

RELIANCE ELECTRIC

OUTPUT CONTACTOR KIT
Models 36C44, 36C45, 36C46
For use with, 100, 125, 150, 200, 250 HP
460 VAC, Three-Phase Input
General Purpose A-C V*S® Drives
and 150, 200, 250 HP
460 VAC, Three-Phase Input
Variable Torque A-C V*S® Drives

WARNING

BEFORE INSTALLING AND/OR OPERATING THIS KIT, THE QUALIFIED ELECTRICAL MAINTENANCE PERSON WHO IS FAMILIAR WITH THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED SHOULD READ THIS ENTIRE INSTRUCTION SHEET. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY.

DESCRIPTION

The Reliance Electric Output Contactor Kit provides a positive disconnect (contactor) between the output of the A-C V*S® Drive Controller and the Drive Motor. A

controller Start command will cause the contactor to be energized. The controller start sequence will be inhibited if the A-C Contactor's auxiliary contact does not close ("N" auxiliary signal). When the Stop rocker switch is pressed, the A-C Contactor will drop out immediately if the controller is set for coast-to-rest or will drop out after zero speed is reached if the controller is set for ramp-to-rest. When set for ramp-to-rest, a Coast-Stop pushbutton must be used. This pushbutton will cause an immediate function loss IET shutdown rather than a ramped stop and will positively open the A-C Contactor. Refer to Instruction Manual D-3907 or D2-3024.

Table 1 shows the appropriate model of Output Contactor Kit to use with each size controller. Figure 1 shows the contents of a typical kit.

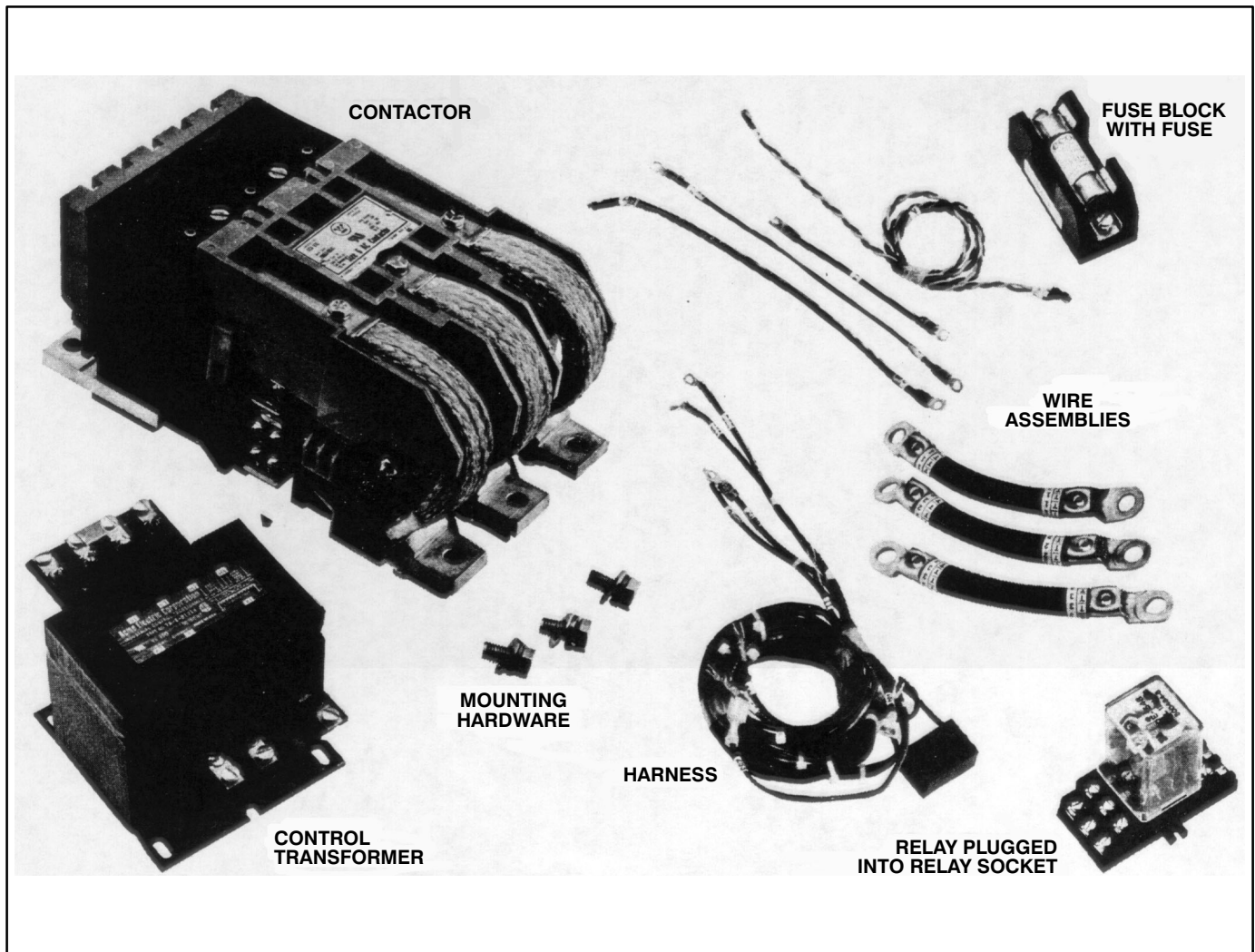


Figure 1. Kit contents.

Table 1. Kit selection.

Contactor		Controller			
		General Purpose		Variable Torque	
Kit Model	NEMA Size	HP	Model	HP	Model
36C44	4	100	26C1100	—	—
36C45	5	125	26C1125	—	—
		150	26C1150	150	1VT41151
		200	26C1200	200	1VT41200
36C46	6	250	26C1250	250	1VT41250

Upon receiving, check the contents of the kit received with the contents as listed in Table 3 at the end of this instruction sheet. Store this equipment in a clean and dry area until ready to use. The ambient temperature of the storage area must not exceed 65° C (149° F) or go below -40° C (-40° F).

INSTALLATION

NOTE: All components of the Output Contactor Kit must be mounted in a clean and dry environment. Maximum ambient temperature must not exceed 40° C outside the cabinet (55° C inside the cabinet).

WIRE SIZING NOTE: Care should be taken to see that all interconnecting wiring is sized and installed in conformance with the National Electrical Code (NEC), published by the National Fire Protection Association, or the Canadian Electrical Code (CEC), and other applicable local codes.

1. Disconnect all power to the A-C V★S Drive before installing this kit.

DANGER

EQUIPMENT IS AT LINE VOLTAGE WHEN THE INPUT DISCONNECT IS ON. THE INPUT DISCONNECT MUST BE OFF BEFORE IT IS SAFE TO TOUCH ANY INTERNAL PARTS OF THIS EQUIPMENT. AFTER POWER IS REMOVED, THE COMMUTATION CAPACITORS CAN REMAIN CHARGED. ALLOW TWO MINUTES BEFORE TOUCHING ANY INTERNAL PARTS OF THE CONTROLLER. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN FATAL INJURY.

NOTE: If both the Output Contactor and the Input Disconnect Kits are to be installed, mount the Output Contactor Kit first because the mounting bracket for the Input Disconnect Kit mounts over the installed Output Contactor.

NOTE: If the Output Contactor Kit and the Control Circuit Transformer Kit are to be installed, mount the Output Contactor Kit first because the Control Circuit Transformer Kit normally occupies the same location as the Output Contactor Kit. The Control Circuit Transformer Kit must be relocated as defined in Instruction Sheet D-3912.

2. When installing Output Contactor Kit Model 36C44 (100 horsepower controller), the Suppressor Assembly (part 600686-41T) must be snapped into the lower left cavity of the Contactor as shown in Figure 4, Detail A. Connect leads A and B to the two contactor coil terminals.
3. Remove the power module phase cover. Referring to Figure 2, remove leads 181, 182 and 183 from the power module and set the hardware aside. Remove the mounting panel with the input terminal board by removing the four taptite screws. This assembly will be re-installed later.
4. If the motor overload relay in the controller is the bus bar type, proceed to Step 5. If the motor overload relay is the single-block type, proceed to Step 6 for 100 horsepower controllers or Step 8 for all other horsepower controllers.
5. Remove the slotted screws from the upper bus bars on the motor overload relay (Detail A in Figure 2). Set the screws aside for later use.

CAUTION: Avoid placing stress on the motor overload. Component damage could result.

6. Remove the hardware and internal power leads at terminals T1, T2 and T3 on the motor overload relay. See Detail A in Figure 2. Set aside the hardware for later use.
7. Disconnect motor leads T1, T2 and T3 from the output terminal board (Figure 2) and set aside the hardware for later use. Remove and discard the output terminal board with attached wire assemblies. Proceed to Step 10.
8. Remove the hardware and internal power leads at terminals 601, 602 and 603 of the power module. See Figure 2. Set aside the hardware for later use.
9. Disconnect motor leads T1, T2 and T3 from the output terminal board (Figure 2). Remove and discard the output terminal board with attached wire assemblies.
10. Using the furnished taptite screws (1/4-20 X 3/8" for Model 36C44 or 5/16-18 x 1" for Models 36C45 and 36C46), mount the Contactor (part 705310-28R, -7R or -8R) in the controller as shown in Figure 3. The mounting holes are pre-drilled. (Due to the weight of the Contactor, it might prove helpful to pre-thread the screws in the mounting holes, and then to remove the upper screws leaving the lower two screws loose.)
11. Remove the jumper between the contactor coil and the auxiliary contact, if installed.
12. Using four furnished 10-32 x 1/2" taptite screws and the #10 flat washers, mount the Control Transformer (part 417155-S) on the left-hand panel as shown in Figure 3. The mounting holes are pre-drilled in the panel. (It might prove helpful to pre-thread the screws in the mounting holes.)

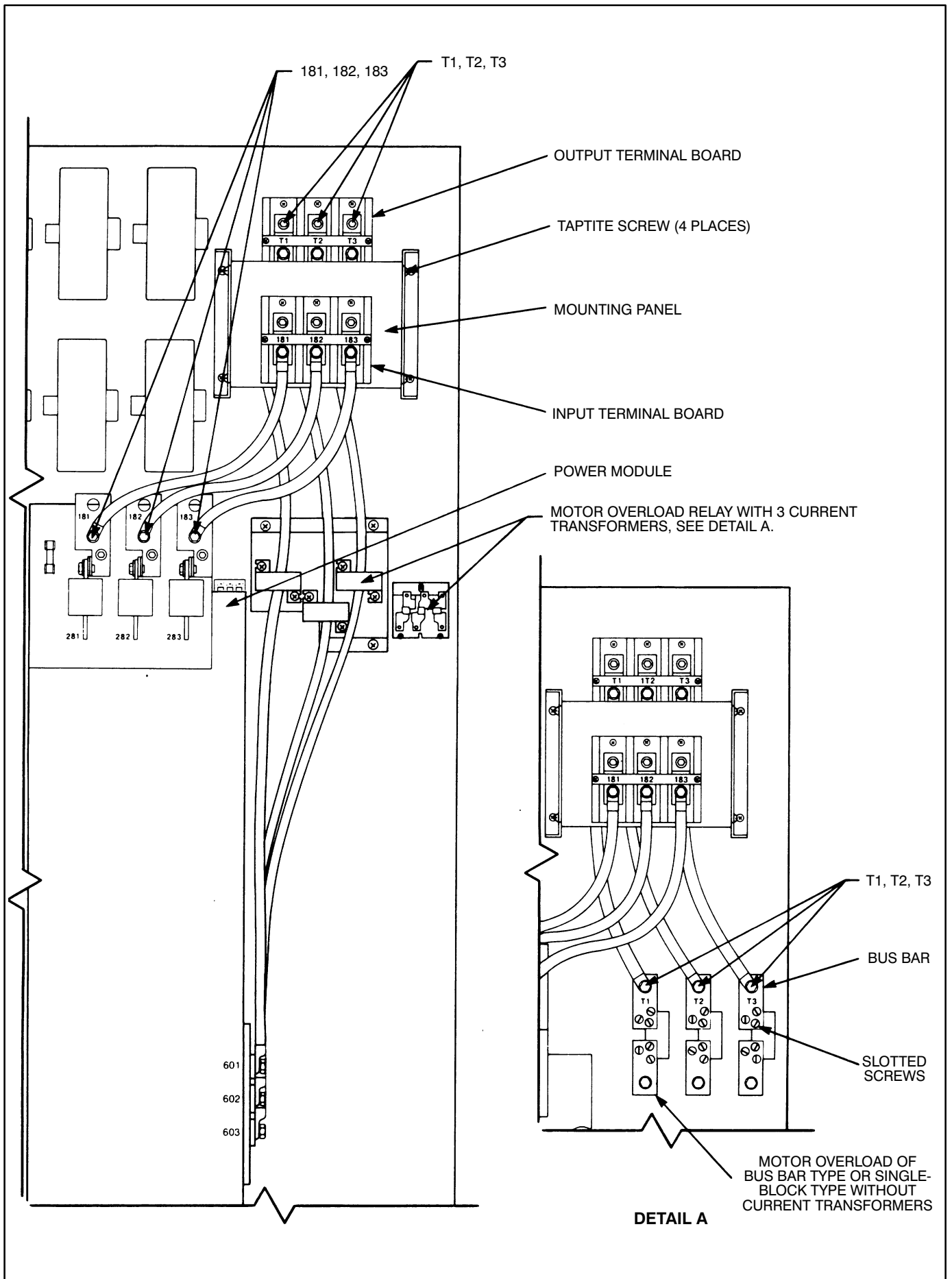


Figure 2. Remove input terminal board.

13. Connect the metal jumper, supplied with the transformer, between the center two terminals (H₃ and H₂) on the input side of the transformer (Figure 1).
14. Mount the Relay Socket (part 600434-5R) and the Fuse Block (part 49454-6A) below the Control Transformer as shown in Figure 3. The required mounting holes are pre-drilled in the panel. Use the furnished 6-32 x 1/2" taptite screws for mounting the Relay Socket; use the furnished 8-32 x 1/2" taptite screws for mounting the Fuse Block. Affix the provided fuse label below the Fuse Block.
15. Insert the Relay (part 600434-6R) into the Relay Socket and the 3.2-amp Fuse (part 64676-29P, dual element, slow-blow type, UL class RK5) into the Fuse Block.
16. Connect the three separate, heavy gage wire assemblies to the line side of the Contactor using the furnished flat washers and hex head cap screws (and secure with hex nut in Model 36C45 only). See Figures 3 and 4.

NOTE: If the motor overload relay in the controller is the single-block type with current transformers, insert the three, heavy gage wire assemblies through the respective current transformer before connecting. See Figure 3.

17. Connect the other end of the three heavy gage wire assemblies as follows:
 - a. If the controller is a 100-horsepower model, connect leads T1, T2 and T3 to the output side of the motor overload relay at terminals T1, T2 and T3, respectively, using the hardware removed in Step 6. See Detail A in Figure 3 and Detail B in Figure 4.
 - b. If the motor overload relay in the controller is the bus bar type, connect leads T1, T2 and T3 to terminals T1, T2 and T3, respectively, on the bus bars using the hardware removed in Step 6. (The angle of the wire assembly to the bus bar should be as shown in Figure 3, Detail A.) Then, re-install the bus bars on the motor overload relay using the slotted screws set aside in Step 5.

CAUTION: Avoid placing stress on the motor overload. Component damage could result.

- c. If the motor overload relay in the controller is the single-block type with current transformers, connect leads 601, 602 and 603 to output terminals 601, 602 and 603, respectively, of the power module using the hardware removed in Step 8. See Figures 3 and 4.
18. Disconnect and discard the factory-installed twisted Pairs between terminals 43 and 53 of TB1 and terminals 1 and 2 on the faceplate of the CSS-card. See Figure 4.

Connect Wire Assembly 608808-74T between auxiliary contact terminals 43 and 53 of the contactor and terminals 43 and 53, respectively, of TB1 of the controller regulator. See Figures 3 and 4.

19. Connect Wire Assembly 608808-74S between the Fuse and the Relay as shown in Figures 3 and 4.
20. Connect Wire Assembly 608808-74V to the respectively numbered terminals on the faceplate of the CSS-card. Connect lead 1 to the Fuse and lead 2 to the Relay as shown in Figures 3 and 4.
21. Connect Wire Harness 801553-1S (or -1R) as shown in Figures 3 and 4 and detailed in Table 2.

CAUTION: Take appropriate measures to prevent loose screws from dropping into the power module heat sink assembly to avoid possible equipment failure.

Using the remaining 10-32 x 1/2" taptite screw and #10 flat washer, connect the green ground wire to the pre-drilled hole in the left-hand panel below the Control Transformer.

22. Support the harness and wire assemblies as necessary with the furnished ty-raps.
23. Reconnect motor leads to the load side (terminals 1T1, 1T2 and 1T3) of the Contactor using the hardware set aside in Step 6.
24. Re-install the mounting panel with the input terminal board (Figure 3) that was removed in Step 3. Reconnect the leads 181, 182 and 183 to the power module with the hardware set aside in Step 3. Replace the phase module cover.

NOTE: If the Input Disconnect Kit is to be installed, discard the mounting panel with input terminal board. Proceed to Instruction Sheet D-3910 for installation instructions for the Input Disconnect Kit.

25. Re-apply power to the A-C V★S Drive.

Table 2. Harness connections.

Harness Lead Number	From	To
289	Suppressor	Coil (Contactor)
11	Suppressor	Coil (Contactor)
289	Transformer X ₂	Relay – B
289	Transformer X ₂	Ground
288	Transformer X ₁	Fuse
381	Transformer H ₁	Fuse Block
383	Transformer H ₄	Fuse Block 383
289	Transformer X ₂	Contactor Coil
11	Relay – 6	Contactor Coil

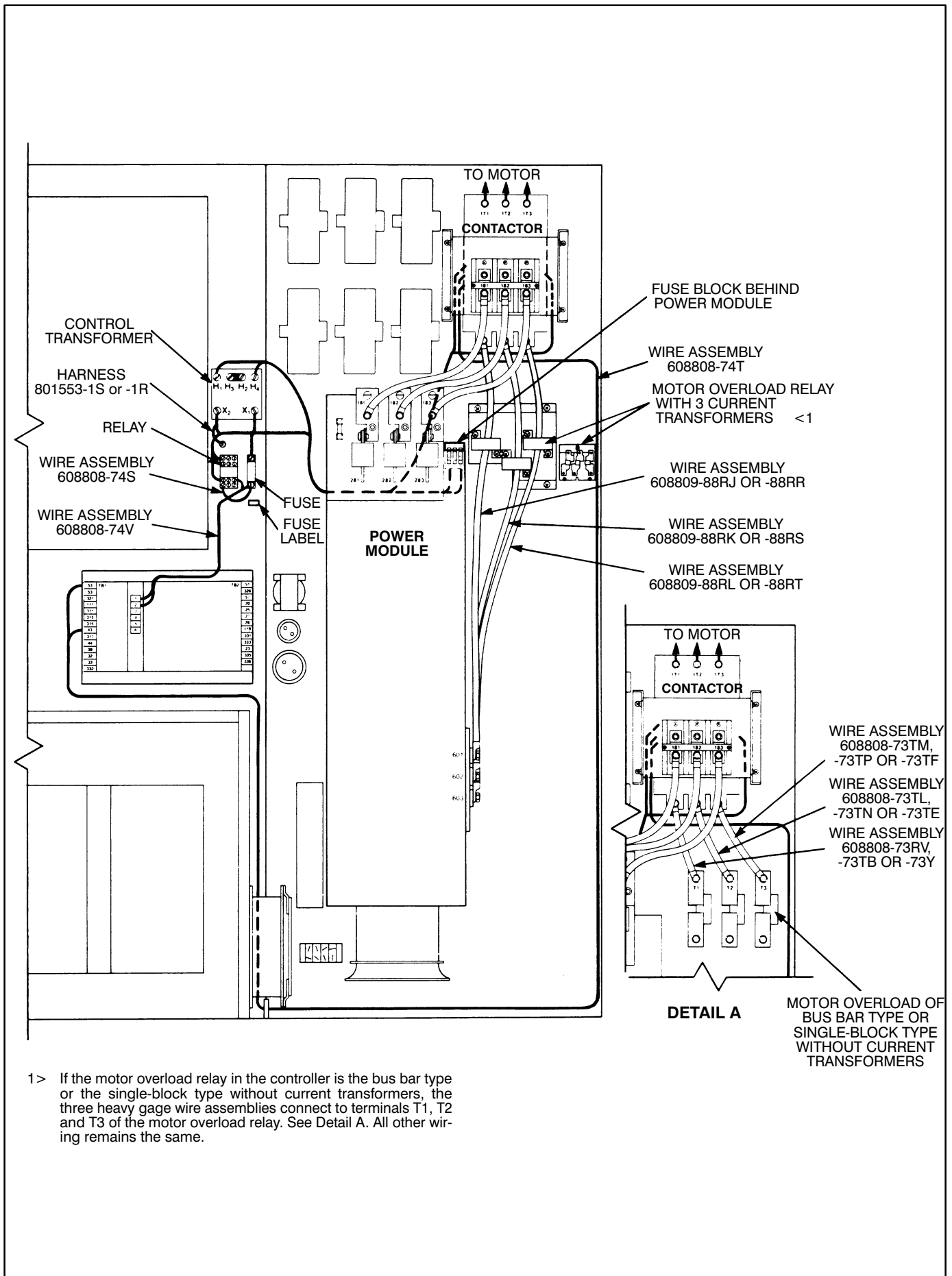
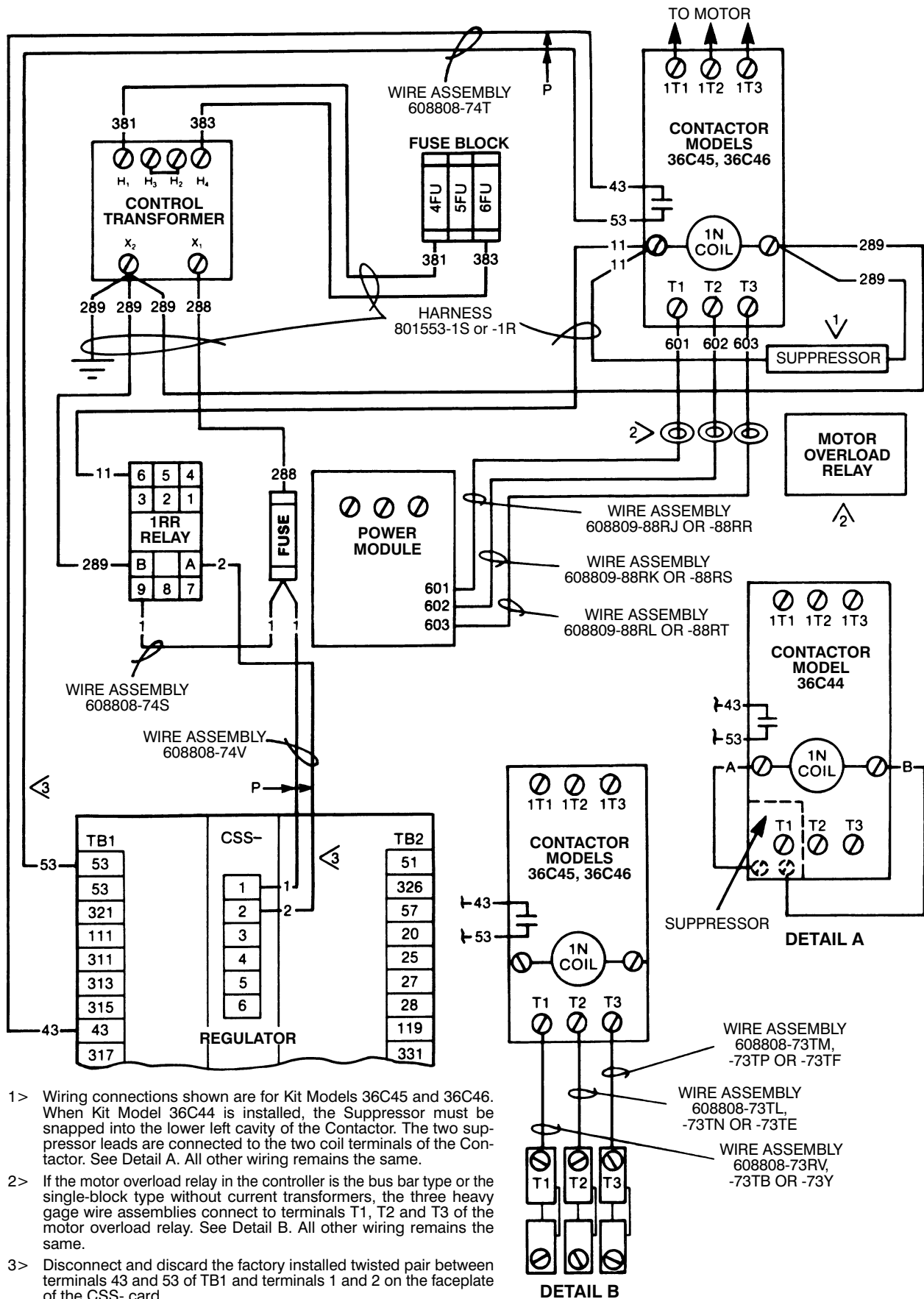


Figure 3. Location of control devices and harness routing.



- 1> Wiring connections shown are for Kit Models 36C45 and 36C46. When Kit Model 36C44 is installed, the Suppressor must be snapped into the lower left cavity of the Contactor. The two suppressor leads are connected to the two coil terminals of the Contactor. See Detail A. All other wiring remains the same.
- 2> If the motor overload relay in the controller is the bus bar type or the single-block type without current transformers, the three heavy gage wire assemblies connect to terminals T1, T2 and T3 of the motor overload relay. See Detail B. All other wiring remains the same.
- 3> Disconnect and discard the factory installed twisted pair between terminals 43 and 53 of TB1 and terminals 1 and 2 on the faceplate of the CSS- card.

Figure 4. Connection diagram.

Table 3. Complete parts list.

Description	Model 36C44		Model 36C45		Model 36C46	
	Qty.	Part No.	Qty.	Part No.	Qty.	Part No.
Contactors	1	705310-28R	1	705310-7R	1	705310-8R
Control Transformer	1	417155-S	1	417155-S	1	417155-S
Harness	1	801553-1S	1	801553-1R	1	801553-1R
Wire Assembly	1	608808-73RV	1	608808-73TB (1) 608809-88RJ (2)	1	608808-73Y (1) 608809-88RR (2)
Wire Assembly	1	608808-73TL	1	608808-73TN (1) 608809-88RK (2)	1	608808-73TE (1) 608809-88RS (2)
Wire Assembly	1	608808-73TM	1	608808-73TP (1) 608809-88RL (2)	1	608808-73TF (1) 608809-88RT (2)
Wire Assembly	1	608808-74S	1	608808-74S	1	608808-74S
Wire Assembly	1	608808-74T	1	608808-74T	1	608808-74T
Wire Assembly	1	608808-74V	1	608808-74V	1	608808-74V
Fuse Block	1	49454-6A	1	49454-6A	1	49454-6A
Fuse (3.2 Amps)	1	64676-29P	1	64676-29P	1	64676-29P
Fuse Label	1	691-XG	1	691-XG	1	691-XG
Relay Socket	1	600434-5R	1	600434-5R	1	600434-5R
Relay	1	600434-6R	1	600434-6R	1	600434-6R
Suppressor Assembly	1	600686-41T	—	—	—	—
8-32 x 1/2" Taptite Screw	2	601741-62D	2	601741-62D	2	601741-62D
6-32 x 1/2" Taptite Screw	2	601741-61D	2	601741-61D	2	601741-61D
10-32 x 1/2" Taptite Screw	5	601741-63C	5	601741-63C	5	601741-63C
#10 Flat Washer	5	601748-1C	5	601748-1C	5	601748-1C
1/4-20 x 3/8" Taptite Screw	3	601741-64X	—	—	—	—
5/16" Flat Washer	3	601748-1F	—	—	—	—
5/16" Lock Washer	3	601748-3K	—	—	—	—
5/16-18 x 1/2" Hex Head Cap Screw	3	601741-2A	—	—	—	—
Ty-Rap	15	69306-3D	15	69306-3D	15	69306-3D
5/16-18 x 1" Taptite Screw	—	—	4	601741-73D	4	601741-73D
1/2-13 x 1 1/4" Hex Head Cap Screw	—	—	3	601741-8AB	3	601741-8AB
1/2" Flat Washer	—	—	3	601748-1J	3	601748-1J
1/2" Lock Washer	—	—	3	601748-3N	3	601748-3N
1/2-13 Hex Nut	—	—	3	601747-1E	—	—

- (1) Use this part number if the controller has the bus bar type of motor overload relay or single-block type of motor overload relay without current transformers.
- (2) Use this part number if the controller has the single-block type of motor overload relay with current transformers.

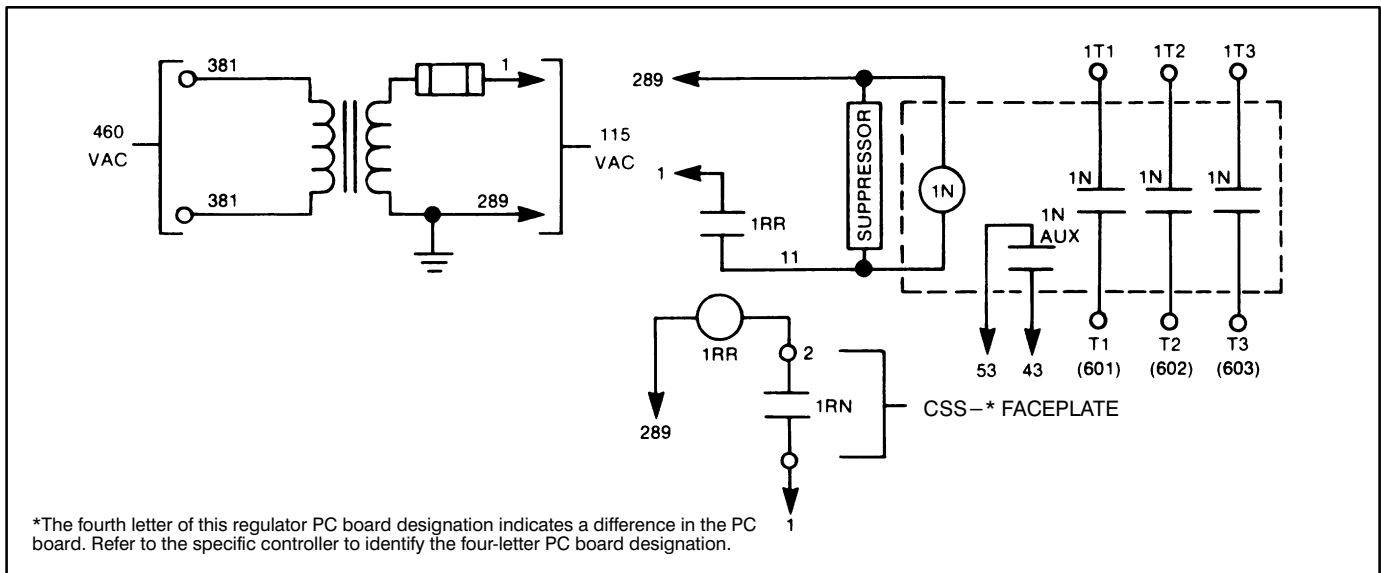


Figure 5. Schematic diagram.

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