



Wiring Diagrams

INDEX

POWER SCHEMATICS

30XA Unit Size	Voltage	Figure Number	Label Diagram
080-120	All	1	00PSN500128400A
140-200	380, 460, 575	1	00PSN500128400A
	200, 230	2	00PSN500140900A
220, 240	200, 230	2	00PSN500140900A
	380, 460, 575	3	00PSN500128500A
260	All	3	00PSN500128500A
280	All	4	00PSN500128600A
300	All	3	00PSN500128500A
325, 350	All	4	00PSN500128600A
400	All	1	00PSN500128400A
	All (Circuit C)	5	00PSN500128800A
450, 500	All	3	00PSN500128500A
	All (Circuit C)	5	00PSN500128800A

BOARD CONTROL SCHEMATICS

30XA Unit Size	Voltage	Figure Number	Label Diagram
080	All	6	00PSN500128200A
090-350	All	7	00PSN500128300A
400-500	All	8	00PSN500140800A

UNIT CONTROL SCHEMATICS

30XA UNIT SIZE	Voltage	Figure Number	Label Diagram
080-350	All	9	00PSN500128100A
400-500	All	9	00PSN500128100A
	All (Circuit C)	10	00PSN500128700A

COMPONENT ARRANGEMENTS

30XA UNIT SIZE	Voltage	Control Box Type	Figure Number	Label Diagram
080-120	200, 230	A/B Power Box	11	TH703002
	All	Display Control Box	12	TH703007
	460	A/B Power Box (includes Display Control Box)	13	TH703003
140-240	All	A/B Breaker Box	14	TH703004
	All	A/B Power Box	15	TH703006
	All	Display Control Box	12	TH703007
260-350	All	A/B Power Box	15	TH703006
	All	Display Control Box	12	TH703007
400-500	All	A/B Power Box	15	TH703006
	All	Display Control Box	12	TH703007
	460	Circuit C Power Box	16	TH703005

FIELD WIRING

30XA UNIT SIZE	Voltage	Figure Number	Label Diagram
080-500	All	17	00DCN500002600A

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










GENERAL

This publication contains Wiring Diagram information for the 30XA080-500 air-cooled liquid chillers with electronic controls. These chillers are equipped with *ComfortLink™* controls and electronic expansion valves.

SEQUENCE OF OPERATION

NOTE: For operating sequence, refer to the Controls, Start-Up, Operation, Service, and Troubleshooting literature.

LEGEND

A	— Alarm	FIOP	— Factory-Installed Option
ALM R	— Alarm Relay	FM	— Fan Motor
ALT R	— Alert Relay	FN	— Fan
CA	— Contactor XL-A Circuit	FU	— Fuse
CA-1M	— Contactor Main YD A Circuit	GFI-CO	— Ground Fault Interrupter - Convenience Outlet
CA-2M	— Contactor Delta YD A Circuit	GND	— Ground
CA-S	— Contactor Wye YD A Circuit	HGBP	— Hot Gas Bypass
CB	— Contactor XL-B Circuit	HTR	— Heater
CB-1M	— Contactor Main YD B Circuit	ISO	— Isolation
CB-2M	— Contactor Delta YD B Circuit	ISOL VLV	— Relay Isolation Valve
CB-S	— Contactor Wye YD B Circuit	LEN	— Local Equipment Network
CB1	— Base Board Mini Circuit Breaker	LS	— Level Switch
CB2	— Fan Board A Mini Circuit Breaker	LWT	— Leaving Water Temperature
CB3	— EXV Board Mini Circuit Breaker	MBB	— Main Base Board
CB4	— CPM Board A Mini Circuit Breaker	MLV	— Minimum Load Valve
CB5	— Fan Board B Mini Circuit Breaker	MM	— Low Ambient Temperature Head Pressure Control
CB6	— EXV Board B Mini Circuit Breaker	NEC	— National Electrical Code (U.S.A.)
CB7	— CPM Board B Mini Circuit Breaker	OAT	— Outdoor Air Temperature
CB8	— EMM Board Mini Circuit Breaker	OPT	— Oil Pressure Transducer
CB12	— Isolation Valve Relays Mini Circuit Breaker	PL	— Plug
CB-13	— 115v Feed Circuit Breaker	PMP	— Chilled Water Pump
CB14	— HGBP/Pump Board Mini Circuit Breaker	PMPI	— Chilled Water Pump Interlock
CB-A	— Circuit Breaker A Circuit	RUN R	— Run Relay
CB-B	— Circuit Breaker B Circuit	SGT	— Suction Gas Temperature
CB-FNA1	— Fan Circuit Breaker A Circuit	SHD R	— Shutdown Relay
CB-FNB1	— Fan Circuit Breaker B Circuit	SPT	— Suction Pressure Transducer
CC	— Contactor XL-C Circuit	SW	— Switch
CCN	— Carrier Comfort Network®	T	— Thermistor
CC-1M	— Contactor Main YD C Circuit	TB	— Terminal Block
CC-2M	— Contactor Delta YD C Circuit	TEMP	— Temperature
CC-S	— Contactor Wye YD C Circuit	TRAN	— Transformer
CH	— Channel	XL	— Across-the-line
CLR HR	— Cooler Heater Relay	Y-Delta	— Wye-Delta
CLR HTR	— Cooler/Heater		Terminal Block Connection
COMM	— Communication		Marked Terminal
COMP	— Compressor		Unmarked Terminal
CPM	— Compressor Protection Module		Unmarked Splice
CT	— Current Transformer		Factory Wiring
CWFS	— Chilled Water Flow Switch		Optional Wiring
CWP	— Chilled Water Pump		Indicates common potential. Does not represent wiring.
DGT	— Discharge Gas Thermistor		FIOP or Accessory
DPT	— Discharge Pressure Transducer		Wire Tag
ECEXV	— Economizer Electronic Expansion Valve		
ECT	— Economizer Temperature		
EMM	— Energy Management Module		
EPT	— Economizer Pressure Transducer		
EQUIP	— Equipment		
EXV	— Electronic Expansion Valve		
FC	— Fan Contactor		

NOTES

1. Factory wiring is in accordance with Underwriters Laboratories (UL) 1995 standards. Field modifications or additions must be in compliance with all applicable codes.
2. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
Incoming wire size range for units 080-120, all voltages is 4-500 kcmil.
Incoming wire size range for units 140-240, 200/230 v is 1/0-500 kcmil.
Incoming wire size range for units 140-240, 380, 460, 575 v is 4-500 kcmil.
Incoming wire size range for units 260-500, 380, 460, 575 v is 1/0-500 kcmil.
3. Terminals 9 and 10 of TB5 are for field external connections for remote on-off. The contacts must be rated for dry circuit application capable of handling a 24 vac load up to 50 mA.
4. Terminals 1 and 2 of TB5 are for external connections of chilled water pump interlock. The contacts must be rated for dry circuit application capable of handling a 24 vac load up to 50 mA.
5. Terminals 11 and 13 of TB5 are for control of chilled water pump 1 (PMP1) starter. Terminals 13 and 15 of TB5 are for control of chilled water pump 2 (PMP2) starter. The maximum load allowed for the chilled water pump relay is 5 va sealed, 10 va inrush at 24 v. Field power supply is not required. External pump control accessory required.
6. For control of chilled water pumps, a set of normally open contacts rated for dry circuit application must be supplied from field-supplied pump starter relay. Connect contacts to violet and pink wires in harness from main base board channel 18. Wires in harness are marked PMP1-13 and PMP1-14. External pump control accessory required.
7. Terminals 12 and 13 of TB5 are for an alarm relay. The maximum load allowed for the alarm relay is 10 va sealed, 25 va inrush at 24 v. Field power supply is not required.
8. Make appropriate connections to TB6 as shown for energy management board options. The contacts for occupancy override, demand limit and ice done options must be rated for dry circuit application capable of handling a 24 vac load up to 50 mA.
9. Terminal blocks, TB5 and TB6 are located in the display panel box for all units. Refer to certified dimensional drawing for each unit to get the exact location.
10. Refer to certified dimensional drawings for exact locations of the main power and control power entrance locations.
11. Power for control circuit should be supplied from a separate source (except 380 v units) through a field supplied disconnect with 30 amp maximum protection for 115 volt control circuits and 15 amp maximum protection for 230 volt control circuit. Connect control circuit power to terminals 1 and 2 of TB4. Control circuit conductors for all units must be copper only. Control circuit power is factory wired for 380 v units.

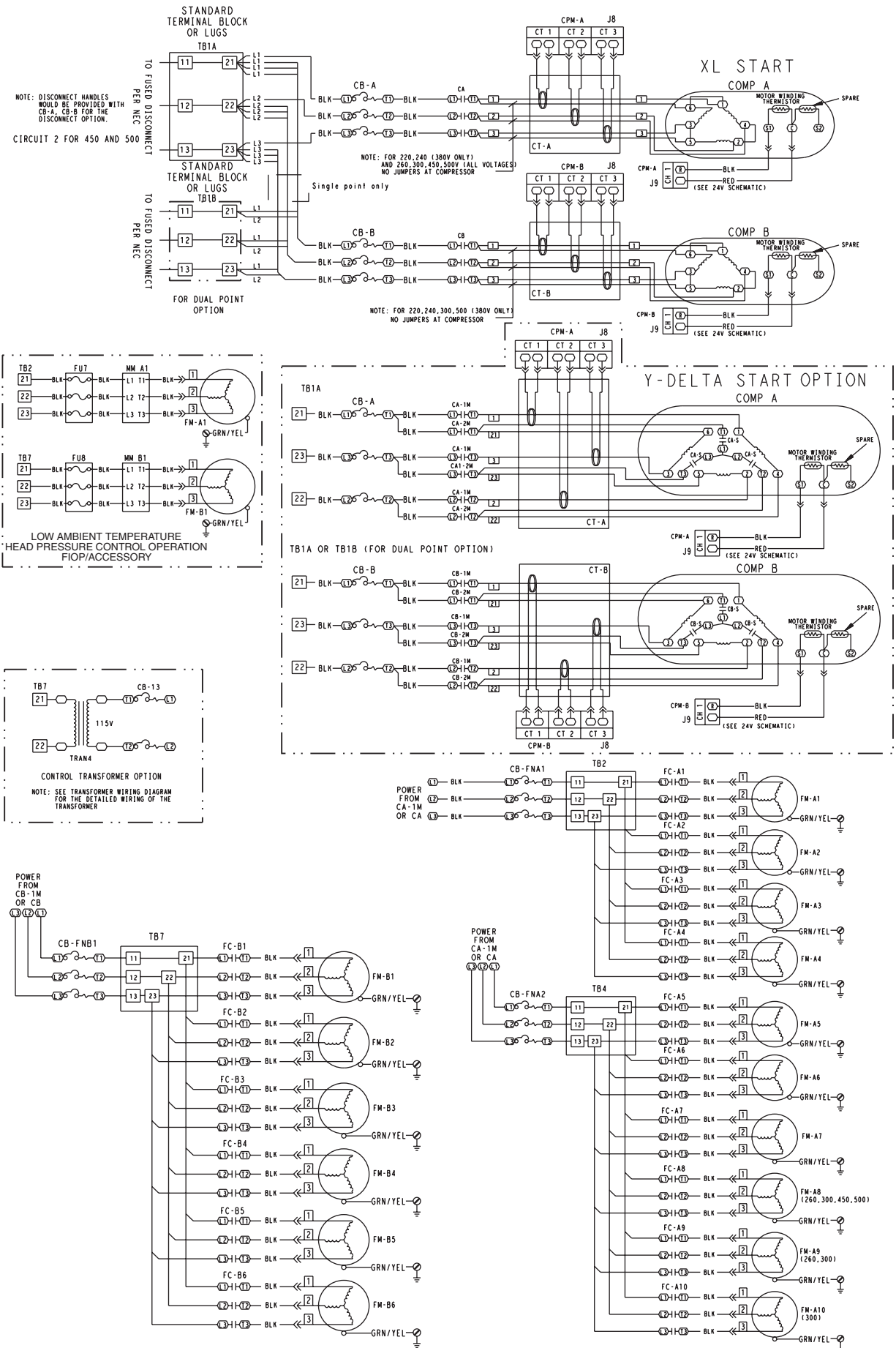
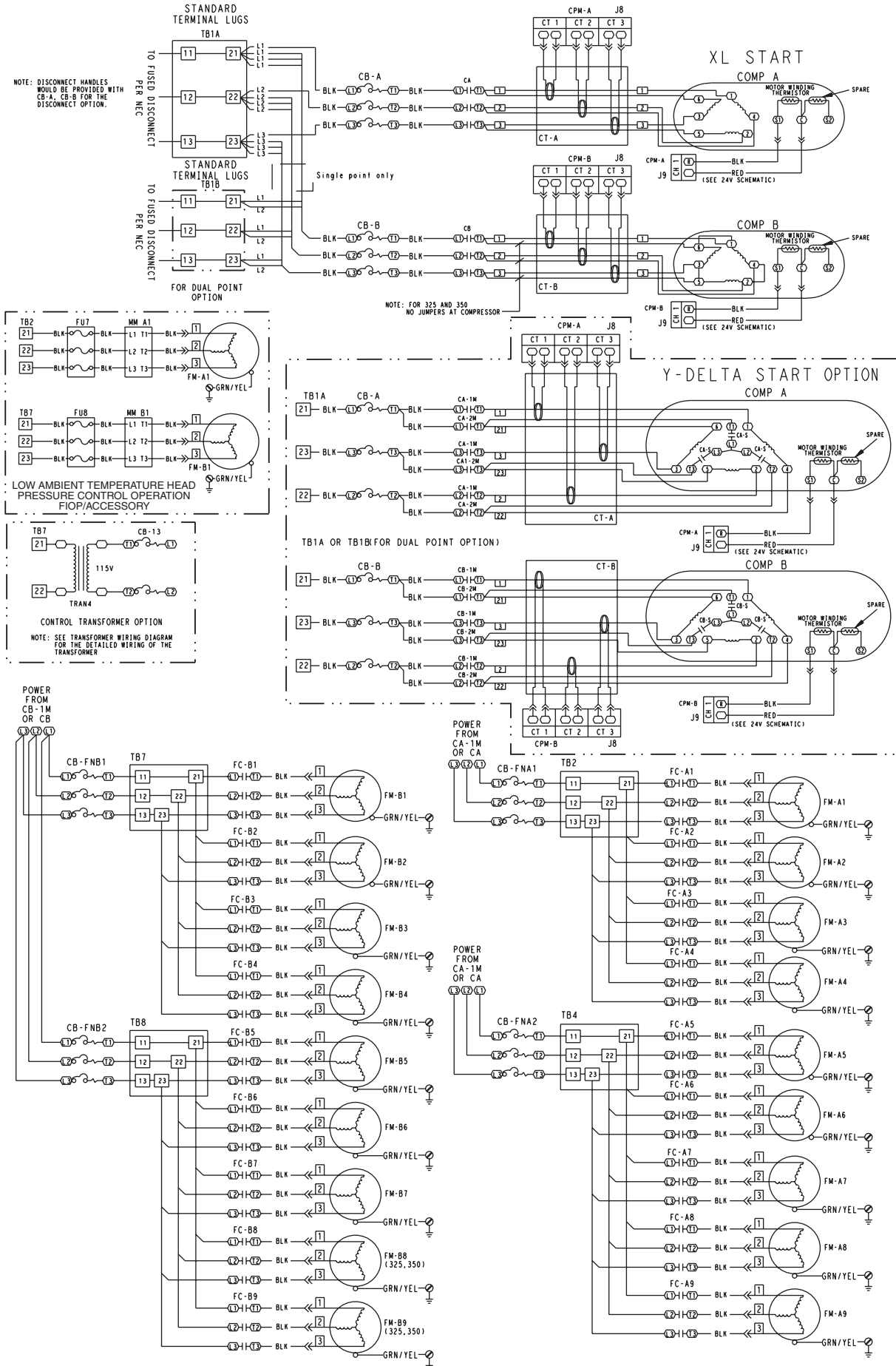


Fig. 3 — Power Schematic, 30XA220, 240 (380, 460, 575 v); 30XA260, 300, 450, 500 (All Voltages)



NOTE: DISCONNECT HANDLE
WOULD BE PROVIDED WITH
CB-C FOR DISCONNECT OPTION.
CIRCUIT 1

TO FUSED DISCONNECT
PER NEC

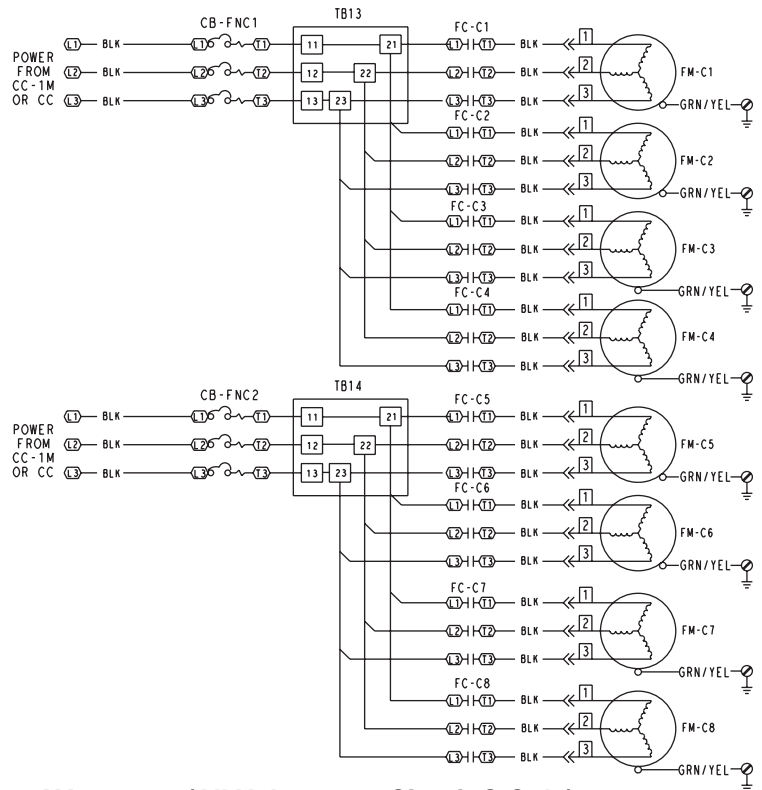
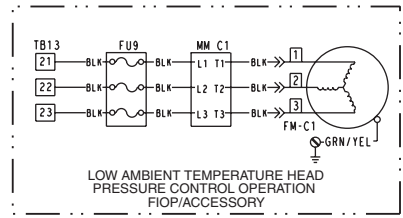
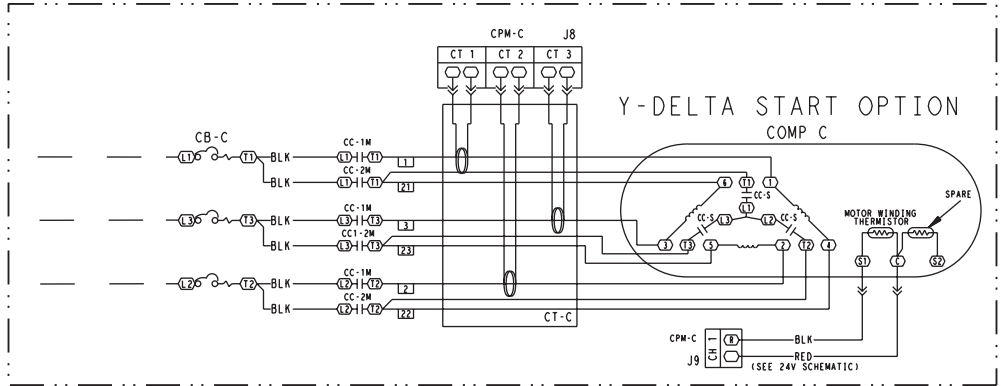
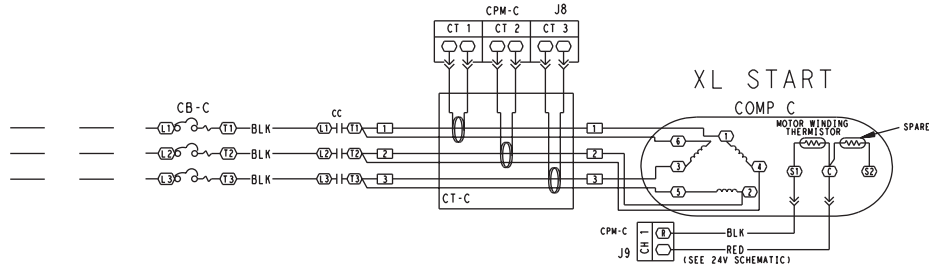


Fig. 5 — Power Schematic, 30XA400-500 (All Voltages — Circuit C Only)

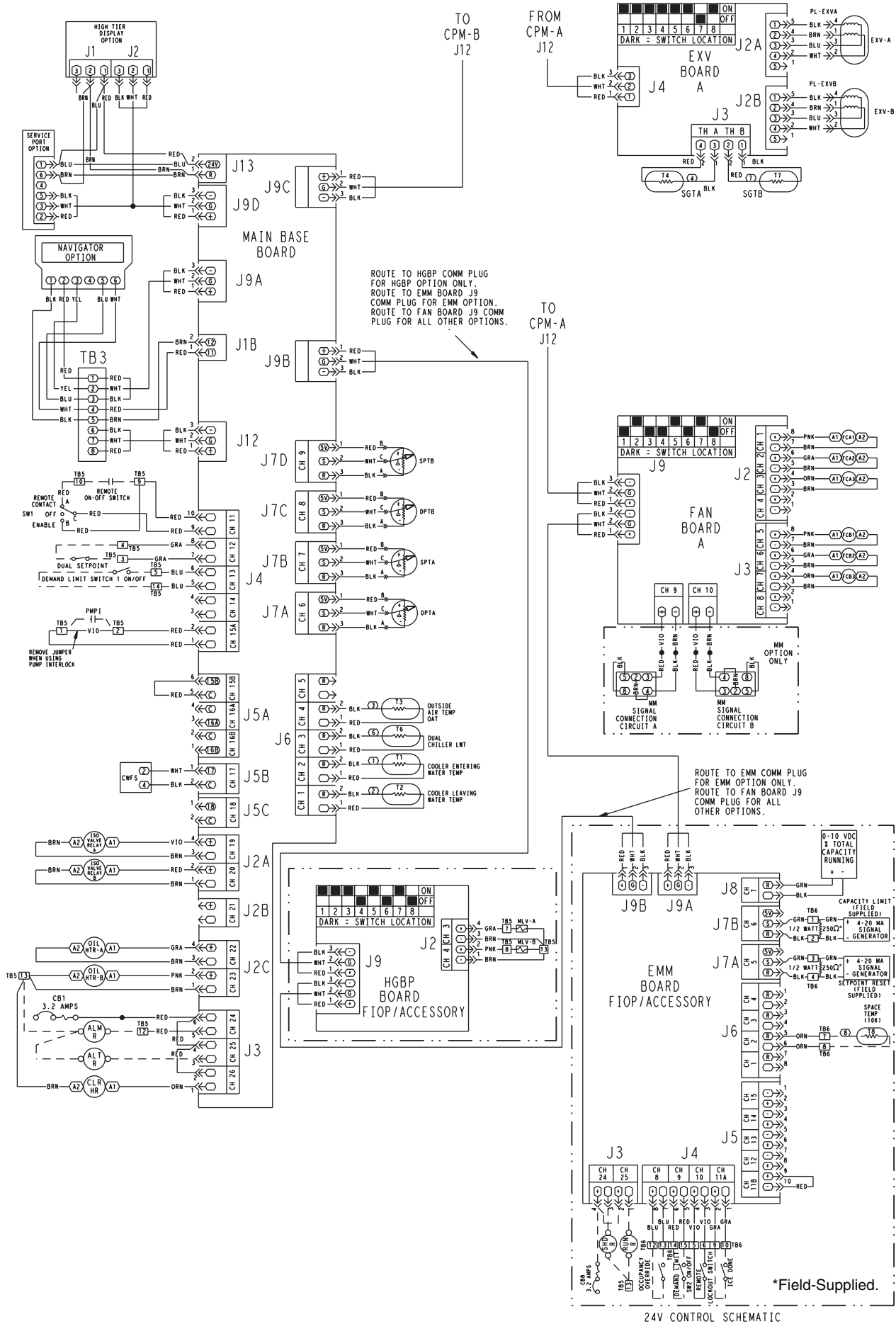


Fig. 6 — Board Control Schematic, 30XA080 (All Voltages)

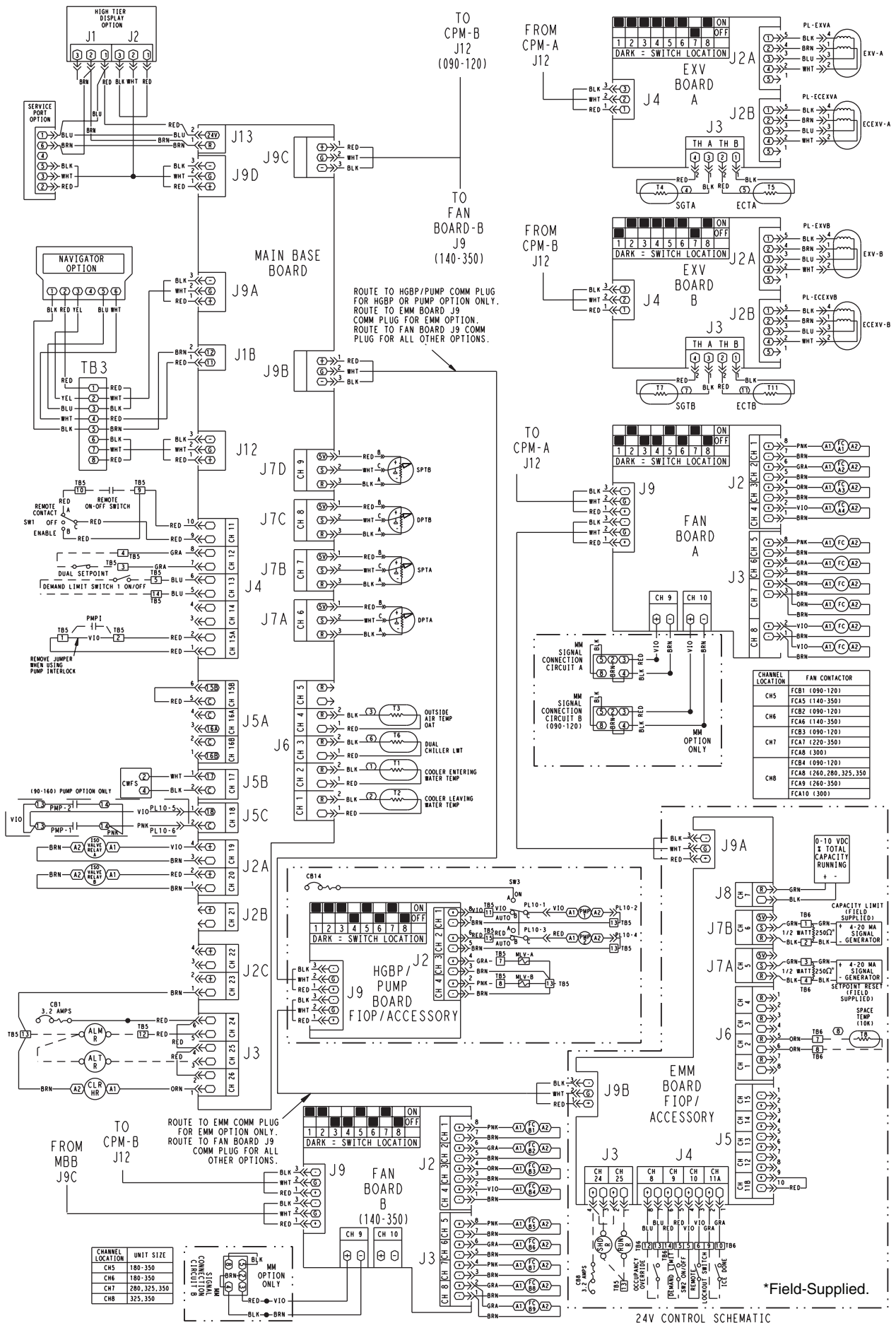


Fig. 7 — Board Control Schematic, 30XA090-350 (All Voltages)

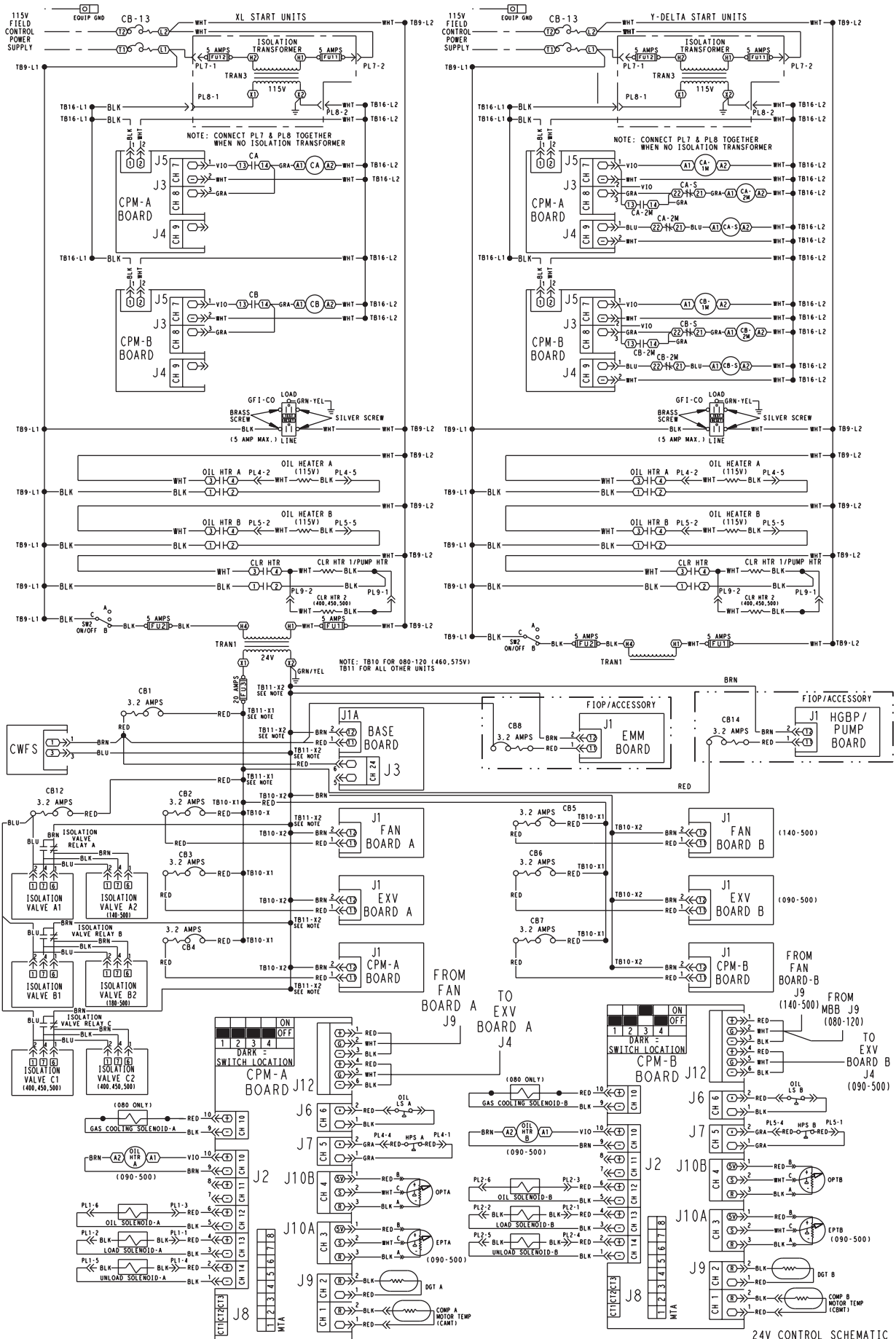


Fig. 9 — Unit Control Schematic, 30XA80-500 (All Voltages)

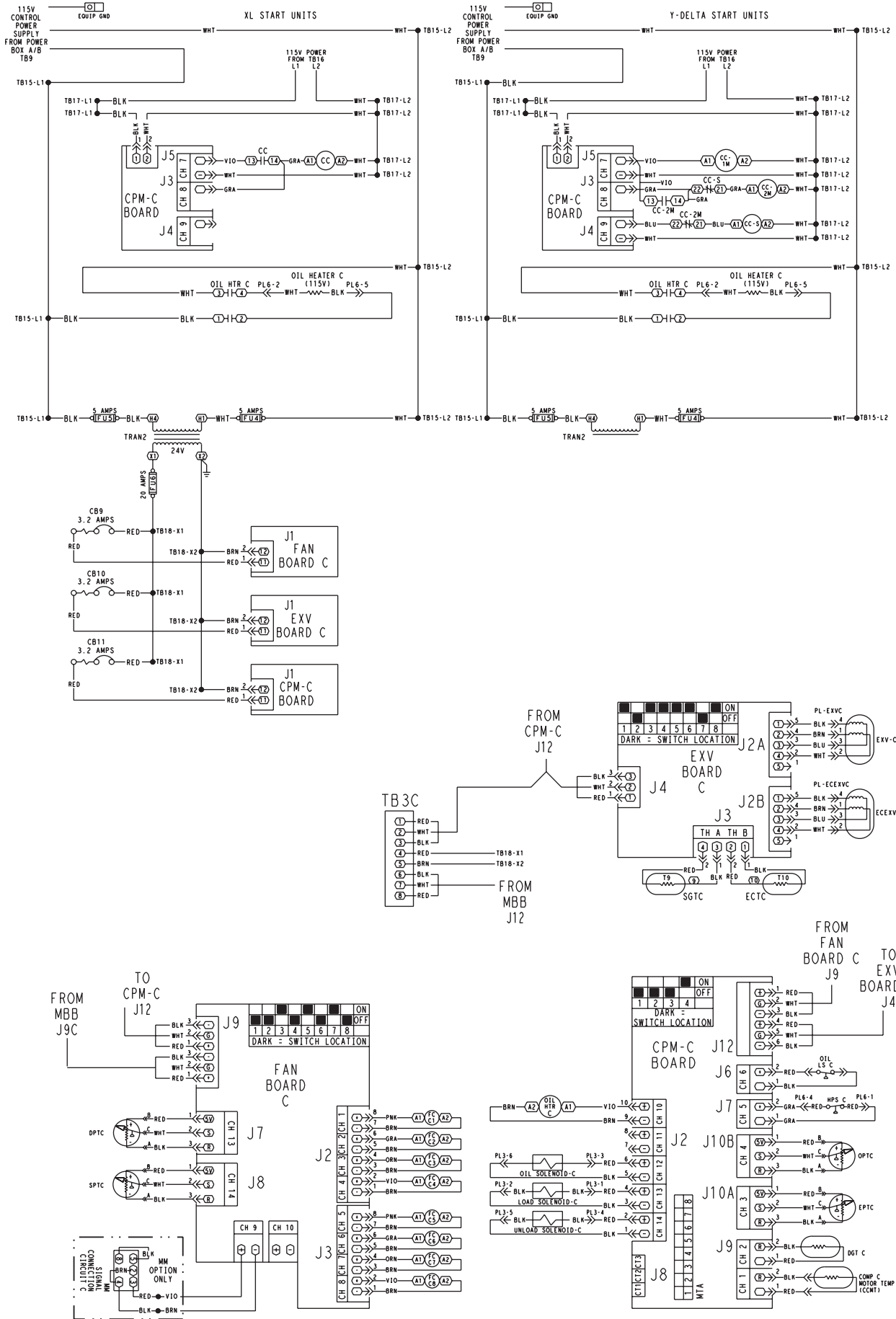


Fig. 10 — Unit Control Schematic, 30XA400-500 (All Voltages — Circuit C Only)

24V CONTROL SCHEMATIC

A/B POWER BOX 30XA080-120 FOR 200, 230 V

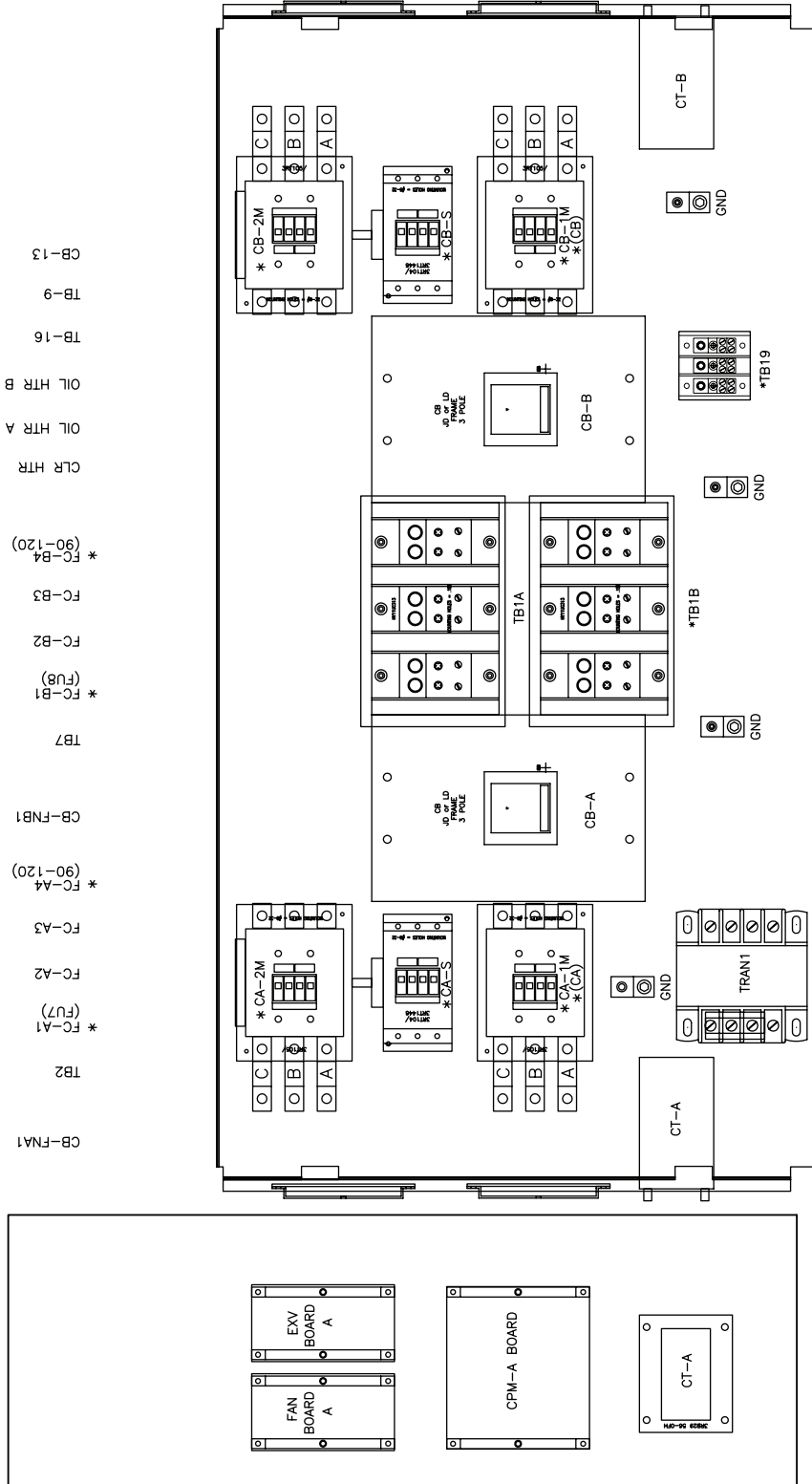
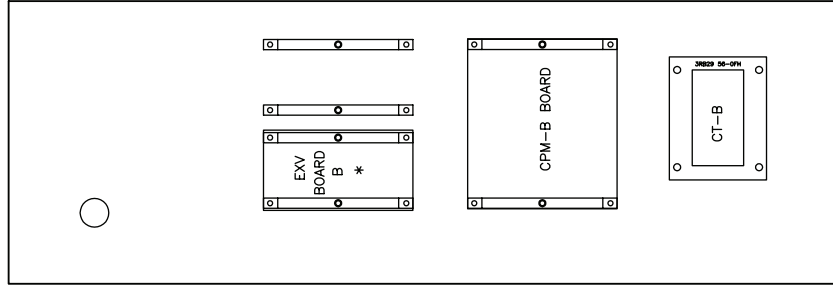
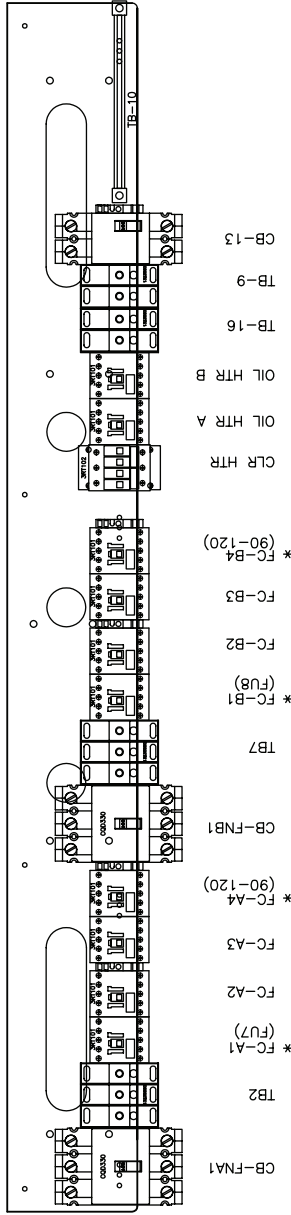


Fig. 11 — Component Arrangement, 30XA080-120 (200, 230 v)

*Fuse block replaces fan connector on units with low ambient temperature head pressure control option installed.

DISPLAY CONTROL BOX 30XA080-500 FOR ALL VOLTAGES

TOUCH PILOT
DISPLAY

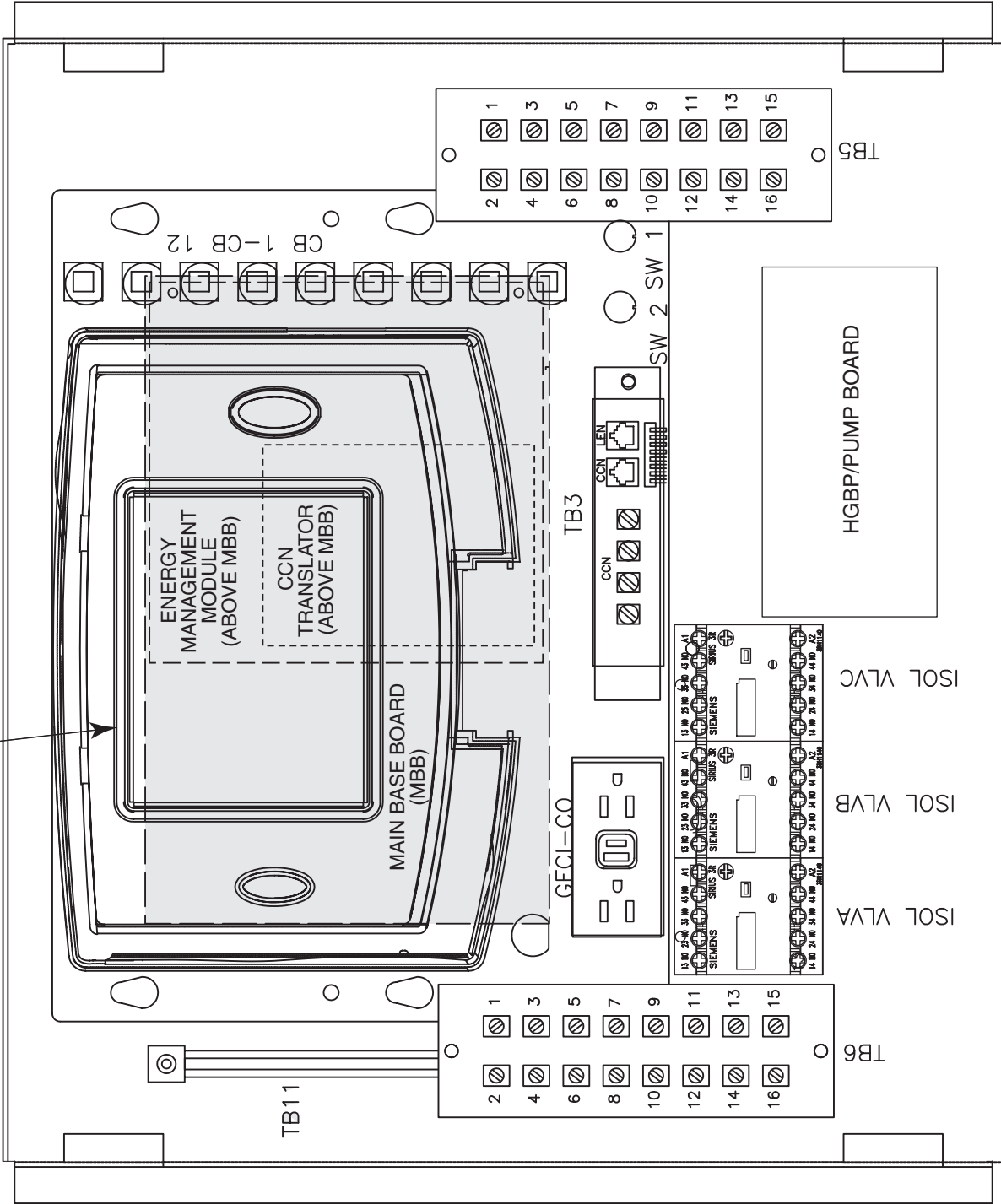


Fig. 12 — Component Arrangement, 30XA080-500 (All Voltages)

A/B POWER BOX DISPLAY CONTROL BOX INCLUDED 30XA080-120 FOR 460 V

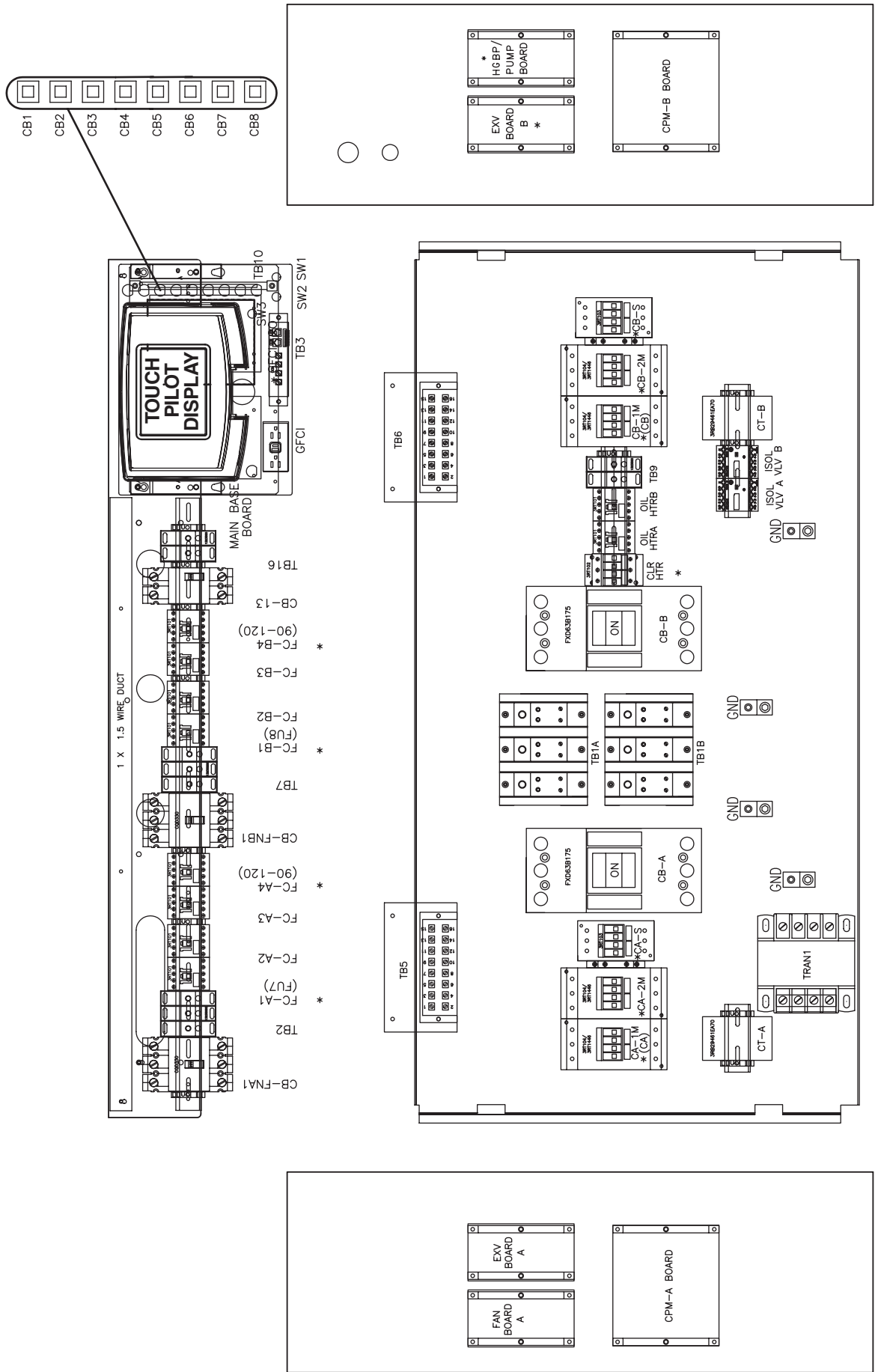


Fig. 13 — Component Arrangement, 30XA080-120 (460 v)

A/B BREAKER BOX 30XA140-240 FOR ALL VOLTAGES

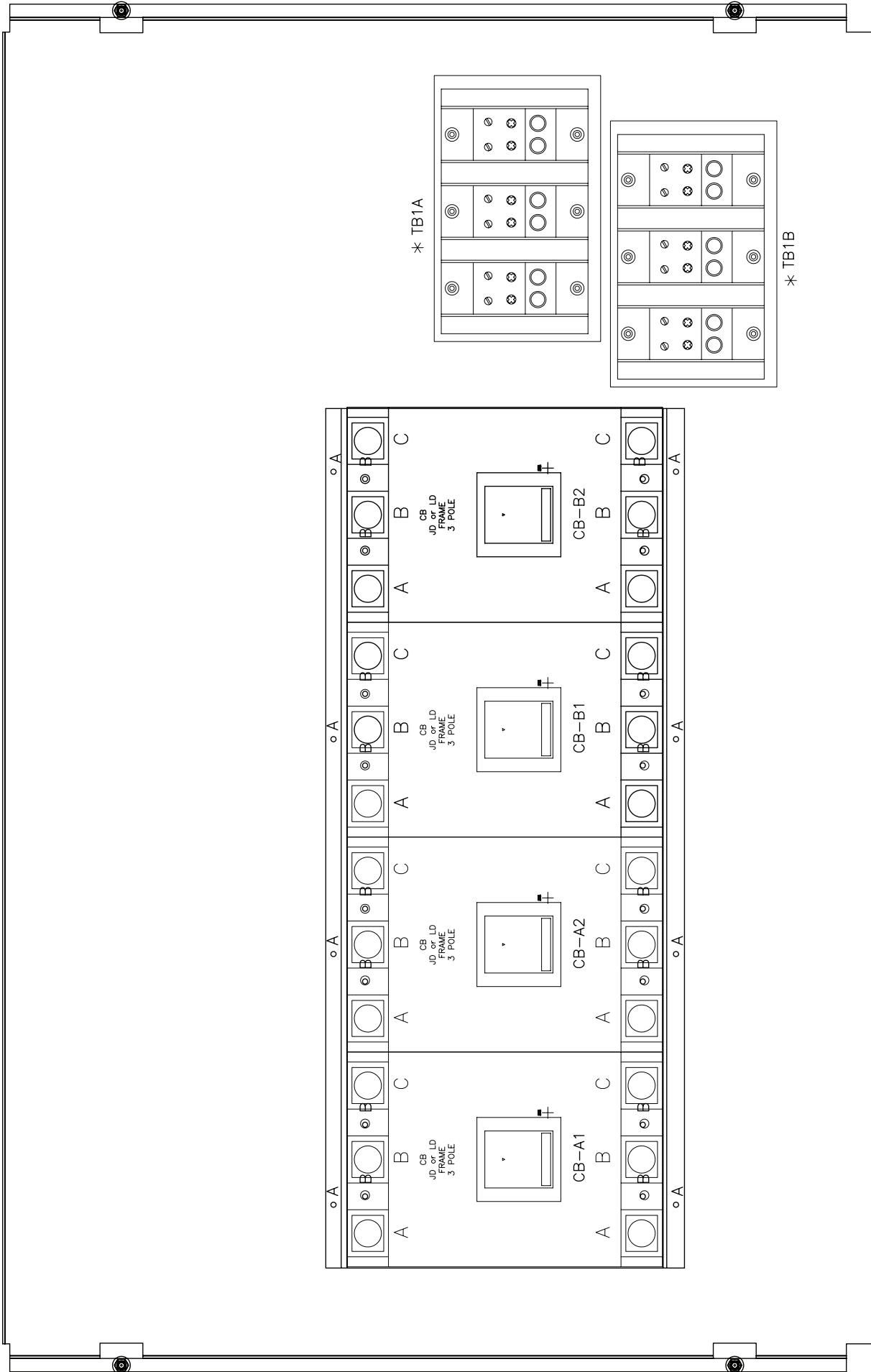


Fig. 14 — Component Arrangement, 30XA140-240 (All Voltages)

A/B POWER BOX 30XA140-500 FOR ALL VOLTAGES

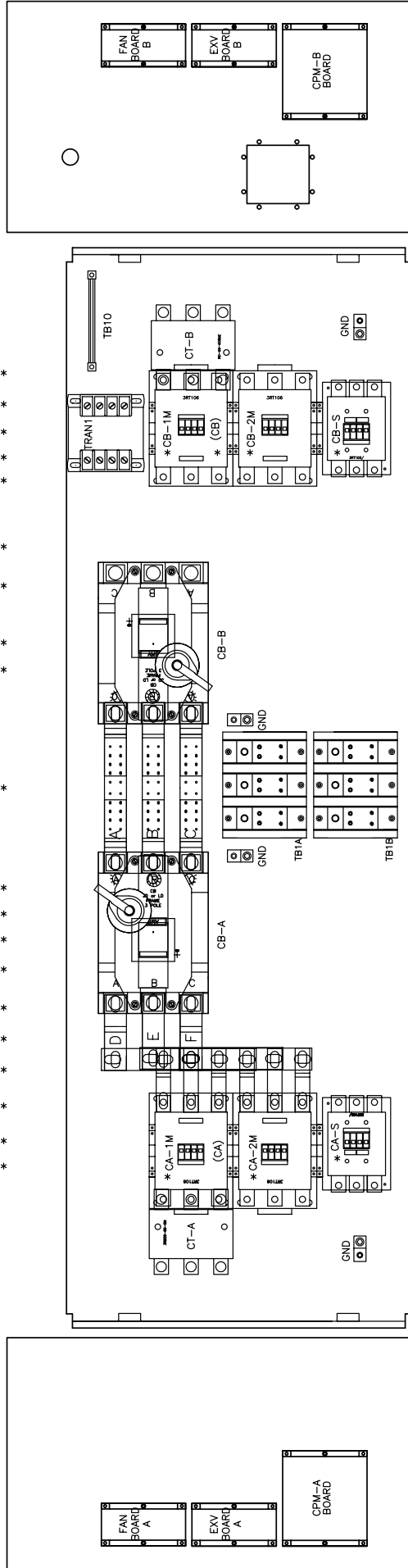
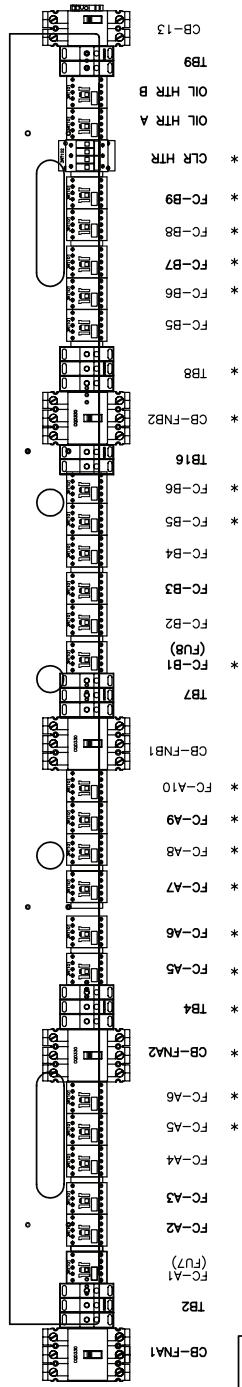


Fig. 15 — Component Arrangement, 30XA140-500 (All Voltages)

