30RAP018-150
38APD025-130,38APS025-065
Motormaster® V Electronic Control
Low Ambient Operation Accessory

Installation Instructions

Part No: 38AP-900---018, 38AP-900---020, and 38AP-900---021

CONTENTS

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure). Only trained, qualified installers and service technicians should install, start-up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply:

- Follow all safety codes
- Wear safety glasses and work gloves
- Use care in handling and installing this accessory

It is important to recognize safety information. This is the safety-alert symbol: ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

ACCESSORY USAGE

ACCESSORY PART NO.	UNIT VOLTAGE
38AP-900---018	575-3-60
38AP-900---020	208/230-3-60
38AP-900---021	460-3-60 380-3-60 380/415-3-50

UNIT	ACCESSORY KITS REQUIRED
30RAP018-060	1
38AP025-065	1
38AP070-130, 30RAP070-150	2

GENERAL

This book contains instructions for the installation and start-up of the Motormaster V electronic low ambient control on 30RAP018-150, 38APD025-130, and 38APS025-065 units. This accessory is a standard feature on size 30RAP010 and 015 units. This kit is not applicable for any Greenspeed unit (models: 30RAP011, 016-060 with Position 13: D, F, G, H, J, or K). The 38APD070-130 and 30RAP070-150 units require two kits per unit. See Tables 1 and 2 for standard unit ambient temperature limitations.

This control varies condenser fan speed based input signal from the AUX board. The control is a variable frequency drive (VFD) and is compatible with the standard motors on these products. The VFD input is controlled by the main base board (MBB) based on the highest saturated discharge temperature (SDT) for the circuit or unit, depending on unit size.

When the SDT drops below Motormaster set point the VFD speed is decreased based on the differential to set point. At certain ambient and load conditions, a fan running at full speed draws too much air across the condenser coil to maintain a minimum condensing pressure/temperature. When these conditions occur, the VFD will slow down the outdoor fan motor and maintain a set point depending on unit type.

The Motormaster V low ambient operation kit can be used to extend the system operation down to –20°F (–28°C). Wind baffles must be installed to ensure proper operation.

High SCCR (short circuit current rating) units can be identified by the 13th position (Ambient/Capacity Control/Interrupt Option) in the model number as high interrupt. These are 38AP unit options 3, 5, 9, and C and 30RAP unit options 3, 4, 5, 9, B, C, H, J, K, P, Q, R. Refer to unit installation instructions for complete model number nomenclature.

NOTE: The drive is phase insensitive in regard to incoming line voltage. This means that the VFD will operate with any phase sequence of the incoming three-phase power.

Table 1 — 30RAP Unit Outdoor Air Temperature Limitations Standard Units (Non-Greenspeed® Intelligence Units)

30RAP UNIT SIZE	MINIMUM OUTDOOR AIR TEMPERATURE (Standard Unit)	MINIMUM OUTDOOR AIR TEMPERATURE WITH MOTORMASTER® CONTROL*
010,015†	–20°F (–28.9°C)	–20°F (–28.9°C)
018-030	45°F (7.2°C)	–20°F (–28.9°C)
035-150	32°F (0.0°C)	–20°F (–28.9°C)

* Requires field installed wind baffles.
† Motormaster control is standard with 30RAP010,015 units.

Table 2 — 38AP Unit Outdoor Air Temperature Limitations

SINGLE CIRCUIT

38APS UNIT SIZE	MINIMUM OUTDOOR AIR TEMPERATURE (Standard Unit)	MINIMUM OUTDOOR AIR TEMPERATURE MOTORMASTER® CONTROL*
025-065	45°F (7.2°C)	–20°F (–28.9°C)

DUAL CIRCUIT

38APD UNIT SIZE	MINIMUM OUTDOOR AIR TEMPERATURE (Standard Unit)	MINIMUM OUTDOOR AIR TEMPERATURE MOTORMASTER CONTROL*
025-040	32°F (0.0°C)	–20°F (–28.9°C)
050-060	25°F (–3.9°C)	–20°F (–28.9°C)
070-130	32°F (0.0°C)	–20°F (–28.9°C)

* Requires field installed wind baffles.

PREINSTALLATION

Inspect the contents of the accessory package before installing. File a claim with the shipper if shipping damage is found or contact your Carrier representative if any parts are missing. See Table 3 for accessory kit package contents.

INSTALLATION

Step 1 — Install Wind Baffles

Accessory wind baffles must be field-installed for all units to ensure proper operation at low-ambient temperatures with Motormaster® V electronic controller. See Table 4 for wind baffle usage.

Step 2 — Modify Control Box

⚠ CAUTION

DO NOT connect incoming AC power to the output terminal T1, T2, and T3. Severe damage to the drive will result. Do not continuously cycle input power to the drive more than once every two minutes. Damage to the drive will result.

Table 3 — Accessory Package Contents

ACCESSORY PART NO.	ITEM NUMBER	(QTY) PART NO.	PART DESCRIPTION
38AP-900---018	2	(1) 38APHLSMFV-A00	Harness Assembly (30RAP035-060 units)
	3	(1) 38APHLSSFV-A00	Harness Assembly (38AP025-030 units)
	4	(3) HY10KB151	15 Amp Fuse
	5	(1) 6SM30A3	Fuse Block (all units except 30RAP035-060)
	6	(1) RT114524	SPDT RT Relay (fan relay)
	7	(1) RT78724	Relay Socket
	8	(1) RT16016	Relay Retaining Clip
	9	(6) AL80AU170	Screw, 8-18 x 1/2-in.
	10	(2) KA99FT060	Terminal End Stop
	11	(1) XBANS3575P-4	DIN Rail, 4-in.
	12	(1) 38APHLSLFV-A00	Harness (38APD070-130, 38APS065 and 30RAP070-150 units)
	13	(1) XBANS3575P-6	DIN Rail, 6-in.
	14	(1) 32GB500442E	AUX1 Board
	15	(1) 38APHLSBFV-A00	Harness (38APD,S025-060 units)
	16	(4) AC41AB100	Screw, 8-32 x 3/8-in.
	22	(1) 38APHSCALXCA00	Harness, AUX Board COM (30RAP units, 38APD070-130 units)
	23	(1) 38APHSCALXCA10	Harness, AUX Board PWR (30RAP units, 38APD070-130 units, 38APS065 units)
	25	(1) HR46TN003	Motormaster Controller (575 v)
	26	(1) XBANS3575P-8	DIN Rail, 8-in. (38APD040-130, 38APS040-065 and 30RAP070-150 units)
	27	(1) 38APHSCMFV-A00	Harness (30RAP018-030 units)
	28	(1) 38APMSCLCA-A00	AUX1 Bracket (30RAP035-060 units)
38AP-900---020	2	(1) 38APHLSMFV-A00	Harness Assembly (30RAP035-060 units)
	3	(1) 38APHLSSFV-A00	Harness Assembly (38AP025-030 units)
	4	(3) HY10KB200	20 Amp Fuse
	5	(1) 6SM30A3	Fuse Block (all units except 30RAP035-060)
	6	(1) RT114524	SPDT RT Relay (fan relay)
	7	(1) RT78724	Relay Socket
	8	(1) RT16016	Relay Retaining Clip
	9	(6) AL80AU170	Screw, 8-18 x 1/2-in.
	10	(2) KA99FT060	Terminal End Stop
	11	(1) XBANS3575P-4	DIN Rail, 4-in.
	12	(1) 38APHLSLFV-A00	Harness (38APD070-130, 38APS065 and 30RAP070-150 units)
	13	(1) XBANS3575P-6	DIN Rail, 6-in.
	14	(1) 32GB500442E	AUX1 Board
	15	(1) 38APHLSBFV-A00	Harness (38APD,S025-060 units)
	16	(4) AC41AB100	Screw, 8-32 x 3/8-in.
	22	(1) 38APHSCALXCA00	Harness, AUX Board COM (30RAP units, 38APD070-130 units)
	23	(1) 38APHSCALXCA10	Harness, AUX Board PWR (30RAP units, 38APD070-130 units, 38APS065 units)
	25	(1) HR46TN001	Motormaster Controller (230 v)
	26	(1) XBANS3575P-8	DIN Rail, 8-in. (38APD040-130, 38APS040-065 and 30RAP070-150 units)
	27	(1) 38APHSCMFV-A00	Harness (30RAP018-030 units)
	28	(1) 38APMSCLCA-A00	AUX1 Bracket (30RAP035-060 units)
38AP-900---021	2	(1) 38APHLSMFV-A00	Harness Assembly (30RAP035-060 units)
	3	(1) 38APHLSSFV-A00	Harness Assembly (38AP025-030 units)
	4	(3) HY10KB151	15 Amp Fuse
	5	(1) 6SM30A3	Fuse Block (all units except 30RAP035-060)
	6	(1) RT114524	SPDT RT Relay (fan relay)
	7	(1) RT78724	Relay Socket
	8	(1) RT16016	Relay Retaining Clip
	9	(6) AL80AU170	Screw, 8-18 x 1/2-in.
	10	(2) KA99FT060	Terminal End Stop
	11	(1) XBANS3575P-4	DIN Rail, 4-in.
	12	(1) 38APHLSLFV-A00	Harness (38APD070-130, 38APS065 and 30RAP070-150 units)
	13	(1) XBANS3575P-6	DIN Rail, 6-in.
	14	(1) 32GB500442E	AUX1 Board
	15	(1) 38APHLSBFV-A00	Harness (38APD,S025-060 units)
	16	(4) AC41AB100	Screw, 8-32 x 3/8-in.
	22	(1) 38APHSCALXCA00	Harness, AUX Board COM (30RAP units, 38APD070-130 units)
	23	(1) 38APHSCALXCA10	Harness, AUX Board PWR (30RAP units, 38APD070-130 units, 38APS065 units)
	25	(1) HR46TN002	Motormaster Controller (460 v)
	26	(1) XBANS3575P-8	DIN Rail, 8-in. (38APD040-130, 38APS040-065 and 30RAP070-150 units)
	27	(1) 38APHSCMFV-A00	Harness (30RAP018-030 units)
	28	(1) 38APMSCLCA-A00	AUX1 Bracket (30RAP035-060 units)

Table 4 — Wind Baffle Usage

UNIT	PART NUMBER	QUANTITY
30RAP018,020	30RA-900---065	1
30RAP025,030	30RA-900---066	1
30RAP035,040	30RA-900---065	2
30RAP045-060	30RA-900---066	2
38APD,S025	30RA-900---065	1
38APD,S027,030	30RA-900---066	1
38APD,S040-060	30RA-900---066	2
38APD070-130, 38APS065 and 30RAP070-150	38AP-900---005	1

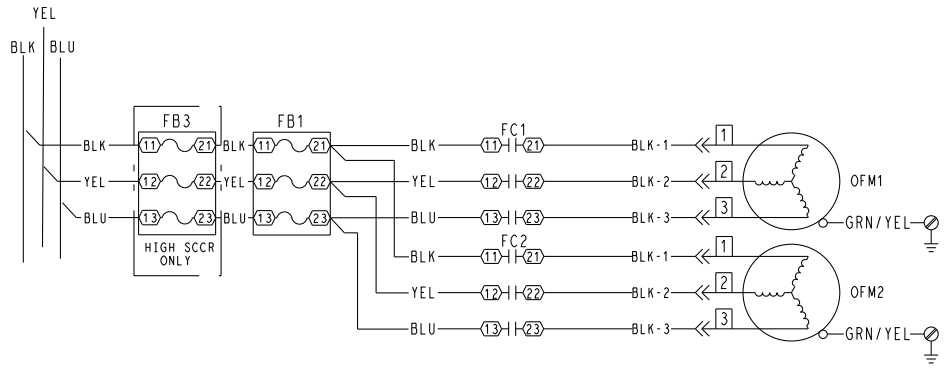
⚠ WARNING

Electrical shock can cause serious injury or death. Wait three minutes after disconnecting incoming power before servicing drive. Capacitors retain charge after power is removed.

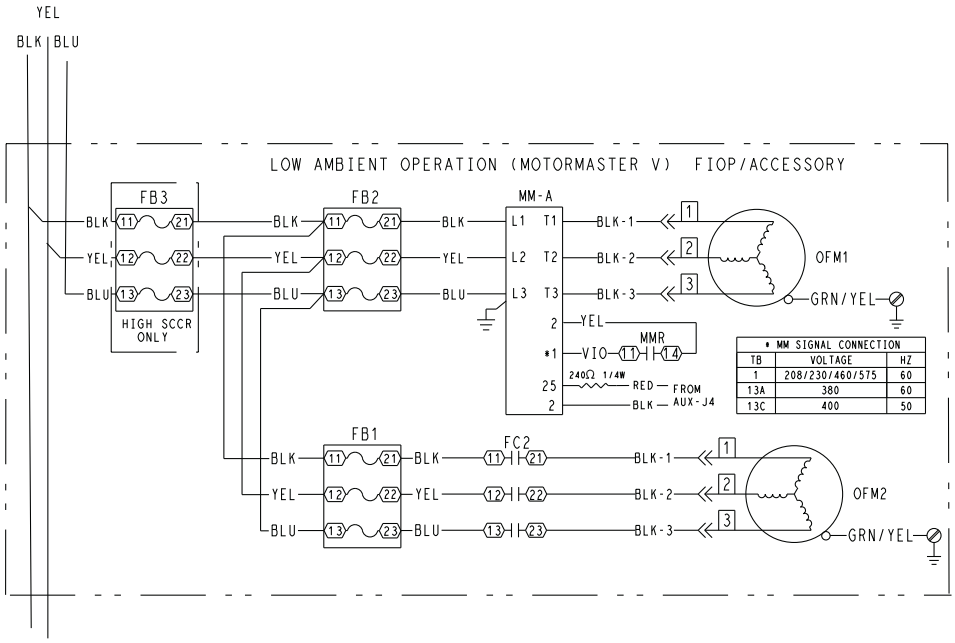
30RAP018-030 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 1 and 2 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1). Remove the wires from the line side of contactor completely.
2. Remove FC1.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 3.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 1. Remove terminals as required.
5. Mount fuse block 2 (FB2) (Item 5) to DIN rail (Item 13) at the top of the enclosure; installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount Motormaster relay (MMR) assembly (Items 6 and 7) on DIN rail next to FB1.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 4. Set DIP switch 2, 5 and 7 = ON. See Fig. 2.
8. Install AUX PWR harness (Item 23) and AUX communication harness (Item 22).
   a. Make power connection to AUX J1.
   b. Make communication connection J9 on AUX to terminal J3 of energy management module (EMM) if the unit has an EMM or to terminal J4 of electronic expansion valve (EXV). See Fig. 2.
9. Install harness 38APHSCMFV-A00 (Item 27).
   a. Connect BLK, YEL and BLU wires from harness to fuse block 2 (FB2) and the other end to MM connection L1, L2 and L3 per Fig. 1 and Fig. 3.
   b. Connect PNK to A1 and (2) BRN wires to A2 of MMR per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of MMR per Fig. 1.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
   e. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   f. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units).
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.



BEFORE MOTORMASTER V POWER WIRING

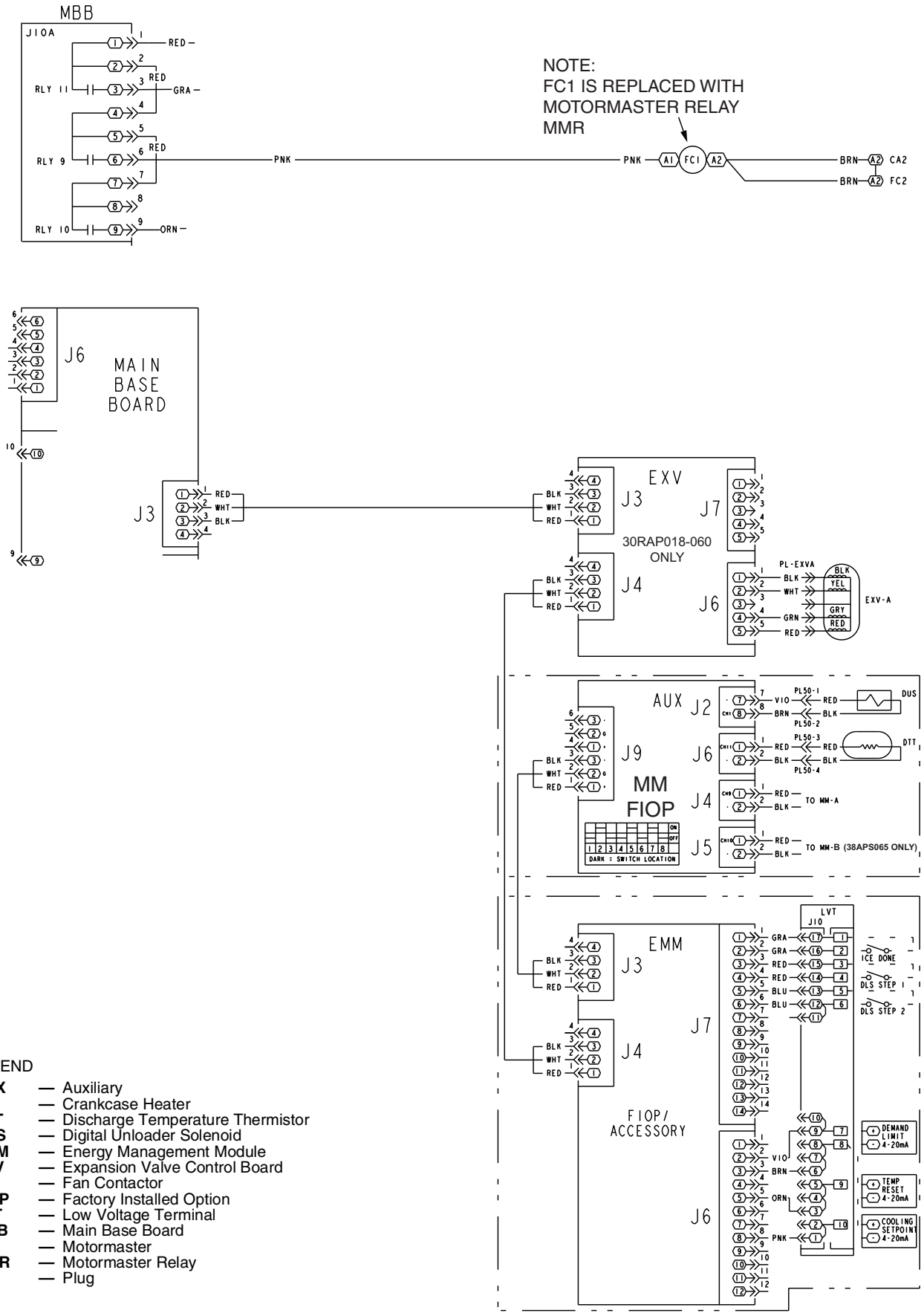


AFTER MOTORMASTER V POWER WIRING

LEGEND

FB — Fuse Block
FC — Fan Contactor
MM — Motormaster
MMR — Motormaster Relay
OFM — Outdoor Fan Motor
SCCR — Short Circuit Current Rating
TB — Terminal Block

Fig. 1 — Motormaster V Power Wiring — 30RAP018-030 Units



LEGEND

AUX	— Auxiliary
CH	— Crankcase Heater
DTT	— Discharge Temperature Thermistor
DUS	— Digital Unloader Solenoid
EMM	— Energy Management Module
EXV	— Expansion Valve Control Board
FC	— Fan Contactor
FIOP	— Factory Installed Option
LVT	— Low Voltage Terminal
MBB	— Main Base Board
MM	— Motormaster
MMR	— Motormaster Relay
PL	— Plug

Fig. 2 — Typical Motormaster® V Control Wiring — 30RAP018-060, 38APD025-060 and 38APS025-065 Units

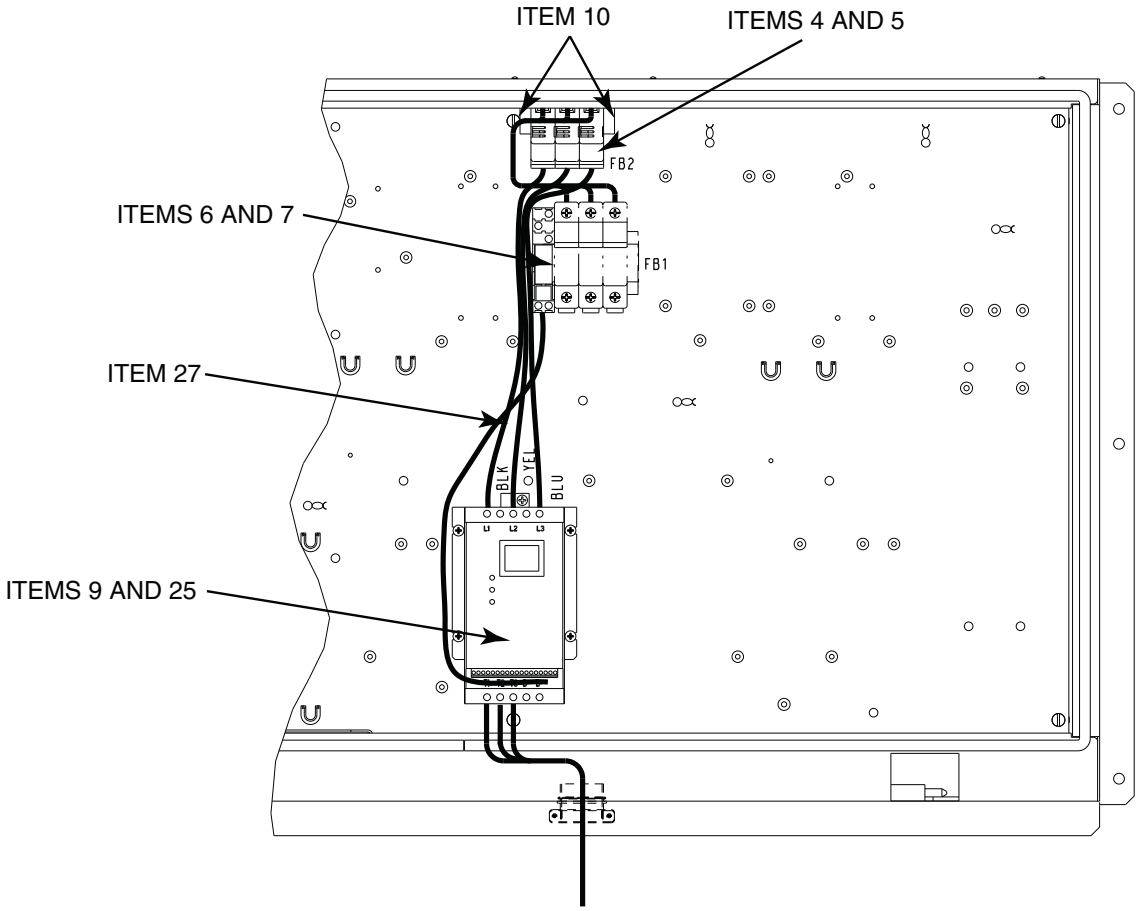


Fig. 3 — Motormaster V Installation Location — 30RAP018-030 Units

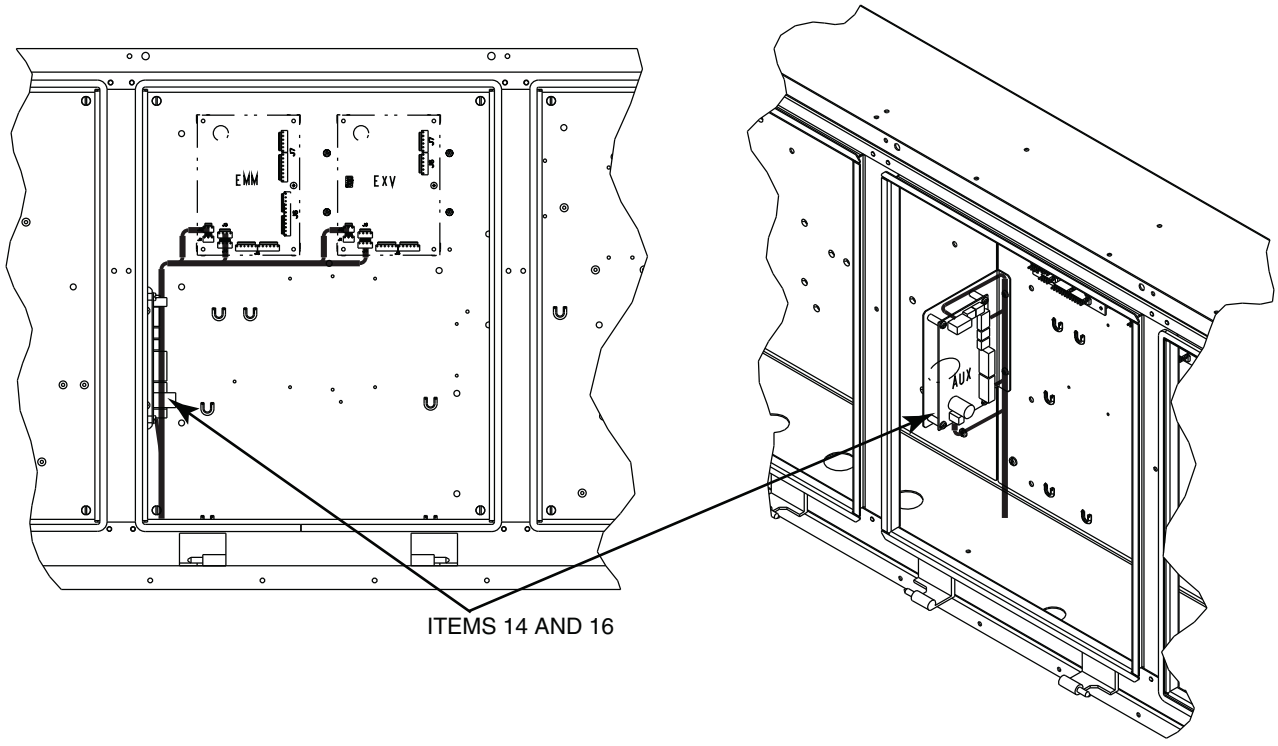
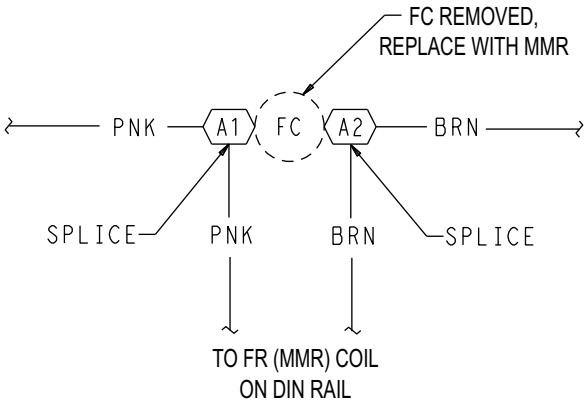


Fig. 4 — AUX Board Installation Location — 30RAP018-060 Units (Sizes 035-060 Shown)



LEGEND

FC	— Fan Contactor
FR	— Fan Relay
MMR	— Motormaster Relay

Fig. 5 — Motormaster® V Control Harness Wiring

30RAP035-050 UNITS

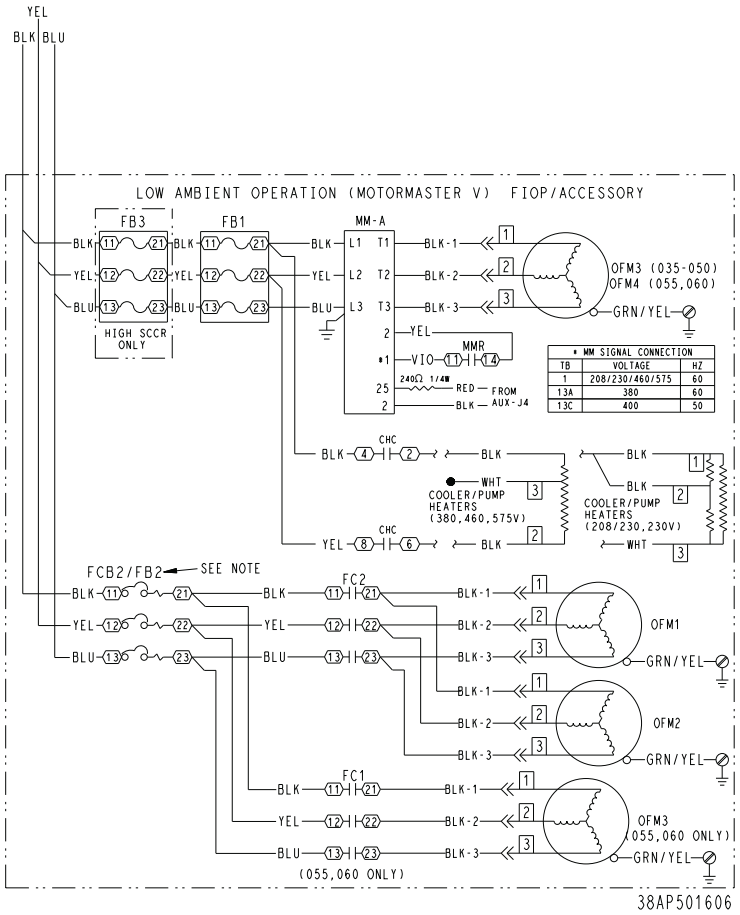
Perform the following procedure to modify the control box for the accessory. See Fig. 2 and 6 for wiring details. Lock out and tag out all power connections.

1. Disconnect wires connected to fan contactor 1 (FC1). Remove the wires from the line side of contactor completely.
2. Remove FC1.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 7.
4. Connect wires from FB1to MMV.
5. Connect fan wires from fan motor OFM3 to terminals T1, T2, and T3 per Fig. 6.
6. Mount MMR assembly (Items 6 and 7) on DIN rail next to FB1 and FB2.
7. If the unit already has an AUX Board installed skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws provided and AUX1 bracket (Item 28). See Fig. 4. Set DIP switch 2, 5, and 7 = ON. See Fig. 2.
8. Install AUX power harness (Item 23) and AUX communication harness (Item 22).
   a. Make power connection AUX J1.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J4 of EXV.
9. Install harness 38APHLSMFV-A00 (Item 2):
   a. Connect PNK and BRN wires to coil side A1, A2 of MMR assembly mounted to DIN rail in Step 6. See Fig. 5.
   b. Connect VIO and YEL wires to terminal 14 and 11 of MMR per Fig. 6.
   c. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
   d. Make terminal strip connections to MMV terminal strip. Connect RED to 25 and BLK to 2.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units).
   f. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   g. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

30RAP055 AND 060 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 2 and 6 for wiring details.

1. Disconnect wires connected to fan contactor 3 (FC3). Remove the wires from the line side of contactor completely.
2. Remove FC3.
3. Remove mounting hardware from FC2 and move FC2 to the FC3 position. Re-attach FC2 with the same hardware.
4. Remove mounting hardware from FC1 and move FC1 to the old FC2 position. Re-attach FC1 with the same hardware.
5. Move FC1 line-side wires to the load-side of FB2.
6. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 6.
7. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 6.
8. Install 3 fuses (Item 4) in fuse block (FB2).
9. Mount MMR assembly (Items 6 and 7) on DIN rail next to FB1 and FB2.
10. If the unit already has an AUX Board installed, skip to Step 12. Install AUX board (Item 14) using 4 AC41AB100 screws provided and AUX1 bracket (Item 28). See Fig. 4. Set DIP switch 2, 5, and 7 = ON. See Fig. 2.
11. Install AUX power harness (Item 23) and AUX communication harness (Item 22).
    a. Make power connection AUX J1.
    b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J4 of EXV.
12. Install harness 38APHLSMFV-A00 (Item 2):
    a. Connect BLK, YEL and BLU wires of harness (Part No. 38APHLSMFV-A00) to fuse block 1 (FB1) load 21, 22, 23 and the other end to MM connection L1, L2 and L3 per Fig. 6.
    b. Connect PNK and BRN wires to terminals A1 and A2 of MMR per Fig. 5.
    c. Connect VIO and YEL wires to terminal 14 and 11 of MMR per Fig. 6.
    d. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
    e. Make terminal strip connections. Connect RED to 25 and BLK to 2.
    f. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units).
    g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
    h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.



NOTE: For 575-3-60 units, fan circuit breaker FCB2 is replaced with fuse block FB2.

Fig. 6 — Motormaster Power Wiring — 30RAP035-060 Units

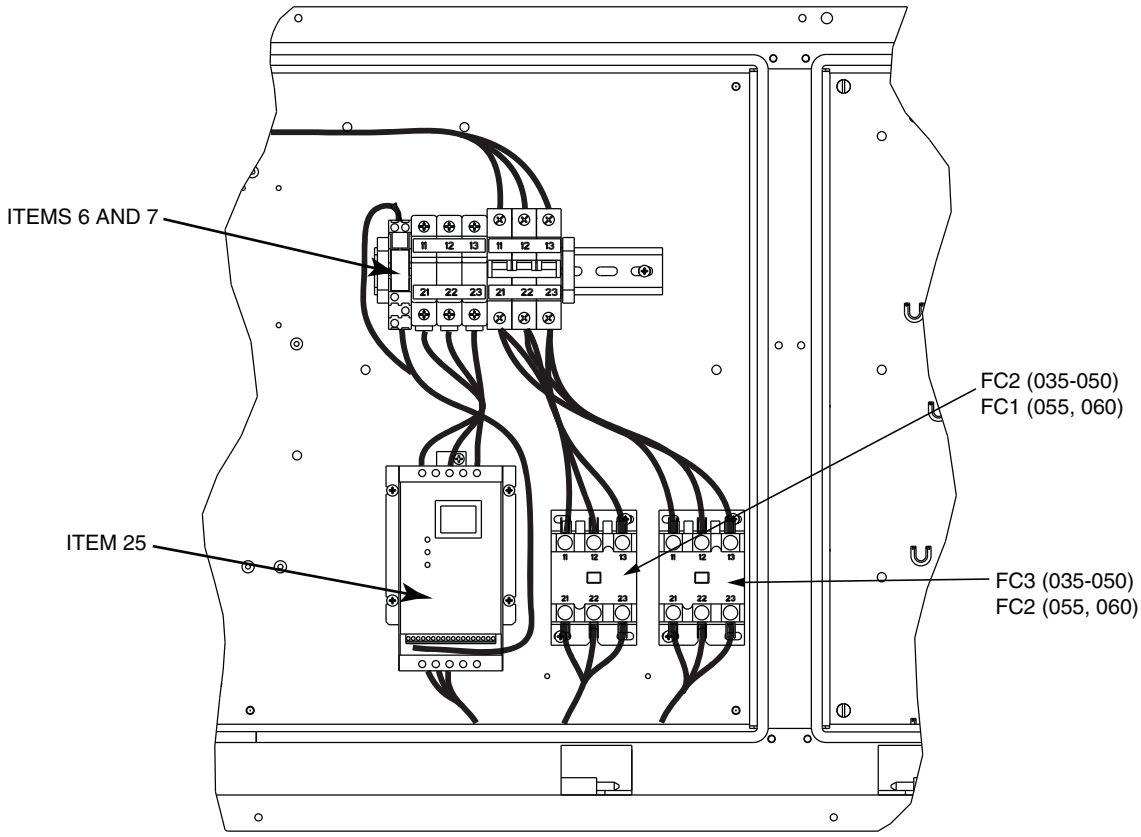


Fig. 7 — Motormaster V Installation Location — 30RAP035-060 Units

38APD,S025-030 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 2 and 8 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1). Remove the wires from the line side of contactor completely.
2. Remove FC1.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 9.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 8.
5. Mount FB2 (Item 5) to DIN rail (Item 11) next to FB1, installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 11) next to FB1 and FB2.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 10. Set DIP switch 2, 5, and 7 = ON. See Fig. 2.
8. Install AUX harness (Item 15).
   a. Make power connection to AUX J1.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of MBB.
9. Install harness 38APHLSSFV-A00 (Item 3).
   a. Connect BLK, YEL and BLU wires from harness 38APHLSSFV-A00 to fuse block 2 (FB2) and the other end to MM connection L1, L2 and L3 per Fig. 8.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 per Fig. 8.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

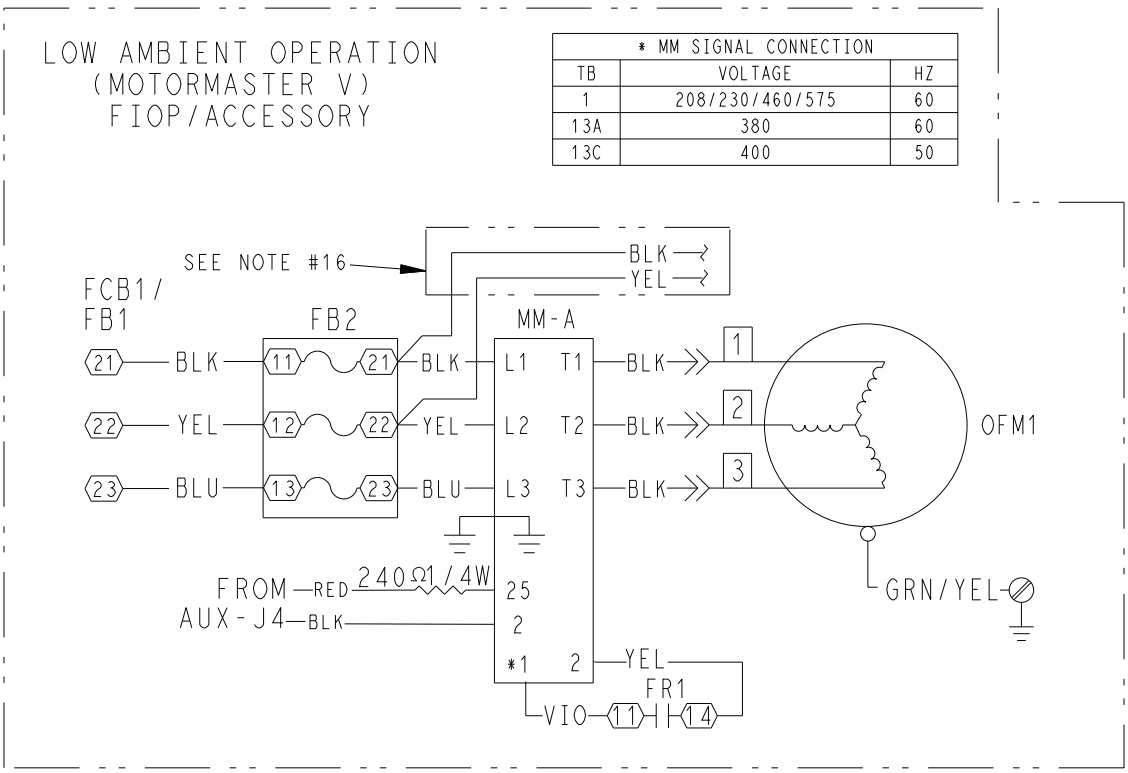


Fig. 8 — Motormaster® V Power Wiring — 38AP025-030 Units

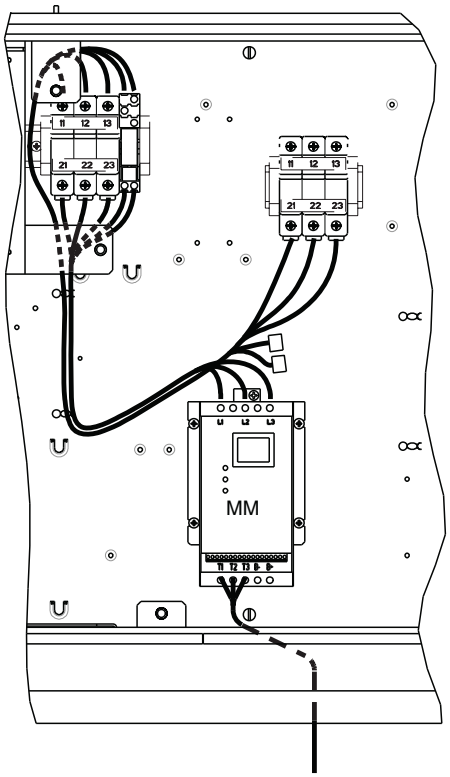


Fig. 9 — Motormaster V Installation Location — 38APD,S025-030 Units

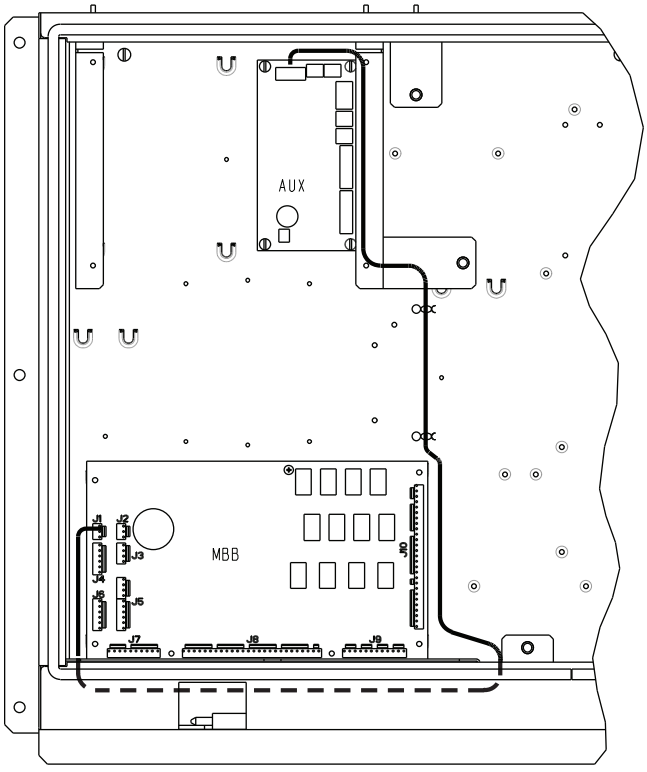


Fig. 10 — AUX Board Installation Location — 38APD,S025-030 Units

38APS040-050 AND 38APD040-060 Units

Perform the following procedure to modify the control box for the accessory. See Fig. 2, 11, and 12 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1). Remove the wires from the line side of contactor completely.
2. Remove FC1.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 13.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 11 and 12. Remove terminals as needed.
5. Mount FB1 (Item 5) to DIN rail (Item 26) next to FB2, installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 26) next to FB1 and FB2.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 14. Set DIP switch 2, 5, and 7 = ON. See Fig. 2.
8. Install AUX harness (Item 15).
   a. Make power connection to AUX J1.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of MBB.
9. Install harness 38APHLSMFV-A00 (Item 2).
   a. Connect BLK, YEL and BLU wires from harness (part no. 38APHLSMFV-A00) to fuse block 2 and the other end to MM connection L1, L2 and L3 per Fig. 11 and 12.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 per Fig. 11 and 12.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units.).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

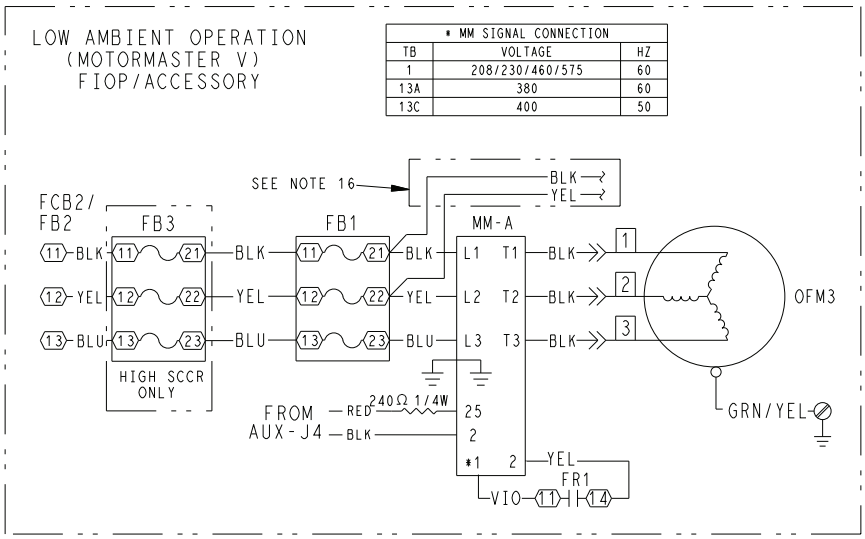


Fig. 11 — Motormaster® V Power Wiring — 38APS040-050 Units

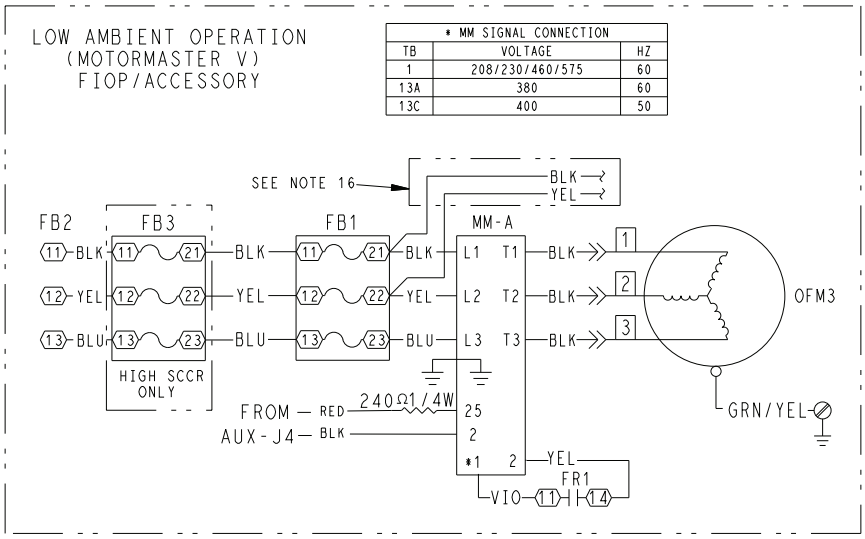


Fig. 12 — Motormaster® V Power Wiring — 38APD040-060 Units

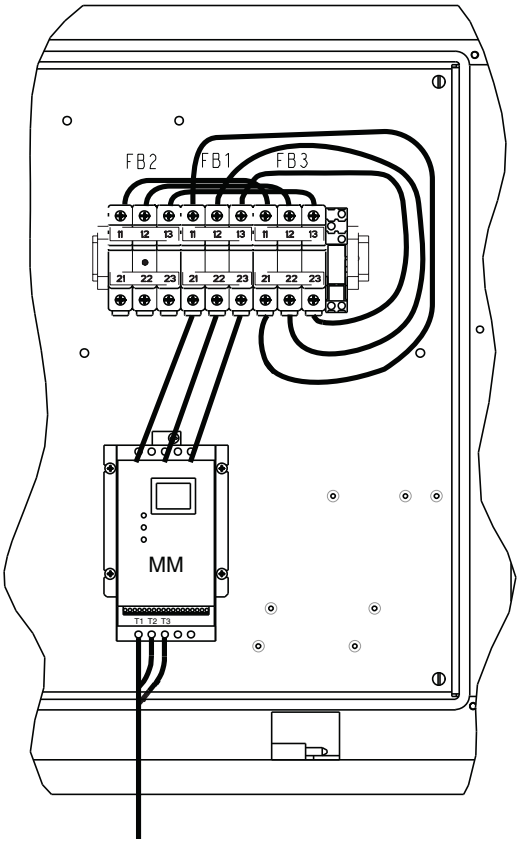


Fig. 13 — Motormaster V Installation Location — 38APD,S040-060 Units

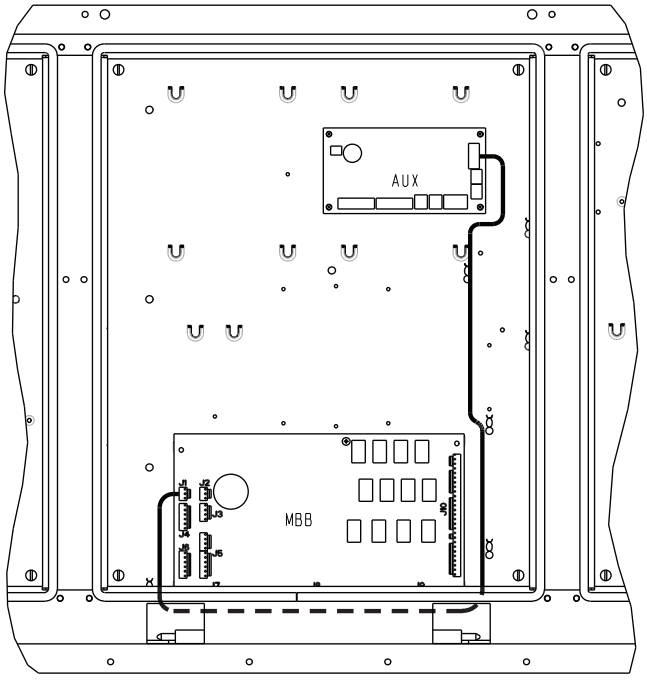


Fig. 14 — AUX Board Installation Location — 38APD,S040-060 Units

38APS065 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 2 and 15 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1). Remove the wires from the line side of contactor completely.
2. Remove FC1.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. See Fig. 16.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 15.
5. Mount FB9 (Item 5) to DIN rail (Item 26) next to FB1, installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 26) next to FB9.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 17. Set DIP switch 2, 5, and 7 = ON. See Fig. 2.
8. Install AUX harness.
   a. Make power connection to AUX J1 (Item 23) from either MBB, CXB, or EMM J2.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of EXV (Item 15).
9. Install harness 38APHLSLFV-A00 (Item 12).
   a. Connect BLK, YEL and BLU wires from harness to fuse block 2 (FB1) and the other end to MM connection L1, L2 and L3 per Fig. 15.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 per Fig. 15.
   d. Plug terminal board connector labeled AUX J5 to AUX Board J5. See Fig. 2.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units.).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

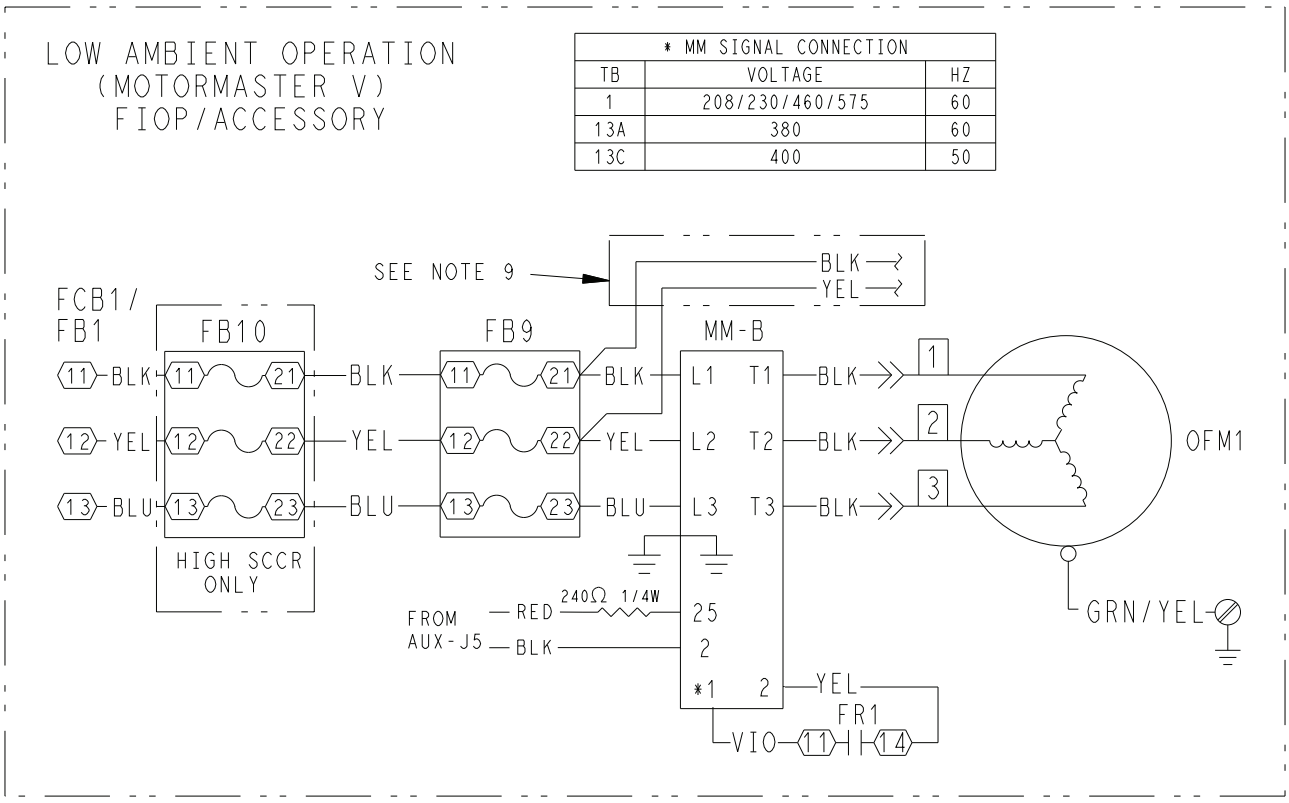


Fig. 15 — Motormaster V Power Wiring — 38APS065 Units

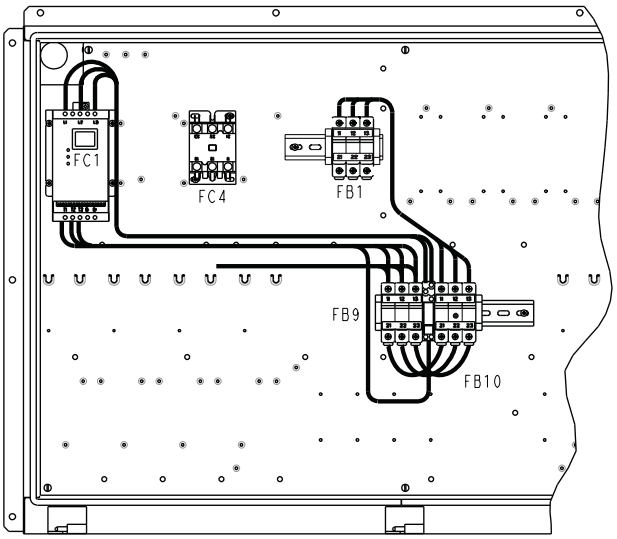


Fig. 16 — Motormaster® V Installation Location — 38APS065 Units (High SCCR Unit Shown)

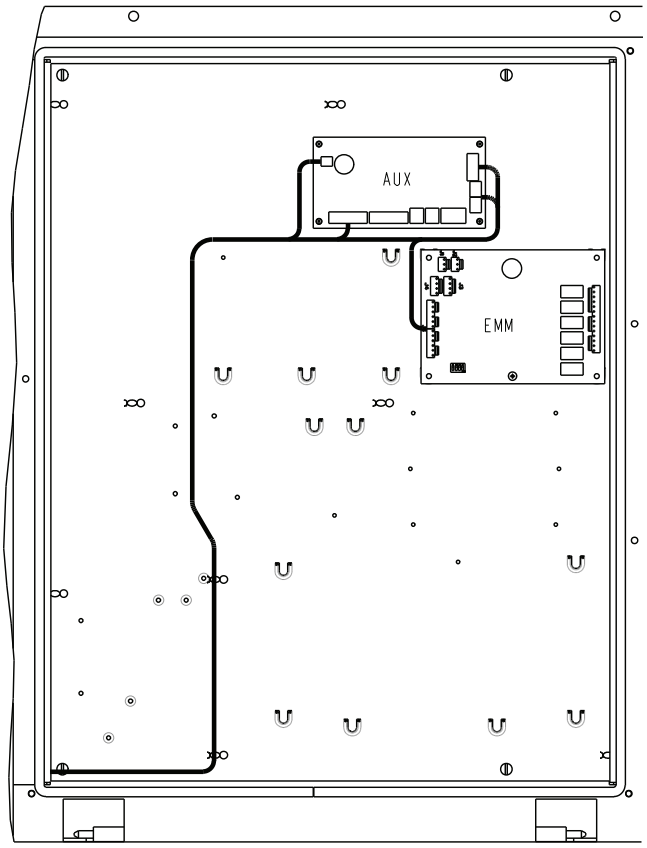


Fig. 17 — AUX Board Installation Location — 38APS065 Units

38APD070-100 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 18 and 19 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1) and fan contactor 2 (FC2) (sizes 070,090,100) or fan contactor 4 (FC4) (size 080). Remove the wires from the line side of contactor completely.
2. Remove FC1 and FC2 (sizes 070,090,100) or FC4 (size 080).
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 AL80AU170 screws (Item 9) provided. Repeat for FC2 (sizes 070,090,100) or FC4 (size 080). See Fig. 20.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 18.
5. Mount FB9 and FB10 (Item 5) to DIN rail (Item 26), installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 26) next to FB9 and FB10.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 21. Set DIP switch 2, 5, and 7 = ON. See Fig. 19.
8. Install AUX power harness (Item 23) and AUX communication harness (Item 22).
   a. Make power connection to AUX J1 from either MBB, CXB, or EMM J2.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of MBB.
9. Install harness 38APHLSLFV-A00 (Item 12).
   a. Connect BLK, YEL and BLU wires from harness (part no. 38APHLSLFV-A00) to fuse block 9 and 10 (FB9 and FB10) and the other end to MM connection L1, L2 and L3 per Fig. 18.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 and FR-2 per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 and FR-2 per Fig. 18.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. Plug terminal board connector labeled AUX J5 to AUX Board J5. See Fig. 19.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units.).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

38APD115-130 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 19 and 22 for wiring details.

1. Disconnect wires connected to fan contactor 5 (FC5) and fan contactor 2 (FC2). Remove the wires from the line side of contactor completely.
2. Remove FC5 and FC2.
3. Mount Motormaster V controller (Item 25) in location where FC5 was mounted, using 4 AL80AU170 screws (Item 9) provided. Repeat for FC2. See Fig. 23.
4. Connect fan wires from fan motor to terminals T1, T2, and T3 per Fig. 22.
5. Mount FB9 and 10 (Item 5) to DIN rail (Item 26), installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 26) next to FB9 and FB10.
7. If the unit already has an AUX board installed, skip to Step 9. Install AUX board (Item 14) using 4 AC41AB100 screws (Item 16) provided. See Fig. 21. Set DIP switch 2, 5, and 7 = ON. See Fig. 19.
8. Install AUX power harness (Item 23) and AUX communication harness (Item 22).
   a. Make power connection to AUX J1 from either MBB, CXB, or EMM J2.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of MBB.
9. Install harness 38APHLSLFV-A00 (Item 12).
   a. Connect BLK, YEL and BLU wires from harness (part no. 38APHLSLFV-A00) to fuse block 9 and 10 (FB9 and FB10) and the other end to MM connection L1, L2 and L3 per Fig. 22.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 (FR-2) per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 (FR-2) per Fig. 22.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. Plug terminal board connector labeled AUX J5 to AUX Board J5. See Fig. 19.
   e. Make terminal strip connections to Motormaster V (MMV) terminal strip (YEL to terminal 1 for 208/230, 460, and 575 V 60 Hz units, terminal 13A for 380 V 60 Hz units, and 13C for 400 V 50 Hz units.).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.
   h. Connect BRN wire labeled OFC COM SPLICE to BRN wire labeled FC-1 COM which was removed from FC1 contactor. See Fig. 5.

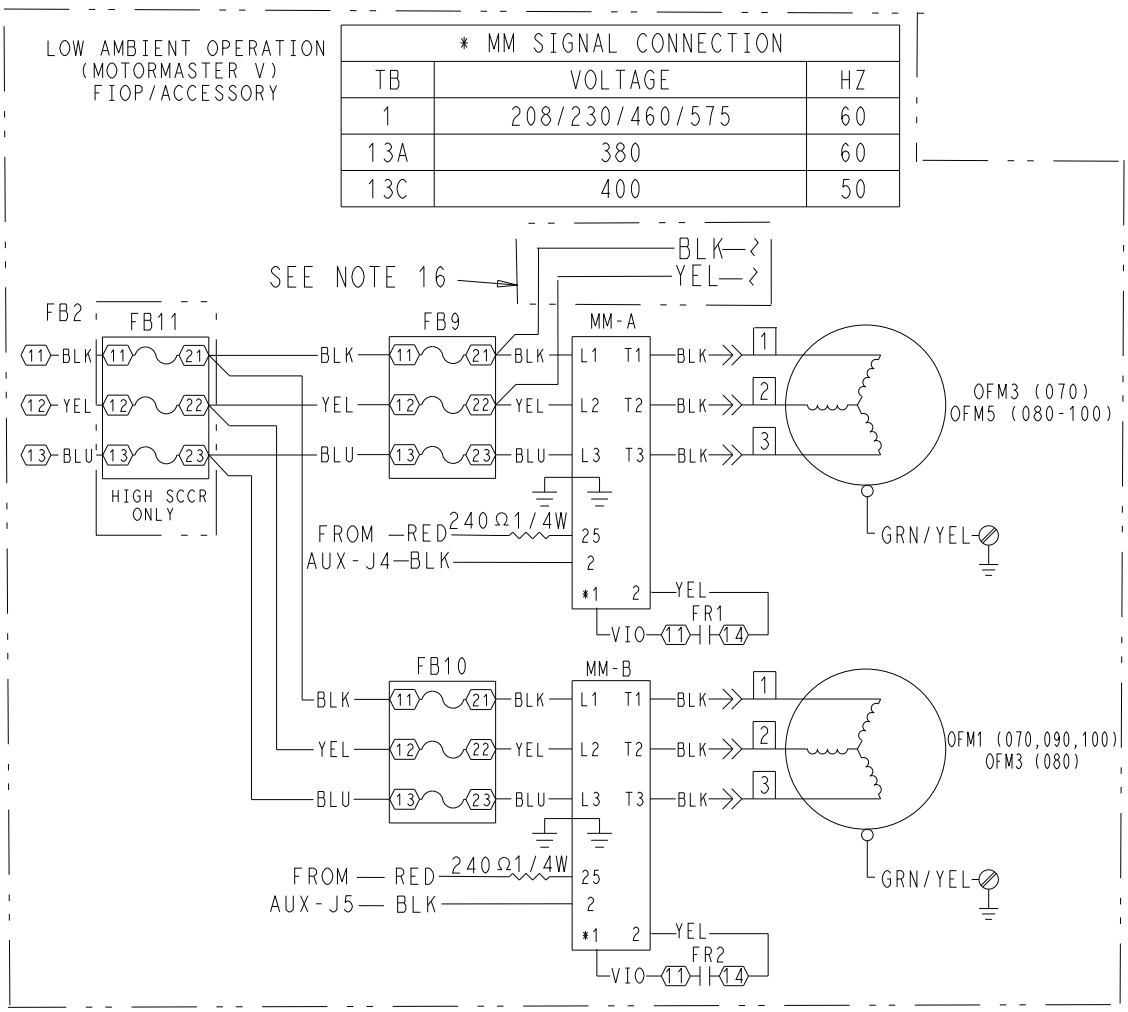


Fig. 18 — Motormaster V Power Wiring — 38APD070-100 Units

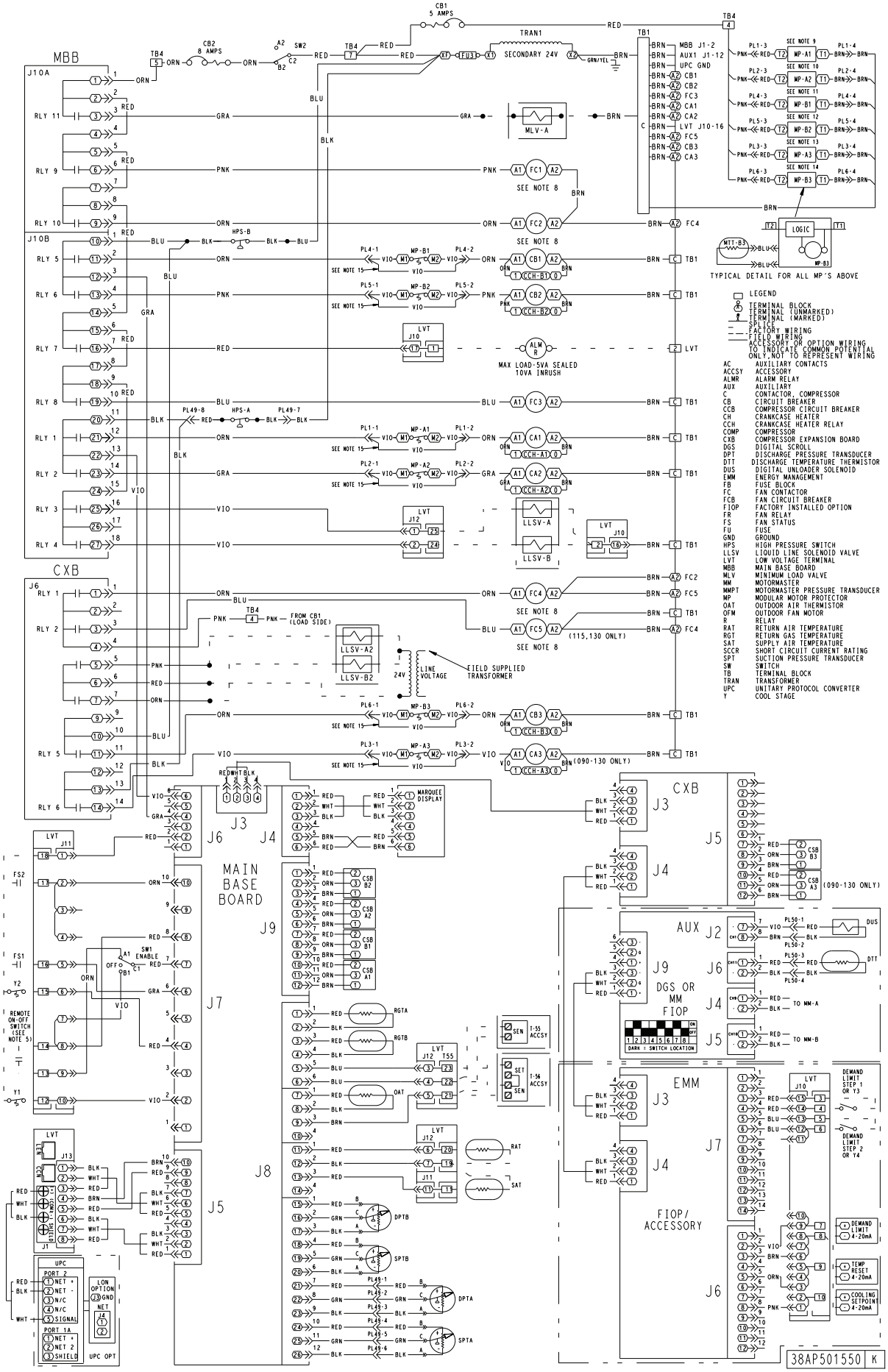


Fig. 19 — Motormaster® V Control Wiring — 38APD070-130 Units

NOTES — FIG. 19

1. Factory wiring is in accordance with UL 1995 standards. 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 field interlock contacts must have a min rating of 2 amps at 24 vac sealed. See field interlock wiring.
4. Compressor and fan motors are thermally protected; three-phase motors are protected against primary single phase conditions.
5. Terminals 13 and 14 of LVT 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.
6. For 500 series unit operation at 208-3-60 line voltage, TRAN1 primary connections must be moved to terminals H3 and H4.
7. Fan circuit breakers FCB1 (575-3-60 or high SCCR) and FCB2 (230v high SCCR) are replaced with fuse blocks FB1 and FB2.
8. For units with low ambient Motormaster® V FIOP/accessory:
   Fan contactor FC5 is replaced with fan relay FR1.
   Fan contactor FC2 is replaced with fan relay FR2.
9. MP-A1 not used in 400v or 460v units without digital scroll.
10. MP-A2 not used in 400v or 460v units.
11. MP-B1 always used.
12. MP-B2 always used.
13. MP-A3 not used in 400 v or 460v units.
14. MP-B3 always used.
15. Jumper plug required when MP is not used.
16. High SCCR units with Motormaster only.
17. For 380 and 400v units, yellow CCH wire will connect to white neutral wire instead of terminal 22 on fuse blocks.
18. Crankcase heater color codes: 575v blue; 460v red; 208/230v, 380v, 380/415v yellow.

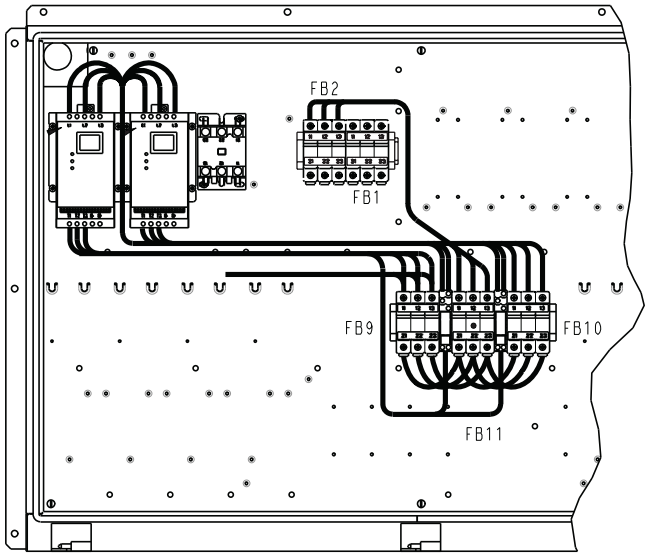


Fig. 20 — Motormaster® V Installation Location — 38APD070-100 Units (High SCCR Unit Shown)

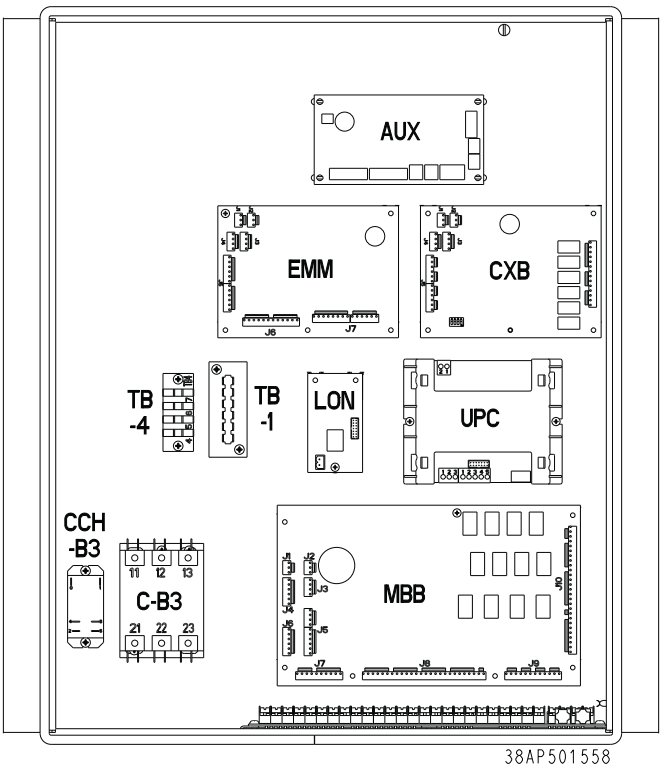


Fig. 21 — AUX Board Installation Location — 38APD070-130 Units

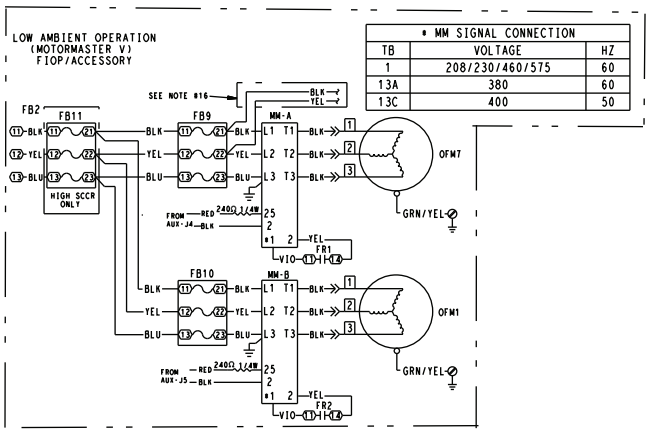


Fig. 22 — Motormaster V Power Wiring — 38APD115-130 Units

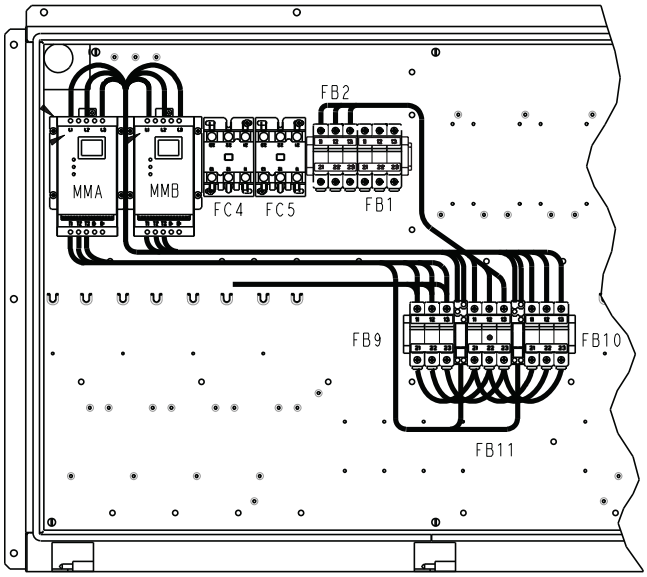


Fig. 23 — Motormaster® V Installation Location — 38APD115-130 Units

30RAP070-150 UNITS

Perform the following procedure to modify the control box for the accessory. See Fig. 24-31 for wiring details.

1. Disconnect wires connected to fan contactor 1 (FC1) and fan contactor 2 (FC2).
2. Remove FC1 and FC2.
3. Mount Motormaster V controller (Item 25) in location where FC1 was mounted, using 4 SL80AU170 screws (Item 9) provided. Repeat for FC2.
4. Connect fan wires from the fan motor to terminals T1, T2, and T3.
   30RAP070-090*:* Per Fig. 25.
   30RAP100,115*:* Per Fig. 26.
   30RAP130,150*:* Per Fig. 27.
5. Mount FB9 and FB10 (Item 5) to DIN rail (Item 26), installing end stop (Item 10) at each end of DIN rail. Install 3 fuses (Item 4) in fuse block.
6. Mount FR assembly (Items 6 and 7) on DIN rail (Item 26) next to FB9 and FB10.
7. If the unit already has an AUX board installed, skip to Step 8. Install AUX board (Item 14) using four AC41AB100 screws (Item 16) provided. See Fig. 27.
8. Install AUX power harness (Item 23) and AUX communication harness (Item 22).
   a. Make power connection to AUX J1 from either MBB, CXB, or EMM J2.
   b. Make communication connection J9 on AUX to terminal J3 of EMM if the unit has an EMM module or to terminal J3 of EXV.
9. Install harness 38APHLSLFV-A00 (Item 12).
   a. Connect BLK, YEL and BLU wires from harness (part no. 38APHLSLFV-A00) to fuse block 9 and 10 (FB9 and FB10) and the other end to MM connection L1, L2 and L3 per Fig. 29-31.
   b. Connect PNK and BRN wires to terminal A1 and A2 of FR-1 and FR-2 per Fig. 5.
   c. Connect VIO and YEL wires to terminal 14 and 11 of FR-1 and FR-2 per Fig. 29-31.
   d. Plug terminal board connector labeled AUX J4 to AUX Board J4. See Fig. 2.
   e. Make terminal strip connections to MMV terminal strip (YEL to terminal 2 and VIO to terminal 1 for 208/230, 460, and 575 V units; terminal 13A for 380 V units; terminal 13C for 400 V 50 Hz units).
   f. Make terminal strip connections. Connect RED to 25 and BLK to 2.
   g. Connect PNK wire labeled OFC PWR SPLICE to PNK wire labeled FC-1 COIL which was removed from FC1 contactor. See Fig. 5.

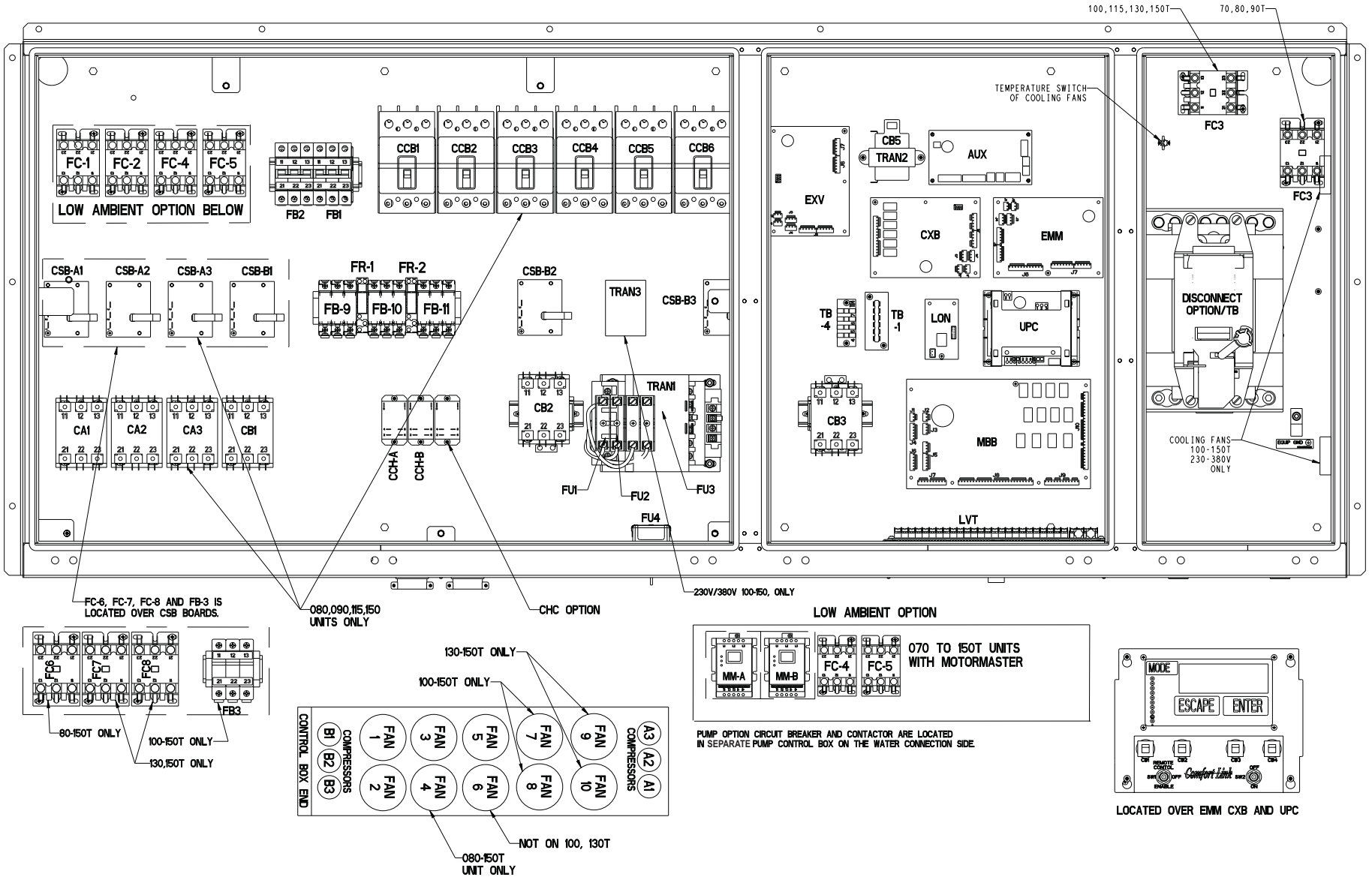
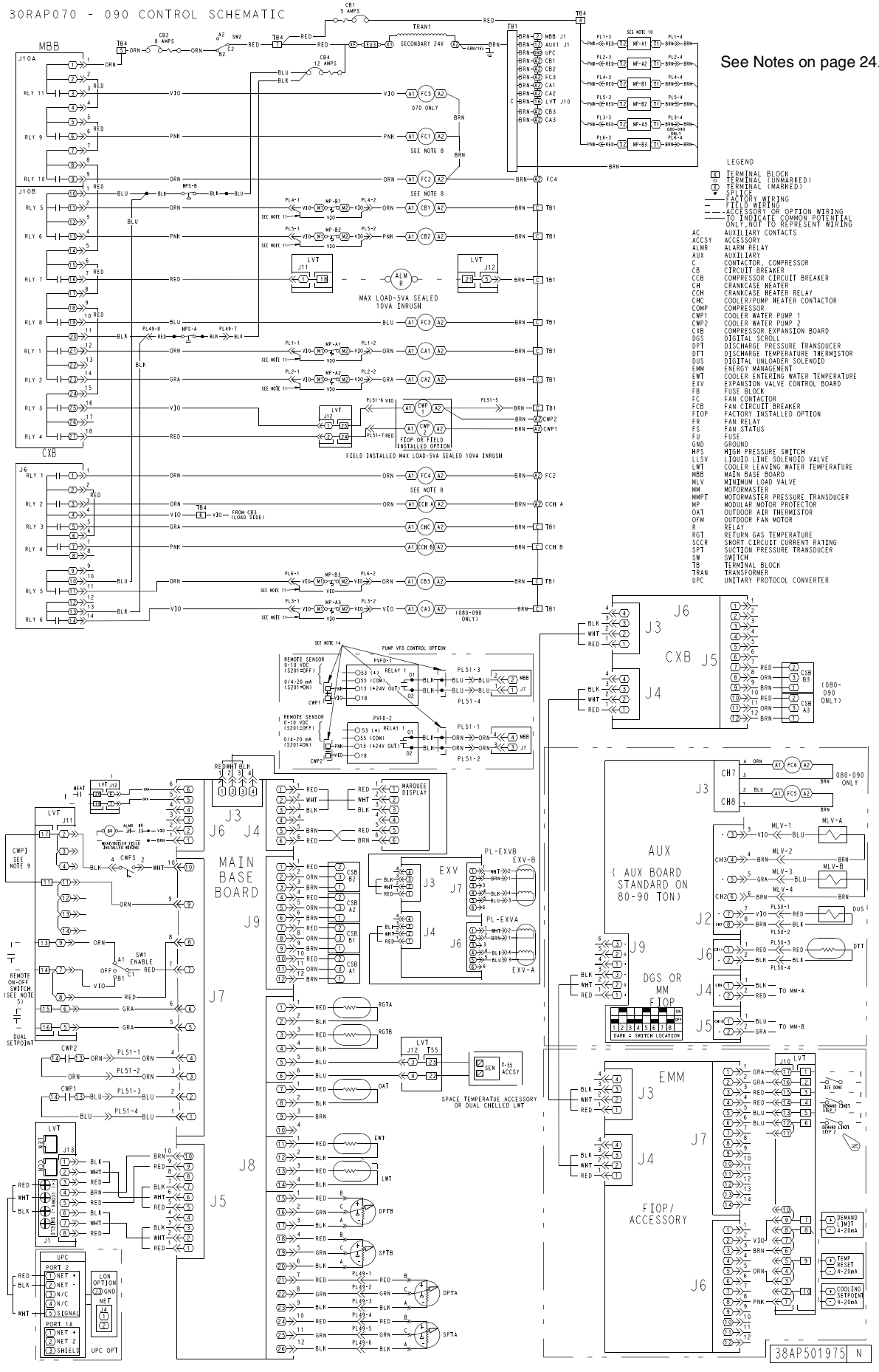


Fig. 24 — 30RAP070-150 Component Arrangement

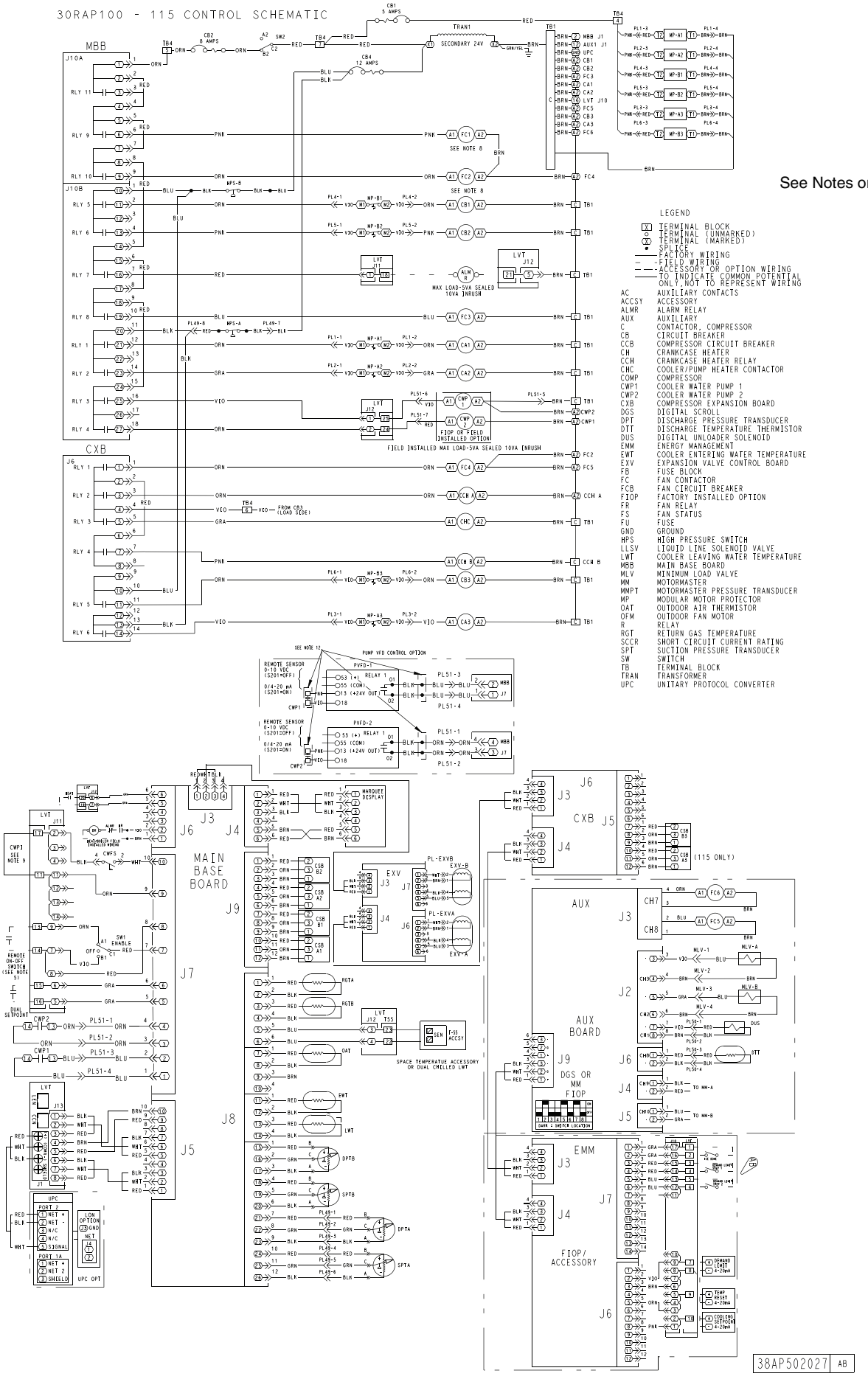


See Notes on page 24.

LEGEND

	TERMINAL BLOCK
	TERMINAL (UNMARKED)
	TERMINAL (MARKED)
	SPLICE
	FACTORY WIRING
	FIELD WIRING
	ACCESSORY OR OPTION WIRING
	TO INDICATE COMMON POTENTIAL ONLY,NOT TO REPRESENT WIRING
AC	AUXILIARY CONTACTS
ACCSY	ACCESSORY
ALMR	ALARM RELAY
AUX	AUXILIARY
C	CONTACTOR, COMPRESSOR
CB	CIRCUIT BREAKER
CCB	COMPRESSOR CIRCUIT BREAKER
CH	CRANKCASE HEATER
CCH	CRANKCASE HEATER RELAY
CHC	COOLER/PUMP HEATER CONTACTOR
COMP	COMPRESSOR
CWP1	COOLER WATER PUMP 1
CWP2	COOLER WATER PUMP 2
CXB	COMPRESSOR EXPANSION BOARD
DGS	DIGITAL SCROLL
DPT	DISCHARGE PRESSURE TRANSDUCER
DTT	DISCHARGE TEMPERATURE THERMISTOR
DUS	DIGITAL UNLOADER SOLENOID
EMM	ENERGY MANAGEMENT
EWT	COOLER ENTERING WATER TEMPERATURE
EXV	EXPANSION VALVE CONTROL BOARD
FB	FUSE BLOCK
FC	FAN CONTACTOR
FCB	FAN CIRCUIT BREAKER
FIOP	FACTORY INSTALLED OPTION
FR	FAN RELAY
FS	FAN STATUS
FU	FUSE
GND	GROUND
HPS	HIGH PRESSURE SWITCH
LLSV	LIQUID LINE SOLENOID VALVE
LWT	COOLER LEAVING WATER TEMPERATURE
MBB	MAIN BASE BOARD
MLV	MINIMUM LOAD VALVE
MM	MOTORMASTER
MMPT	MOTORMASTER PRESSURE TRANSDUCER
MP	MODULAR MOTOR PROTECTOR
OAT	OUTDOOR AIR THERMISTOR
OFM	OUTDOOR FAN MOTOR
R	RELAY
RGT	RETURN GAS TEMPERATURE
SCCR	SHORT CIRCUIT CURRENT RATING
SPT	SUCTION PRESSURE TRANSDUCER
SW	SWITCH
TB	TERMINAL BLOCK
TRAN	TRANSFORMER
UPC	UNITARY PROTOCOL CONVERTER

Fig. 25 — 30RAP070-090 Control Schematic



LEGEND

	TERMINAL BLOCK
	TERMINAL (UNMARKED)
	TERMINAL (MARKED)
	SPLICE
	FACTORY WIRING
	FIELD WIRING
	ACCESSORY OR OPTION WIRING
	TO INDICATE COMMON POTENTIAL ONLY, NOT TO REPRESENT WIRING
AC	AUXILIARY CONTACTS
ACCSY	ACCESSORY
ALMR	ALARM RELAY
AUX	AUXILIARY
C	CONTACTOR, COMPRESSOR
CB	CIRCUIT BREAKER
CCB	COMPRESSOR CIRCUIT BREAKER
CH	CRANKCASE HEATER
CCH	CRANKCASE HEATER RELAY
CHC	COOLER/PUMP HEATER CONTACTOR
COMP	COMPRESSOR
CWP1	COOLER WATER PUMP 1
CWP2	COOLER WATER PUMP 2
CXB	COMPRESSOR EXPANSION BOARD
DGS	DIGITAL SCROLL
DPT	DISCHARGE PRESSURE TRANSDUCER
DTT	DISCHARGE TEMPERATURE THERMISTOR
DUS	DIGITAL UNLOADER SOLENOID
EMM	ENERGY MANAGEMENT
EWT	COOLER ENTERING WATER TEMPERATURE
EXV	EXPANSION VALVE CONTROL BOARD
FB	FUSE BLOCK
FC	FAN CONTACTOR
FCB	FAN CIRCUIT BREAKER
FIOP	FACTORY INSTALLED OPTION
FR	FAN RELAY
FS	FAN STATUS
FU	FUSE
GND	GROUND
HPS	HIGH PRESSURE SWITCH
LLSV	LIQUID LINE SOLENOID VALVE
LWT	COOLER LEAVING WATER TEMPERATURE
MBB	MAIN BASE BOARD
MLV	MINIMUM LOAD VALVE
MM	MOTORMASTER
MMPT	MOTORMASTER PRESSURE TRANSDUCER
MP	MODULAR MOTOR PROTECTOR
OAT	OUTDOOR AIR THERMISTOR
OFM	OUTDOOR FAN MOTOR
R	RELAY
RGT	RETURN GAS TEMPERATURE
SCCR	SHORT CIRCUIT CURRENT RATING
SPT	SUCTION PRESSURE TRANSDUCER
SW	SWITCH
TB	TERMINAL BLOCK
TRAN	TRANSFORMER
UPC	UNITARY PROTOCOL CONVERTER

See Notes on page 24.

Fig. 26 — 30RAP100,115 Control Schematic

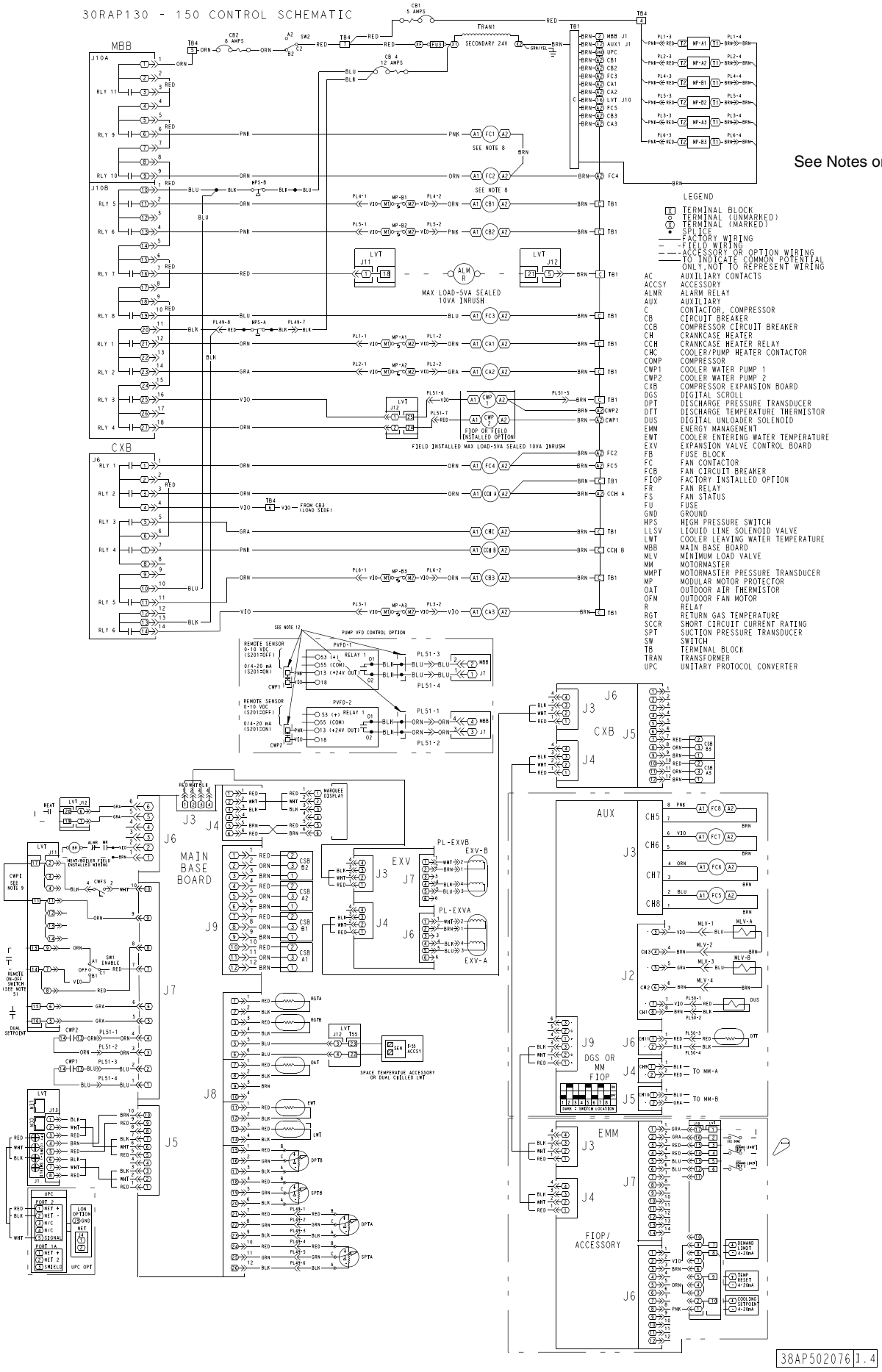


Fig. 27 — 30RAP130,150 Control Schematic

See Notes on page 24.

NOTES — FIG. 25

1. Factory wiring is in accordance with UL 1995 standards. 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 field interlock contacts must have a min rating rating of 2 amps at 24 vac sealed. See field interlock wiring.
4. Compressor and fan motors are thermally protected; three-phase motor protected against primary single phase conditions.
5. Terminals 13 and 14 of LVT 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.
6. For 500 series unit operation at 208-3-60 line voltage, TRAN1 primary connections must be moved to terminals H3 and H4.
7. For units with low ambient Motormaster® V FIOP/accessory:
   Fan contactor FC1 is replaced with fan relay FR1.
   Fan contactor FC2 is replaced with fan relay FR2.
8. If chilled water interlock pump is used, remove jumper from terminal 11 to terminal 17 and wire interlock contact across terminals 11 and 17.
9. MP-A1, A2, A3, B1, B2, B3 not used in 460V units without digital scroll.
10. Jumper plug required when MP not used.
11. High SCCR units with Motormaster only.
12. Two pump heaters connected in pump control box.
13. Connections are made in the pump control box.
14. Crankcase heater color codes: 575V blue; 460V, 380/415V red; 208/230V, 380V yellow.

NOTES — FIG. 26

1. Factory wiring is in accordance with UL 1995 standards. 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 field interlock contacts must have a min rating rating of 2 amps at 24 vac sealed. See field interlock wiring.
4. Compressor and fan motors are thermally protected; three-phase motor protected against primary single phase conditions.
5. Terminals 13 and 14 of LVT 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.
6. For 500 series unit operation at 208-3-60 line voltage, TRAN1 primary connections must be moved to terminals H3 and H4.
7. For units with low ambient Motormaster® V FIOP/accessory:
   Fan contactor FC1 is replaced with fan relay FR1.
   Fan contactor FC2 is replaced with fan relay FR2.
8. If chilled water interlock pump is used, remove jumper from terminal 11 to terminal 17 and wire interlock contact across terminals 11 and 17.
9. High SCCR units with Motormaster only.
10. Pump option, two heaters connected in pump control box.
11. Connections are made in the pump control box.
12. Crankcase heater color codes: 575V blue; 460V, 380/415V, 380V red; 208/230V yellow.

NOTES — FIG. 27

1. Factory wiring is in accordance with UL 1995 standards. 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 field interlock contacts must have a min rating rating of 2 amps at 24 vac sealed. See field interlock wiring.
4. Compressor and fan motors are thermally protected; three-phase motor protected against primary single phase conditions.
5. Terminals 13 and 14 of LVT 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.
6. For 500 series unit operation at 208-3-60 line voltage, TRAN1 primary connections must be moved to terminals H3 and H4.
7. For units with low ambient Motormaster® V FIOP/accessory:
   Fan contactor FC1 is replaced with fan relay FR1.
   Fan contactor FC2 is replaced with fan relay FR2.
8. If chilled water interlock pump is used, remove jumper from terminal 11 to terminal 17 and wire interlock contact across terminals 11 and 17.
9. High SCCR units with Motormaster only.
10. Pump option, two heaters connected in pump control box.
11. Connections are made in the pump control box.
12. Crankcase heater color codes: 575V blue; 460V, 380/415V, 380V red; 208/230V yellow.

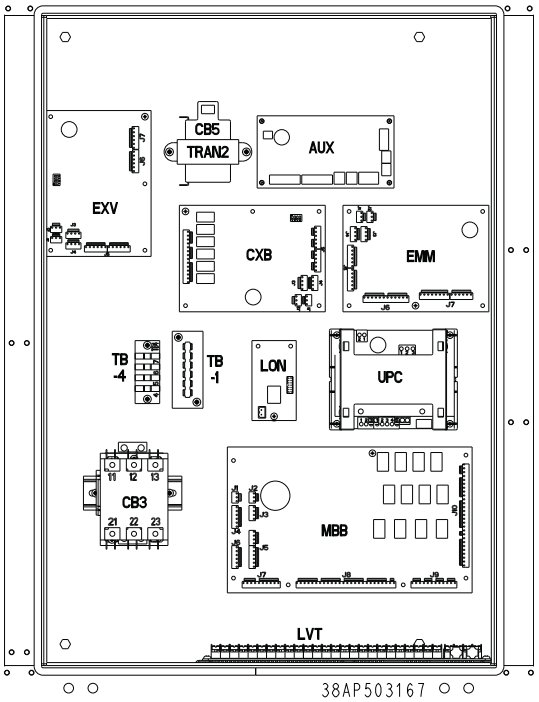


Fig. 28 — AUX Board Installation Location — 30RAP070-150 Units

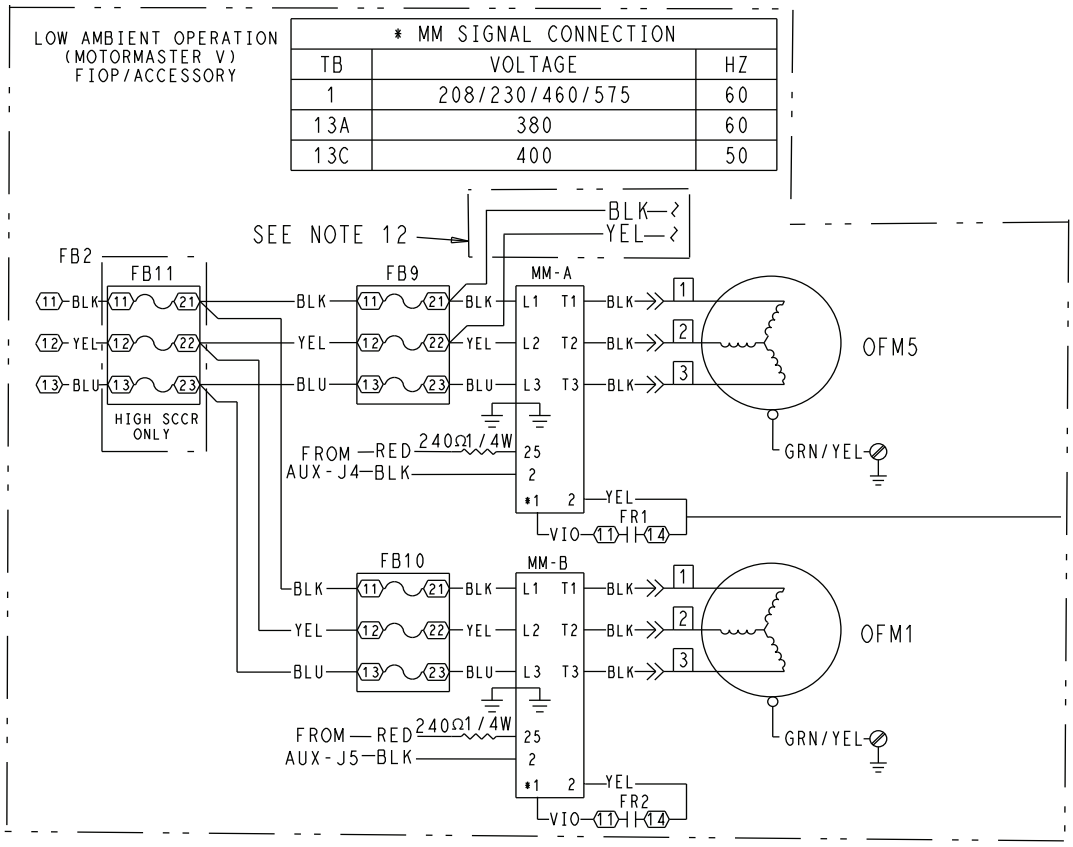


Fig. 29 — Motormaster V Power Wiring — 30RAP070-090 Units

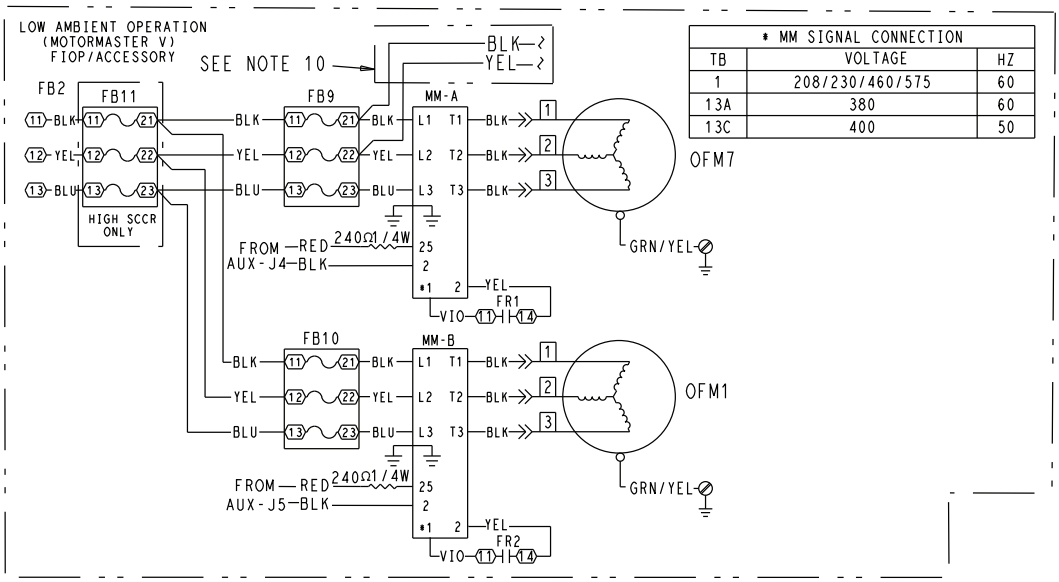


Fig. 30 — Motormaster V Power Wiring — 30RAP100,115 Units

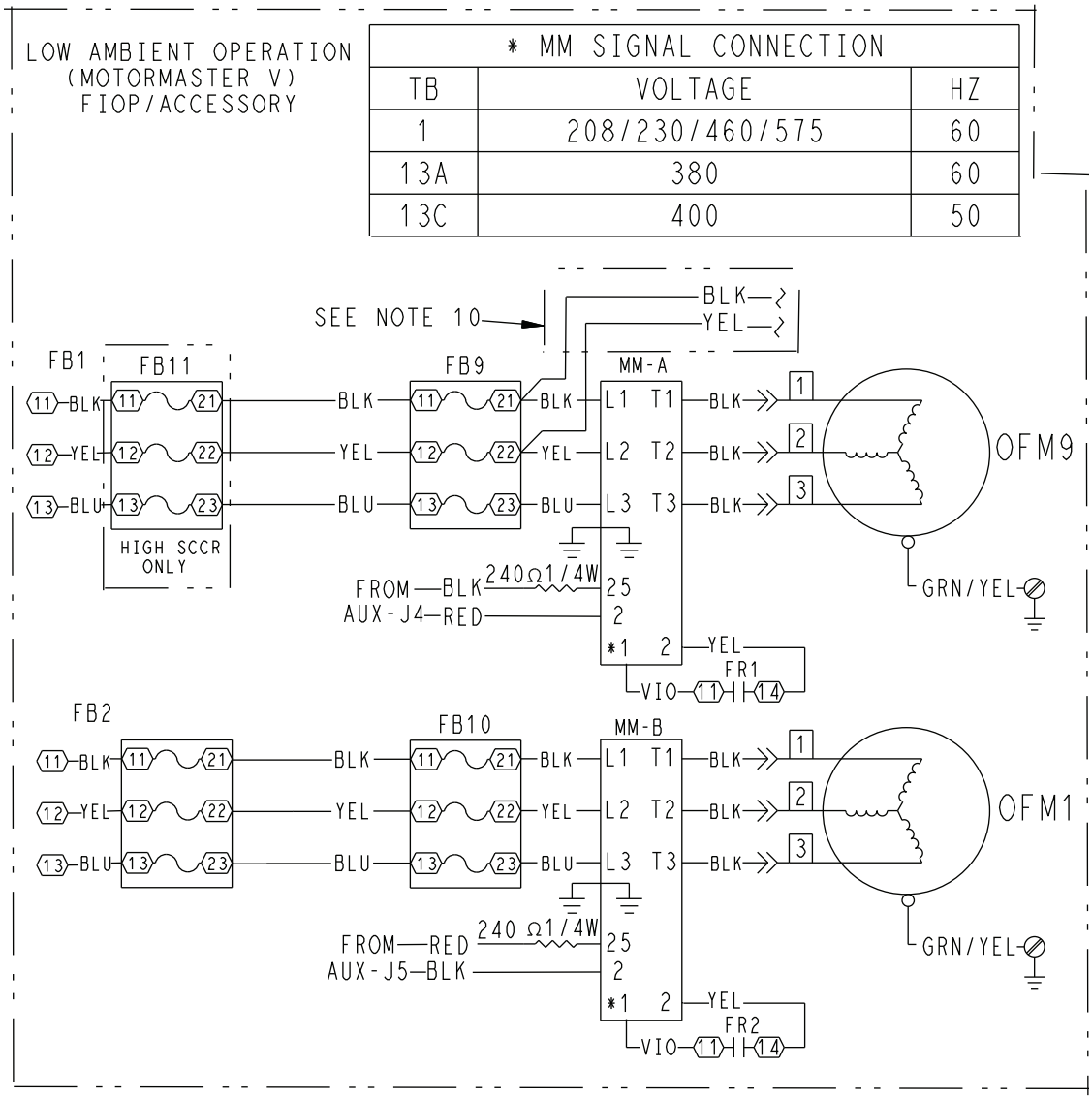


Fig. 31 — Motormaster V Power Wiring — 30RAP130,150 Units

Step 3 — Configure Unit for Motormaster V Electronic Control Operation

The unit must be configured for the Motormaster V electronic control operation. Use the scrolling marquee display to configure the system as following:

1. Set the Enable/Off/Remote switch to OFF position.
2. Press the ESCAPE key until the screen is blank and use the arrow key to select the Configuration mode LED (light-emitting diode).
3. Press ENTER key, then use ▼ key to select the sub-mode 'MM', then press ENTER key.
4. Press ▼ until 'MMR.S' displayed.
5. Press ENTER key twice. The words 'PASS' and 'WORD' will flash.
6. Press 1 1 1 1 then ENTER key so that 'NO' flashes.
7. Use arrow keys to change to 'YES' and press ENTER key.
8. Return the Enable/Off/Remote switch to the proper position.

The unit is now configured for Motormaster control.

Step 4 — Test Motormaster V Electronic Control Option Output

Follow the instructions given in the Controls Start-Up, and Troubleshooting Guide to verify proper operation of Motormaster V electronic control and the outdoor fan motors.

When the auxiliary contact is closed, the Motormaster V electronic control will start and respond to the input from the AUX board. The LED will display the speed of the motor. The display range will be 8 to 50 Hz for 50 Hz units and 8 to 60 Hz for 60 Hz units.

START-UP

Motormaster V Control

Refer to the Motormaster V electronic control information in the unit Controls and Troubleshooting literature for start-up information.

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

⚠ CAUTION

If input power has not been applied to the drive for a period of time exceeding three years (due to storage, etc.), the electrolytic DC bus capacitors within the drive can change internally, resulting in excessive leakage current. This can result in premature failure of the capacitors if the drive is operated after such a long period of inactivity or storage. In order to reform the capacitors and prepare the drive for operation after a long period of inactivity, apply input power to the drive for 8 hours prior to actually operating the motor. Before attempting to operate the drive or the motor, be sure all procedures pertaining to installation and wiring have been properly followed.

⚠ CAUTION

DO NOT connect incoming AC power to output terminals T1, T2, and T3. Severe damage to the drive will result. Do not continuously cycle input power to the drive more than once every two minutes. Damage to the drive will result.

⚠ CAUTION

UNIT DAMAGE HAZARD

It is strongly recommended that the user NOT change any programming without consulting Carrier service personnel. Unit damage may occur from improper programming.

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

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