TopDry Wiring Diagrams

Installation Manual

PNEG-1264

Date: 10-22-15

PNEG-1264

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Cautionary Symbols

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.

DANGER This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**

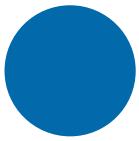
WARNING This symbol indicates a potentially hazardous situation which, if not avoided, **may result in serious injury or death.**

CAUTION This symbol indicates a potentially hazardous situation which, if not avoided, **may result in minor or moderate injury.**

CAUTION This symbol indicates a potentially hazardous situation which, if not avoided, **may result in property damage**.

This symbol indicates a general hazard.

This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

WARNING! BE ALERT!

Personnel operating or working around electric fans should read this manual. This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Fan/Heater Installation and Operating Instructions

Thank you for choosing a TopDry Series 2000 unit. It is designed to give excellent performance and service for many years.

This manual describes the wiring for all standard production TopDry Series 2000 single fan, multi-fan and 2000 Series Heater Control units. Different models are available for liquid propane or natural gas fuel supply, with either 1 phase 230 volt, or 3 phase 208, 220, 380, 460 or 575 volt electrical power.

Our foremost concern is your safety and the safety of others associated with this equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where SERIOUS INJURY or DEATH may occur.

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

Safety Precautions

READ THESE INSTRUCTIONS BEFORE OPERATION AND SERVICE
SAVE FOR FUTURE REFERENCE

1. Read and understand the operating manual before trying to operate the dryer.
2. Power supply should be **OFF** for service of electrical components. Use **CAUTION** in checking voltage or other procedures requiring power to be **ON**.
3. Check for gas leaks at all gas pipe connections. If any leaks are detected, **DO NOT** operate the dryer. Shut down and repair before further operation.
4. **NEVER** attempt to operate the dryer by jumping or otherwise bypassing any safety devices on the unit.
5. Set pressure regulator to avoid excessive gas pressure applied to burner during ignition and when burner is in operation. **DO NOT** exceed maximum recommended drying temperature.
6. Keep the dryer clean. **DO NOT** allow fine material to accumulate in the plenum or drying chamber.
7. Use **CAUTION** in working around high speed fans, gas burners, augers and auxiliary conveyors which can **START AUTOMATICALLY**.
8. **DO NOT** operate in any area where combustible material will be drawn into the fan.
9. **BEFORE** attempting to remove and reinstall any propeller, make certain to read the recommended procedure listed within the servicing section of the manual.
10. Clean grain is easier to dry. Fine material increases resistance to airflow and requires removal of extra moisture.

This product is intended for the use of grain handling only. Any other use is considered a misuse of the product.

Some edges of the product components can be sharp. It is recommended that each component of this product be examined to determine if there are any safety considerations to be taken. Any and all necessary personal protective equipment should be worn at all times when handling, assembling, installing and operation of the product and/or components.

Guards are removed for illustration purpose only. All guards must be in place before/during operation.

Use Caution in the Operation of this Equipment

This dryer is designed and manufactured with operator safety in mind. However, the very nature of a grain dryer having a gas burner, high voltage electrical equipment and high speed rotating parts, presents hazards to personnel which can not be completely safeguarded against without interfering with the efficient operation of the dryer and reasonable access to its components.

Use extreme caution in working around high speed fans, gas-fired heaters, augers and auxiliary conveyors, which may start without warning when the dryer is operating on automatic control.

Keep the dryer clean. Do not allow fine material to accumulate in the plenum chamber or surrounding the outside of the dryer.

Continued safe, dependable operation of automatic equipment depends, to a great degree, upon the owner. For a safe and dependable drying system, follow the recommendations within this manual, and make it a practice to regularly inspect the unit for any developing problems or unsafe conditions.

Take special note of the *Safety Precautions on Page 6* before attempting to operate the dryer.

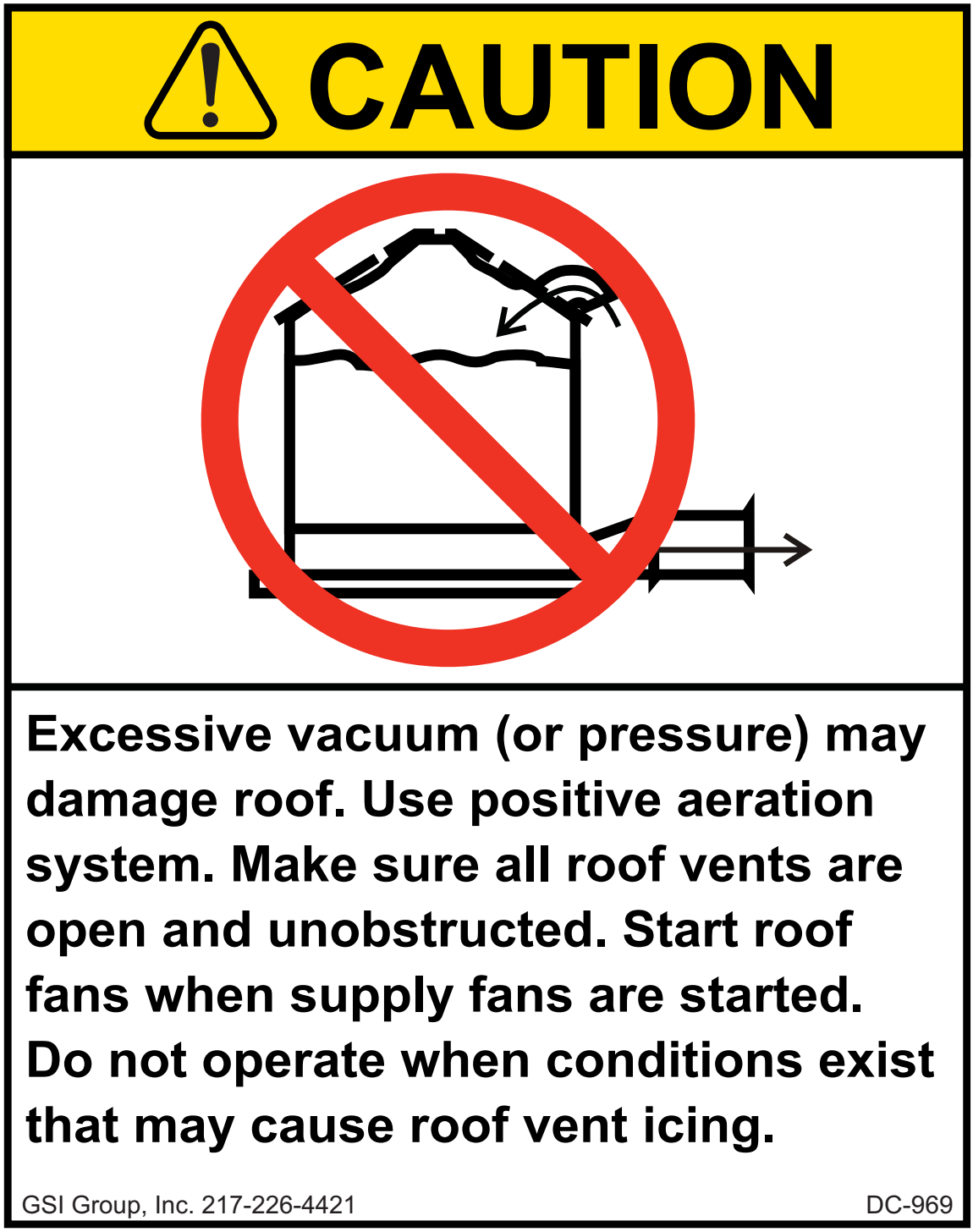
Safety Sign-Off Sheet

As a requirement of O.S.H.A., it is necessary for the employer to train the employee in the safe operating and safety procedures for this auger. This sign-off sheet is provided for your convenience and personal record keeping. All unqualified persons are to stay out of the work area at all times. It is strongly recommended that another qualified person who knows the shut down procedure be in the area in the event of an emergency.

Date	*Employee Name*	*Supervisor Name*

Roof Damage Warning and Disclaimer

The manufacturer does not warrant any roof damage caused by excessive vacuum or internal pressure from fans or other air moving systems. Adequate ventilation and/or “makeup air” devices should be provided for all powered air handling systems. The manufacturer does not recommend the use of downward flow systems (suction). Severe roof damage can result from any blockage of air passages. Running fans during high humidity/cold weather conditions can cause air exhaust or intake ports to freeze.



2. Decals

The GSI Group recommends contacting the local power company, and having a representative survey the installation so the wiring is compatible with their system and adequate power is supplied to the unit.

Safety decals should be read and understood by all people in the grain handling area. The rotating blade, fire warning decals and voltage danger decal must be displayed on the fan can. The decal DC-973 given below should be present on the inside bin door cover of the 2 ring door, 24" porthole door cover and the roof manway cover.

If a decal is damaged or is missing contact:

GSI Decals
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 1-217-226-4421

A free replacement will be sent to you.

Power Supply

An adequate power supply and proper wiring are important factors for maximum performance and long life of the dryer. Electrical service must be adequate enough to prevent low voltage damage to motors and control circuits. (See electrical load information.)

Transformer and Wiring Voltage Drop

It is necessary to know the distance from the unit to the available transformer, and the horsepower of the fan unit. Advise the service representative of the local power supplier that an additional load will be placed on the line. Each fan motor should be wired through a fused or circuit breaker disconnect switch. Check on KVA rating of transformers, considering total horsepower load. The power supply wiring, main switch equipment and transformers must provide adequate motor starting and operating voltage. Voltage drop during motor starting should not exceed 14% of normal voltage, and after motor is running at full speed it should be within 8% of normal voltage. Check electrical load information for HP ratings and maximum amp loads to properly size wire and fusing elements. Standard electrical safety practices and codes should be used. (Refer to National Electrical Code Standard Handbook by National Fire Protection Association.)

Machine to Earth Grounding

It is very important that a *Machine to Earth Ground Rod* be installed at the fan. This is true even if there is a ground at the pole 15 feet (15') away. Place the ground rod that comes standard, within 8 feet (8') of the dryer and attach it to the dryer control panel with at least a #6 solid, bare copper ground wire and the clamp provided. The grounding rod located at the power pole will not provide adequate grounding for the dryer. The proper grounding will provide additional safety in case of any short and will ensure long life of all circuit boards, and the ignition system. The ground rod must be in accordance with local requirements.

Proper Installation of Ground Rod

It is not recommended that the rod be driven into dry ground.

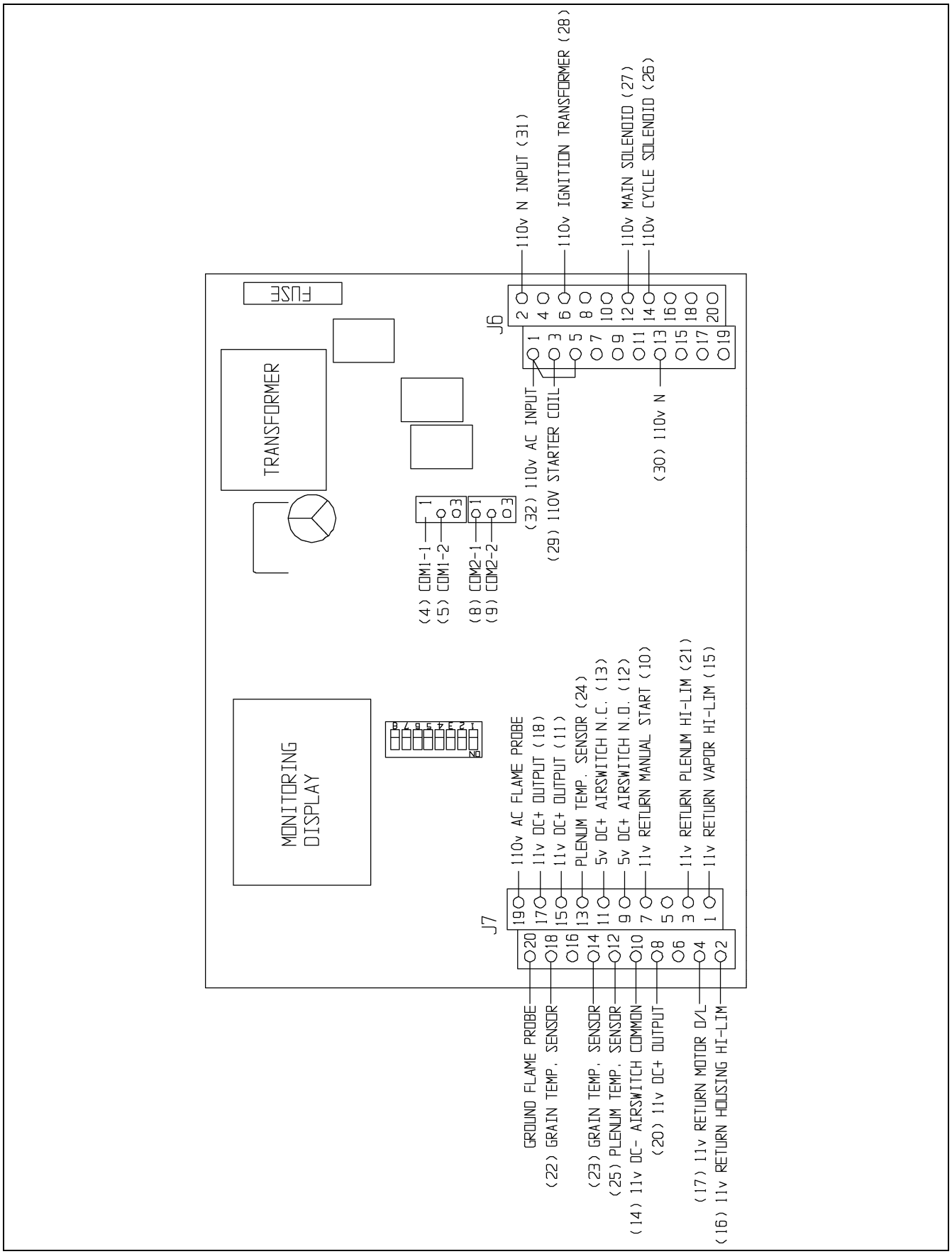
Follow these instructions for proper installation:

1. Dig a hole large enough to hold 1 to 2 gallons of water.
2. Fill hole with water.
3. Insert rod through water and jab it into the ground.
4. Continue jabbing the rod up and down. The water will work its way down the hole, making it possible to work the rod completely into the ground. This method of installing the rod gives a good conductive bond with the surrounding soil.
5. Connect the bare copper ground wire to the rod with the proper ground rod clamp. *(See Figure 3A.)*
6. Connect the bare copper ground wire to the fan control boxes with a grounding lug.
7. Ground wire must not have any breaks or splices.

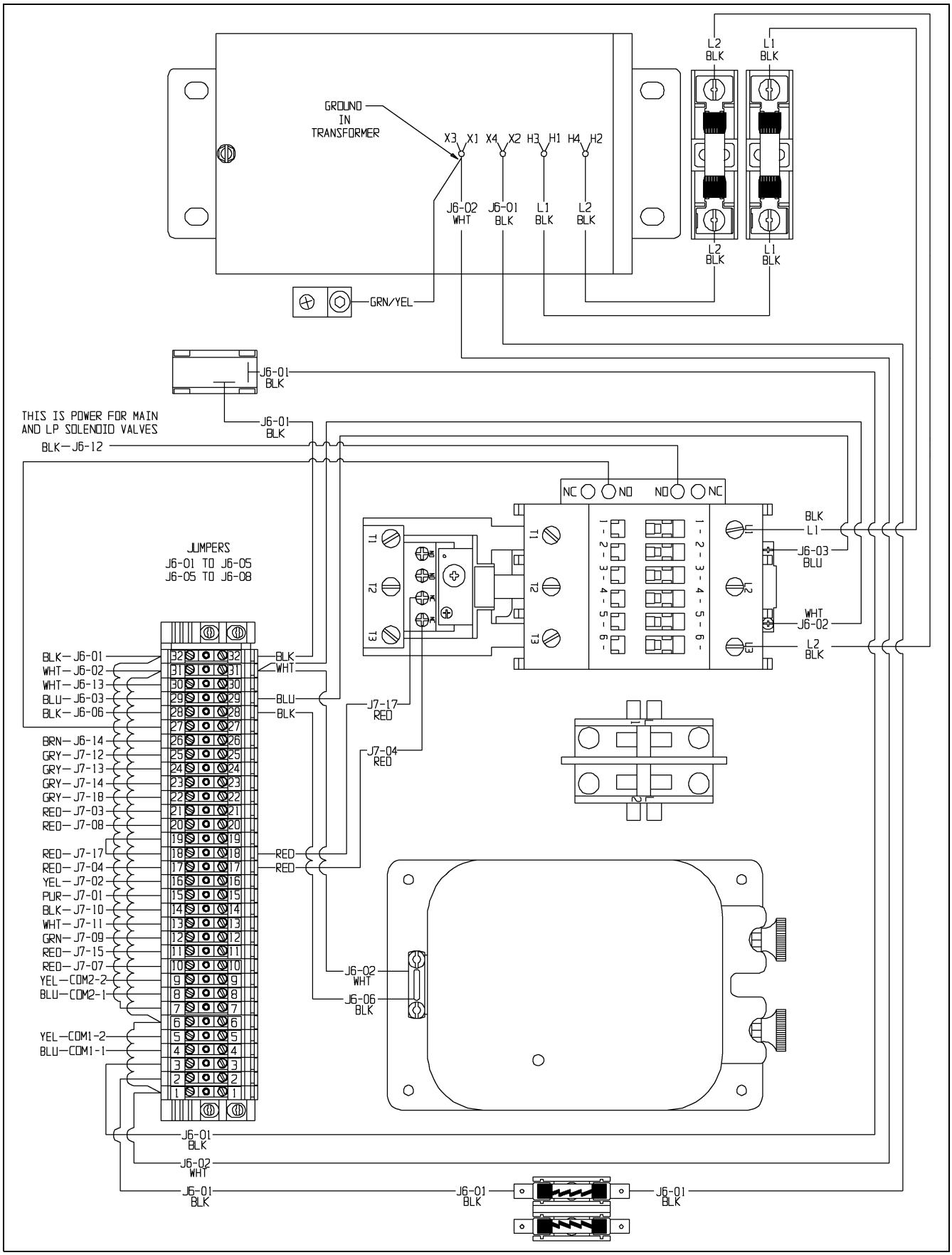
Dig a hole large enough to hold 1 or 2 gallons of water. Work the ground rod into the earth until it is completely in the ground.

Figure 3A

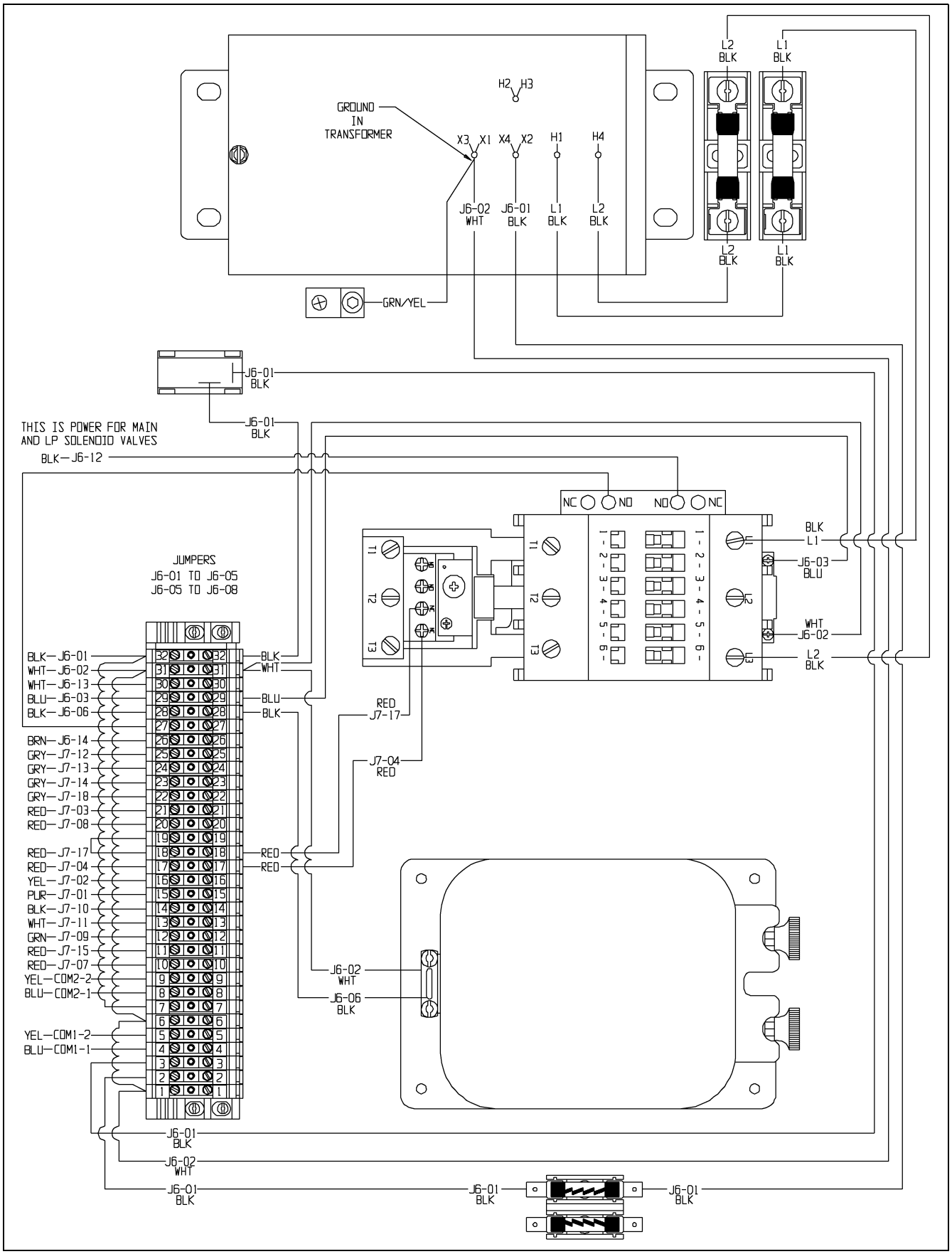
Series 2000 Master Heater Board Input/Output



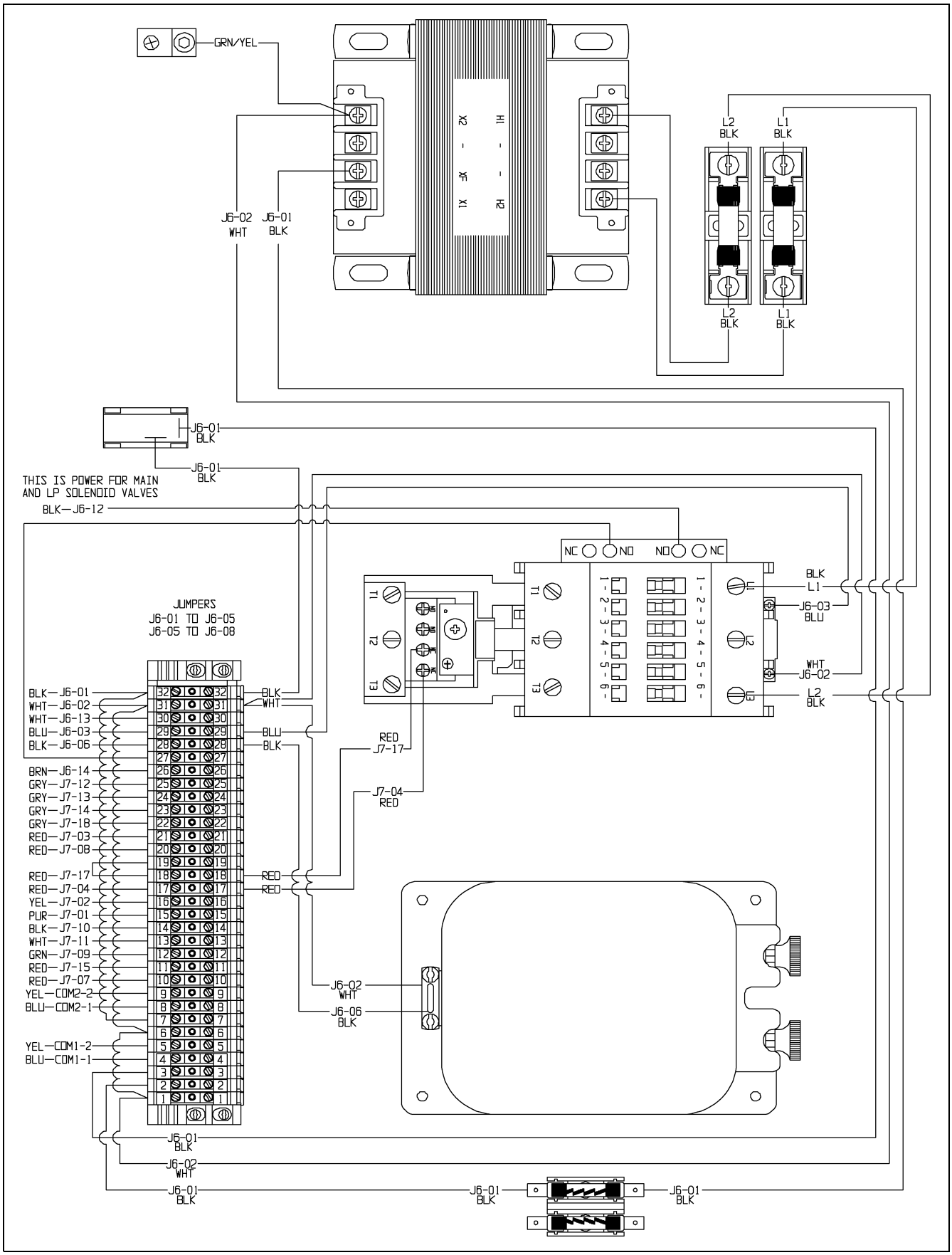
Series 2000 Master 220V 1 PH and 220V 3 PH Internal Wiring



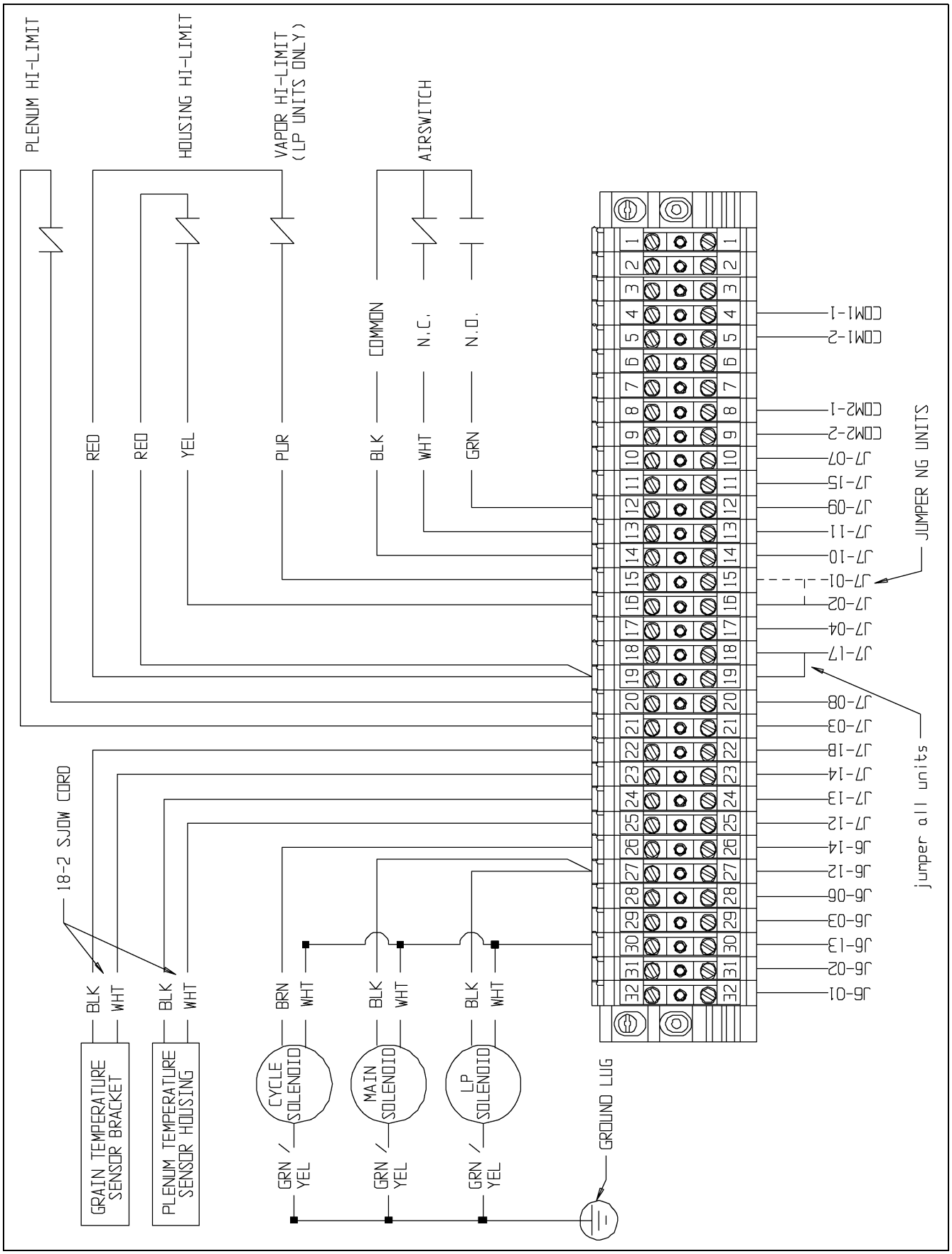
Series 2000 Master 460V 3 PH Internal Wiring



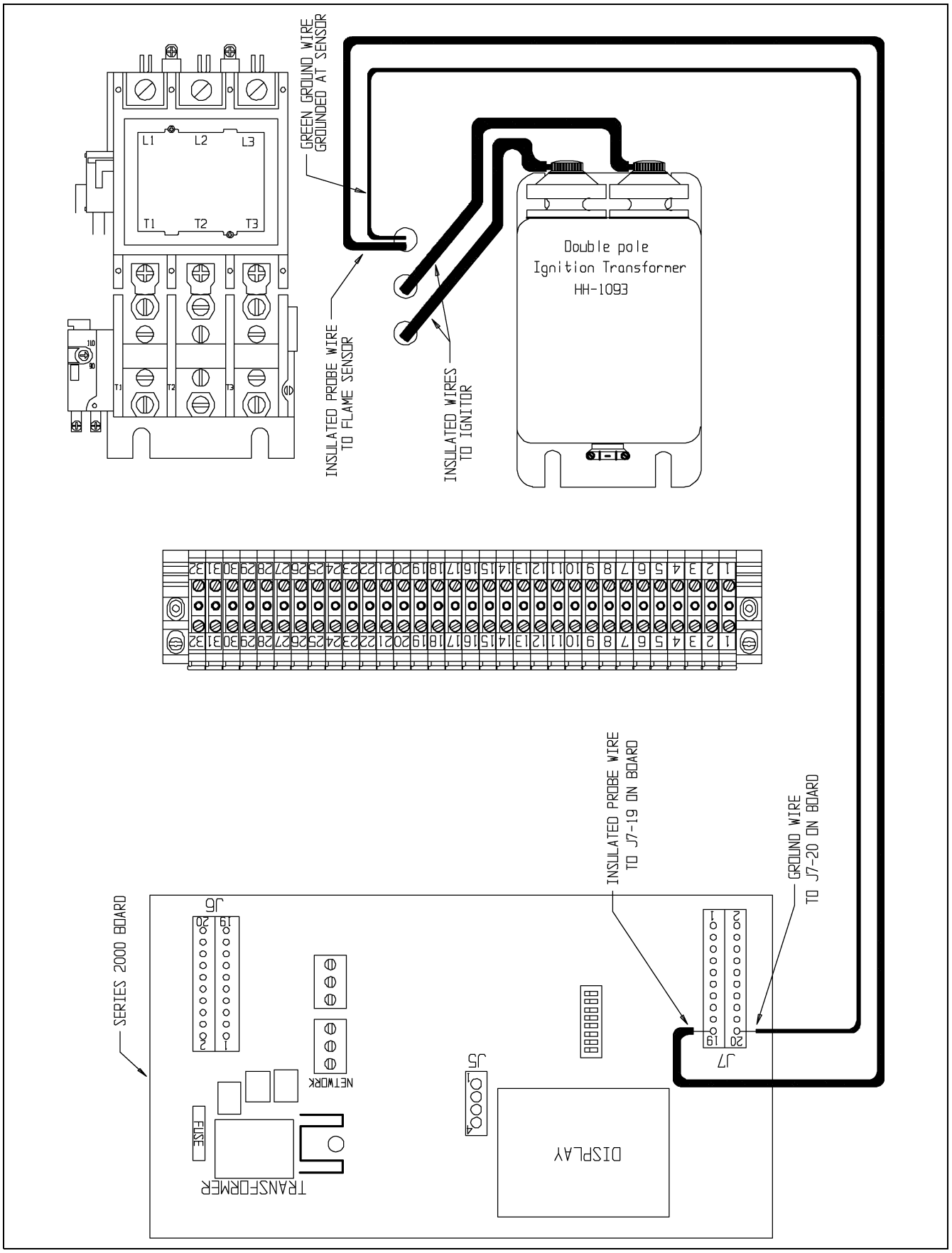
Series 2000 Master 575V 3 PH Internal Wiring



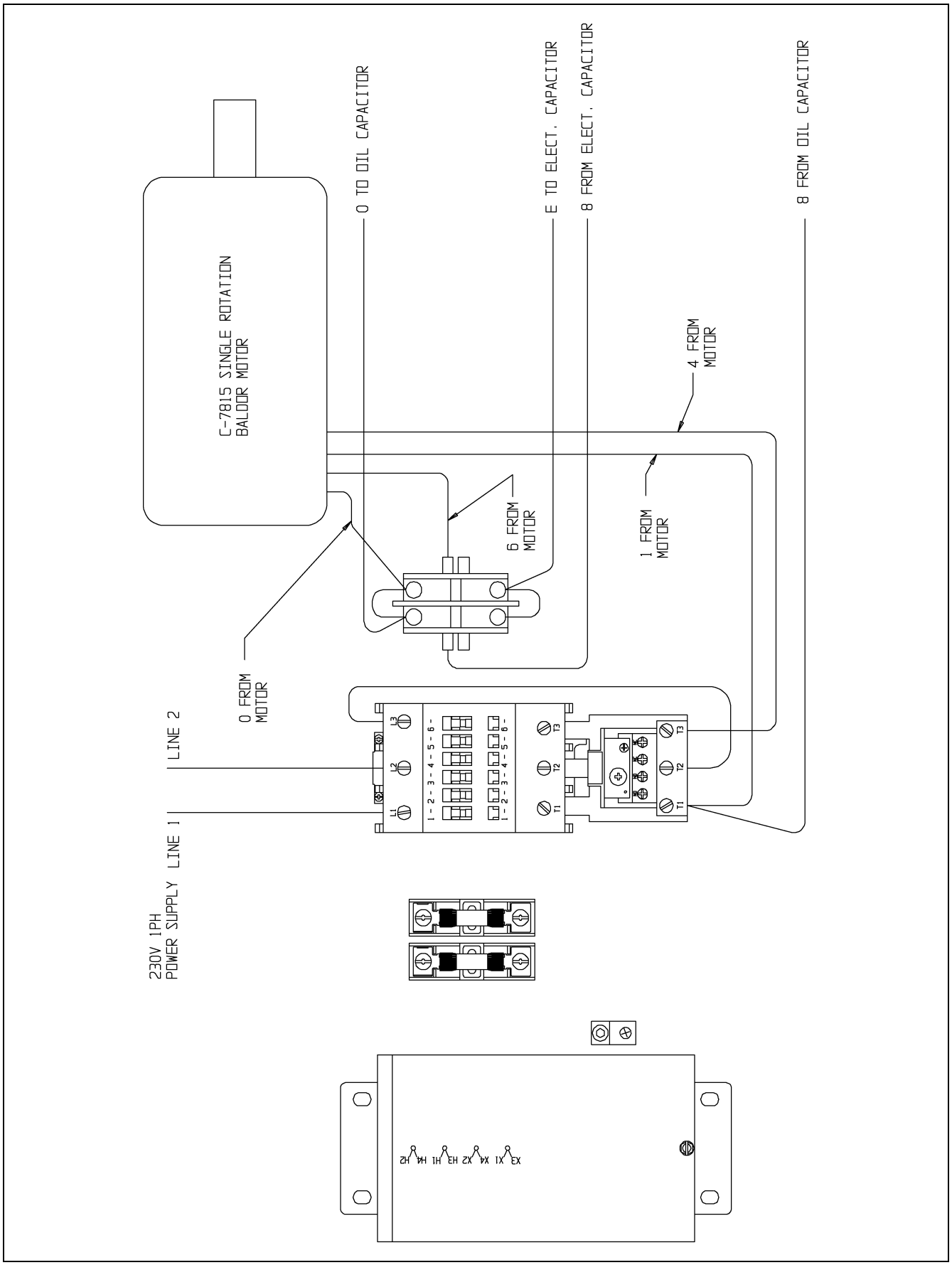
Series 2000 Master External Wiring



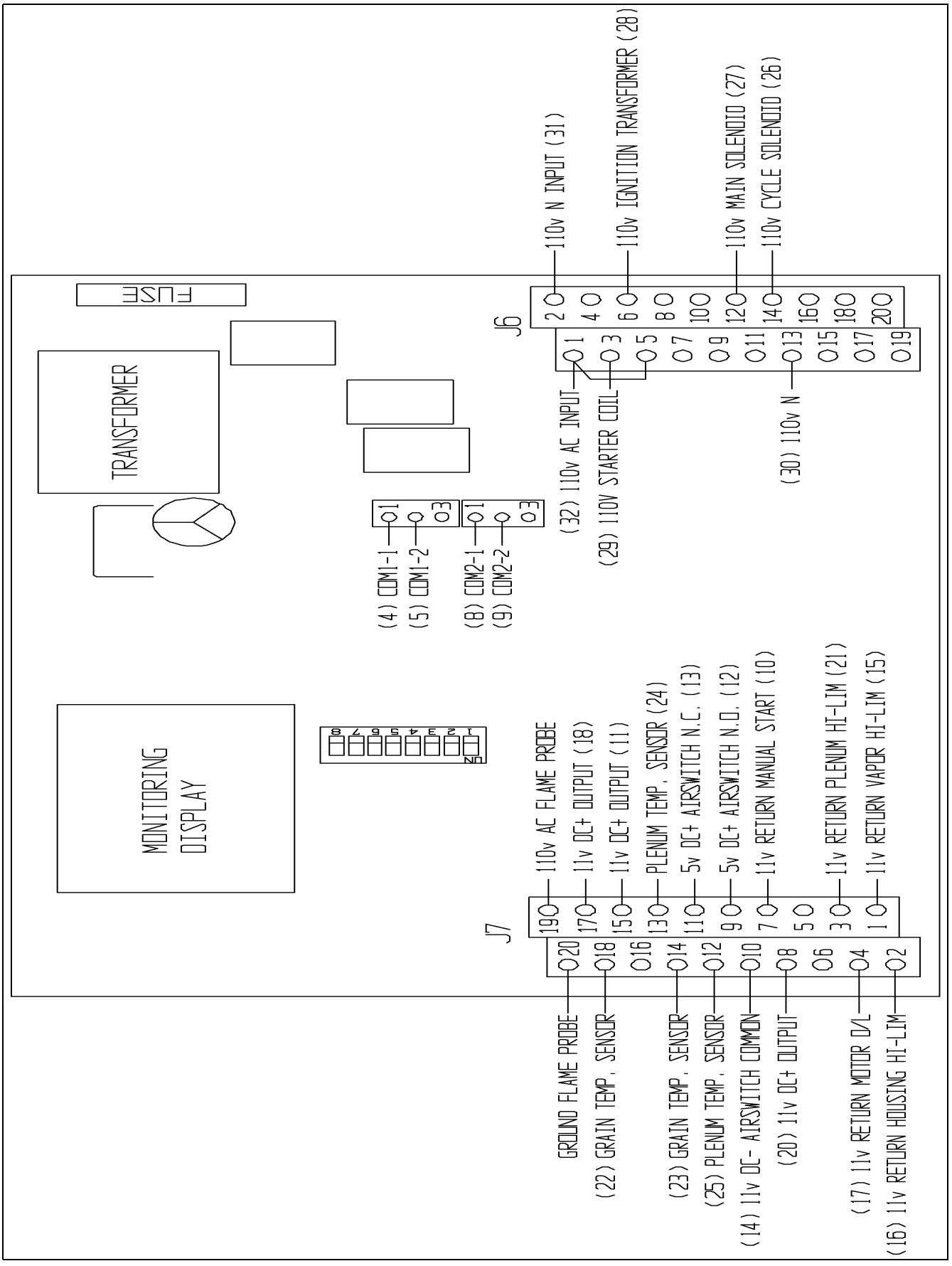
Series 2000 Master Ignitor/Probe Wiring



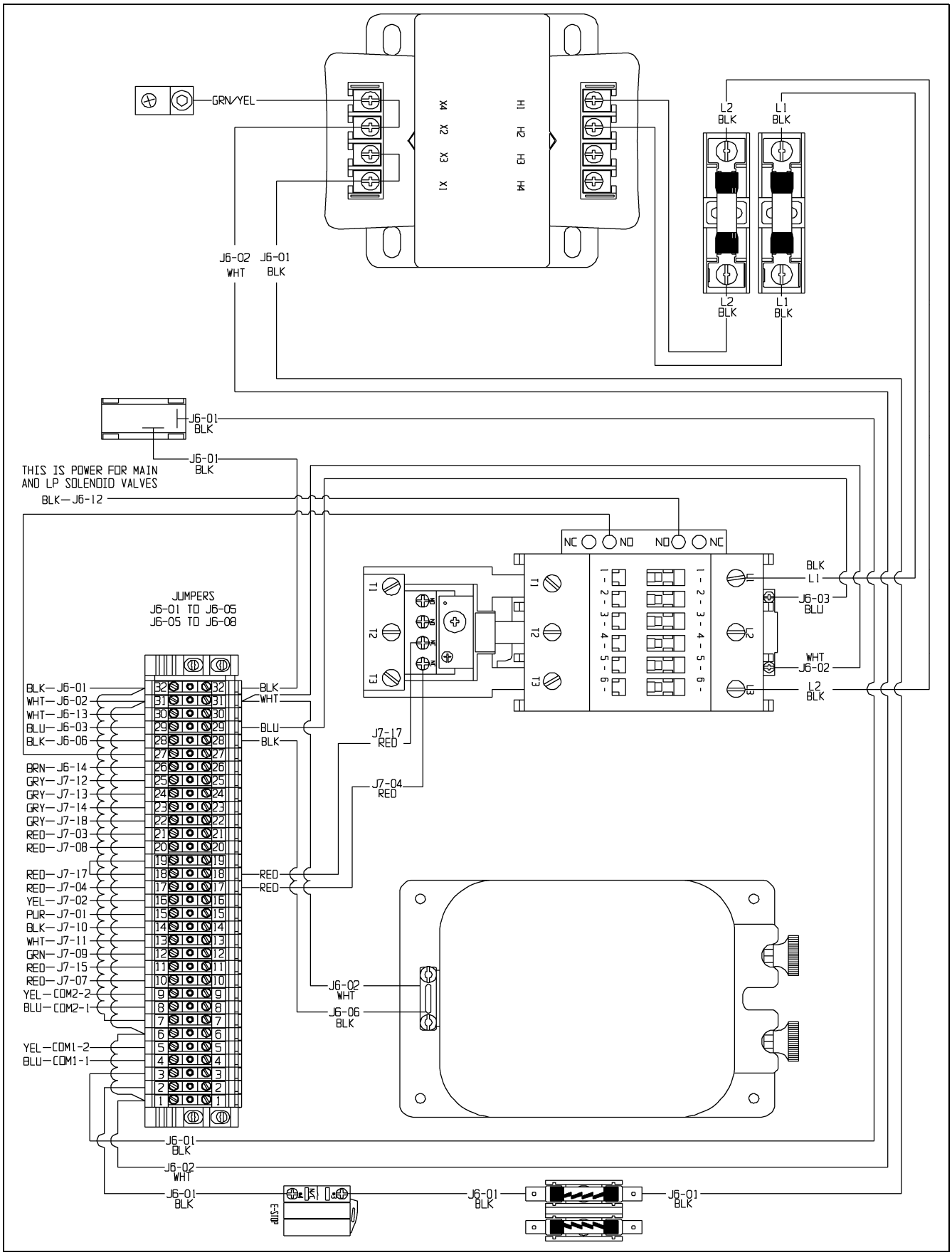
Series 2000 Master 15 HP 220V 1 PH Capacitor Wiring (Baldor)



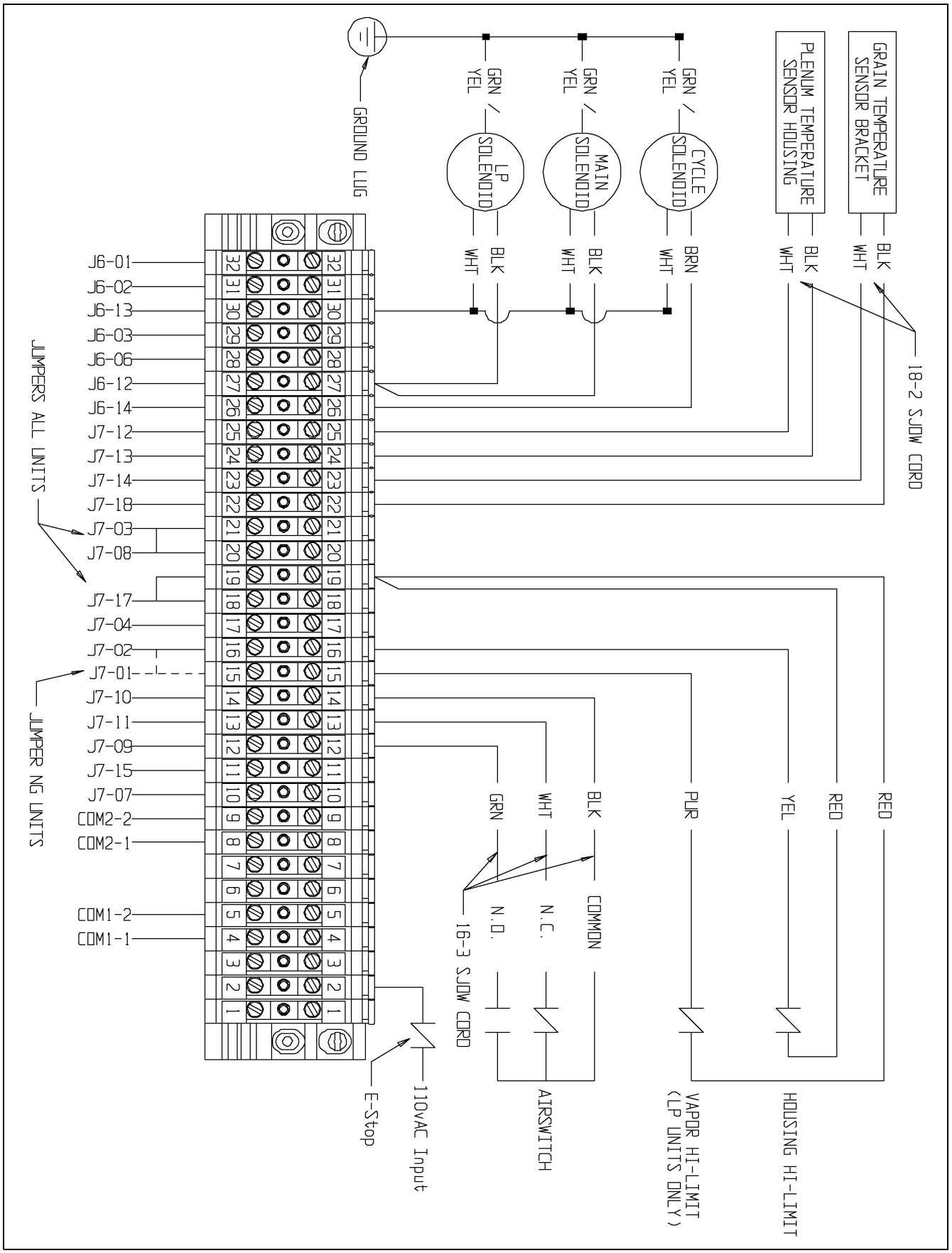
Series 2000 Master Heater Board Input/Output



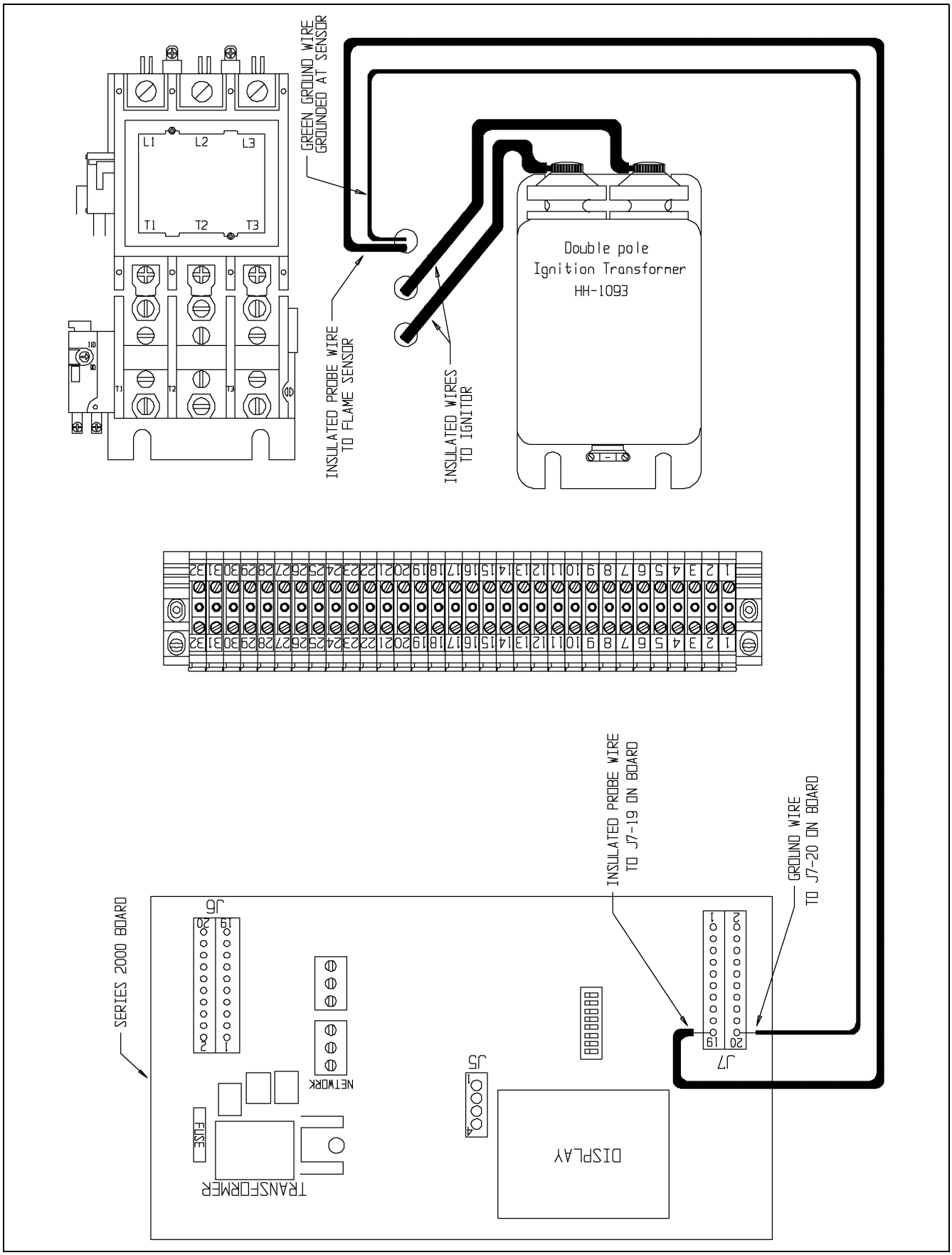
Series 2000 Master 380V 3 PH Internal Wiring



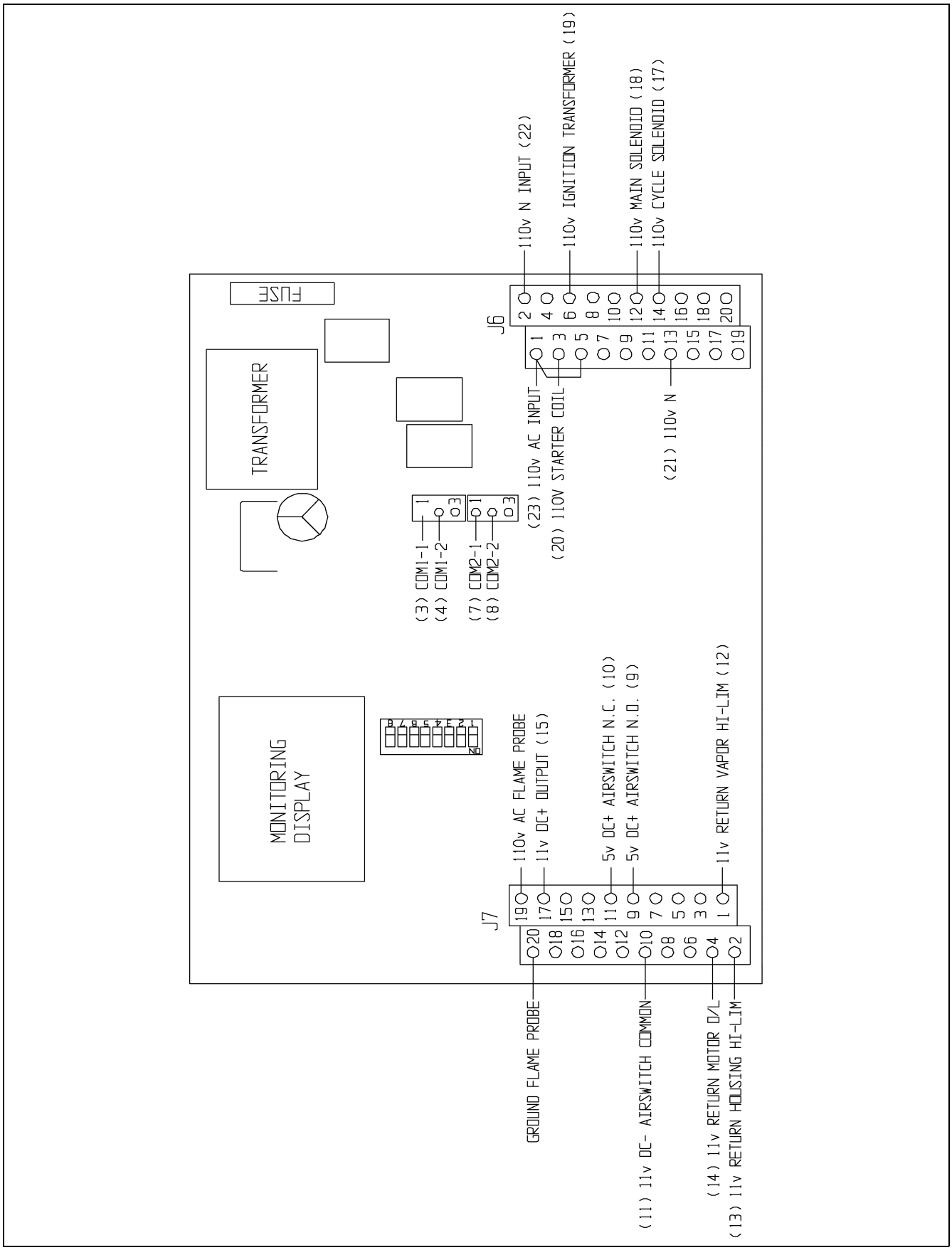
Series 2000 Master 380V 3 PH External Wiring



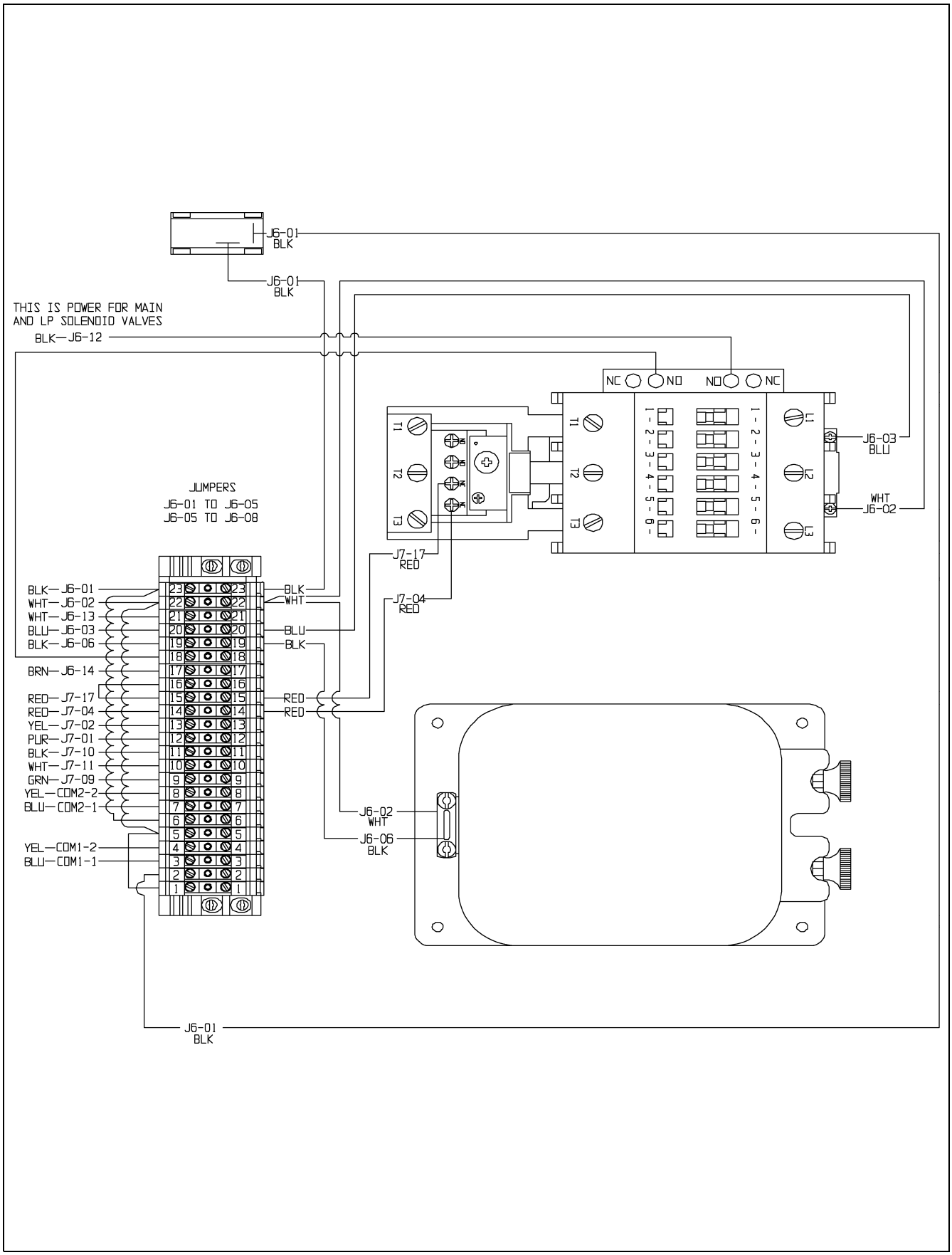
Series 2000 Master Ignitor/Probe Wiring



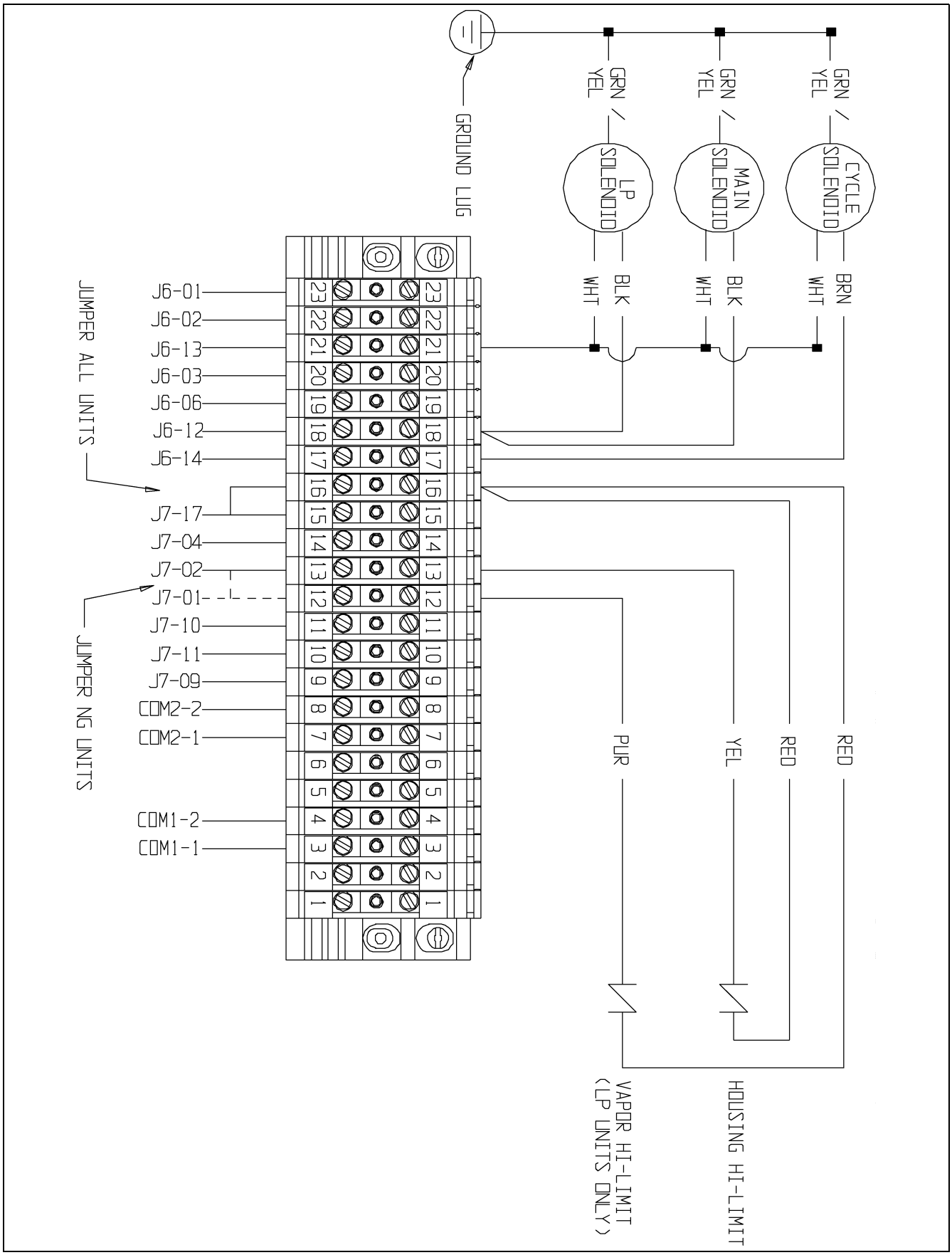
Series 2000 Slave Heater Board Input/Output



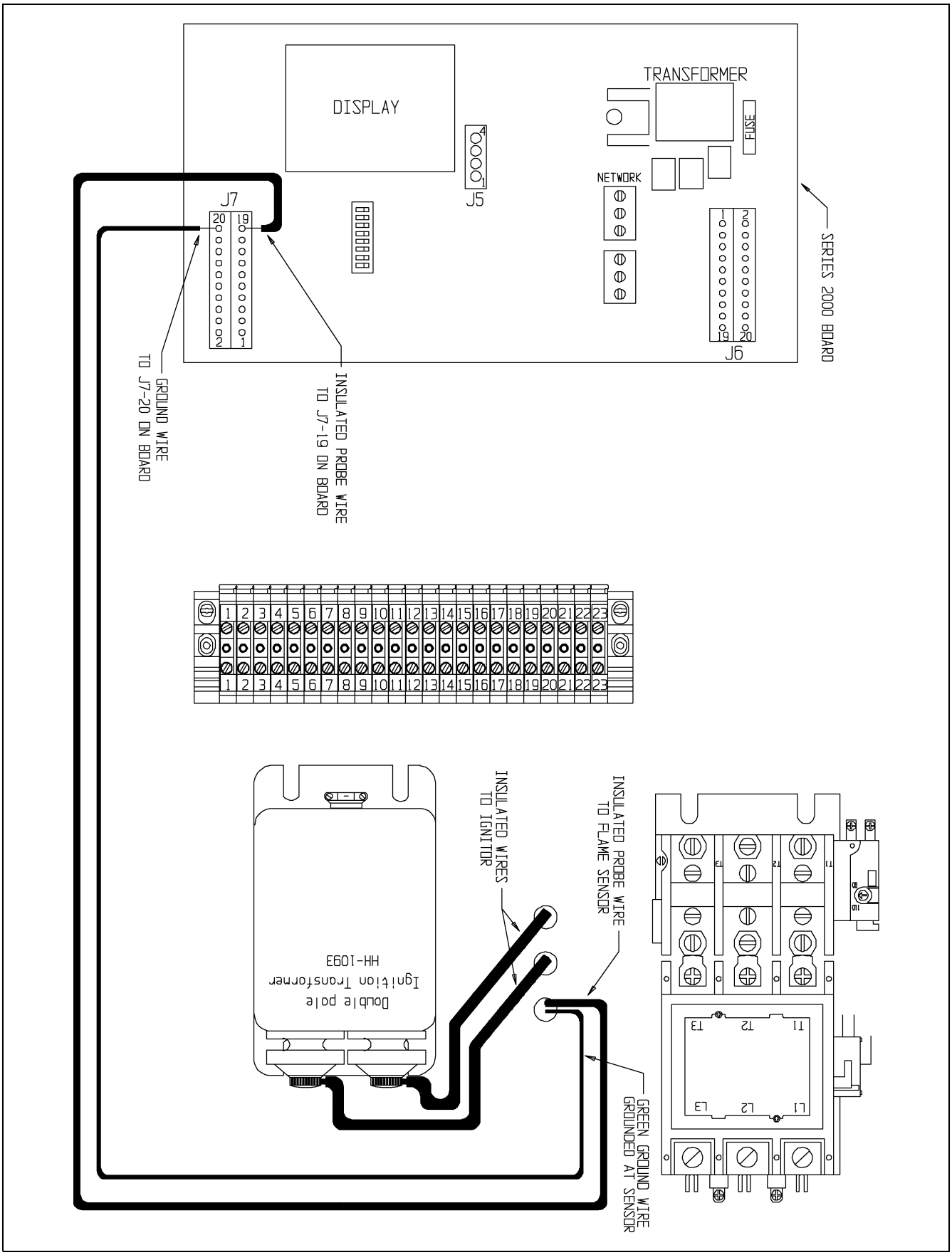
Series 2000 Slave Internal Wiring



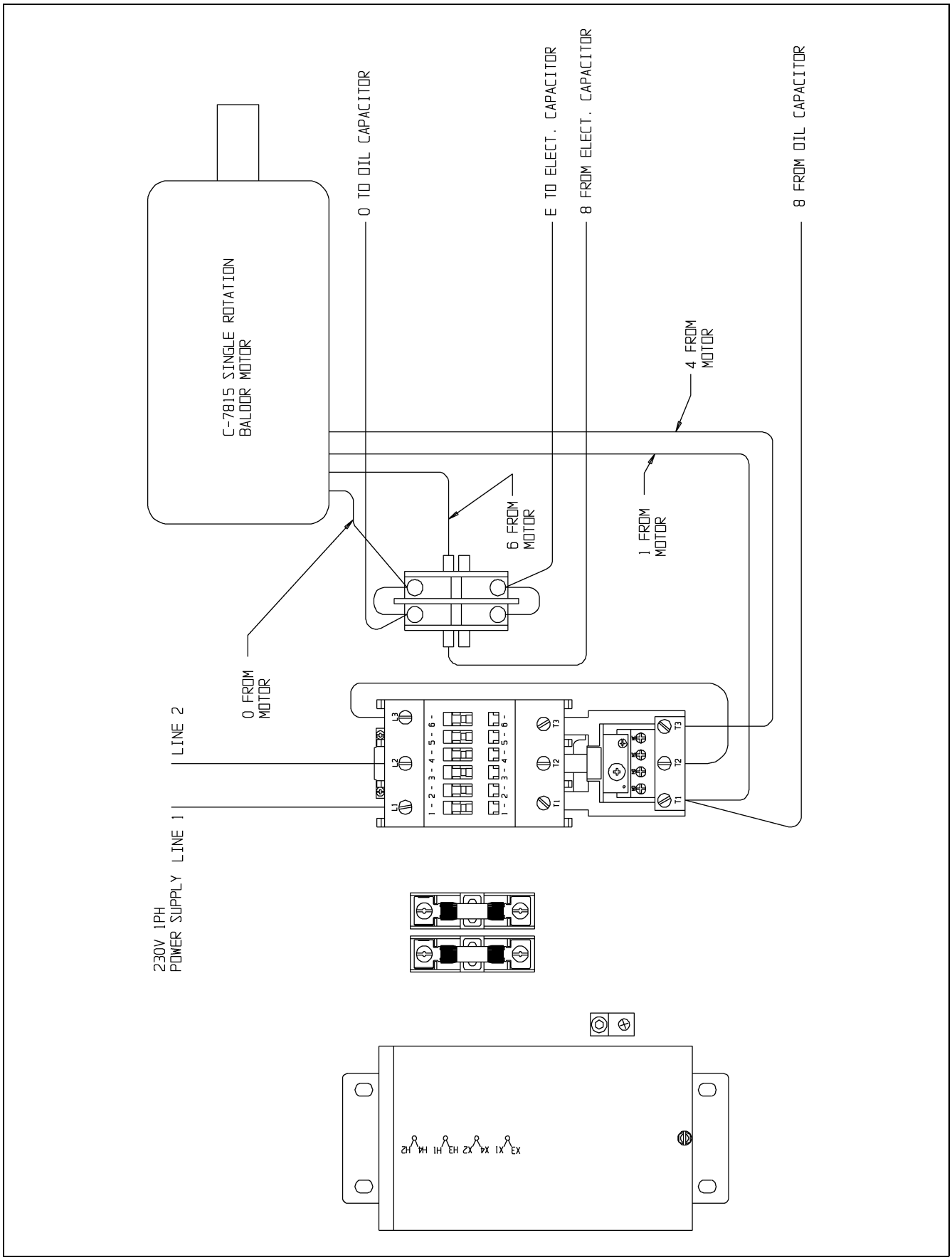
Series 2000 Slave External Wiring



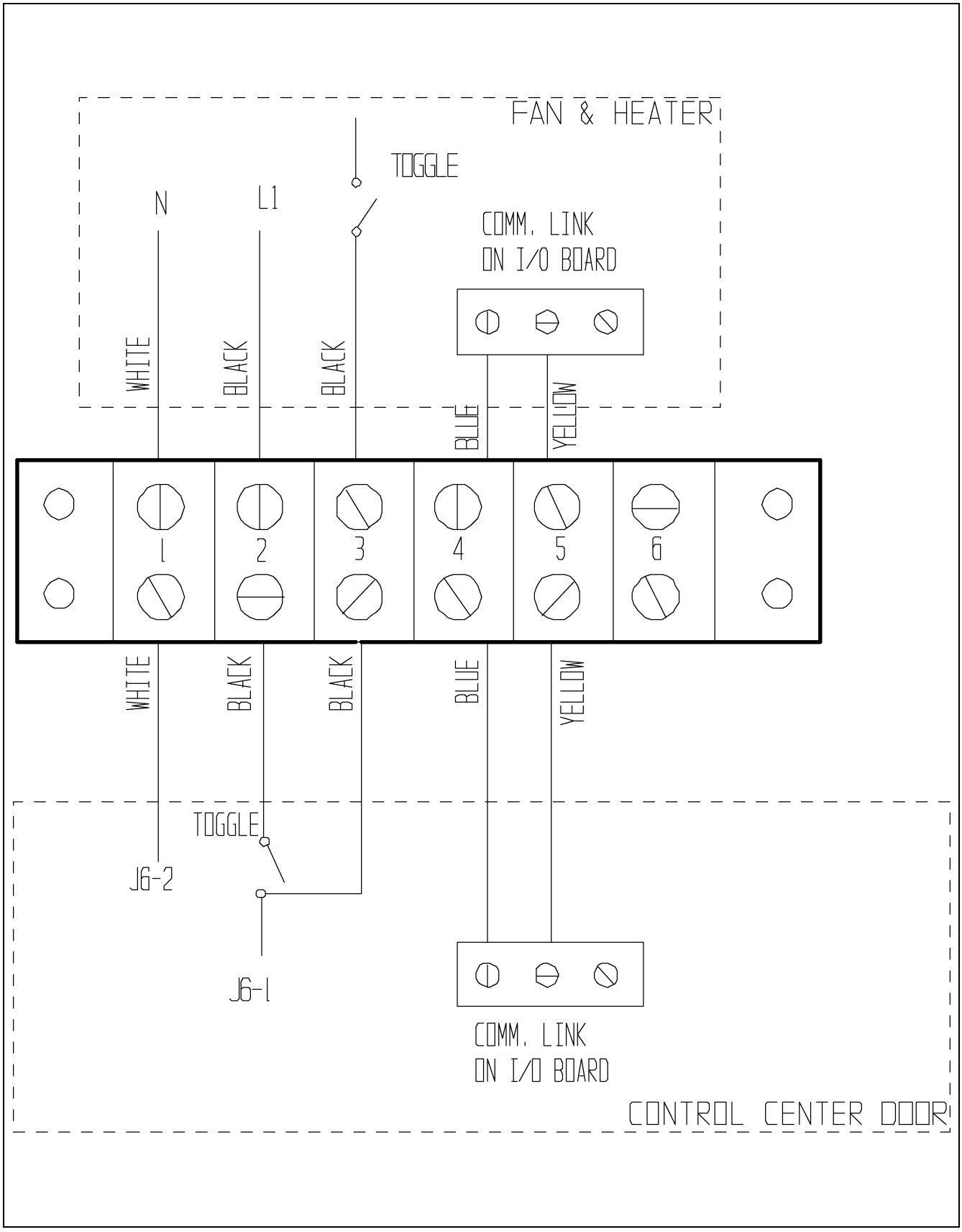
Series 2000 Slave Ignitor/Probe Wiring



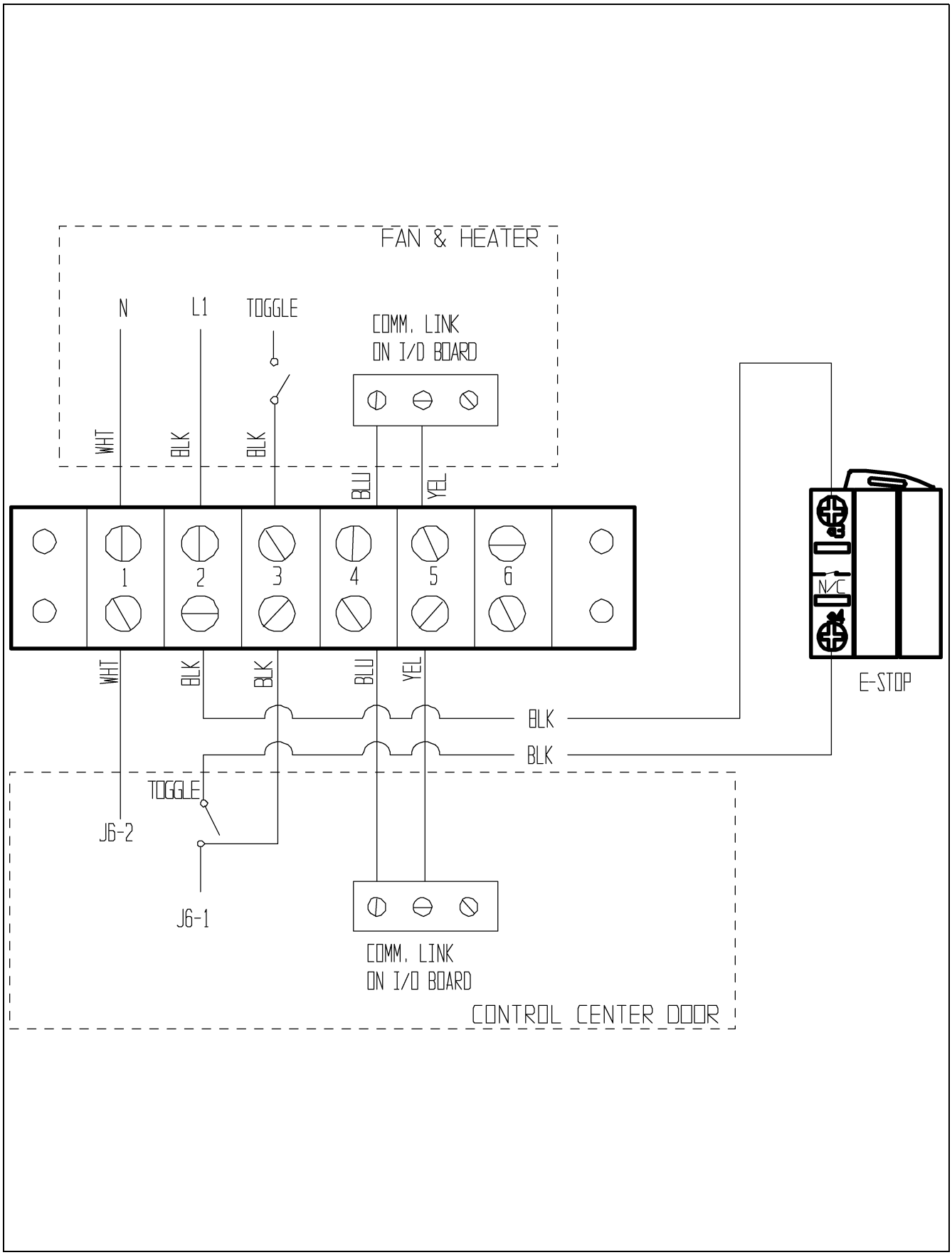
Series 2000 Slave 15 HP 220V 1 PH Capacitor Wiring (Baldor)



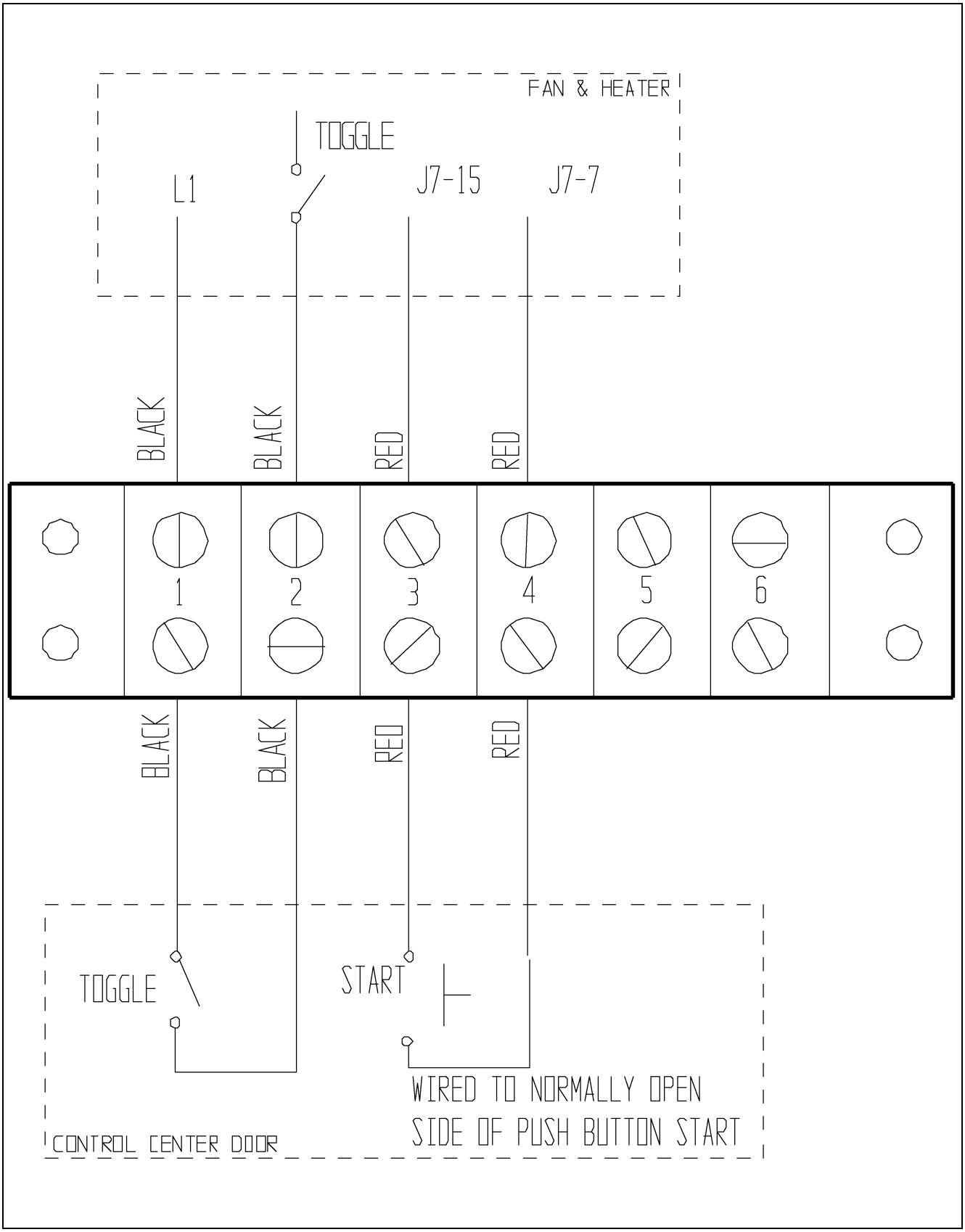
Series 2000 Batch Remote Display Wiring - Domestic and CGA Units



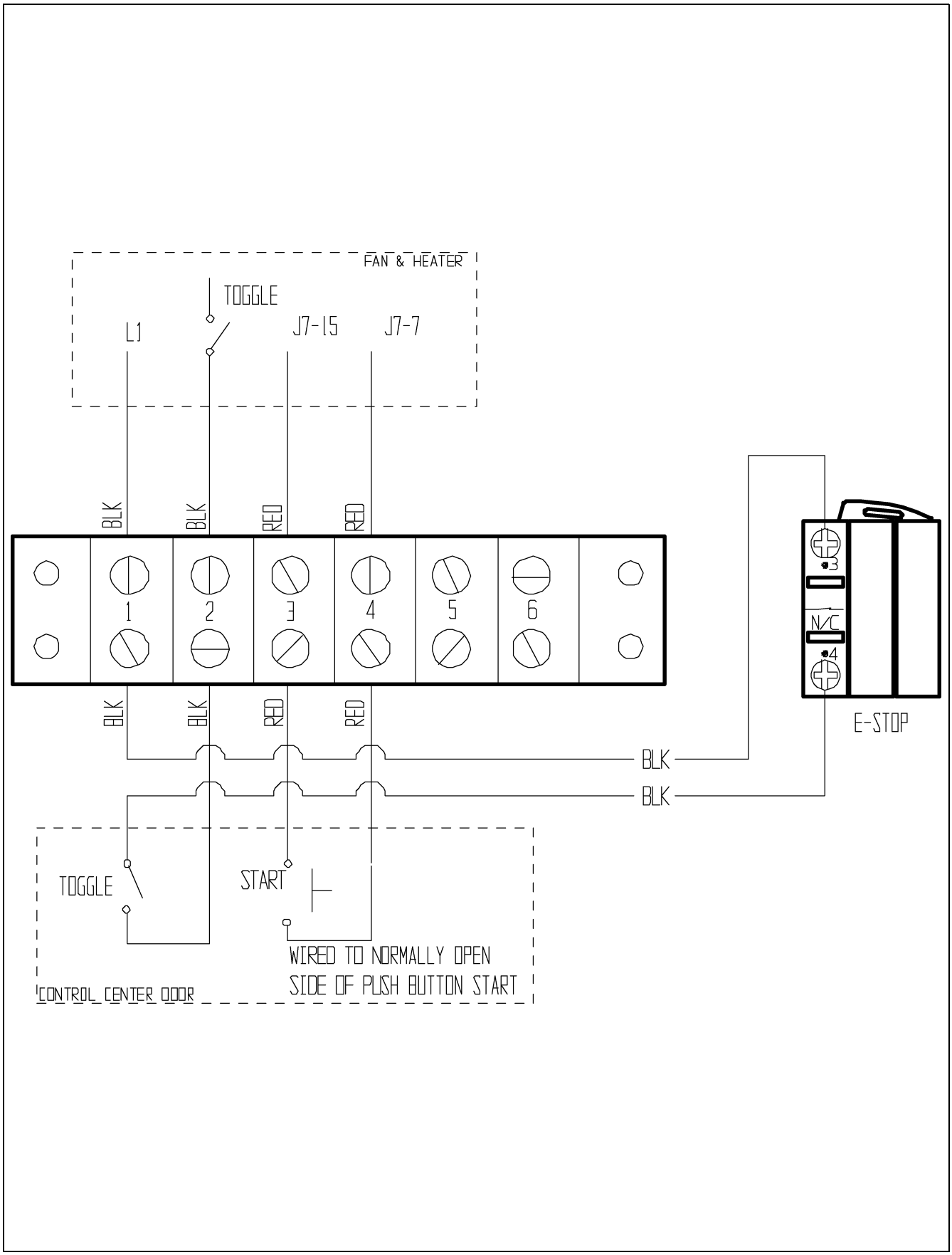
Series 2000 Batch Remote Display Wiring - European Units



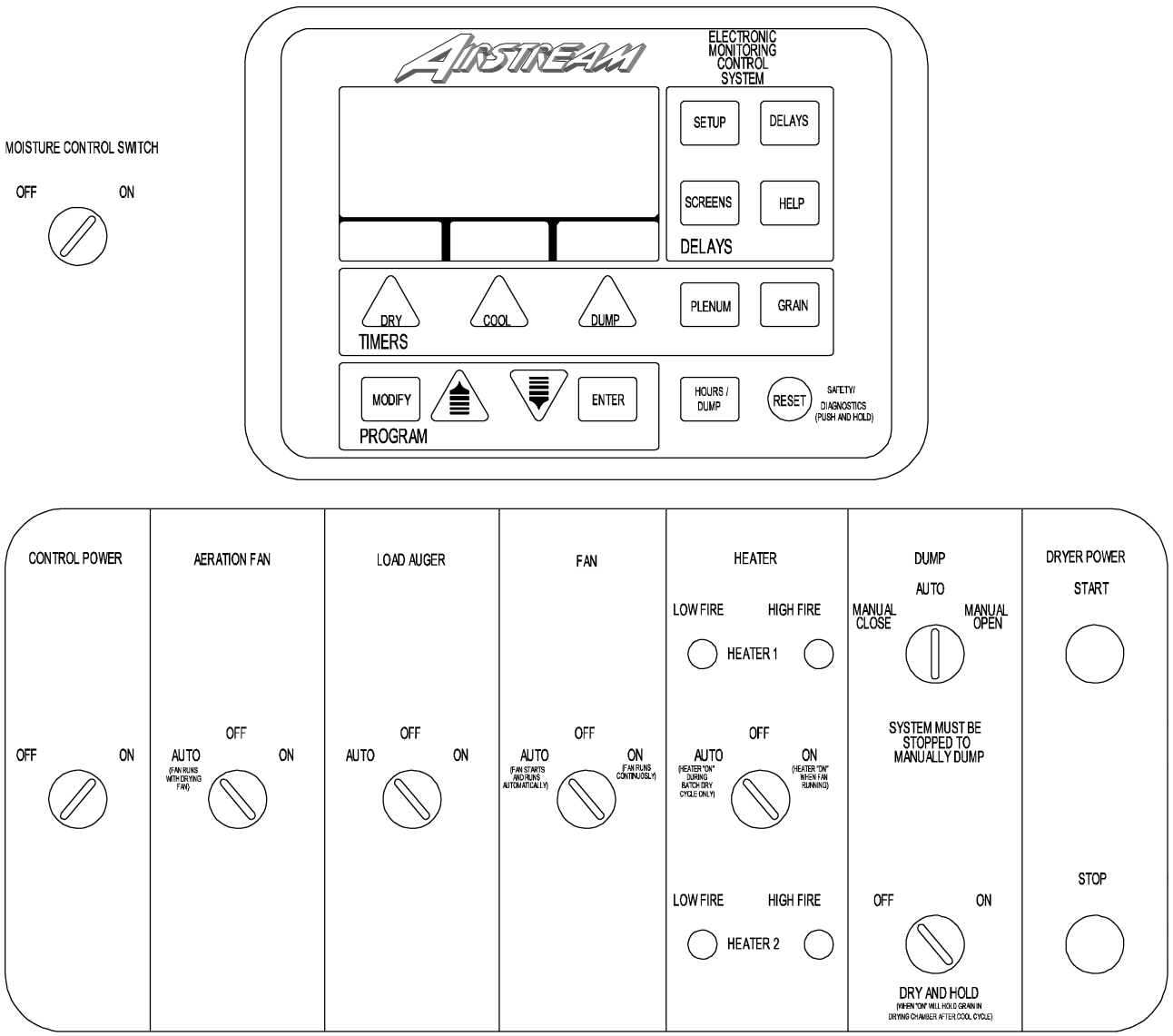
Series 2000 Batch Economy Control Wiring - Domestic and CGA Units



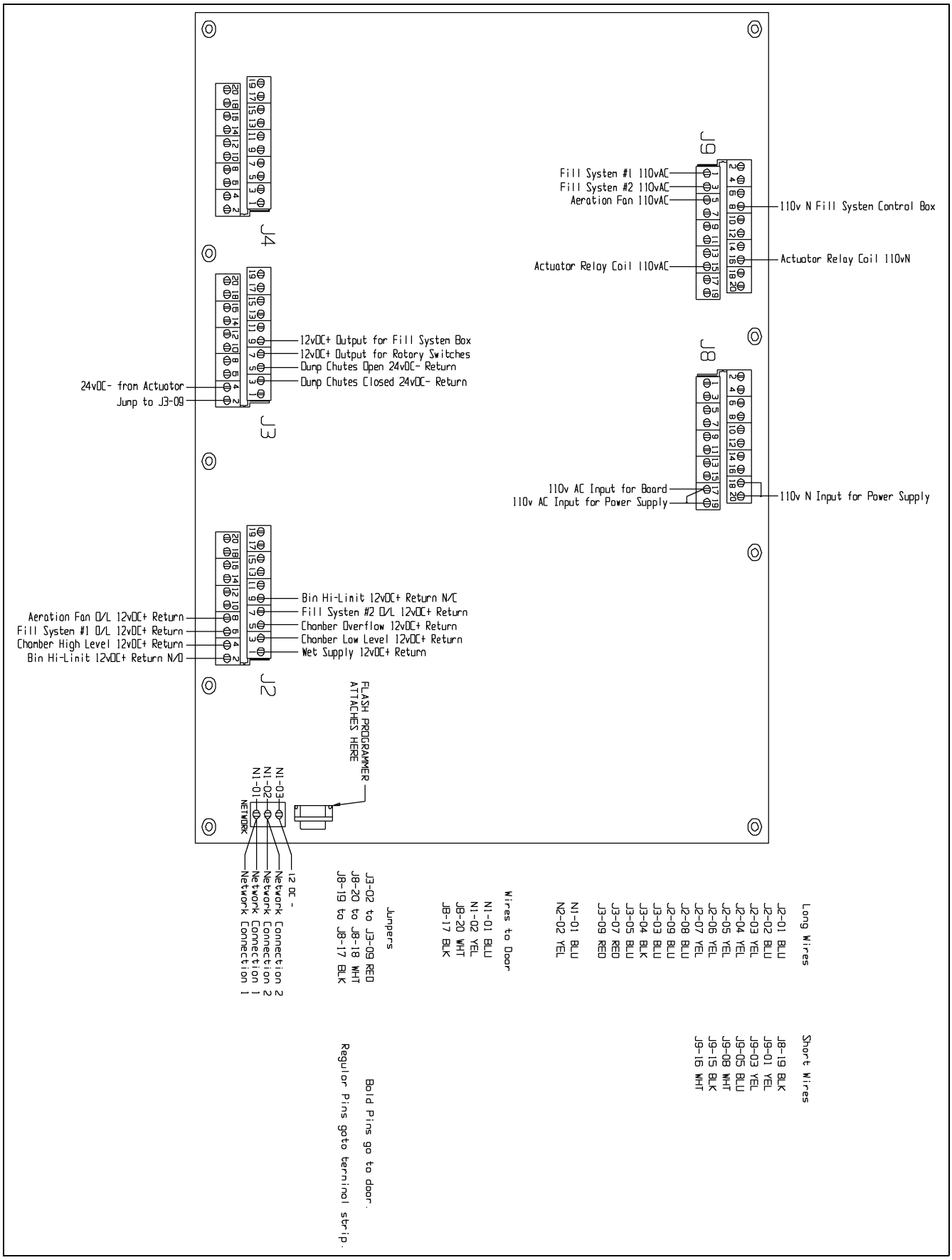
Series 2000 Batch Economy Control Wiring - European Units



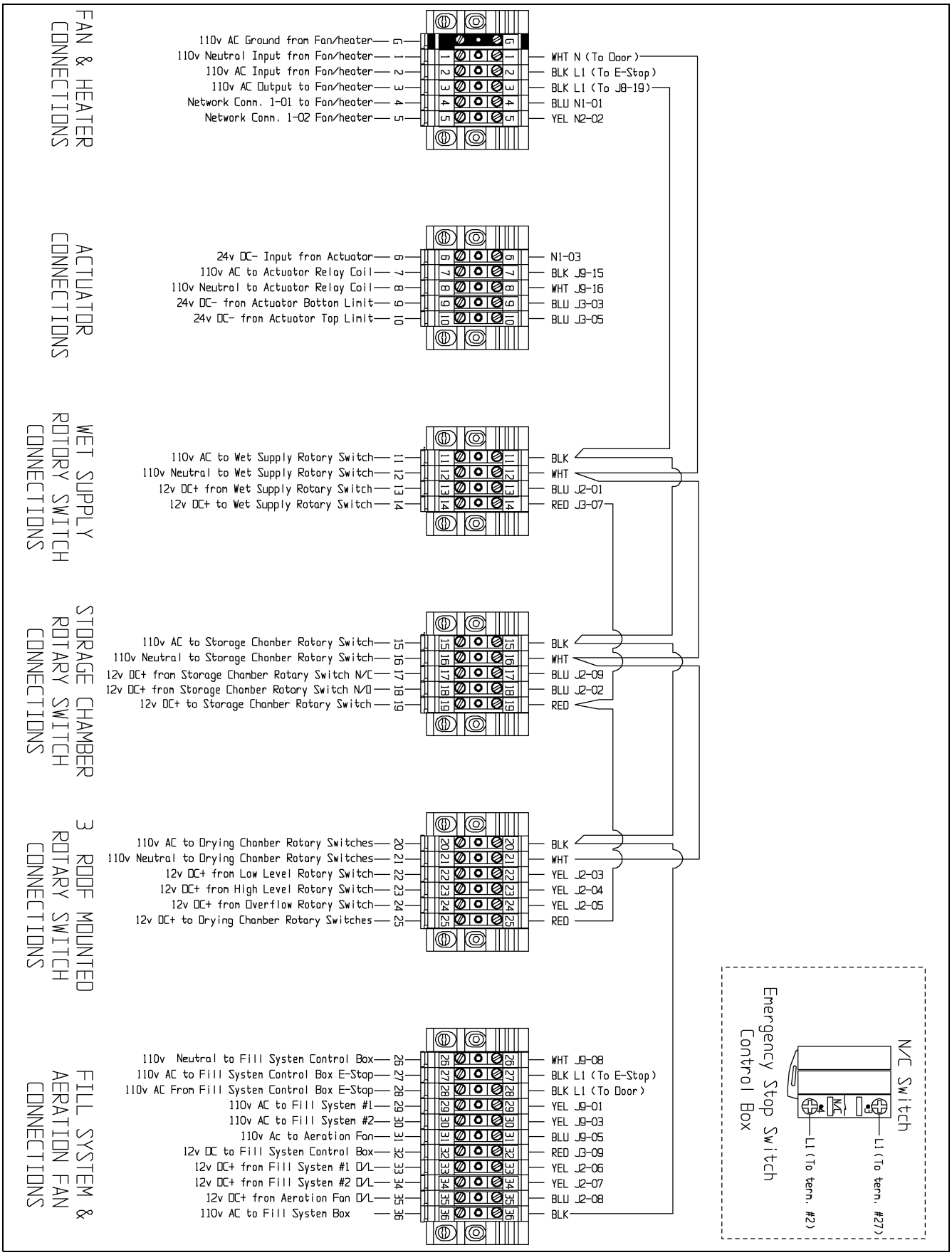
Series 2000 Autoflow Front Panel



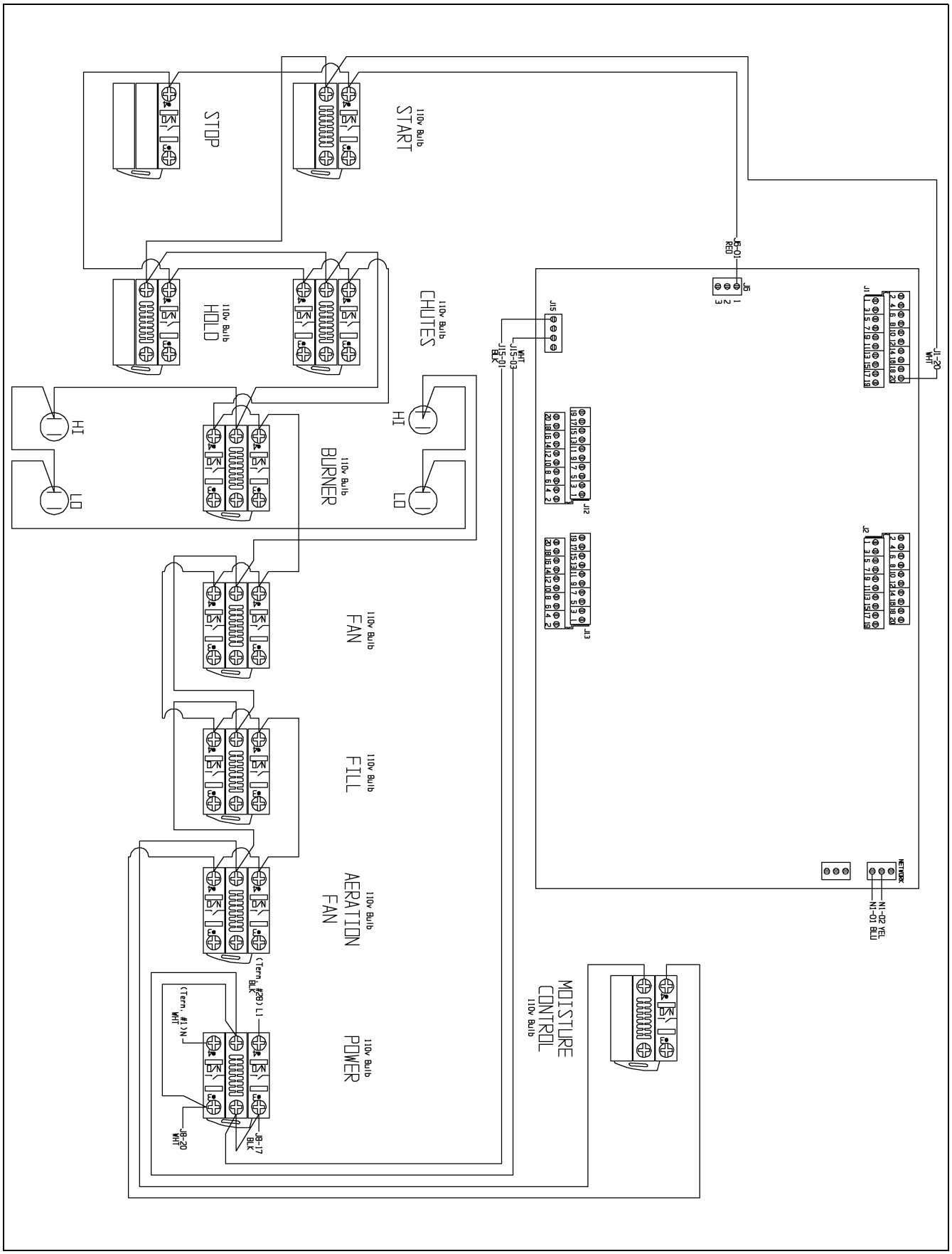
Series 2000 Autoflow Input/Output Board Wiring



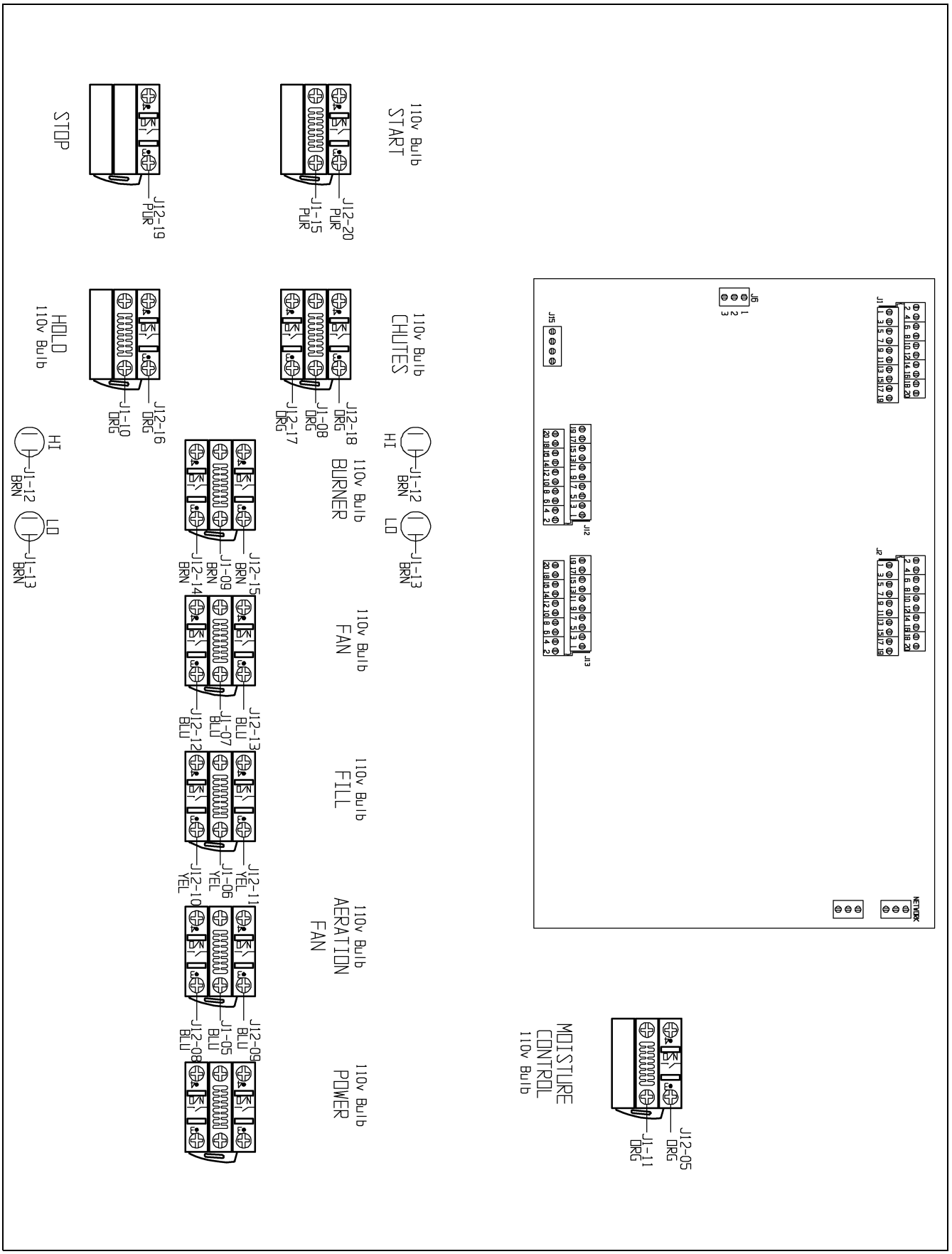
Series 2000 Autoflow Terminal Strip Wiring



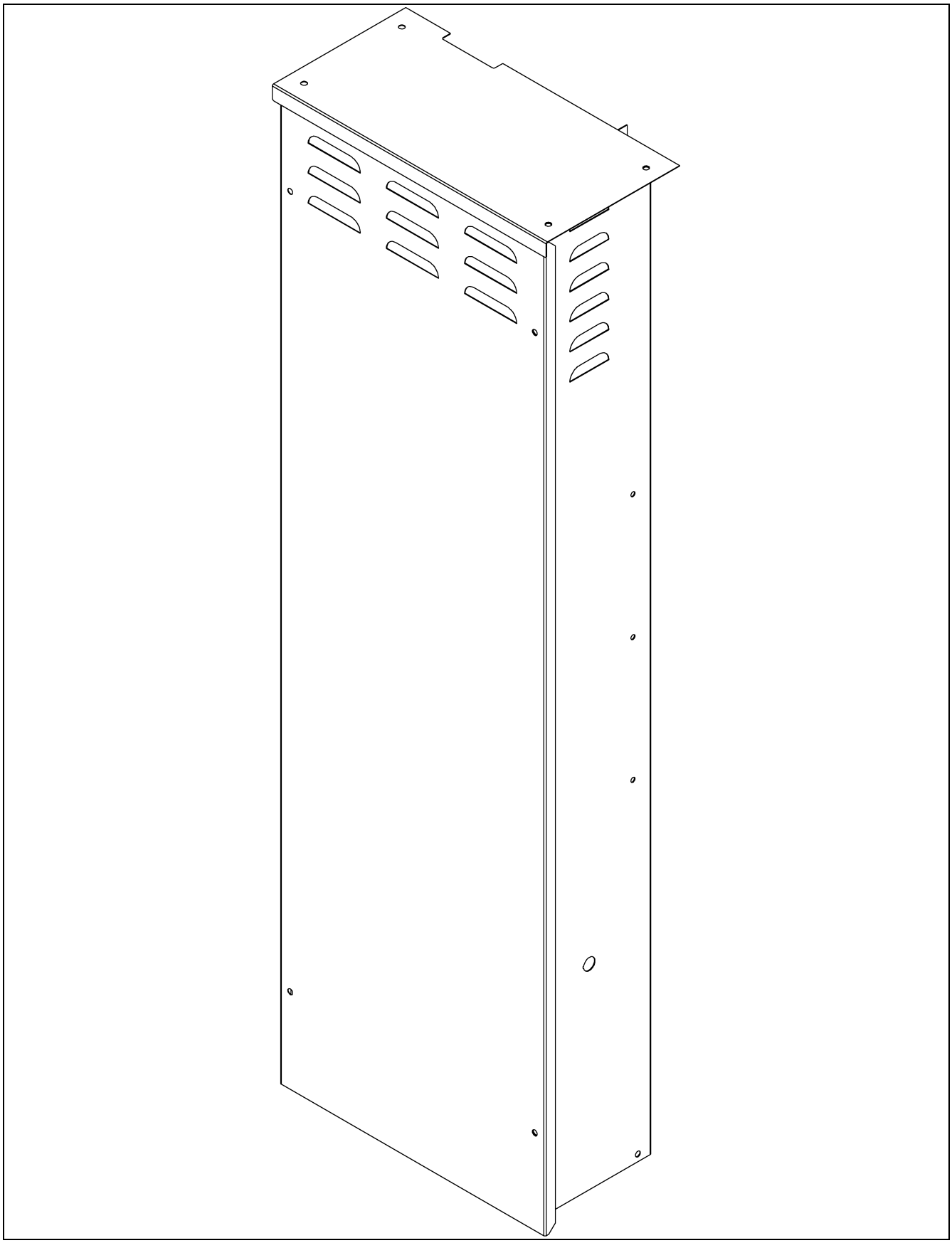
Series 2000 Autoflow Door Internal Wiring



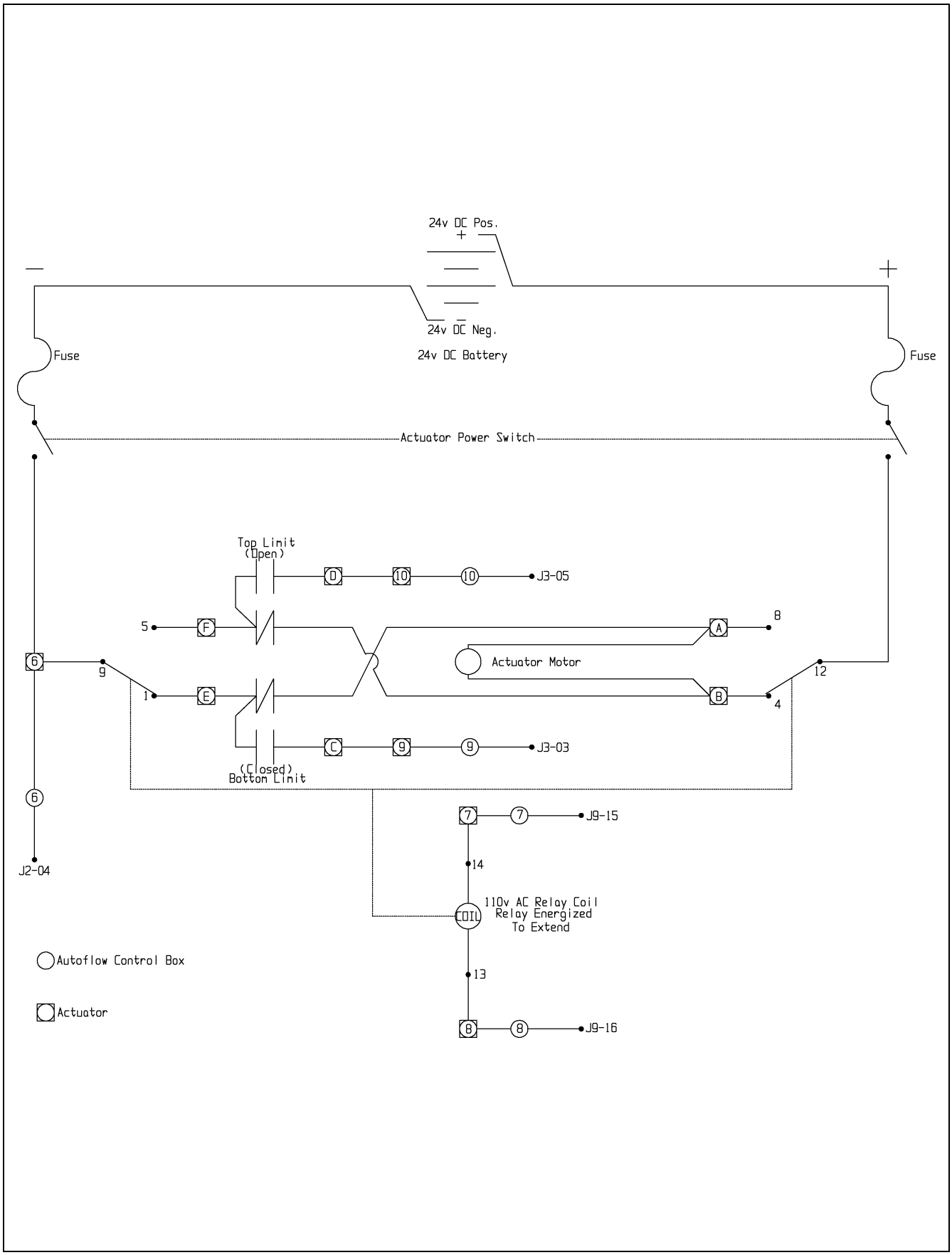
Series 2000 Autoflow Door External Wiring



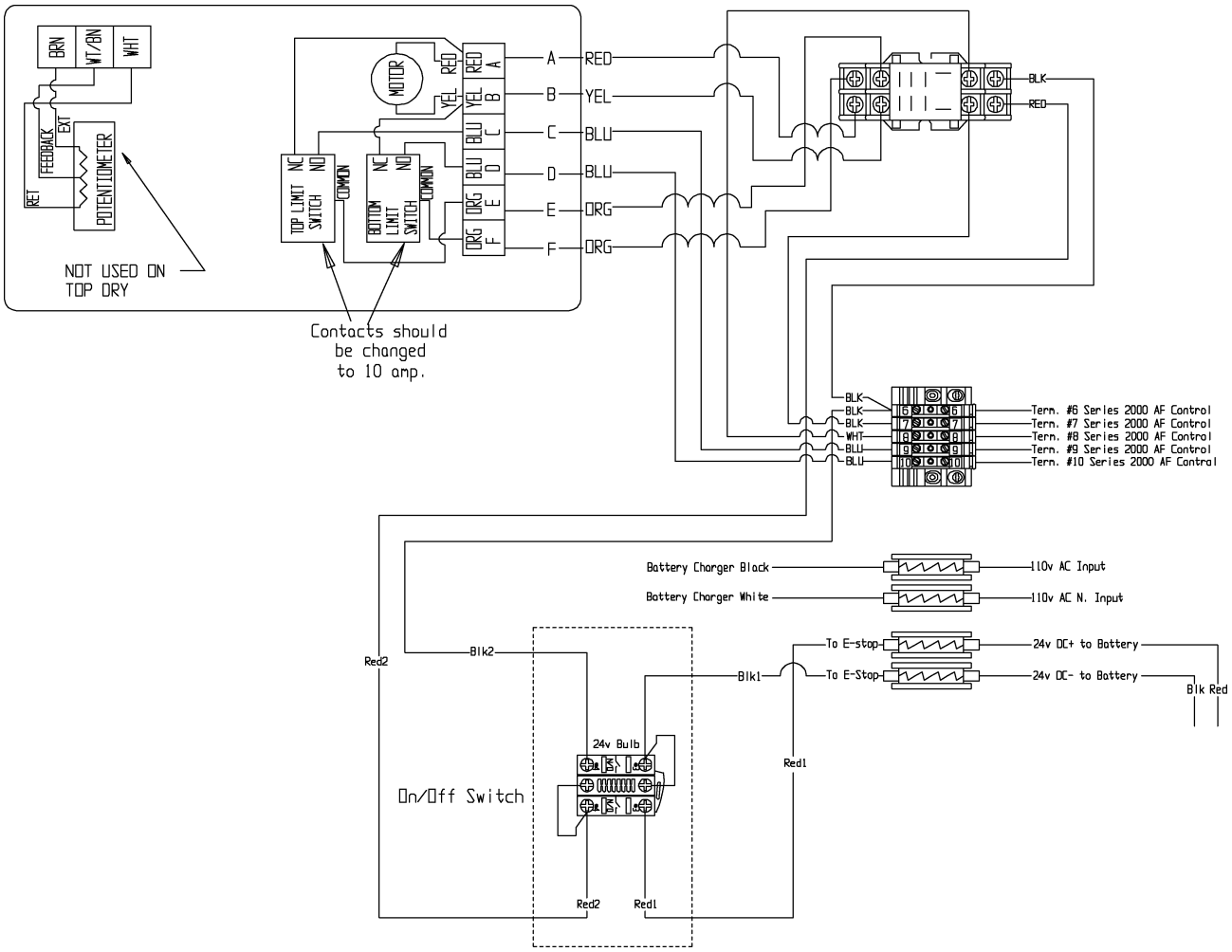
Series 2000 Autoflow Actuator



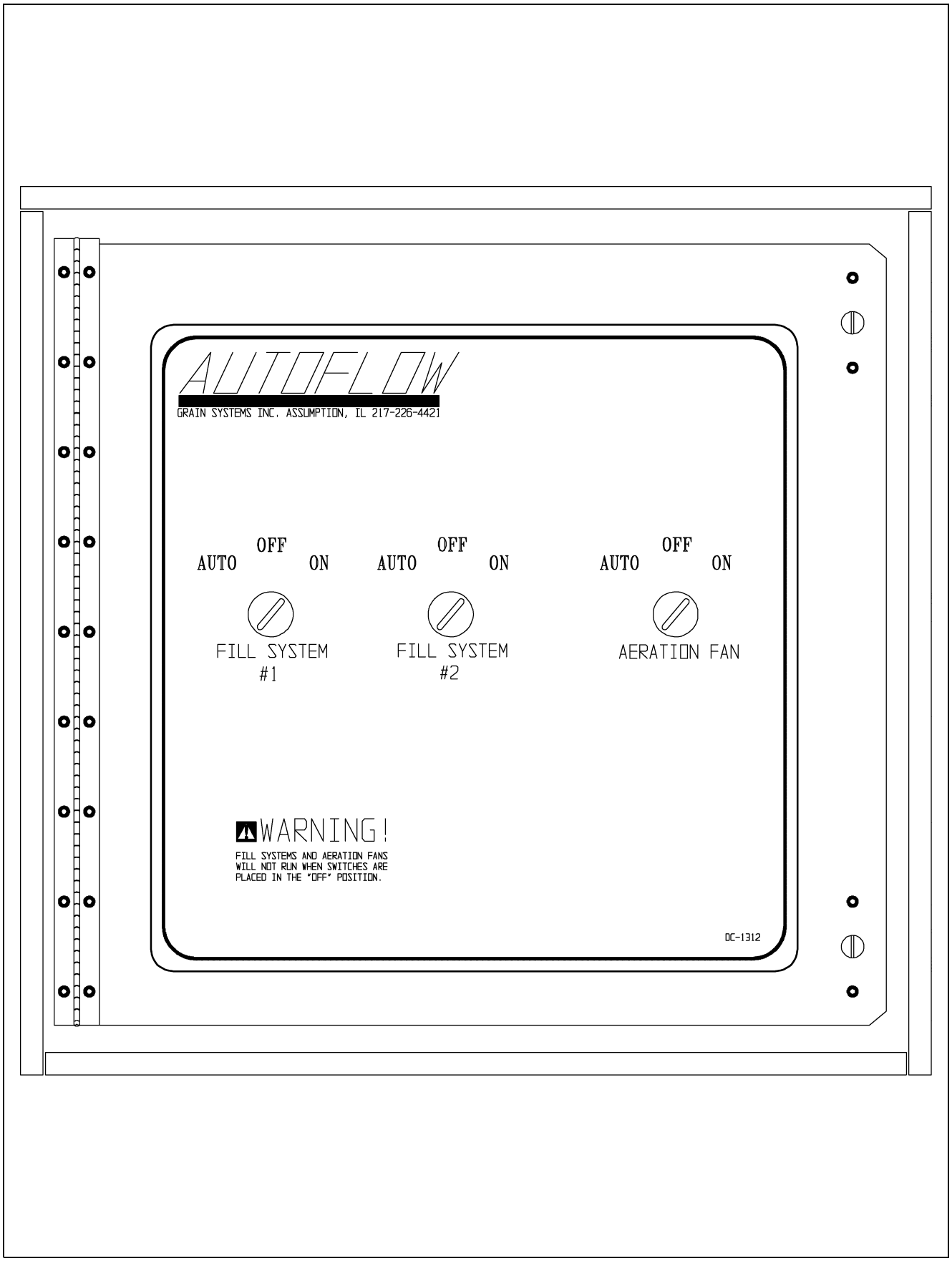
Series 2000 Autoflow Actuator Schematic



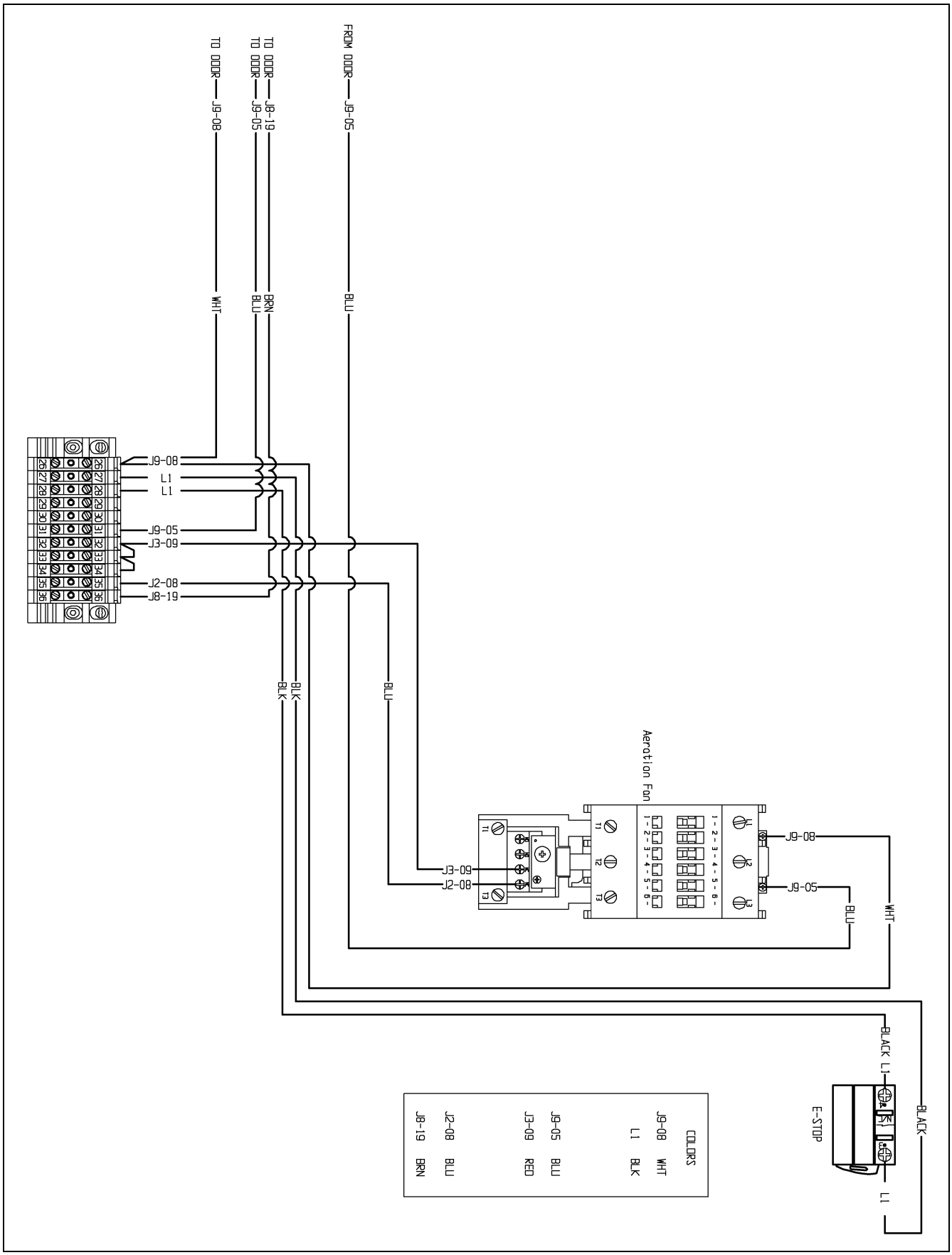
Series 2000 Autoflow Actuator Wiring



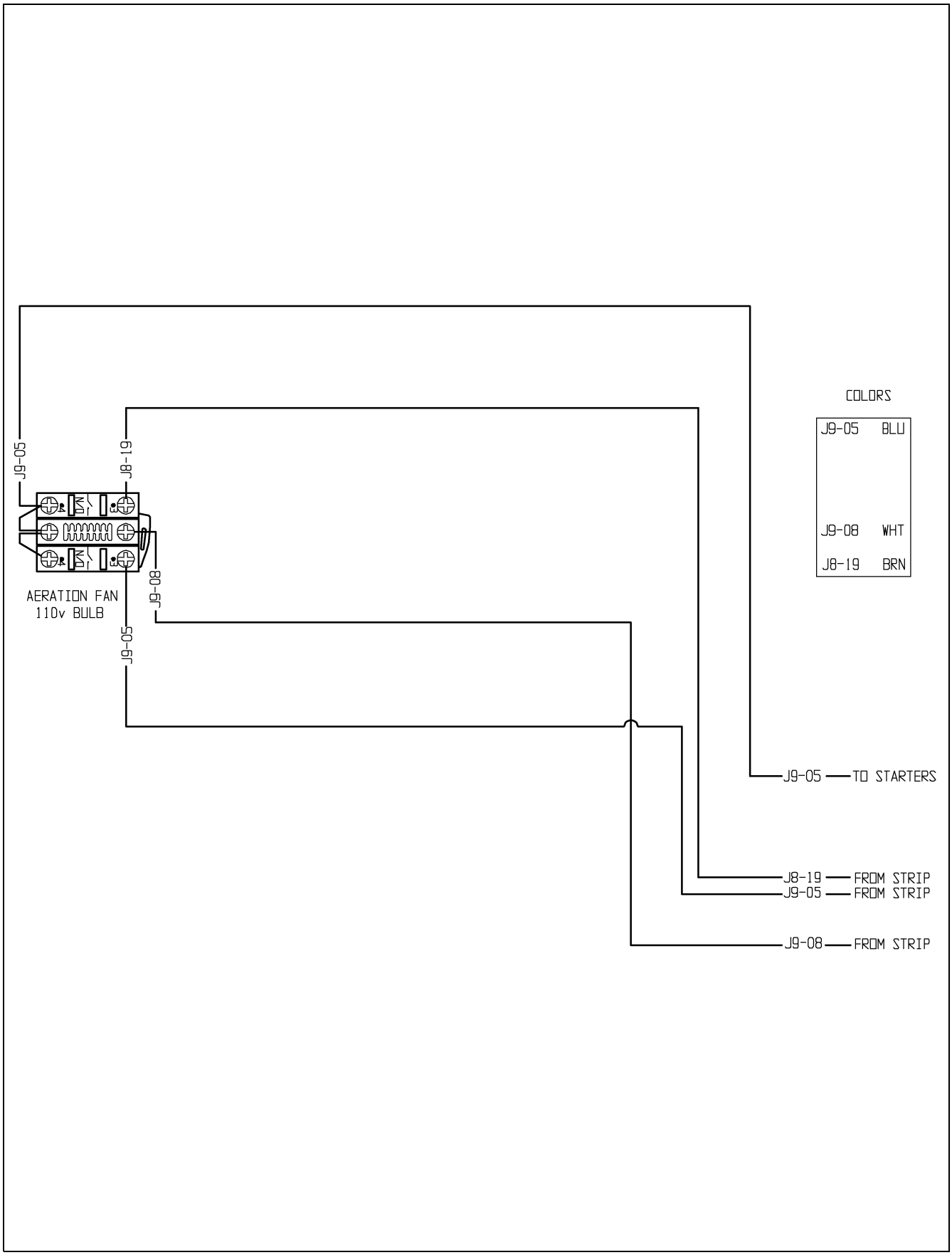
Series 2000 Autoflow Fill System Control Box



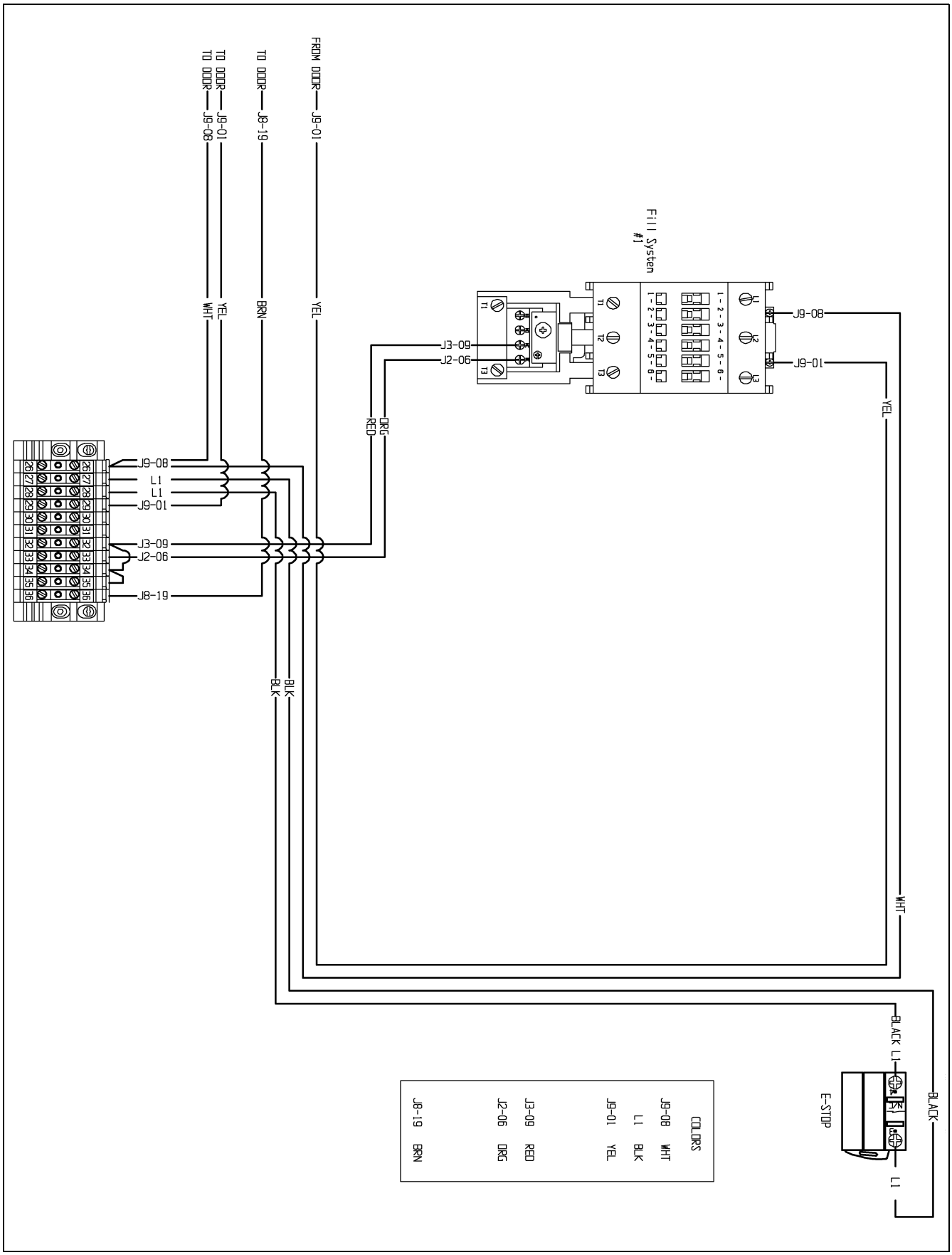
0 Fill Systems, 1 Aeration Fan Internal Wiring



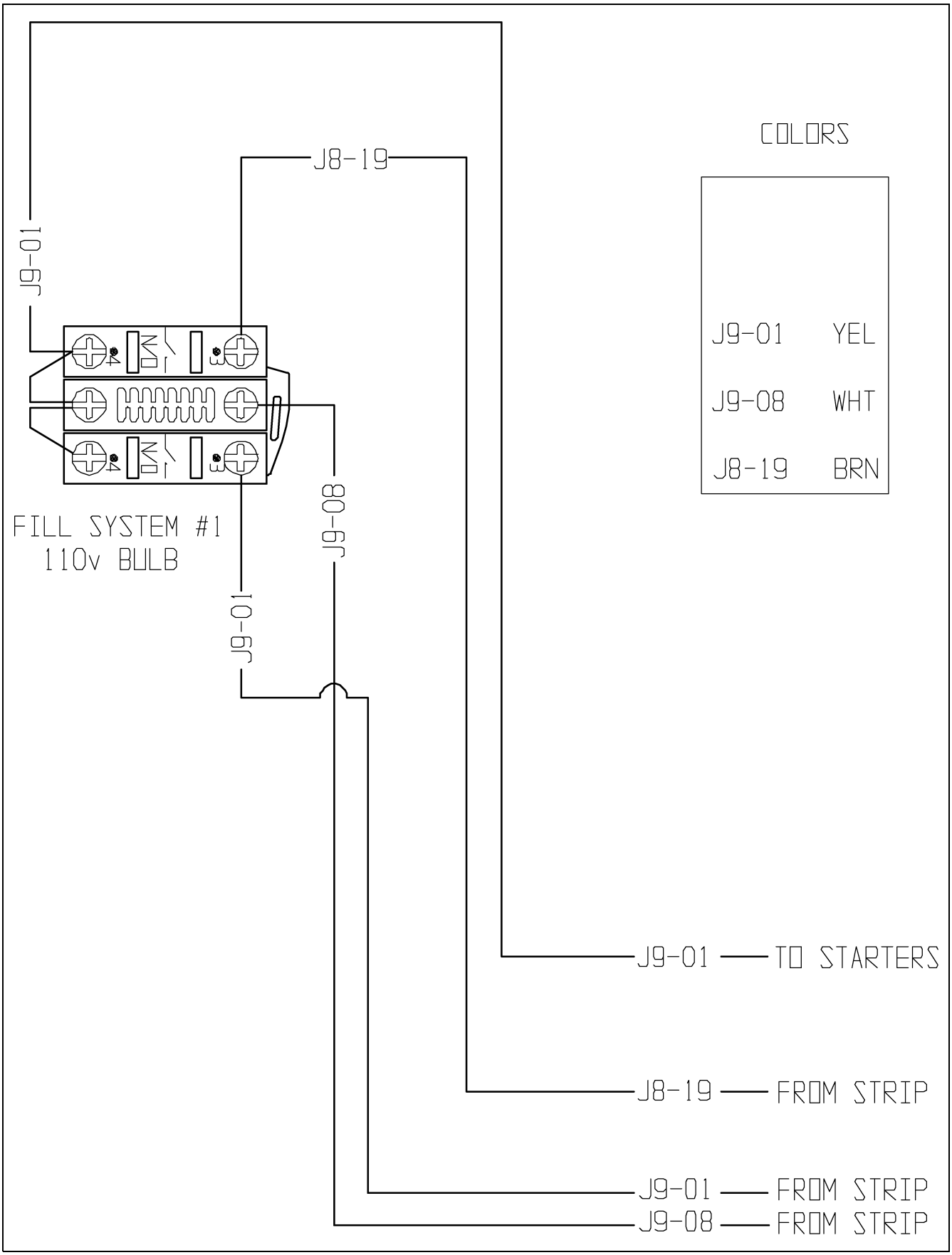
0 Fill Systems, 1 Aeration Fan Door Wiring



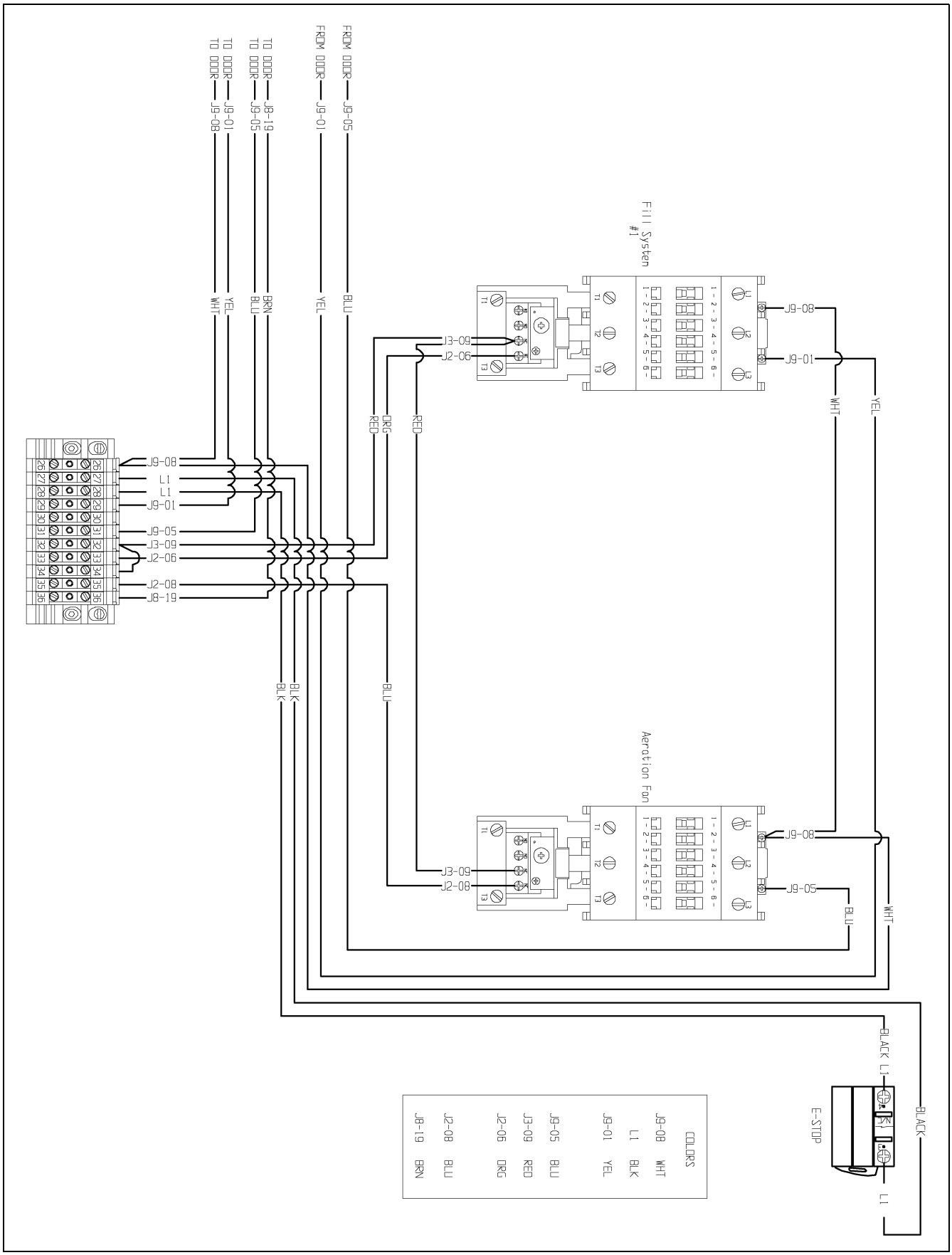
1 Fill Systems, 0 Aeration Fan Internal Wiring



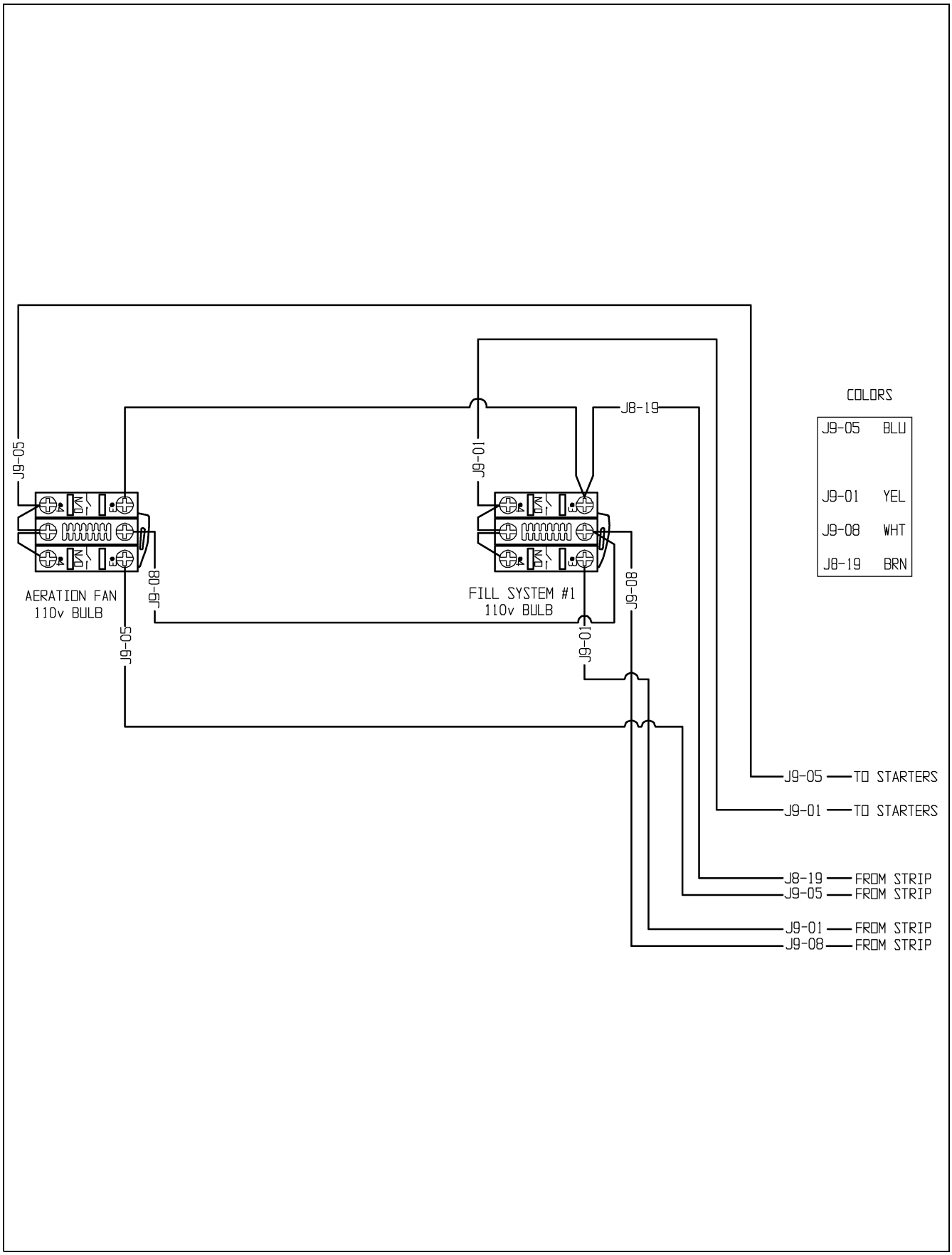
1 Fill Systems, 0 Aeration Fan Door Wiring



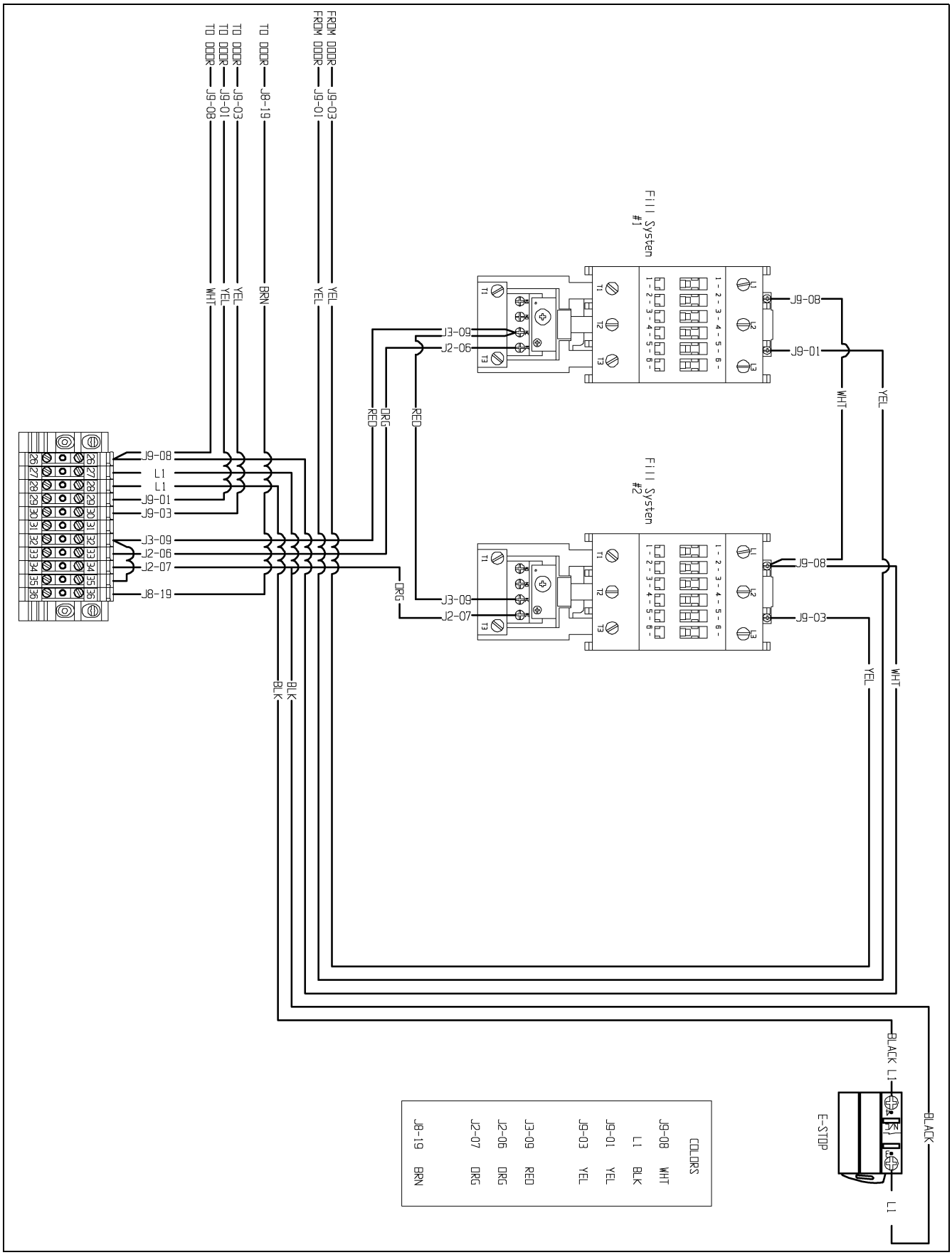
1 Fill Systems, 1 Aeration Fan Internal Wiring



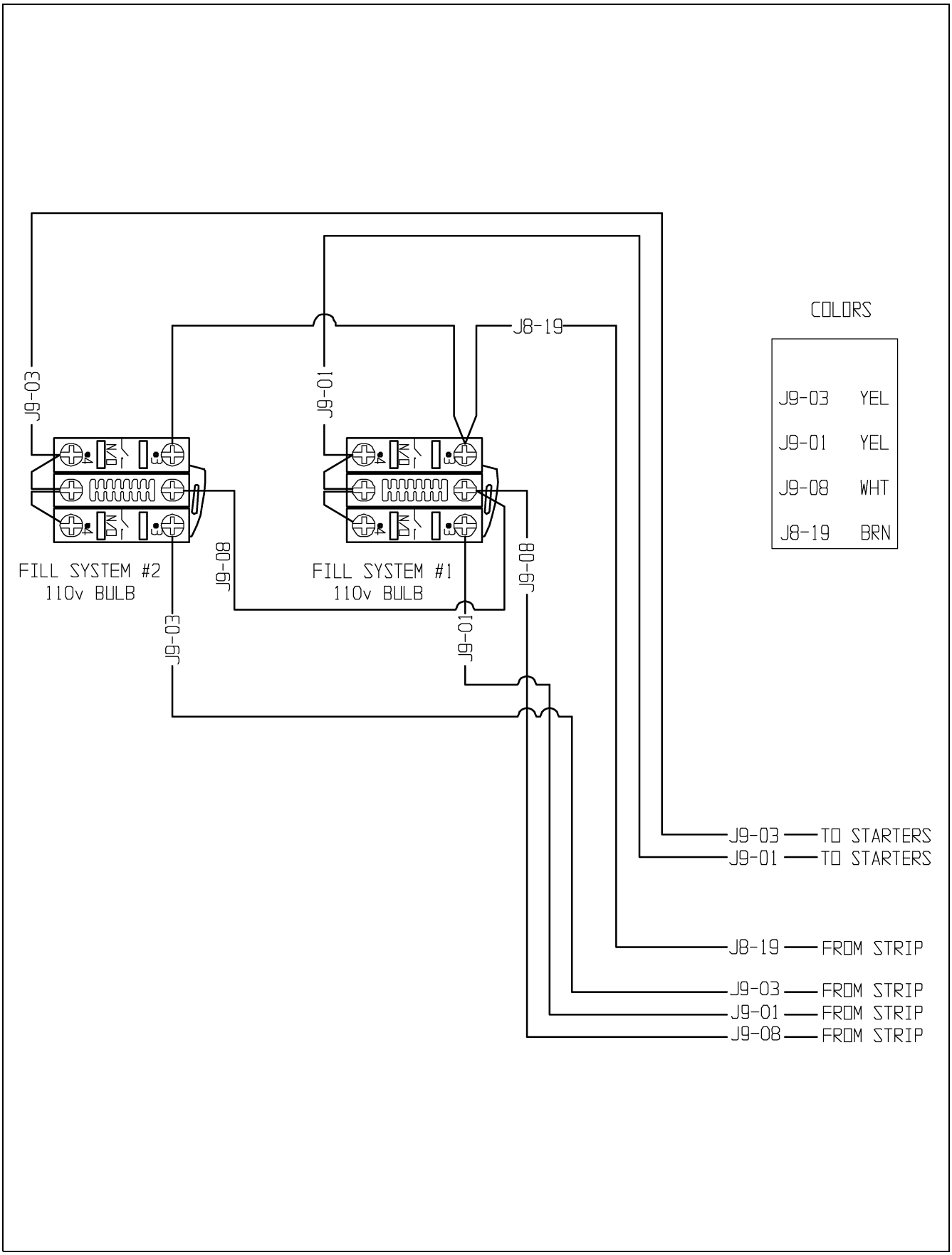
1 Fill Systems, 1 Aeration Fan Door Wiring



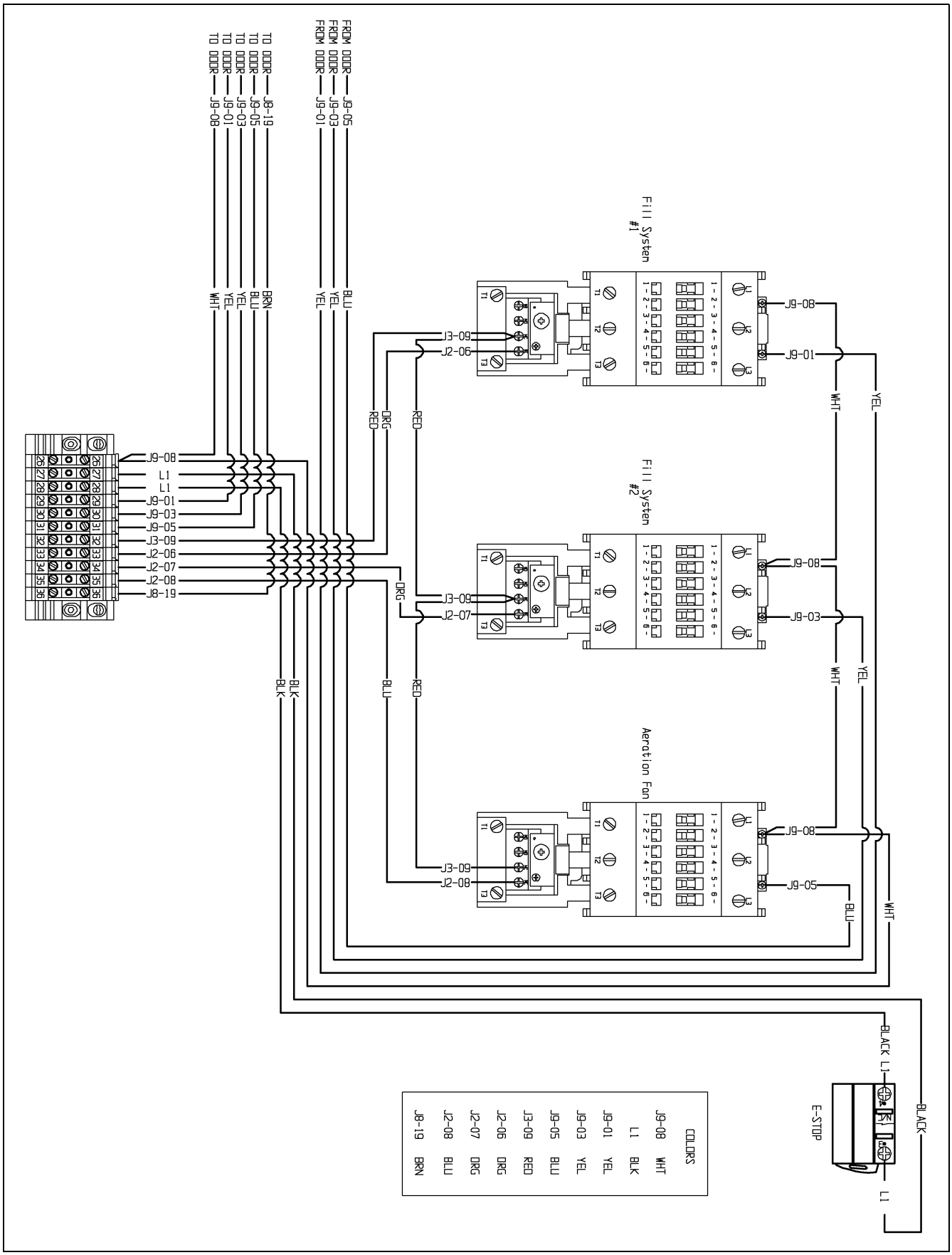
2 Fill Systems, 0 Aeration Fan Internal Wiring



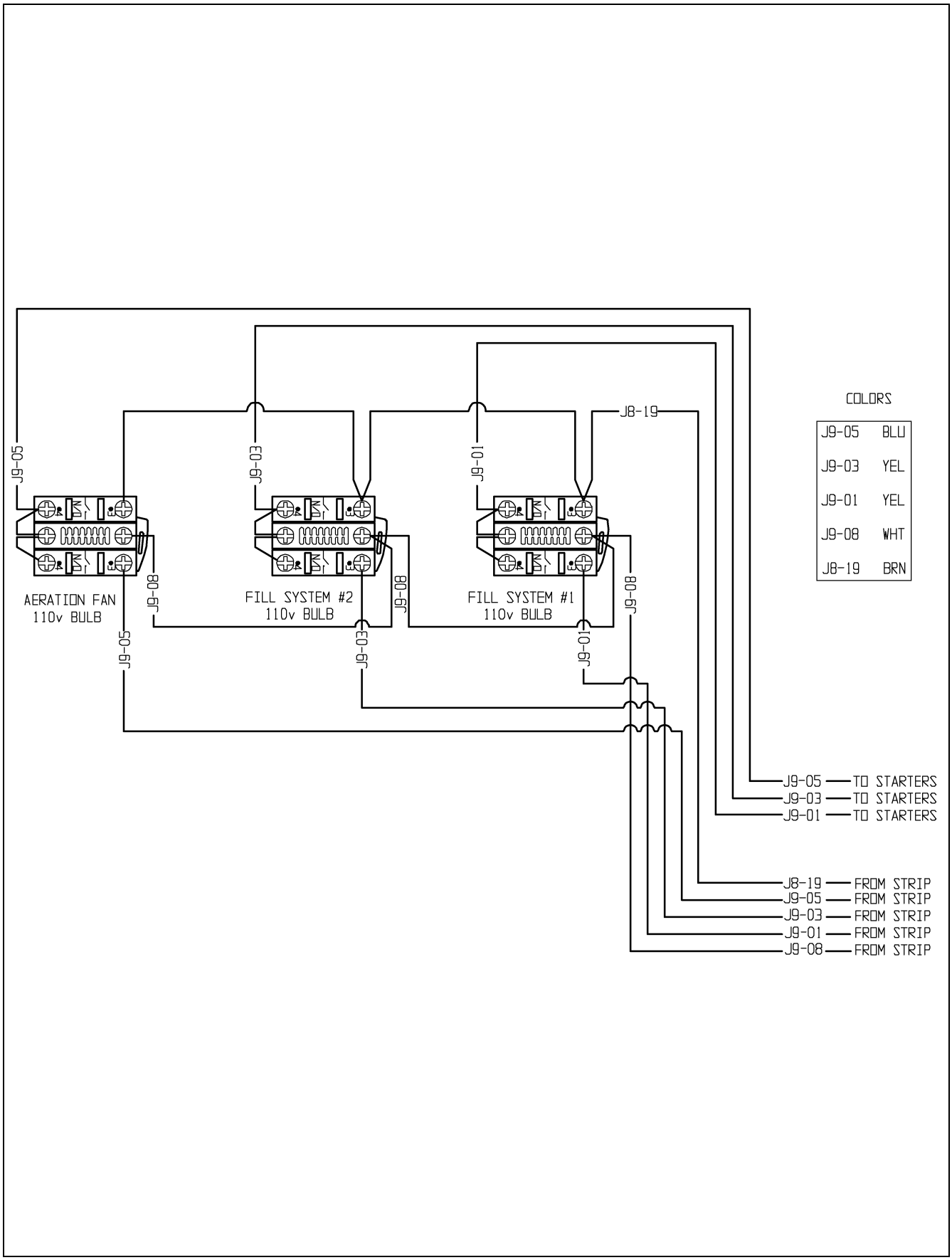
2 Fill Systems, 0 Aeration Fan Door Wiring



2 Fill Systems, 1 Aeration Fan Internal Wiring



2 Fill Systems, 1 Aeration Fan Door Wiring



NOTES

GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1-3/4" and 2.00")	10 Years *
	Centerless Augers	10 Years *
	Watering Nipples	10 Years *
Grain Systems	Grain Bin Structural Design	5 Years
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years

* Warranty prorated from list price:
0 to 3 years - no cost to end-user
3 to 5 years - end-user pays 25%
5 to 7 years - end-user pays 50%
7 to 10 years - end-user pays 75%

** Warranty prorated from list price:
0 to 3 years - no cost to end-user
3 to 5 years - end-user pays 50%

† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12^{th}) month from the date of purchase and continuing until the sixtieth (60^{th}) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

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This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

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