



Installation Instructions

50/60 Hz

Accessory Fan Cycling Control Usage

PACKAGE NUMBER 09DK	CONTROL CKT VOLTAGE		USED ON 09DK
	3 Ph, 60 Hz	3 Ph, 50 Hz	
500070	208/230, 460,575	—	020,024, 028
500071	380	230,400	020 (60 Hz only), 024,028
500072	208/230, 460,575	—	034,044
500073	380	230,400	034,044
09DE900011	115	—	09DE016

Accessory Kit Contents — 09DK

QTY PER KIT NO.				ITEM
070	071	072	073	
1	1	2	2	Temperature Actuated Switch
1	1	1	1	Terminal Block
0	0	1	1	Terminal Adapter
1	1	2	2	Contactor
1	1	1	1	Instructions
1	1	1	1	Parts Bag
PARTS BAG CONTENTS:				
5	5	5	5	Mounting Screws
2	2	4	4	Screws, 8-18 x 1/2-in. long
2	2	4	4	Screws, 6AB x 1/2-in. long
5	5	8	8	Wire Assemblies
3	3	3	3	Wire Ties

Accessory Kit Contents — 09DE016

QTY PER KIT NO. 09DE900011		ITEM
1		Temperature Actuated Switch
1		Relay
1		Contactor
1		Instructions
1		Parts Bag
PARTS BAG CONTENTS:		
8		Screws #6B — 1/2 in. long
4		Screws #10AB — 1/2 in. long

GENERAL

The Accessory Fan Cycling Control maintains unit cooling capacity control during changes in outside ambient temperature. If full cooling is not required during certain operating periods, the accessory can save energy by supplying power to fewer fans.

BEFORE INSTALLATION

Check kit contents for missing or damaged items. File claim immediately with transit company if anything is missing or damaged. Check to be sure accessory control voltage matches available power supply.

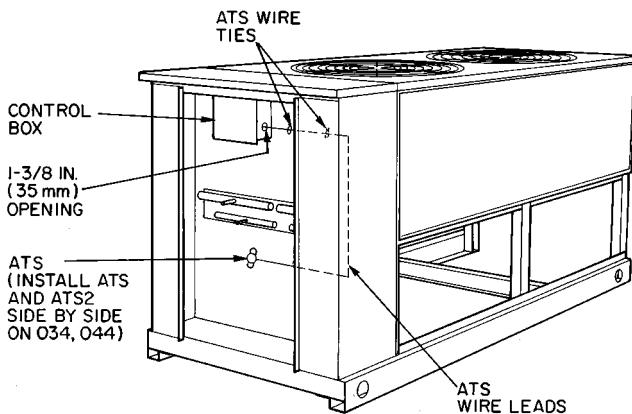


Fig. 1 — Model 09DK (028 Shown)

INSTALLATION

09DK

- Shut off power to unit.

WARNING

Electrical shock can cause personal injury or death. Before installing this accessory, be sure power to unit is disconnected. There may be more than one disconnect switch. Attach tags at disconnect(s) to alert others **not** to restore power until installation is completed.

- Remove unit control box cover. See Fig. 1.
- 09DK020-028 Units:* Mount temperature actuated switch (ATS) onto the bottom inner divider panel of unit, using two #6AB x 1/2-in. long screws provided. Screw holes are predrilled in panel. See Fig. 1.

09DK034,044 Units: Mount temperature actuated switches (ATS and ATS2) onto the bottom inner divider panel of unit, using four #6AB x 1/2-in. long screws provided (2 screws for each switch). Mount switches side by side in predrilled holes. See Fig. 1.

- 09DK020-028 Units:* Install fan contactor FC2 and terminal block TB2 inside control box. See Fig. 2. Disconnect red wire from FC1 $\textcircled{11}$ and orange wire from FC1 $\textcircled{13}$. Connect red wire to FC2 $\textcircled{21}$. Connect orange wire to FC2 $\textcircled{23}$. Attach 8-in. black wire provided in accessory package to FC1 $\textcircled{11}$ and FC2 $\textcircled{11}$. Connect the 8-in. blue wire to FC1 $\textcircled{13}$ and FC2 $\textcircled{13}$. Next, connect the 8-in. white wire to FC1 neutral side, and FC2 $\textcircled{C2}$. Attach the 18-in. black wire to FC1 control power side and TB2 $\textcircled{1}$. Connect one lead of ATS to TB2 $\textcircled{1}$ and connect the other lead to FC2 $\textcircled{C1}$.

09DK034,044 Units: Install fan contactors FC2 and FC3 and terminal block TB2 inside control box. See Fig. 2. Add terminal adapter to TB2 $\textcircled{1}$. See Fig. 2 and 3. Disconnect red and pink wires from FC1 $\textcircled{11}$. Also, disconnect orange and gray wires from FC1 $\textcircled{13}$. Connect red wire to FC2 $\textcircled{21}$ and pink wire to FC3 $\textcircled{21}$. Also, connect orange wire to FC2 $\textcircled{23}$ and gray wire to FC3 $\textcircled{23}$. Attach 8-in. black wire provided in accessory package to FC1 $\textcircled{11}$ and FC2 $\textcircled{11}$. Con-

nect the other 8-in. black wire to FC1 $\textcircled{11}$ and FC3 $\textcircled{11}$. Connect an 8-in. blue wire to FC1 $\textcircled{13}$ and FC2 $\textcircled{13}$. Attach the other 8-in. blue wire to FC1 $\textcircled{13}$ and FC3 $\textcircled{13}$. Next, connect an 8-in. white wire to FC1 neutral side and FC2 $\textcircled{C2}$. Attach the other 8-in. white wire to FC2 $\textcircled{C2}$ and FC3 $\textcircled{C2}$. Connect the 18-in. black wire to FC1 control power side and TB2 $\textcircled{1}$. Attach one lead of ATS (Air Temperature Switch) to TB2 $\textcircled{1}$ and the other lead to FC2 $\textcircled{C1}$. Connect one lead of ATS2 to TB2 $\textcircled{1}$ and the other lead to FC3 $\textcircled{C1}$. See Fig. 4 for wiring connections.

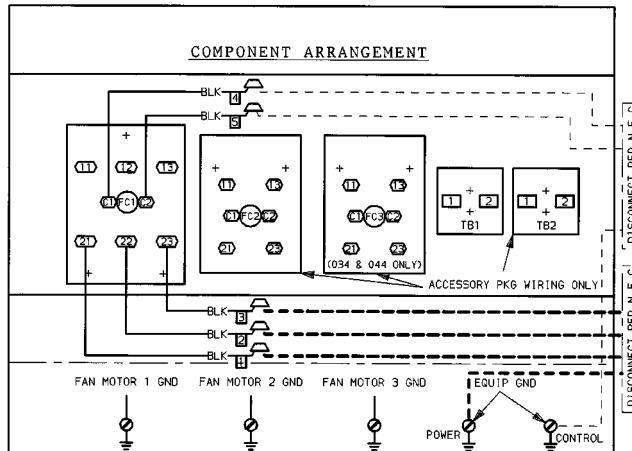


Fig. 2 — Component Arrangement

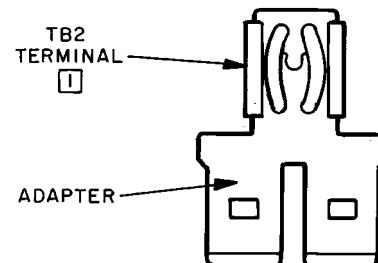


Fig. 3 — Terminal Adapter

- Route the wire leads of ATS around the coil, keeping them away from the coil and any sharp metal edges. Install wire ties provided through predrilled holes in upper divider panel. See Fig. 1. Run ATS wire leads through wire ties, then into the 1 3/8-in. (35 mm) diameter control box opening.
- The underside of the ATS is the thermal sensor area that senses the temperature of air entering the coil. The air temperature switch opens at 60 ± 3 F and closes at 70 ± 3 F (020,024,028 units only). On 09DK034 and 09DK044 units, ATS opens at 55 ± 3 F and closes at 65 ± 3 F, and ATS2 opens at 70 ± 3 F and closes at 80 ± 3 F.
- ATS controls fan motor (FM2). On 09DK034 and 044 units, ATS2 controls fan motor (FM3).
- If Motormaster® control is to be used to modulate fan motor (FM1), see installation instructions included with 09DK wiring book, and see 32LT Motormaster control installation instructions for additional general reference.

9. Replace unit control box cover.

10. Restore power to unit.

11. Check fan rotation.

NOTE: On 020 to 028 units, when the outdoor ambient temperature is below 60 F, FM2 is off. For 034 and 044

units, when the outdoor ambient temperature is below 55 F, FM2 and FM3 are off. To energize fan(s) in order to check fan rotation, warm ATS (and ATS2) thermal sensors by hand. **Do not use a torch.**

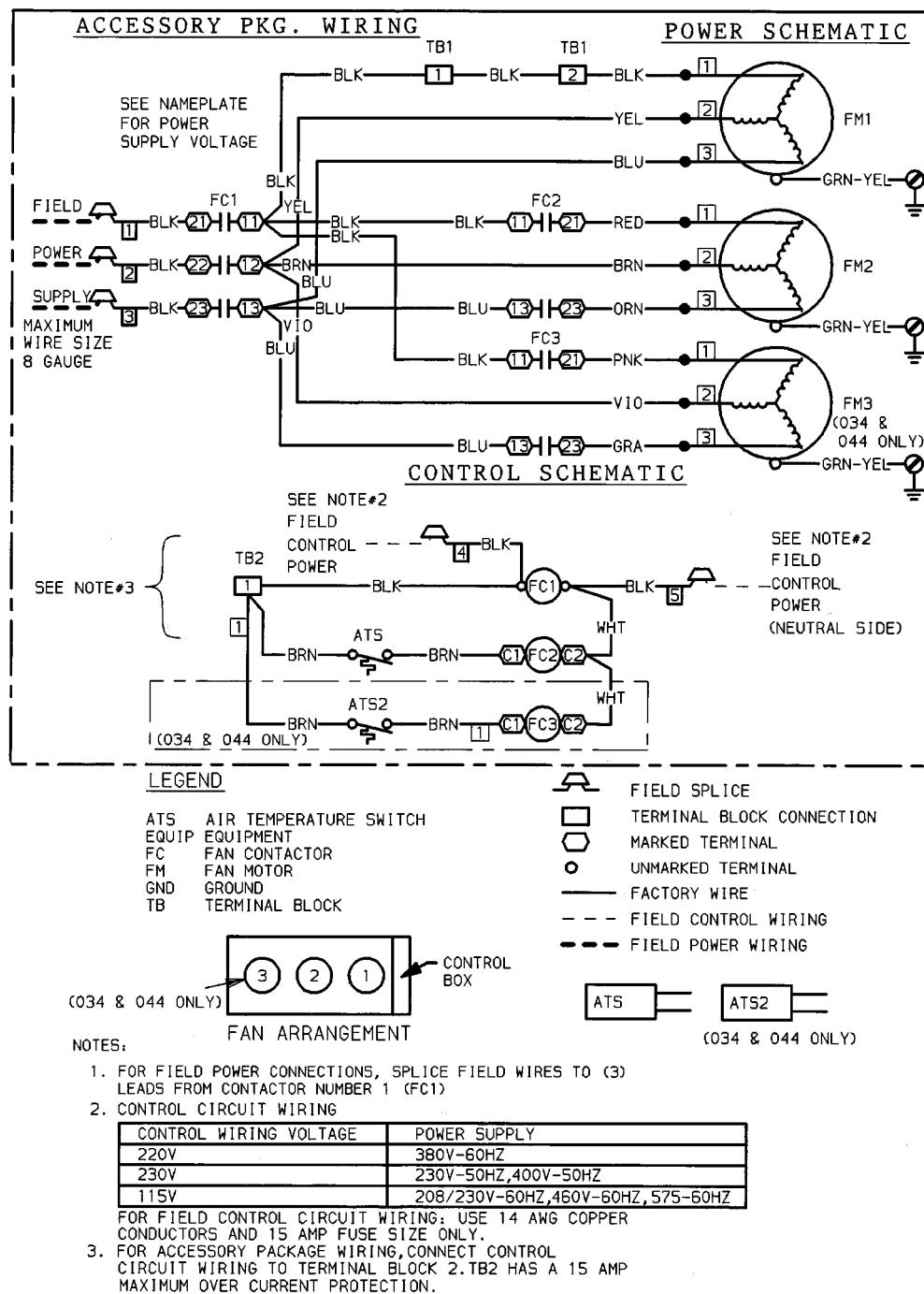


Fig. 4 — Accessory Fan Cycling Control Wiring

09DE016

1. Shut off power to unit.
2. Remove access panel and electric control box cover.
3. Mount temperature actuated switch, relay and contactor on bracket as shown in Fig. 5 using the #6B — 1/2 screws supplied with the package.
4. Mount the bracket assembly on the electric control box panel as shown in Fig. 5 (indicated by dotted lines), using the #10AB — 1/2 screws supplied for fasteners. Position bracket assembly on panel until matching holes are located.

▲ CAUTION

Do not kink air temperature switch capillary or the switch operation may not function normally.

5. Carefully unwind the air temperature switch (ATS) capillary and route it as shown in Fig. 6. Route through slot in bottom of control box, behind left corner post, down

between cornerpost and basepan, vertically upward, and locate behind flange of fan deck. Fasten thermal bulb with field-supplied perforated strap. The thermal bulb senses the temperature of the air entering the coil. The air temperature switch opens at 60 F and closes at 65 F (± 2 degrees F).

6. Wire the air temperature switch to control fan motor (OFM1) in accordance with Fig. 7. Wire sizing amps are indicated in installation instructions for 09DE016.
7. If Motormaster® control is to be used to modulate fan motor (OFM2), refer to 32LT Motormaster control installation instructions.
8. Replace panels.
9. When outdoor ambient temperature is below 60 F, FM2 is off. To energize, for checking fan rotation, warm thermostat bulb by hand. **Do not use a torch.**

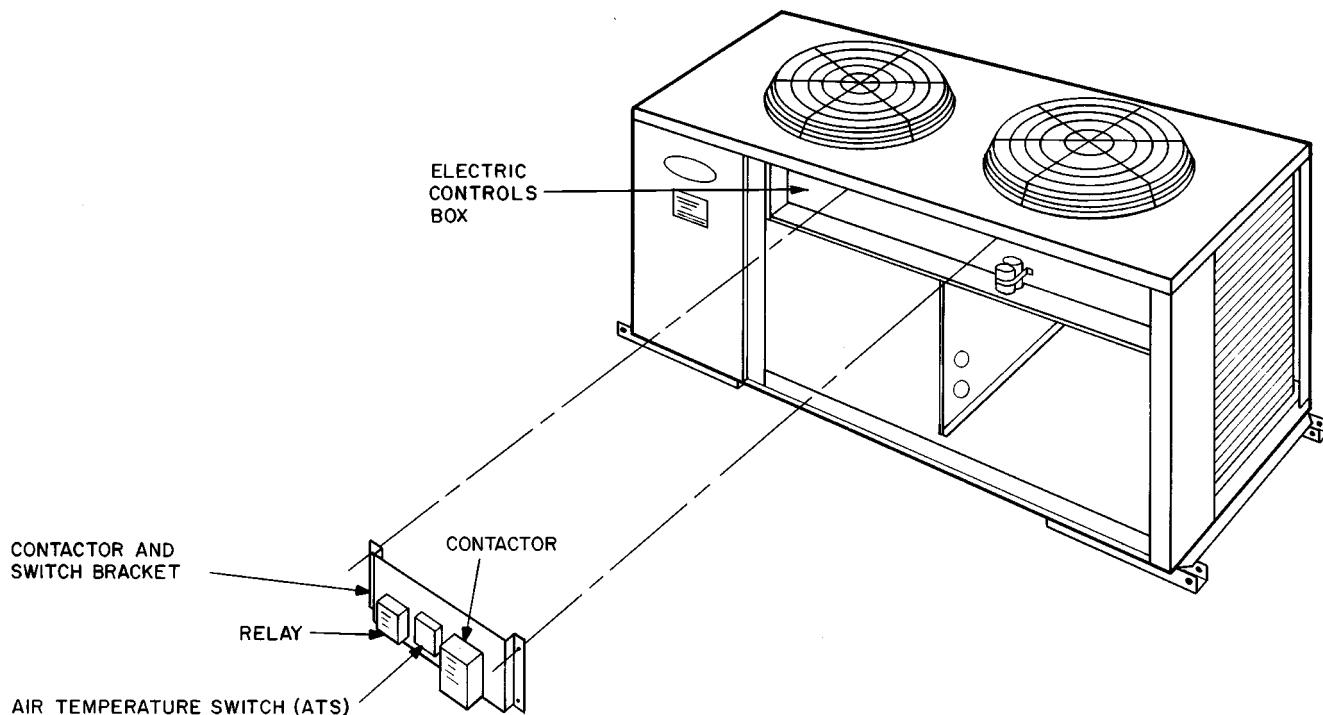


Fig. 5 — Fan Control Package for 09DE016

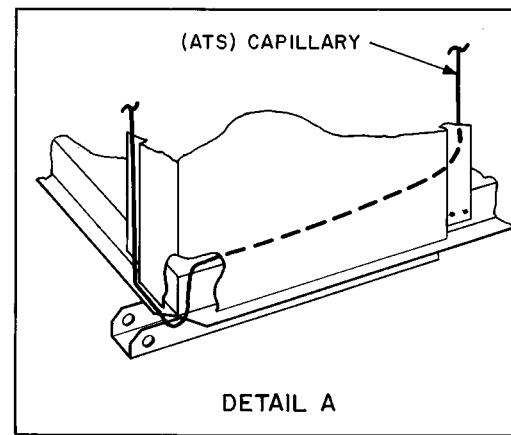
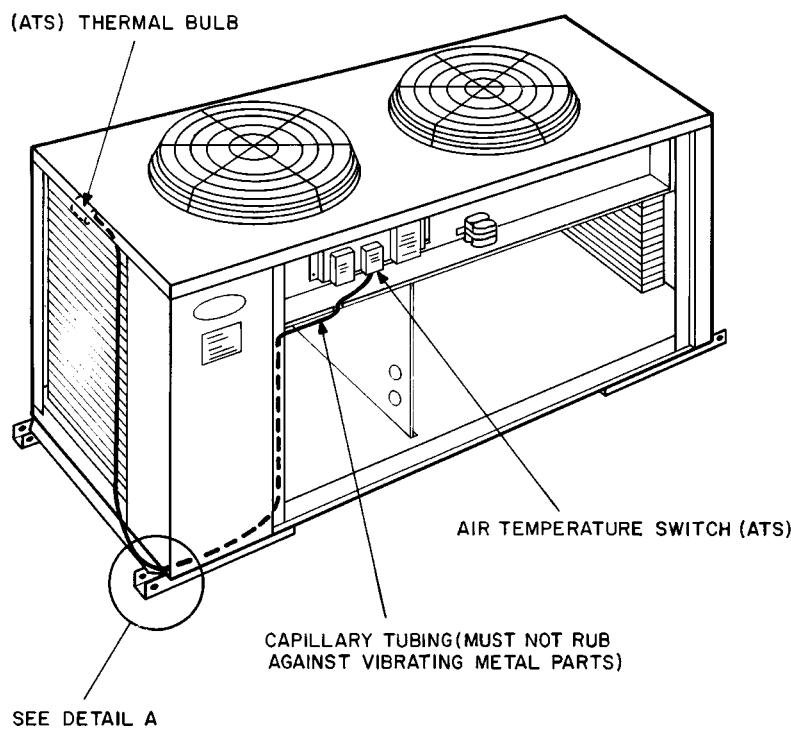
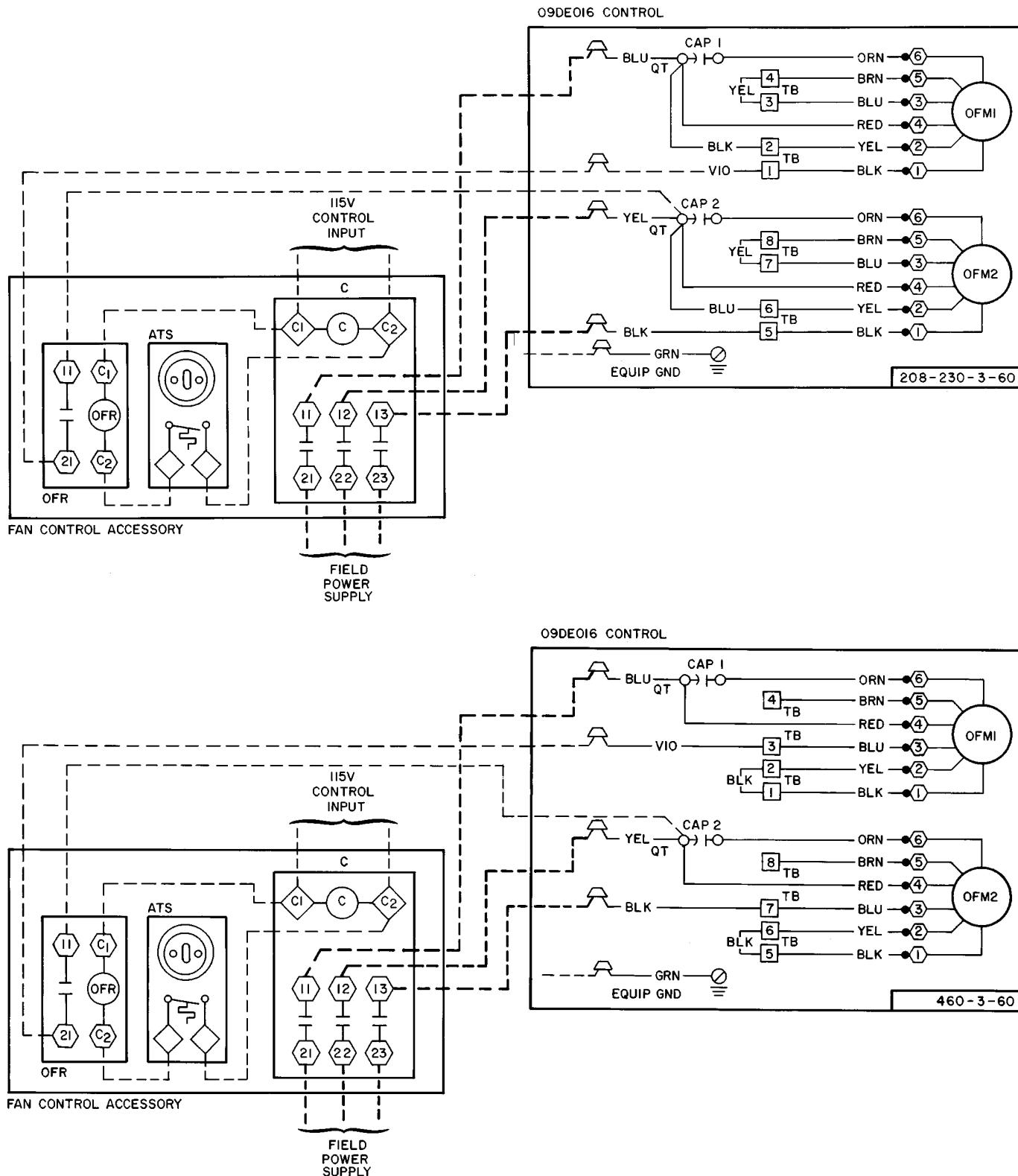


Fig. 6 — Routing ATS Capillary



LEGEND

ATS	—	Air Temperature Switch	OFM	—	Outdoor Fan Motor	—	Factory Wiring
C	—	Contactor	OFR	—	Outdoor Fan Motor Relay	—	Field Wiring (Power)
CAP.	—	Capacitor	QT	—	Quadruple Terminal	—	Field Wiring (Control)
GND	—	Ground	TB	—	Terminal Board	—	

Fig. 7 — 09DE016 Accessory Fan Cycling Control Wiring

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

Book 2
Tab 4a

PC 111

Catalog No. 530-950

Printed in U.S.A.

Form 09DK-2SIM

Pg 8

5-90

Replaces: New