

FAN COIL CONTROLS

FAN COIL RELAY BOARD

Installation, Operation, and
Maintenance Manual

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FAN COIL UNIT (FCU) FAN MOTOR CONTROL

Ensure no wires are floating loosely in the product. Verify all wires are connected properly on the relay board. Measure input voltage on relay board as indicated below:

Ensure "MTR PWR" is connected to correct voltages (115V/P7 or 208V/P3 or 230V/P4 or 277V/P5). See Figure 1 below.

WARNING: Motor power can only be connected to one voltage.

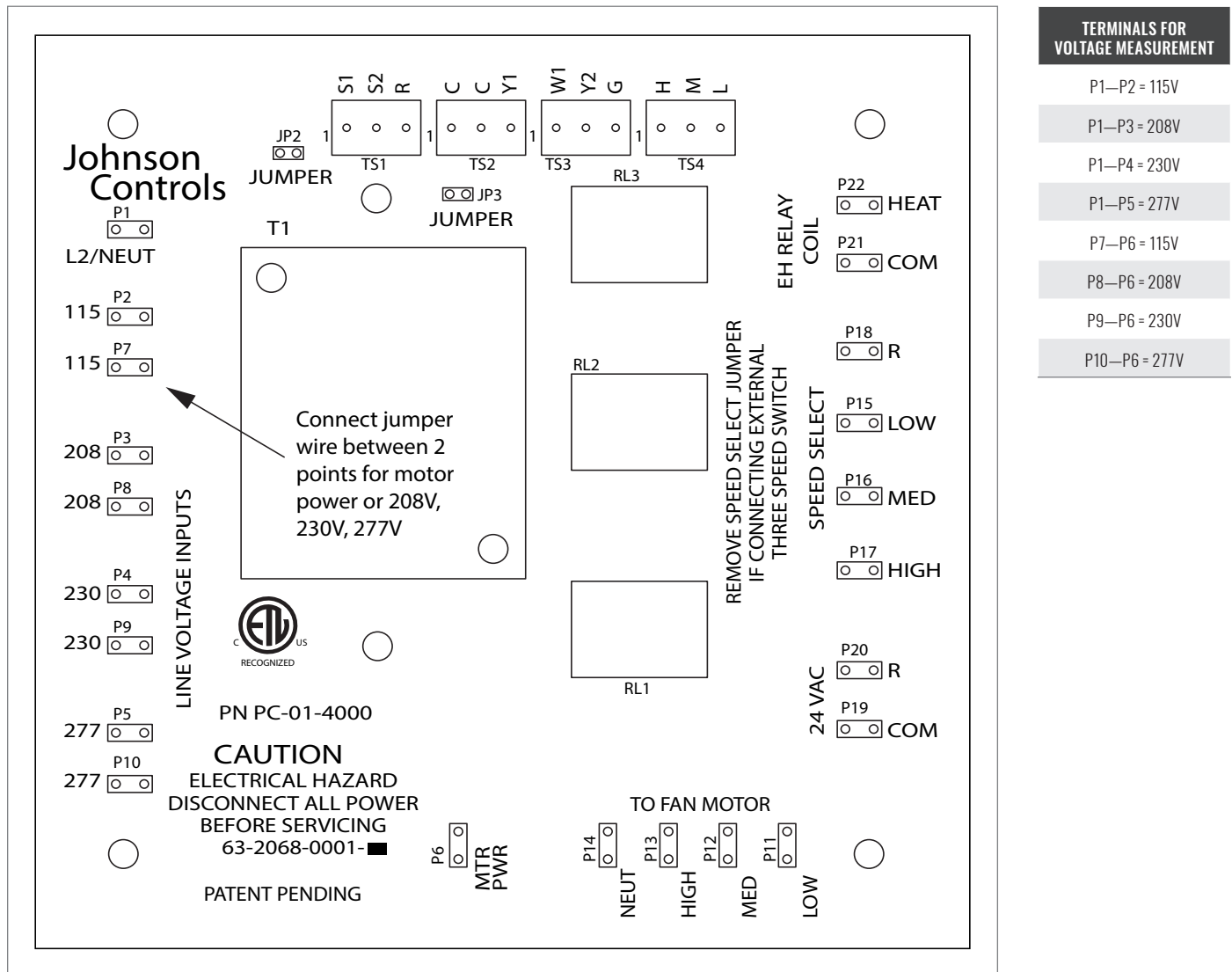


Figure 1 – Fan Coil Relay Board with motor power connections

Verify fan speed will change from High, Medium, and Low by utilizing remote 3 speed switch, thermostat or connecting P18 to P15, P18 to P16, or P18 to P17. If fan speeds are adjustable the relay board is producing 24 Volts.

If board is not working, measure 24 Volts between P20 and P19, if 24 Volts (19-29 VAC) is not present then measure across terminals S1 and R, if 24 Volts (19-29 VAC) is not present then return board to local sales representative.

Verify plug jumper (see Figure 2) is installed or wired (see Figure 3) is installed between W2 and R.

WARNING: Either JP3 or wire jumper must always be installed unless thermostat drawing indicates otherwise.

JP3 should be removed for single speed operation using "G" terminal.

For thermostat with 3 speed switching, remove JP1 but leave JP3 installed.

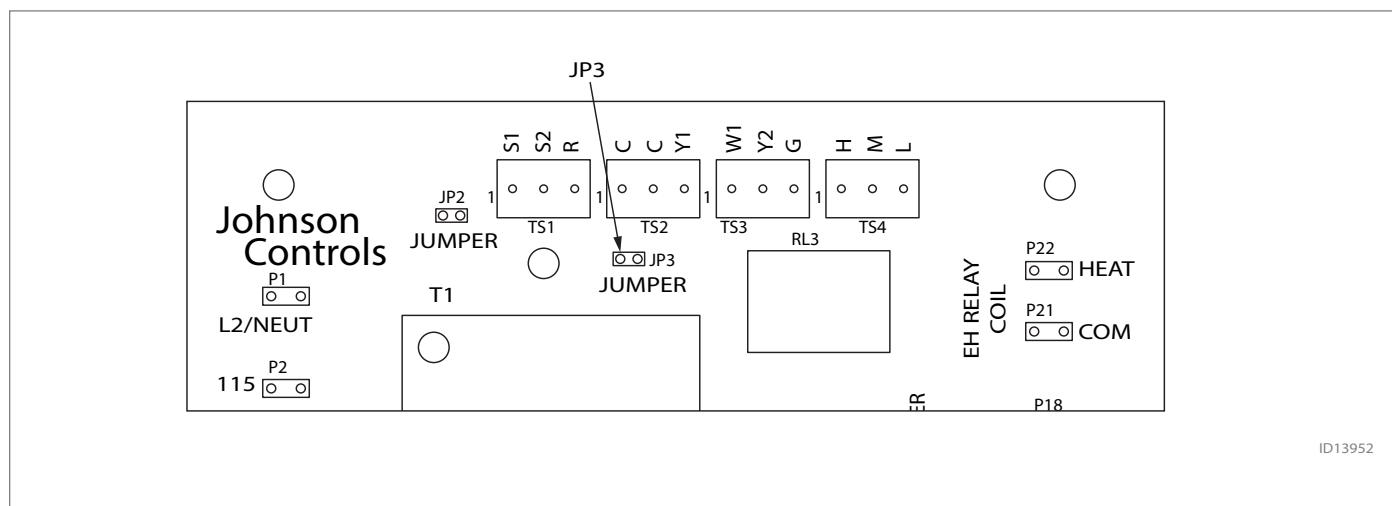


Figure 2 - Fan Coil Relay Board (Current)

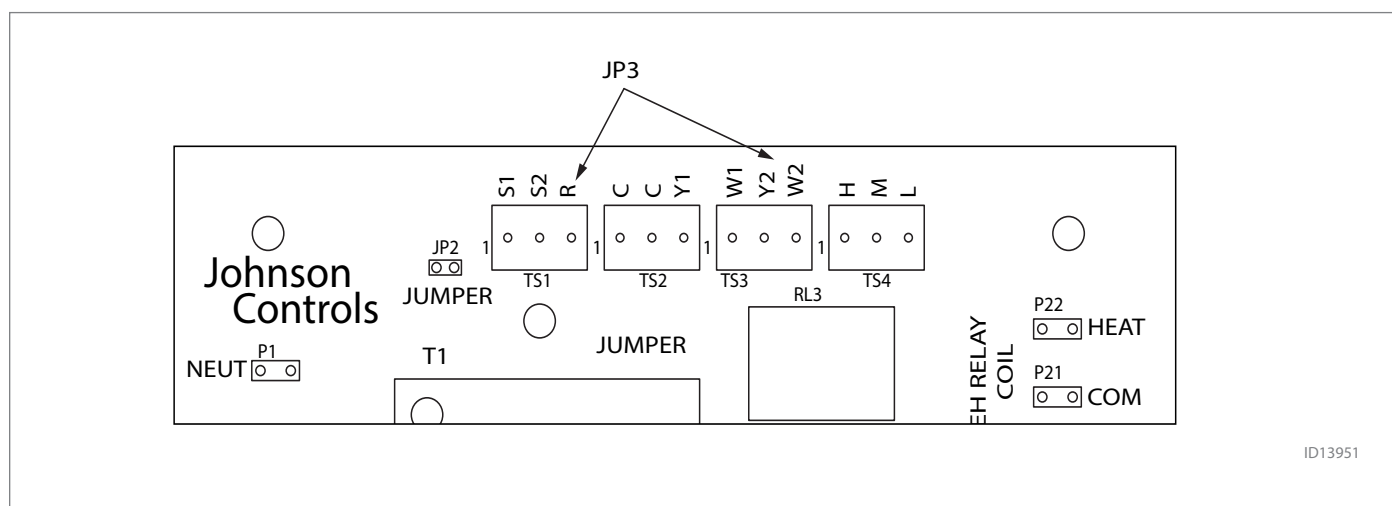


Figure 3 - Fan Coil Relay Board (Obsolete)

TABLE F.1: SCREW TERMINAL SIGNAL IDENTIFICATION

SIGNAL	DESCRIPTION
Y1	Tie point for chilled water valve actuator control input, and thermostat cooling output. Convenience terminal, not connected to anything else on board.
Y2	Tie point for "Close" input of modulating chilled water valve actuator or 2nd stage chilled water valve actuator control input, and thermostat cooling output. Convenience terminal, not connected to anything else on board. Y1 is "Open" output if floating (tristate) chilled water valve actuator is supplied (or used).
W1	Tie point for hot water valve actuator or 1st stage EH control input, and thermostat heating output. Convenience terminal, tied to P22 "Heat" quick connect for factory termination to EH relay if applicable.
L	Low speed control input for onboard relay. Parallels the P15 "LOW" quick connect input.
M	Medium speed control for onboard relay. Parallels the P16 "MED" quick connect input.
H	High speed control input for onboard relay. Parallels the P17 "HIGH" quick connect input. If thermostat or independent three speed switch is used, remove jumper JP1 (female to female quick jumper wire).
G	Connected to "R" thru JP3. Used (with JP3 removed) for input from single speed (residential style) thermostats that do not supply three speed fan switching. In these applications, a separate three speed switch may be used with the "H", "M" or "L" inputs, of the provided jumper to set a fixed fan speed. If thermostat supports three speed switching, "H", "M" and "L" inputs should be used, and JP3 should remain in place.
C	Device common, including onboard speed relays (all terminals "C" and "COM" on board are tied together).
R	Transformer "hot" connection (side of transformer that's not the one used for valve actuator, EH, etc. commons). Control outputs to board should close to "R" to energize (Refer to thermostat literature).
S2	Convenience terminal. Not connected to other components on the board. Used for different functions based on application, such as 2nd stage heat control tie point for two stage EH applications, or changeover water valve/aquastat tie point for two pipe changeover applications. May also be used as tie point for "Close" input of modulating hot water valve actuator and "Close" output of thermostat in floating (tristate) water valve applications.
S1	Common side of transformer. Jumped to "C" (common) through JP2. If application calls for float switch JP2 is removed and float switch is connected between S1 and C.
HEAT (P22)	Same functionality as W1 when operating EH. June

EXAMPLE WIRING DIAGRAMS

Typical 24VAC Control Drawing

(Refer to unit control enclosure for actual order specific drawings)

- FILED NOTES:
- 1. FILED WIRING MUST BE COPPER CONDUCTOR, RATED AT 75°C MINIMUM.
 - 2. ADDITIONAL MOTOR WIRED IN PARALLEL.
 - 3. REMOVE SPEED SELECT JUMPER JP1 IF T'STAT OR 3 SPEED SWITCH PROVIDED. OTHERWISE, TO CHANGE SPEED, REMOVE JUMPER FROM "HIGH" TERMINAL AND CONNECT TO "MED" OR "LOW" TERMINAL. OPTIONAL ITEM SHOWN. SEE ORDER ACKNOWLEDGEMENT FOR OPTIONAL ITEM REQUIREMENTS.
 - 4. FILED WIRING IS REQUIRED IF VALVE PACKAGE NOT SUPPLIED, OR EXTERNAL TO UNIT.
 - 5. REMOVE JP3 FOR REMOTE CONTROL USING "G".
7. IF FLOAT SWITCH PROVIDED, ATTACH JP2 TO ONE PIN ONLY; OTHERWISE ATTACH TO BOTH PINS.
8. WIRE FILED SUPPLIED START/STOP CONTACT IN SERIES WITH OPTIONAL FLOAT SWITCH, IF PROVIDED. OTHERWISE, INSTALL JP2.
9. OPTIONAL DOOR INTERLOCKING DISCONNECT MAY BE PROVIDED IN LIEU OF TOGGLE DISCONNECT.

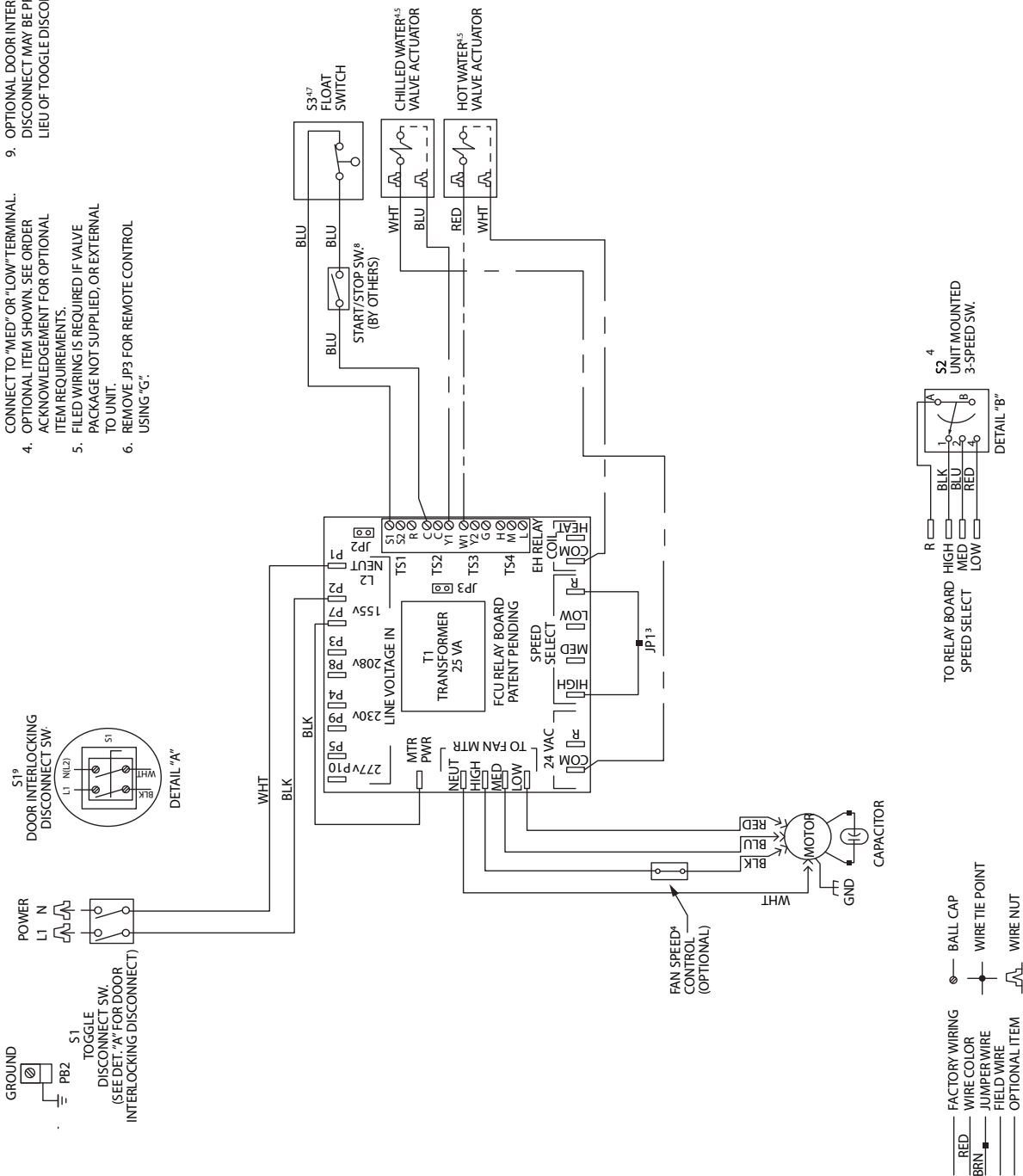


Figure 4

EXAMPLE WIRING DIAGRAMS

- FILED NOTES:
1. FILED WIRING MUST BE COPPER CONDUCTOR, RATED AT 75°C MINIMUM.
 2. ADDITIONAL MOTOR WIRED IN PARALLEL.
 3. REMOVE SPEED SELECT JUMPER, JP1 IF T-STAT OR 3 SPEED SWITCH PROVIDED. OTHERWISE, TO CHANGE SPEED, REMOVE JUMPER FROM "HIGH" TERMINAL AND CONNECT TO "MED" OR "LOW" TERMINAL.
 4. OPTIONAL ITEM SHOWN, SEE ORDER ACKNOWLEDGEMENT FOR OPTIONAL ITEM REQUIREMENTS.
 5. FILED WIRING IS REQUIRED IF VALVE PACKAGE NOT SUPPLIED, OR EXTERNAL TO UNIT.
 6. REMOVE JP3 FOR REMOTE CONTROL USING "G".
 7. IF FLOAT SWITCH PROVIDED, ATTACH JP2 TO ONE PIN ONLY; OTHERWISE ATTACH TO BOTH PINS.
 8. WIRE FILED SUPPLIED START/STOP CONTACT IN SERIES WITH OPTIONAL FLOAT SWITCH, IF PROVIDED. OTHERWISE, INSTALL JP2
 9. ADDITIONAL HEATER ELEMENT(S) WIRED IN PARALLEL.
 10. OPTIONAL TOGGLE DISCONNECT MAY BE PROVIDED IN LIEU OF DOOR INTERLOCKING DISCONNECT.

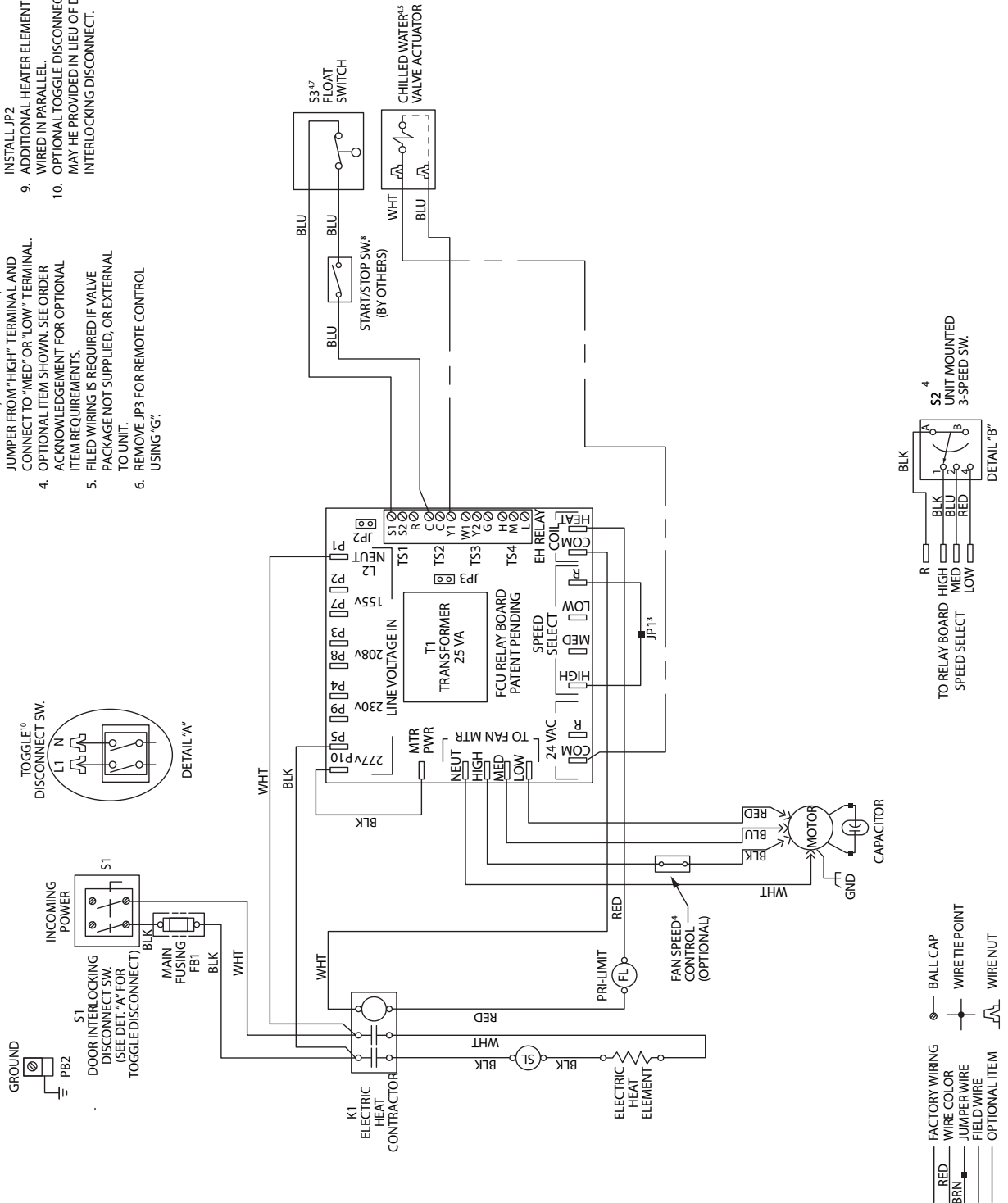


Figure 5

EXAMPLE WIRING DIAGRAMS

Example with EC Motor

NOTES:

1. INCOMING POWER WIRE FOR 120 OR 277 VOLT IS WHITE & 208 OR 230 VOLT WIRE IS RED.
2. FIELD WIRING MUST BE COPPER CONDUCTOR, RATED AT 75°C MINIMUM.
3. OPTIONAL ITEM SHO. SEE ORDER ACKNOWLEDGMENT FOR OPTIONAL ITEM REQUIREMENTS.
4. WIRE FILED PROVIDED START/STOP CONTACT IN SERIES WITH OPTIONAL FLOAT SWITCH (IF SUPPLIED). IF OPTIONAL FLOAT SWITCH IS NOT SUPPLIED, WIRE FILED PROVIDED START/STOP CONTACT IN PLACE OF FACTORY INSTALLED JUMPER (JP2).
5. OPTIONAL DOOR INTERLOCKING MAY BE PROVIDED IN LIEU OF LINE BLOCK AND OPTIONAL TOGGLE SWITCH.
6. JUMPER IS FACTORY INSTALLED IF OPTIONAL FLOAT SWITCH IS NOT SUPPLIED. ONLY REQUIRED IF MOTORIZED DAMPER PROVIDED AND THERMOSTAT NOT PROVIDED. REMOVE FOR REMOTE FAN CONTROL USING "G" TERMINAL.
7. P2 IS COMMON TO TERMINAL T5 OF THE ETPWM1.
8. INSTALL JUMPER JP1 BETWEEN PINS 1 & 2 FOR 120 VAC APPLICATIONS ONLY.

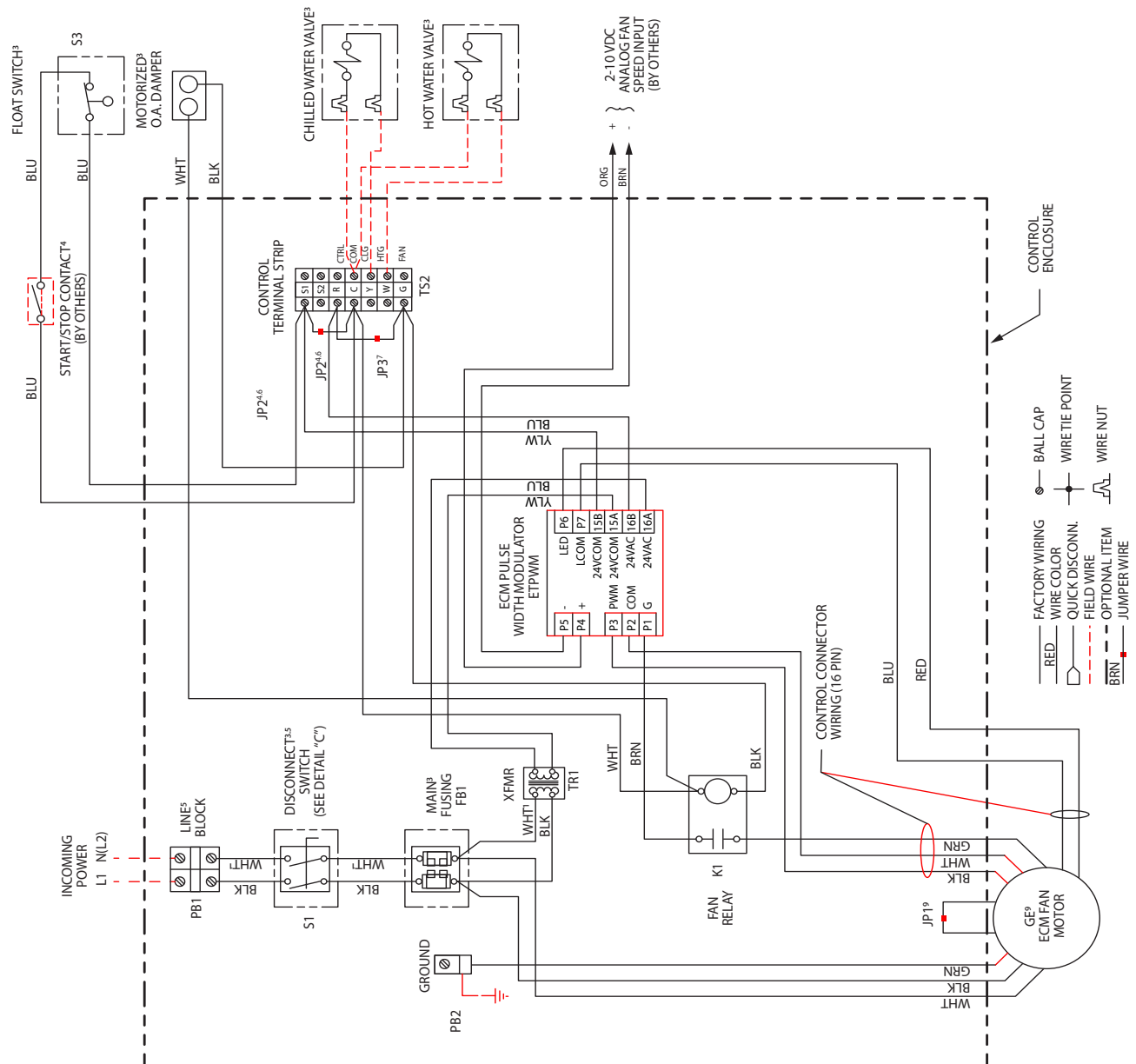
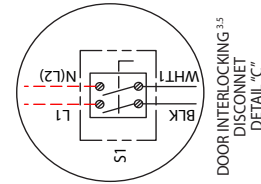


Figure 6

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