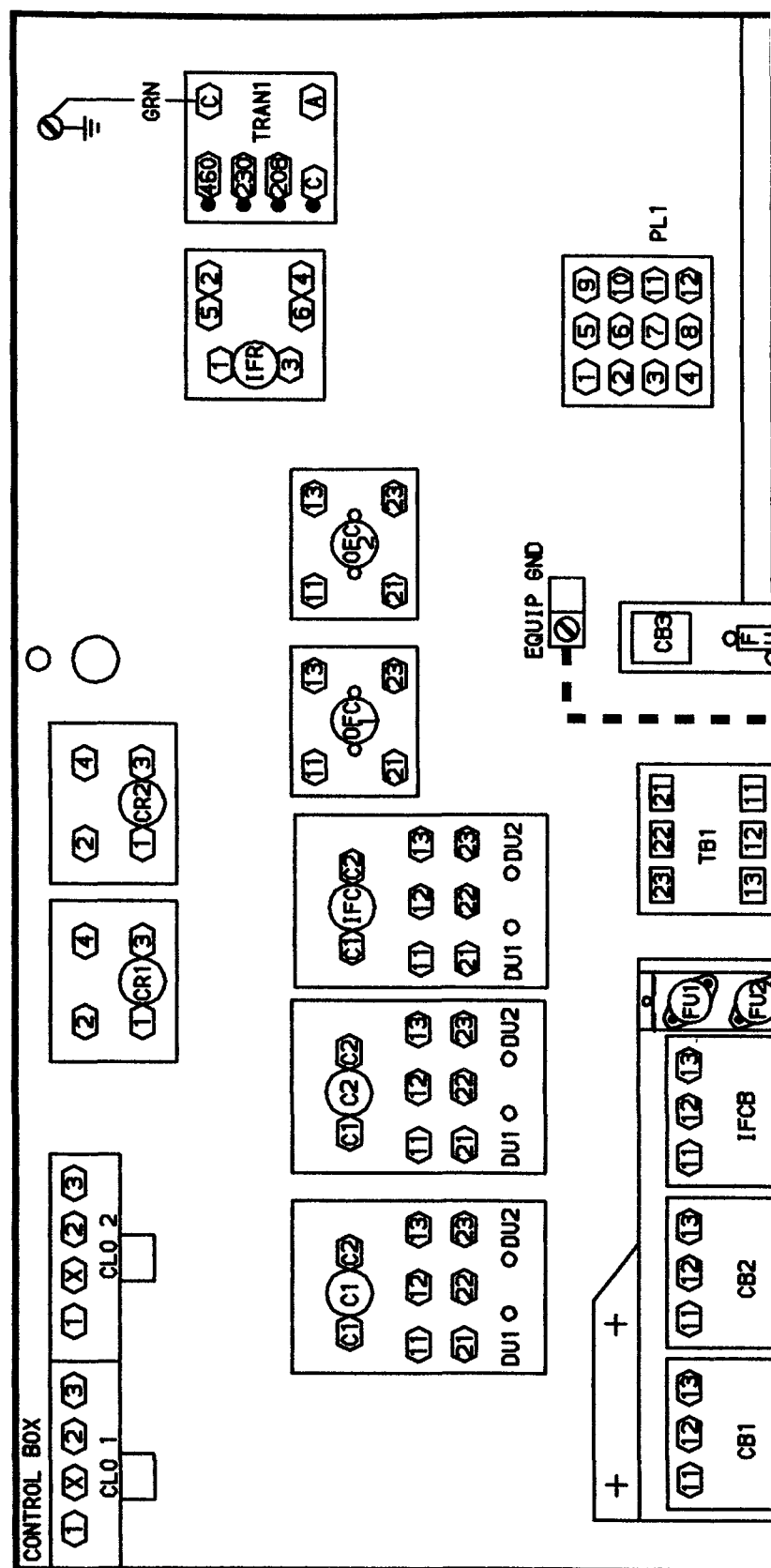
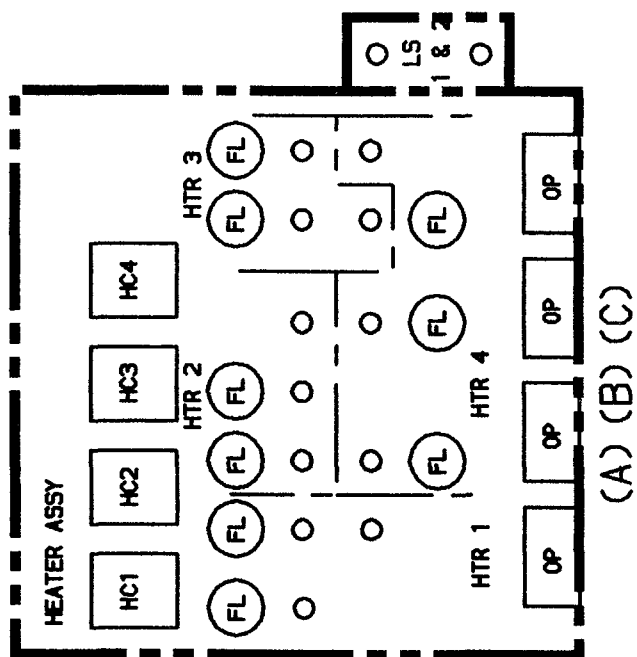
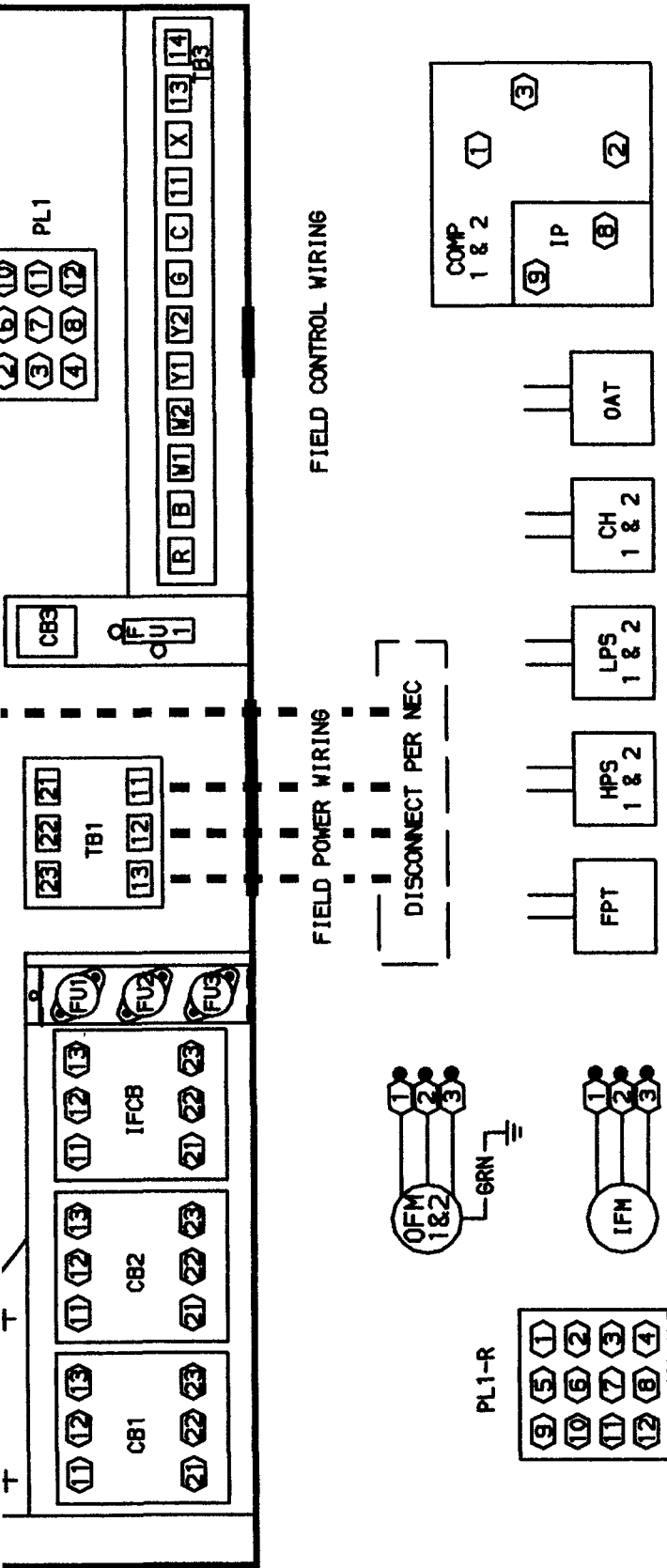


Fig. 31 — Label Diagram, Schematic;
50TJ020, 460 V — 611 Series Unit





ECONOMIZER OPTION/ACCESSORY

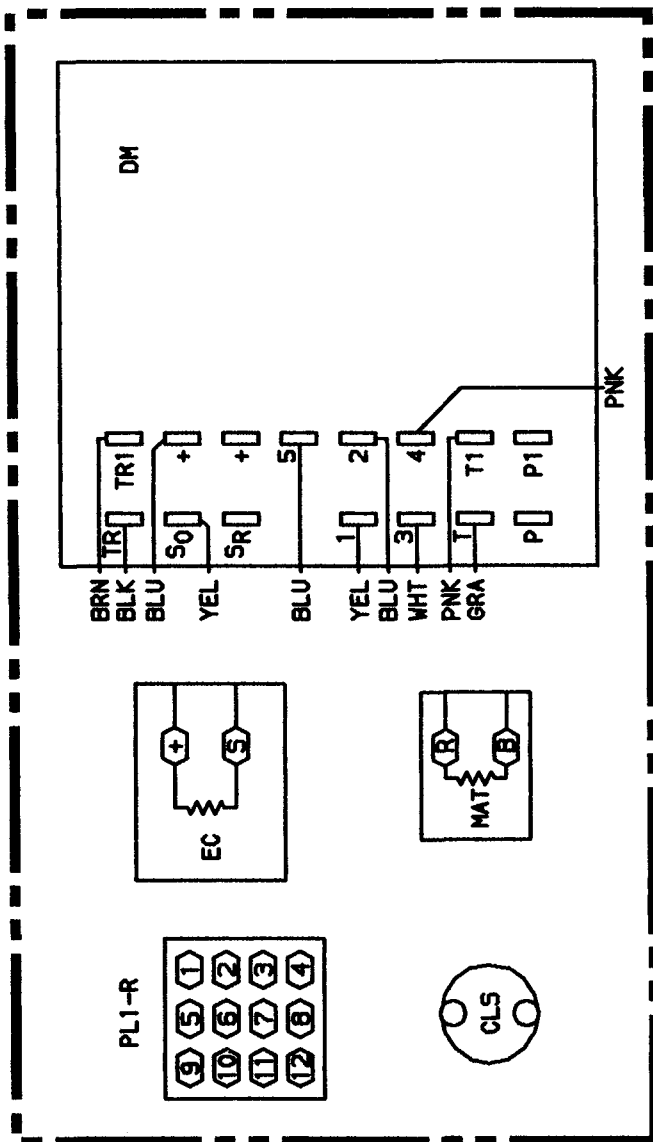
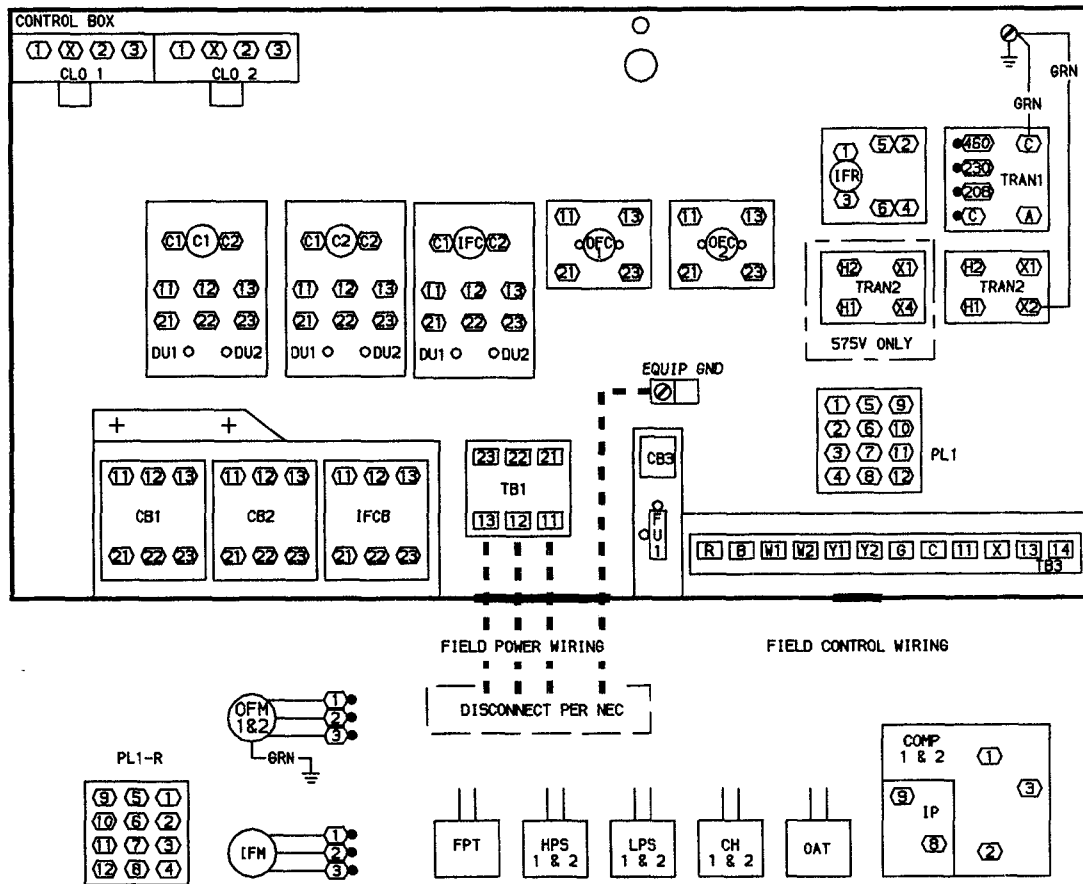
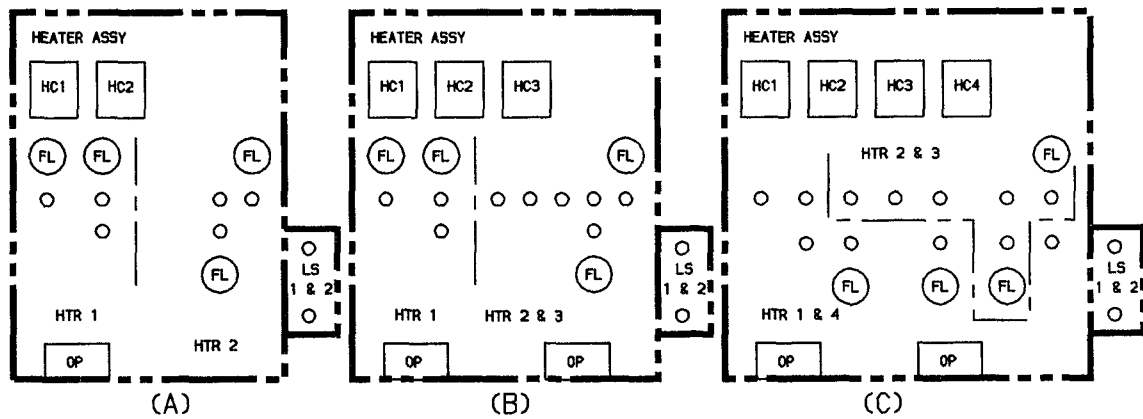


Fig. 33 — Label Diagram, Component Arrangement;
50TJ024, 208/230 V — 501 Series Unit



ECONOMIZER OPTION/ACCESSORY

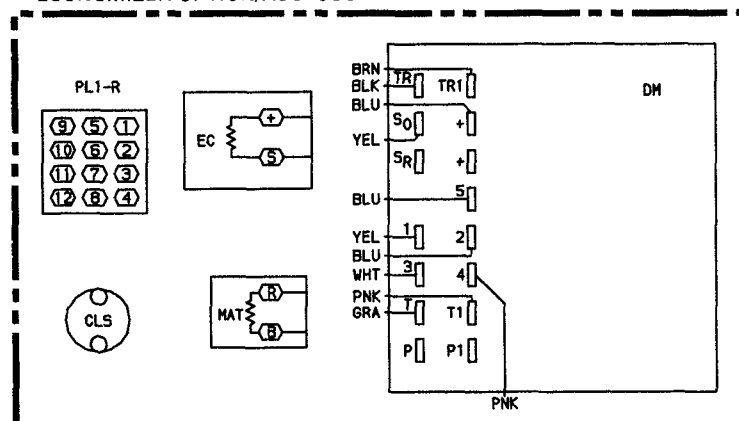
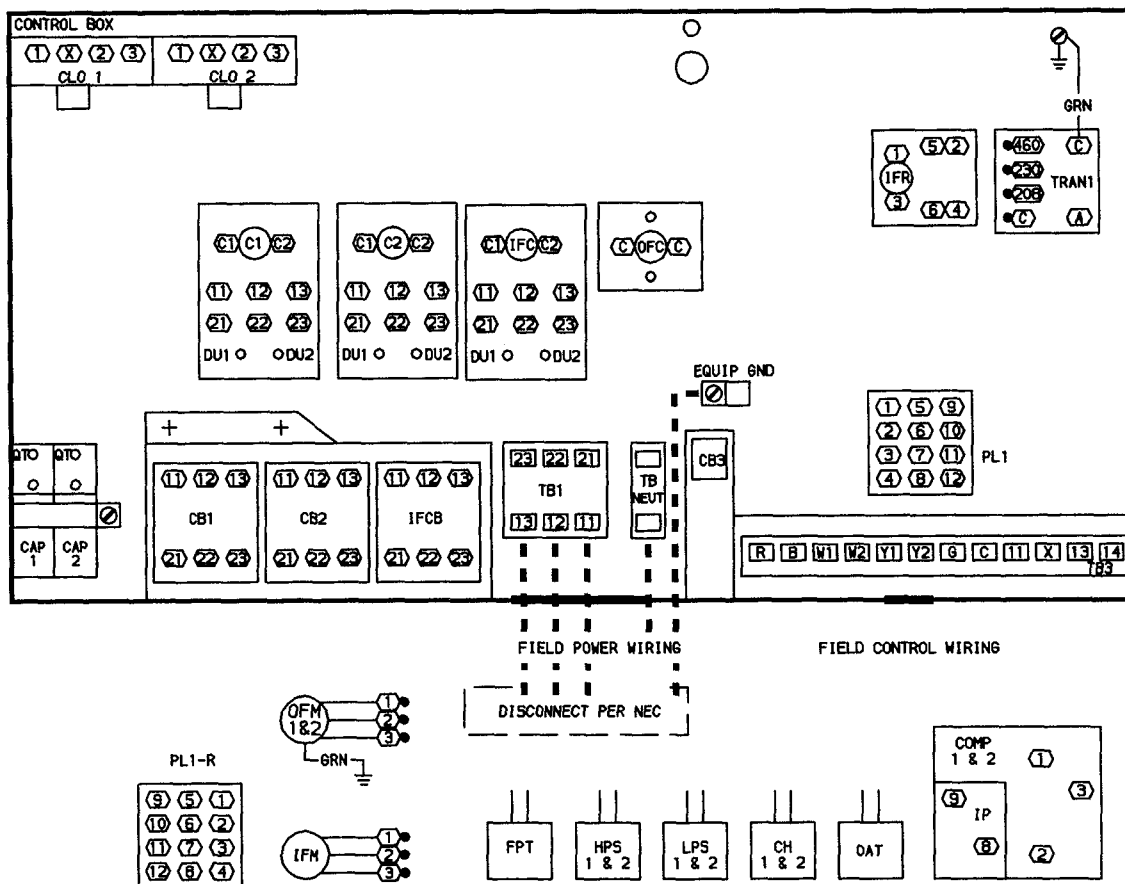
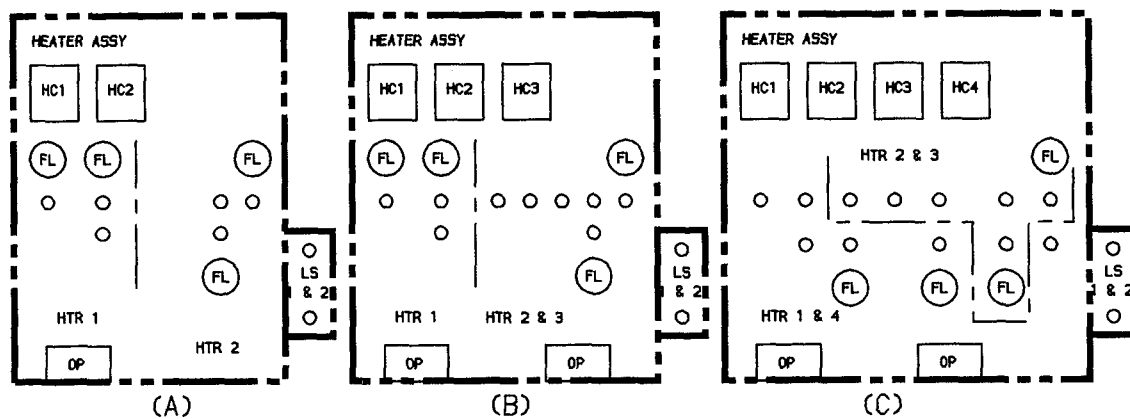


Fig. 34 — Label Diagram, Component Arrangement;
50TJ024, 460 and 575 V — 601 and 101 Series Units



ECONOMIZER OPTION/ACCESSORY

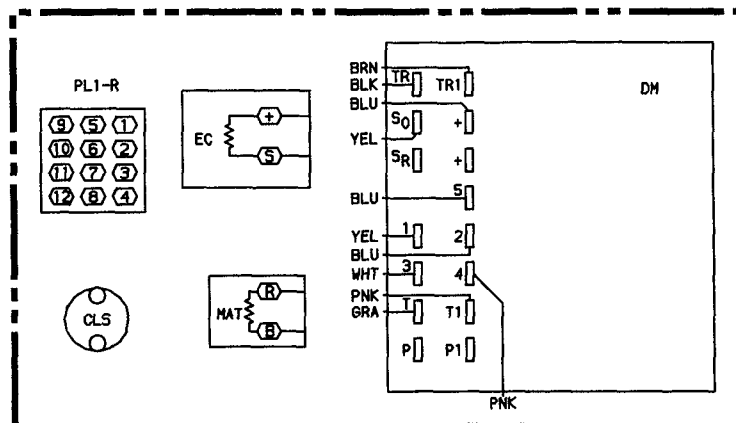
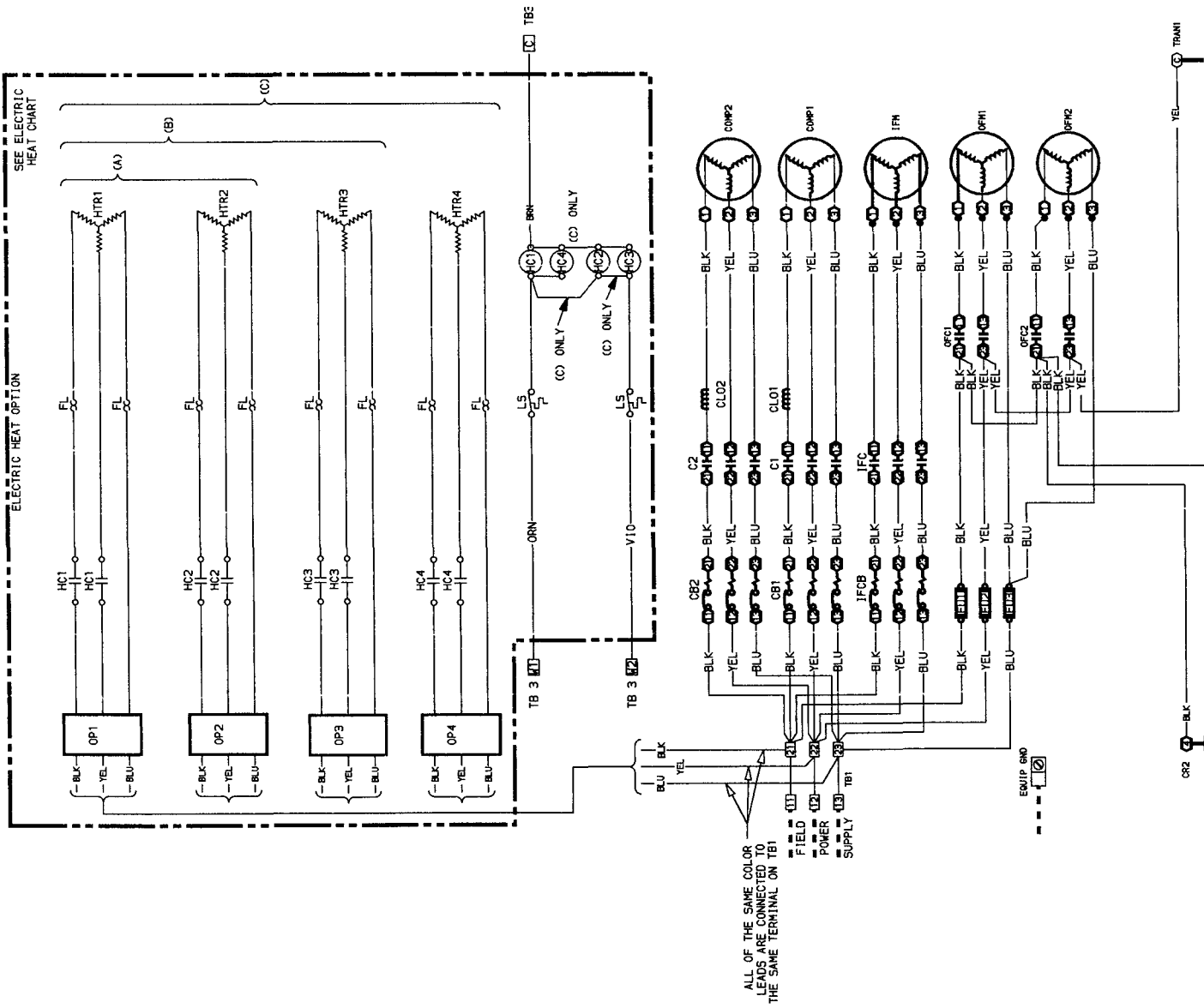


Fig. 35 — Label Diagram, Component Arrangement;
50TJ024, 400 V, 50 Hz — 903 Series Unit



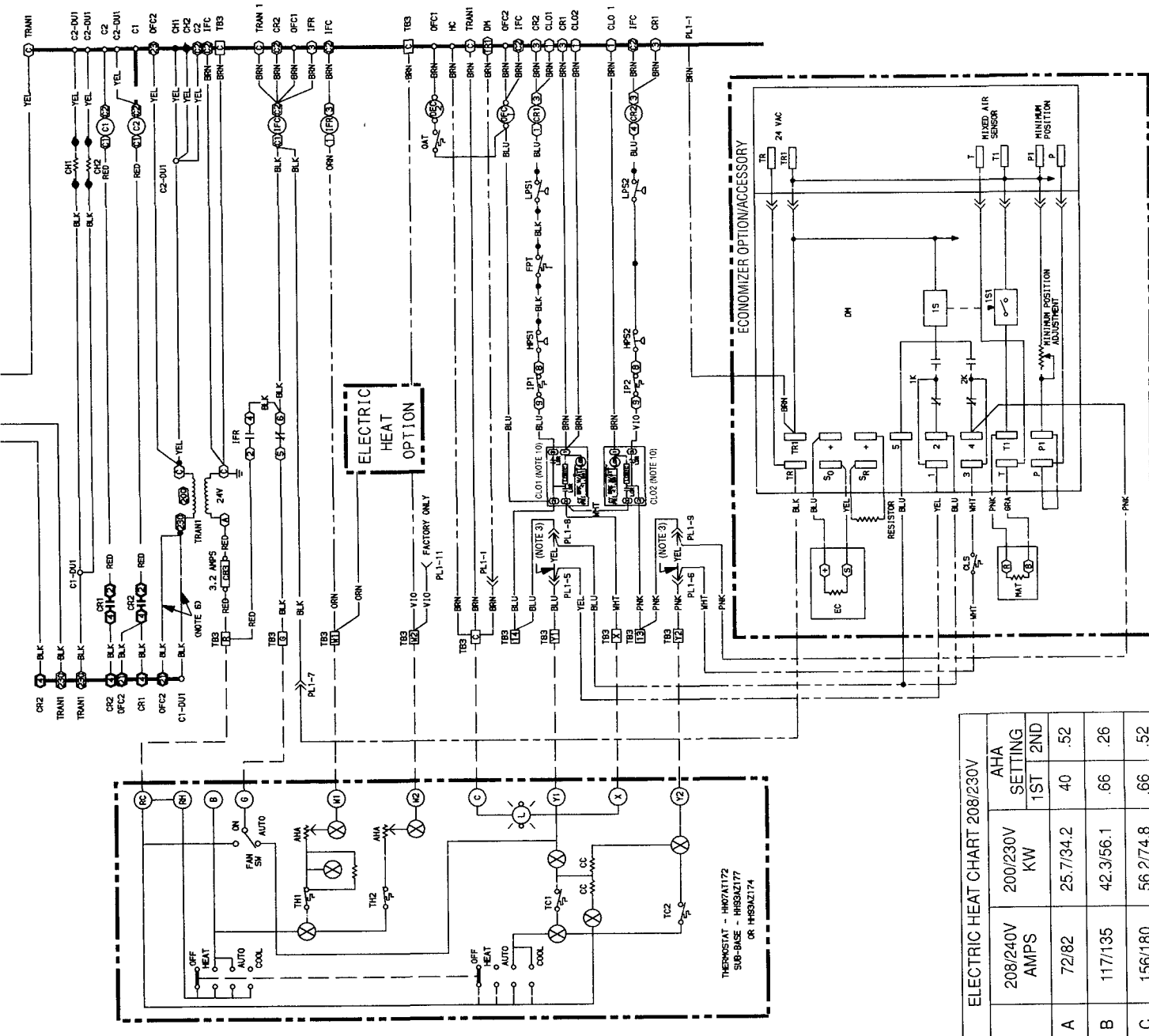
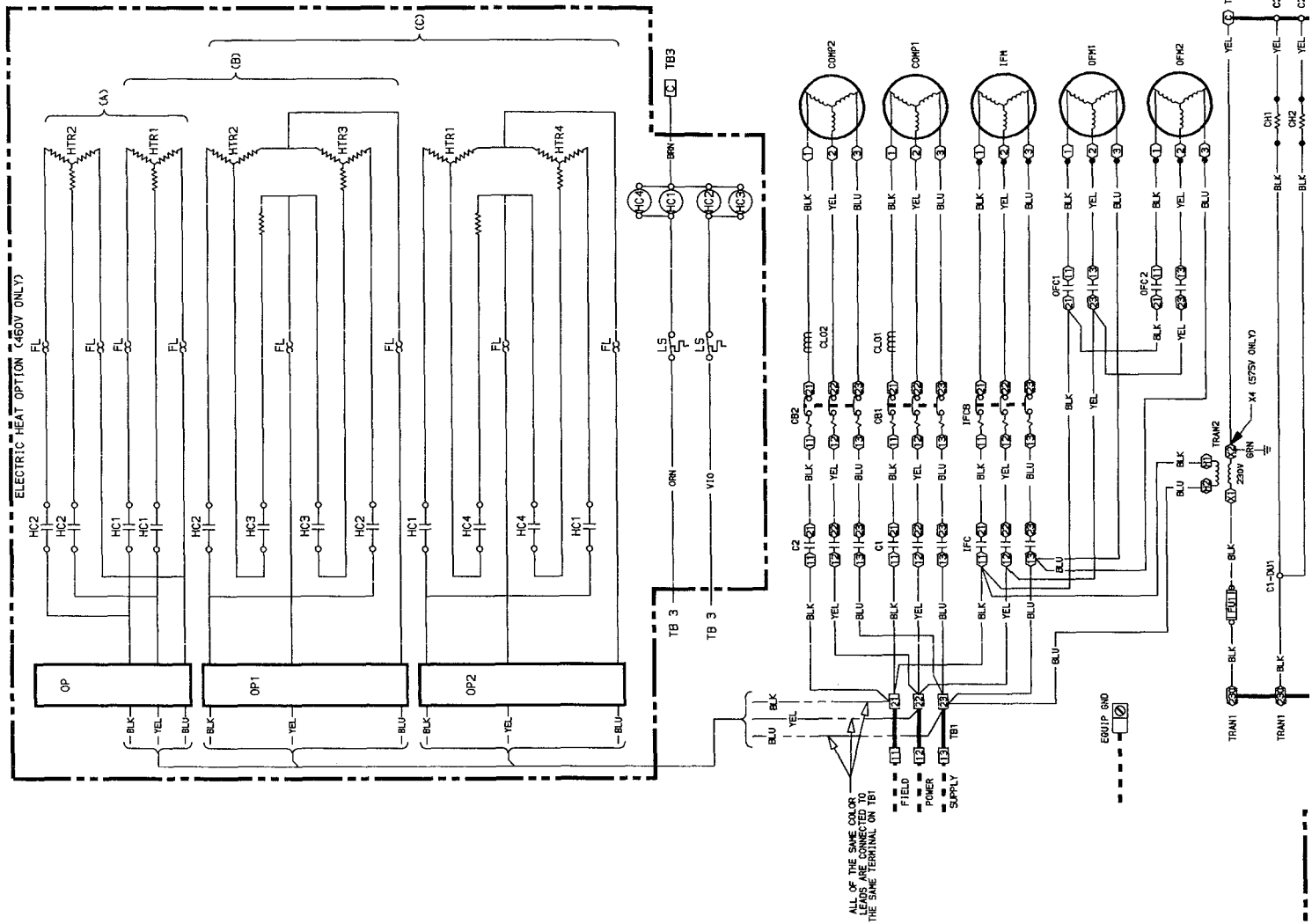
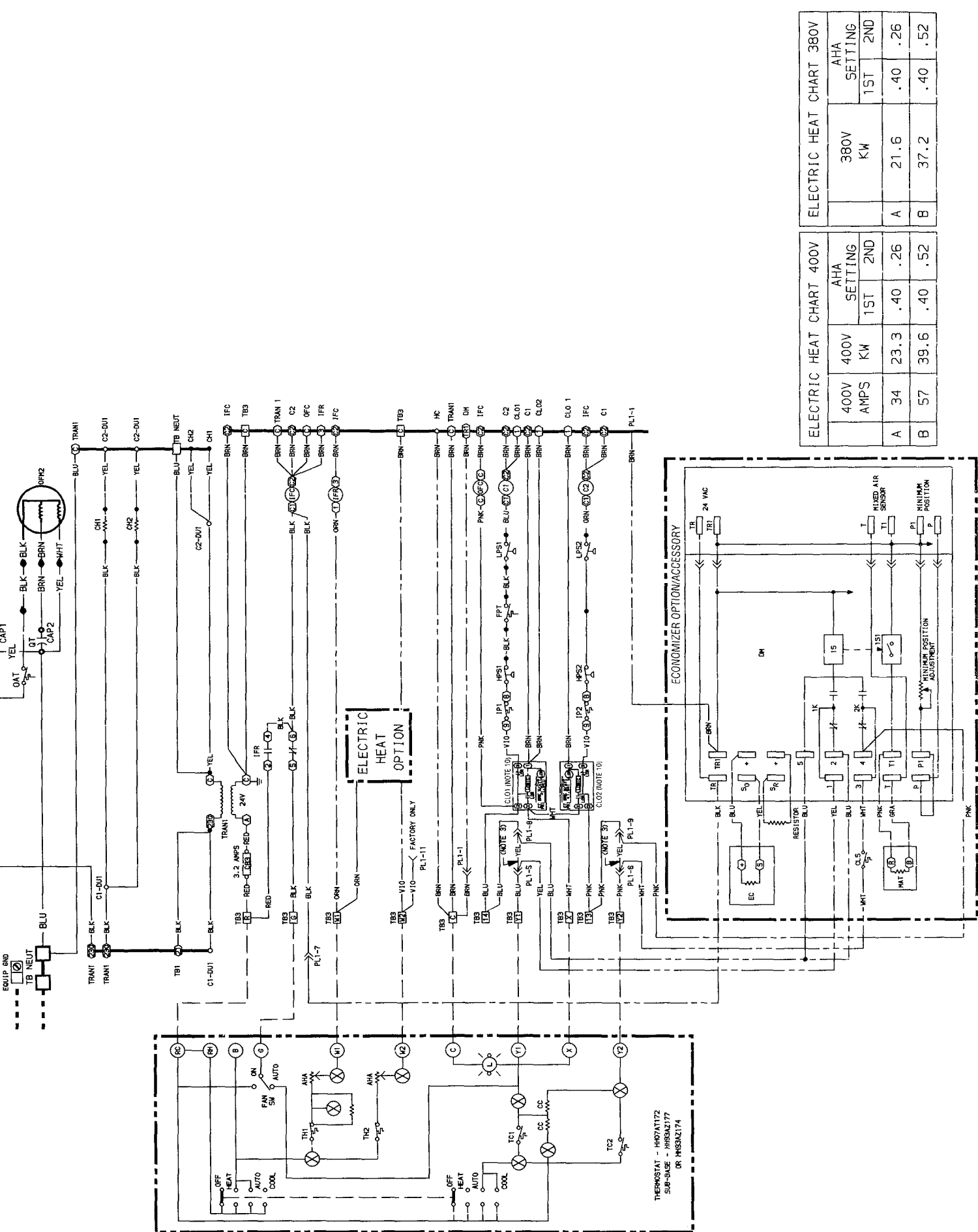


Fig. 36 — Label Diagram, Schematic;
50TJ024, 208/230 V — 501 Series Unit

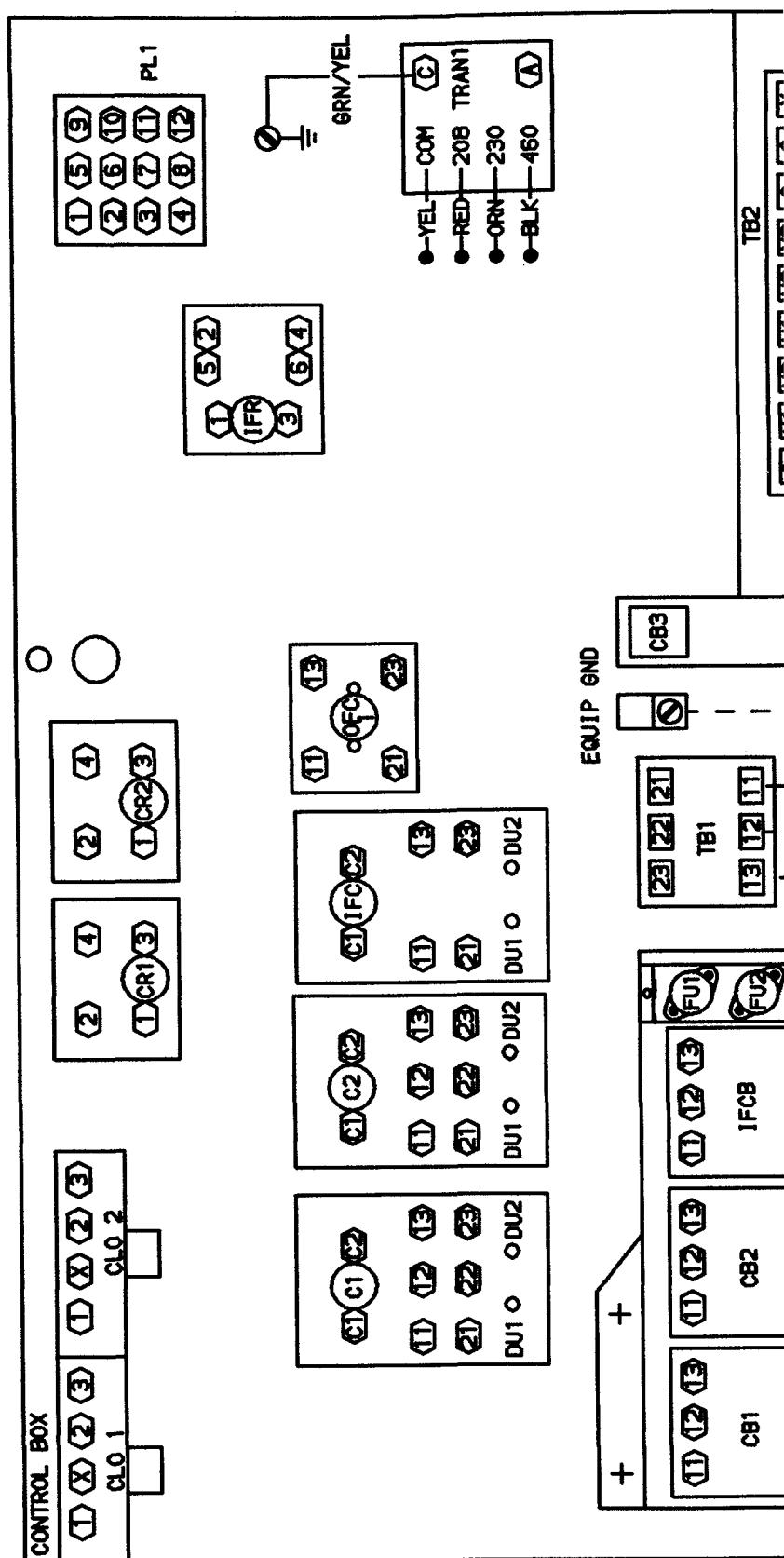








ELECTRIC HEAT CHART 400V			ELECTRIC HEAT CHART 380V		
	400V AMPS	AHA SETTING	380V KW	AHA SETTING	
				1ST	2ND
A	34	.40	21.6	.40	.26
B	57	.40	37.2	.40	.52



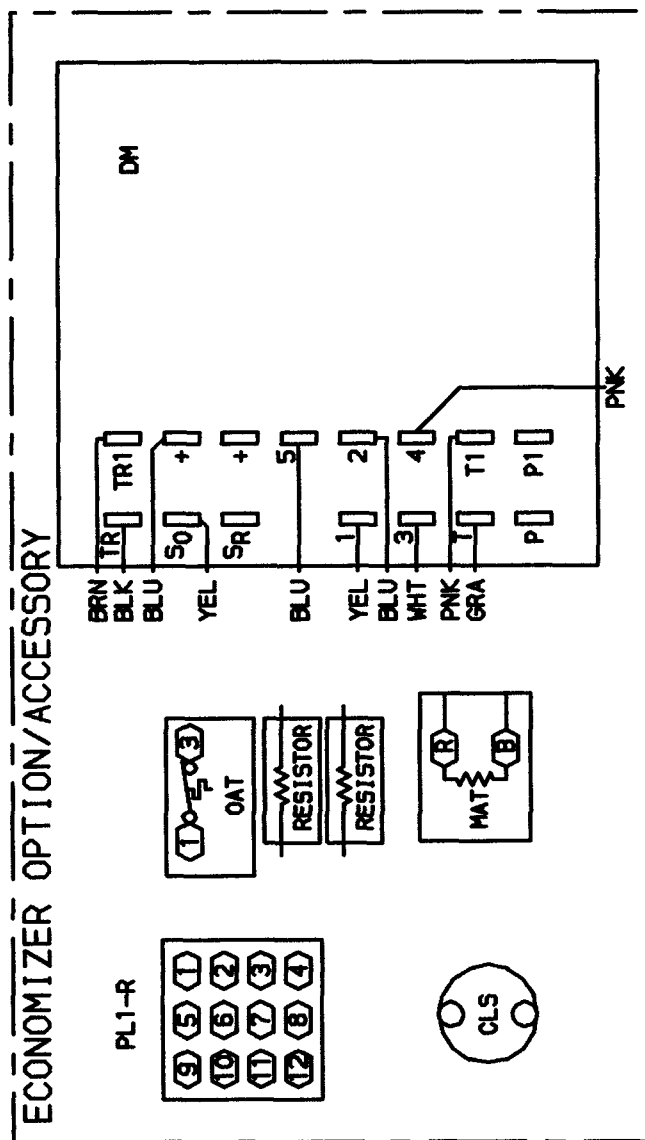
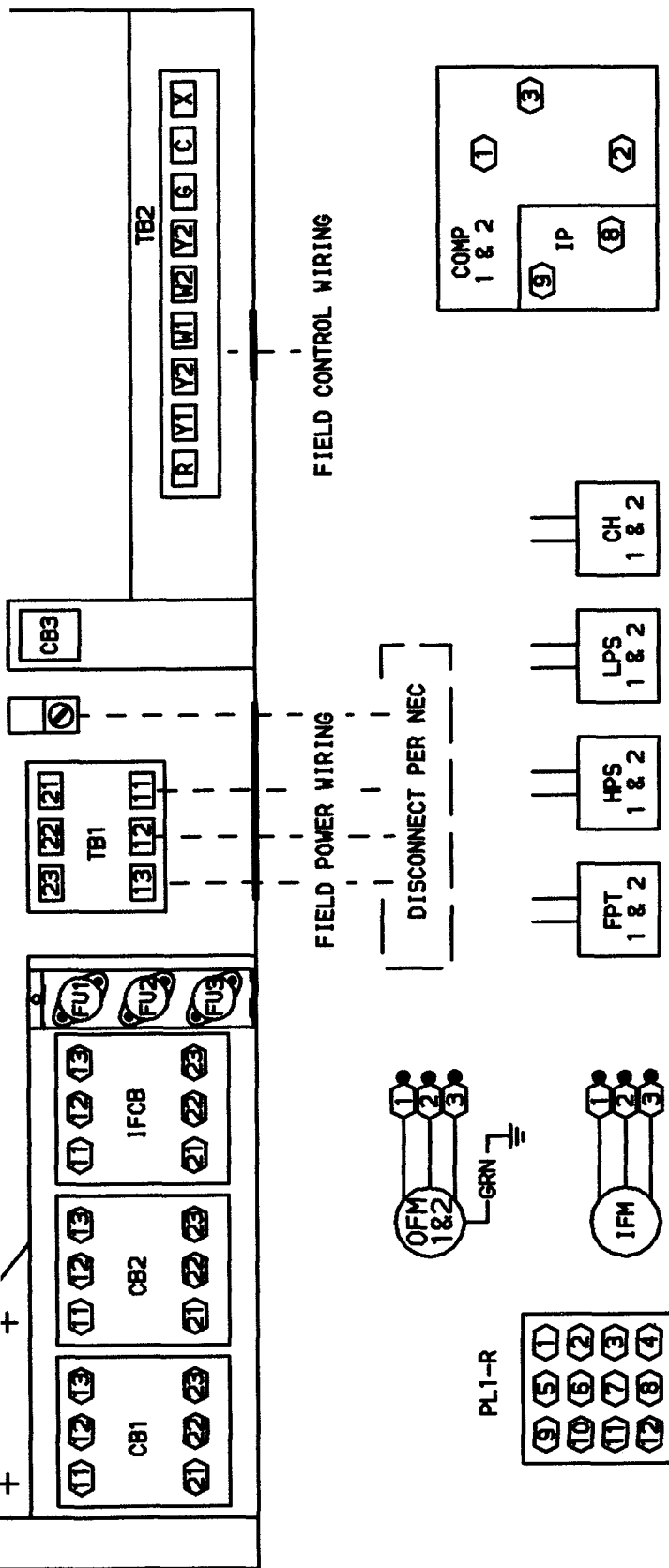


Fig. 39 — Label Diagram, Component Arrangement;
50TJ028, 208/230 V — 501 Series Unit

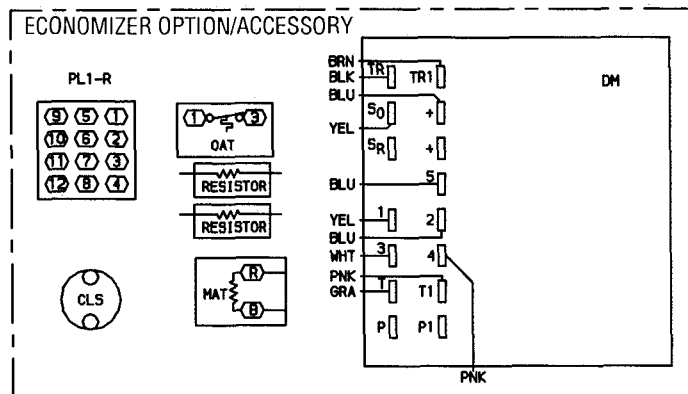
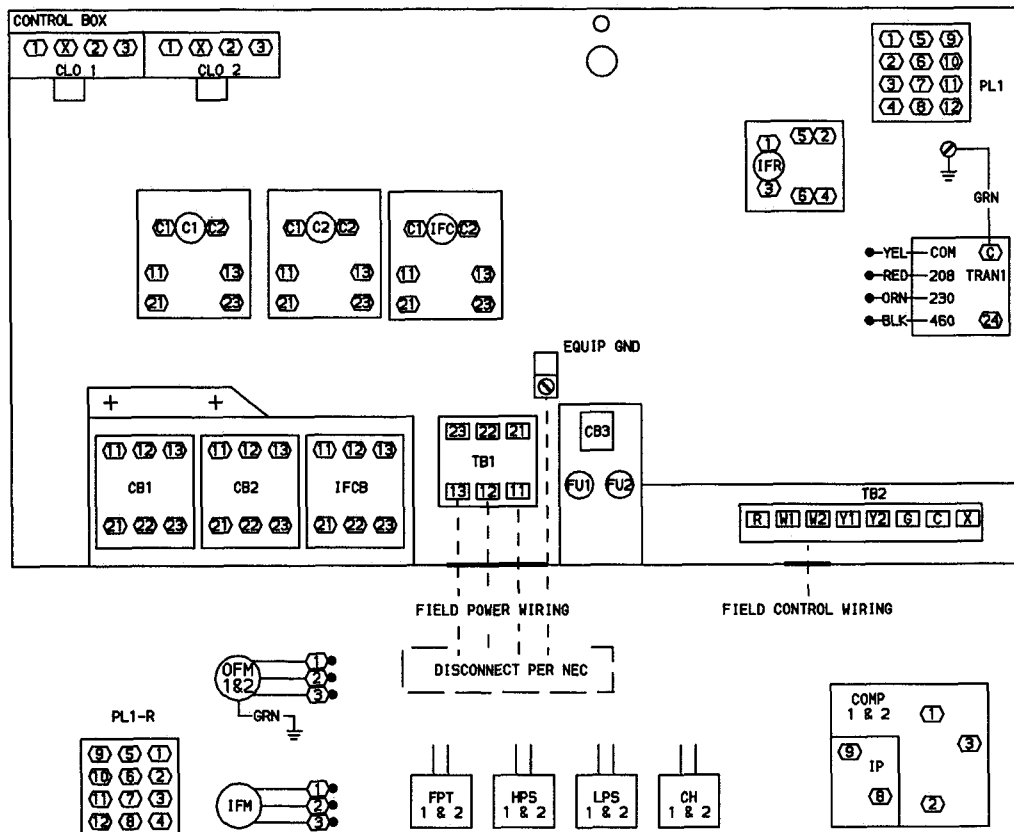
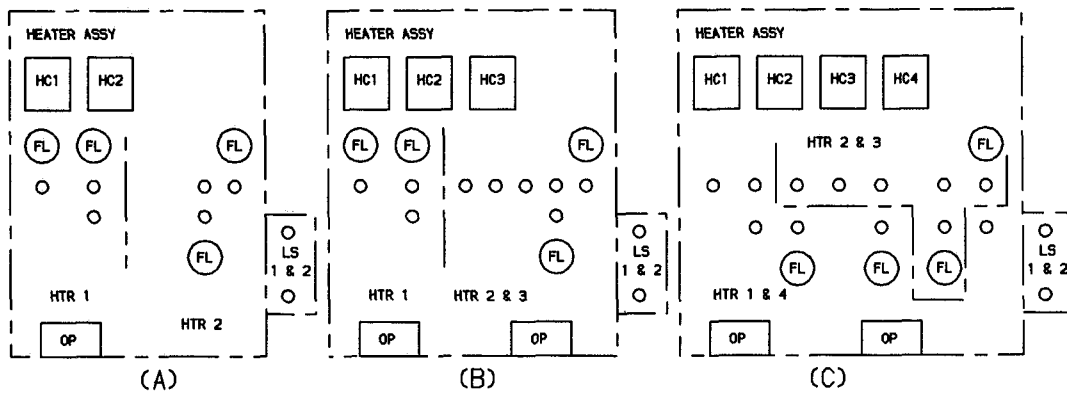
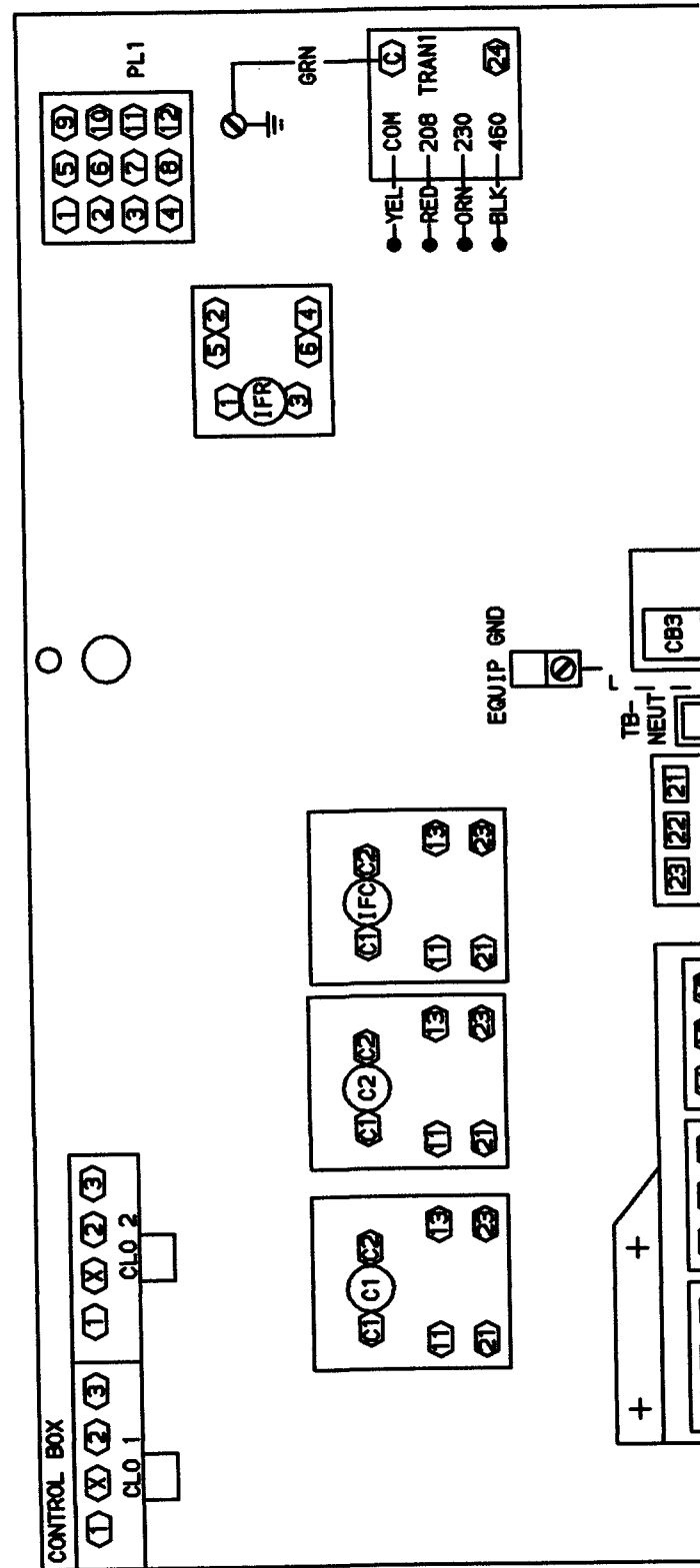
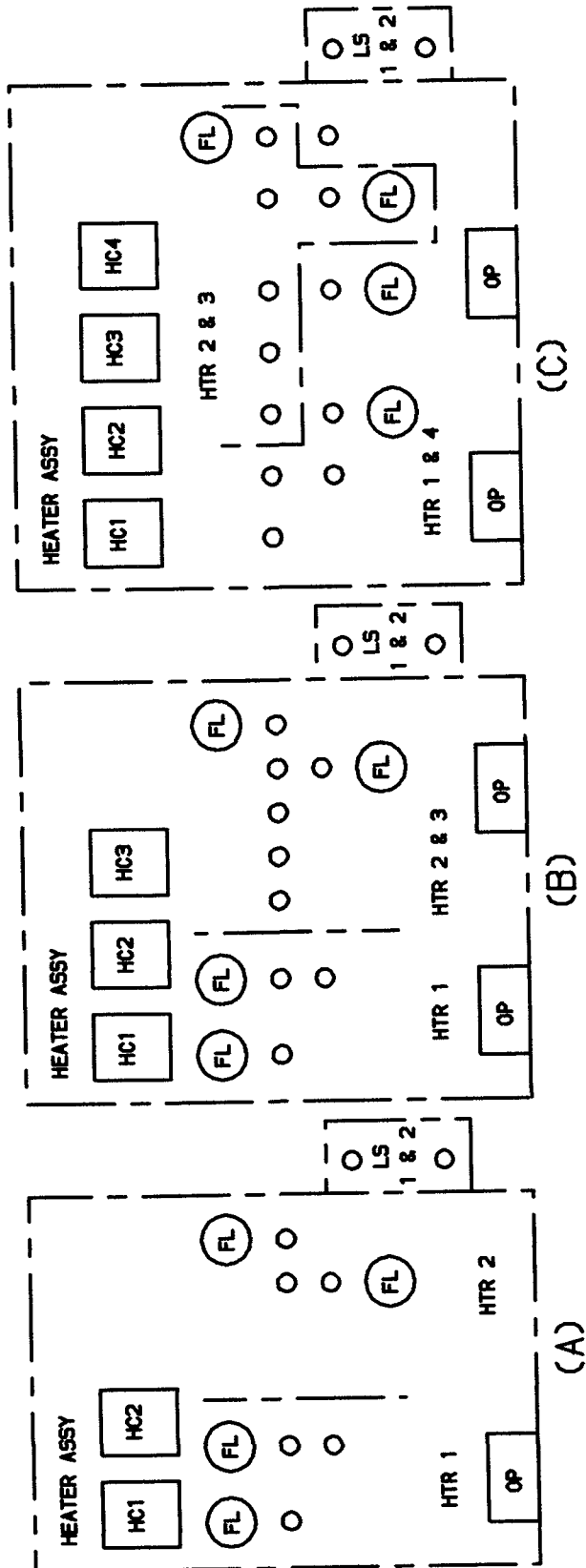


Fig. 40 — Label Diagram, Component Arrangement;
50TJ028, 460 V — 601 Series Unit



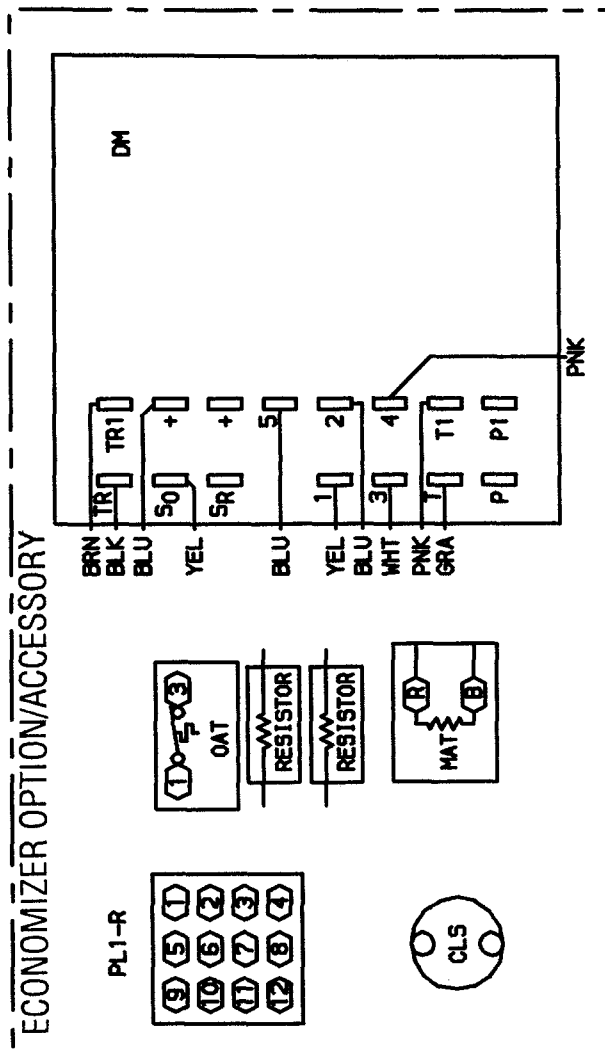
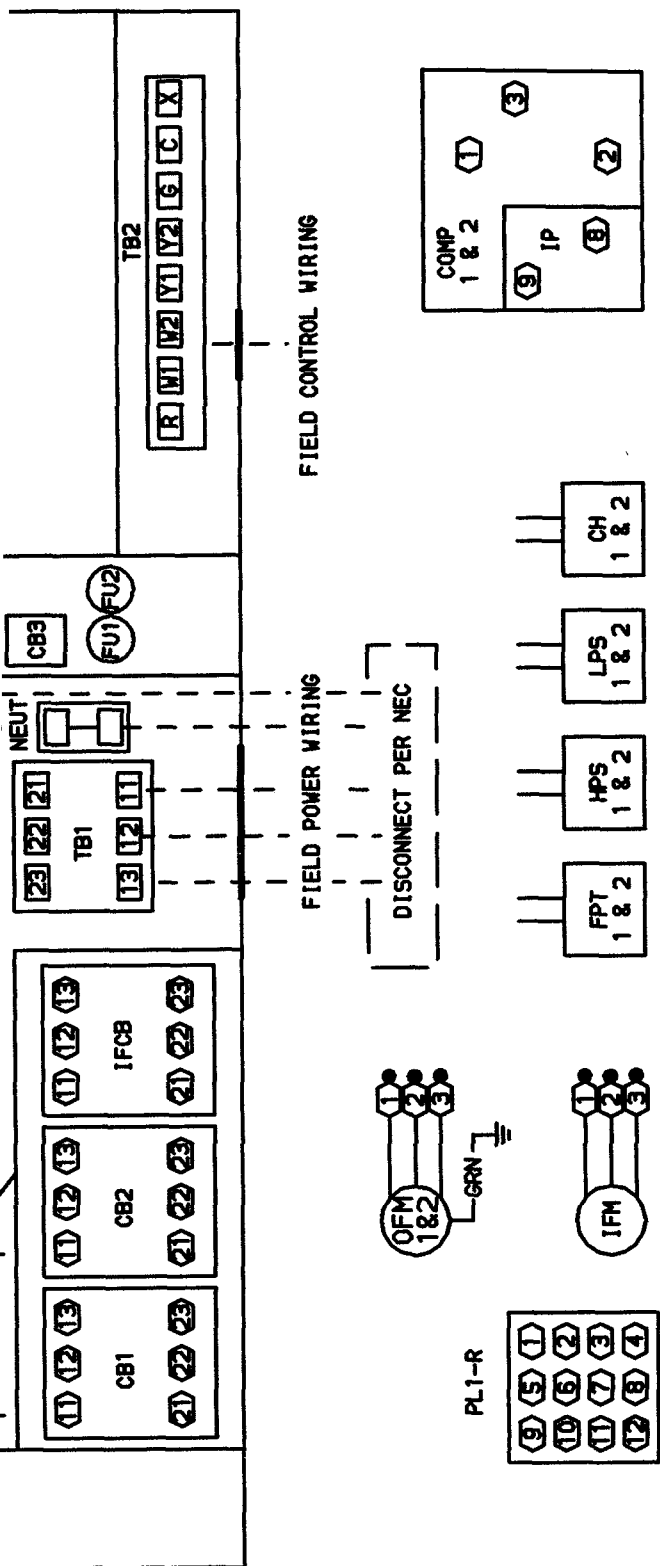
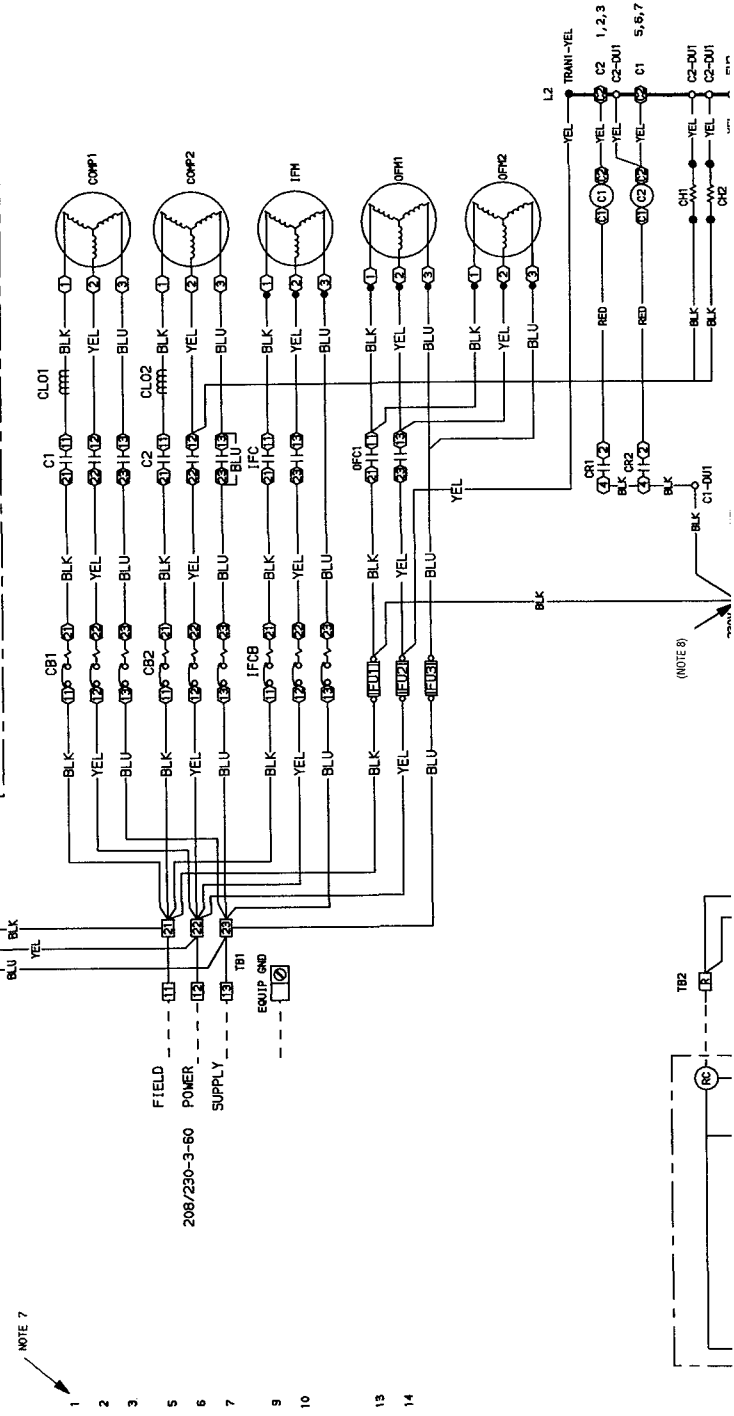
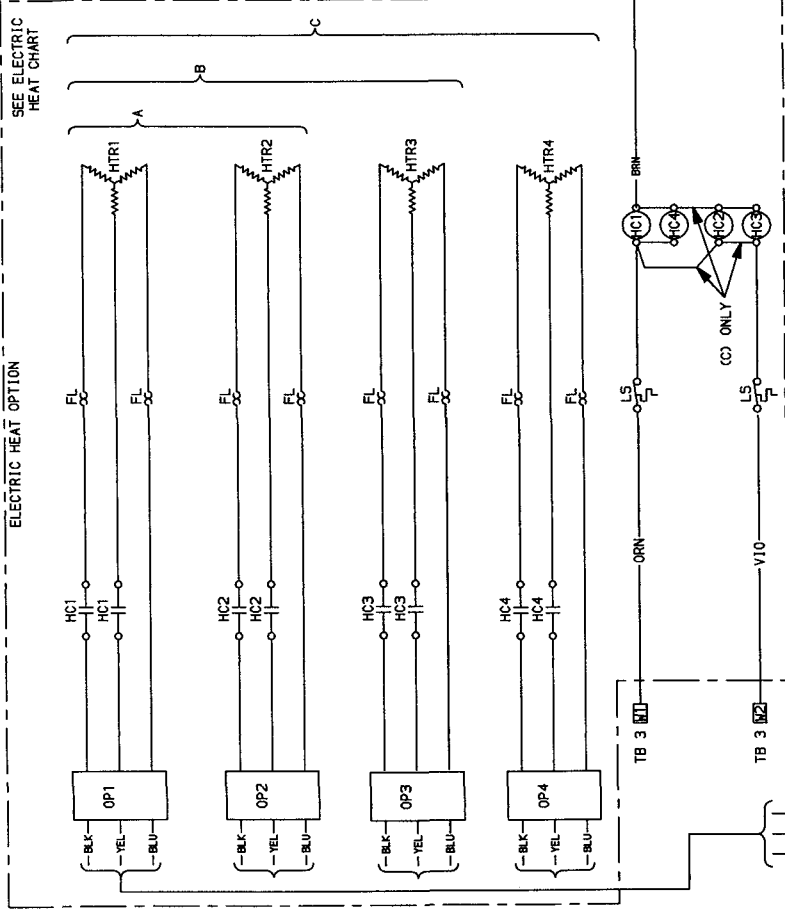


Fig. 42 — Label Diagram, Component Arrangement;
50TJ028, 400 V, 50 Hz — 903 Series Unit

ELECTRIC HEAT OPTION

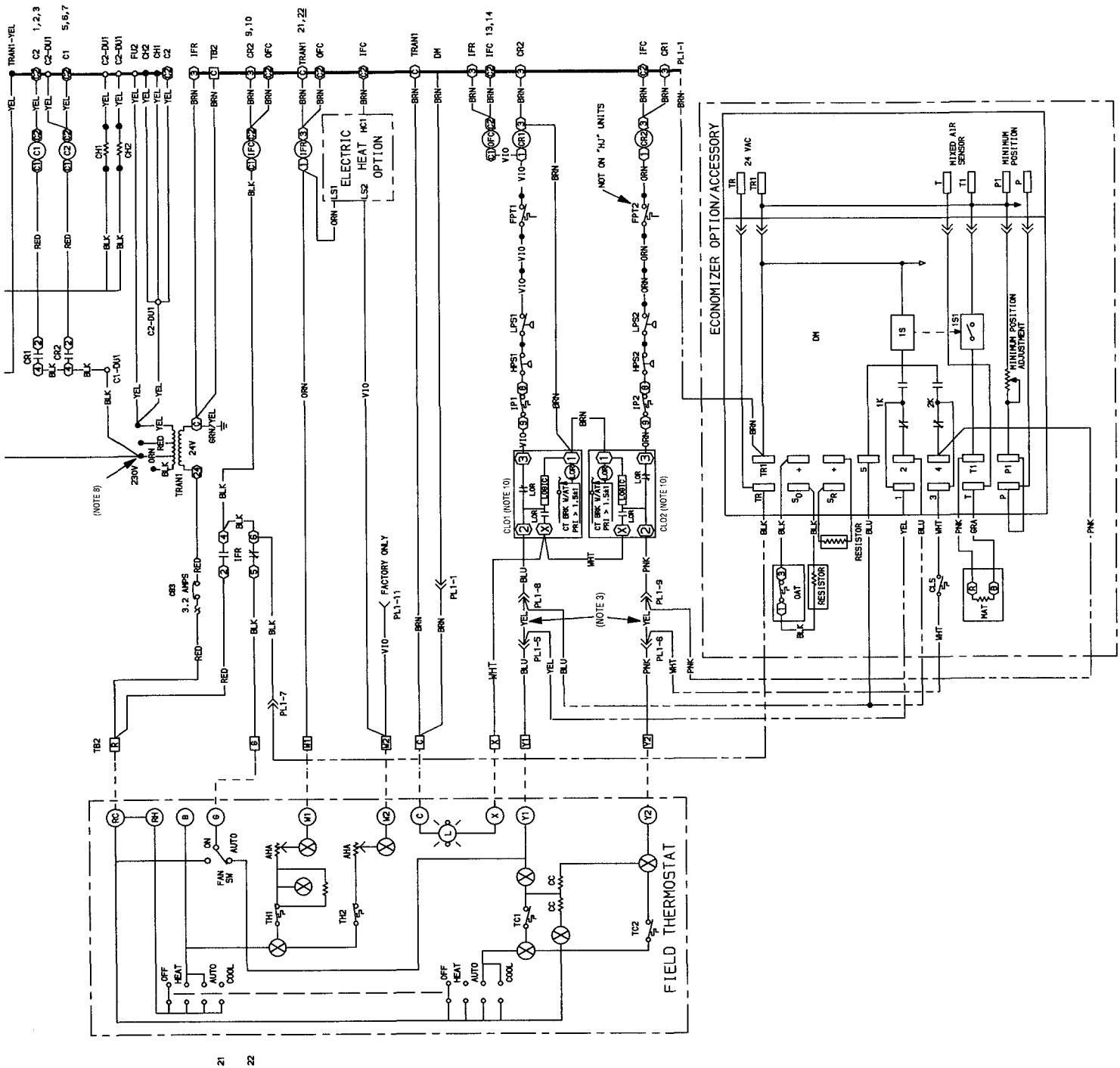
SEE ELECTRIC HEAT CHART

ELECTRIC HEAT		
	208/240V AMPS	200/230V KW
A	72/82	25.7/34.2
B	117/135	42.3/56.1
C	156/180	56.2/74.8

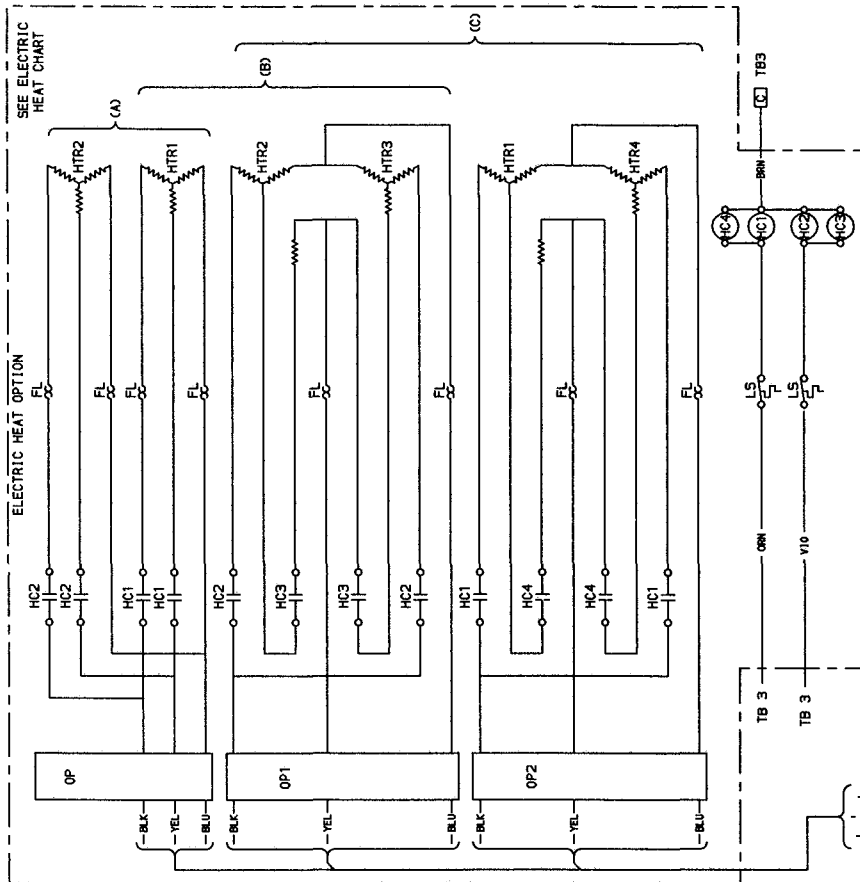


NOTE 7

- 1
- 2
- 3
- 5
- 6
- 7
- 9
- 10
- 13
- 14



ELECTRIC HEAT		
	480V AMPS	460V KW
A	39	32.4
B	66	54.9
C	96	79.8



NOTE 7

1
2

460-3-60

FIELD
POWER
SUPPLY

11
12
13

21
22
23

31
32
33

41
42
43

51
52
53

61
62
63

71
72
73

81
82
83

91
92
93

101
102
103

111
112
113

121
122
123

131
132
133

141
142
143

151
152
153

161
162
163

171
172
173

181
182
183

191
192
193

201
202
203

211
212
213

221
222
223

231
232
233

241
242
243

251
252
253

261
262
263

271
272
273

281
282
283

291
292
293

301
302
303

311
312
313

321
322
323

331
332
333

341
342
343

351
352
353

361
362
363

371
372
373

381
382
383

391
392
393

401
402
403

411
412
413

421
422
423

431
432
433

441
442
443

451
452
453

461
462
463

471
472
473

481
482
483

491
492
493

501
502
503

511
512
513

521
522
523

531
532
533

541
542
543

551
552
553

561
562
563

571
572
573

581
582
583

591
592
593

601
602
603

611
612
613

621
622
623

631
632
633

641
642
643

651
652
653

661
662
663

671
672
673

681
682
683

691
692
693

701
702
703

711
712
713

721
722
723

731
732
733

741
742
743

751
752
753

761
762
763

771
772
773

781
782
783

791
792
793

801
802
803

811
812
813

821
822
823

831
832
833

841
842
843

851
852
853

861
862
863

871
872
873

881
882
883

891
892
893

901
902
903

911
912
913

921
922
923

931
932
933

941
942
943

951
952
953

961
962
963

971
972
973

981
982
983

991
992
993

1001
1002
1003

1011
1012
1013

1021
1022
1023

1031
1032
1033

1041
1042
1043

1051
1052
1053

1061
1062
1063

1071
1072
1073

1081
1082
1083

1091
1092
1093

1101
1102
1103

1111
1112
1113

1121
1122
1123

1131
1132
1133

1141
1142
1143

1151
1152
1153

1161
1162
1163

1171
1172
1173

1181
1182
1183

1191
1192
1193

1201
1202
1203

1211
1212
1213

1221
1222
1223

1231
1232
1233

1241
1242
1243

1251
1252
1253

1261
1262
1263

1271
1272
1273

1281
1282
1283

1291
1292
1293

1301
1302
1303

1311
1312
1313

1321
1322
1323

1331
1332
1333

1341
1342
1343

1351
1352
1353

1361
1362
1363

1371
1372
1373

1381
1382
1383

1391
1392
1393

1401
1402
1403

1411
1412
1413

1421
1422
1423

1431
1432
1433

1441
1442
1443

1451
1452
1453

1461
1462
1463

1471
1472
1473

1481
1482
1483

1491
1492
1493

1501
1502
1503

1511
1512
1513

1521
1522
1523

1531
1532
1533

1541
1542
1543

1551
1552
1553

1561
1562
1563

1571
1572
1573

1581
1582
1583

1591
1592
1593

1601
1602
1603

1611
1612
1613

1621
1622
1623

1631
1632
1633

1641
1642
1643

1651
1652
1653

1661
1662
1663

1671
1672
1673

1681
1682
1683

1691
1692
1693

1701
1702
1703

1711
1712
1713

1721
1722
1723

1731
1732
1733

1741
1742
1743

1751
1752
1753

1761
1762
1763

1771
1772
1773

1781
1782
1783

1791
1792
1793

1801
1802
1803

1811
1812
1813

1821
1822
1823

1831
1832
1833

1841
1842
1843

1851
1852
1853

1861
1862
1863

1871
1872
1873

1881
1882
1883

1891
1892
1893

1901
1902
1903

1911
1912
1913

1921
1922
1923

1931
1932
1933

1941
1942
1943

1951
1952
1953

1961
1962
1963

1971
1972
1973

1981
1982
1983

1991
1992
1993

2001
2002
2003

2011
2012
2013

2021
2022
2023

2031
2032
2033

2041
2042
2043

2051
2052
2053

2061
2062
2063

2071
2072
2073

2081
2082
2083

2091
2092
2093

2101
2102
2103

2111
2112
2113

2121
2122
2123

2131
2132
2133

2141
2142
2143

2151
2152
2153

2161
2162
2163

2171
2172
2173

2181
2182
2183

2191
2192
2193

2201
2202
2203

2211
2212
2213

2221
2222
2223

2231
2232
2233

2241
2242
2243

2251
2252
2253

2261
2262
2263

2271
2272
2273

2281
2282
2283

2291
2292
2293

2301
2302
2303

2311
2312
2313

2321
2322
2323

2331
2332
2333

2341



50TJ028, 460 V — 601 Series Unit

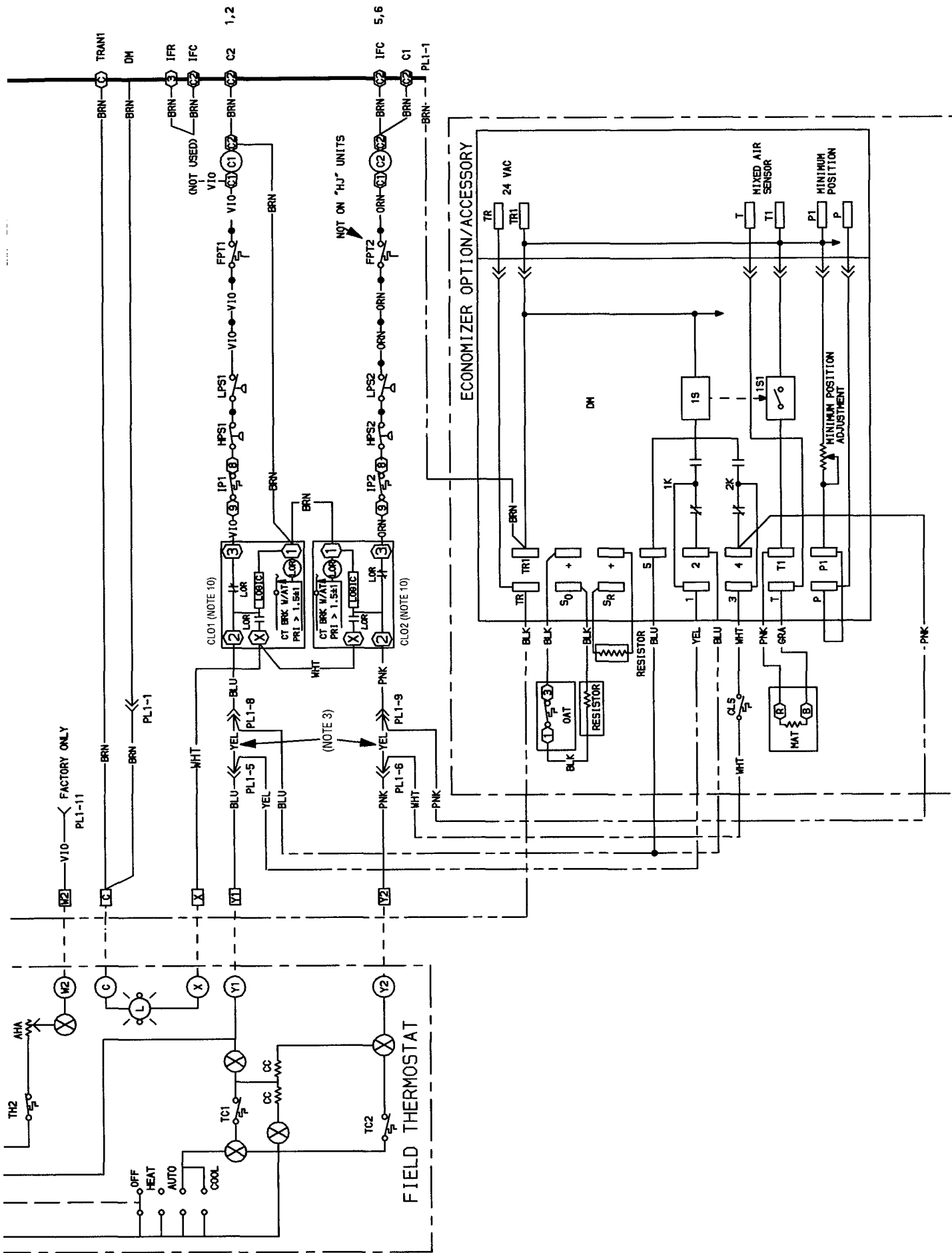
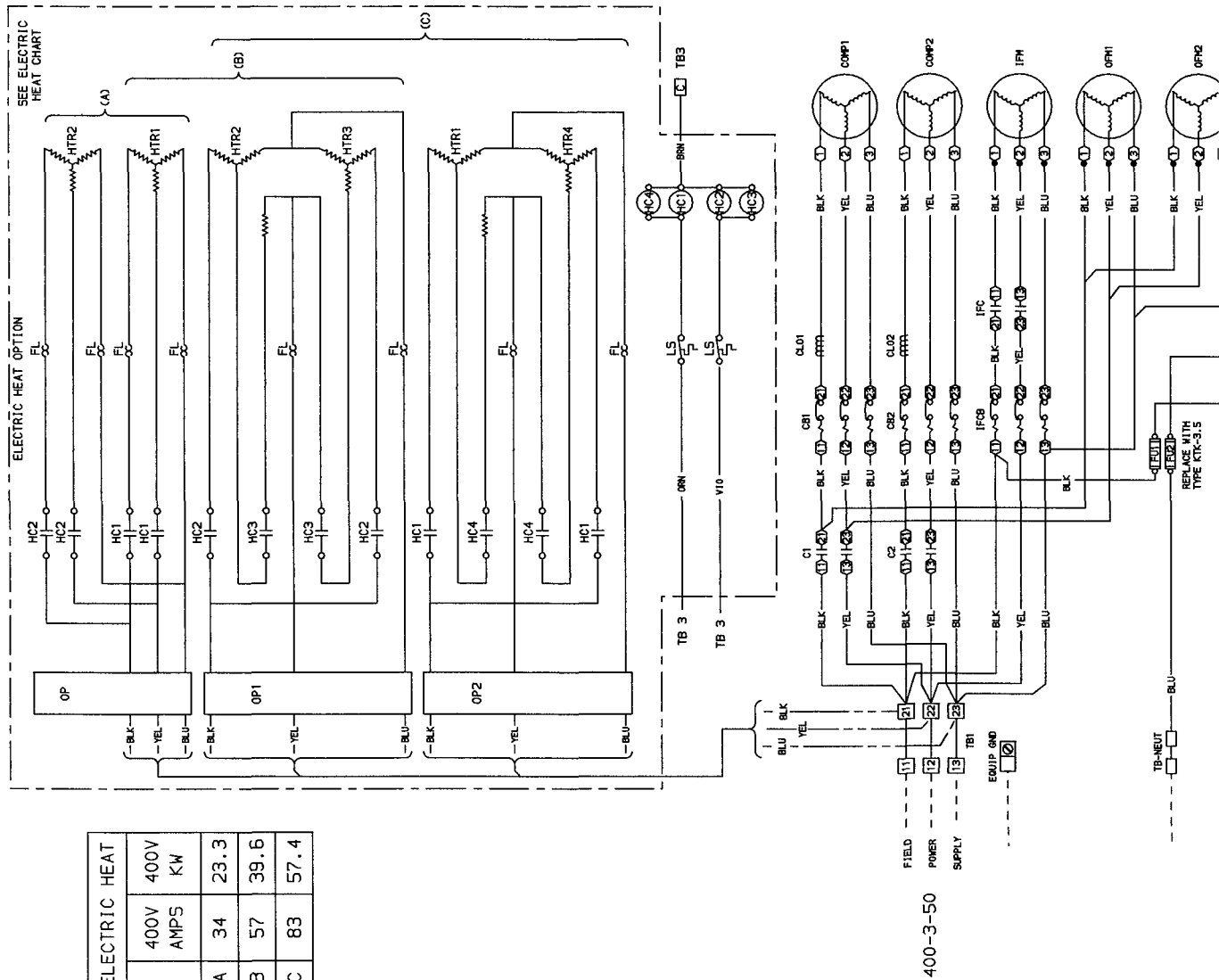


Fig. 45 — Label Diagram, Schematic;
50TJ028, 575 V — 101 Series Unit

ELECTRIC HEAT		
	400V AMPS	400V KW
A	34	23.3
B	57	39.6
C	83	57.4



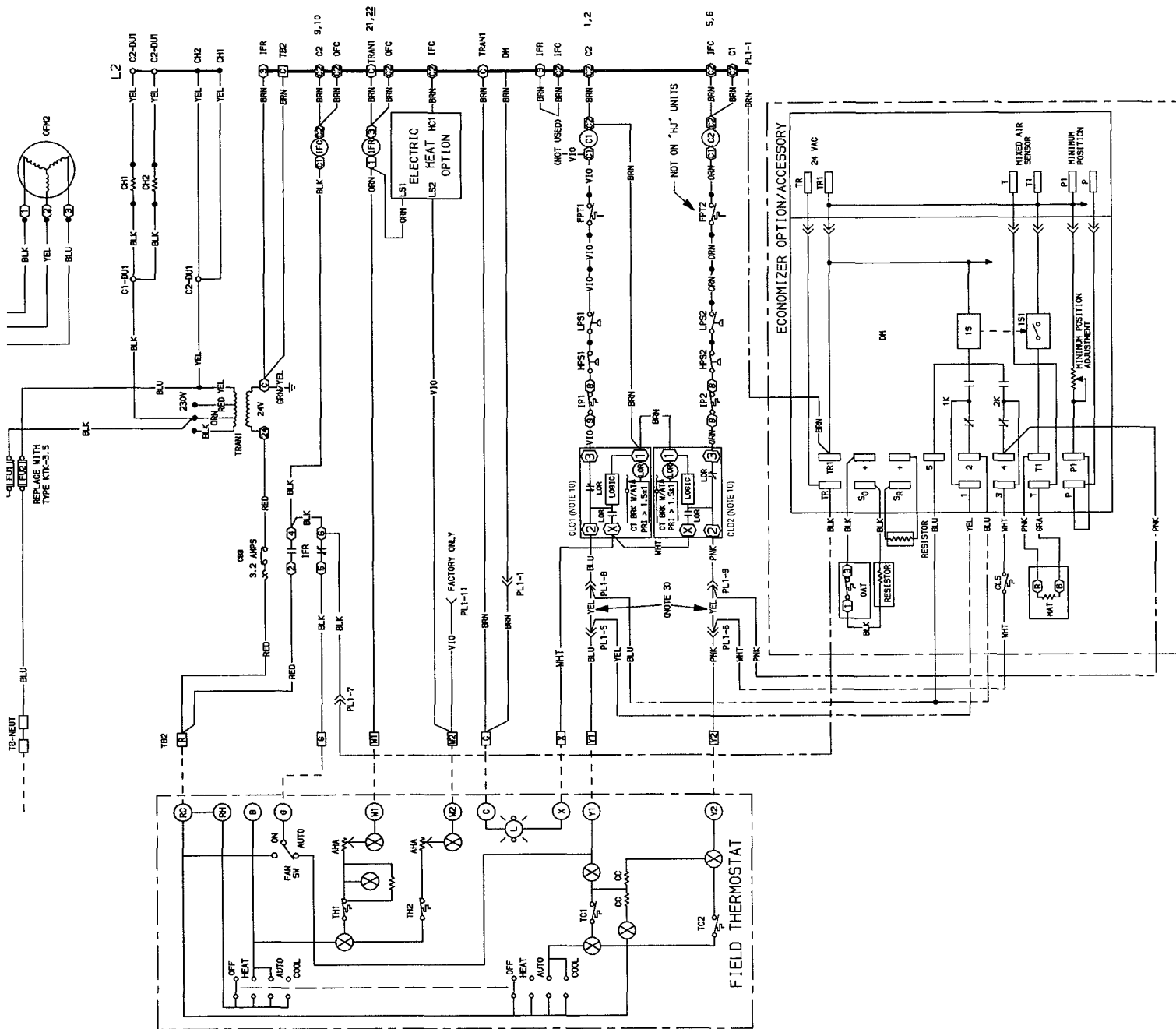
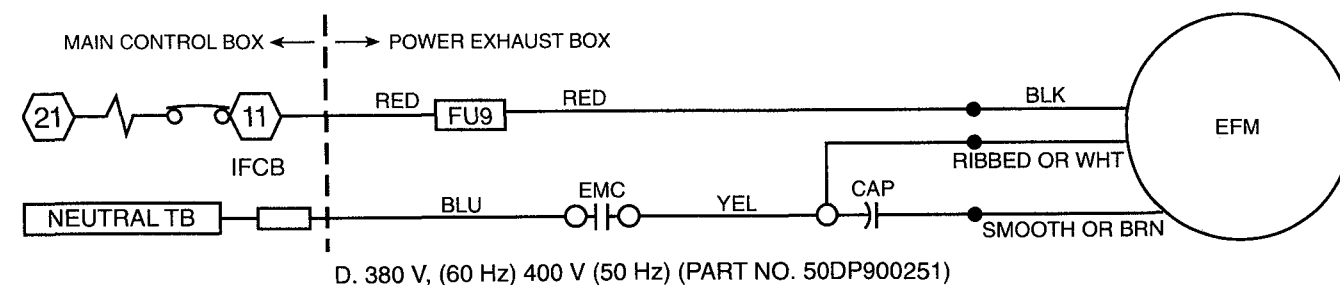
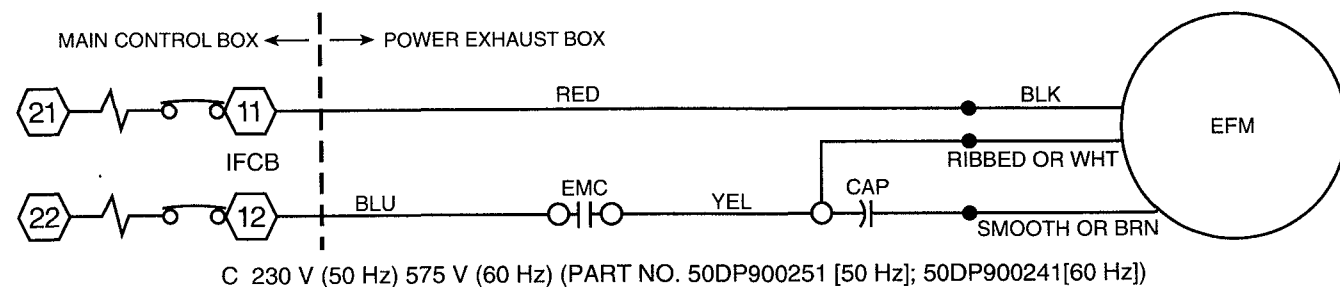
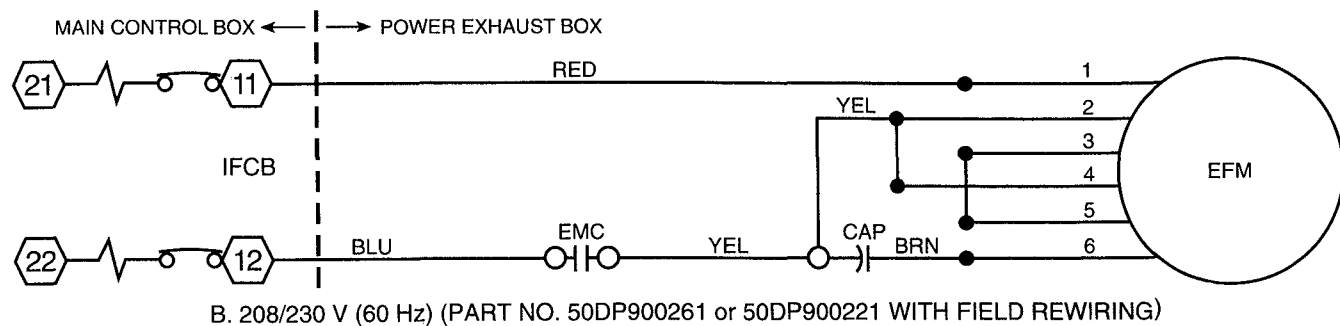
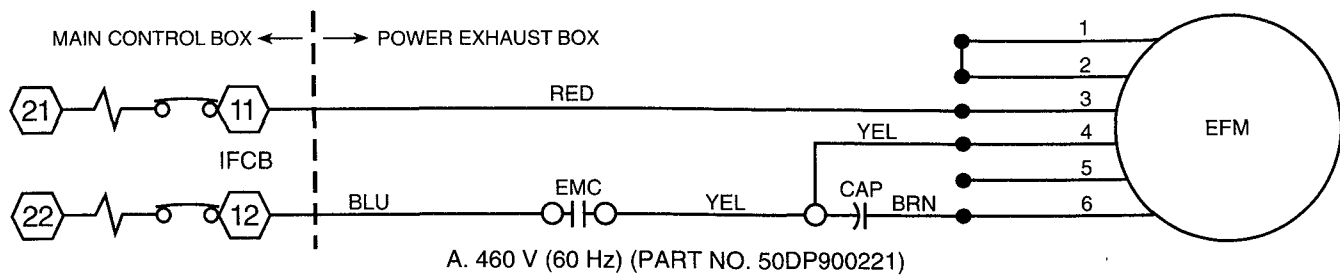


Fig. 46 — Label Diagram, Schematic:
50TJ028, 400 V, 50 Hz — 903 Series Unit

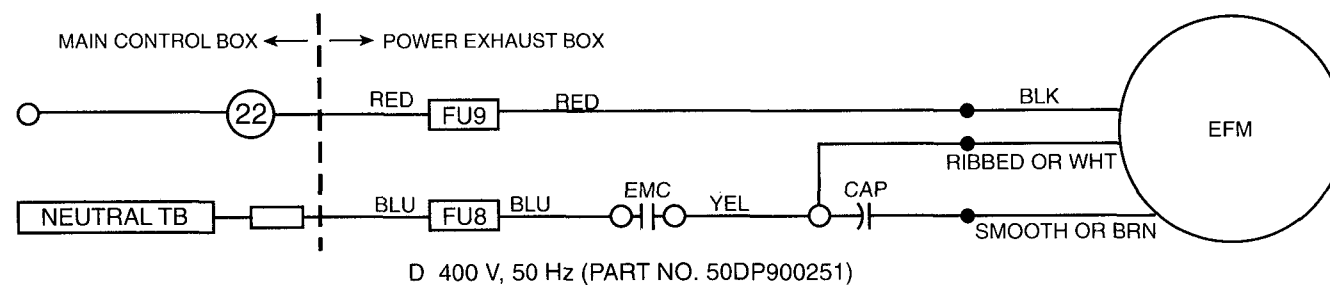
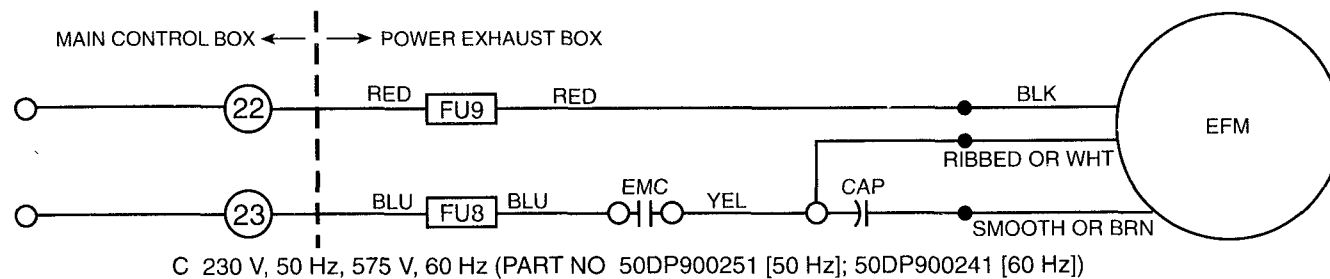
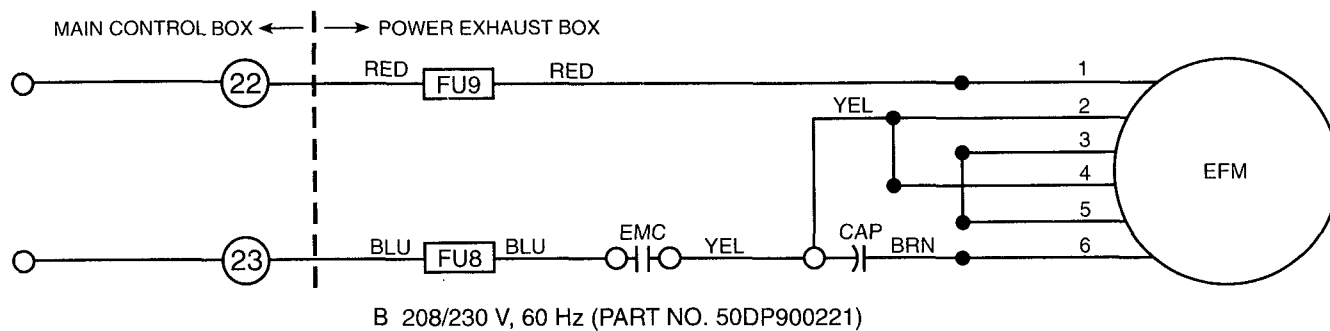
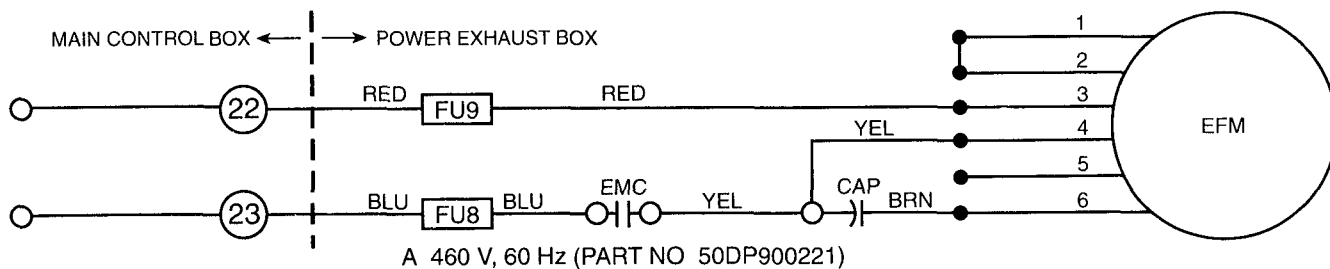


LEGEND

CAP - Capacitor
EMC - Exhaust Motor Contactor
EFM - Exhaust Fan Motor
IFCB - Indoor Fan Circuit Breaker

NOTE: For units that do not have an indoor fan circuit breaker, connect red power wire to indoor fan circuit breaker 23 and blue wire to indoor fan circuit breaker 21

**Fig. 47 — Accessory Power Exhaust Power Wiring
 (Serial numbers lower than 5/95/0000)**



LEGEND

CAP – Capacitor

EMC – Exhaust Motor Contactor

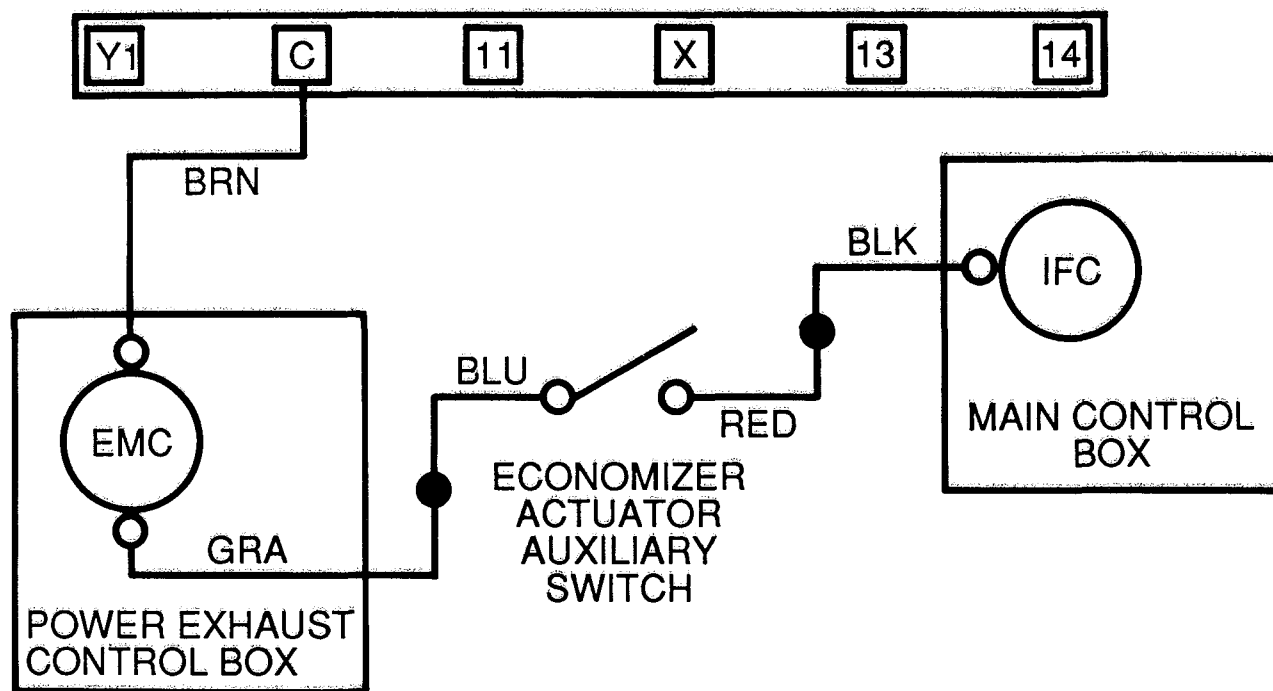
EFM – Exhaust Fan Motor

FU – Fuse

IFC – Indoor-Fan Contactor

TB – Terminal Block

Fig. 48 — Power Exhaust Power Wiring
(Serial numbers higher than 5/95/0000)



LEGEND

- EMC - Exhaust Motor Contactor
IFC - Indoor (Evaporator) Fan Contactor

Fig. 49 — Accessory Power Exhaust Control Wiring

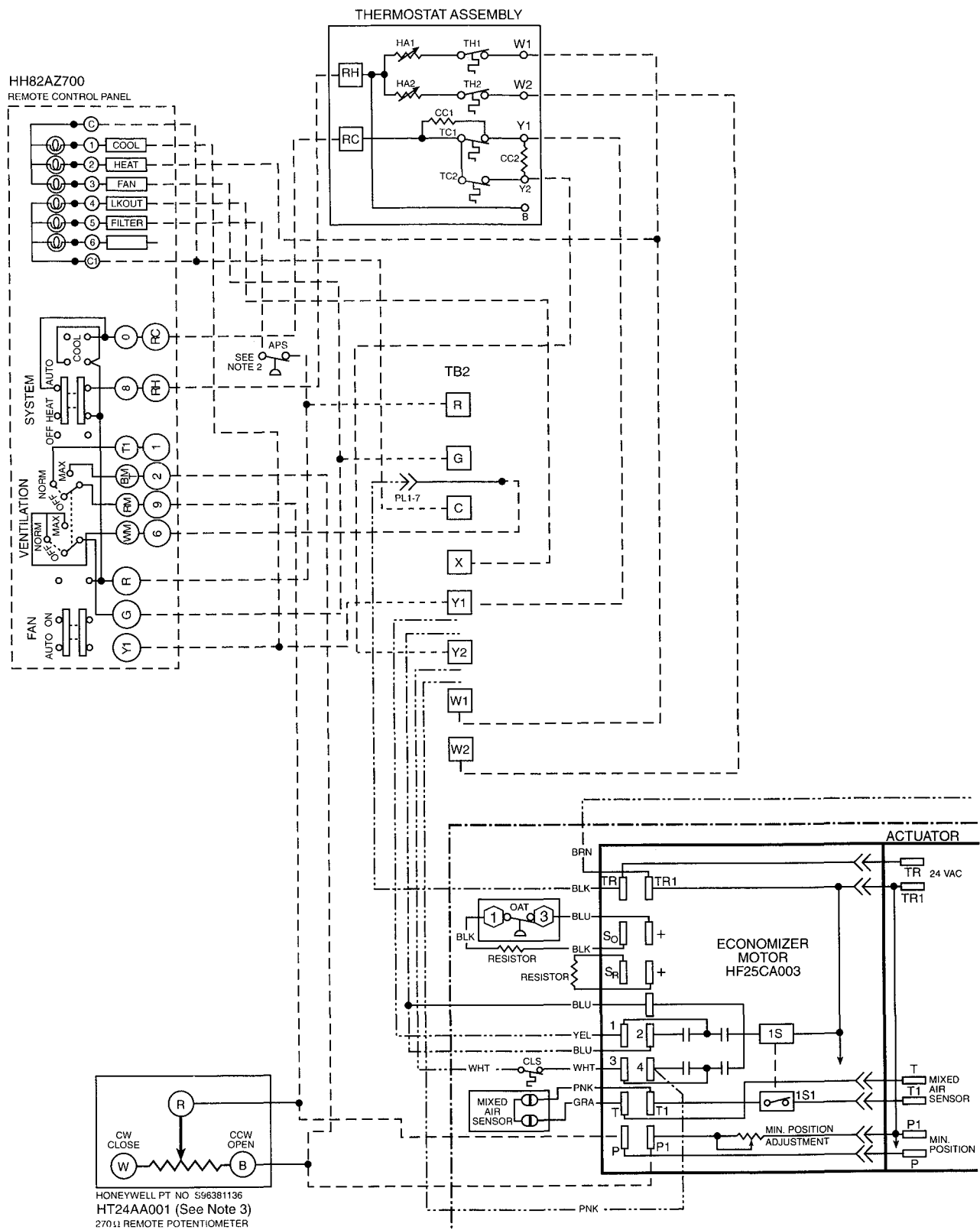
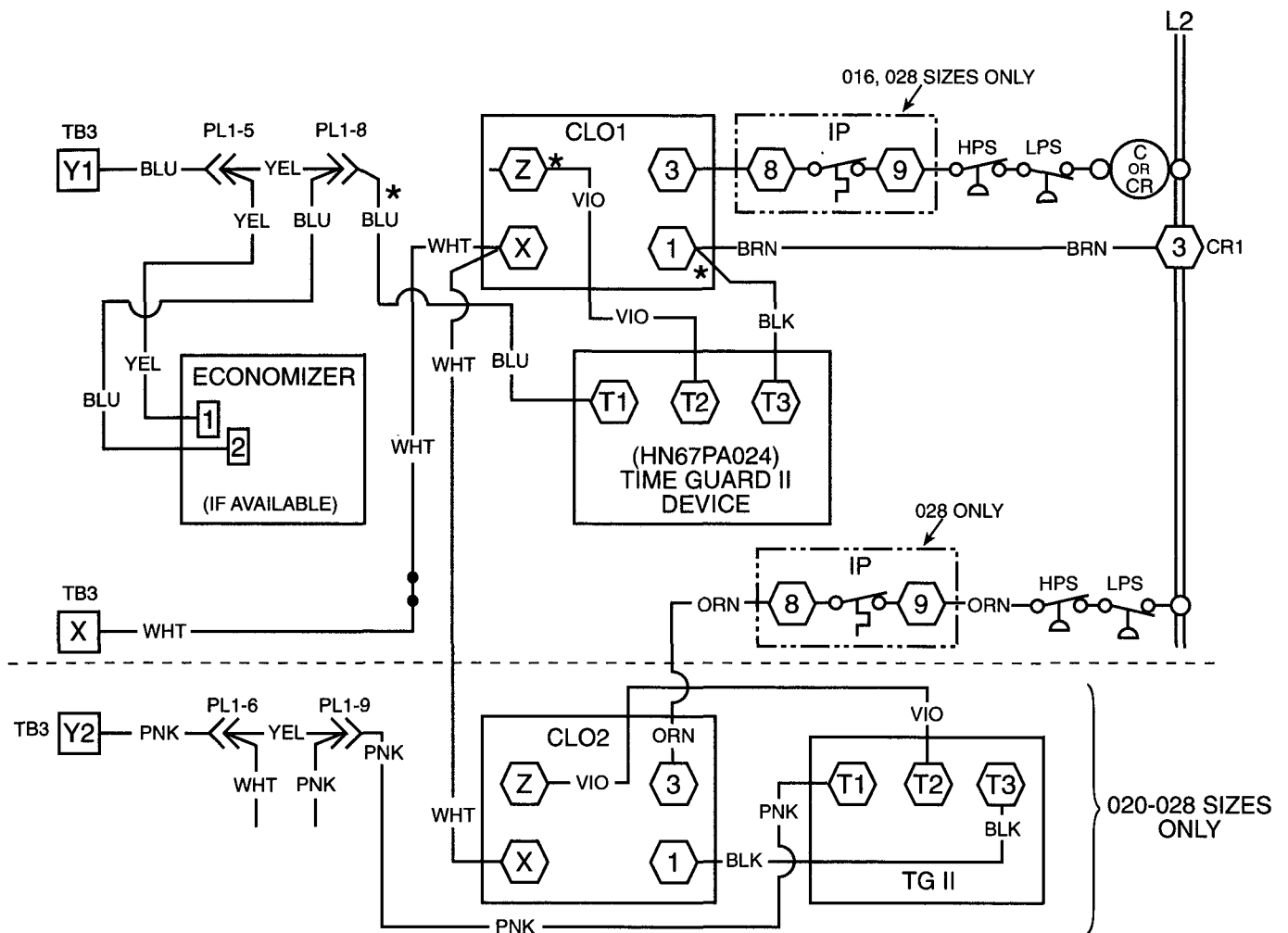


Fig. 50 — Accessory Remote Control Panel Wiring

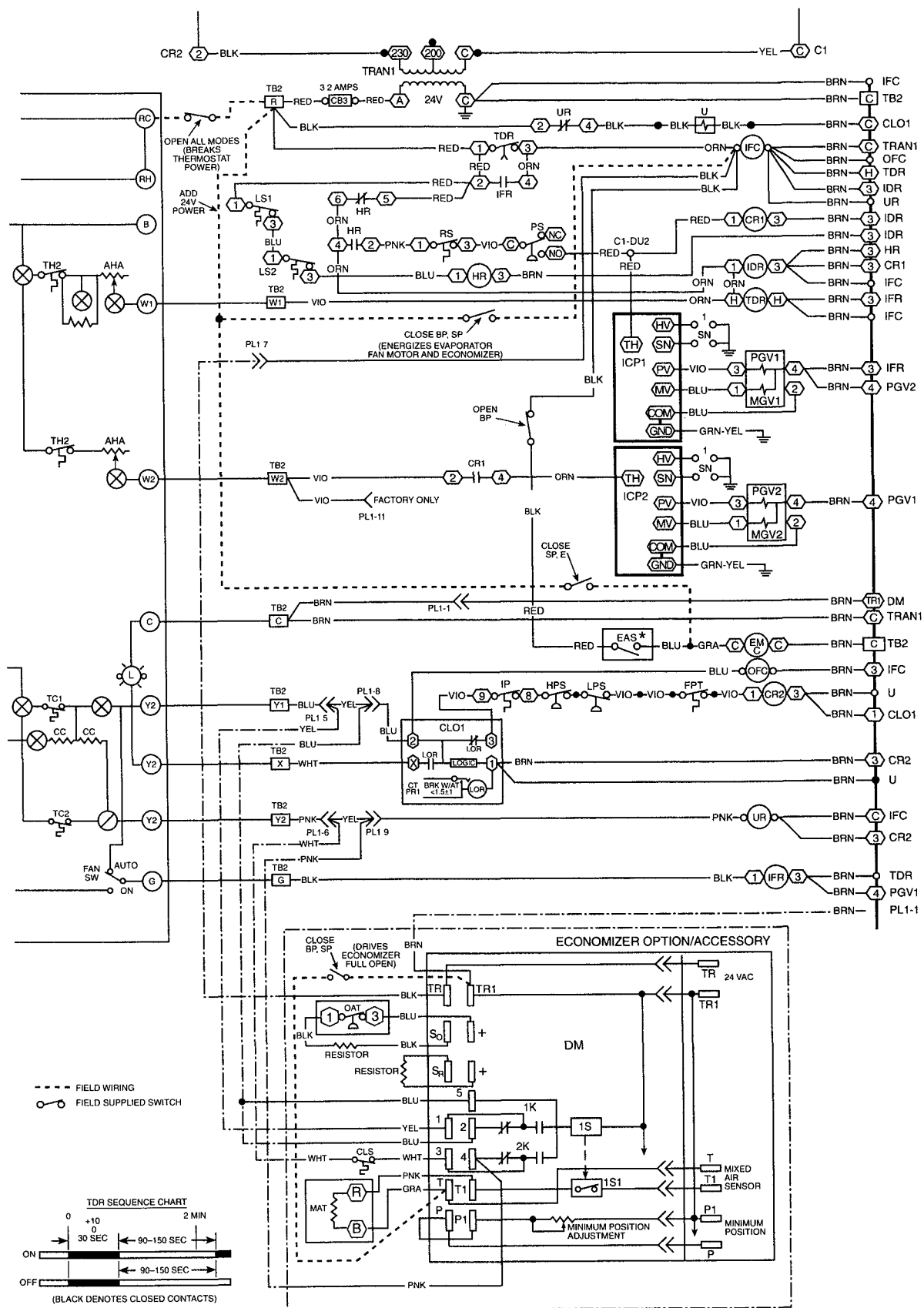


LEGEND

- | | |
|-----------------------------------|----------------------------------|
| C - Contactor | LPS - Low-Pressure Switch |
| CLO - Cooling Lockout | PL - Plug |
| CR - Control Relay | TB - Terminal Block |
| HPS - High-Pressure Switch | TG - Time Guard II Device |
| IP - Internal Protector | |

*Time Guard II device connections

Fig. 51 — Time Guard® II Device Wiring



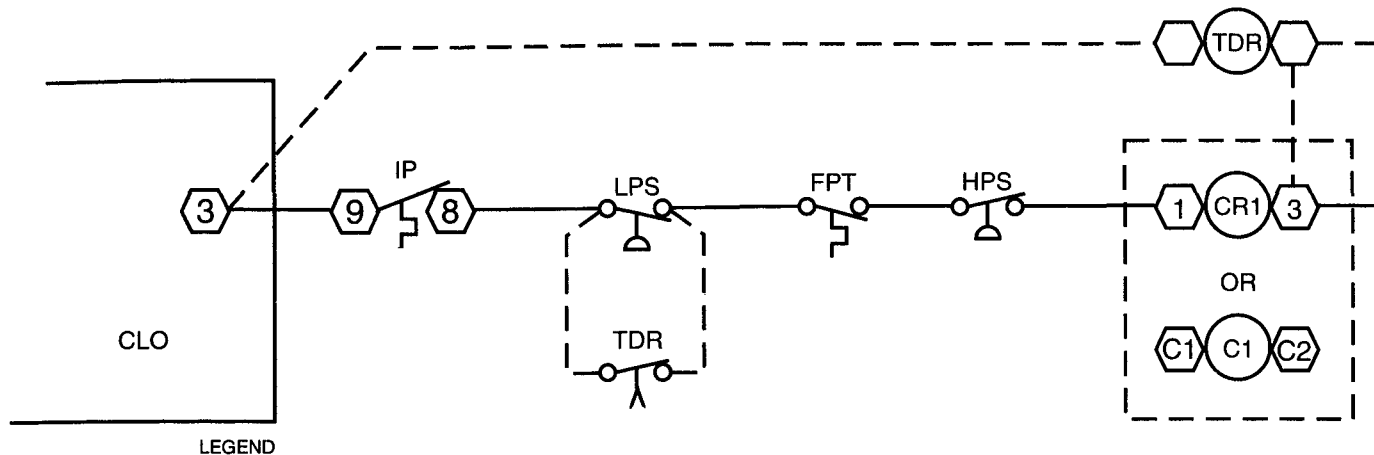
See Legend on page 3.

* Included in power exhaust accessory

OPERATING MODES

- BP** – Building Pressurization: Evaporator fan on, economizer energized to fully open position, power exhaust disabled
- E** – Evacuation: Evaporator fan off, economizer deenergized to fully closed position, power exhaust on (open)
- SD** – Complete Unit Shutdown: Breaks 24-v power to the thermostat
- SP** – Smoke Purge: Evaporator fan on, economizer energized to fully open position, power exhaust on

Fig. 52 — Smoke Control/Fire Shutdown Wiring

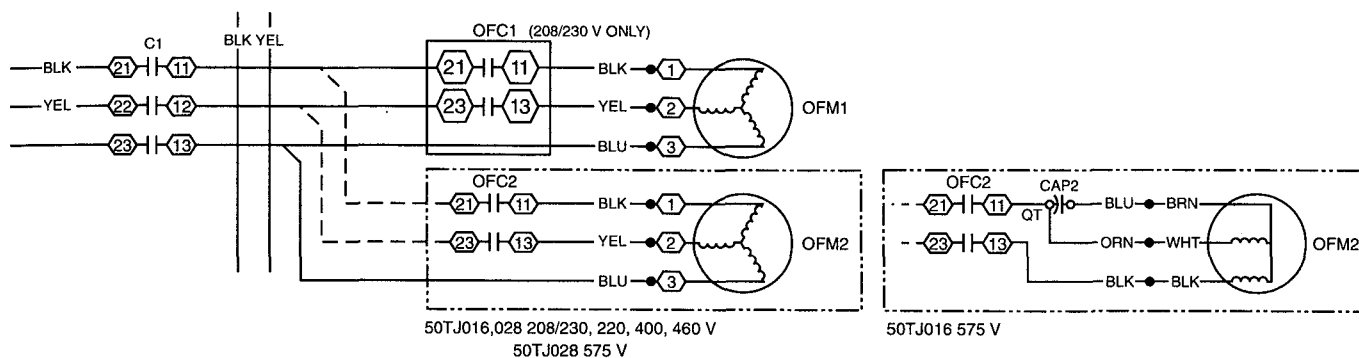


LEGEND

- | | |
|---|----------------------------------|
| C - Contactor | IP - Internal Protector |
| CLO - Compressor Lockout | LPS - Low-Pressure Switch |
| CR - Control Relay | TDR - Time-Delay Relay |
| FPT - Freeze Protection Thermostat | —— Factory-Supplied Wiring |
| HPS - High-Pressure Switch | ----- Field-Supplied Wiring |

NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 53 — Winter Start Kit Wiring, 50TJ016-028 Units



POWER WIRING

ACCESSORY WIRING

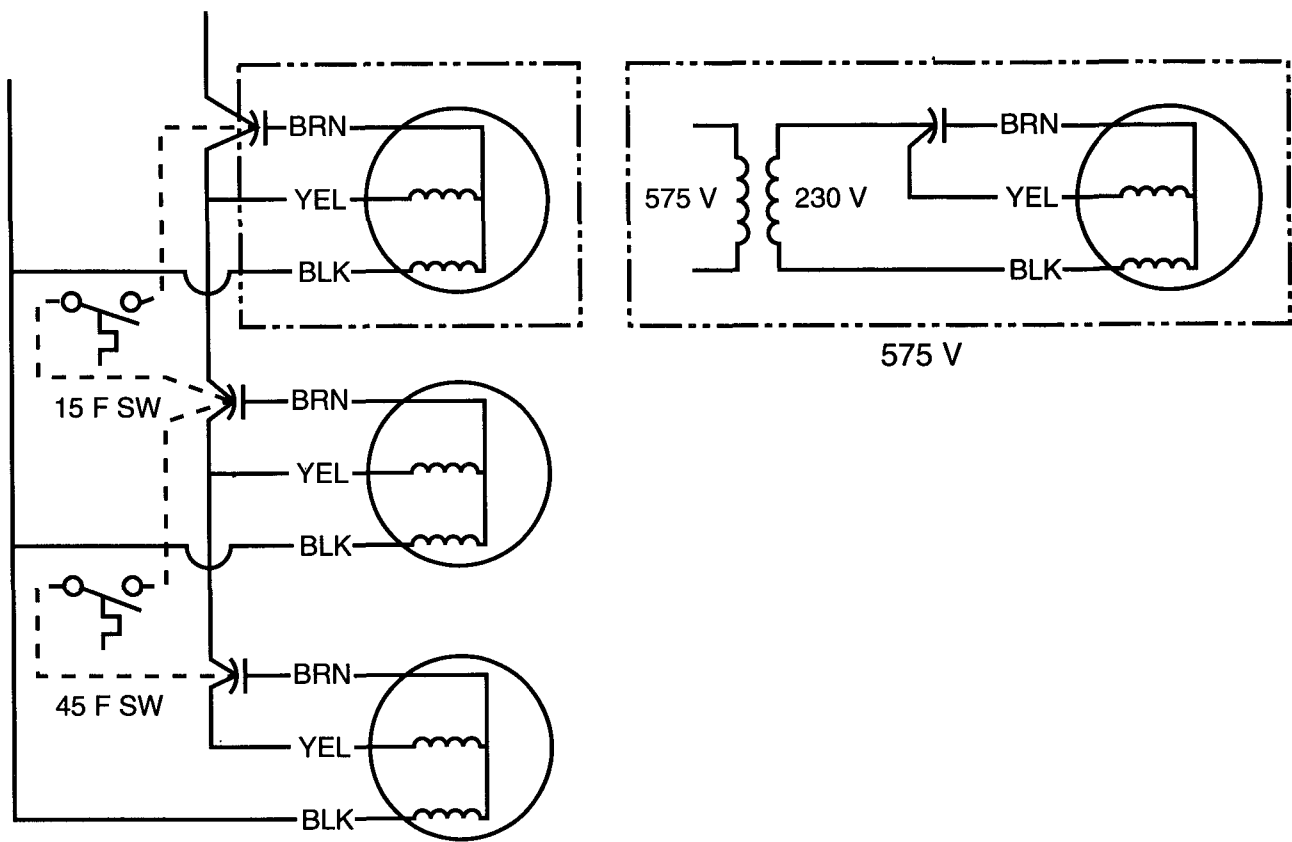
LEGEND

- | | |
|--|--|
| BRK W/AT - Breaks with Amps | LOR - Lockout Relay |
| C - Contactor | LPS - Low-Pressure Switch |
| CAP - Capacitor | OFC - Outdoor (Condenser) Fan Contactor |
| CR - Control Relay | OFM - Outdoor (Condenser) Fan Motor |
| CT - Circuit | PL - Plug |
| FPT - Freeze Protection Thermostat | PRI - Primary |
| HPCT - Head Pressure Control Thermostat | QT - Quadruple Terminal |
| HPS - High-Pressure Switch | TDR - Time-Delay Relay |
| IFC - Indoor (Evaporator) Fan Contactor | —— Factory-Supplied Wiring |
| IFR - Indoor (Evaporator) Fan Relay | ----- Field-Supplied Wiring |
| IP - Internal Protector | |

NOTES:

1. OFC is used in 208/230-v units only
2. CR1 is replaced by C1 in 460 and 575-v units
3. See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 54 — HPCT, OFC2, and TDR Wiring — 25 F Ambient Kit; 50TJ016 and 028 Units



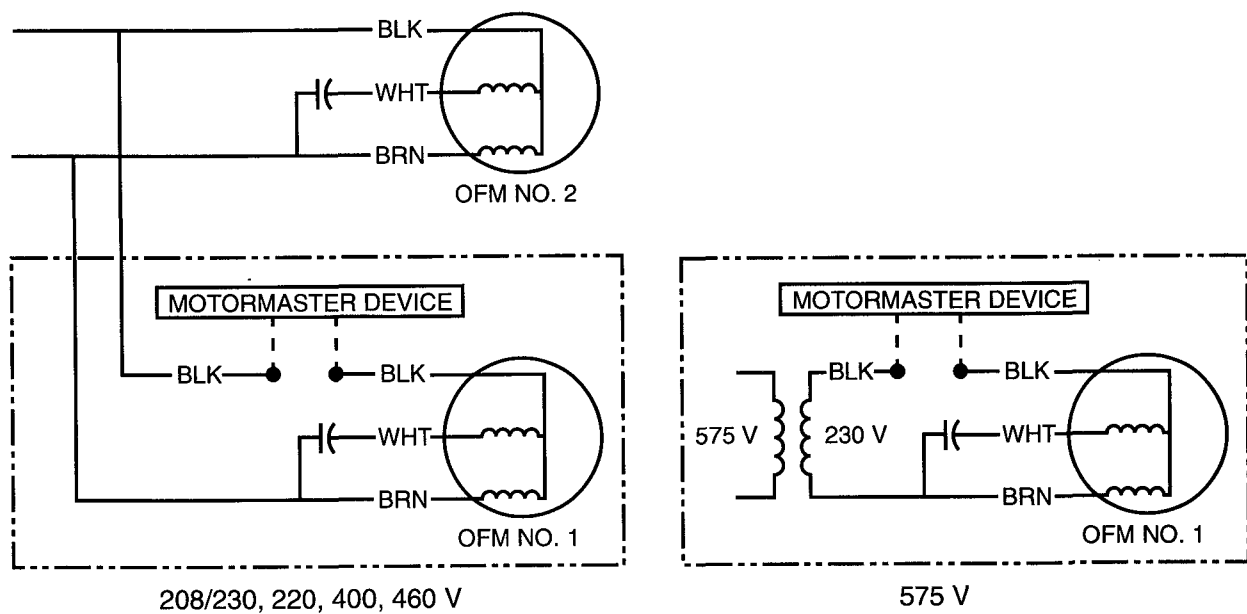
208/230, 220, 400, 460 V

LEGEND

- SW — Switch
- Field-Supplied Wiring
- Factory-Supplied Wiring

NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 55 — Mild/Low Ambient Control — 50TJ016,020 Units



208/230, 220, 400, 460 V

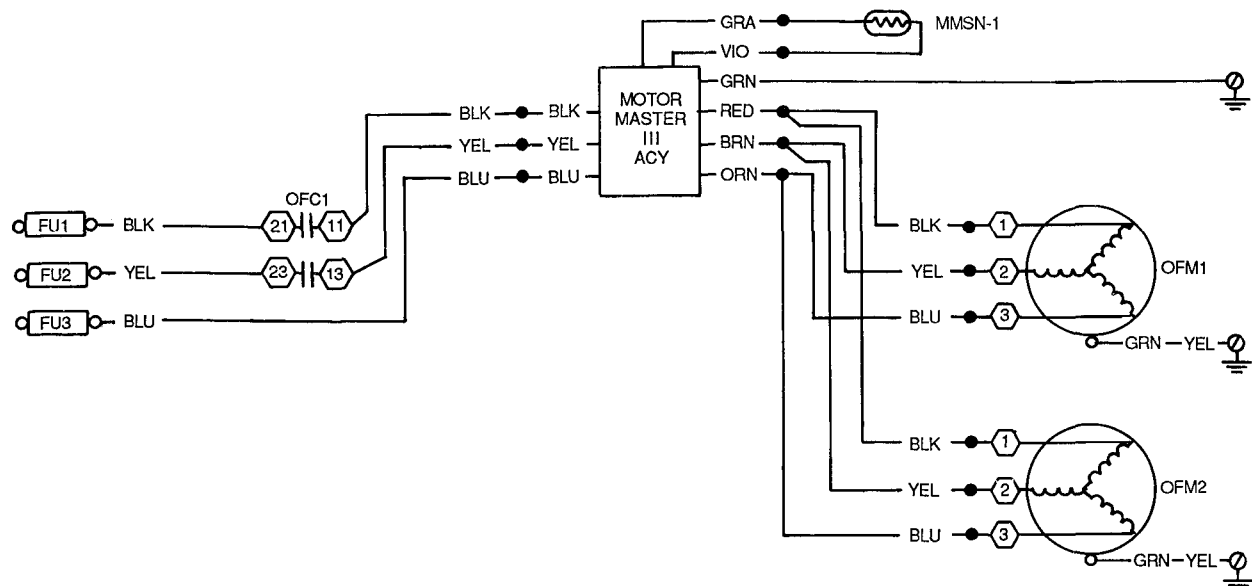
575 V

LEGEND

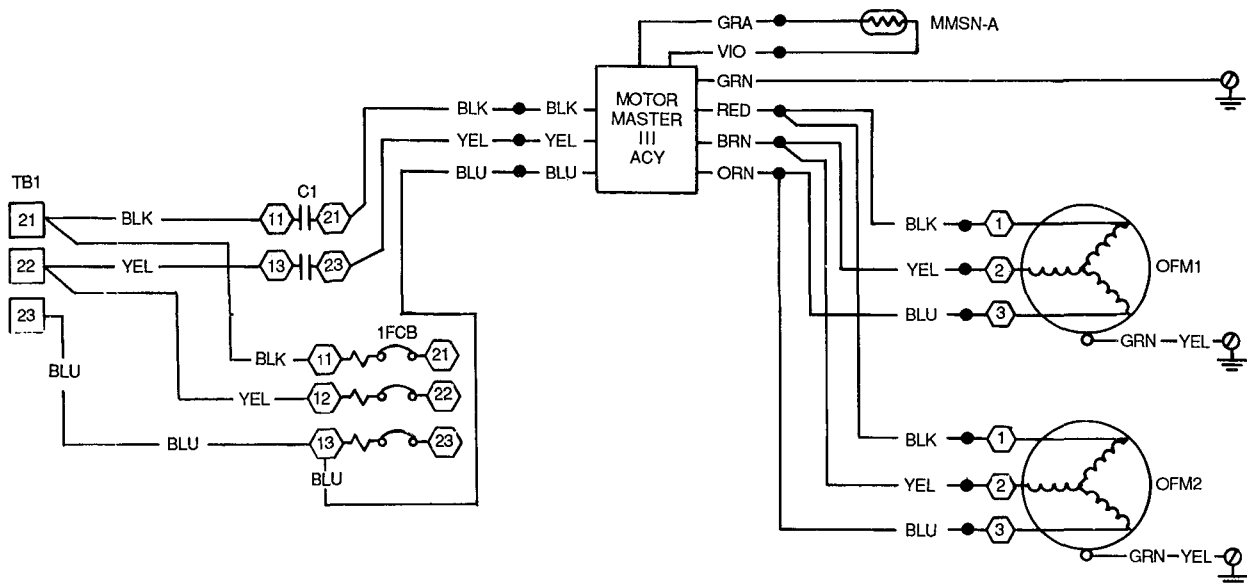
- OFM — Outdoor (Condenser) Fan Motor
- Field Wiring
- Factory Wiring

NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

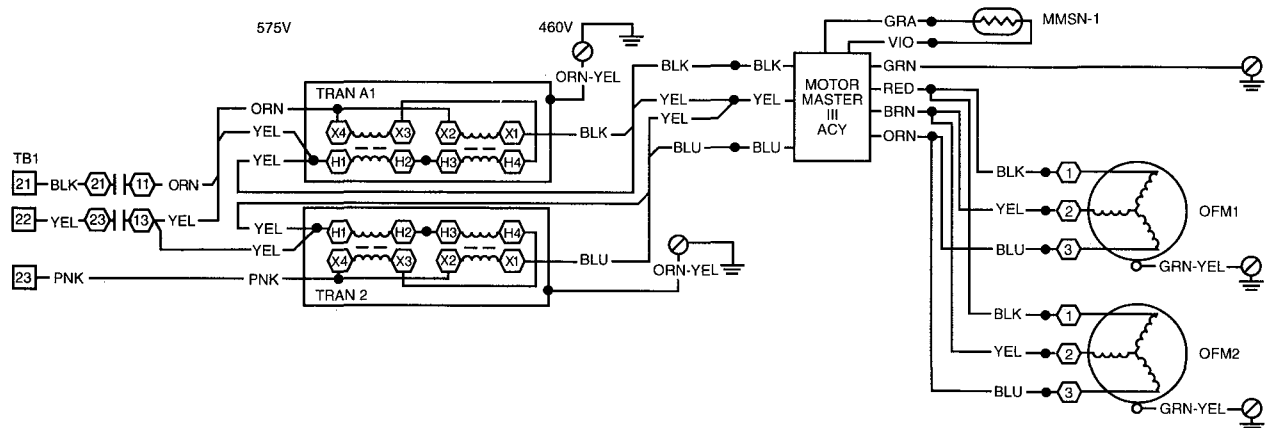
**Fig. 56 — Single Phase Motormaster® Head Pressure Control Device Wiring;
50TJ016 and 020 Units**



50TJ020-028, 208/230-3-60 UNITS



50TJ020-028, 380-3-50, 400-3-50, and 460-3-60 UNITS



50TJ020-028, 575-3-60 UNITS

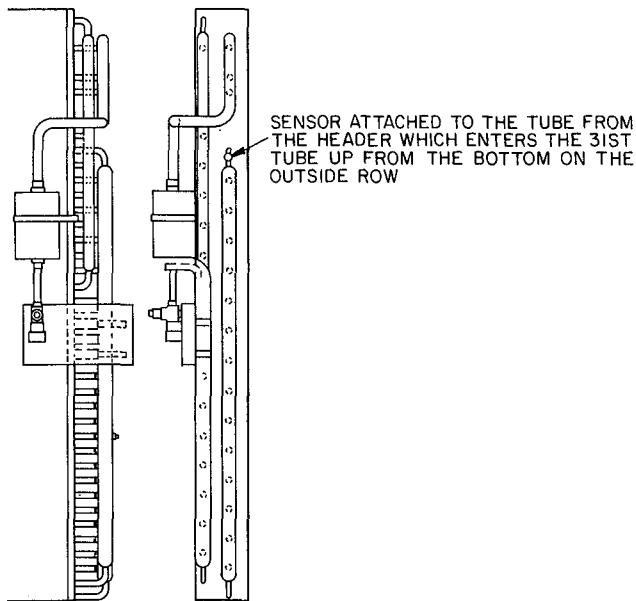
LEGEND

C - Contactor
FU - Fuse
MMSN - Motormaster Sensor
OFC - Outdoor (Condenser) Fan Contactor

OFM - Outdoor (Condenser) Fan Motor
TB - Terminal Block
TRAN - Transformer

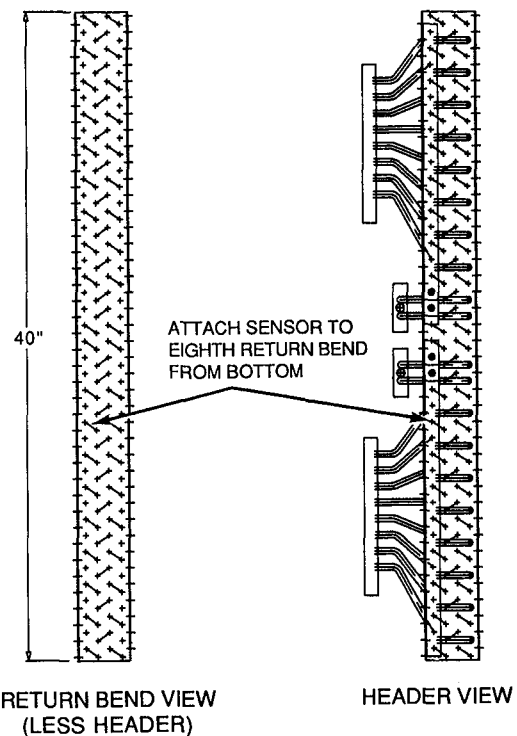
NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 57 — Motormaster® III Device Wiring



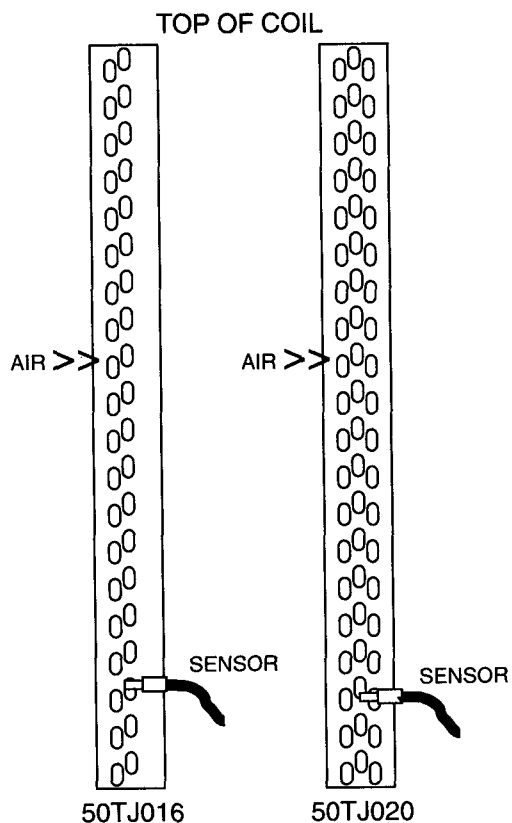
NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 58 — Motormaster® I Device Sensor Location; 50TJ016 Units



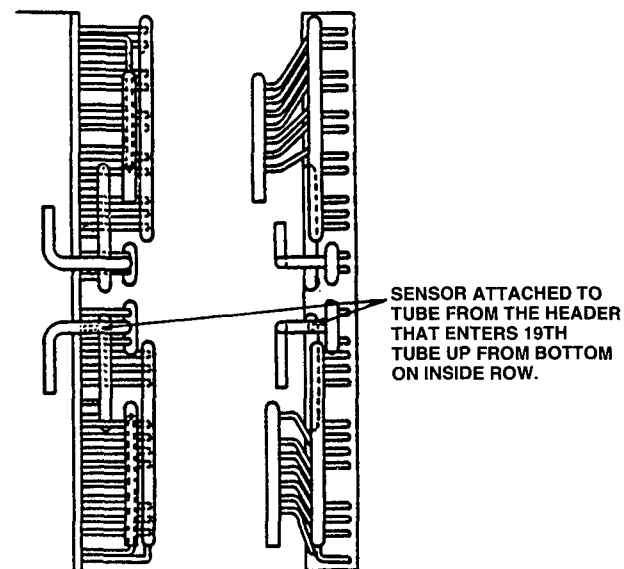
NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 60 — Motormaster III Device Sensor Location; 50TJ020-028 Units



NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 59 — Motormaster I Device Sensor Location; 50TJ016,020 Units



NOTE: See Lower Outdoor Ambient Operation Accessories table on page 2 for correct application

Fig. 61 — Motormaster III Device Sensor Location; 50TJ024; Series 101, 501, 601, 903 Units

