Summary	Fast Seal USEM to SEW Eurodrive Retrofit				
Products Affected	Fast Seal				
Key Word Tags	US, SEW, Motor, Retro, FS				
Tools/Equipment (If Required)	Lift, Sockets and Wrenches, Allen Wrenches, Misc. Screwdrivers				
Parts/Materials (If Required)	See Below				
Related Media					
Author	Jason Freimuth, RevA Mike Burzlaff	**Issue Date**	4/30/2002	**Status**	Active

Please Read The Entire Bulletin Before Proceeding

NOTE: The motor cable supplied with the new motor must be used. Failure to do so will void any motor warranty.

Prior to April of 2002, the Fast Seal doors shipped with a USEM electric motor assembly. The gearbox on the USEM motors has a different mounting pattern than that of the SEW Eurodrive motors currently in use. Also, the brake release on the USEM motor activated vertically and the SEW Eurodrive activates horizontally. This service bulletin outlines the procedure to retrofit a SEW Eurodrive motor onto a door that originally shipped with a USEM motor.

⚠CAUTION

This retrofit involves high voltage electrical wiring.
Technicians must be qualified to perform such functions.

ASSY,MTR, LH or RH,DG,FS	Part Number Will Vary
ASSY, ADAPTER PLATE, US/SEW,LH (1ea)	R02992594
OR	
ASSY, ADAPTER PLATE, US/SEW,RH (1ea)	R02992595
PULLEY WELDT, LH BRAKE RELEASE (1ea)	R02991127
OR	
PULLEY WELDT, RH BRAKE RELEASE (1ea)	R02991128
ROPE,3/16",YELLOW (300”)	R0007139
CRIMPS, ROPE (2ea)	R0004181
ASSY,BRAKE RELEASE HANDLE W/MAGNET (1ea)	R1210467-0
HFSMS, 1/4-20 x 3/4, GR5.2 ZN (2ea)	R0550016
NUT, 1/4-20, HEX, FLNG, LOCK, ZN (2ea)	R0553103

WARNING

The disconnect must be in the OFF position and properly locked and tagged before performing the next step of the procedure.

Retrofit Mechanical Instructions:

1) Remove the hood section over the motor from the door head assembly (If present).

2) Loosen the adjustment nut on the motor mount plate and remove the drive chain from the motor sprocket.

3) Disconnect the motor wires from the junction box on the front spreader and make sure the wires are numbered for reference when reconnecting them to the new motor. Disconnect the manual brake release components from the motor. Remove the motor mount bolts and nuts and remove the motor from the door.

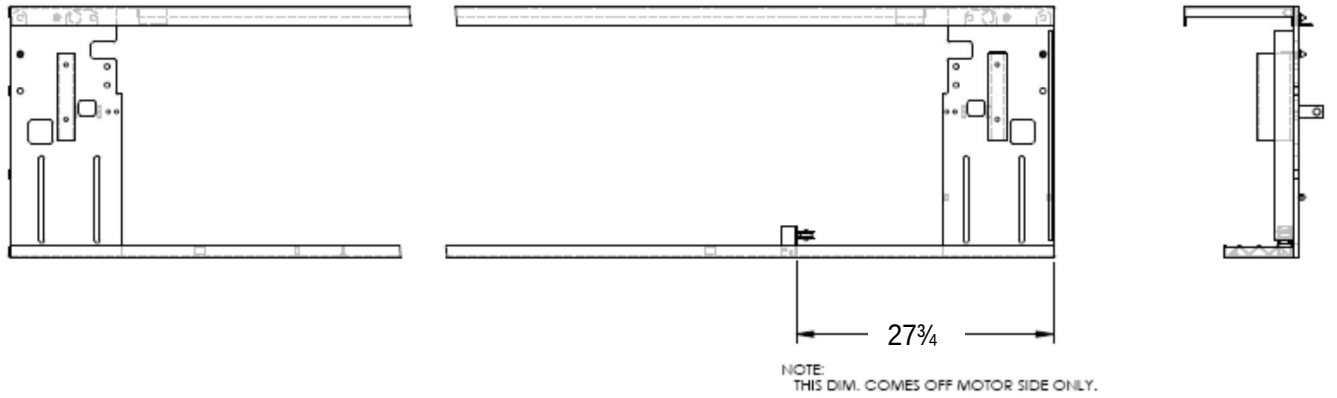
4) Attach the adapter plate to the door head with the adjusting stud pointing to the rear of the door. Secure the lower studs through the head with four of the supplied nuts. Loctite thread sealant is recommended to use on all motor mounting bolts.

5) Place the motor on the adapter plate and secure with the provided nuts.

6) Install the taper-lock bushing and sprocket onto the motor shaft. Follow the assembly procedures in the box that contains the taper-lock bushing. Failure to do so will result in sheared bolts on the sprocket. When installing the sprocket, make sure the centerline of the sprocket is aligned with the centerline of the drum sprocket.

7) Reattach the drive chain to the motor sprocket and tension the chain per the instructions in the Rytec Fast Seal Owners Manual.

8) On the inside bottom lip of the front spreader, make a mark 27 ¾" from edge of the motor side to the center of the door per attached drawing R02992596. (Note: Drawing shows a right hand mount motor. For a left hand assembly, make sure the measurements are done from the left hand side.)



9) Place the inside edge of the pulley mounting bracket on this mark and drill holes through the inside bottom lip of the front spreader to line up with the holes on the bracket. Use a 9/32" drill bit.

10) Mount the pulley mounting bracket to the inside bottom lip of the front spreader using the ¼" bolts and nuts provided.

11) Attach the brake release rope to the eyebolt brake release lever. Route the brake release rope around the pulley, through the eyelets on the bottom of the head plate and down the side column.

12) Put the handle on the rope with the countersunk end of the hole facing down. Cut the rope to the desired length, tie a knot in the end of the cord and attach a rope crimp.

13) Reconnect the motor leads to the existing wiring. The wire numbers will match the wire numbers used on the USEM Motor. If you are reusing the existing SOW cord (not recommended), take note of which terminals in the motor the new SOW cord are attached to before you remove it.

14) Remove the lockout from the power supply and turn on the power to the door.

15) Check the rotation of the motor. When the M1O contactor is energized, the door should open. When the M1C contactor is energized, the door should close. If the rotation is incorrect on any contactor, swap two of the motor leads at the main terminal strip that come from that contactor. Once the correct rotation is achieved, set the limit switches and test the operation of the door per the instructions in the Rytec Fast Seal Owner's Manual.

Electrical Changes from Electroid to Eurodrive:

The Electroid motor had different electrical connections than the SEW Eurodrive. This will require modifying the wires on the new contactors in the control box. The following instructions can be used as a general guide on how these changes can be done.

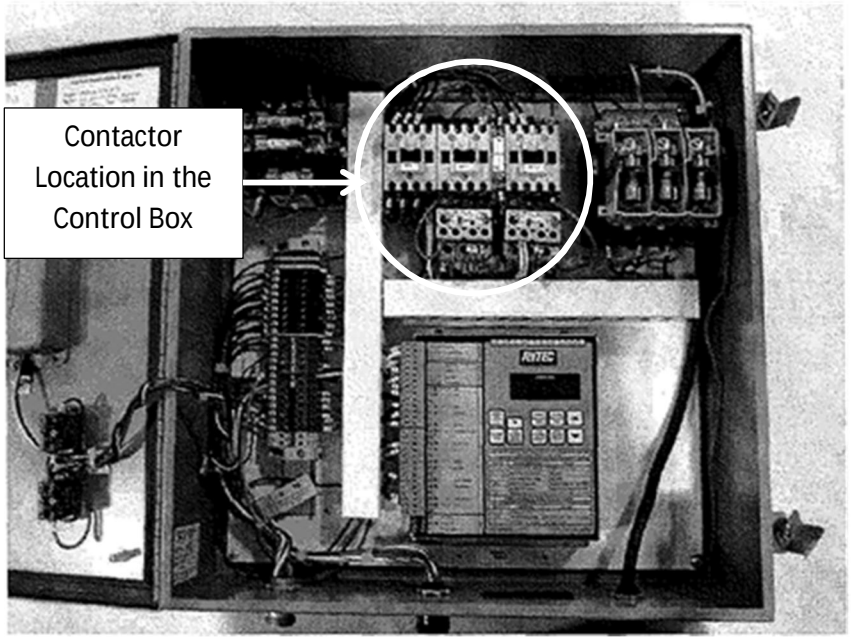
Read the instructions carefully and completely before beginning the retrofit. Only a qualified electrician should perform this work. It is imperative to have an understanding of these changes to prevent damage to the electrical controls and any possible injury.

⚠ WARNING

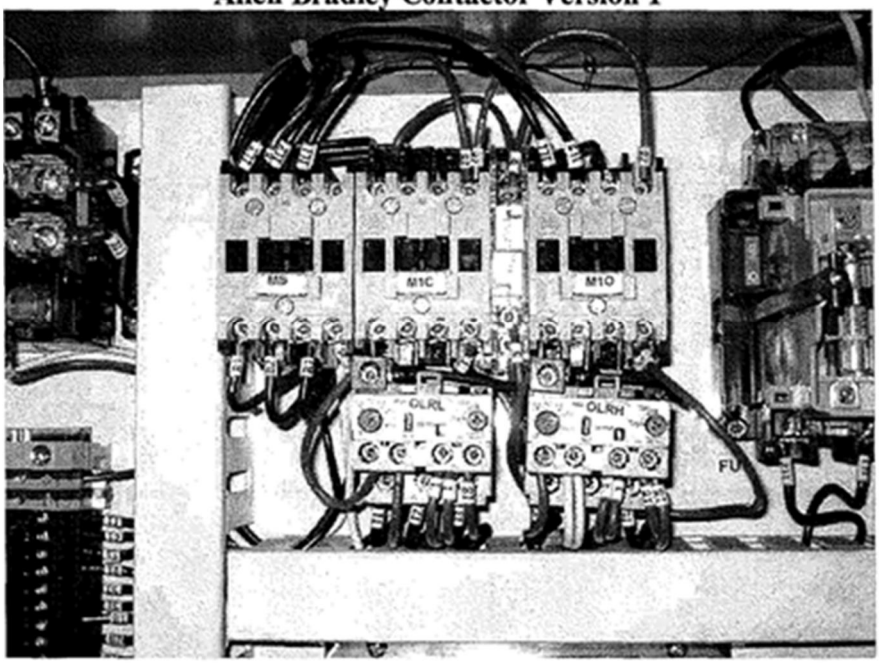
The disconnect must be in the OFF position and properly locked and tagged before performing the next step of the procedure.

Two Speed Motor Connections:

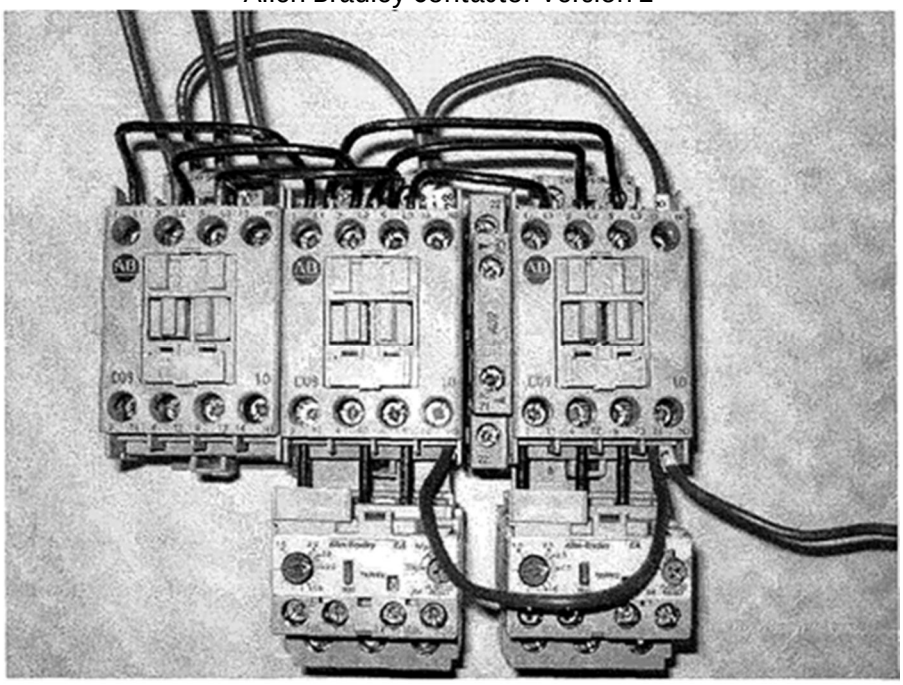
1. If you have a 2 speed motor, continue to step 2 below. If you have a single speed motor, continue to step 12.
2. The beginning wiring is shown below. It is important to note that several versions of the Allen Bradley contactor have been used in the Predadoor control box. While they may look slightly different, the wiring in each step of the process will be the same. Two versions are shown below.

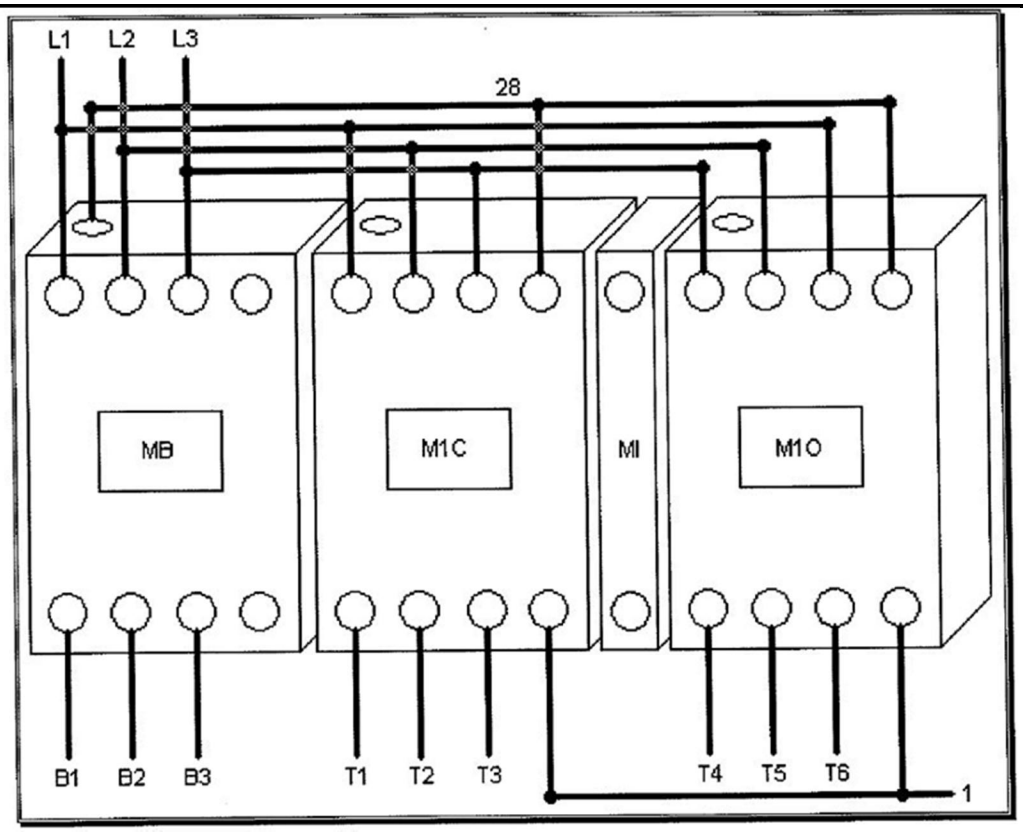


Allen Bradley Contactor Version 1



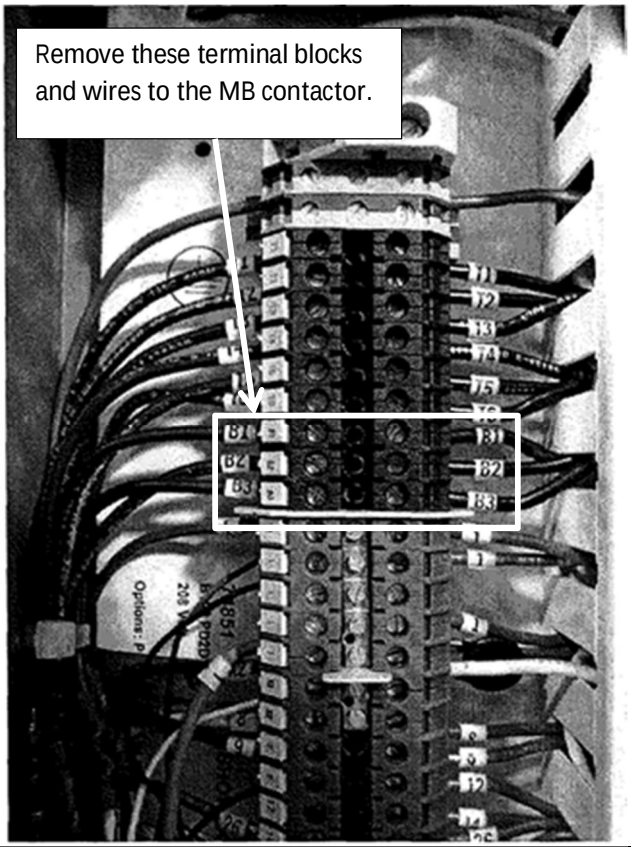
Allen Bradley Contactor Version 2



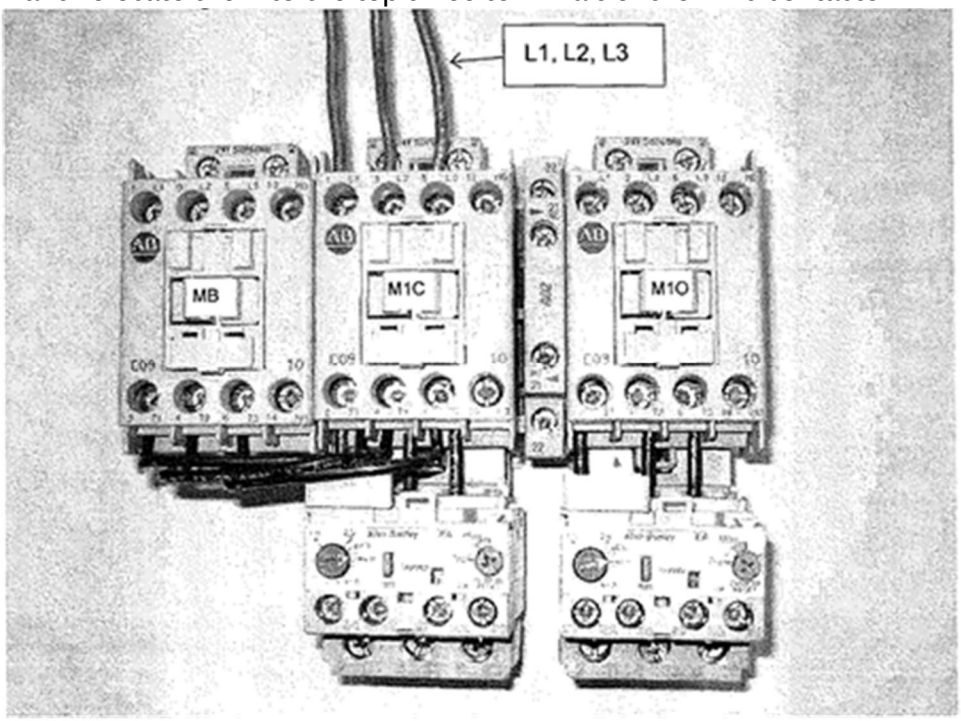


Original Wire Layout

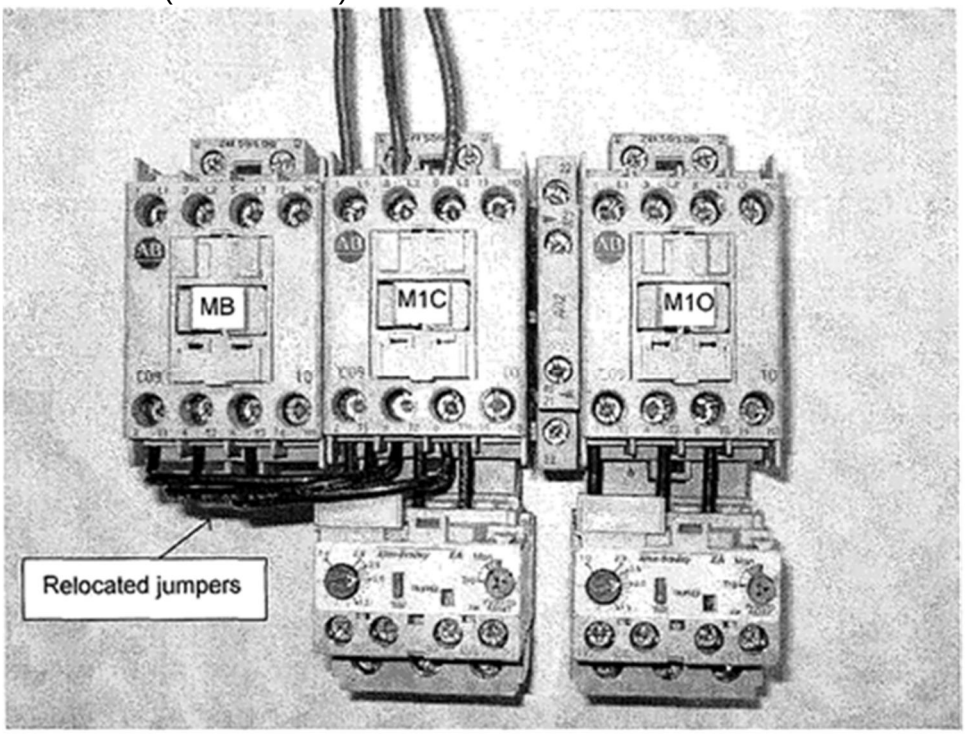
3. Remove terminal blocks B1, B2, and B3 from the controller along with the wires that are attached between it and the MB contactor.



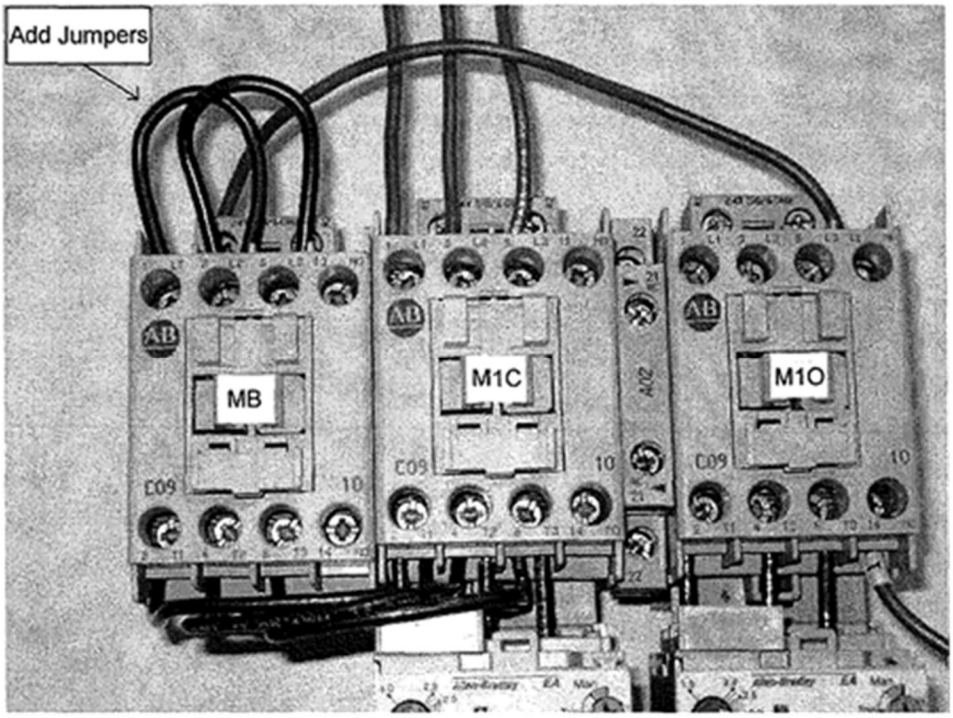
4. If the incoming power L1, L2, and L3 are connected to the top of the MB contactor, remove them and relocate them to the top three terminals of the M1C contactor.



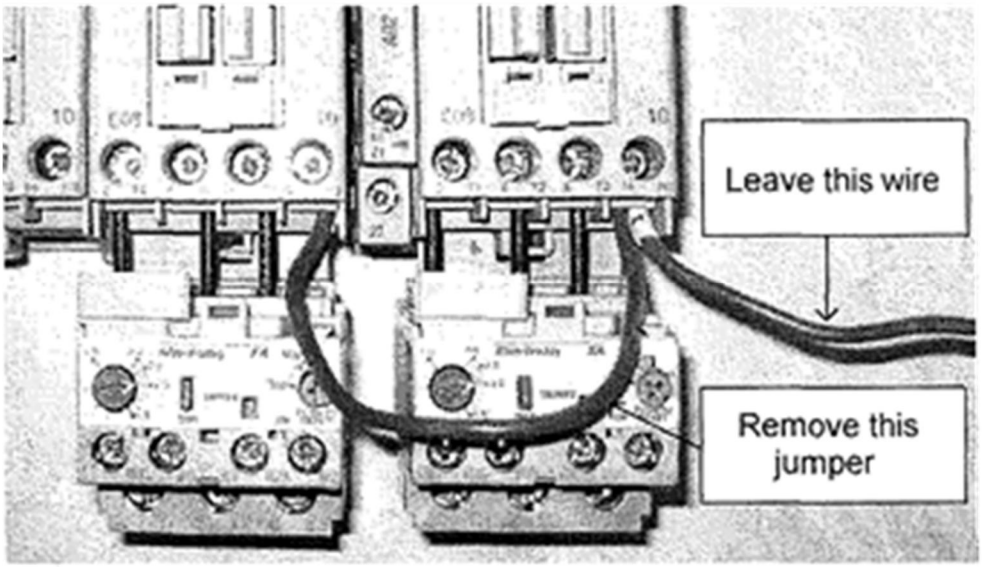
5. Remove the three black jumpers from the top of the MB contactor that connect to the top of the M1C contactor. Re-use these jumpers to connect from the bottom left three terminals of the MB contactor to the bottom left three terminals of the M1C contactor where the OLRL (overload left) attaches to the M1C.



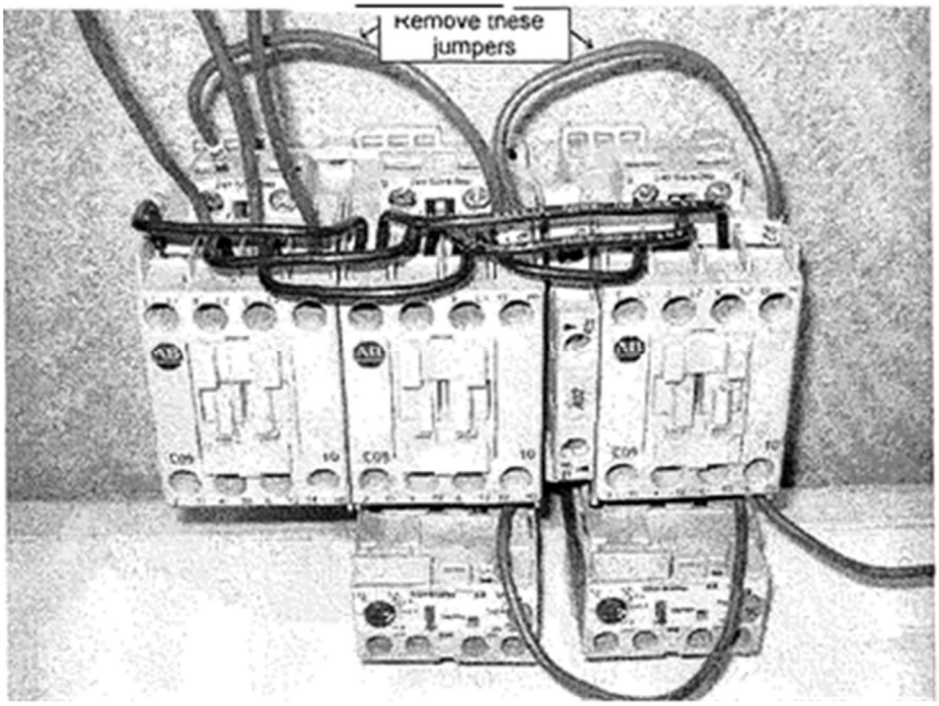
6. Install two jumpers on the top three terminals of the MB contactor that will bridge from the 1st to the 2nd terminal and from the 2nd to the 3rd terminal.

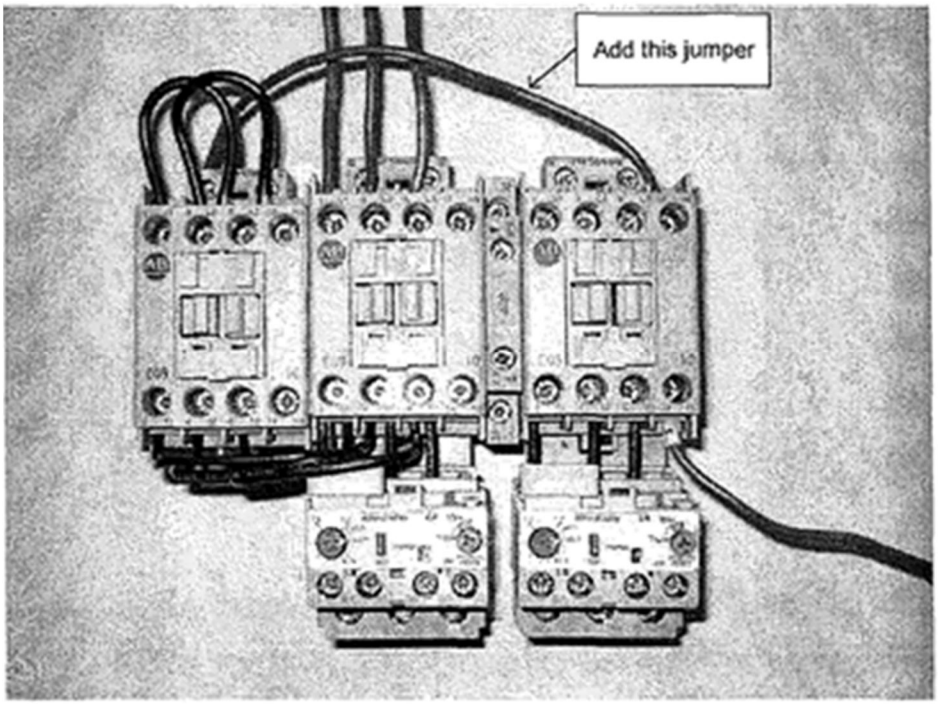


7. Remove the red wire that connects the fourth bottom terminal of the M1O to the fourth bottom terminal of the M1C. Leave the other red wired labeled #1 in place on the M10.

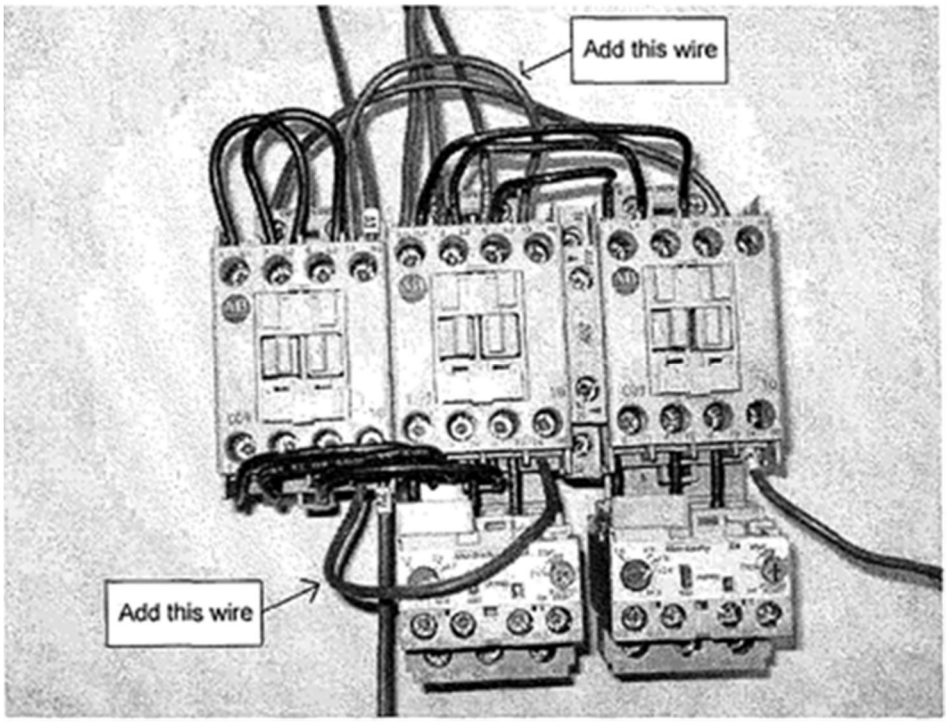


8. Remove the two red wired that are connected to the fourth top terminal on the M1C. The wires should lead to M1O and MB. Replace the old wires with one long wire that connects from the fourth top terminal of the M1O to terminal A1 on the MB contactor.

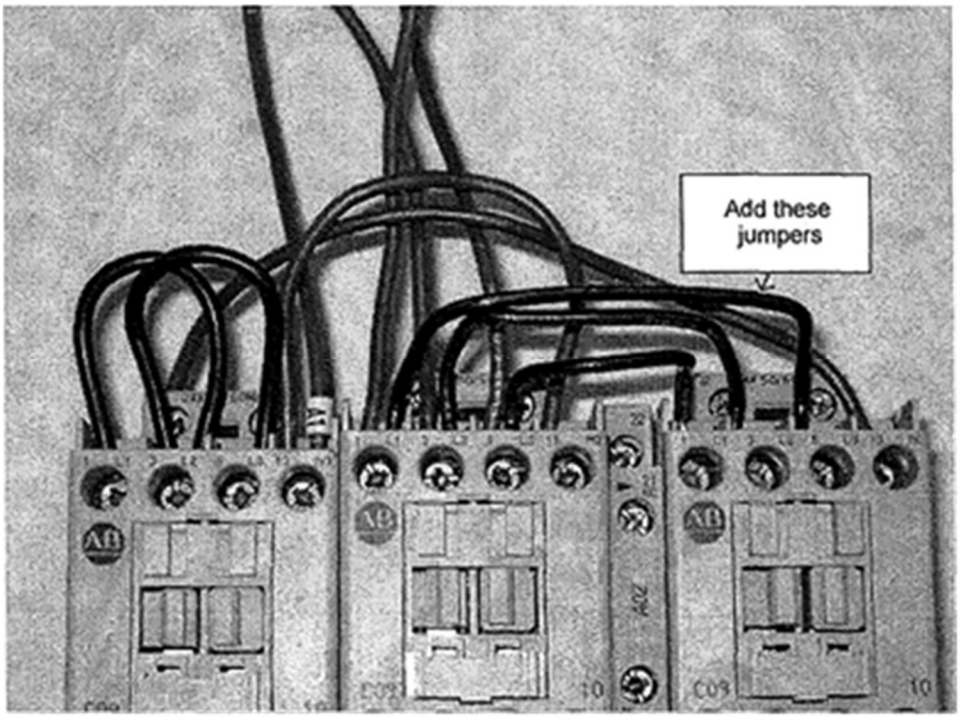




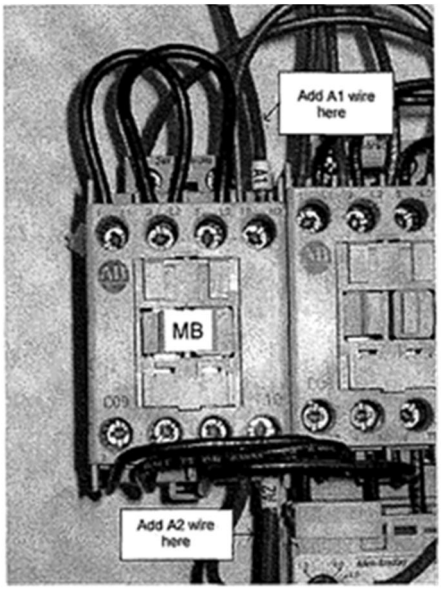
9. Install a jumper from the fourth top terminal of the MB contactor to the fourth top terminal of the M1C contactor. Install another jumper from the fourth bottom terminal of the MB contactor to the fourth bottom terminal of the M1C



10. Install a jumper from the M1C contactor terminal 1 to the M1O terminal 3. Install a jumper from the m1C terminal 2 to the M1O terminal 2. Install a jumper from the M1C terminal 3 to the M1O terminal 1.

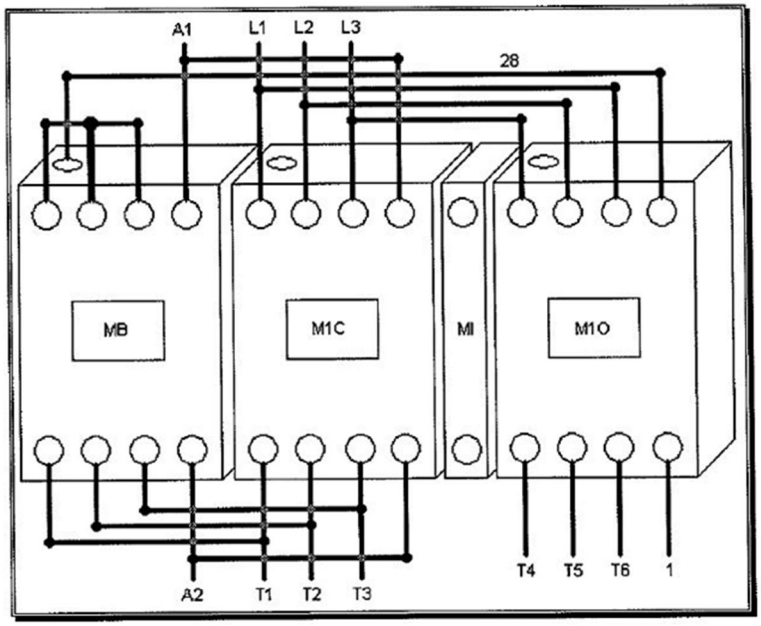


11. Run a wire from the fourth top terminal of the MB contactor to an unused terminal block. (Use the old B1 and B2 terminal blocks for this step.) This terminal should be re-labeled A1. Run a wire from the fourth bottom terminal of the MB contactor to the other unused terminal block. This terminal block should be re-labeled A2. (NOTE: These terminals have nothing to do with and do not represent the A1 and A2 terminal on the coils of all the contactors.)



IMPORTANT!!!

The new contactor setup will short out wires A1 and A2 whenever the M1O or the M1C contactors pull in. This allows the brake to grab immediately upon release. In addition, the MB contactor will ONLY pull in when the M1O is energized. When the MB contactor pulls in, it will short together all three legs of the low speed motor. It is important to double check all of the above steps. If the MB contactor pulls in with the M1C, you will blow all of your line fuses and possibly burn and fuse the two contactors.



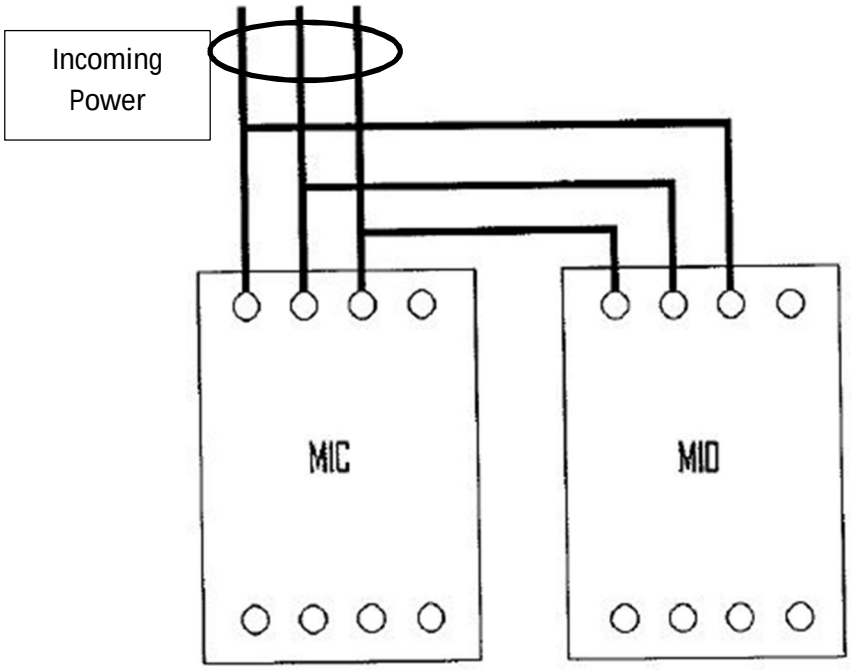
Final Wire Layout

Single Speed Motor Connections

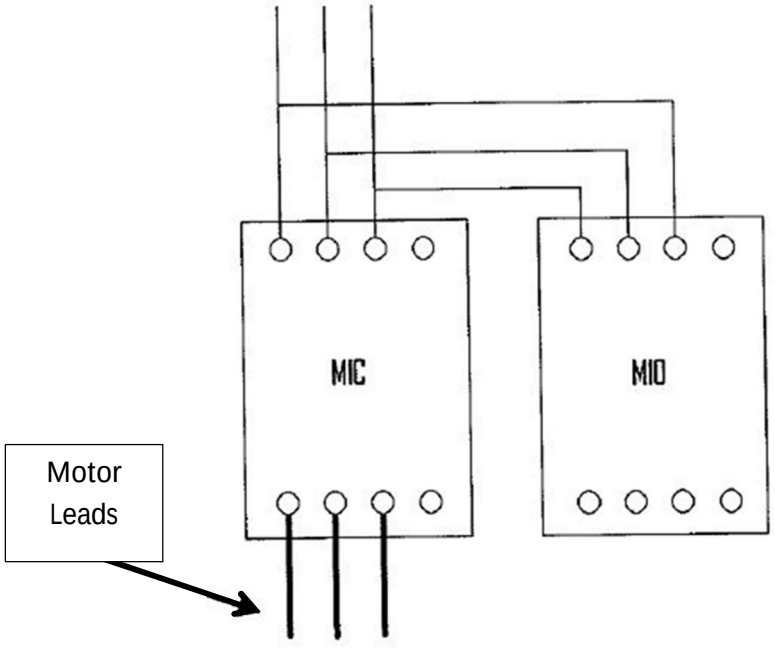
12. With a Single Speed motor you will NOT be using the MB contactor. You will only use the M1C and M1O contactors.

13. Connect the incoming power to L1, L2, and L3 on your M1C contactor.

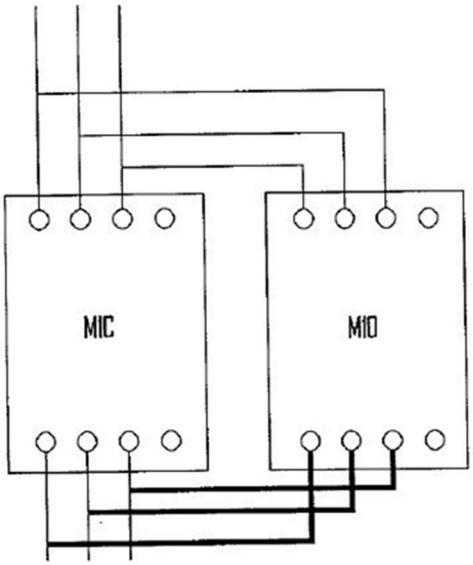
14. Put a jumper from L1 on the M1C contactor to L3 on the M1O contactor. Put a jumper from L2 on the M1C contactor to L2 on the M1O contactor. Put a jumper from L3 on the M1C contactor to L1 on the M1O contactor.



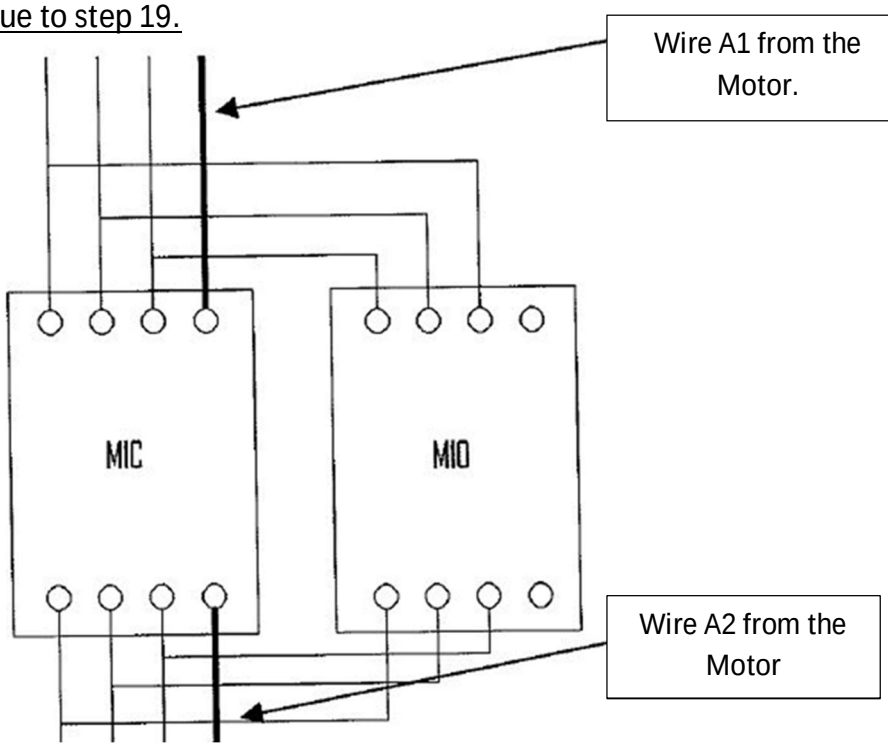
15. Connect T1, T2, and T3 from the motor leads to T1, T2, and T3 on the M1C contactor.



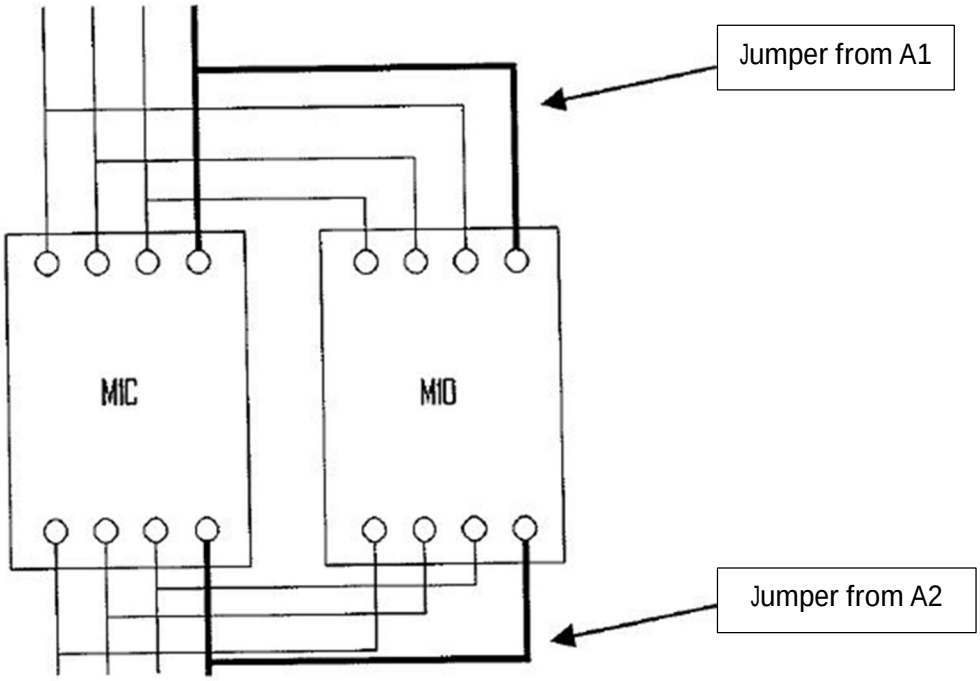
16. Put a jumper from T1 on the M1C contactor to T1 on the M1O contactor. Put a jumper from T2 on the M1C contactor to t2 on the M1O contactor. Put a jumper from T3 on the m1C contactor to T3 on the M1O contactor.



17. If there is an A1 and A2 from the motor, connect the A1 to terminal 13 on the M1C contactor and A2 to terminal 14 on the M1C contactor. <u>If there is no A1 or A2 coming from the motor, continue to step 19.</u>



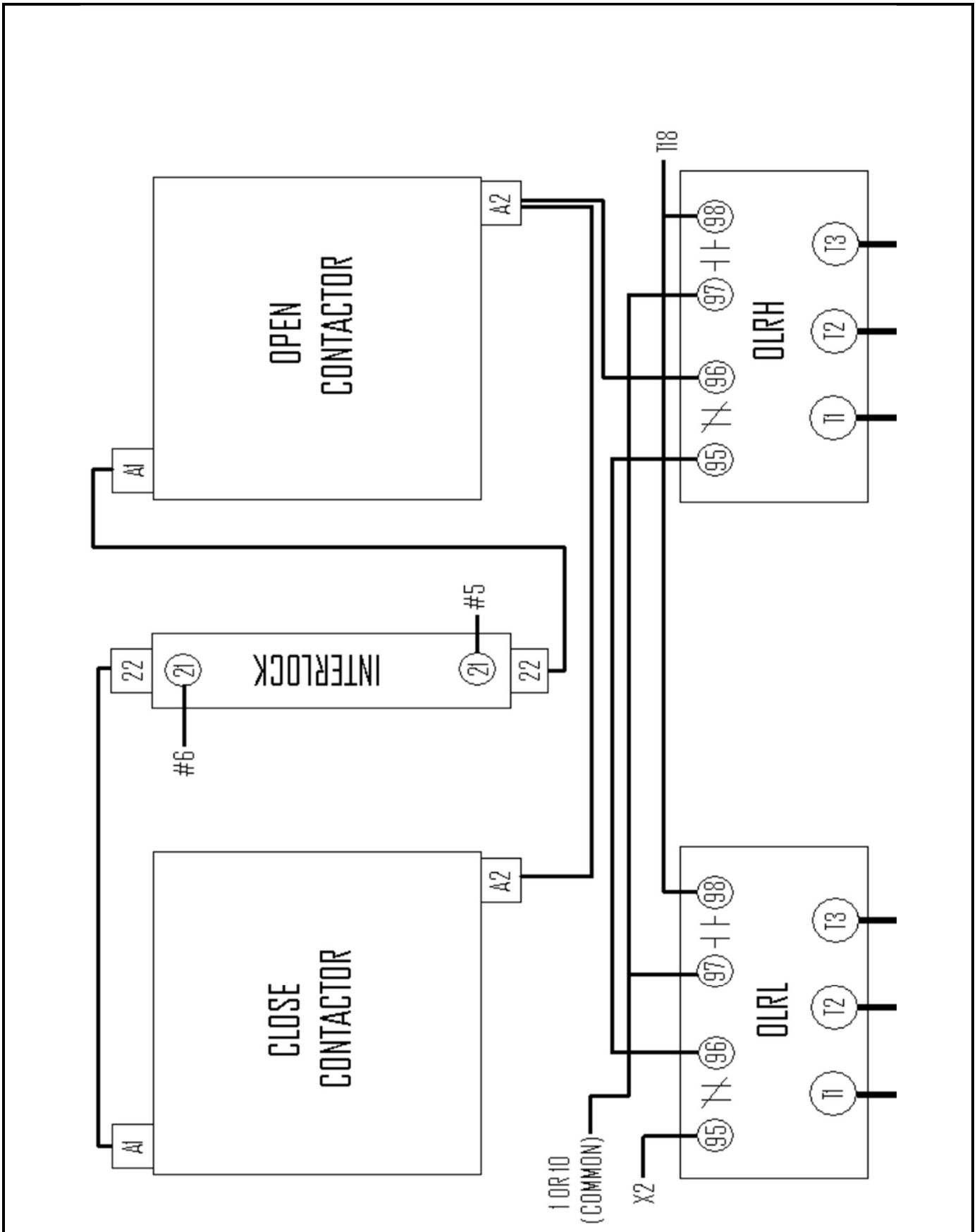
18. Put a jumper from terminal 13 on the M1C to 13 on the M1O. Put a jumper from terminal 14 on the M1C to terminal 14 on the M10.



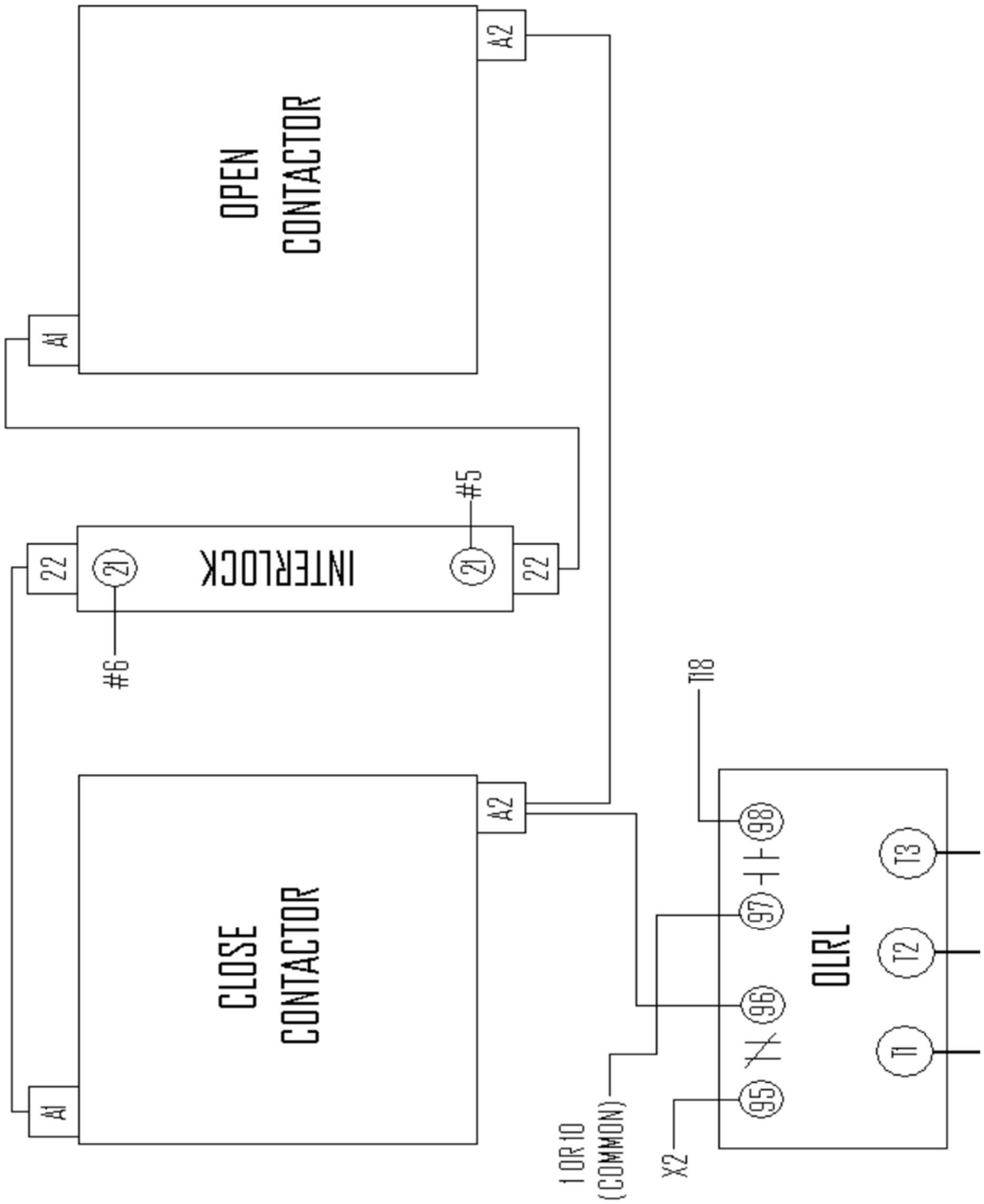
19. Cap wires from the motor T4, T5, and T6 and move them out of the way so that they do not interfere with any other wiring or contactors. After double checking all the connections turn power on and run the door. Make sure there is no mechanical binding and that the door runs freely.

Reference drawings below for Interlock and Overload specific wiring, and Complete Schematics.

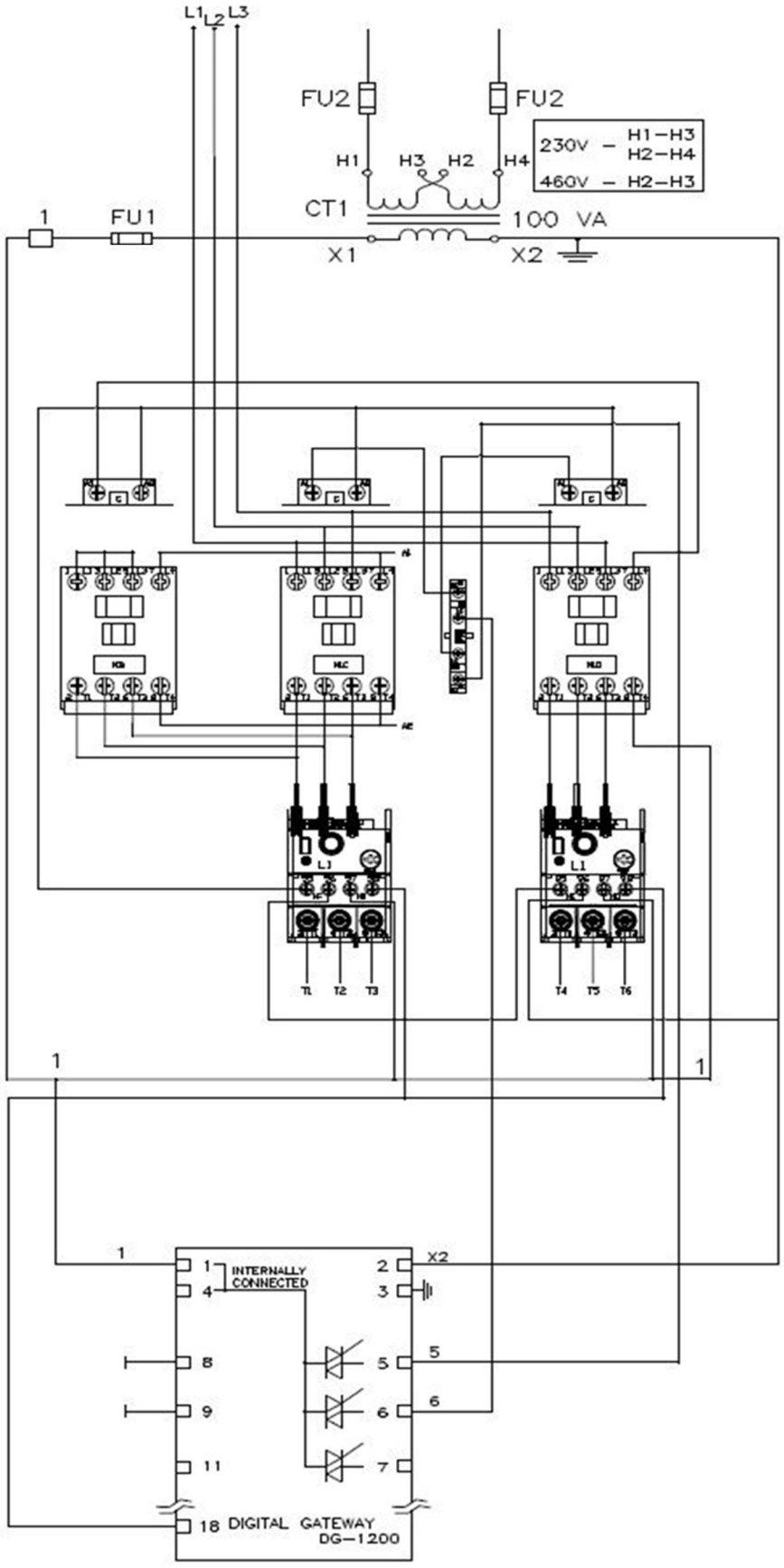
If you have any questions please contact Rytec Customer Support at 1-800-628-1909.

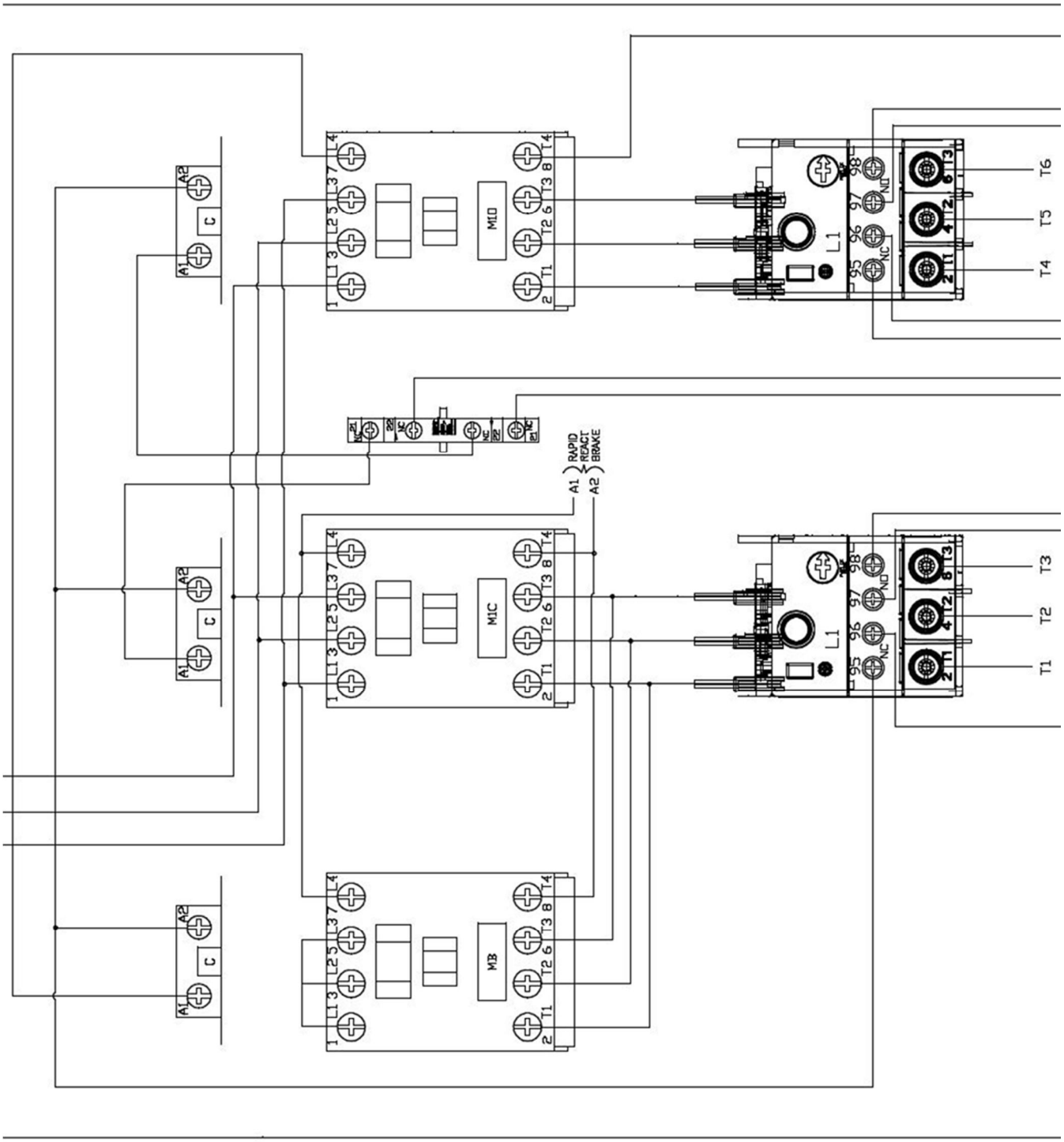


Two Speed Interlock and Overload Connections

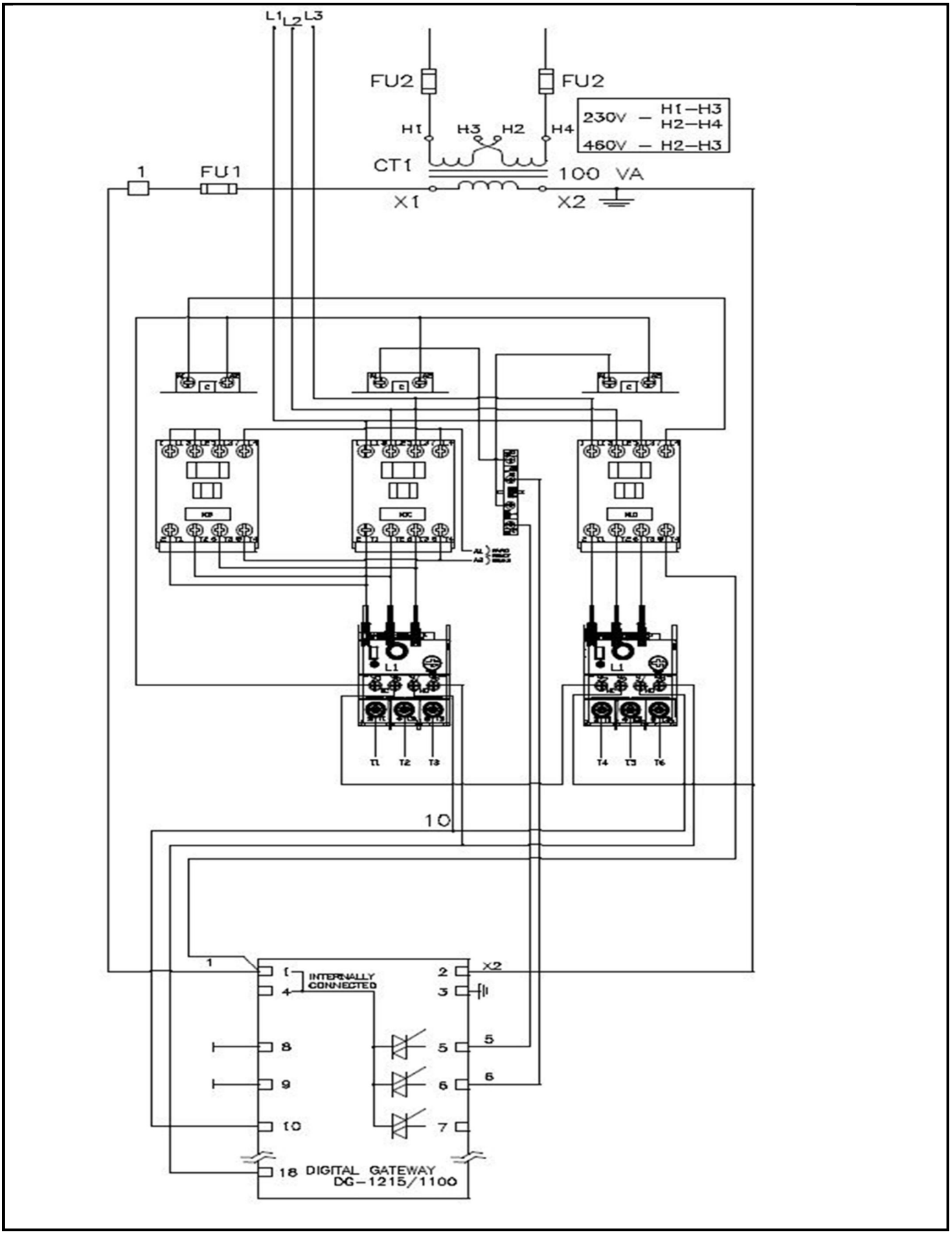


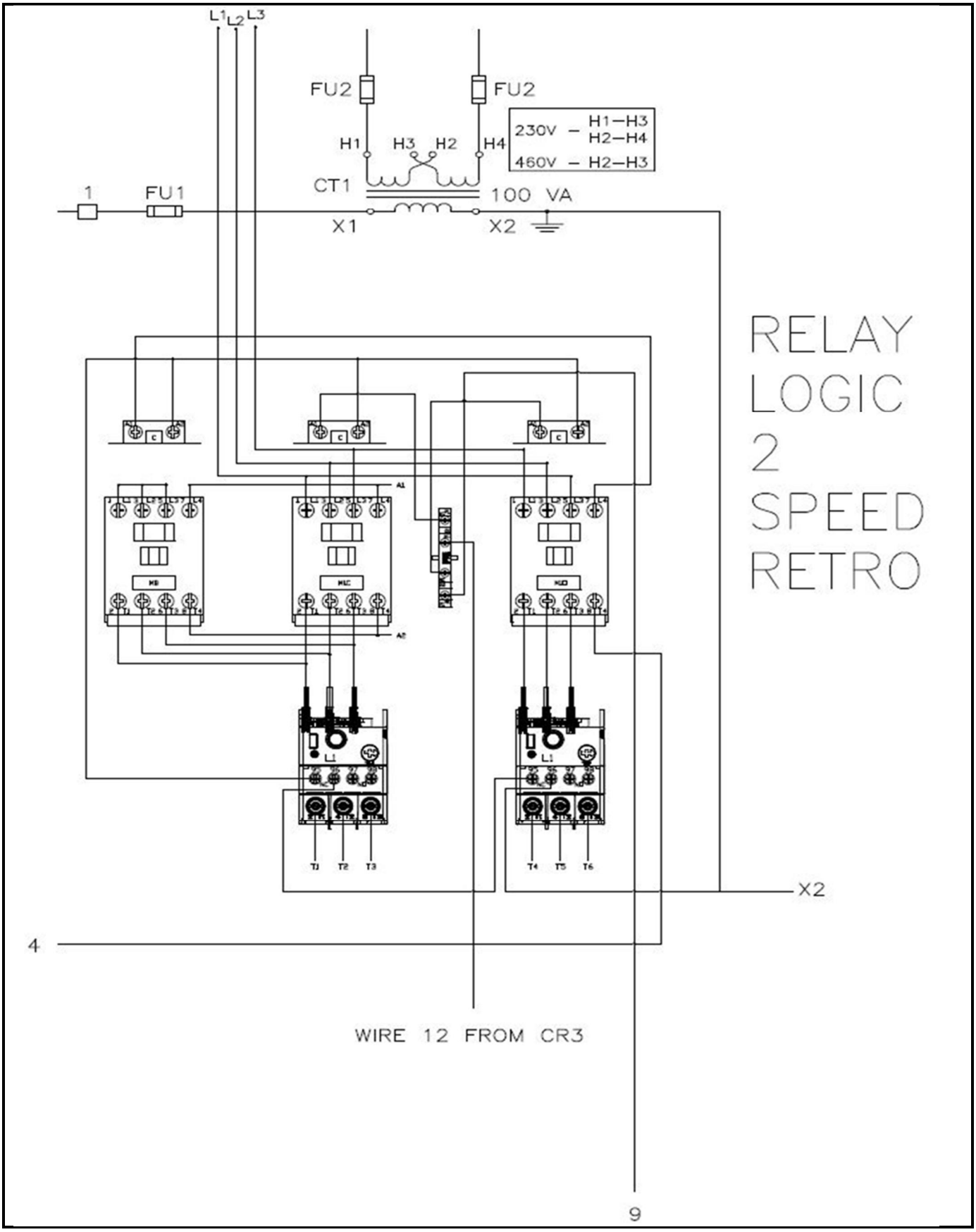
Single Speed Interlock and Overload Connections


L1 L2 L3
FU2
FU2
H1
H3
H2
H4
230V – H1–H3 H2–H4
460V – H2–H3
CT1
100 VA
1
FU1
X1
X2
T1
T2
T3
T4
T5
T6
1
1
1
INTERNALLY CONNECTED
1
4
2
3
X2
8
9
11
5
6
7
5
6
18 DIGITAL GATEWAY DG–1200



Close up of contactors, overloads, and interlock for 2 speed motor


L1 L2 L3
FU2
FU2
H1 H3 H2 H4
230V – H1–H3 H2–H4
460V – H2–H3
CT1
100 VA
1
FU1
X1
X2
L1
T1 T2 T3
T4 T5 T6
10
1
INTERNALLY CONNECTED
2
3
X2
4
8
9
10
5
6
7
5
6
18 DIGITAL GATEWAY DG–1215/1100


L1 L2 L3
FU2
FU2
H1
H3
H2
H4
230V – H1–H3 H2–H4
460V – H2–H3
CT1
100 VA
1
FU1
X1
X2
RELAY LOGIC 2 SPEED RETRO
X2
4
WIRE 12 FROM CR3
9