



Wiring Diagrams

DIAGRAM INDEX

POWER SCHEMATICS			
Unit 30RA	Voltage	Figure Number	Label Diagram No. 30RA
010-018	All	1	500086
022-030	All	2	500475
032-040	All	3	500274
042-055	All	4	500781

CONTROL SCHEMATICS			
Unit 30RA	Voltage	Figure Number	Label Diagram No. 30RA
010-018	All	5	500087
022-030	All	6	500476
032-040	All	7	500275
042-055	All	8	500782

COMPONENT ARRANGEMENTS			
Unit 30RA	Voltage	Figure Number	Label Diagram No. 30RA
010-018	All	9	500087
022-030	All	10	500476
032-040	All	11	500275
042-055	All	12	500782

OPTION/ACCESSORY WIRING DIAGRAMS				
Unit 30RA	Option/Accessory	Voltage	Figure Number	Label Diagram No. 30RA
010-055	Storage Tank	All	13	501331

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

LEGEND

A	— Alarm	NEC	— National Electrical Code
ALMR	— Alarm Relay	OAT	— Outdoor-Air Thermistor
BR	— Boiler Relay	RLA	— Rated Load Amps
C	— Contactor, Compressor	SPT	— Suction Pressure Transducer
CB	— Circuit Breaker	SW	— Switch
CHC	— Cooler Heater Control	T	— Thermistor
COMP	— Compressor	TB	— Terminal Block
CWFS	— Chilled Water Flow Switch	TRAN	— Transformer
CWP	— Chilled Water Pump	TNKR	— Storage Tank Relay
DPST	— Double-Pole, Single-Throw		Terminal Block Connection
DPT	— Discharge Pressure Transducer		Marked Terminal
EMM	— Energy Management Module		Unmarked Terminal
FC	— Fan Contactor		Unmarked Splice
FIOP	— Factory-Installed Option		Marked Wire
FLA	— Full Load Amps		Marked Splice
FM	— Fan Motor		Factory Wiring
FU	— Fuse		Field Control Wiring
GFI-CO	— Ground Fault Interrupter-Convenience Outlet		Field Power Wiring
GND	— Ground		Indicates common potential. (Does not represent wiring.)
ICP	— Inrush Current Protector		Accessories or Options
IP	— Internal Protector		
HS	— High Speed		
HR	— Heat Relay		
HPS	— High-Pressure Switch		
LS	— Low Speed		
LWT	— Leaving Water Temperature Sensor		
MBB	— Main Base Board		
MLV	— Minimum Load Valve		
MM	— Motormaster® Controller		
MMPT	— Motormaster Pressure Transducer		
MS	— Manual Starter		

NOTES:

1. Factory wiring is in accordance with the National Electrical Codes. Any field modifications or additions must be in compliance with all applicable codes.
2. Use 75° C min wire for field power supply.
3. All compressor manual starters "Must Trip Amps" are equal to or less than 156% RLA. All other manual starters "Must Trip Amps" are equal to or less than 140% FLA.
4. All field interlock contacts must have a minimum rating of 2 amps at 24 vac sealed. See field interlock wiring.
5. Compressor and fan motors are thermally protected. Three-phase motors protected against primary single-phase conditions.
6. Interchange fan motor connections 1 and 3 to ensure counterclockwise fan rotation.
7. Terminals 9 and 10 of TB5 are for field connection of remote on-off. The contact must be rated for dry circuit application capable of handling a 5 vdc 1 mA to 20 mA load.
8. Compressors on models 015 (50 Hz) and 018 are protected by internal line break devices not thermostats.
9. Alarm relay must be installed for heating/boiler relay operation. DPST relay must be used for heat relay.

UNIT POWER DISCONNECT OPTION	STANDARD UNIT ALL MODELS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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79	79
80	80
81	81
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83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100



30RA022-030 AQUA SNAP

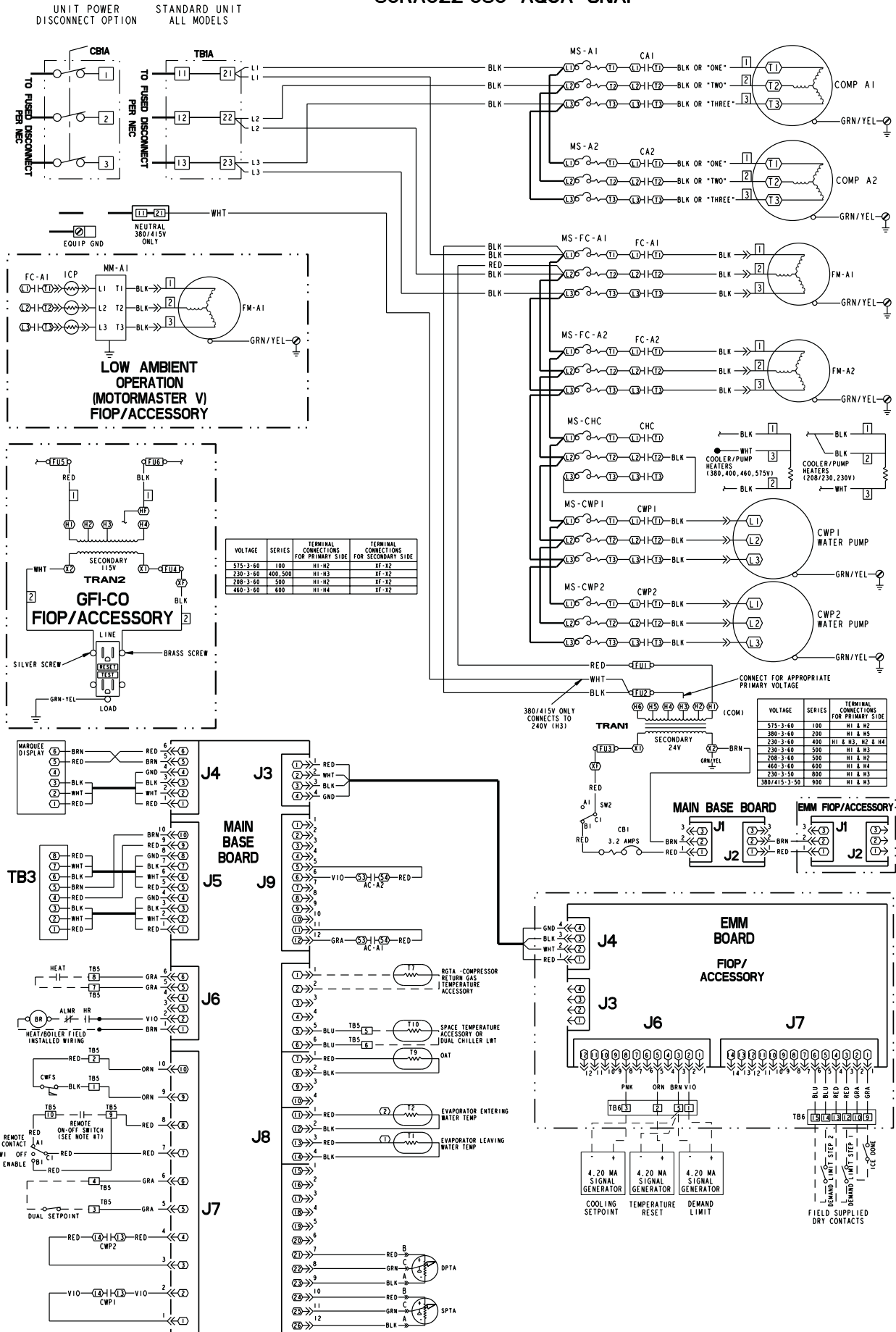


Fig. 2 — Power Schematic, 30RA022-030

30RA032-040 AQUA SNAP

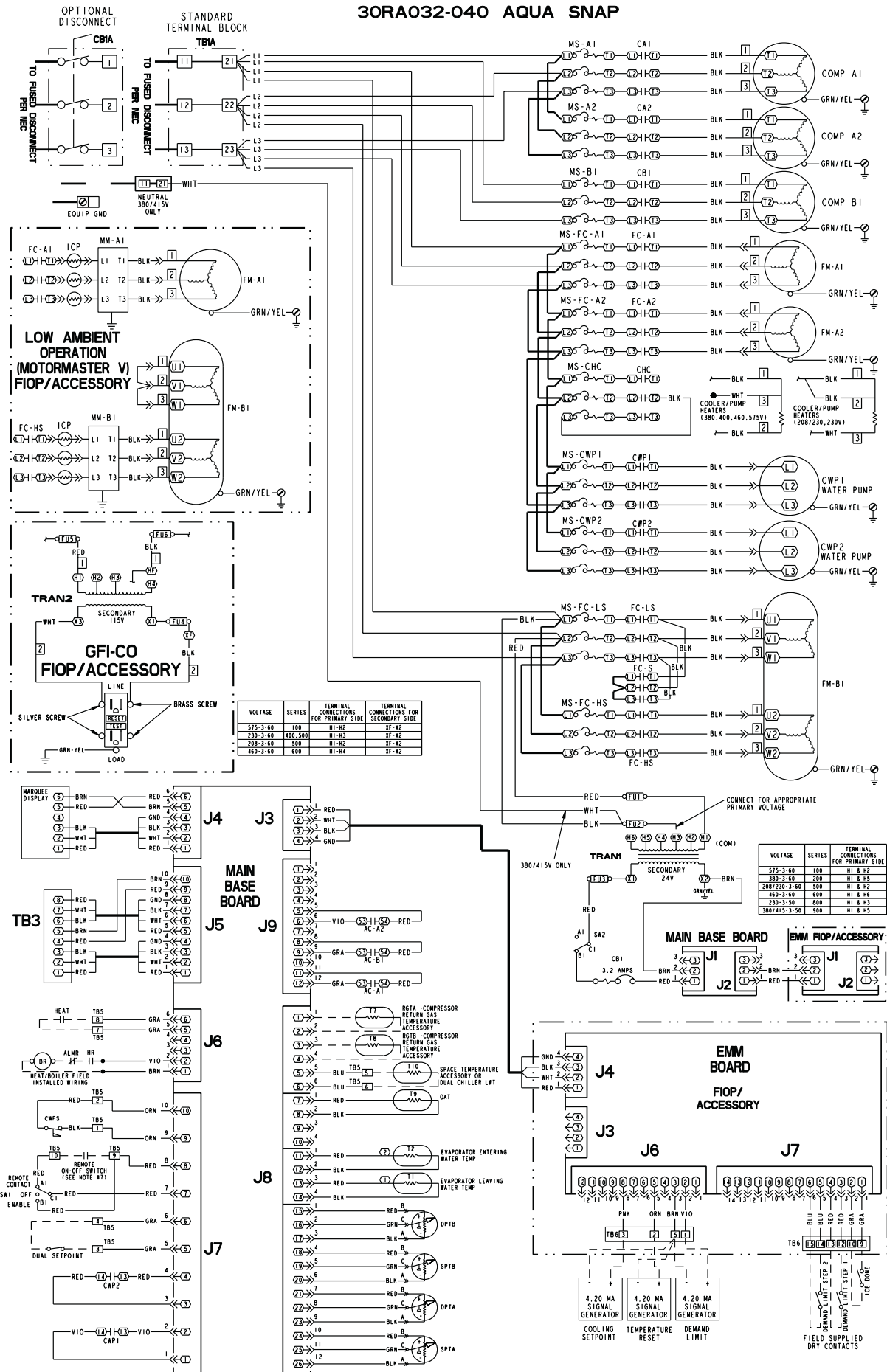


Fig. 3 — Power Schematic, 30RA032-040

30RA042-055 AQUA SNAP

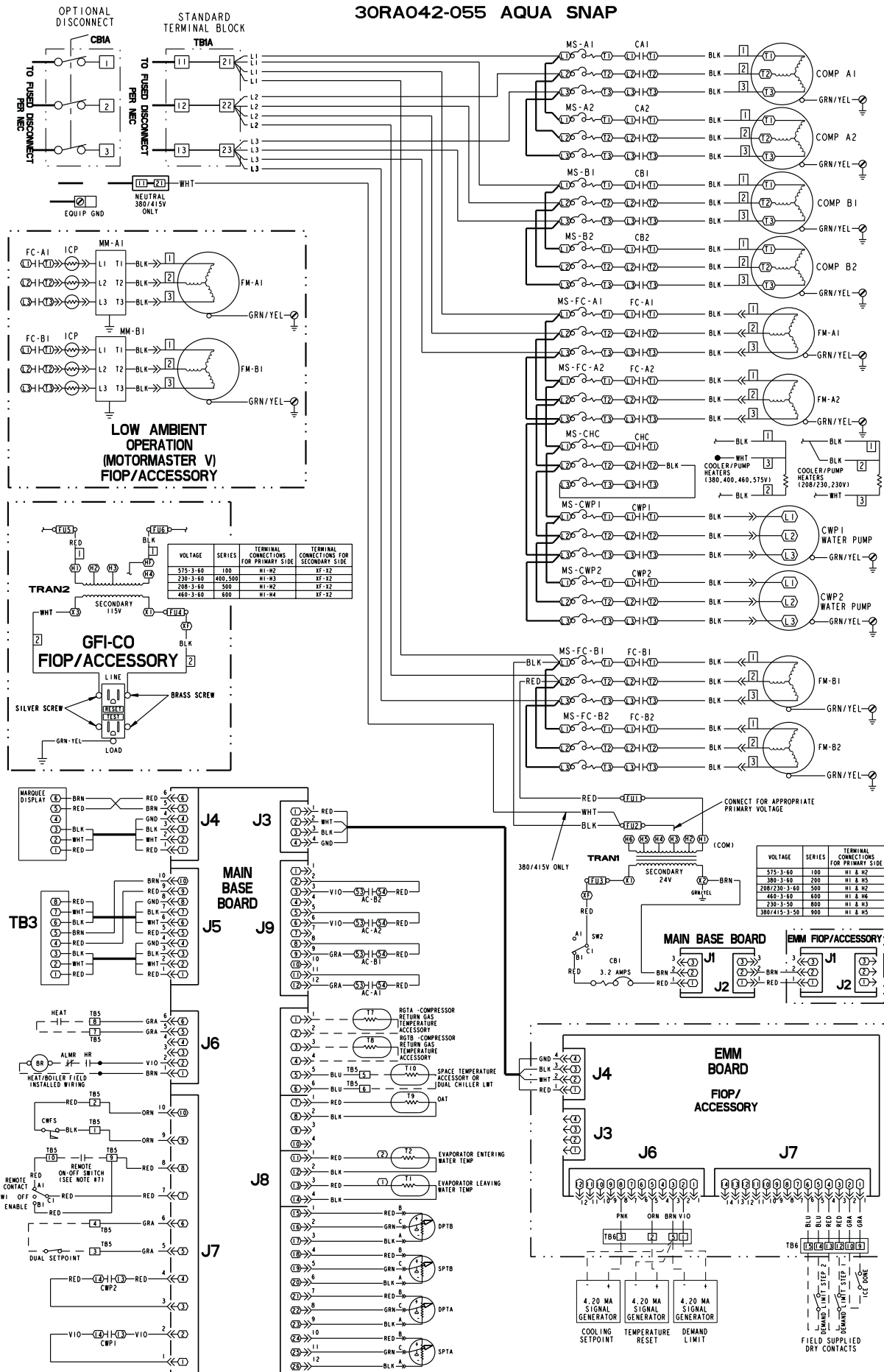


Fig. 4 — Power Schematic, 30RA042-055

AQUA-SNAP LOW VOLTAGE CONTROL SCHEMATIC (010-018)

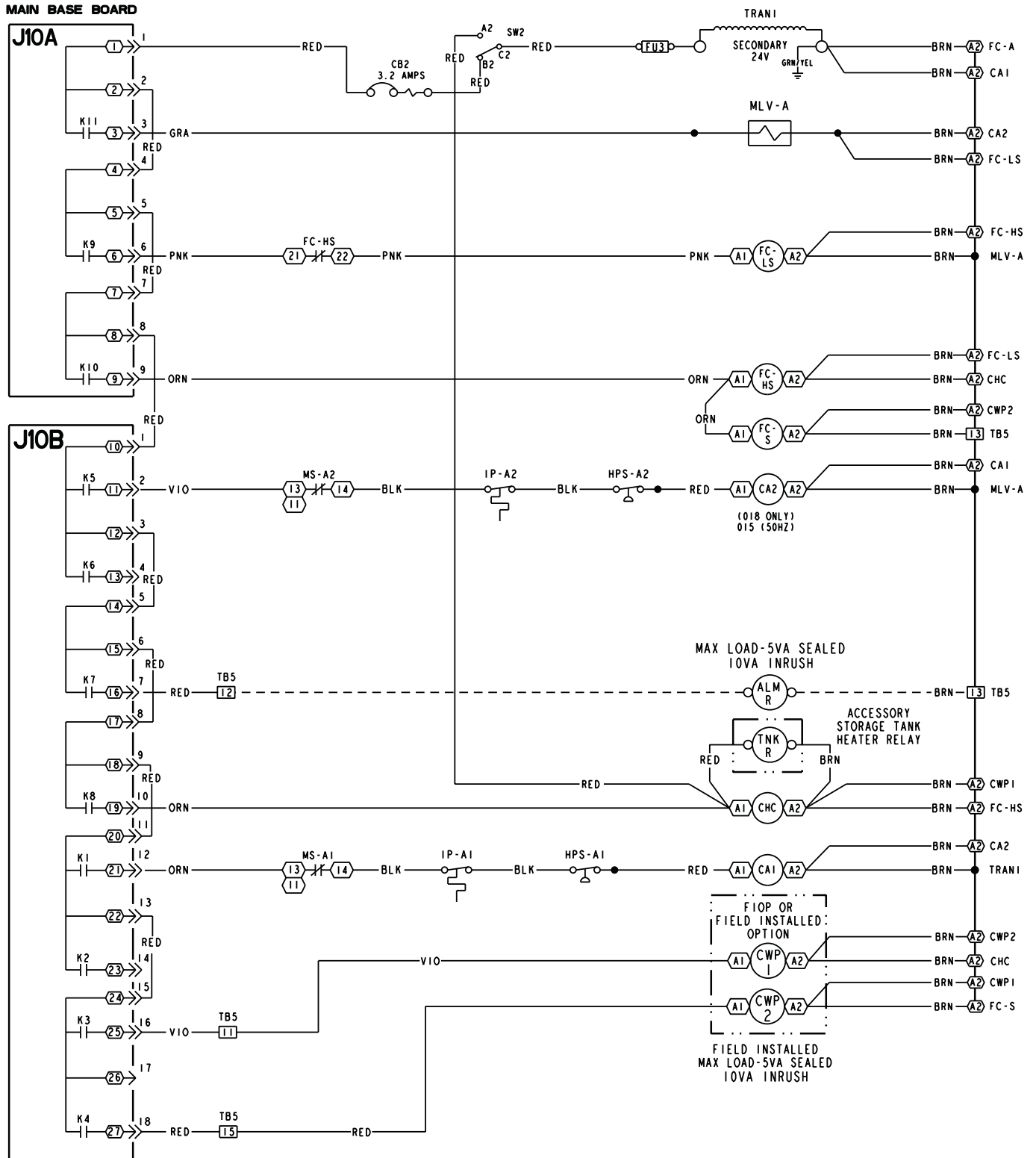


Fig. 5 — Control Schematic, 30RA010-018

AQUA-SNAP LOW VOLTAGE CONTROL SCHEMATIC (022-030)

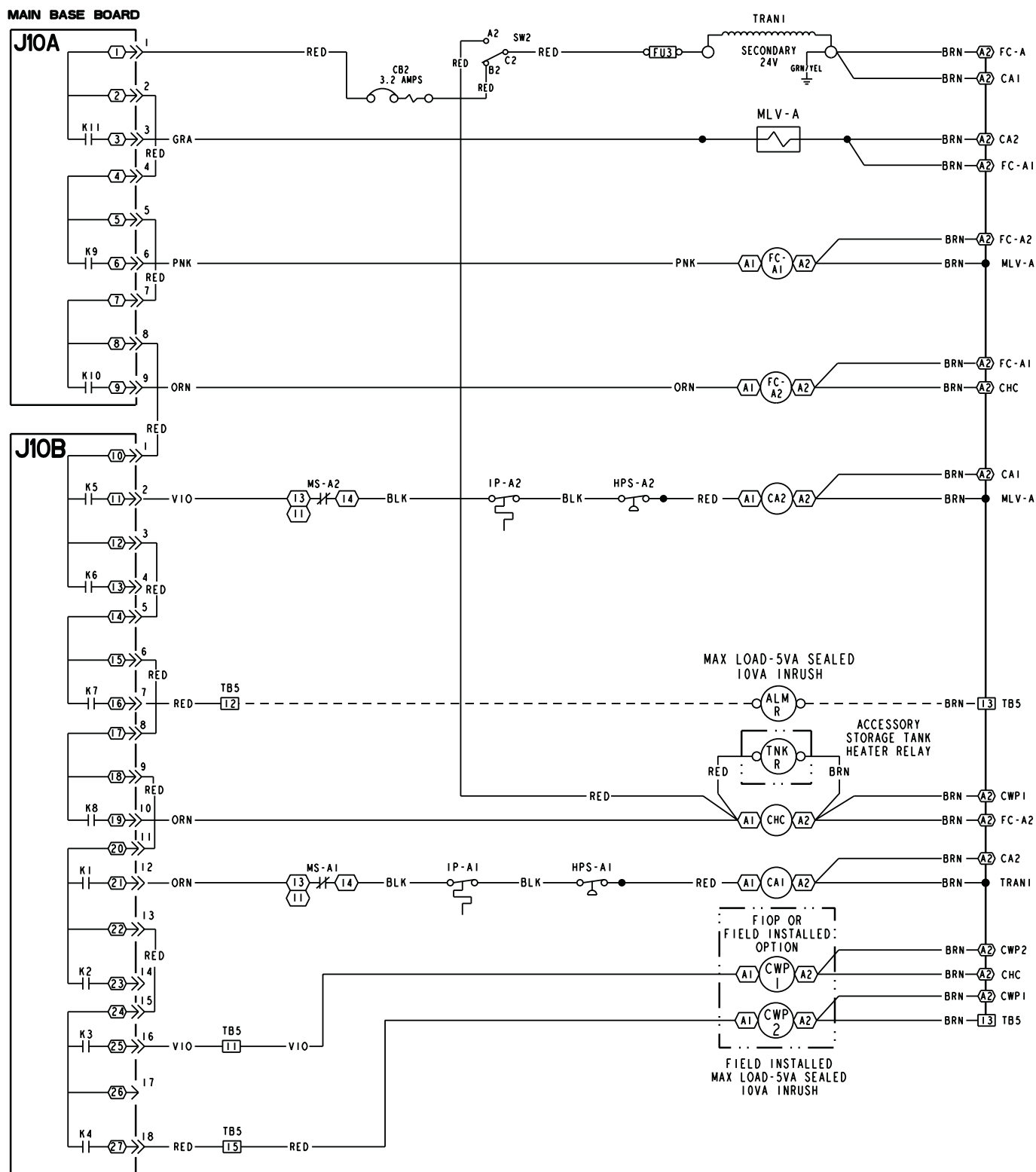


Fig. 6 — Control Schematic, 30RA022-030

AQUA-SNAP LOW VOLTAGE CONTROL SCHEMATIC (032-040)

MAIN BASE BOARD

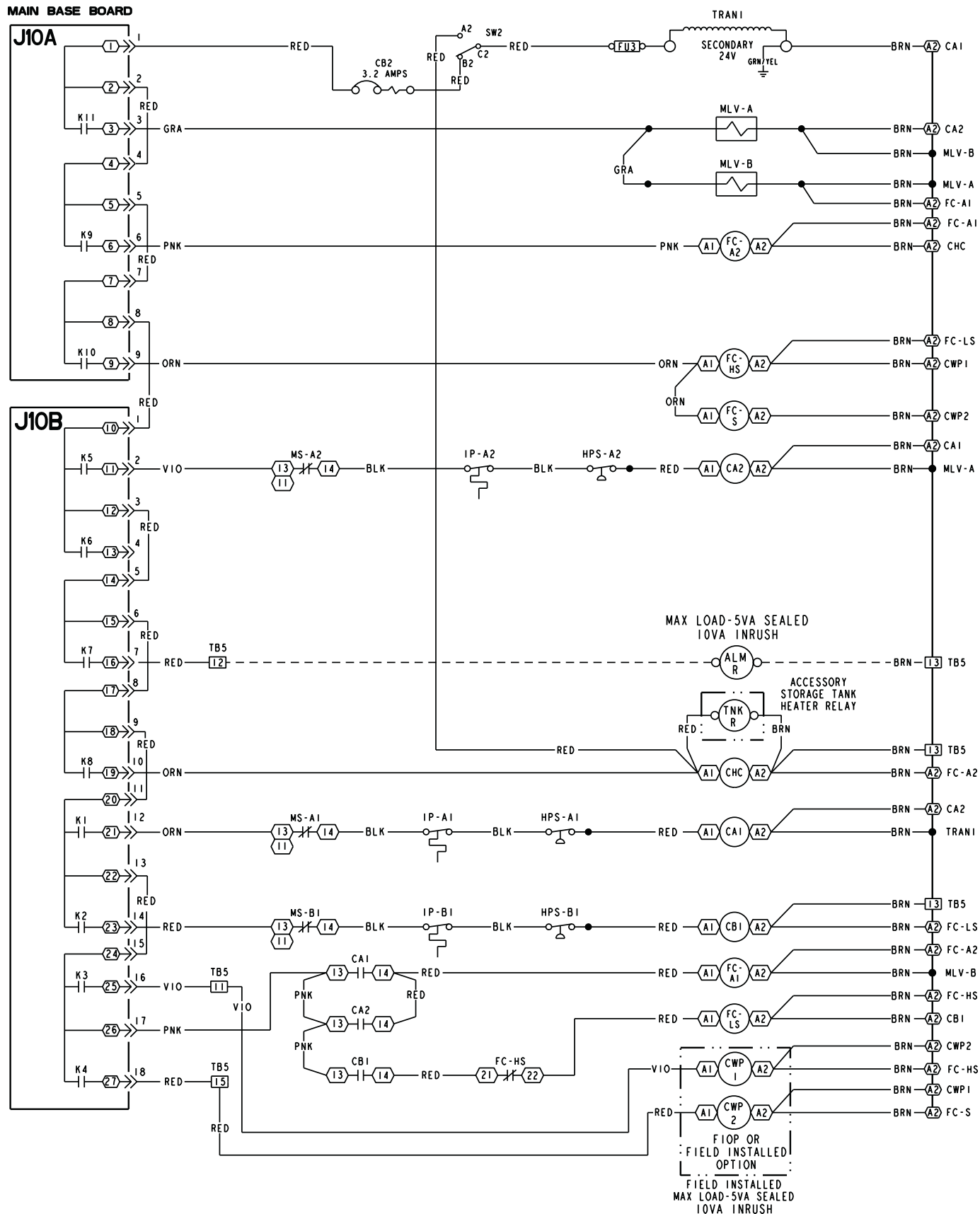


Fig. 7 — Control Schematic, 30RA032-040

AQUA-SNAP LOW VOLTAGE CONTROL SCHEMATIC (042-055)

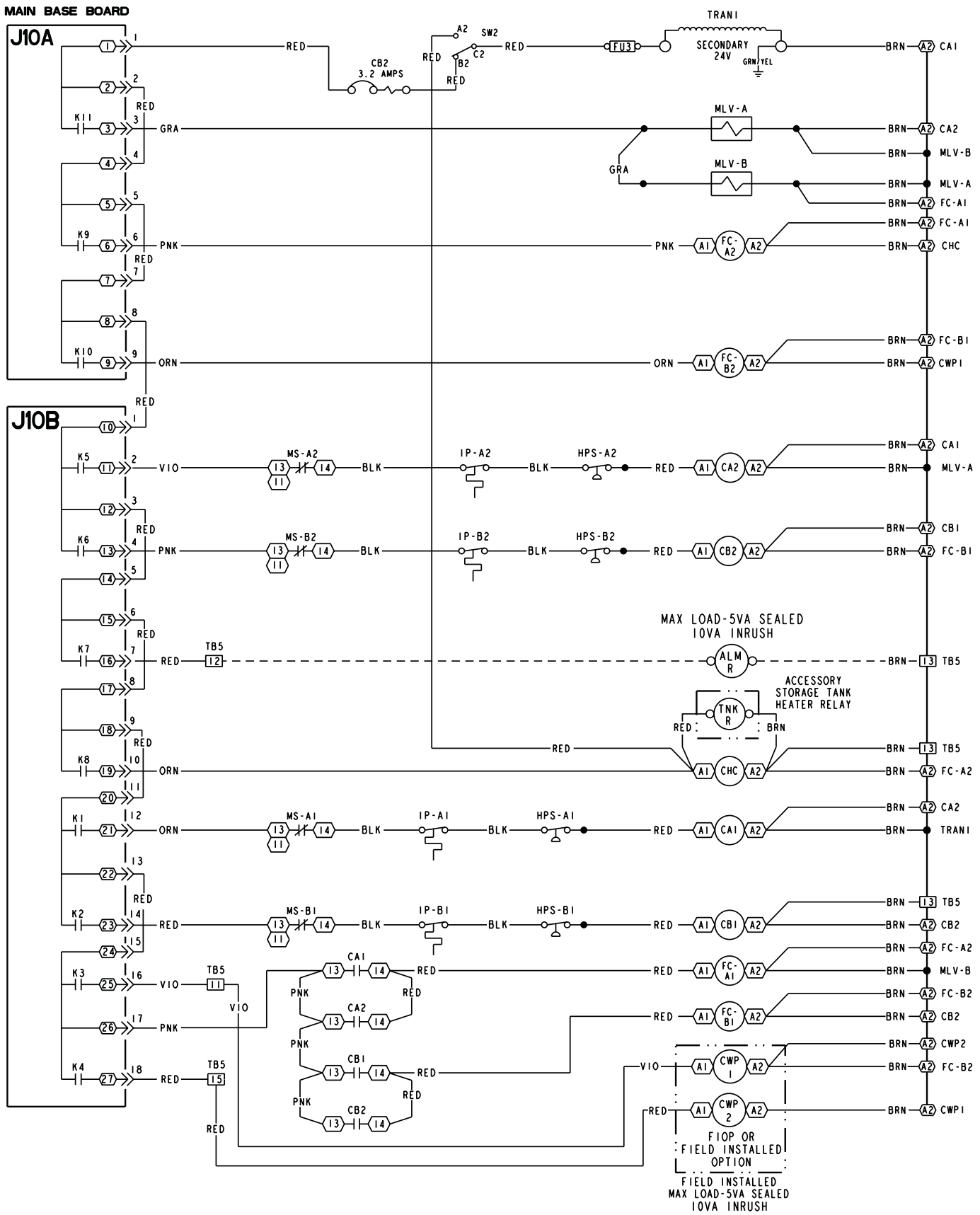


Fig. 8 — Control Schematic, 30RA042-055

LOW AMBIENT OPERATION (MOTORMASTER V) FIOP/ACCESSORY		
UNIT VOLTAGE	CONFIGURATION JUMPER LOCATION	CONFIGURATION JUMPER COMMON LOCATION
575-3-60	I	2
380-3-60	I3A	
230-3-60	I	
208-3-60	I3A	
460-3-60	I	
230-3-50	I3B	
380/415-3-50	I3C	

FUSE NUMBER	UNIT VOLTAGE	TRANSFORMER SIZE	REPLACE WITH
FU1 & FU2	380-3-60, 460-3-60, 575-3-60	100VA	FNO-R-1/2
	208/230-3-60, 230-3-50, 380/415-3-50		FNO-R-1 1/4
FU3 (24V)	380-3-60, 460-3-60, 575-3-60	100VA	FNM-6
	208/230-3-60, 230-3-50, 380/415-3-50		
FU4 (115V)	460-3-60, 575-3-60	500VA	FNM-6
	208/230-3-60, 230-3-60		
FU5 & FU6	460-3-60, 575-3-60	500VA	FNO-R-2 1/2
	208/230-3-60, 230-3-60		FNO-R-3 1/2

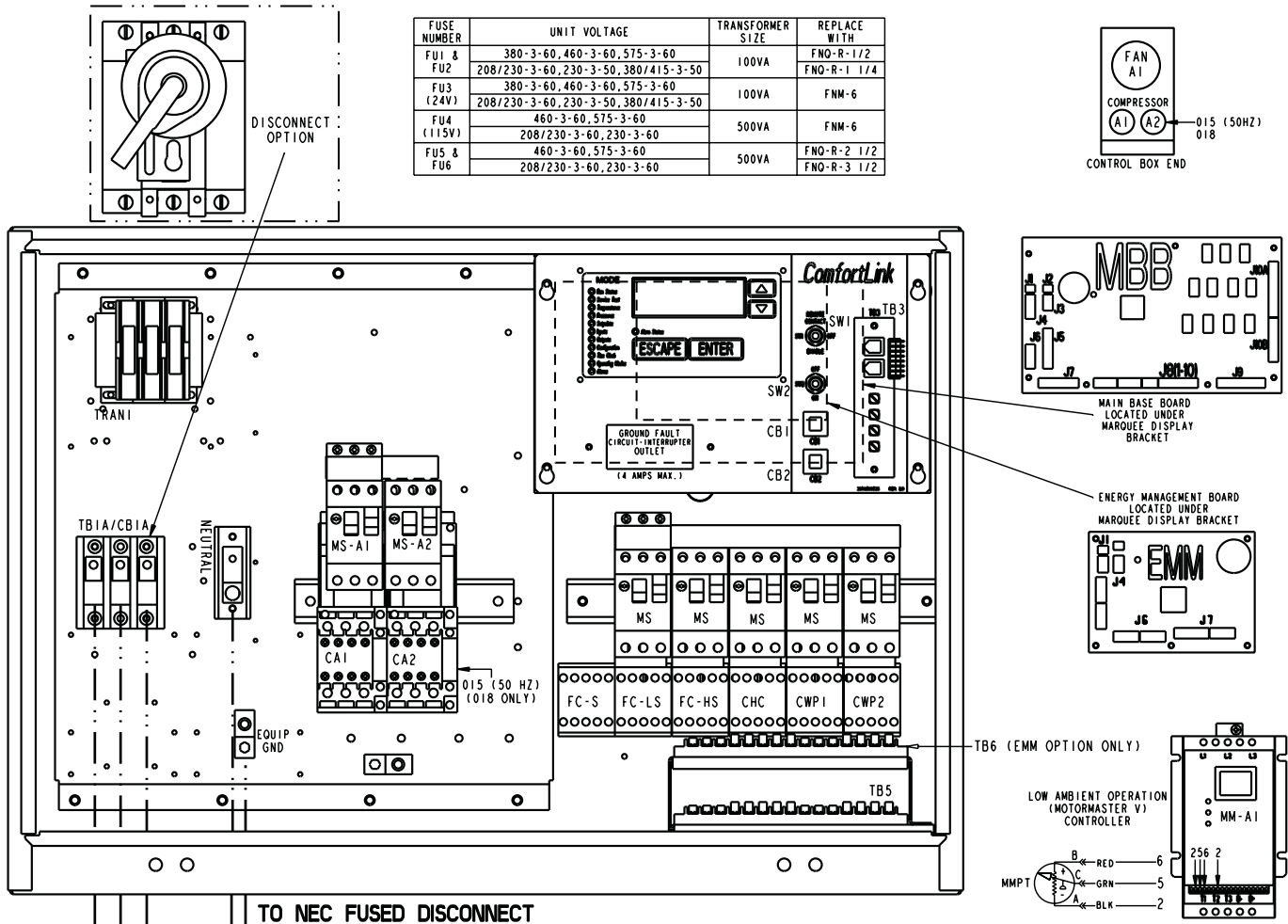
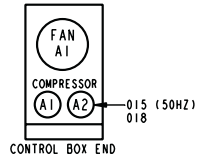
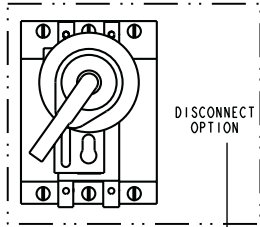


Fig. 9 — Component Arrangement, 30RA010-018

LOW AMBIENT OPERATION (MOTORMASTER V) FIOP/ACCESSORY		
UNIT VOLTAGE	CONFIGURATION JUMPER LOCATION	CONFIGURATION JUMPER COMMON LOCATION
575-3-60	I	2
380-3-60	I3A	
230-3-60	I	
208-3-60	I3A	
460-3-60	I	
230-3-50	I3B	
380/415-3-50	I3C	



FUSE NUMBER	UNIT VOLTAGE	TRANSFORMER SIZE	REPLACE WITH
FU1 & FU2	380-3-60, 460-3-60, 575-3-60	100VA	FNO-R-1/2
	208/230-3-60, 230-3-50, 380/415-3-50		FNO-R-1 1/4
FU3 (24V)	380-3-60, 460-3-60, 575-3-60	100VA	FNM-6
	208/230-3-60, 230-3-50, 380/415-3-50		
FU4 (115V)	460-3-60, 575-3-60	500VA	FNM-6
	208/230-3-60, 230-3-60		
FU5 & FU6	460-3-60, 575-3-60	500VA	FNO-R-2 1/2
	208/230-3-60, 230-3-60		FNO-R-3 1/2

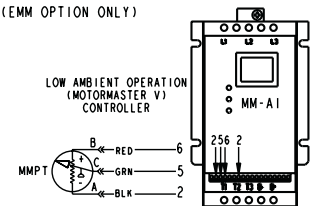
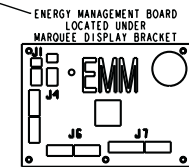
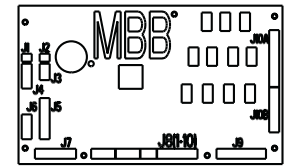
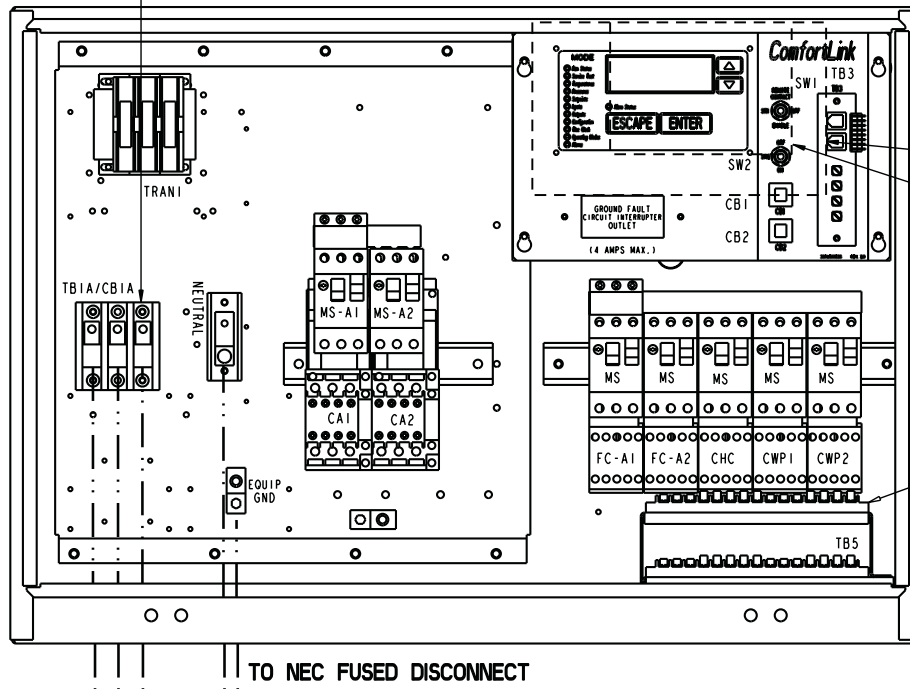
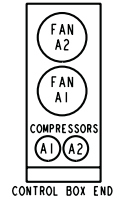
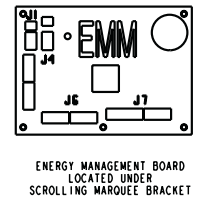
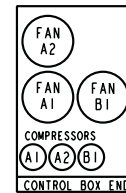


Fig. 10 — Component Arrangement, 30RA022-030

LOW AMBIENT OPERATION (MOTORMASTER V) F1OP/ACCESSORY		
UNIT VOLTAGE	CONFIGURATION JUMPER LOCATION	CONFIGURATION JUMPER COMMON LOCATION
575-3-60	I	2
380-3-60	I3A	
230-3-60	I	
208-3-60	I3A	
460-3-60	I	
230-3-50	I3B	
380-3-50	I3C	
415-3-50	I3C	



FUSE NUMBER	UNIT VOLTAGE	TRANSFORMER SIZE	REPLACE WITH
FU1 & FU2	380-3-60, 460-3-60, 575-3-60 208/230-3-60, 230-3-50, 380/415-3-50	200VA	FNO-R-1 FNO-R-2 1/2
FU3 (24V)	380-3-60, 460-3-60, 575-3-60 208/230-3-60, 230-3-50, 380/415-3-50	200VA	FNM-10
FU4 (115V)	460-3-60, 575-3-60 208/230-3-60, 230-3-60	500VA	FNM-6
FU5 & FU6	460-3-60, 575-3-60 208/230-3-60, 230-3-60	500VA	FNO-R-2 1/2 FNO-R-3 1/2

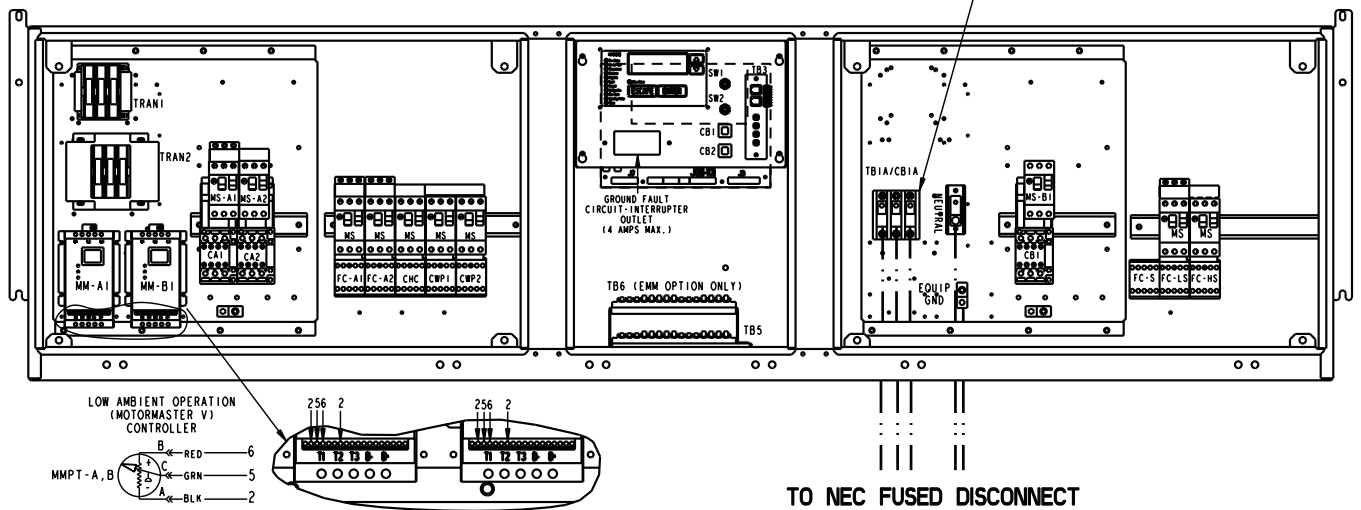
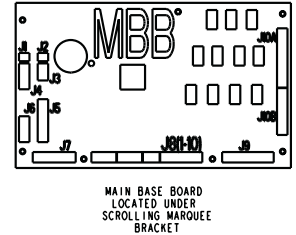
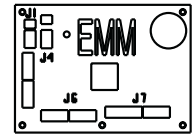
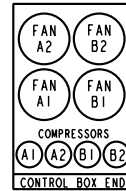


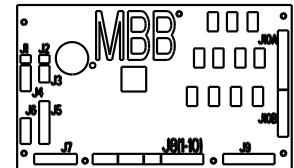
Fig. 11 — Component Arrangement, 30RA032-040

LOW AMBIENT OPERATION (MOTORMASTER V) FIOP/ACCESSORY		
UNIT VOLTAGE	CONFIGURATION JUMPER LOCATION	CONFIGURATION JUMPER COMMON LOCATION
575-3-60	I	2
380-3-60	13A	
230-3-60	I	
208-3-60	13A	
460-3-60	I	
230-3-50	13B	
380-3-50	13C	
415-3-50	13C	



ENERGY MANAGEMENT BOARD
LOCATED UNDER
SCROLLING MARQUEE BRACKET

FUSE NUMBER	UNIT VOLTAGE	TRANSFORMER SIZE	REPLACE WITH
FU1 & FU2	380-3-60, 460-3-60, 575-3-60	200VA	FNO-R-1
FU3	208/230-3-60, 230-3-50, 380/415-3-50	200VA	FNO-R-2 1/2
FU4 (115V)	380-3-60, 460-3-60, 575-3-60	200VA	FNM-10
FU5 & FU6	208/230-3-60, 230-3-50, 380/415-3-50	500VA	FNM-6
	460-3-60, 575-3-60	500VA	FNO-R-2 1/2
	208/230-3-60, 230-3-60	500VA	FNO-R-3 1/2



MAIN BASE BOARD
LOCATED UNDER
SCROLLING MARQUEE
BRACKET

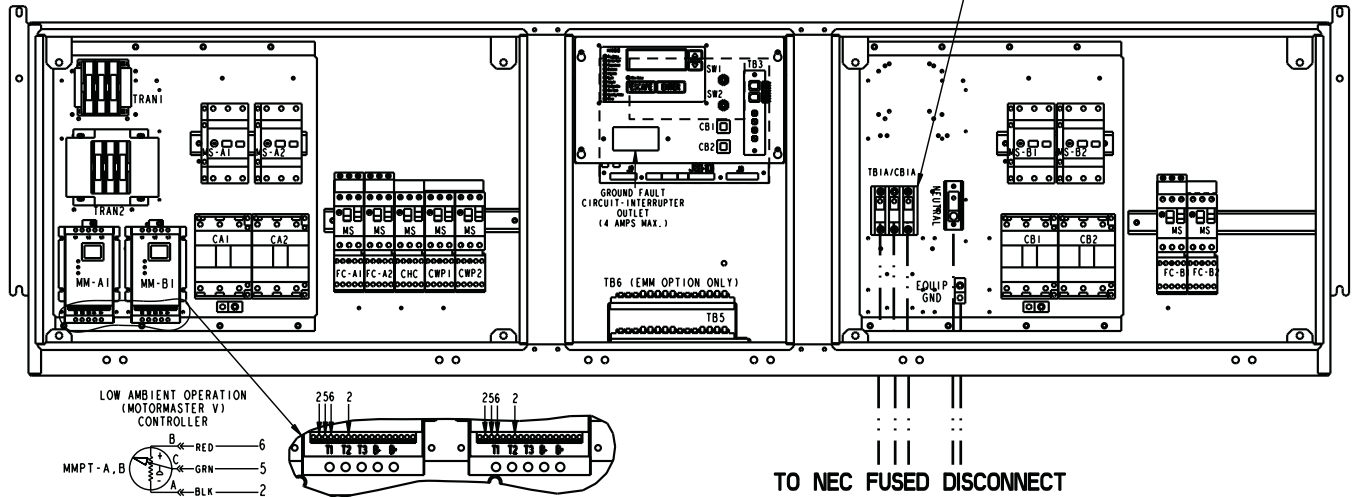
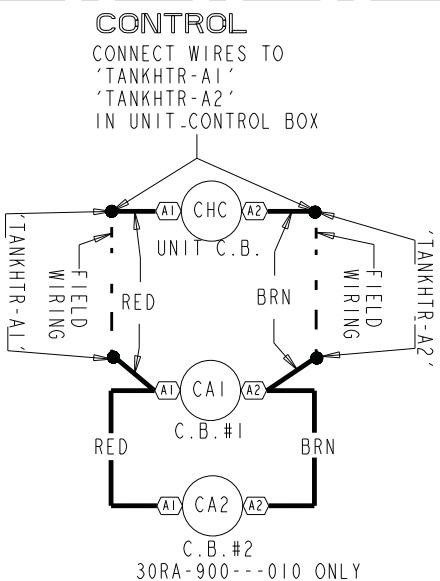
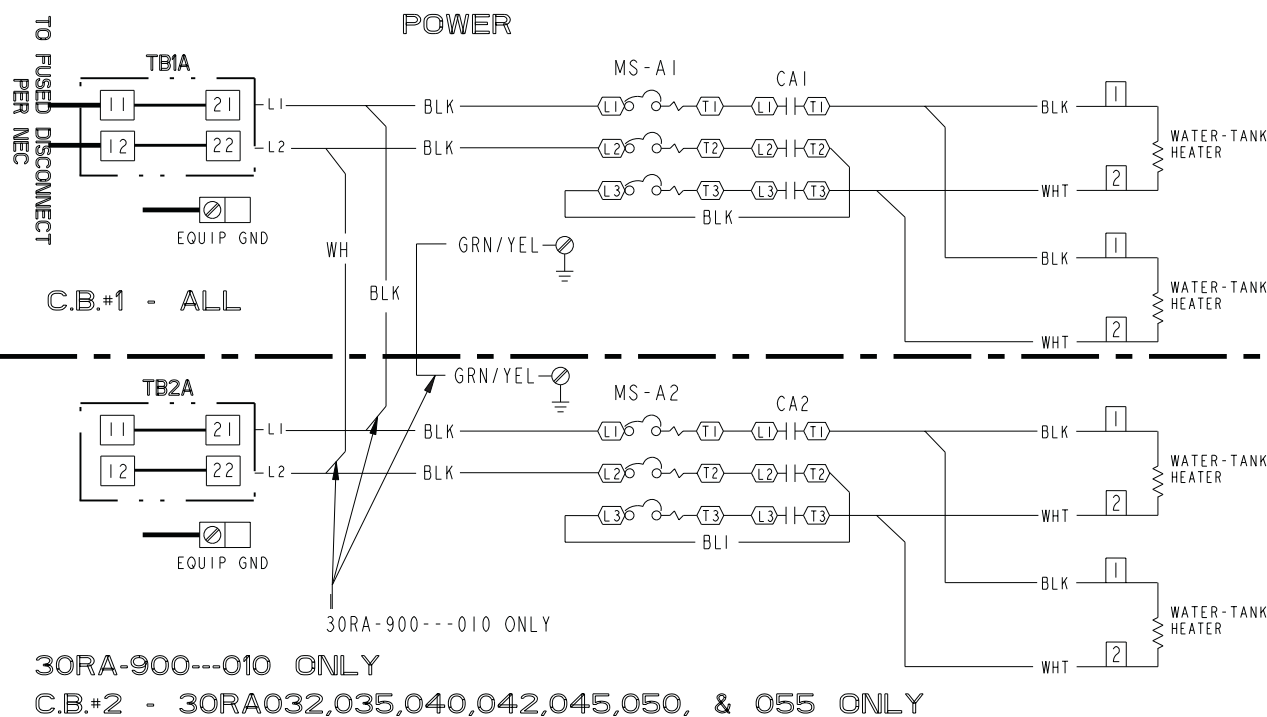


Fig. 12 — Component Arrangement, 30RA042-055

30RA010-055, AQUA-SNAP, STORAGE TANKS



CA CONTACTOR
C.B. CONTROL BOX
GRND GROUND
MS MANUAL STARTER
TB TERMINAL BLOCK

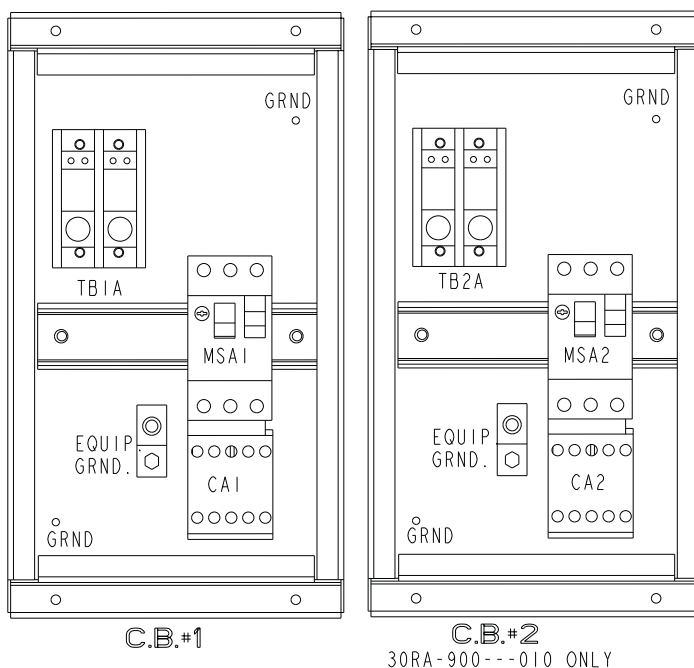


Fig. 13 — 30RA010-055 Water Storage Tank Wiring

