



# Vector<sup>®</sup> Multi-Cook Oven

Deluxe Control

VMC-H2HW  
VMC-H3HW



Structured Air Technology<sup>®</sup>

MN-47471-EN

REV.04  
06/22

EN



# Manufacturer's Information

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P.O. Box 450  
W164 N9221 Water Street  
Menomonee Falls, WI 53052

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**Original instructions** The content in this manual is written in American English.

# Alto-Shaam 24/7 Emergency Repair Service

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<b>Call</b>	Call 800-558-8744 to reach our 24-hour emergency service call center for immediate access to local authorized service agencies outside standard business hours. The emergency service access is provided exclusively for Alto-Shaam equipment and is available throughout the United States through Alto-Shaam's toll free number.
<b>Availability</b>	Emergency service access is available seven days a week, including holidays.

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# The Meaning of Signal Words

This manual contains signal words where needed. These signal words must be obeyed to reduce the risk of death, personal injury, or equipment damage. The meaning of these signal words is explained below.

**DANGER**

Danger indicates a hazardous situation which, if not avoided, will result in serious injury or death.

**WARNING**

Warning indicates a hazardous situation which, if not avoided, could result in serious injury or death.

**CAUTION**

Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE**

Notice indicates a situation which, if not avoided, could result in property damage.



**NOTE:** Note indicates additional information that is important to a concept or procedure.

# Safety Precautions

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## Before you begin

Read and understand all instructions in this manual.

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## Electrical precautions

Obey these electrical precautions when using the appliance:

- Connect the appliance to a properly grounded outlet. Do not use the appliance if it is not properly grounded. Consult an electrician if there is any doubt that the outlet used is properly grounded.
  - Keep the cord away from hot surfaces.
  - Do not attempt to service the appliance or its cord and plug.
  - Do not operate the appliance if it has a damaged cord or plug.
  - Do not immerse the cord or plug in water.
  - Do not let the cord hang over the edge of a table or counter.
  - Do not use an extension cord.
- 

## Usage precautions

Obey these usage precautions when using the appliance:

- Only use this appliance for its intended use of heating or cooking.
  - Always keep liquids, or foods that can become liquid when heated, level and at or below eye level where they can be seen.
  - Use utensils and protective clothing such as dry oven mitts when loading and unloading the appliance.
  - Use caution when using the appliance. Floors adjacent to the appliance may become slippery.
  - Do not cover or block any of the openings of this appliance.
  - Do not cover racks or any other part of this appliance with metal foil.
  - Do not use this appliance near water such as a sink, in a wet location, near a swimming pool, or similar locations.
  - Do not unplug or disconnect the appliance immediately after cooking. The cooling fans must stay on to protect electrical components.
- 

## Maintenance precautions

Obey these maintenance precautions when maintaining the appliance:

- Obey precautions in the manual, on tags, and on labels attached to or shipped with the appliance.
- Only clean the appliance when oven is OFF.
- Do not store the appliance outdoors.
- Do not clean the appliance with metal scouring pads.
- Do not use corrosive chemicals when cleaning the appliance.
- Do not use a hose or water jet to clean the appliance.
- Do not use the appliance cavity for storage.
- Do not leave flammable materials, cooking utensils, or food inside the appliance when it is not in use.
- Do not remove the top cover or side panels. There are no user-serviceable components inside.



<b>Operator training</b>	<p>All personnel using the appliance must have proper operator training. Before using the appliance:</p> <ul style="list-style-type: none"> <li>■ Read and understand the operating instructions contained in all the documentation delivered with the appliance.</li> <li>■ Know the location and proper use of all controls.</li> <li>■ Keep this manual and all supplied instructions, diagrams, schematics, parts lists, notices, and labels with the appliance if the appliance is sold or moved to another location.</li> <li>■ Contact Alto-Shaam for additional training if needed.</li> </ul>
<b>Operator qualifications</b>	<p>Only trained personnel with the following operator qualifications are permitted to use the appliance:</p> <ul style="list-style-type: none"> <li>■ Have received proper instruction on how to use the appliance.</li> <li>■ Have demonstrated their ability with commercial kitchens and commercial appliances.</li> </ul> <p>The appliance must not be used by:</p> <ul style="list-style-type: none"> <li>■ Persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by person responsible for their safety.</li> <li>■ People impaired by drugs or alcohol.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>■ Children should be supervised to ensure that they do not play with the appliance.</li> <li>■ Children shall neither clean nor maintain the appliance.</li> </ul>
<b>Condition of appliance</b>	<p>Only use the appliance when:</p> <ul style="list-style-type: none"> <li>■ All controls operate correctly.</li> <li>■ The appliance is installed correctly.</li> <li>■ The appliance is clean.</li> <li>■ The appliance labels are legible.</li> </ul>
<b>Servicing the appliance</b>	<ul style="list-style-type: none"> <li>■ Only trained personnel are permitted to service or repair the appliance. Repairs that are not performed by an authorized service partner or trained technician will void the warranty and relieve Alto-Shaam of all liability. Original manufacturer's replacement parts may be substituted; however, these parts must be of equal quality and specifications as those provided by Alto-Shaam.</li> <li>■ To prevent serious injury, death or property damage, have the appliance inspected and serviced at least every twelve (12) months by an authorized service partner or trained technician.</li> <li>■ Contact Alto-Shaam for the authorized service partner in your area.</li> </ul>
<b>Sound power</b>	<p>The A-weighted sound pressure level is below 70 dB(A).</p>

## Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while cleaning the appliance:

- Protective gloves
  - Protective clothing
  - Eye protection
  - Face protection
- 

## Service Technician Training

Only trained personnel are permitted to service or repair the appliance. Service technicians must be knowledgeable in current codes and standards as stated by the appropriate agencies, such as:

- The National Fire Protection Association (NFPA)
- National Electrical Code (NEC)
- The Service Technician's employer

# How to Turn On and Turn Off the Oven

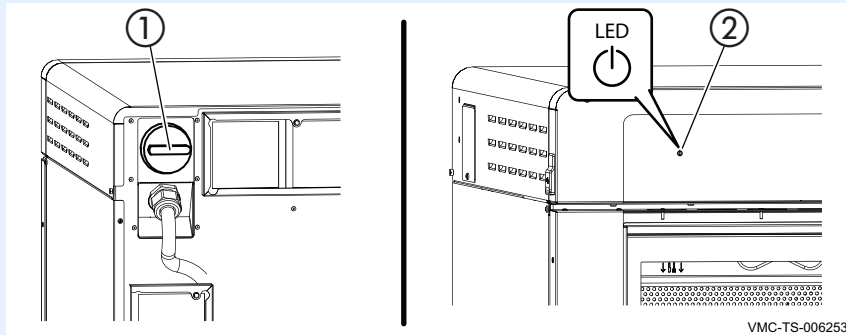
## Before you begin

The oven must be connected to electric power.

## Turning on the oven

To turn on the oven, do the following.

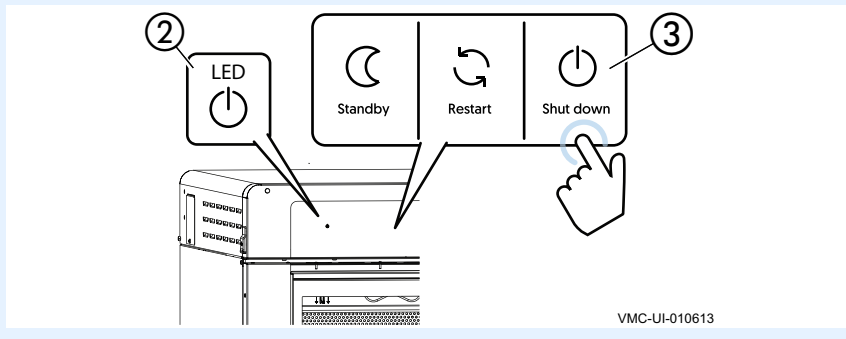
Step	Action
1.	<p><b>Set</b> the main disconnect switch ① to the ON position.</p> <p><b>Touch</b> the ON/OFF button ②.</p> <div data-bbox="613 621 1339 724" data-label="Text"> <p><b>NOTE:</b> The main disconnect switch is meant to be used during service operations. For every day operation, it may be left in the ON position.</p> </div> <div data-bbox="539 739 1380 1071" data-label="Image"> <p>The diagram consists of two parts. The left part shows a side view of the oven's main disconnect switch, labeled with a circled '1'. The right part shows a top-down view of the oven's control panel, with a callout box labeled 'LED' and a circled '2' pointing to the power button.</p> </div> <p style="text-align: right;">VMC-TS-006253</p>
2.	<p><b>Touch</b> and hold the ON/OFF button ② until the “Shut down options” screen displays. <b>Touch</b> “Shut down” ③. The oven activates the blowers for the cool-down process. The cool-down process is complete when the oven deactivates the blowers and the display screen turns off.</p> <div data-bbox="539 1417 1380 1753" data-label="Image"> <p>The diagram shows the oven's control panel with a callout box labeled 'LED' and a circled '2' pointing to the power button. The callout box contains three options: 'Standby' with a moon icon, 'Restart' with a circular arrow icon, and 'Shut down' with a power icon. A hand is shown touching the 'Shut down' button, which is labeled with a circled '3'.</p> <p style="text-align: right;">VMC-UI-010613</p> </div>



The oven is now on.

## Turning off the oven

To turn off the oven, do the following.



The oven is now off.

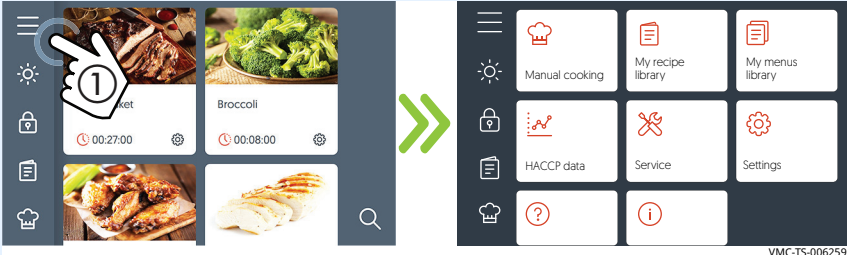
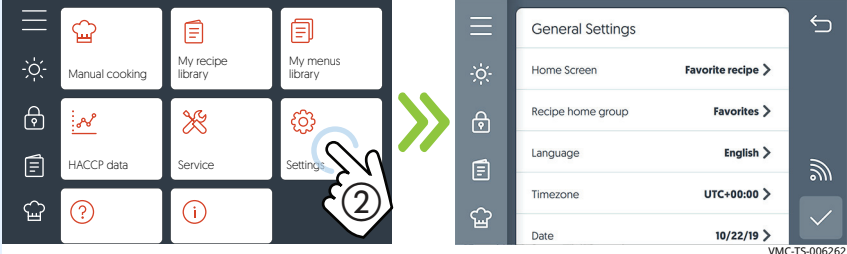
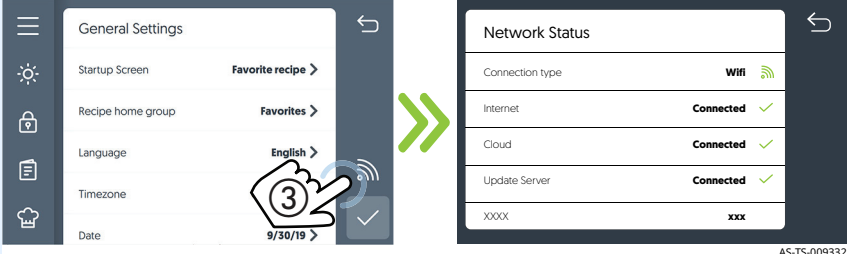
# How to View and Set up Network Connections

## Before you begin

- The facility must have Wi-Fi.
- The oven will only recognize networks that require a password to connect.
- Do not connect to a guest network.

## Procedure

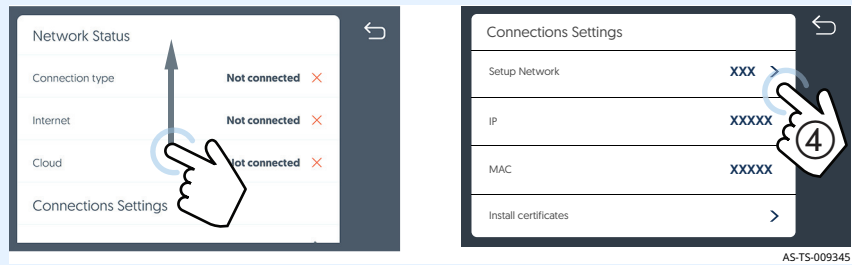
To set up Wi-Fi, do the following.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The menu screen displays.</p>  <p>VMC-TS-006259</p>
2.	<p><b>Touch</b> the settings icon ②. The general settings screen displays.</p>  <p>VMC-TS-006262</p>
3.	<p><b>Touch</b> the Wi-Fi icon ③. The Network Status screen displays.</p>  <p>AS-TS-009332</p>

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4. **Scroll** to “Connection settings”. **Touch** the Setup Network icon ④.



AS-TS-009345

The available networks will show on the screen. The color of the network icon indicates the strength of the signal for each network.

Green = strong

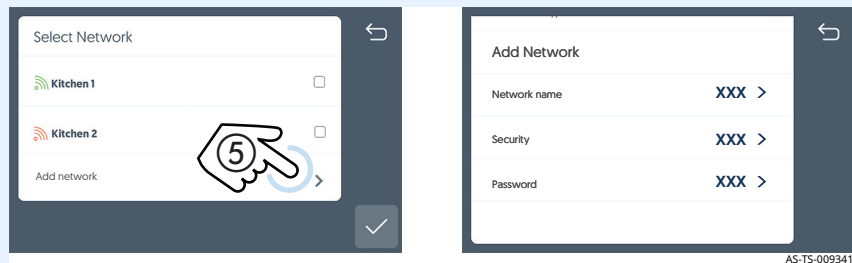
Red = weak

If the network to be used is not displayed, continue with step 5.



AS-TS-008285

5. If the network is not displayed, **touch** the “Add network” icon ⑤.



AS-TS-009341

**Enter** the SSID using the keypad. Then, **touch** the arrow key.

**Enter** the security type. Then, **touch** the check mark.

**Enter** the password using the keypad. Then, **touch** the arrow key.

**Touch** the check mark when finished.

## Result

The procedure is now complete.

# How to Set up an Ethernet Connection

## Before you begin

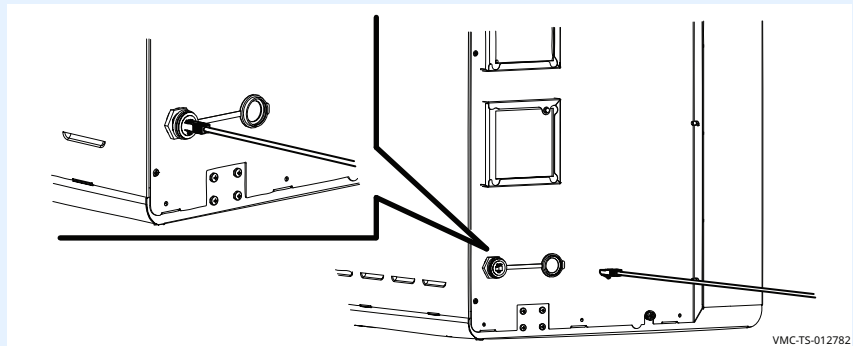
- The facility must have an Ethernet port.
- You will need an Ethernet cable.

## Procedure

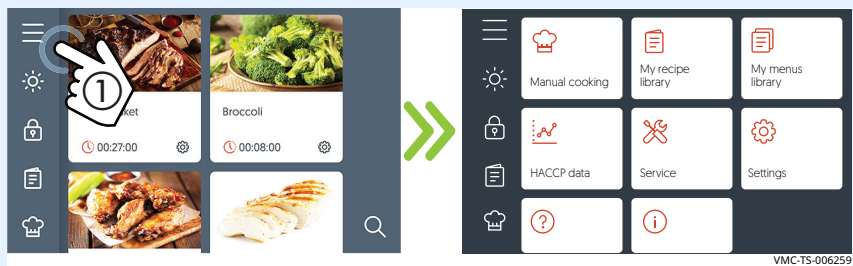
To set up an Ethernet connection, do the following.

Step	Action
------	--------

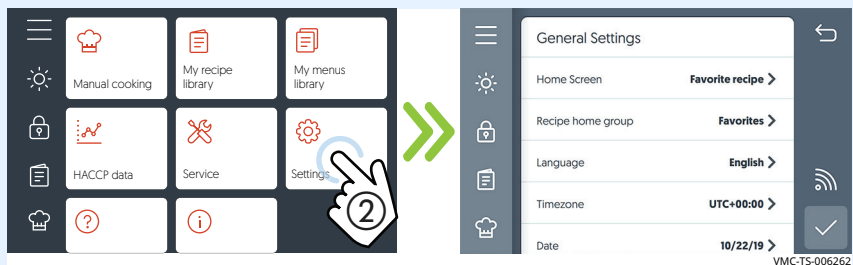
- |    |   |
|----|---|
| 1. | <b>Plug</b> the Ethernet cord into the Ethernet port on the oven and the wall outlet. |
|----|---|



- |    |   |
|----|---|
| 2. | <b>Touch</b> the menu icon ①. The menu screen displays. |
|----|---|



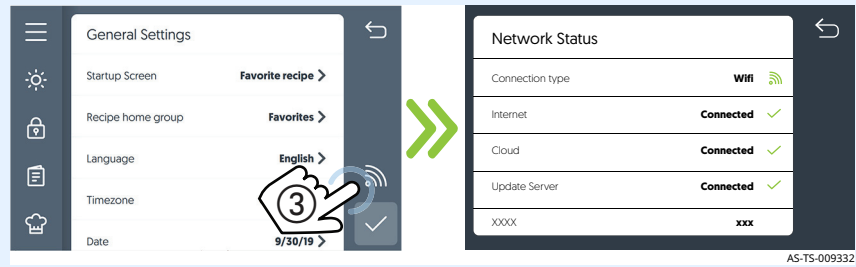
- |    |   |
|----|---|
| 3. | <b>Touch</b> the settings icon ②. The general settings screen displays. |
|----|---|



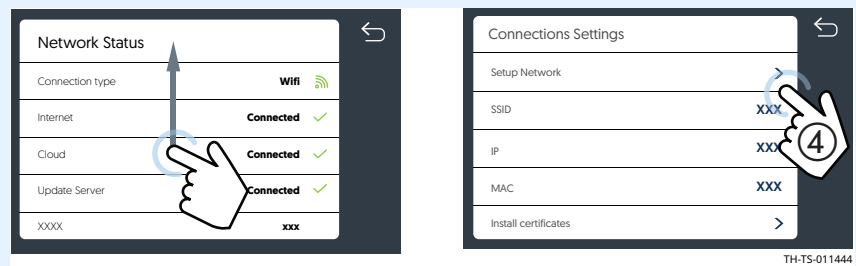
*Continued on next page*

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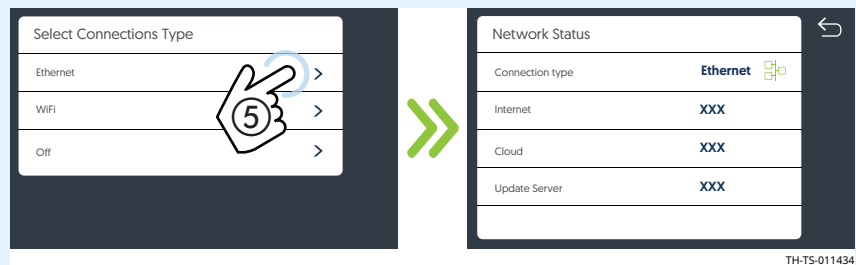
4. **Touch** the Wi-Fi icon ③. The Network Status screen displays.



5. **Scroll** to “Connection Settings”. **Touch** the Setup Network icon ④. The Select Connection Type screen displays.



6. **Touch** the “Ethernet” icon ⑤. Follow any prompts.



**Result**

The Ethernet connection is now set up.

# How to Update Software with a USB Drive

## Before you begin

### Make sure:

- The oven is on, but not in a cooking mode.
- You will need a USB drive with the updated software. To download the most up to date oven software and register for email notifications when new software versions are released, please visit <https://www.alto-shaam.com/en/customer-support/software-downloads>.
- Do not remove the USB drive during the update process.

## Procedure

To update the software, do the following.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The menu screen displays.</p>  <p style="text-align: right;"><small>VMC-TS-006259</small></p>
2.	<p><b>Touch</b> the Settings icon ②. The general settings screen displays.</p>  <p style="text-align: right;"><small>VMC-TS-006262</small></p>
3.	<p><b>Plug</b> the USB drive ③ into the port.</p>  <p style="text-align: right;"><small>VMC-TS-007852</small></p>

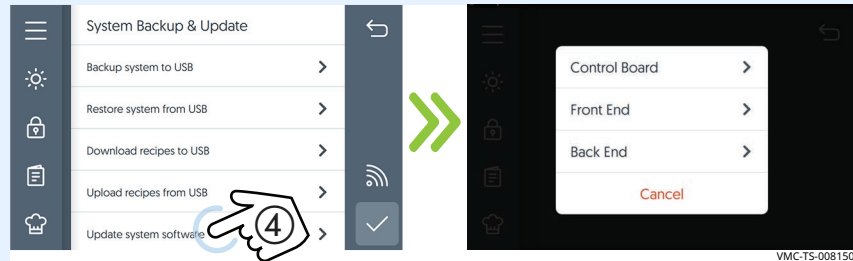
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4. **Scroll** to System Backup & Update.

**Touch** the Update system software ④ setting.



**Touch** Control Board (CB) to update the control board. The oven loads the selected software. The oven verifies the file and then updates the CB.

**NOTICE** Do not remove the USB drive during the update process.

**Touch** Front End to update the user interface software. The oven loads the selected software.

**Touch** Back End to update the supporting software between the control board (CB) and interface board (IB). The oven loads the selected software.

5. **Touch** the check mark when the update is complete to restart the oven.



6. **Remove** the USB drive.

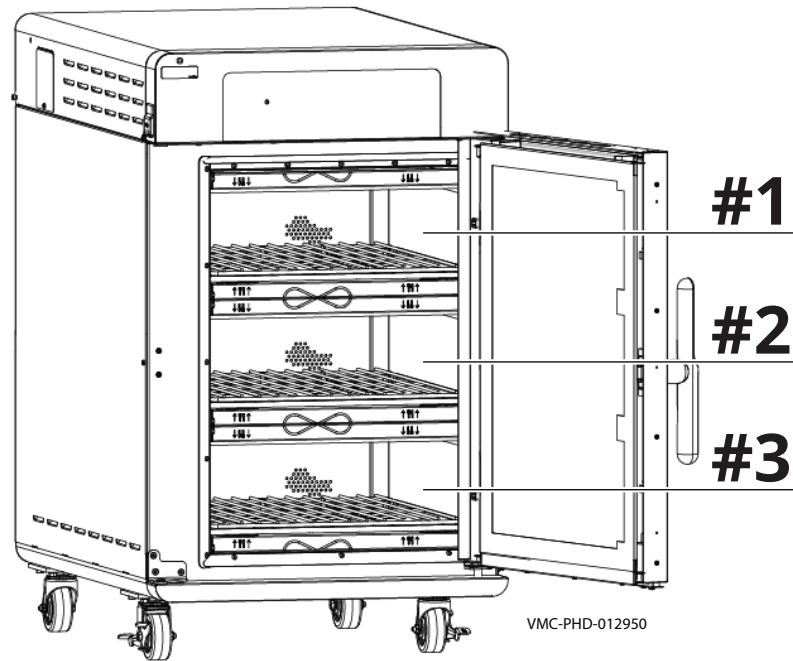
**Result**

The software has now been updated.

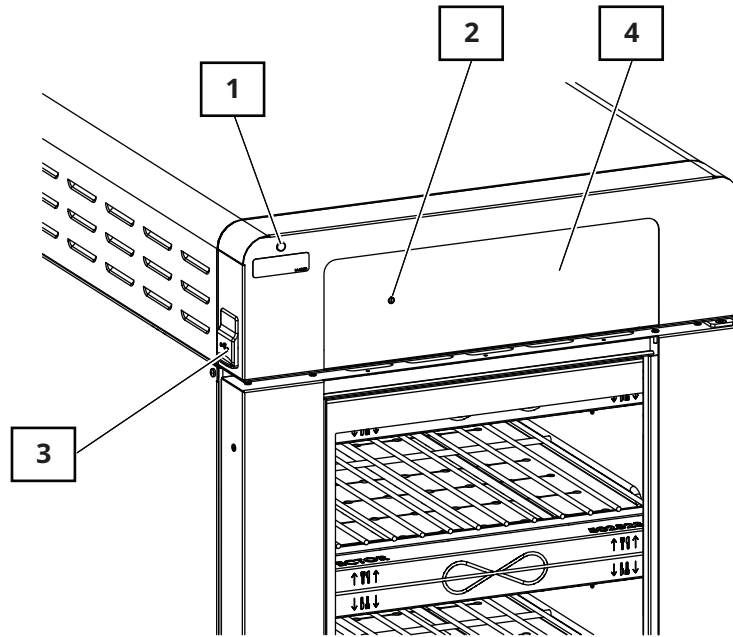
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# Chamber Identification

Components will be identified in accordance with the chamber numbering illustrated here.



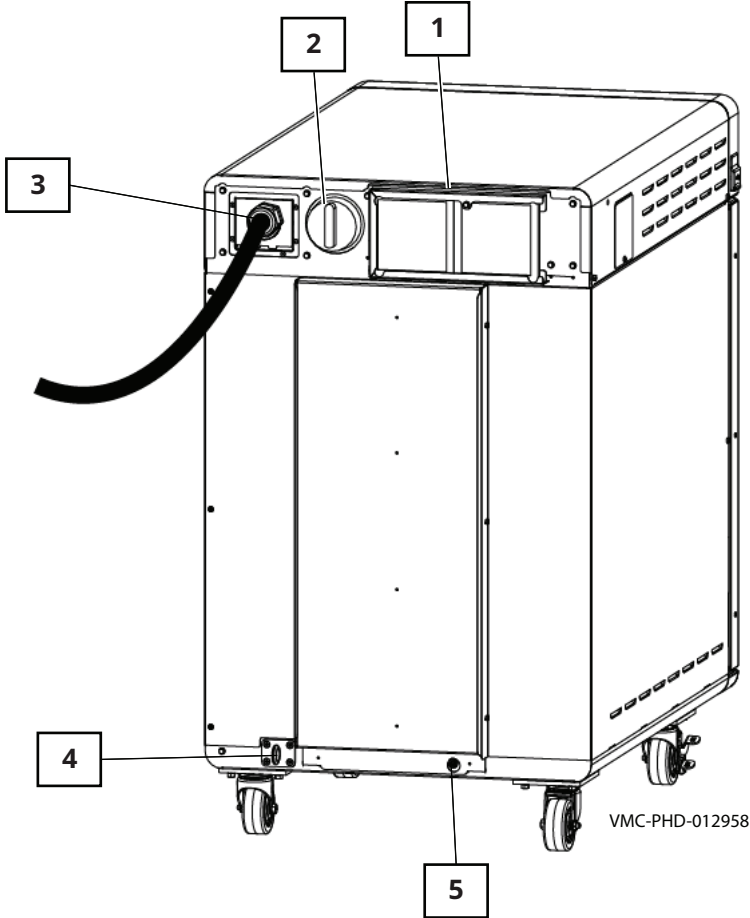
# Front Panel Identification



VMC-PHD-007533

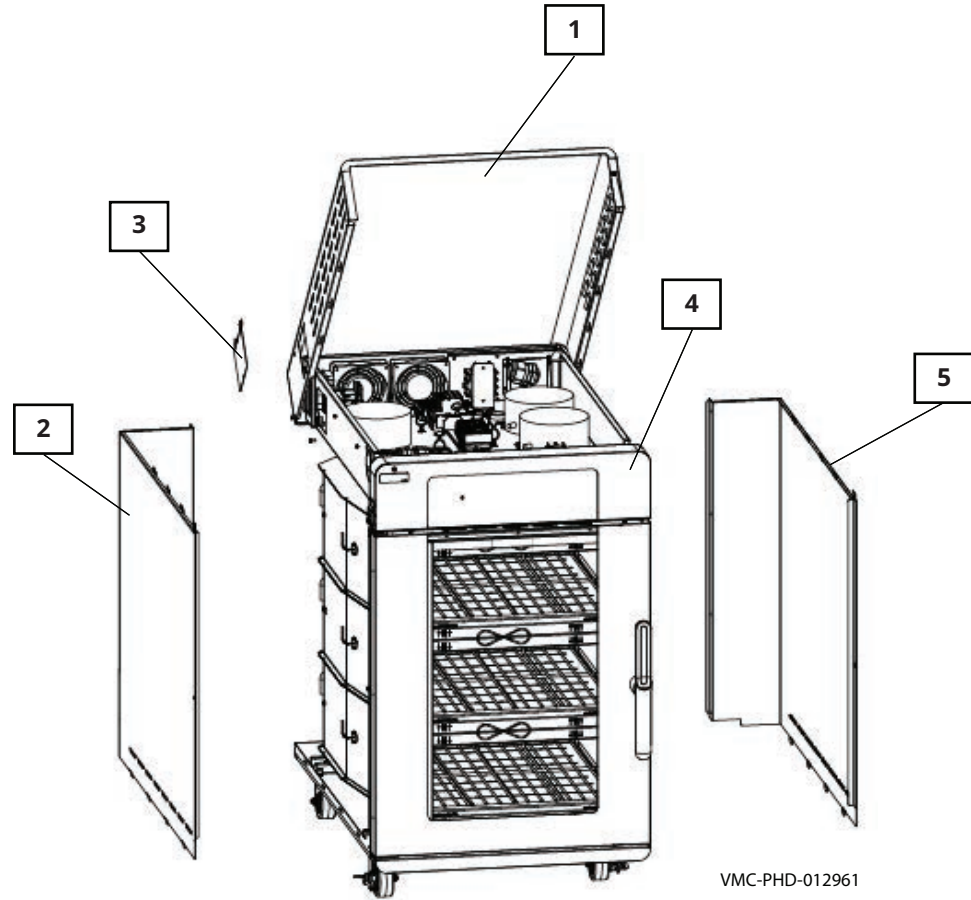
Ref.	Description
1	Check fans indicator light
2	ON/OFF button
3	USB port
4	Control panel display

# Back Panel Identification



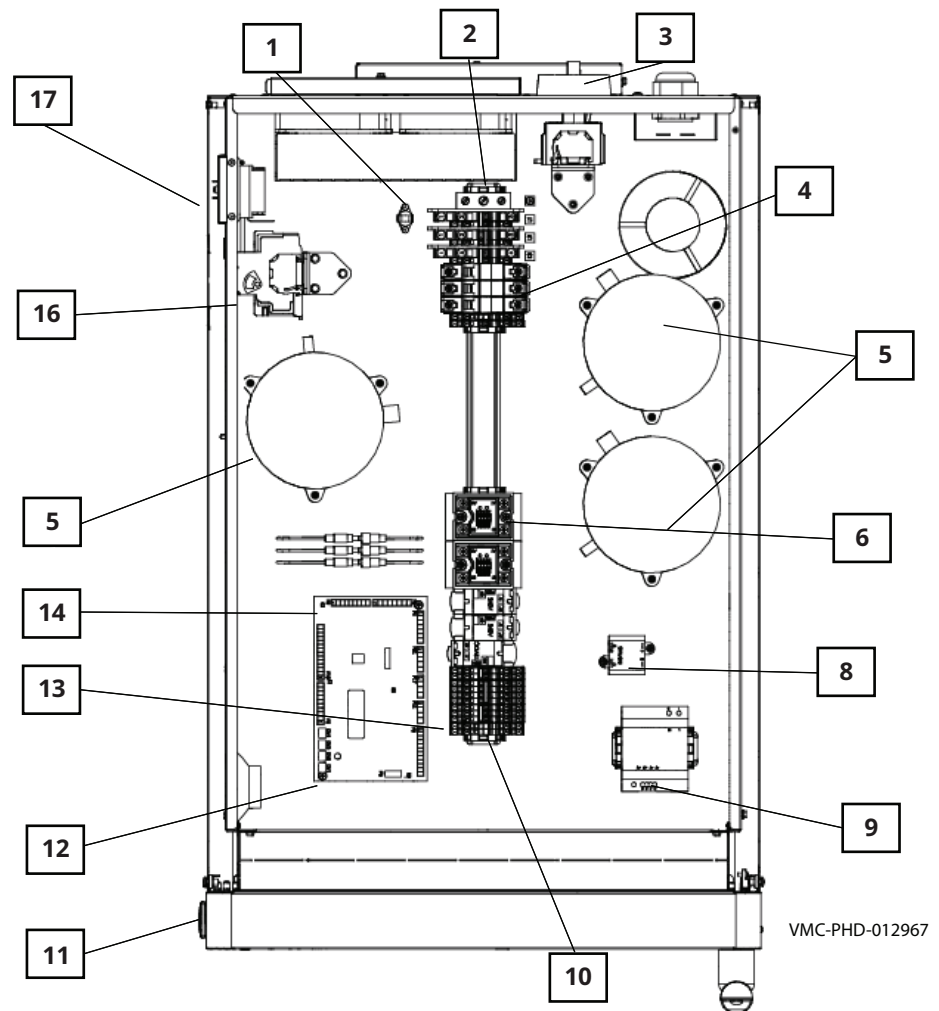
Ref.	Description
1	Cooling Fans/Filters
2	Main disconnect switch
3	Electrical supply cord
4	Tether ring mount
5	Equipotential-bonding terminal

# Component Access Panels Identification



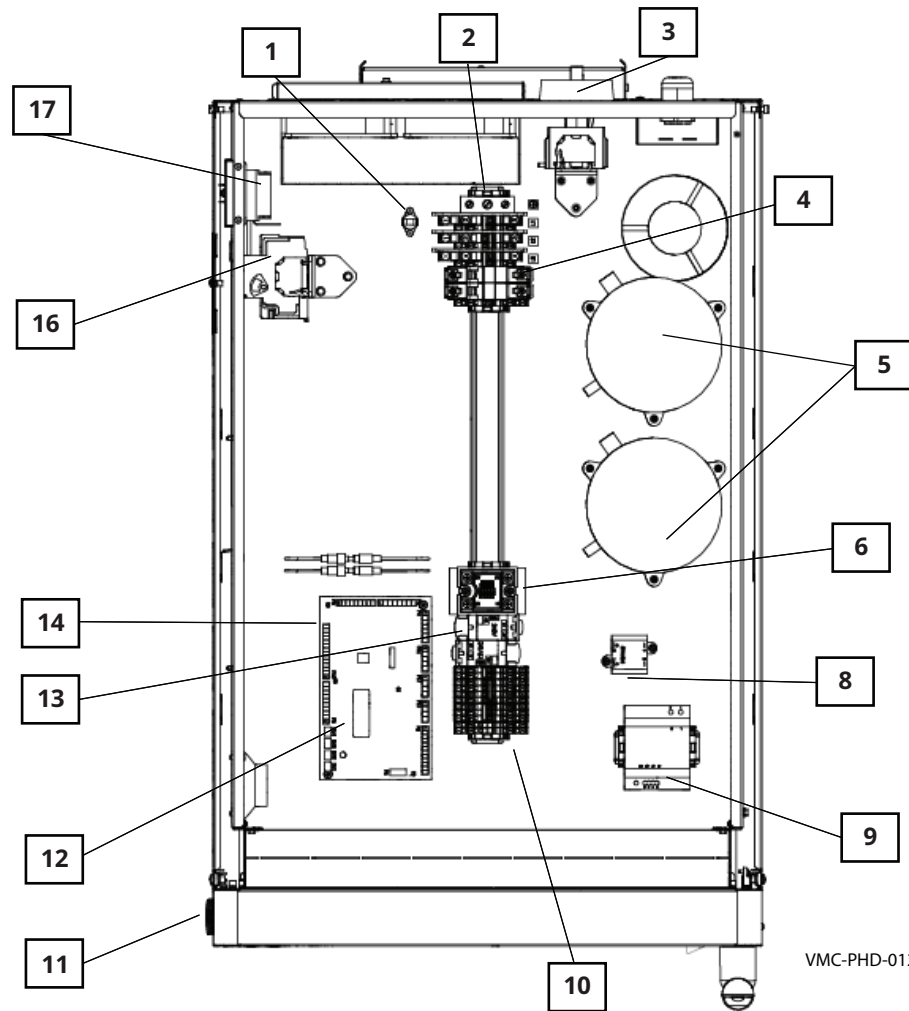
Ref.	Description	Provides access to
1	Top service panel	Electrical components
2	Left service panel	Heating elements, catalyst, and thermocouples
3	Circuit breaker access panel	Circuit breakers
4	Control panel	Interface board
5	Right service panel	Blower motors and cooling fans

# H3—Electrical Component Identification



Ref.	Description	Ref.	Description
1	Check fans indicator light switch	10	Terminal blocks
2	Terminal blocks	11	USB port
3	Main disconnect switch	12	Control board
4	Circuit breakers (heating elements)	13	Relays
5	Variable Frequency Drive (VFD)	14	Fuses (lights)
6	Solid State Relay (SSR)	15	Wye filter (CE models only)
7	Line filter (CE models only)	16	Circuit breakers (control)
8	12VAC transformer	17	High limit switch
9	12VDC power supply	—	—

# H2—Electrical Component Identification



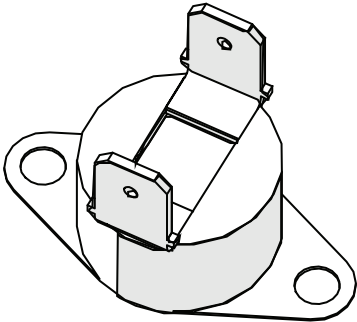
Ref.	Description	Ref.	Description
1	Check fans indicator light switch	10	Terminal blocks
2	Terminal blocks	11	USB port
3	Main disconnect switch	12	Control board
4	Circuit breakers (heating elements)	13	Relays
5	Variable Frequency Drive (VFD)	14	Fuses (lights)
6	Solid State Relay (SSR)	15	Wye filter (CE models only)
7	Line filter (CE models only)	16	Circuit breakers (control)
8	12VAC transformer	17	High limit switch
9	12VDC power supply	—	—



# Electrical Components

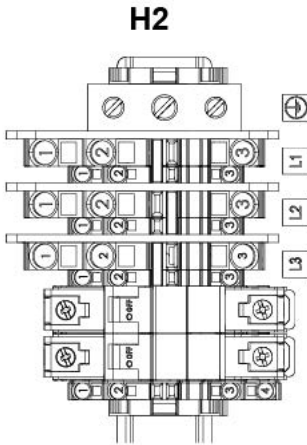
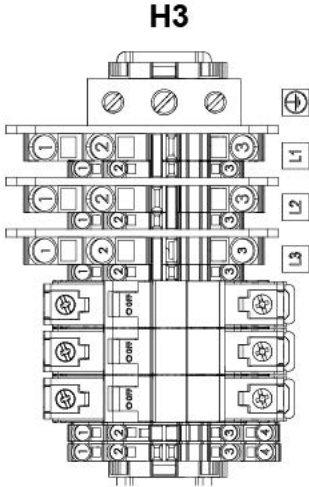
## Check Fans Indicator Light Switch

- The contacts close at or above 130°F (54°C)



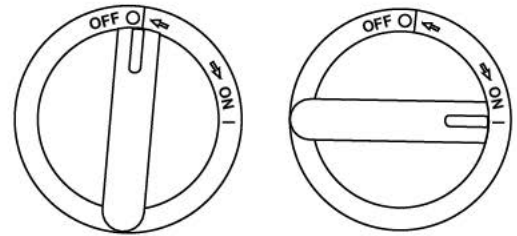
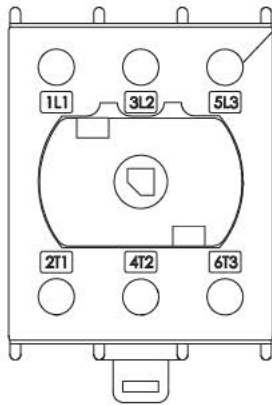
VMC-PHD-001903

## Terminal Blocks for Electrical Supply



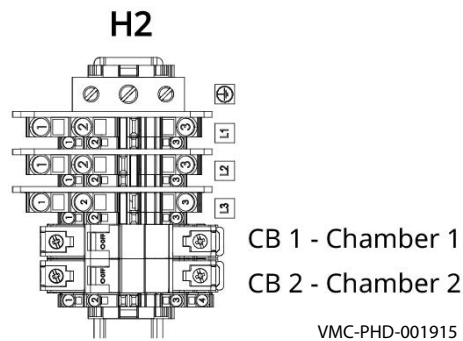
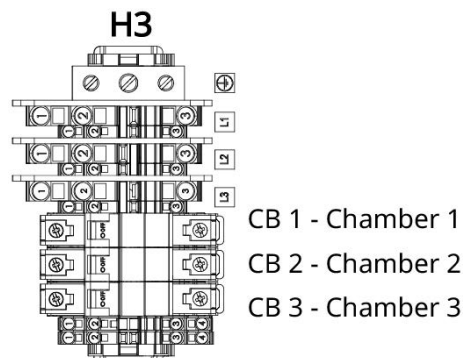
VMC-PHD-012907

## Main Disconnect Switch




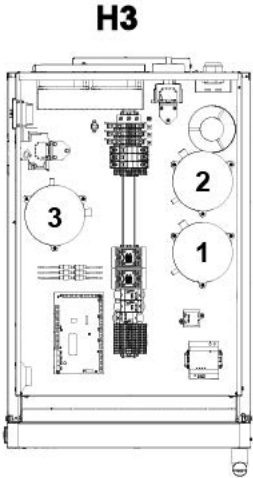
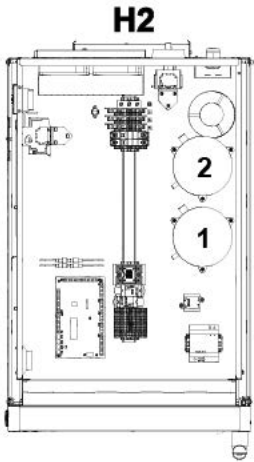
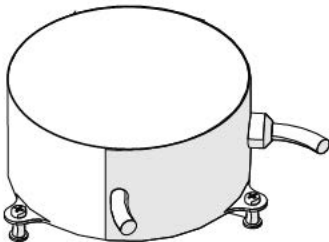
VMC-PHD-001911

## Circuit Breakers (Heating Elements)



# Variable Frequency Drive (VFD)

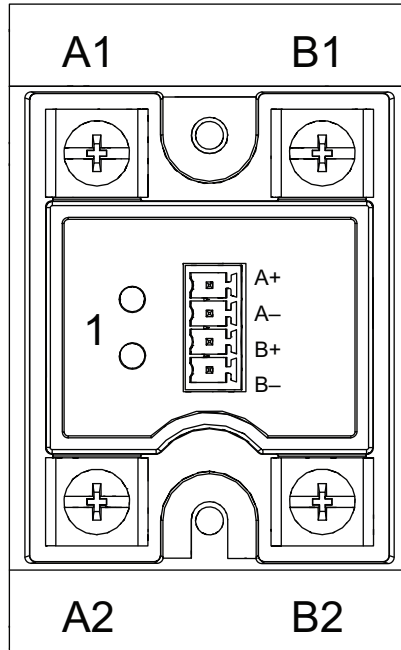
 **WARNING:** Electric shock hazard.  
Do not disassemble the VFD.



VMC-PHD-007590

# Solid State Relay (SSR)

Heater element control. One SSR for each chamber.



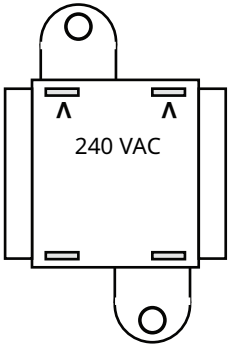
VMC-PHD-010722

Ref.	Description
1	L1 terminal, AC line voltage into the SSR
2	T1 terminal, AC load voltage to the heating element
3	Call for heat indicator light
4	A2 (-) terminal, DC control voltage from the control board to the SSR
5	A2 (+) terminal, DC control voltage from the control board to the SSR

# 12VAC Transformer

The transformer provides a voltage signal to the control board. The signal allows the control board to determine the incoming line voltage.

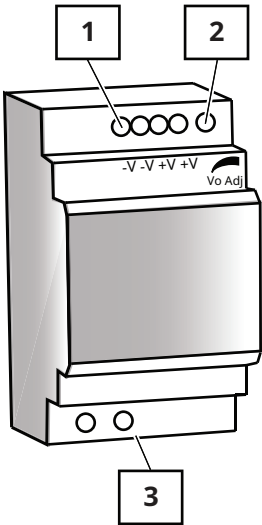
- Primary: 1700 Ohms
- Secondary: 6 Ohms



VMC-PHD-001927

# 12VDC Power Supply

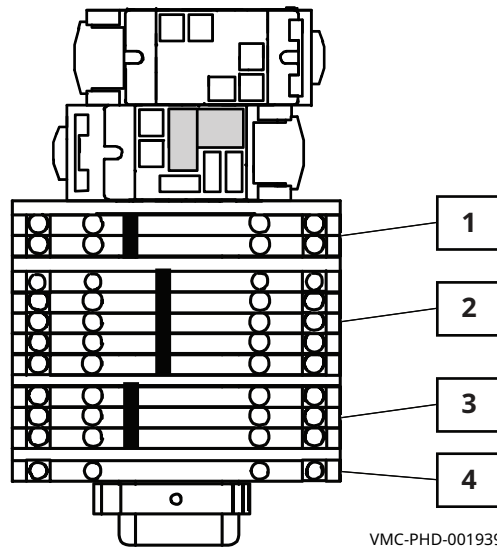
Supplies DC voltage to the control board and the ON/OFF switch.



VMC-PHD-001935

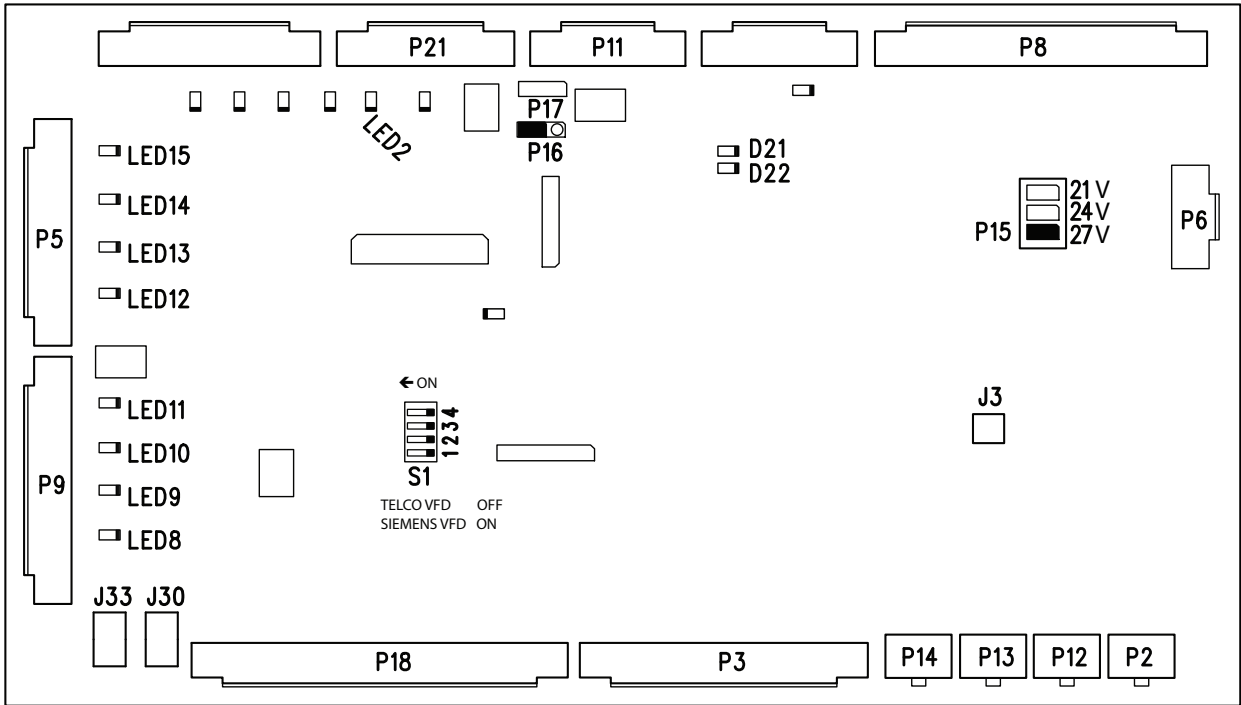
Ref.	Description
1	12VDC terminals
2	12VDC adjustment
3	240VAC terminals

## Terminal Blocks (VFDs and Cooling Fans)



Ref.	Description
1	TB 4 - L2
2	TB 5 - L1
3	TB 6 - L2 (switched)
4	Ground

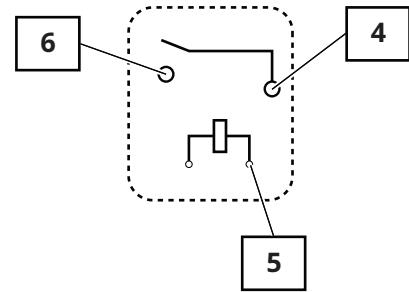
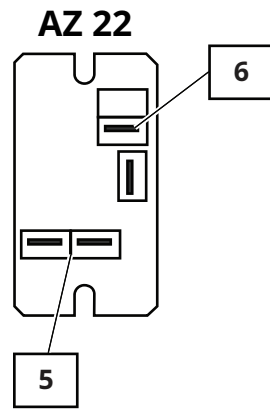
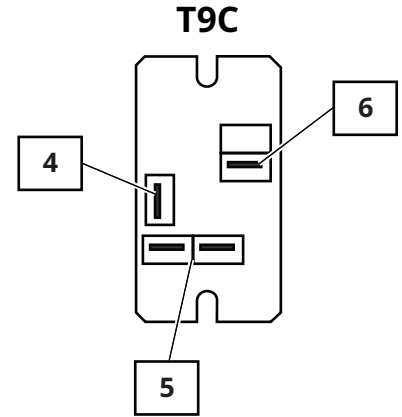
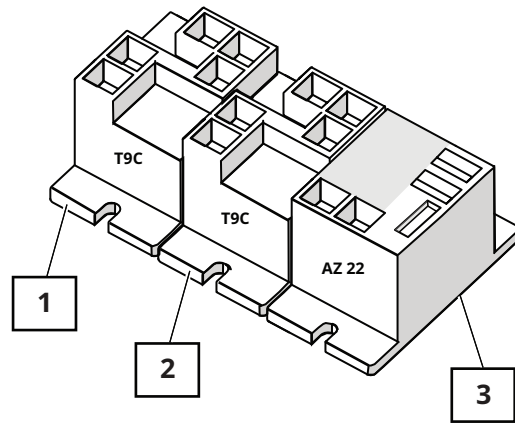
# Control Board (CB)



VMC-PHD-001947

Ref.	Description	Ref.	Description	Ref.	Description
<b>P2</b>	Drive 1 communication	<b>P16</b>	Jumper	<b>LED 9</b>	Chamber 2 call for heat
<b>P3</b>	Input signals	<b>P17</b>	Not used	<b>LED 10</b>	Chamber 3 call for heat
<b>P4</b>	Door handle lights	<b>P18</b>	Input from chamber combine switches (F Series only)	<b>LED 11</b>	Chamber 4 call for heat
<b>P5</b>	Lights	<b>P21</b>	Output to blower/fan relay RL1	<b>LED 12</b>	Chamber 1 light
<b>P6</b>	Input from 12VDC power supply	<b>J3</b>	Speaker	<b>LED 13</b>	Chamber 2 light
<b>P8</b>	Thermocouple inputs	<b>J30</b>	AC input from the transformer	<b>LED 14</b>	Chamber 3 light
<b>P9</b>	Heater control signal to SSRs	<b>J33</b>	AC input from the transformer	<b>LED 15</b>	Chamber 4 light
<b>P11 or P10</b>	Communication to UI board	<b>LED 2</b>	Cooling fan power	<b>D21</b>	RS485 communication
<b>P12</b>	Drive 2 communication	<b>LED 3</b>	Door handle lights	<b>D22</b>	RS485 communication
<b>P13</b>	Drive 3 communication	<b>LED 4</b>	Door handle lights	<b>S1</b>	Chamber VFD selection Telco VFD set to OFF Siemens VFD set to ON
<b>P14</b>	Drive 4 communication	<b>LED 6</b>	Door handle lights	—	—
<b>P15</b>	Jumper	<b>LED 8</b>	Chamber 1 call for heat	—	—

# Relays



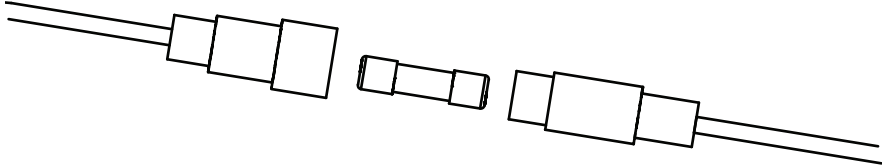
VMC-PHD-001951

Ref.	Description	Ref.	Description
1	RL-3 (H3 only)	4	Common terminal
2	RL-1, T9C, 240VAC coil  Input to the control board for the check fan indicator light  Coil—10.90 K Ohm	5	Coil terminal
3	RL-2, AZ 22, 12VDC coil  Blowers/fan  Coil—155 Ohm	6	Normally open terminal



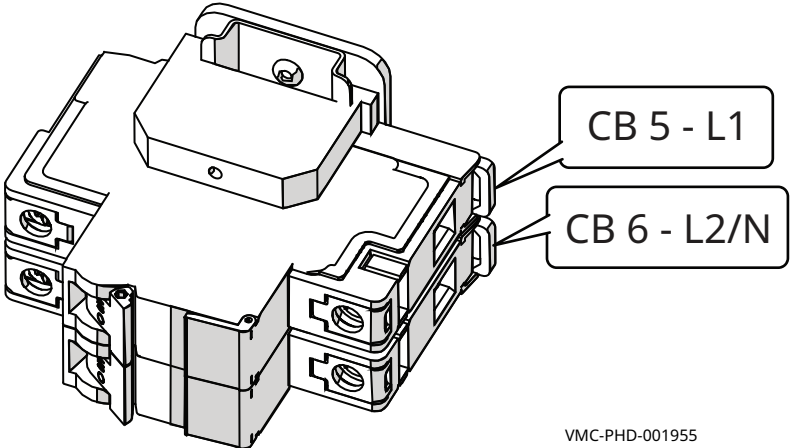
## Fuses (Chamber Lights)

Fuse, 1A, 250V, Slow-Blo, 5 x 20 mm



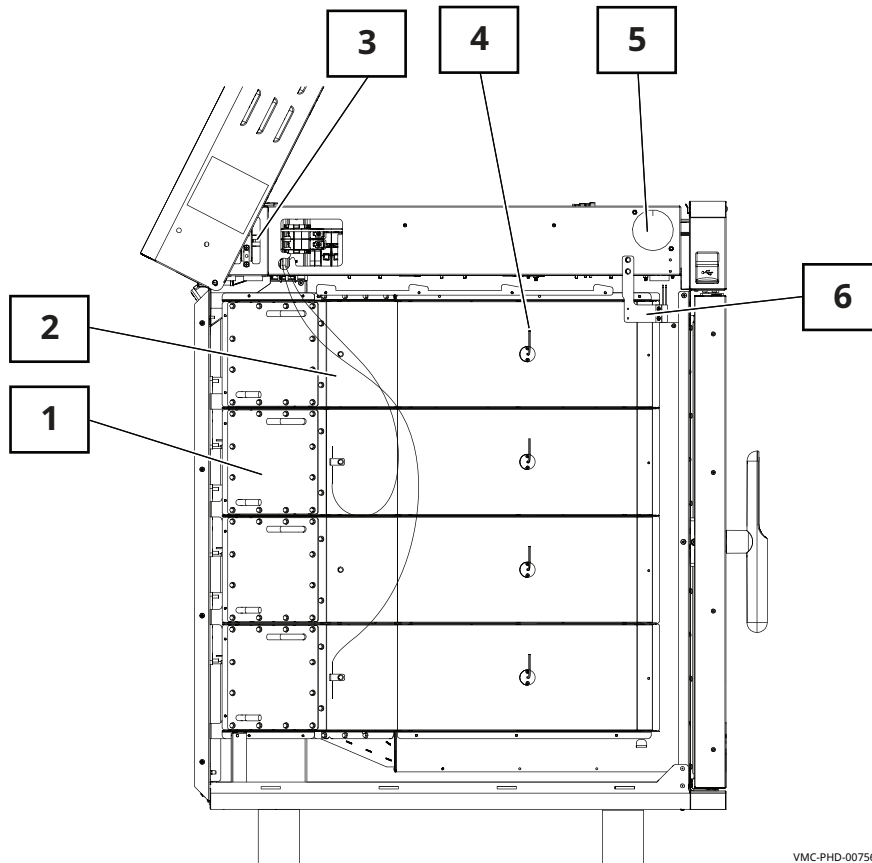
VMC-PHD-007561

## Circuit Breakers (Control)



VMC-PHD-001955

# Left Service Panel Identification

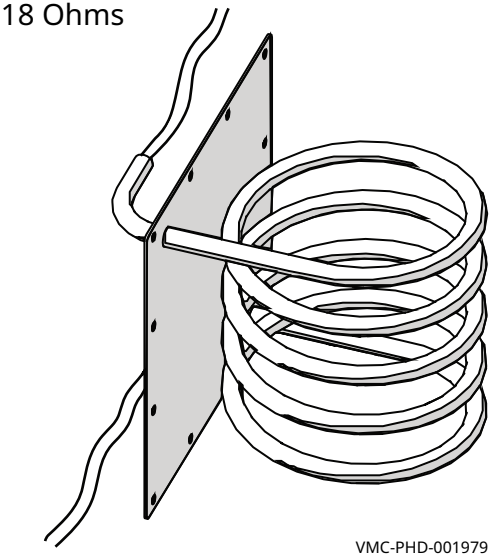


VMC-PHD-007565

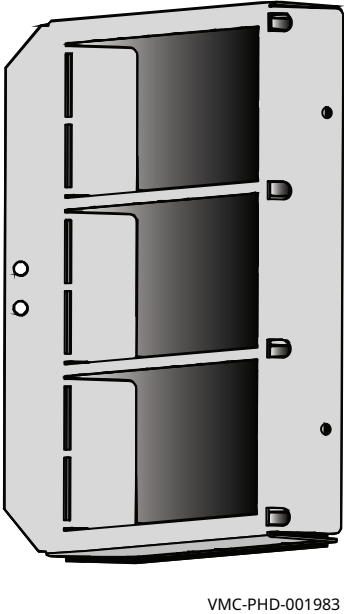
Ref.	Description
1	Chamber heating element
2	Catalyst
3	High limit switch
4	Chamber air temperature probe
5	Speaker
6	Door switch

# Left Service Panel Components

## Chamber Heating Element



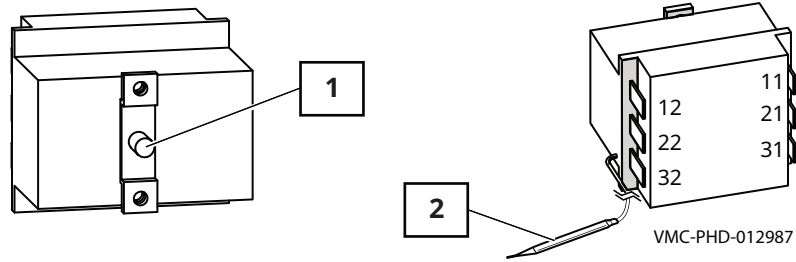
## Catalyst



# High Limit Switch

Resettable

Contacts open at 572°F (300°C)

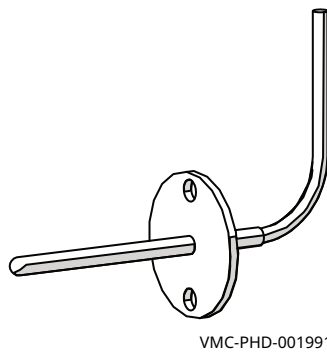


Ref.	Description
1	Reset button
2	Temperature bulb

# Chamber Air Temperature Probe

K Type Thermocouple

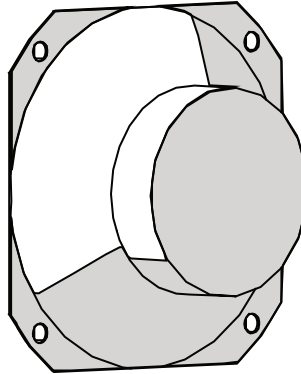
100°C	4.096 mV	100°F	1.521 mV
200°C	8.138 mV	200°F	3.820 mV
300°C	12.209 mV	300°F	6.094 mV



100°C = 4.096 mV	100°F = 1.521 mV
200°C = 8.138 mV	100°F = 3.820 mV
300°C = 12.209 mV	100°F = 6.094 mV

## Speaker

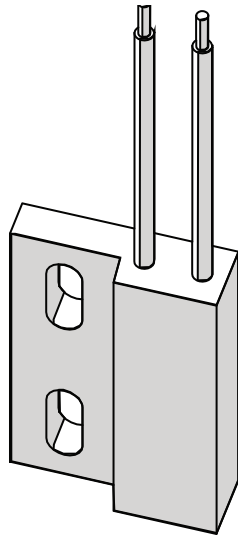
8 Ohms



VMC-PHD-001995

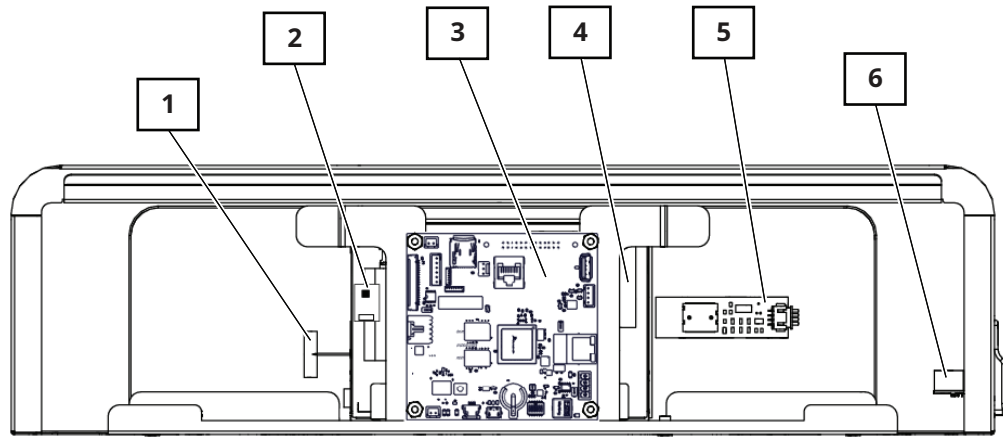
## Door Switch

- **Door closed** 0 Ohms; 0 VDC across terminals 1 and 2 of connector P3 on the control board.
- **Door open** Infinite Ohms; 8 VDC across terminals 1 and 2 of connector P3 on the control board.



VMC-PHD-001999

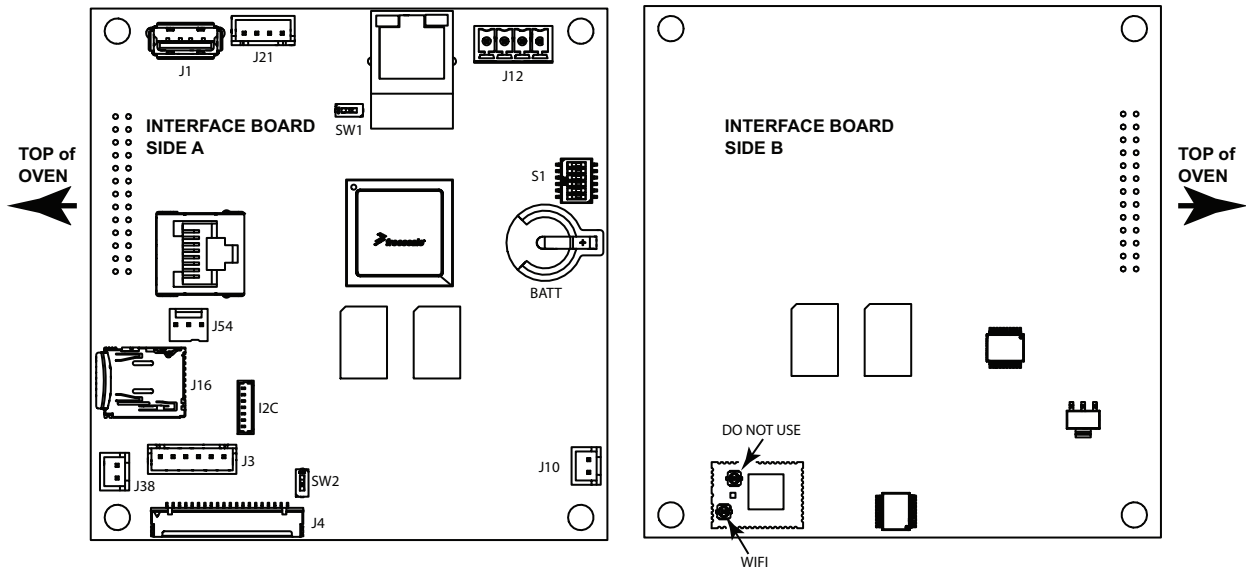
# Control Panel



VMC-PHD-007596

Ref.	Description
1	WIFI antenna (Not serviceable)
2	Capacitive touch controller board (Not serviceable)
3	Interface board
4	Liquid Crystal Display (LCD) (Not serviceable)
5	ON/OFF board (Not serviceable)
6	USB port

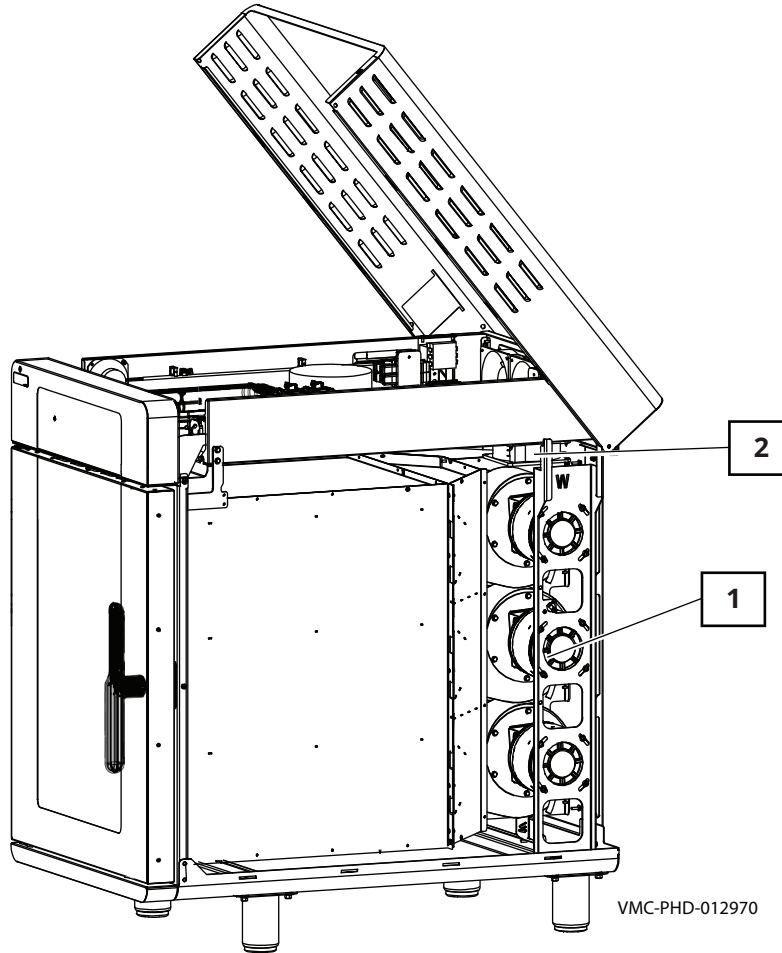
# Interface Board



VMC-TS-008222

Ref.	Description
<b>BATT</b>	Clock battery
<b>I2C</b>	Capacitive touch cable
<b>J1</b>	USB connections
<b>J3</b>	Display back light
<b>J4</b>	LCD interface
<b>J10</b>	Speaker
<b>J12</b>	12 VDC power
<b>J16</b>	8 GB micro SD card
<b>J21</b>	ON/OFF board
<b>J38</b>	Speaker
<b>J54</b>	RS 485/232 LVIO
<b>S1</b>	DIP switches (all off)
<b>SW1</b>	DIP switch (off)
<b>SW2</b>	DIP switch (off)
<b>WIFI</b>	WIFI antenna (conductor closest to the edge of the board)

# Right Service Panel Identification

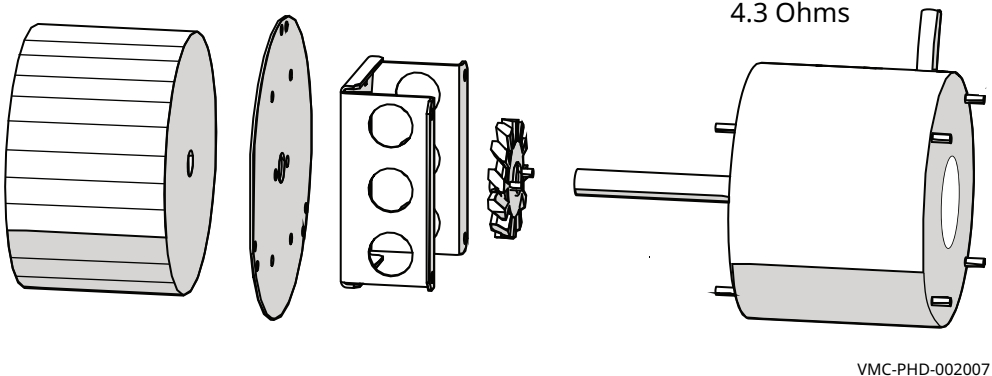


Ref.	Description
1	Chamber blower motor
2	Cooling fans



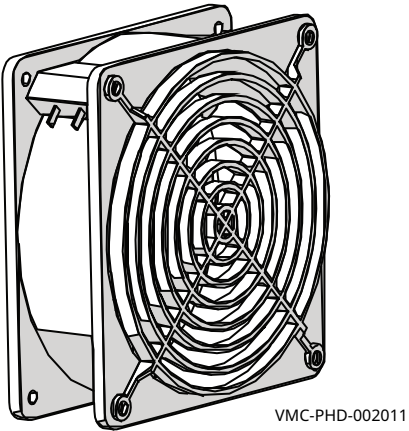
# Right Service Panel Components

## Blower Assembly

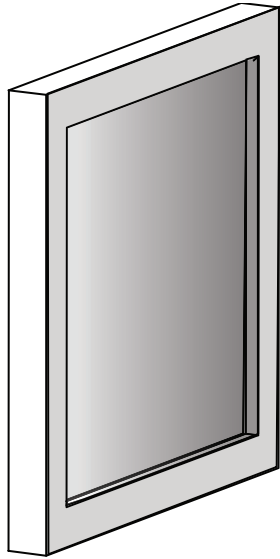


## Fans

- Impedance protected
- 240 Volt
- 581 Ohm

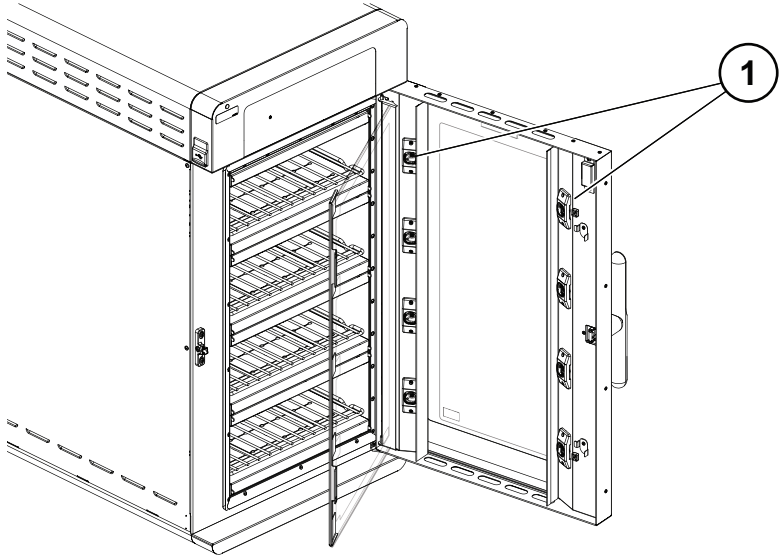


## Filter—Cooling Air

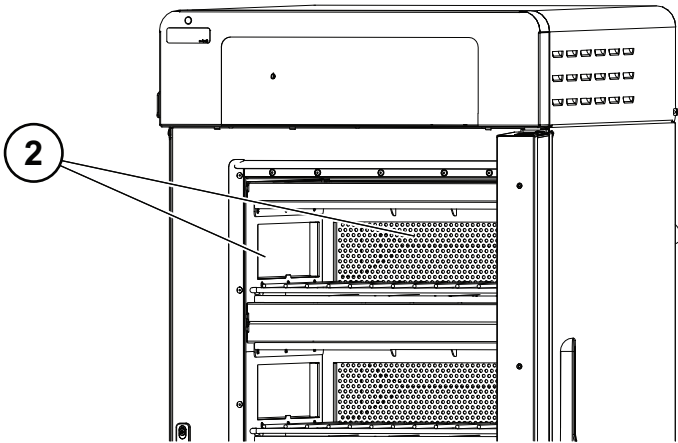


VMC-PHD-002015

# Internal Components Identification



VMC-PHD-007583



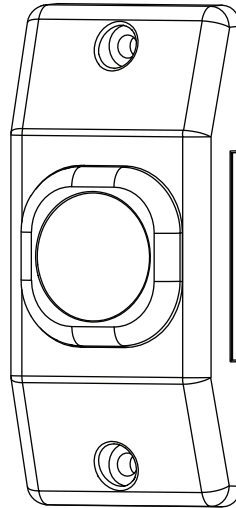
VMC-PHD-007580

Ref.	Description
1	Chamber light
2	Filters (optional)

# Internal Components

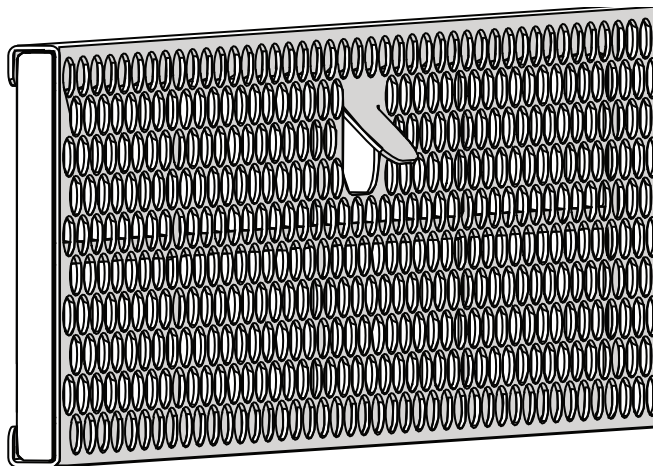
## Chamber Light

12 VDC



VMC-PHD-007587

## Filters (optional)



VMC-PHD-002027

# Maintenance Schedule

## Requirements

- See topic *How to Clean the Oven*.
- Make sure the oven is cooled down and off—inside of chamber 140°F (60°C) or less.

## Daily

For daily maintenance, do the following.

- **Remove** any spills with disposable paper wipes or a damp cloth.
- **Wipe** the outside of the oven with a damp cloth.
- **Check** the screen for cracking or peeling. Contact Technical Service if needed.

## Weekly

For weekly maintenance, do the following.

- **Restart** the oven to reboot the screen.
- **Clean** the entire oven. **Make sure** to use a non-abrasive nylon scrub pad.
- **Inspect** and clean the grease filters (if equipped)
- Do not spray the cleaner directly into the fan openings located in the rear of the oven.

## Monthly

For monthly maintenance, do the following.

- **Inspect** and clean the cooling fan filters.

## Yearly

For yearly maintenance, do the following.



**NOTE:** Must be performed by a qualified professional.

- **Remove** the convection element(s) and inspect the return air path for grease buildup. **Remove** any grease buildup.
- **Inspect** the catalyst for any signs of degradation (Vector H Series models only).
- **Inspect** the heater flange area for grease leakage.
- **Inspect** the motor flange area for grease leakage.
- **Inspect** the door gaskets for correct shape and seal.
- **Inspect** the inner and outer door window panes for cracking or chipping.

- **Check and tighten** all wire connections.
- **Check and tighten** all display, interface and control board connections.
- **Check and tighten** the door hinges.

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- **Record** the software versions and update if necessary.
  - **Record** the amp draw of all elements on the service screen individually.
  - **Record** the incoming supply line voltage.
- 

- **Test** each chamber fan for correct operation.
- **Test** each chamber heater for correct operation.
- **Test** the chamber lights.

# How to Clean the Oven

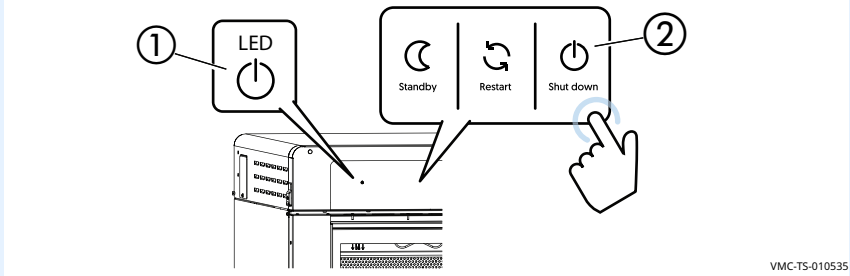
## Precautions

**WARNING:** Burn hazard.  
 Wear eye protection and hand protection while cleaning the oven.  
 Do not spray cleaner into the oven while the blowers are running.  
 Allow the oven, racks, and jet plates to cool before cleaning the oven.

**NOTICE** Using improper cleaning procedures will damage the catalyst and void the warranty.  
 Do not spray the catalyst or any opening inside the oven with water or cleaning solution.  
 Do not use steel pads, wire brushes, or scrapers when cleaning.

## Daily cleaning procedure

To clean the oven daily, do the following.

Step	Action
1.	<p><b>Touch and hold</b> the ON/OFF button ① until the Shut down options screen displays.</p>  <p><b>Touch</b> "Shut down" ②.</p> <p>The oven activates the blowers for the cool-down process. The cool-down process is complete when the oven deactivates the blowers and the display screen turns off. When the cool-down process is complete, it is safe to clean the oven.</p>
2.	<b>Remove</b> any spills with disposable paper wipes or a damp cloth.
3.	<b>Wipe</b> the outside of the oven with a damp cloth.
4.	<b>Wipe</b> the outside of the oven with a stainless steel cleaner.

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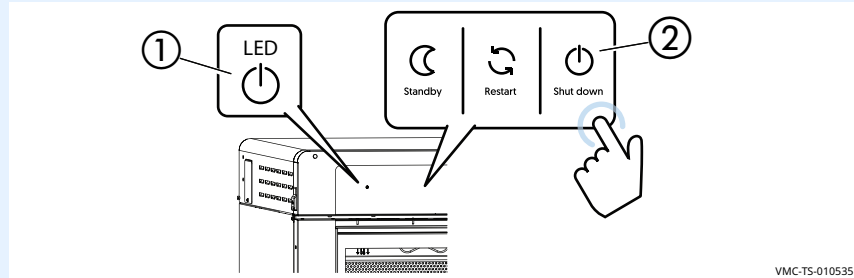
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## Monthly or as needed cleaning procedure

For the monthly cleaning or as needed if the oven is dirty, do the following.

Step	Action
------	--------

- |    |  |
|----|--|
| 1. | <b>Touch and hold</b> the ON/OFF button ① until the Shut down options screen displays. |
|----|--|



**Touch** "Shut down" ②.

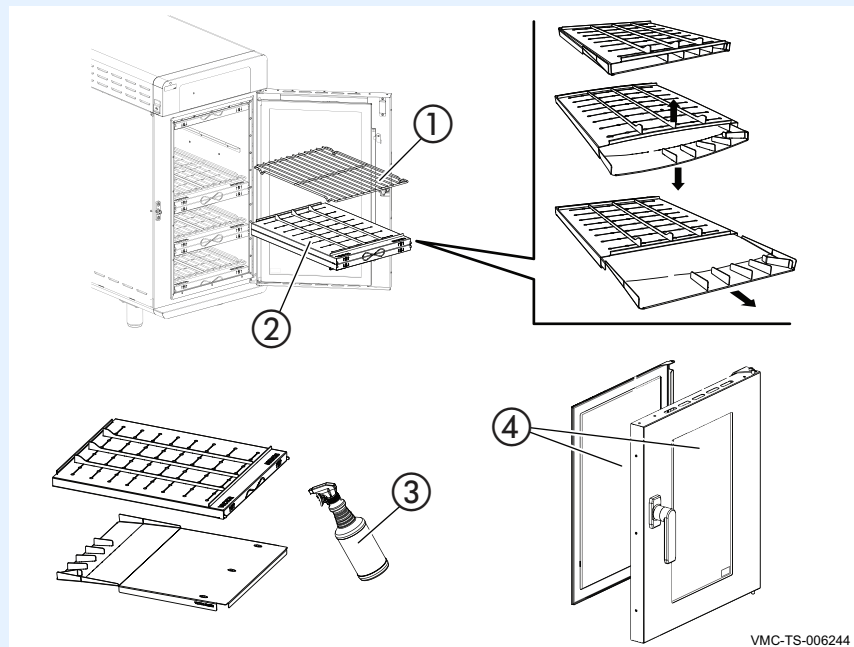
The oven activates the blowers for the cool-down process. The cool-down process is complete when the oven deactivates the blowers and the display screen turns off. When the cool-down process is complete, it is safe to clean the oven.

- |    |   |
|----|---|
| 2. | <b>Remove</b> the cooking racks ① and jet plates ②. |
|----|---|



**CAUTION:** Personal injury hazard.

Use hand protection when handling the jet plates.

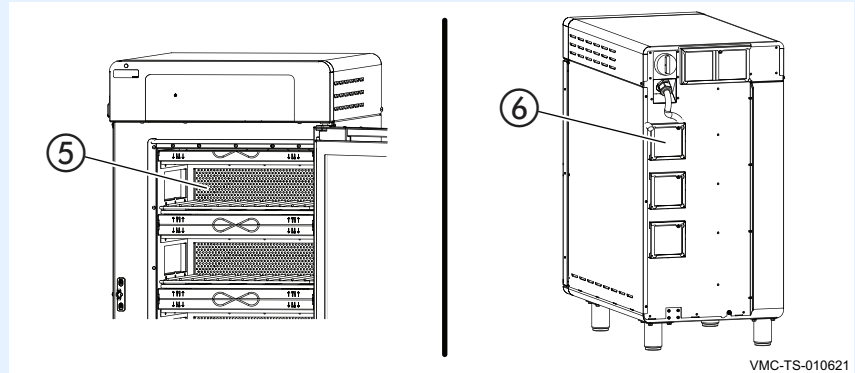


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3. **Separate** the jet plates. Flexing the jet plates outward can aid in separating the jet plates.
4. **Spray** the cooking racks and jet plates with Alto-Shaam non-caustic oven cleaner ③, CE-46828. Follow safety instructions on cleaner bottle. Let the cleaner work for 3–5 minutes. **Scrub** with a non-abrasive scrub pad. **Rinse** with water. **Wipe** with a soft cloth.
5. **Remove** the grease filters ⑤ if equipped.



6. **Spray** the interior surfaces of the oven with Alto-Shaam non-caustic oven cleaner, CE-46828. Also spray the grease filters. Let the cleaner work for 3–5 minutes. **Scrub** with a non-abrasive scrub pad. **Remove** any residue with a water-soaked towel.
7. **Remove** the cooling fan filters ⑥. Clean with a mild cleaner and rinse with hot water.



**NOTE:** Replace the cooling fan filters at least once a year.

8. **Re-install** the grease filters and the cooling fan filters.
9. **Clean** the door glass ④ with Windex® or equivalent glass cleaner.
10. **Re-install** the jet plates and cooking racks. See topic *How to Install the Jet Plates*.



**NOTE:** Make sure the jet plates are installed correctly. The nozzles on the jet plates should be pointing towards the food.

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11. **Spray** the exterior of the oven with stainless steel polish. **Wipe** the exterior of the oven with a non-abrasive scrub pad. Follow safety instructions on the bottle of the stainless steel polish.

**NOTICE** Use only non-caustic cleaners.  
Do not spray directly into the fan openings on the rear of the oven.  
Do not use cleaners that contain sodium hydroxide (lye) or phosphorus.

## Result

The oven is now clean.

# Error Codes

Code	Description	Parameters that trigger the error	Possible Cause(s)
E-3	Motor error	No cavity motor rotation detected for greater than 30 seconds.	<ol style="list-style-type: none"> <li>1. Connection between Variable Frequency Drive (VFD) and control board</li> <li>2. Connection between fan motor and VFD</li> <li>3. Fan motor</li> <li>4. VFD</li> <li>5. Control board</li> </ol>
E-10	Sensor short	Short circuit detected on sensor wires.	<ol style="list-style-type: none"> <li>1. Sensor connection</li> <li>2. Sensor</li> <li>3. Control board</li> </ol>
E-11	Sensor open	Cavity air sensor reading > 650°F (343°C).	<ol style="list-style-type: none"> <li>1. Sensor connection</li> <li>2. Sensor</li> <li>3. Control board</li> </ol>
E-30	Unit under temperature	Cavity temperature remains 25°F (14°C) below target for more than 90 minutes.	Troubleshoot heating element
E-31	Electronics over temperature	Control board temperature exceeds 158°F (70°C) and/or interface board temperature exceeds 184°F (84°C).	<ol style="list-style-type: none"> <li>1. Cooling fan filters blocked or dirty</li> <li>2. Cooling fan not operating</li> <li>3. Installation clearance requirements not met</li> </ol>
E-87	Gas lockout	Loss of flame three times within 5 minutes.	Lack of fuel pressure.
E-88	Ignition module/valve failure	Two, 4-second tries for light at the ignition module with a 30-second delay between.	<ol style="list-style-type: none"> <li>1. Valve status is not open after call for heat.</li> </ol>
E-90	Gas combustion blower speed failure	Blower RPM is outside +/- 10% of expected RPMs at start of call for heat, or post-ramping when the end speed is reached.	<ol style="list-style-type: none"> <li>1. Power supply cable is not connected to blower motor.</li> <li>2. Speed control cable is not connected to blower motor.</li> <li>3. Blower motor is blocked, rotation is impeded, or motor is faulty.</li> <li>4. Faulty PWM daughter board.</li> </ol>
E-94	Interface Board - Control Board communication error	No signal transfer for more than 5 seconds between the interface board and the control board.	<ol style="list-style-type: none"> <li>1. Connection of modbus cable</li> <li>2. Modbus cable</li> <li>3. Control board</li> <li>4. Interface board</li> </ol>
E-108	Bi-metal thermostat open	Open circuit detected across bi-metal switch.	<ol style="list-style-type: none"> <li>1. Cooling fan filters blocked or dirty</li> <li>2. Cooling fan not operating</li> <li>3. Connection between bi-metal switch and control board</li> <li>4. Installation clearance requirements not met</li> <li>5. Bi-metal switch</li> </ol>
E-109	High limit error <b>Note:</b> Contact an authorized Alto-Shaam service partner.	Open circuit detected across high limit switch.	<ol style="list-style-type: none"> <li>1. Jet plate(s) improperly installed</li> <li>2. Cavity fan not operating</li> <li>3. Optional grease filters blocked with debris</li> <li>4. Heat relay(s) stuck closed</li> <li>5. Connection between high limit switch and control board</li> <li>6. High limit switch</li> </ol>

# The Oven will not Power Up

## Before you begin

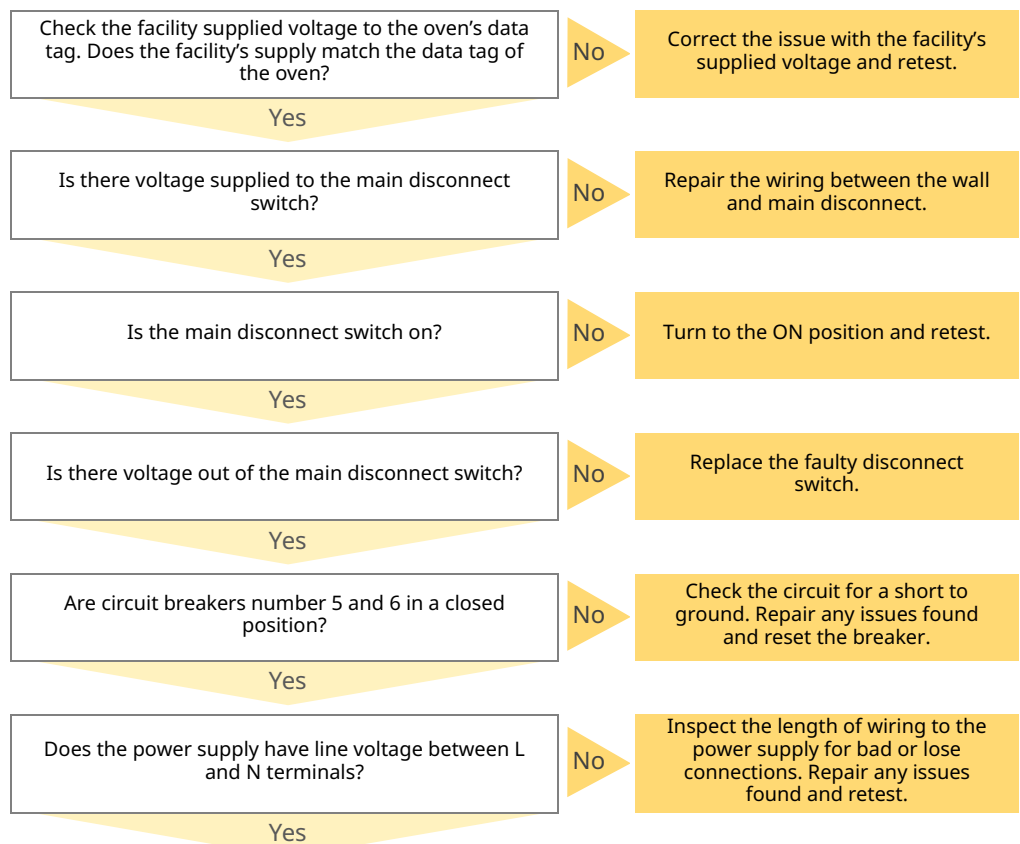
- Remove the circuit breaker service panel on the left side of the oven.
- Move the circuit breakers to the OFF position, then move the circuit breakers to the ON position and retry operation. If the oven still does not power up, follow the troubleshooting procedure below.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

**NOTICE**

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow. An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.



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# The Oven does not Heat

## Before you begin

- Make sure the jet plates are installed correctly. See topic *How to Install the Jet Plates*.
- Read and follow the steps described in the topic *The Chambers do not Heat—Element Control Voltage*.
- At the main disconnect switch, determine which phase connects directly to the heating element, and which phase connects to the L1 terminal of the SSR.
- Remove the service panel.



**WARNING:** Electric shock and arc flash hazard.

Use caution when measuring line voltage.

Wear Personal Protective Equipment (PPE).




**NOTE:** The chamber blower fans must operate if the blower fans do not operate. See topic *Chamber Blower Fans do not Operate*.

### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow.

An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.

Step	Action
1.	<b>Navigate</b> to the service screen.
2.	<b>Enter</b> the pass code 6702.
3.	<b>Touch</b> the check mark.
4.	<b>Scroll</b> to the chamber to be tested.
	 <b>NOTE:</b> The button to the right of the chamber number will expand and collapse the selection list. When the button is gray, the button is active. When the button is white, the button is inactive.
5.	<b>Expand</b> the selection list.
6.	<b>Read</b> the temperature sensor value.
7.	<b>Select</b> the arrow to the right of the target temperature.

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8. **Enter** a value higher than the temperature sensor value.  
**Touch** the check mark.

9. **Select** the button to the right of the heater.

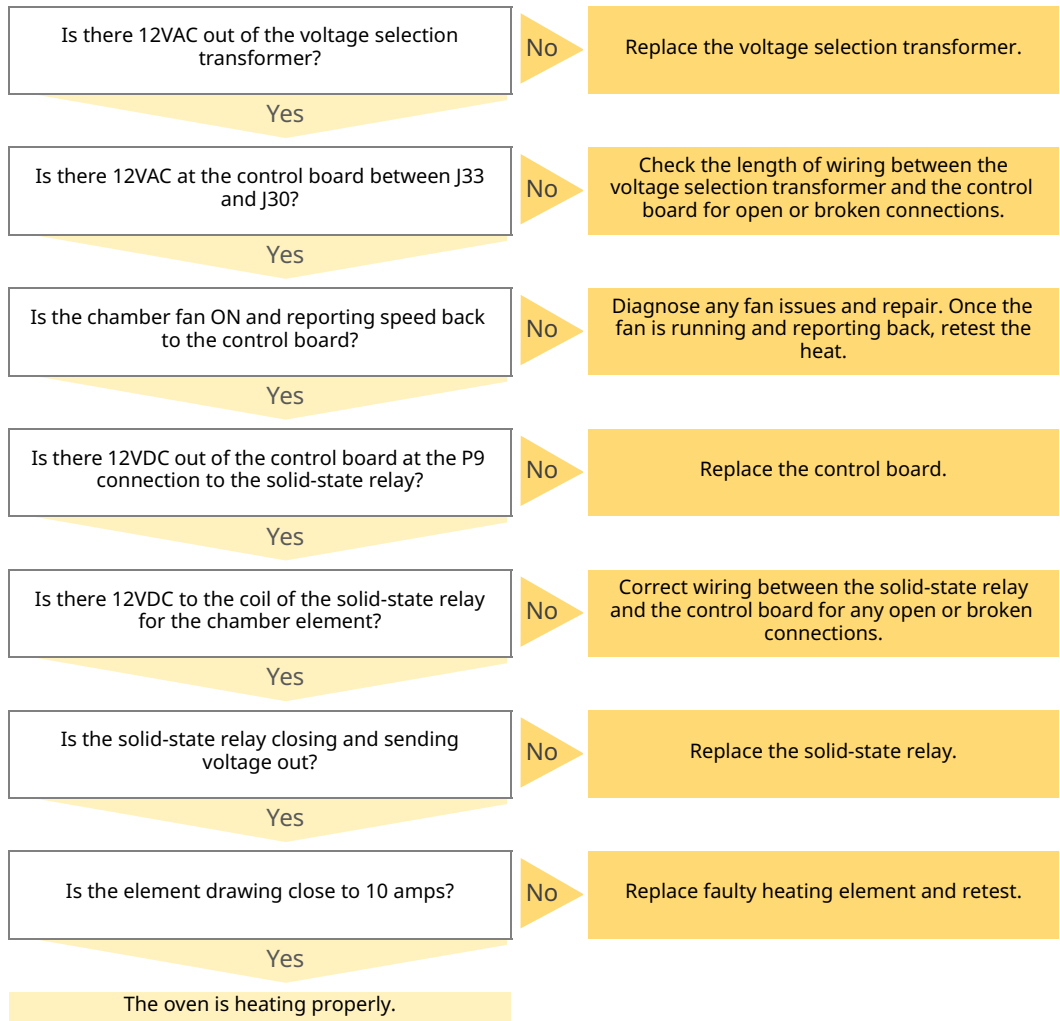


**NOTE:** The button will move to the right and turn gray. The convection fan button will also move to the right and turn gray.



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# Chamber Blower Fans do not Operate

## Before you begin



- Make sure the jet plates are installed correctly. See topic *How to Install the Jet Plates*.
- Put the oven into a heating mode.
- Remove the service panel.
- Locate the circuit breakers and reset any tripped circuit breaker as required.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

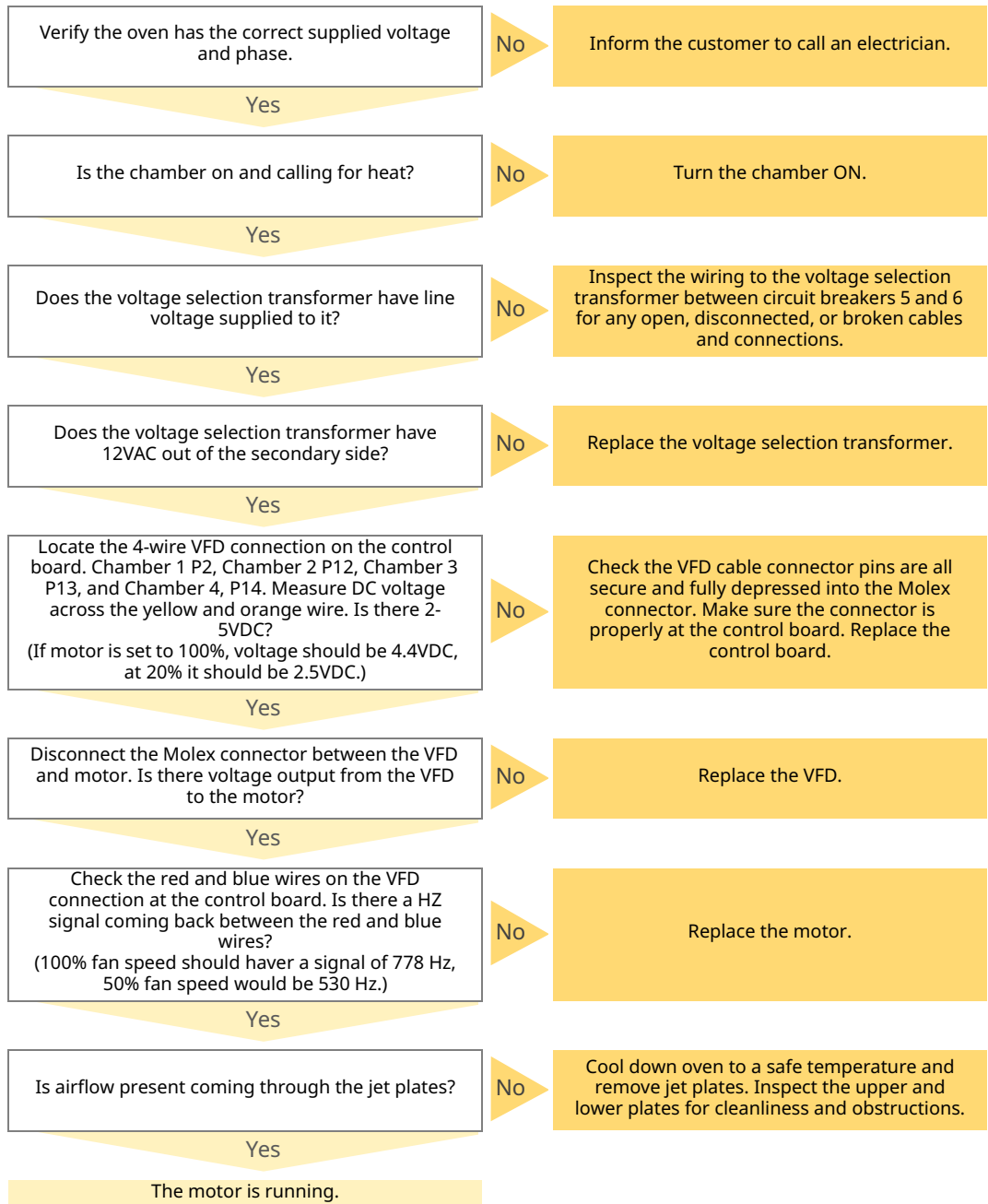
### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow.  
An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.

Step	Action
1.	<b>Navigate</b> to the service screen.
2.	<b>Enter</b> the pass code.
3.	<b>Touch</b> the check mark.
4.	<b>Scroll</b> to the chamber to be tested.  <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p> <b>NOTE:</b> The button to the right of the chamber number will expand and collapse the selection list. When the button is gray, the button is active. When the button is white, the button is inactive.</p> </div>
5.	<b>Expand</b> the selection list.
6.	<b>Touch</b> the button to the right of convection fan.  <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p> <b>NOTE:</b> The button will move to the right and turn gray.</p> </div>

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# Chamber Lights do not Illuminate

## Before you begin

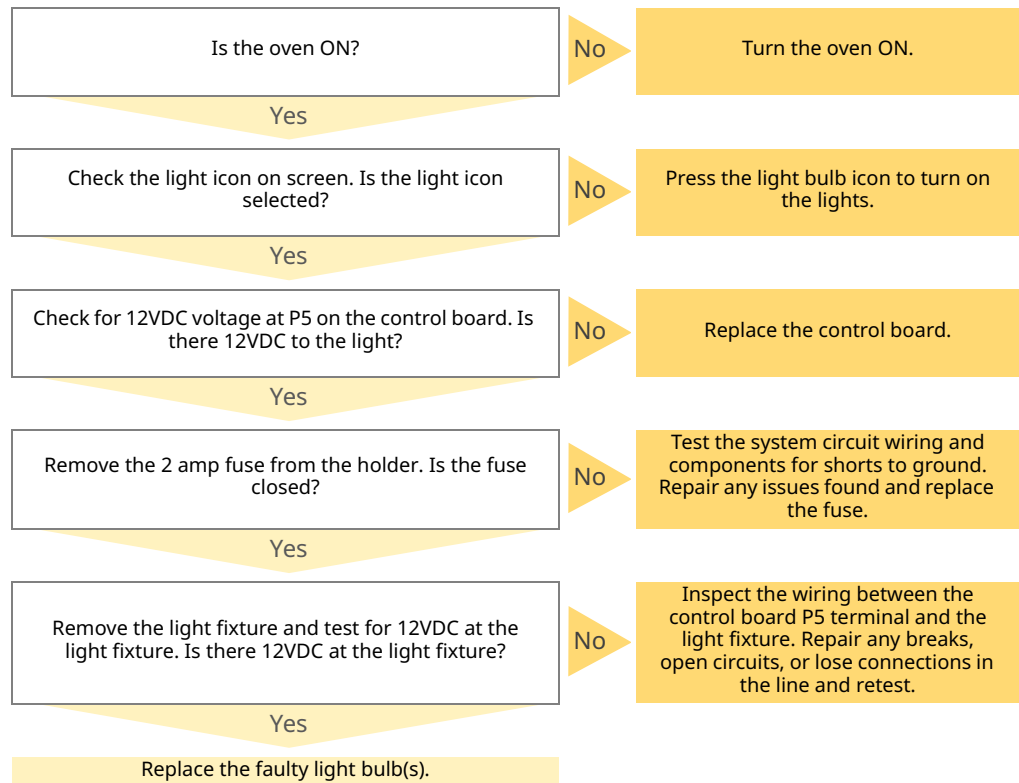
Remove the service panel.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow. An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.



# The Check Fan Indicator Light is Illuminated

**Before you begin**

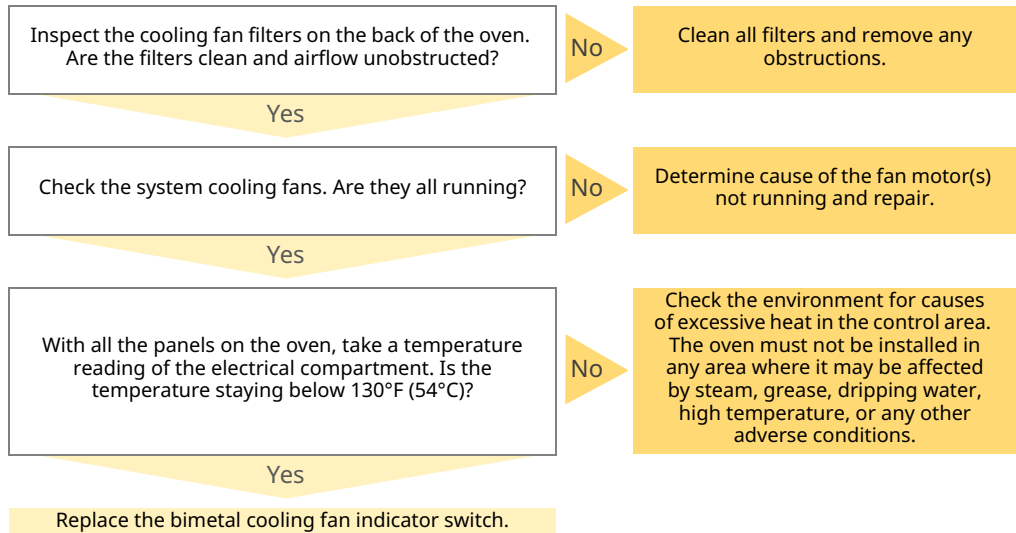
- Put the oven into a heating mode.
- Remove the service panel.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

**NOTICE**

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow.  
An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.



# Door Handle Light does not Illuminate

## Before you begin

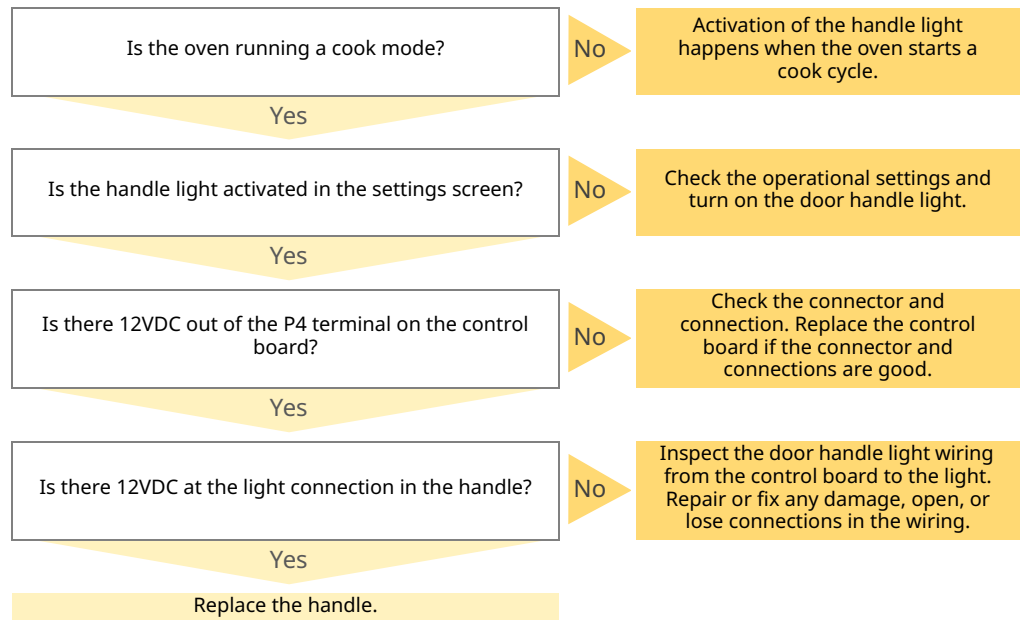
Remove the service panel.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow. An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.



# Axial Cooling Fan(s) are not Running

**Before you begin**

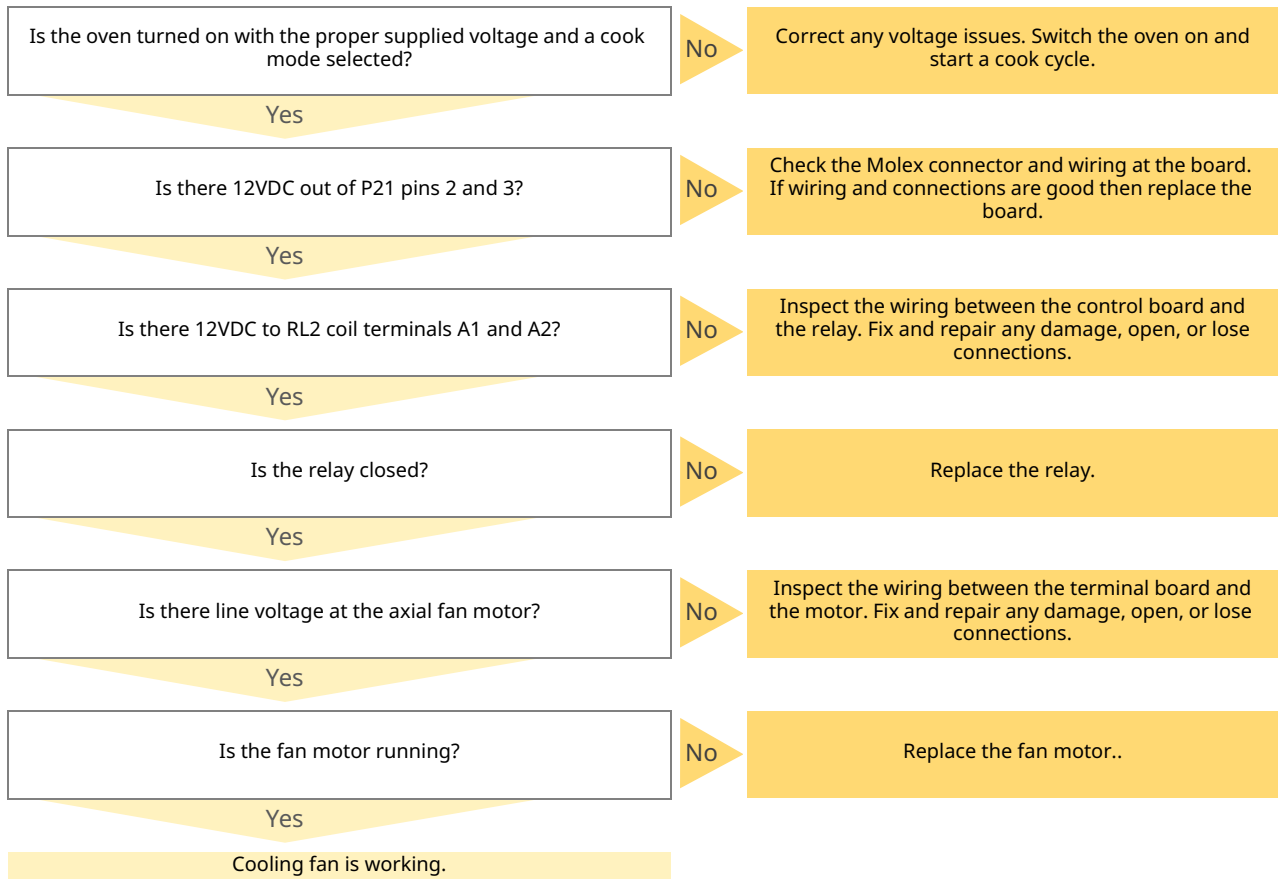
- Put the oven into a heating mode.
- Remove the top service panel.



**WARNING:** Electric shock and arc flash hazard.  
Use caution when measuring line voltage.  
Wear Personal Protective Equipment (PPE).

**NOTICE**

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow.  
An auxiliary fan must be used if the oven will be operated in a cooking mode for an extended period of time with the top panel removed.



# How to Test the Convection Fan Motors

## Before you begin

The oven must be connected to electric power.

## Procedure

To test the convection fan motors, do the following.

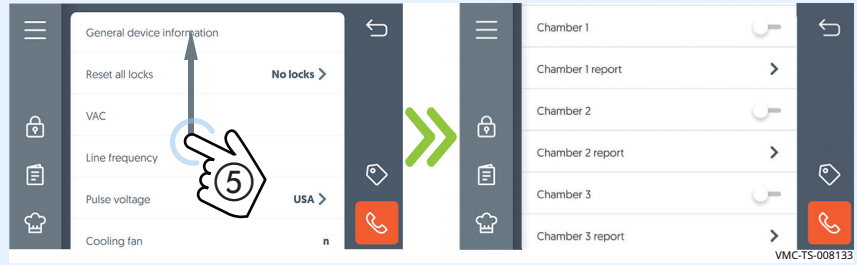
**NOTICE** Do not turn on the heaters during this test. Damage to the oven may occur.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The user menu screen displays.</p>  <p>VMC-TS-006259</p>
2.	<p><b>Touch</b> the service icon ②. The enter pass code screen displays.</p>  <p>VMC-TS-008129</p>
3.	<p><b>Enter</b> the pass code 6702 ③.</p> <p><b>Touch</b> the check mark ④. The general device screen displays.</p>  <p>VMC-TS-008131</p>

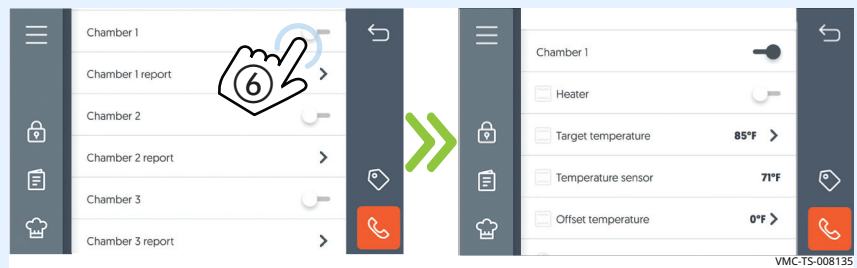
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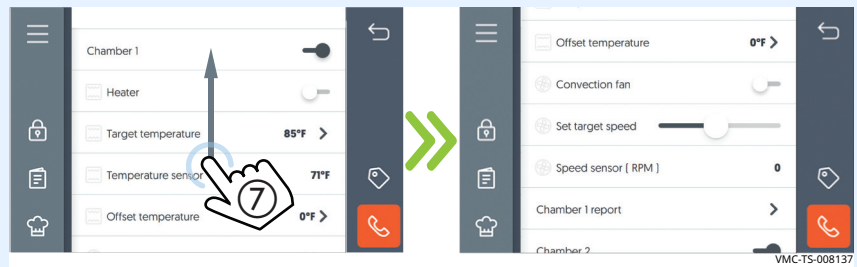
4. **Scroll** ⑤ to the chamber selection buttons.



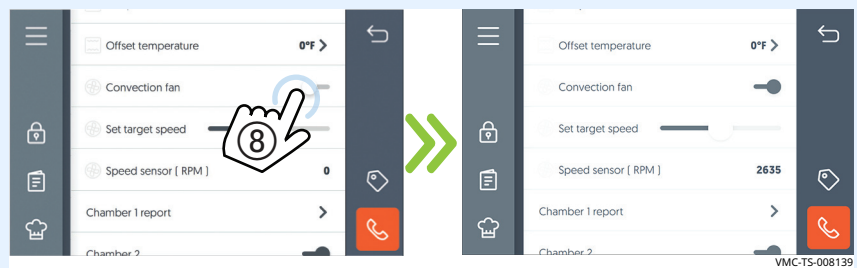
5. **Touch** the button ⑥ of the chamber to be tested. The chamber options are displayed.



6. **Scroll** ⑦ until the convection fan button is displayed.



7. **Touch** the convection fan button ⑧. The speed sensor will display an RPM value.

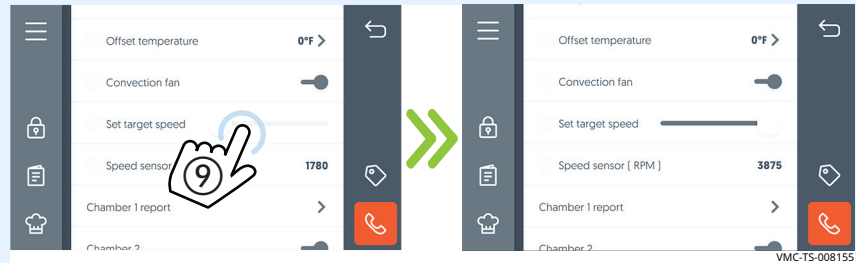


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8. **Move** the Set target speed button (9) to change the motor RPM.  
If the blower speed changes, the system is working.

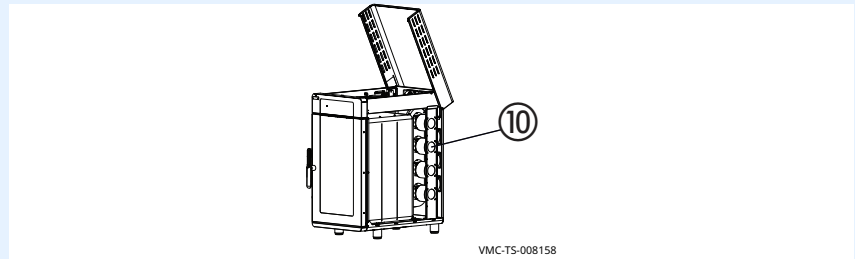


9. **Remove** the right side panel from the oven.

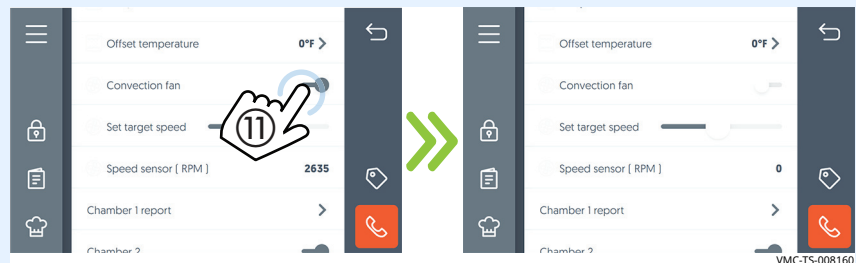
**Touch** the convection fan motor (10) and feel for vibration. See topic *Chamber Blower Fans Inoperable* if the blower motor does not turn on.



**WARNING:** Electric shock hazard. Wear PPE and use NEC best practices when working near components with live voltage.



10. **Touch** the convection fan button (11) to stop the Convection fan motor.



## Result

The convection fan motor has now been tested.

# How to Test the Cooling Fans

## Before you begin

- The oven must be connected to electric power.
- Make sure the top cover and side panels are installed when conducting this test.

## Procedure

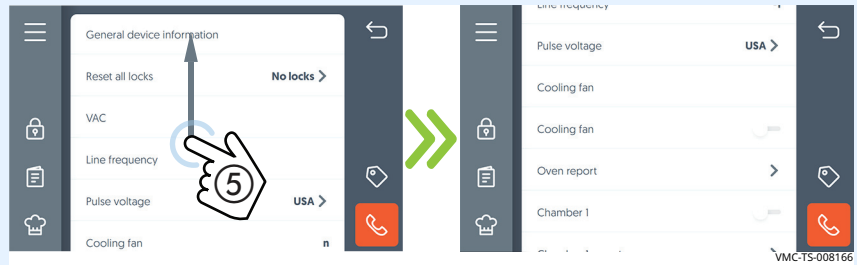
To test the cooling fans, do the following.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The User Menu screen displays.</p>  <p style="text-align: right;">VMC-TS-006259</p>
2.	<p><b>Touch</b> the Service icon ②. The Enter Pass Code screen displays.</p>  <p style="text-align: right;">VMC-TS-008129</p>
3.	<p><b>Enter</b> the pass code 6702 ③.</p> <p><b>Touch</b> the check mark ④. The general device information screen displays.</p>  <p style="text-align: right;">VMC-TS-008131</p>

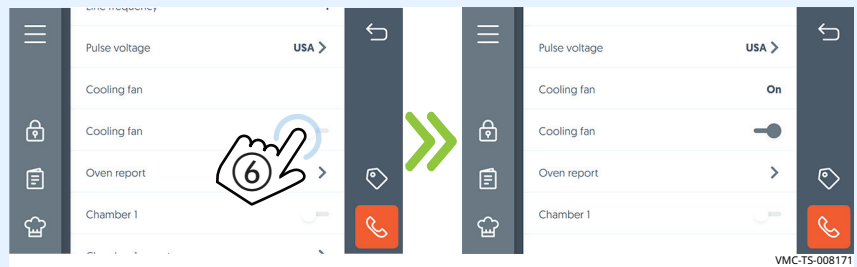
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4. **Scroll** ⑤ to the cooling fan button displays.



5. **Touch** the cooling fan button ⑥. The cooling fans turn on.  
See topic *The Cooling Fans do not Operate*, if the fans do not operate.  
**Touch** the cooling fan button to turn the cooling fans off.



## Result

The cooling fans have now been tested.

# How to Test the Heaters

## Before you begin

- The oven must be connected to electric power.
- Remove the right side panel.

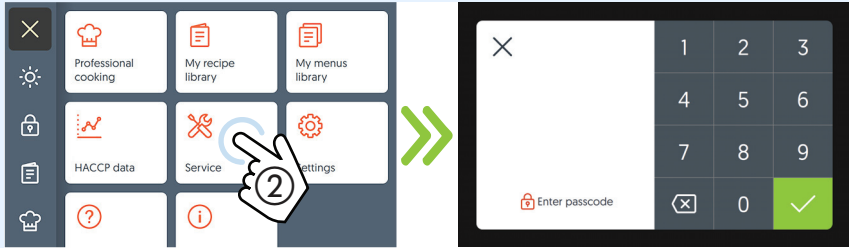
## Procedure

To test the heaters, do the following.

### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow.

An auxiliary air fan must be used if the oven is to be operated in a cooking mode for an extended period of time with the top panel removed.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The user menu screen displays.</p>  <p style="text-align: right;">VMC-TS-006259</p>
2.	<p><b>Touch</b> the service icon ②. The enter pass code screen displays.</p>  <p style="text-align: right;">VMC-TS-008129</p>

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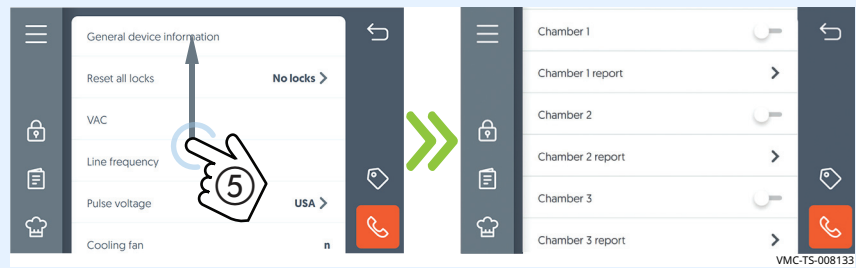
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3. **Enter** the pass code 6702 ③.

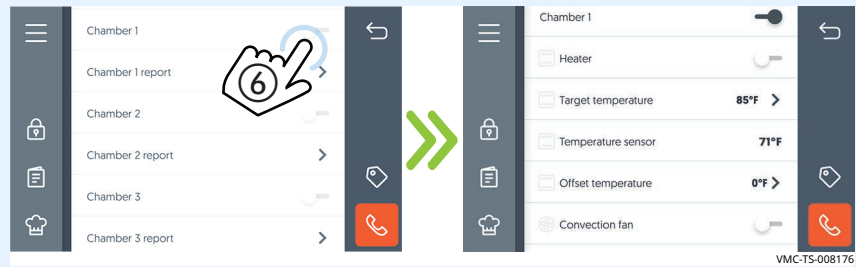
**Touch** the check mark ④. The general device information screen displays.



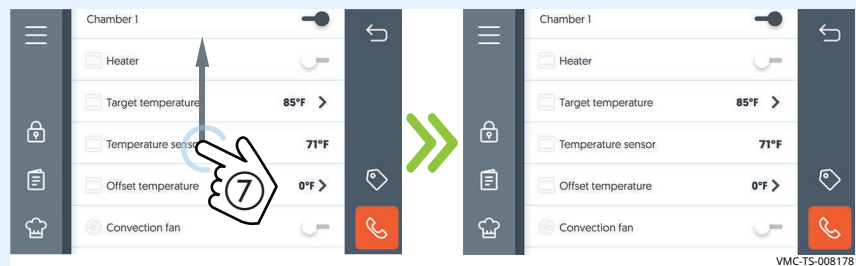
4. **Scroll** ⑤ to the chamber selection buttons.



5. **Touch** the button ⑥ of the chamber to be tested. The chamber options are displayed.



6. **Scroll** ⑦ until the heater button and the convection fan button are displayed.



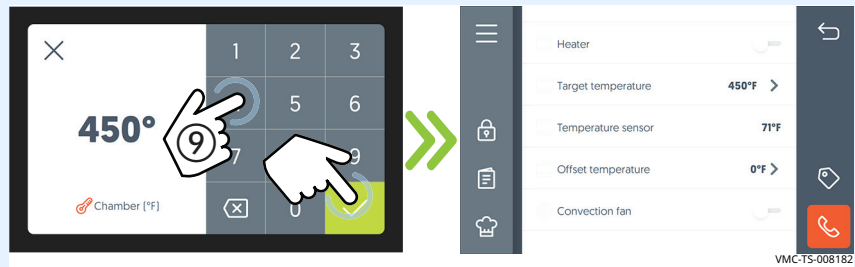
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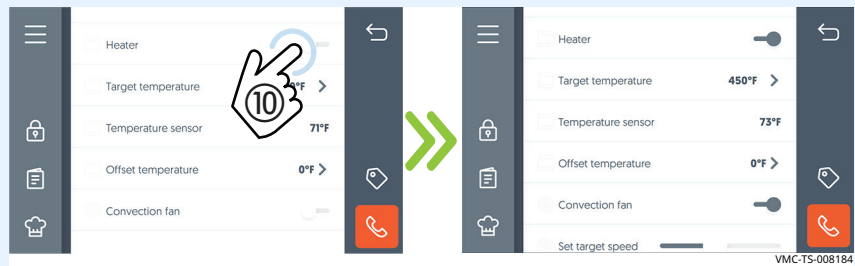
7. **Touch** the target temperature setting ⑧. The select temperature screen displays.



8. **Select** a temperature higher than the current chamber temperature ⑨. Touch the check mark, the target temperature is displayed.



9. **Touch** the heater button ⑩. The heater and convection fan buttons will turn gray. The chamber's heater is on.



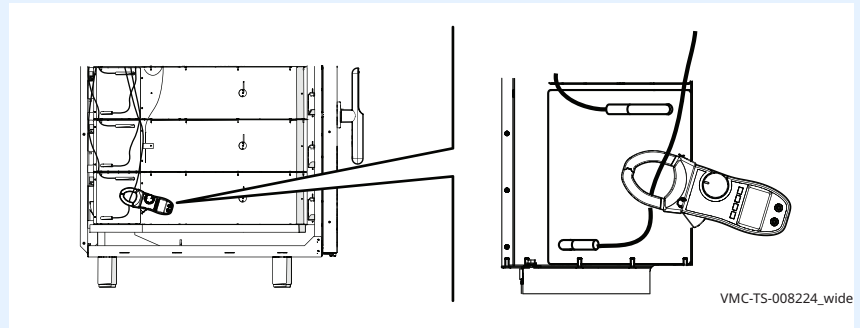
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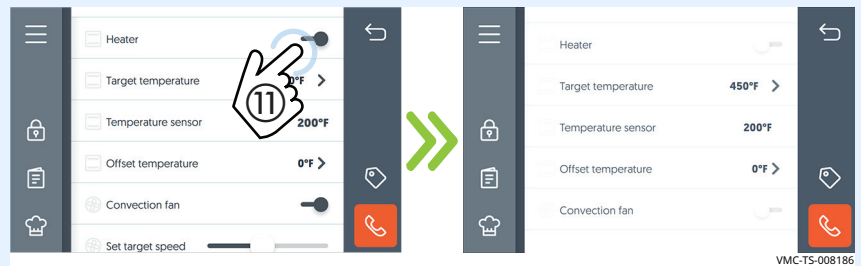
10. **Measure** the amp draw while the heater is on. The amperage draw of a functioning heater element is 10-15 amps.



**WARNING:** Electric shock hazard. Wear PPE and use best practices when measuring live voltage.



11. **Touch** the heater button ⑪ to stop the heater. The heater and convection fan buttons will turn white.



12. **Cool** the oven.

13. **Re-install** the side panel.

## Result

The heaters have now been tested.

# How to Calibrate a Chamber Thermocouple

## Before you begin

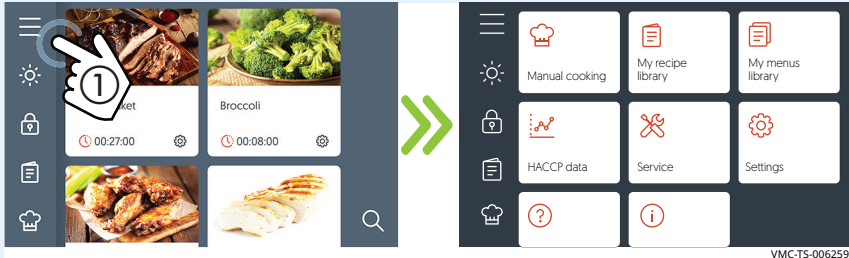
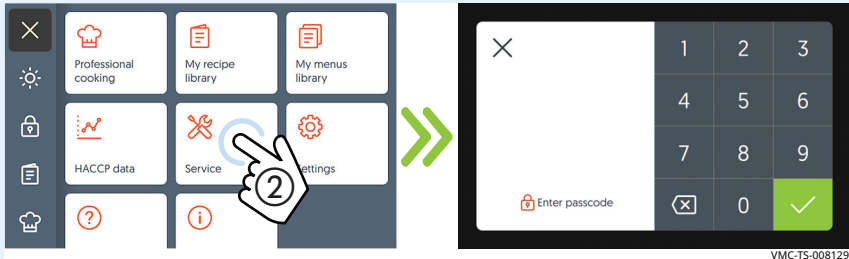
- The oven must be connected to electric power.
- Make sure you have a multimeter with a thermocouple attachment.
- Make sure the jet plates are installed.
- You will need to know the service pass code.

## Procedure

To calibrate a chamber thermocouple, do the following.

### NOTICE

Do not operate the oven in a cooking mode for an extended period of time with the top panel removed. Damage to the electronics may occur without adequate cooling airflow. An auxiliary air fan must be used if the oven is to be operated in a cooking mode for an extended period of time with the top panel removed.

Step	Action
1.	<p><b>Touch</b> the menu icon ①. The user menu screen displays.</p>  <p>VMC-TS-006259</p>
2.	<p><b>Touch</b> the service icon ②. The enter pass code screen displays.</p>  <p>VMC-TS-008129</p>

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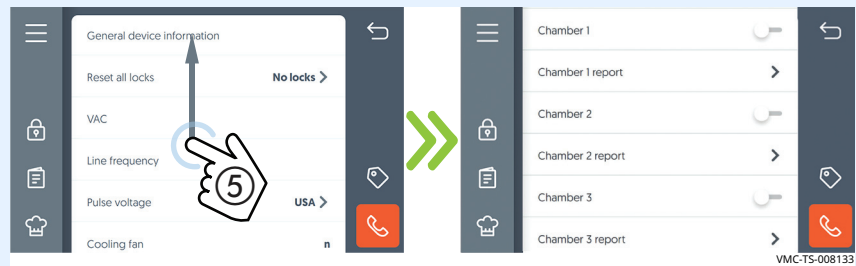
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3. **Enter** the pass code 6702 ③.

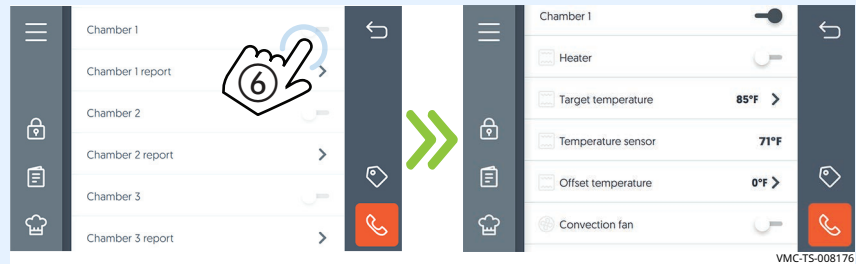
**Touch** the check mark ④. The general device information screen displays.



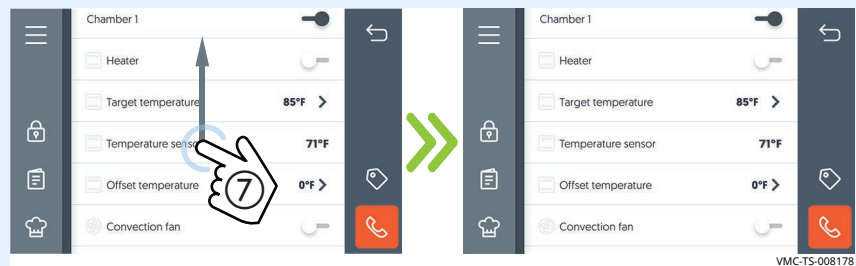
4. **Scroll** ⑤ to the chamber selection buttons.



5. **Touch** the button ⑥ of the chamber to be tested. The chamber options are displayed.



6. **Scroll** ⑦ until the heater button and the convection fan button are displayed.



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7. **Touch** the target temperature setting ⑧. The select temperature screen displays.

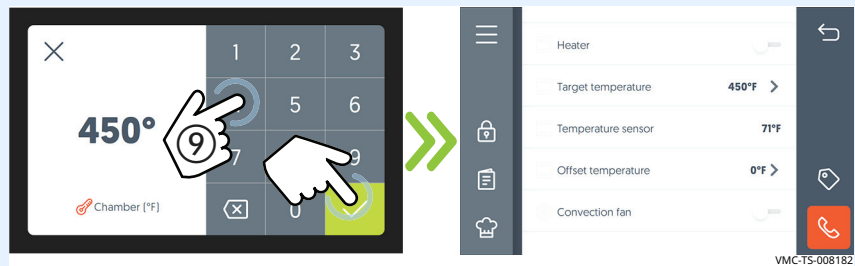


## Enter chamber temperature

8. **Enter** a temperature higher than the current chamber temperature ⑨. **Touch** the check mark. The target temperature is displayed.

**Repeat** for all chambers.

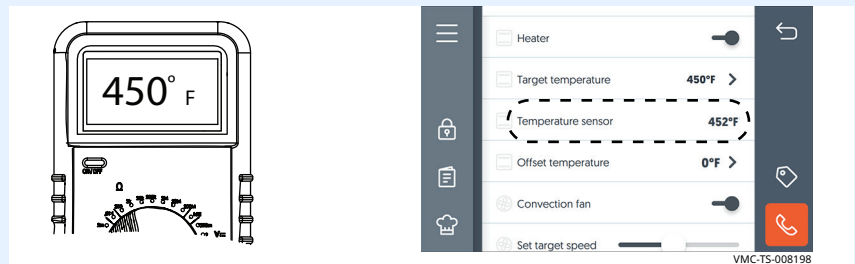
**Set** all chambers to the same temperature.



## Insert the thermocouple

9. **Insert** the thermocouple from the multimeter into the heated oven. Allow the multimeter to stabilize.

**Compare** the reading from the multimeter's thermocouple with the temperature sensor reading displayed on the screen.

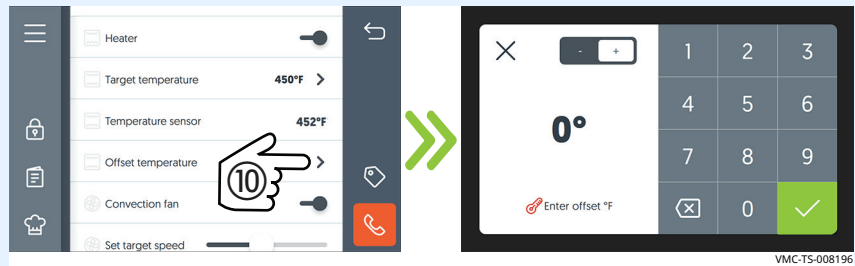


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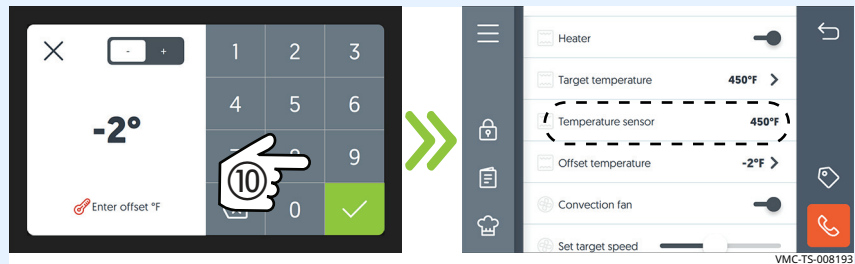
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## Calibrate the offset

10. **Calibrate** the offset number. Subtract the smaller value from the larger value. This is the offset. If the value measured by the multimeter was the larger value, the offset will be positive "+". If the value measured by the multimeter was the smaller value, the offset will be negative "-".
11. **Enter** the offset. To do so:  
**Touch** the ">" icon **10** for the chamber offset temperature that needs to be calibrated. The Enter offset screen displays.



**Enter** the value calibrated in step 10 and press the check mark. The multimeter temperature and the temperature sensor should show the same reading.



12. **Repeat** the procedure for the remaining chambers.
13. **Cool** the oven.

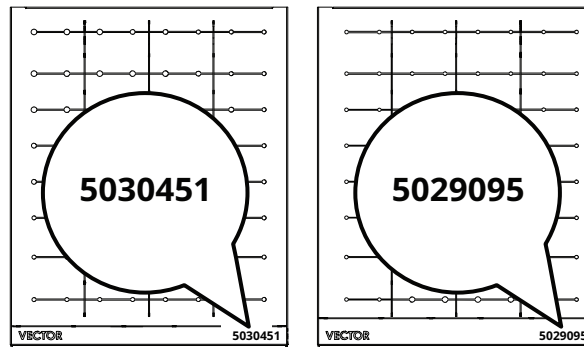
## Result

The chamber thermocouples have now been calibrated.

# How to Install the Jet Plates (VMC-H2HW, VMC-H3HW)

## Background

Each jet plate assembly consists of one inner panel and one outer panel. There are two unique jet plate assemblies used on the Vector Wide oven. The difference is in the outer panel used. One type (5029095) is used on the lower section of each chamber. The other type (5030451) is used on the upper section of each chamber. The inner panels used are the same for both types of assemblies.

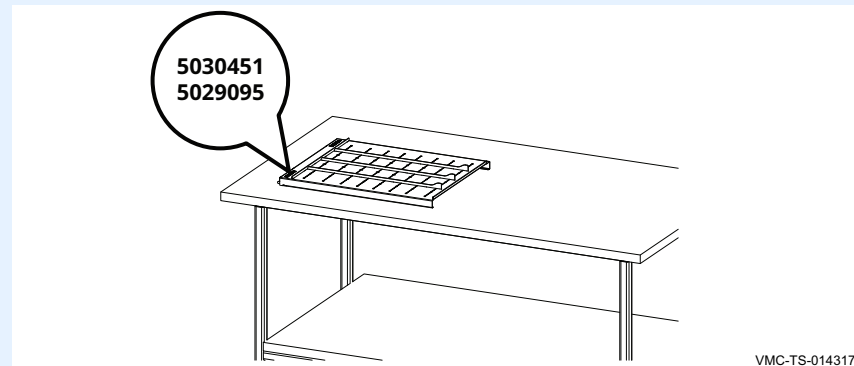


VMC-TS-014314

## Procedure

To install the jet plates, do the following.

Step	Action
1.	Each outer panel has the part number etched into the right corner. <b>Locate</b> the part number on all outer panels. <b>Place</b> an outer panel on a table with the part number facing up.

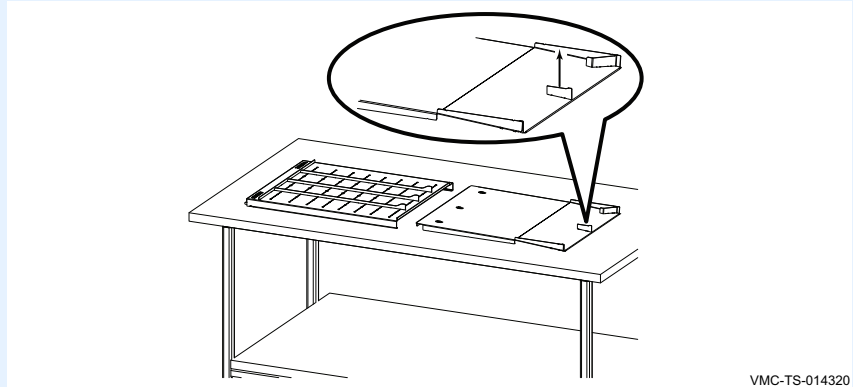


VMC-TS-014317

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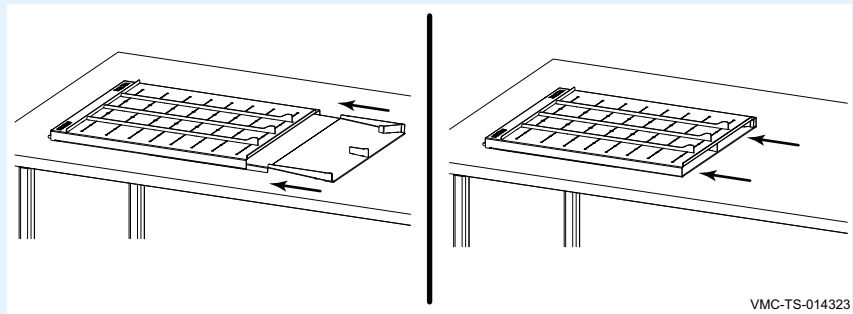
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2. **Place** an inner panel on the table with the air deflector up.

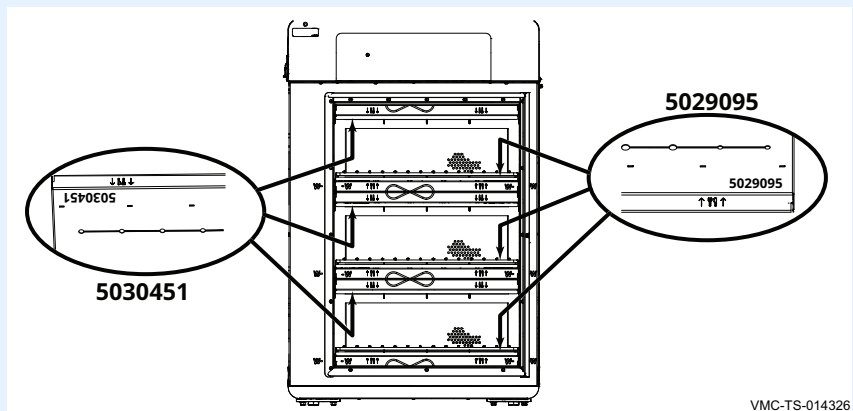


3. **Insert** the inner panel into the outer panel. **Push** the inner panel into the outer panel until it is fully inserted.

**Assemble** all jet plates in a similar fashion.



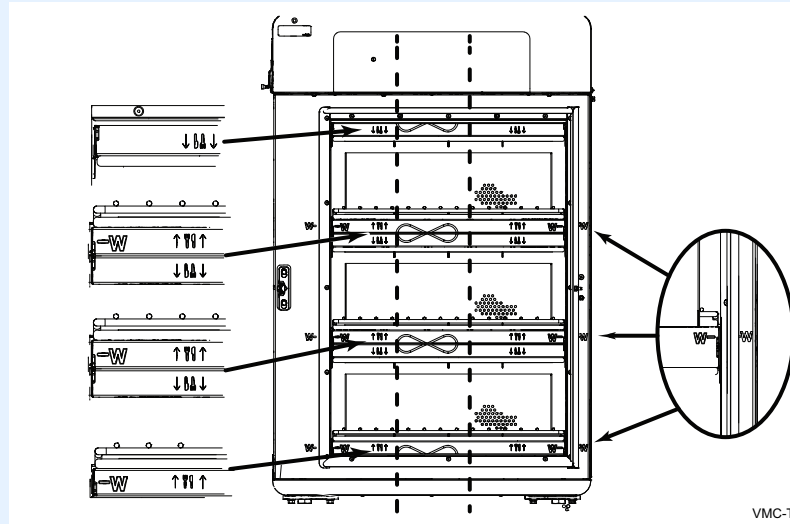
4. **Install** jet plates 5029095 in the lower section of each chamber with the part number facing up. **Install** jet plates 5030451 in the upper section of each chamber with the part number facing down.



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5. **Follow** the steps below and inspect the installation of the jet plates.
  - Make sure the ∞ symbols are aligned.
  - Make sure the fork and knife arrows point to the product in each chamber.
  - On later production jet plates which include a “W” etched into them, make sure the “W” etched aligns with the “W” etched in the door frame.

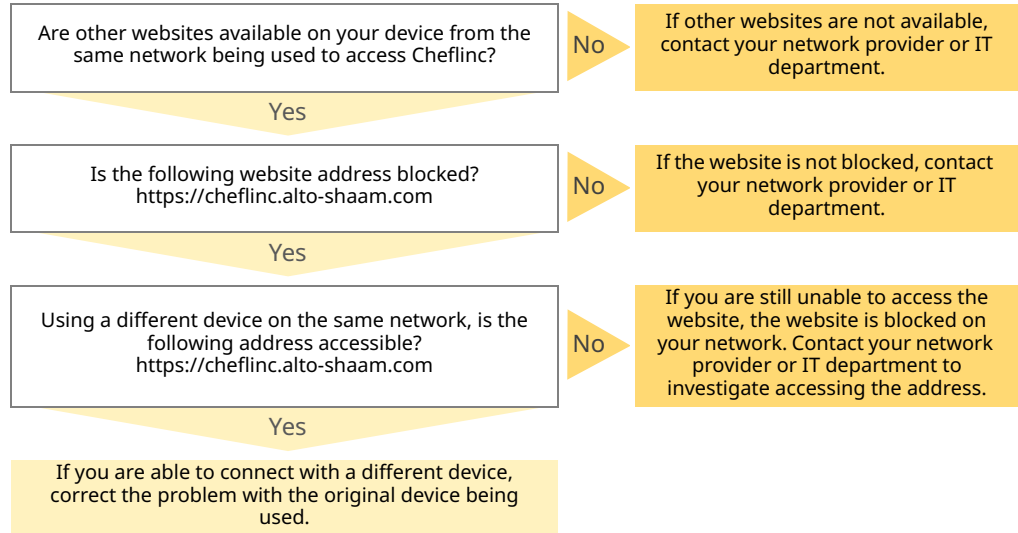


VMC-TS-014329

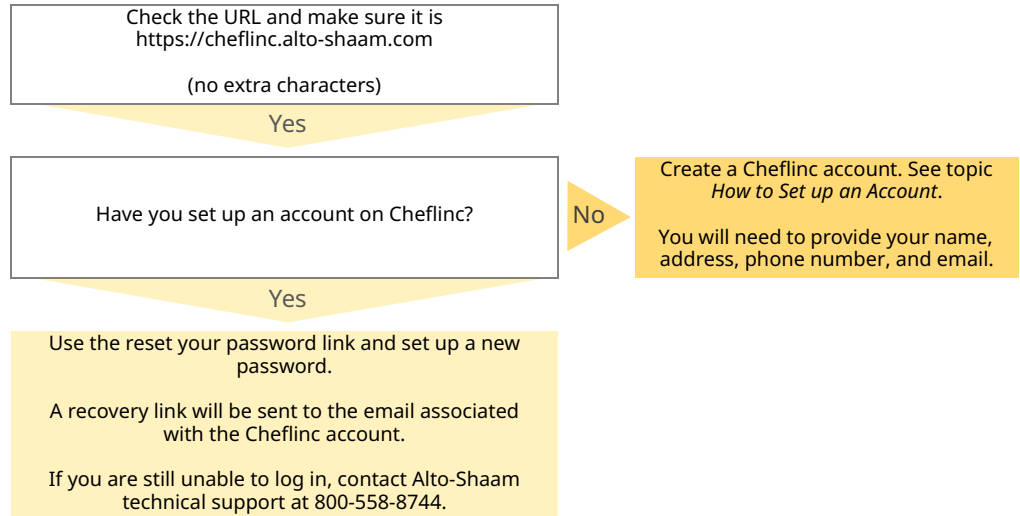
## Result

The jet plates are now installed.

# Cheflinc.alto-shaam.com is Not Available on Your Device



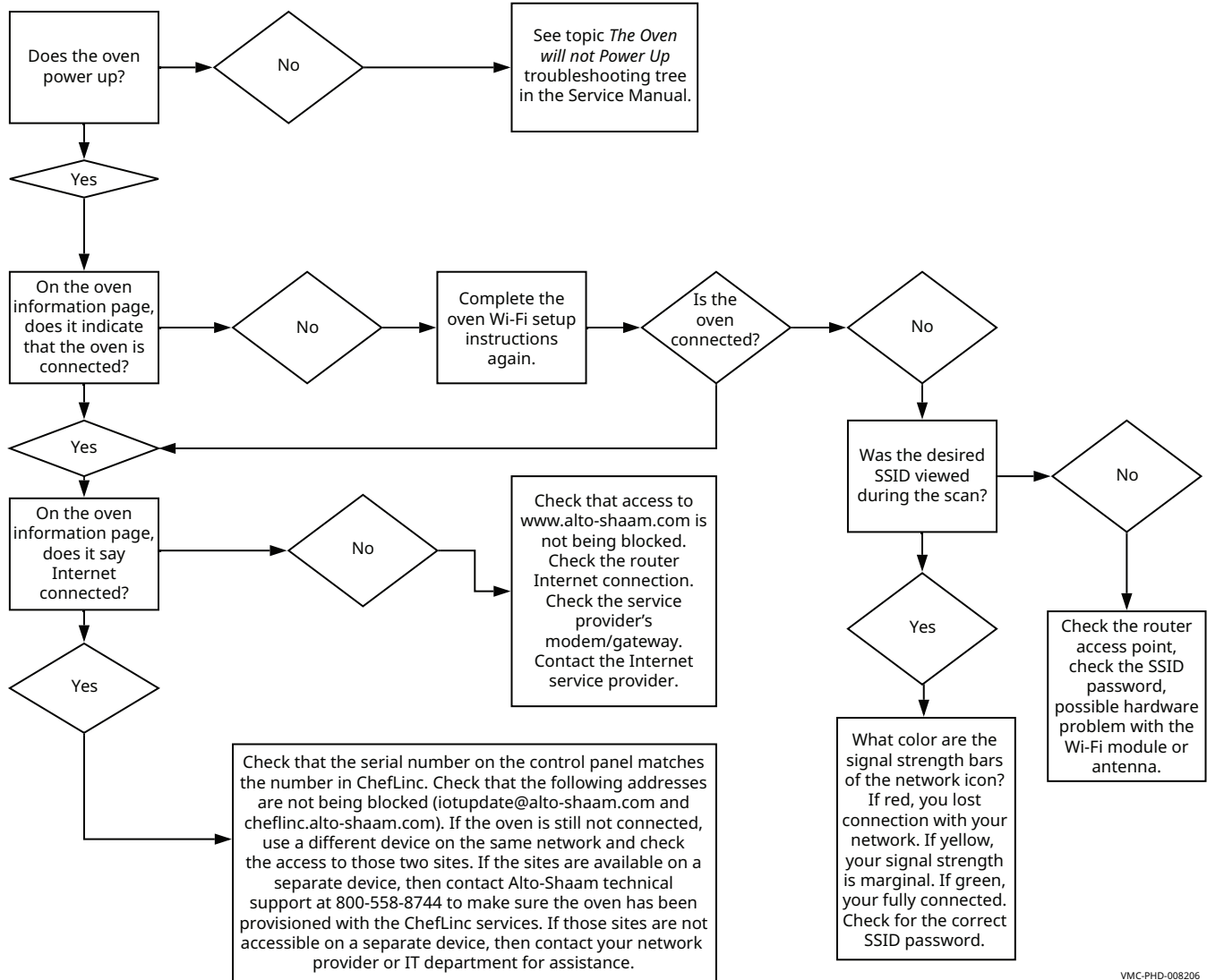
# Cannot Connect to cheflinc.alto-shaam.com





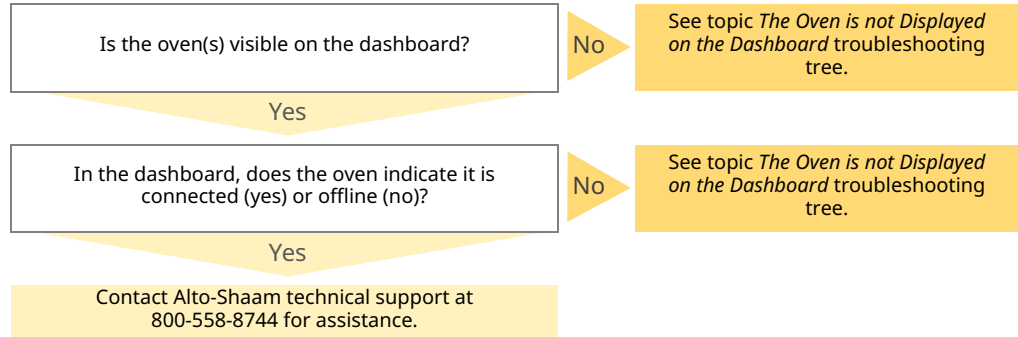
# The Oven is not Displayed on the Dashboard

Prerequisite: The operator is on a device connected to the Internet and is able to login to [cheflinc.alto-shaam.com](http://cheflinc.alto-shaam.com).



VMC-PHD-008206

# Unable to Assign Recipes from the Dashboard to Ovens in the Field



# Removing and Installing the Blower Motor

## Before you begin

- The oven must be disconnected from electric power.
- Have a replacement blower motor.

## Procedure

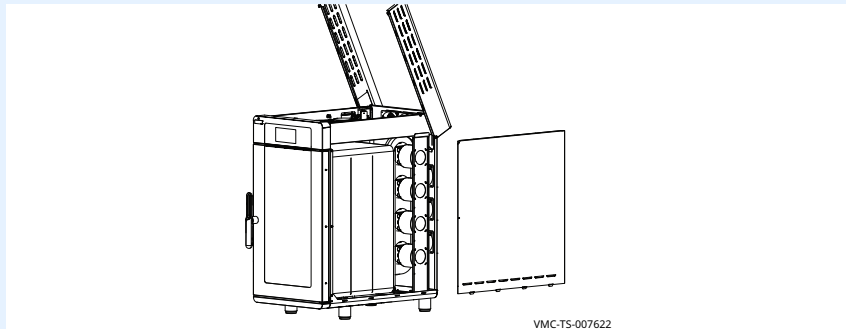
To remove and install the blower motor, do the following.



**WARNING:** Electric shock hazard.

Disconnect the appliance from electric power before servicing the appliance.

Step	Action
1.	<b>Remove</b> the top and right side service panels.



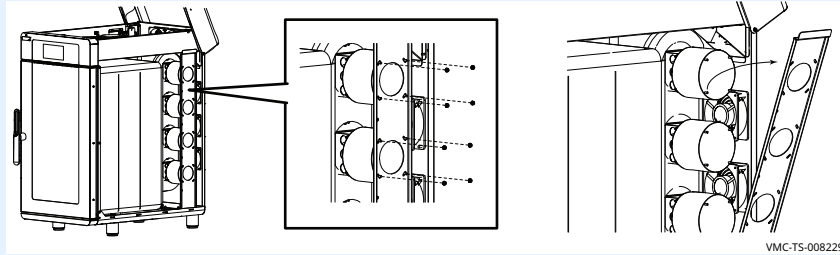
- |    |  |
|----|--|
| 2. | <b>Disconnect</b> the motor wire connectors. |
|----|--|



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3. **Remove** the mounting screws and remove the motor support plate.

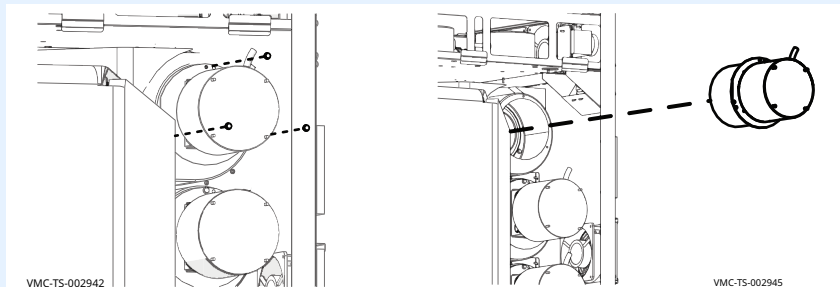


VMC-TS-008229

4. **Cut** the insulation around the motor.

**Remove** the three mounting screws and remove the motor and blower wheel from the housing.

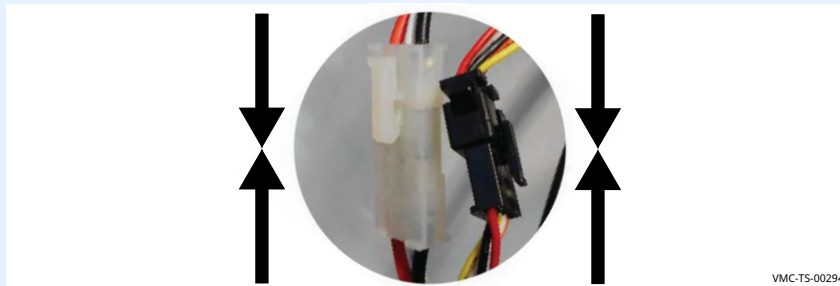
**Install** the new motor with the three mounting screws. Tape all the seams in the insulation.



VMC-TS-002942

VMC-TS-002945

5. **Re-connect** the motor wire connectors.



VMC-TS-002948

6. **Re-install** the motor support plate.

**Re-install** the top and right side service panels.

**Connect** electric power to the appliance and test all functions.

## Result

The blower motor has been replaced.

# Removing and Installing a Heater Element

## Before you begin

- The oven must be disconnected from electric power.
- Have a replacement heater element.

## Procedure

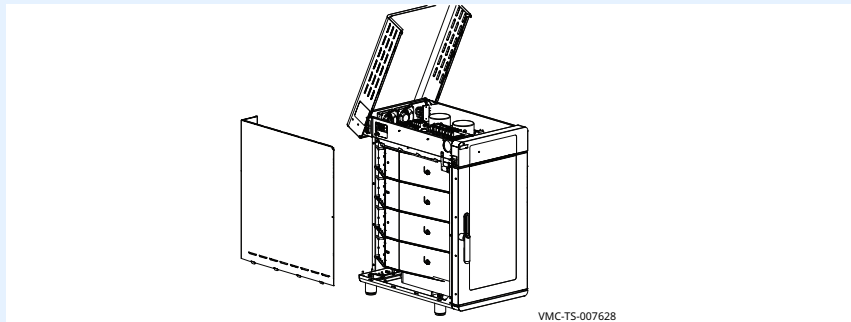
To remove and install a heater element, do the following.



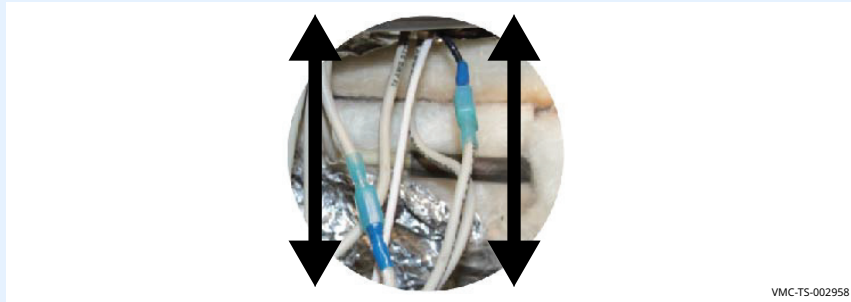
**WARNING:** Electric shock hazard.

Disconnect the appliance from electric power before servicing the appliance.

Step	Action
1.	<b>Open</b> the top and remove the left side service panel.
	
2.	<b>Disconnect</b> the heater element wires.
	



VMC-TS-007628

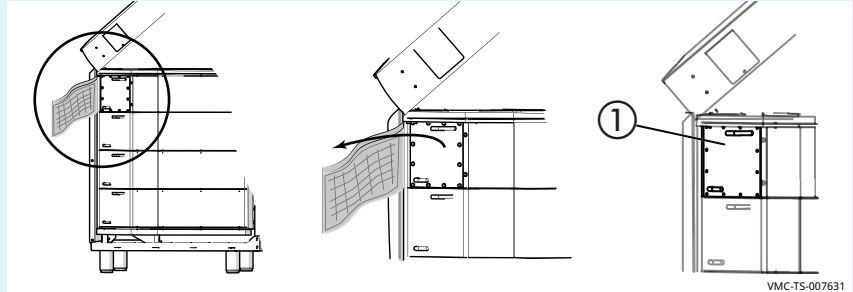


VMC-TS-002958

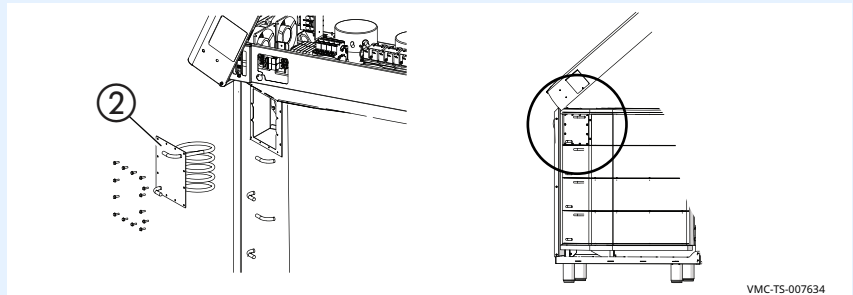
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3. **Cut** the insulation around the heater element panel.  
**Move** the insulation away from the heater element panel.  
**Remove** the heater element panel ①.

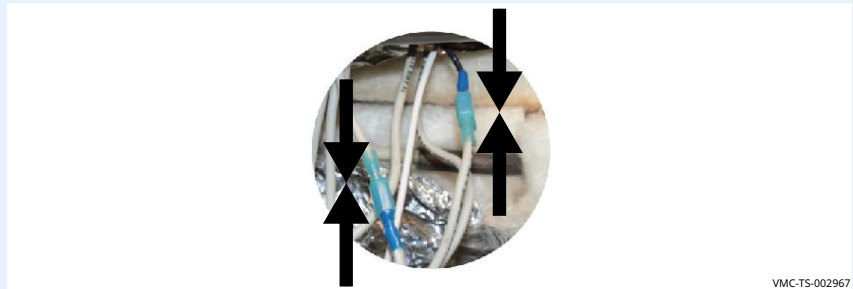


4. **Remove** the heater element ② from the oven.  
**Install** the new heater element into the oven.



5. **Re-install** the heater element panel.  
**Re-install** the insulation over the heater element panel. Tape all the seams of the insulation.

6. **Re-connect** the heater element wires.

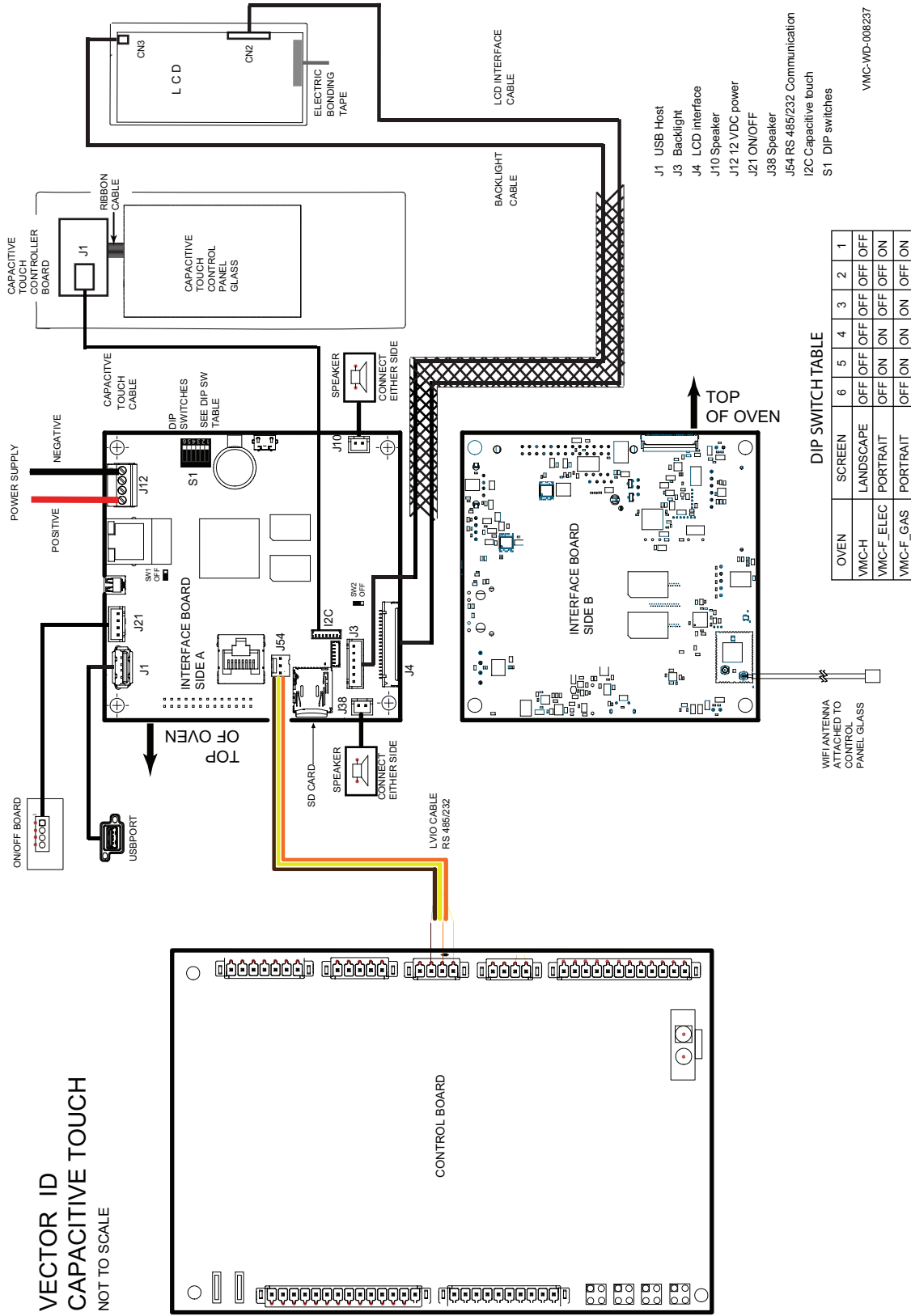


7. **Re-install** the top and left side service panels.  
**Connect** electric power to the appliance and test all functions.

## Result

The heater element has now been replaced.

VECTOR ID  
CAPACITIVE TOUCH  
NOT TO SCALE



- J1 USB Host
- J3 Backlight
- J4 LCD Interface
- J10 Speaker
- J12 12 VDC power
- J21 ON/OFF
- J38 Speaker
- J54 RS 485/232 Communication
- I2C Capacitive touch
- S1 DIP switches

DIP SWITCH TABLE

OVEN	SCREEN	6	5	4	3	2	1
VMC-H	LANDSCAPE	OFF	OFF	OFF	OFF	OFF	OFF
VMC-F_ELEC	PORTRAIT	OFF	ON	ON	OFF	OFF	ON
VMC-F_GAS	PORTRAIT	OFF	ON	ON	ON	OFF	ON

WIFI ANTENNA ATTACHED TO CONTROL PANEL GLASS

# H2HW 208-240V 1PH

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DELUXE CONTROL	PG 05
LEGEND	PG 06



REV.	DATE	NAME	ECO	CHANGES
2	7/12/2021	grantp	182363	Updated to New Standard, CHG: Wire Colors (204/205/242), Position (205/242)
1	3/23/2021	grantp	182115	Added Wire/Cutsheet Ref #s, Updated to/from labels and Component Markings
0	3/9/2021	grantp	731156	NEW

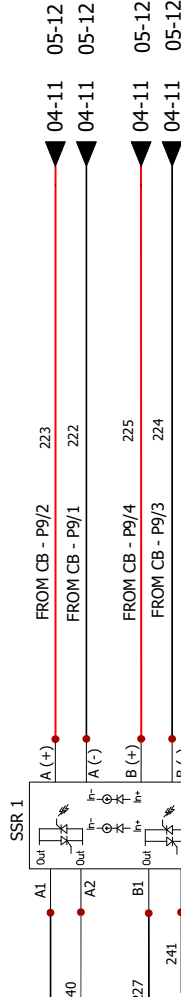
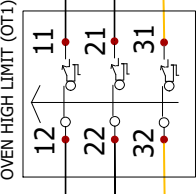
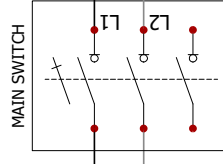
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MAIN POWER

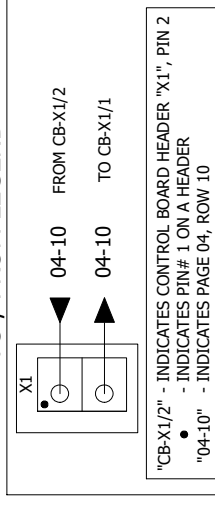
TERMINAL BLOCKS

12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

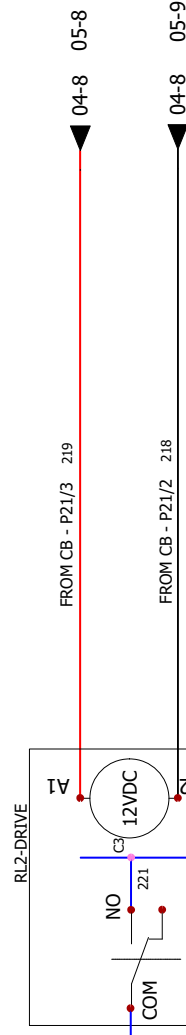


- LEGEND
- CB - CONTROL BOARD
  - C/B - CIRCUIT BREAKER
  - TB - TERMINAL BLOCK
  - OT - OVEN HIGH LIMIT
  - PS - DC POWER SUPPLY
  - SSR - SOLID STATE RELAY
  - TB - TERMINAL BLOCK

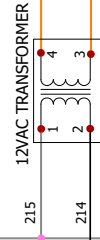
TO / FROM LEGEND



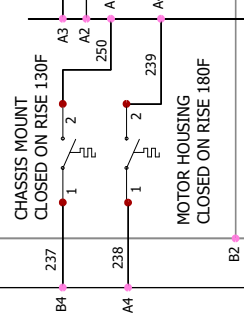
TO CB - P3/3 228 → 04-6 05-6  
 TO CB - P3/4 229 → 04-6 05-6



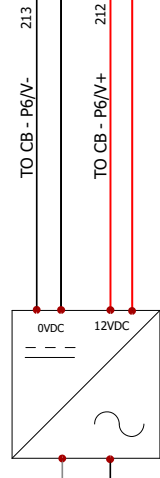
FROM CB - P21/3 219 → 04-8 05-8  
 FROM CB - P21/2 218 → 04-8 05-9



TO CB - J33 217 → 04-10 05-10  
 TO CB - J30 216 → 04-10 05-10



TO CB - P3/7 233 → 04-6 05-7  
 TO CB - P3/8 234 → 04-7 05-7



TO CB - P6/V- 213 → 04-3 05-3  
 TO ON/OFF P1/2 05-12 TO IB - J12/V- → 04-3 05-3  
 TO CB - P6/V+ 212 → 04-3 05-3  
 TO ON/OFF P1 05-12 TO IB - J12/V+ → 04-3 05-3

L1 L2 GND

TB1-L1  
TB2-L2

TB5-L1  
TB4-L2

TB9  
TB6-L2

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MAIN & BRANCH CIRCUIT

77763

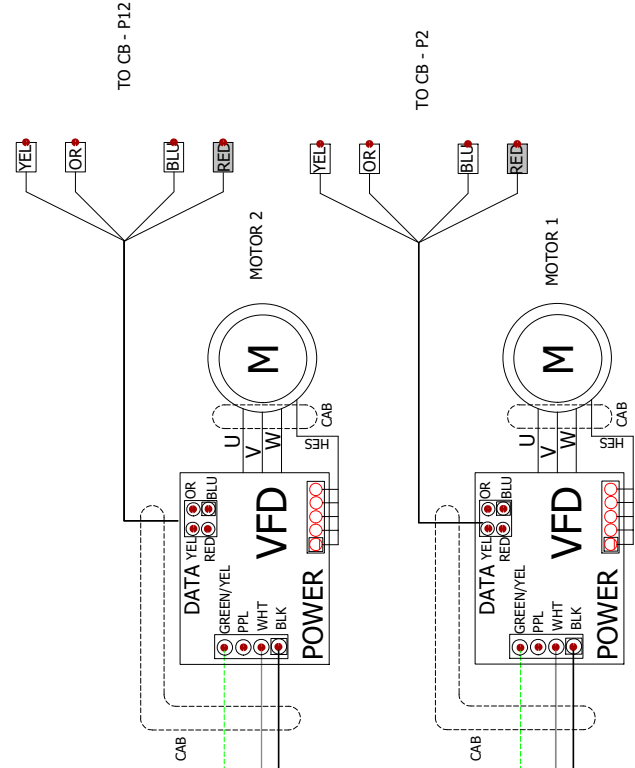
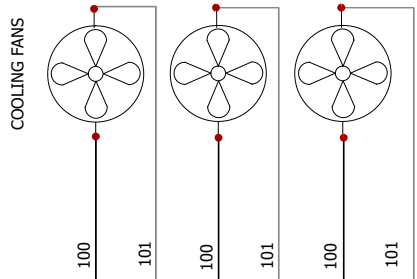
REFERENCE CUTSHEETS: 5031362, 5032492

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TERMINAL BLOCKS



TB5-L1 TB6-L2 TB7-GND

LEGEND  
 CB - CONTROL BOARD  
 TB - TERMINAL BLOCK  
 VFD - VARIABLE FREQUENCY DRIVE

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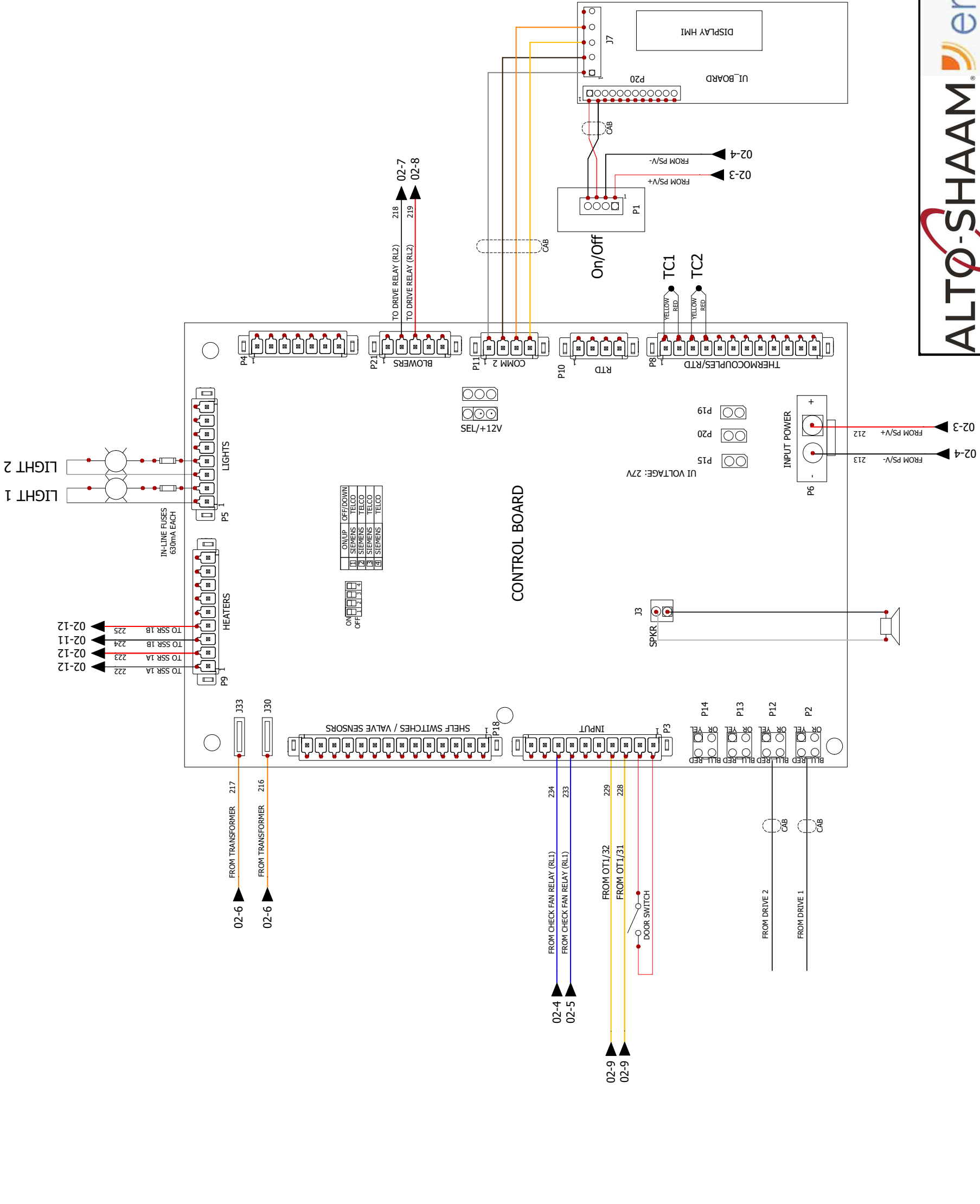
**DRIVE, MOTOR, COOLING FANS**

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REVISION 2  
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LEGEND

CB	- CONTROL BOARD
OT	- HIGH LIMIT
PS	- DC POWER SUPPLY
SSR	- SOLID STATE RELAY
TC	- THERMOCOUPLE



ON/UP	OFF/DOWN
1   SIEMENS	TELCO
2   SIEMENS	TELCO
3   SIEMENS	TELCO
4   SIEMENS	TELCO

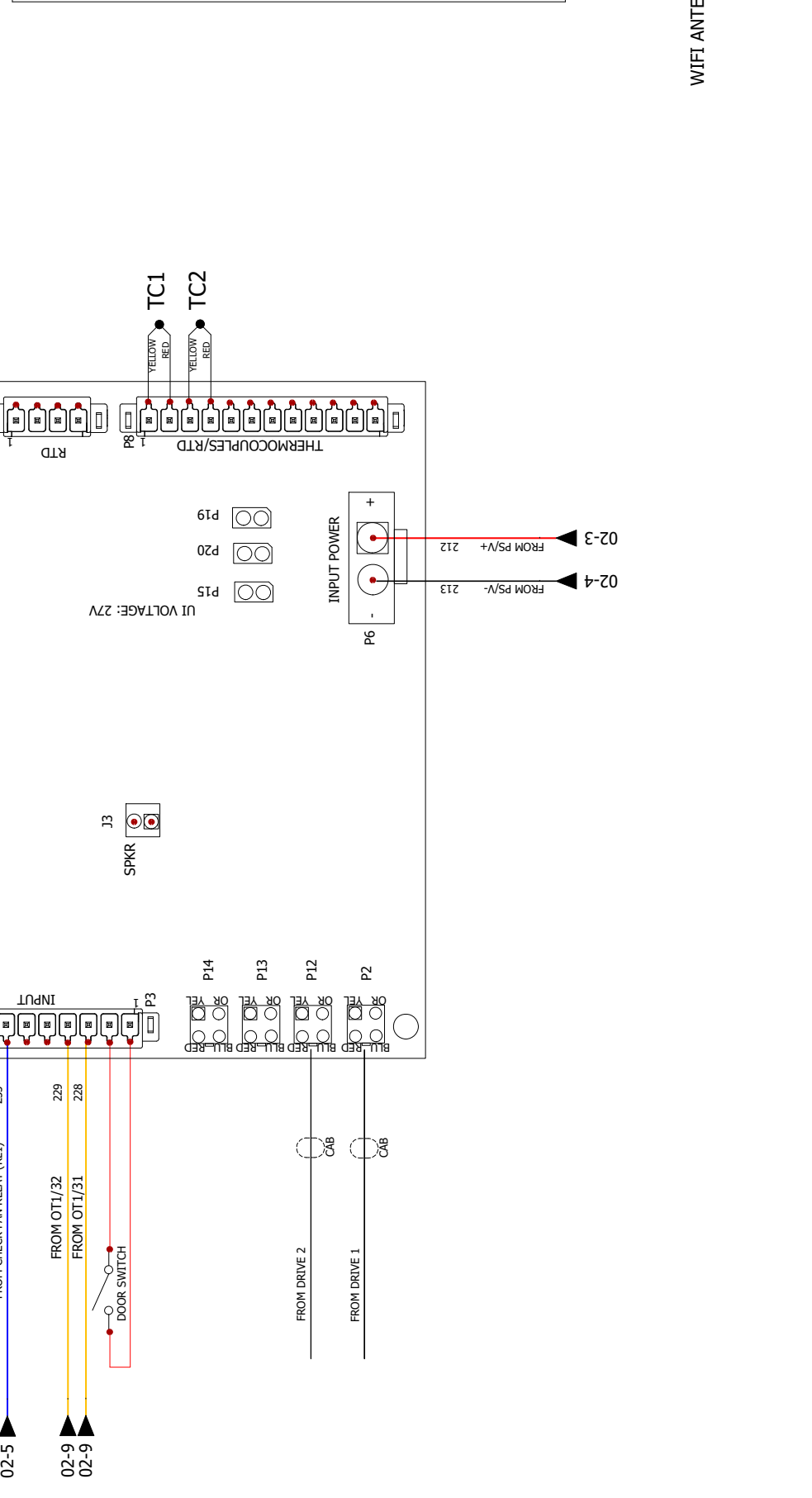
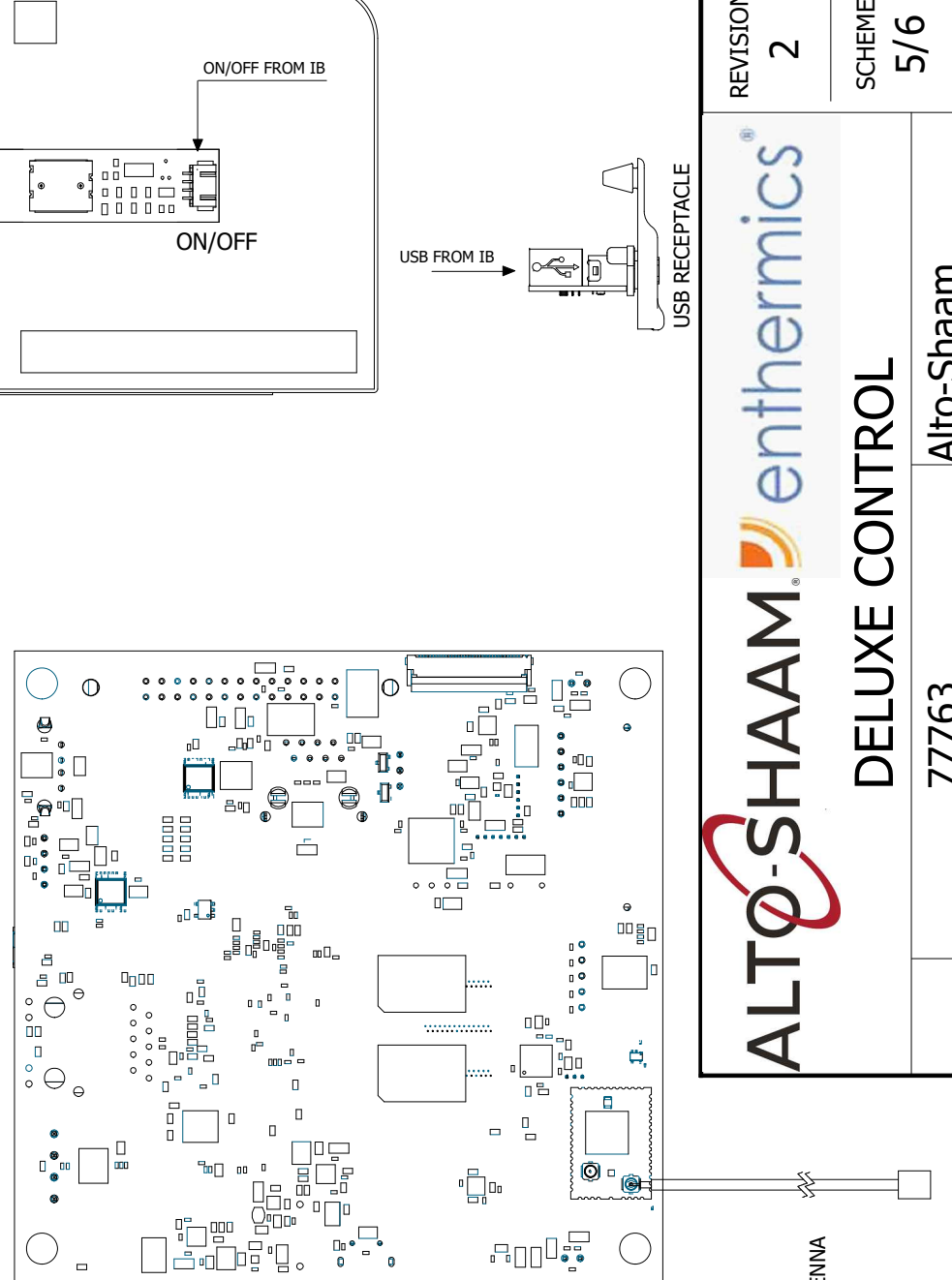
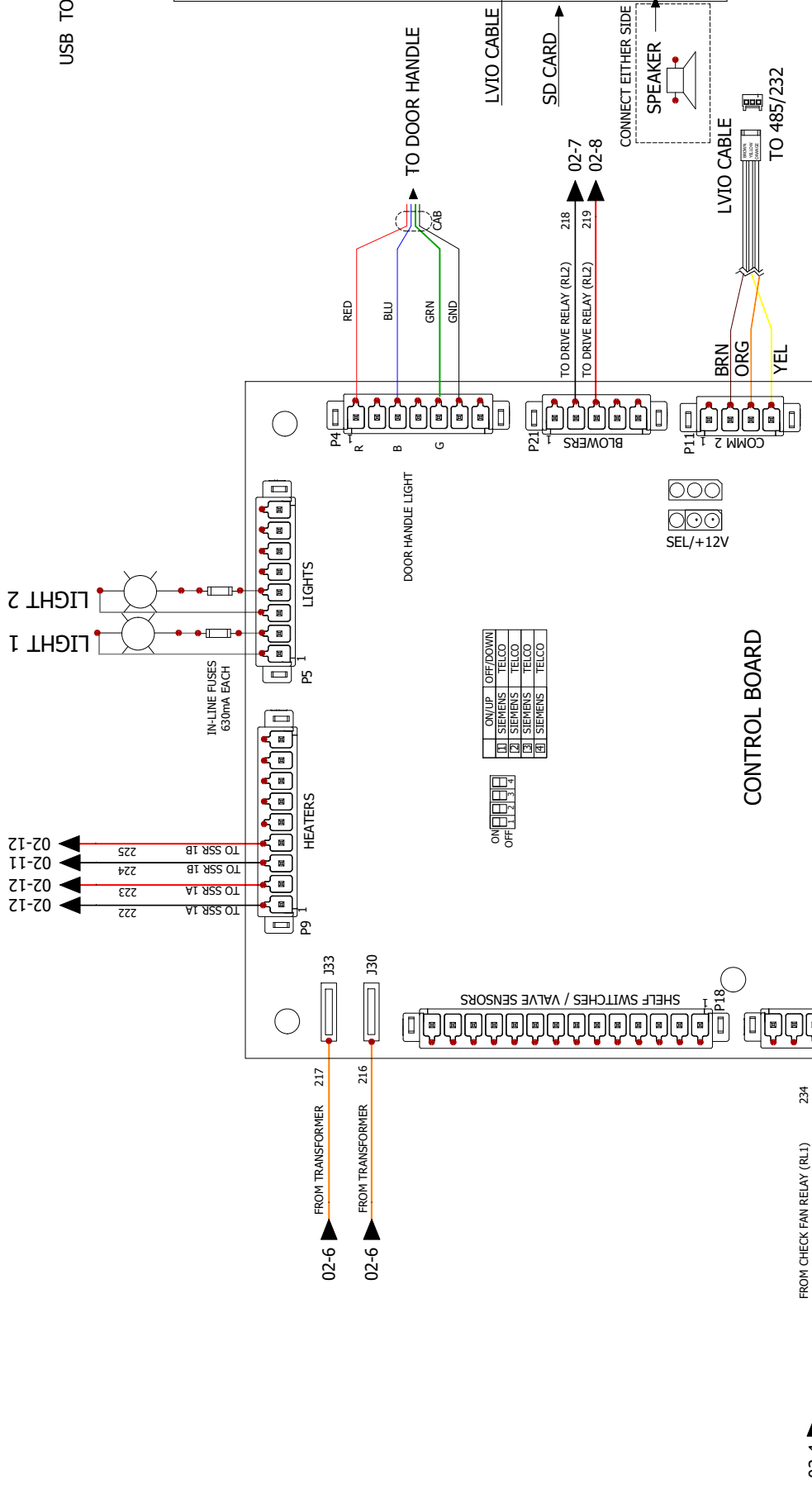
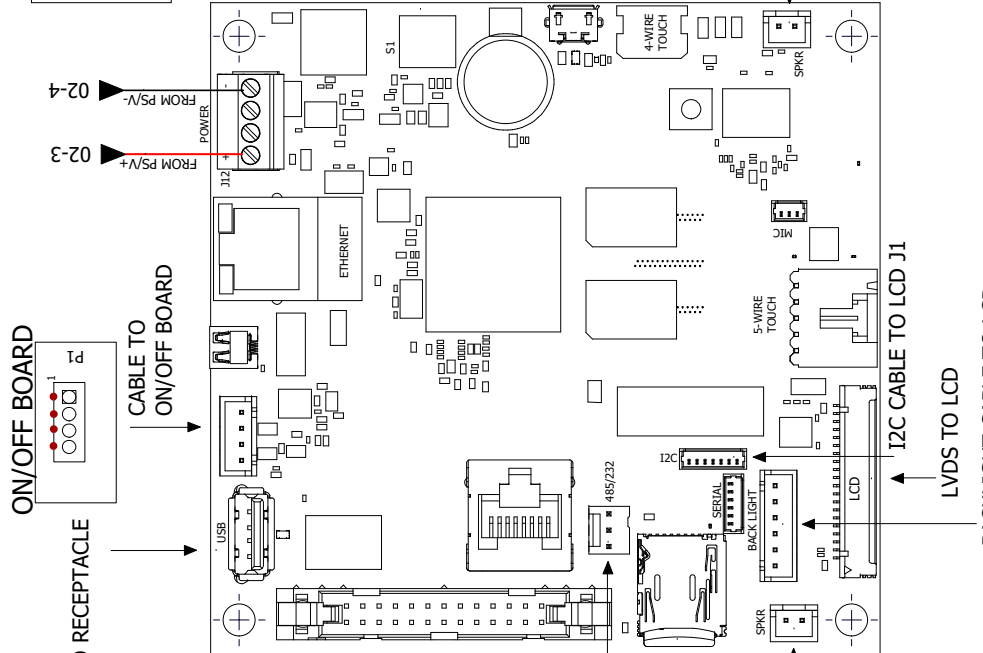
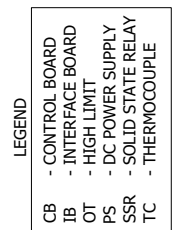
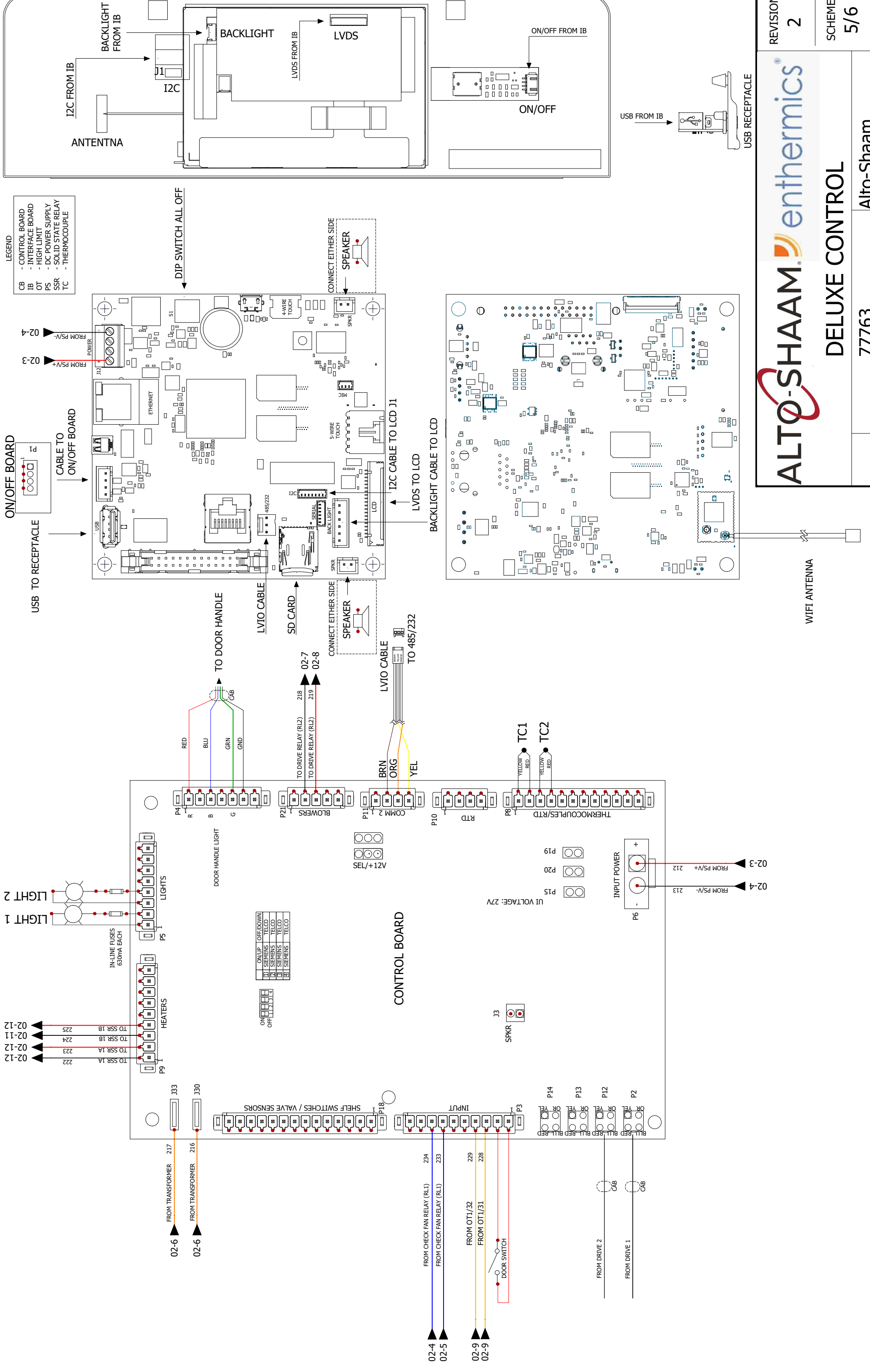
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REVISION 2

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SIMPLE CONTROL



**DELUXE CONTROL**

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12

B1 = H2O PROBE LOW E43 = CONV ELEMENT SET K41 = CONV CONTACTOR N9 = HIGH LIMIT TB = TERMINAL BLOCK

11

B2 = H2O PROBE HIGH EL = ELEMENT K42 = CONV CONTACTOR N10 = HIGH LIMIT TX = TRANSFORMER

B3 = WATER PROBE

FA = FAN K43 = CONV CONTACTOR NC X = NO CONNECTION UPP = UPPER

10

B4 = BOILER PROBE FE = BOILER FUSE K44 = CONV CONTACTOR NC = NORMALLY CLOSED VFD = VARIABLE FREQUENCY DRIVE

B5 = STEAM BY-PASS PROBE

FST = CONV FUSE K45 = CONV CONTACTOR NO = NORMALLY OPEN Y1 = STEAM VALVE

9

B10 = FOOD PROBE

FSW = FILTER SWITCH K50 = MOTOR CONTACTOR LOW OB = OPTION BOARD Y2 = MIXED WATER VALVE

8

B11 = MULTI-POINT PROBE

FT = X-CAP FILTER K51 = MOTOR CONTACTOR LOW OT = HIGH LIMIT Y3 = CLEAN VALVE

BLWR = GAS CONV BLOWER

FTT = COOLING FAN THERMOSTAT K60 = MOTOR CONTACTOR LOW PS = POWER SUPPLY Y4 = CLEAN PUMP

7

C/B = CIRCUIT BREAKER

FU = FUSE K61 = MOTOR CONTACTOR LOW PSW = PRESSURE SWITCH Y5 = HAND SHOWER

CAB = CABLE

G. PUMP = GREASE PUMP K77 = MASTER CONTACTOR RLY = RELAY --- = -----

6

CB = CONTROL BOARD

GND = GROUNDING K78 = MASTER CONTACTOR RV = STEAM RELIEF VALVE --- = -----

CC = CATALYTIC CONVERTER

GU = HALOGEN LIGHT LED = LIGHT EMITTING DIODE S7 = REED SWITCH --- = -----

5

CH = CONV HEATER

HSI = HOT SURFACE IGNITOR LF = LINE FILTER SMK = SMOKER --- = -----

CV = CONVECTION

IB = INTERFACE BOARD LQ. PUMP = LIQUID PUMP SMO = STEAM MOTOR --- = -----

4

E1 = BOILER ELEMENT SET

IM = IGNITION MODULE LWR = LOWER SPI = SPARK IGNITOR --- = -----

3

E2 = BOILER ELEMENT SET

K1 = BOILER CONTACTOR MO = MOTOR SSR = SOLID STATE RELAY --- = -----

E3 = BOILER ELEMENT SET

K2 = BOILER CONTACTOR N6 = CAVITY PROBE SV = STEAM VALVE --- = -----

2

E41 = CONV ELEMENT SET

K3 = BOILER CONTACTOR N7 = HIGH LIMIT TC = THERMOCOUPLE

E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR N8 = BOILER TEMP PROBE TM = TERMINAL

# H2HW 220V-240V 1PH

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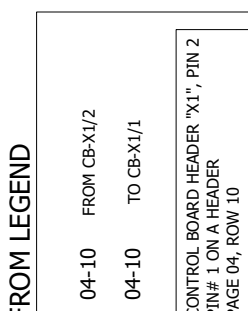
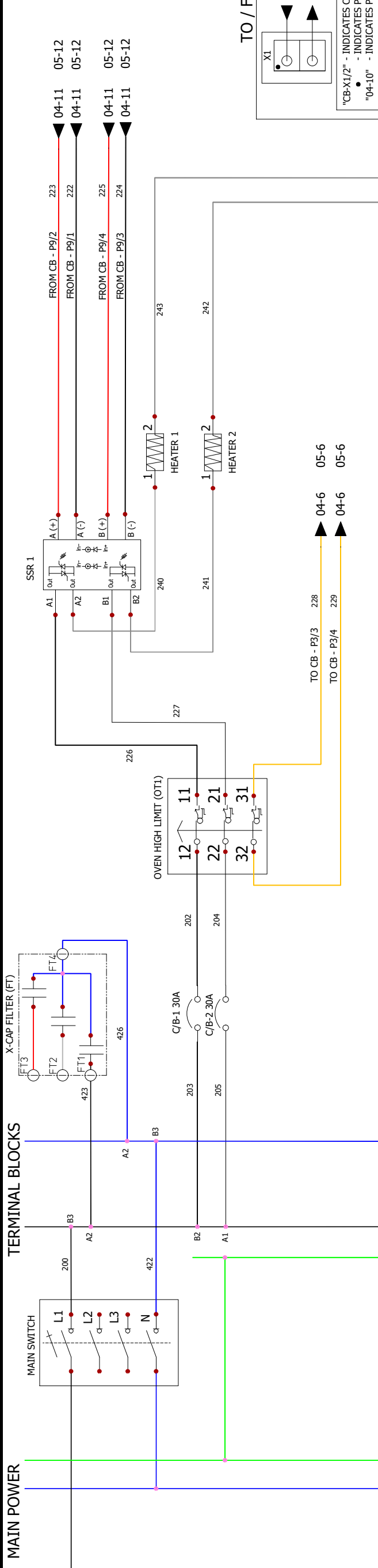
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0	7/8/2021	grantp	182363	NEW	PAGE
					1/6
					Alto-Shaam
77764					
H2HW 220V-240V 1PH					

MAIN POWER

TERMINAL BLOCKS

LEGEND

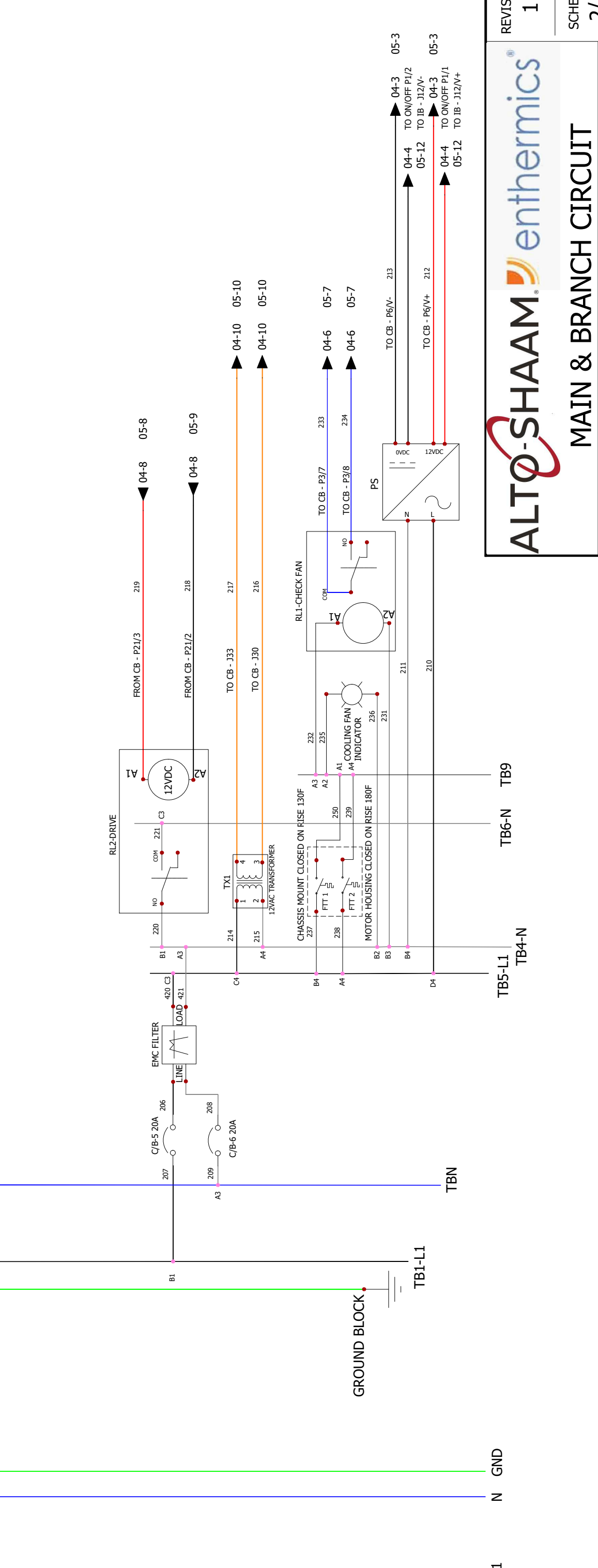
- CB - CONTROL BOARD
- C/B - CIRCUIT BREAKER
- FT - X-CAP FILTER
- FTT - COOLING FAN THERMOSTAT
- IB - INTERFACE BOARD
- OT - HIGH LIMIT
- PS - DC POWER SUPPLY
- SSR - SOLID STATE RELAY
- TB - TERMINAL BLOCK
- TX - TRANSFORMER



GROUND BLOCK

TBN

TO / FROM LEGEND




**ALTO-SHAAM**

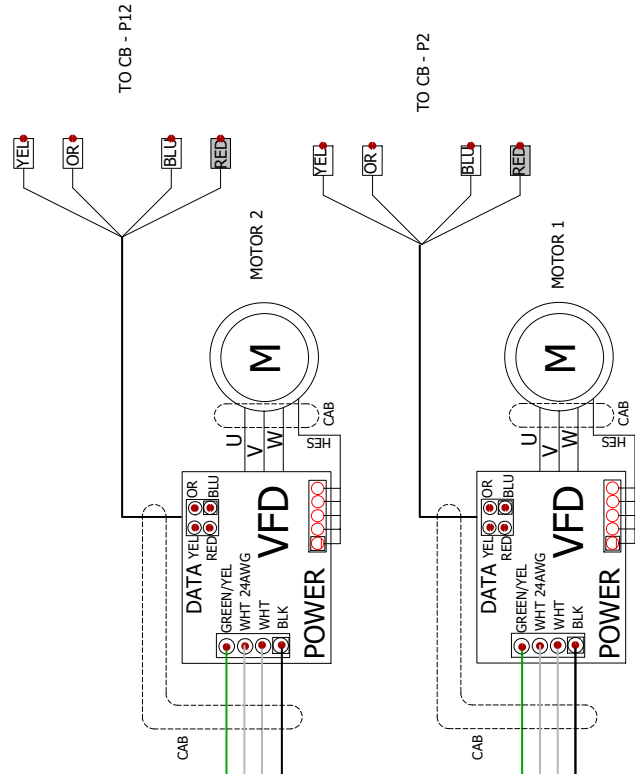
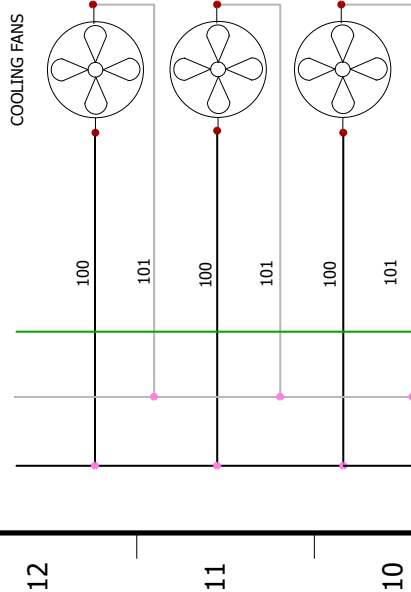


**MAIN & BRANCH CIRCUIT**

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TERMINAL BLOCKS



LEGEND

CB - CONTROL BOARD

TB - TERMINAL BLOCK

VFD - VARIABLE FREQUENCY DRIVE

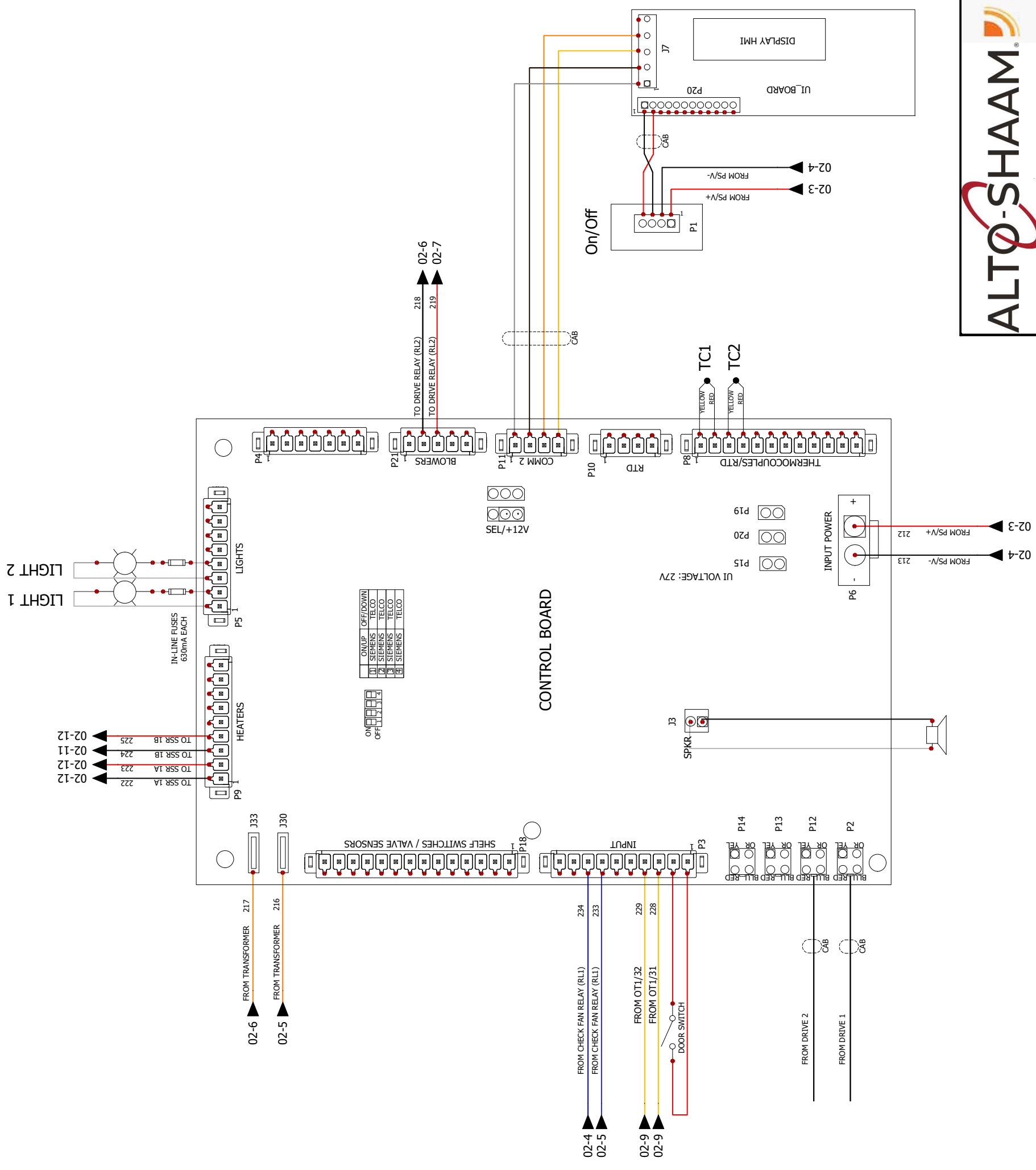
TB5-L1 TB7-GND

TB6-N



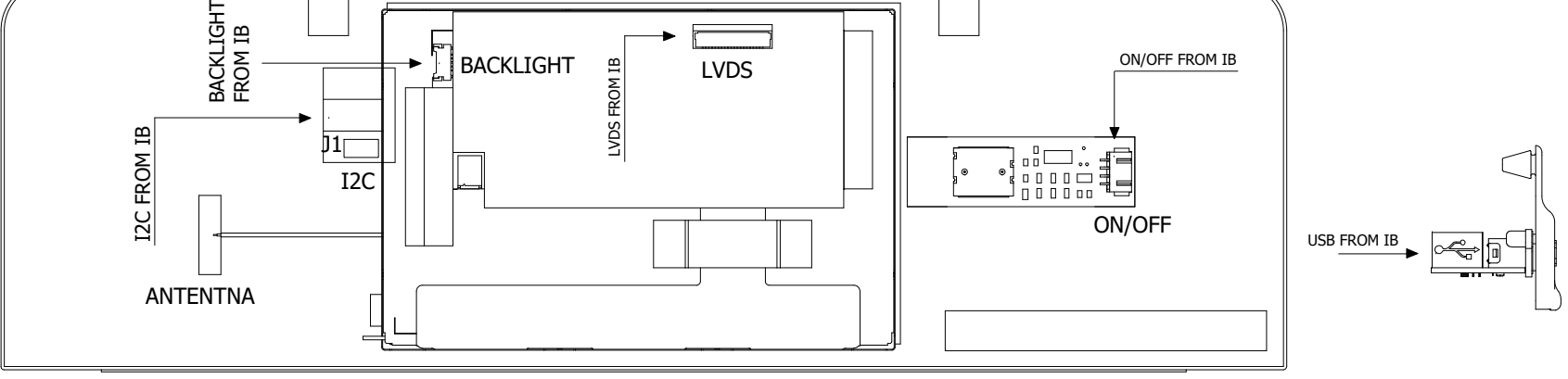
LEGEND

- CB - CONTROL BOARD
- OT - HIGH LIMIT
- PS - DC POWER SUPPLY
- SSR - SOLID STATE RELAY
- TC - THERMOCOUPLE

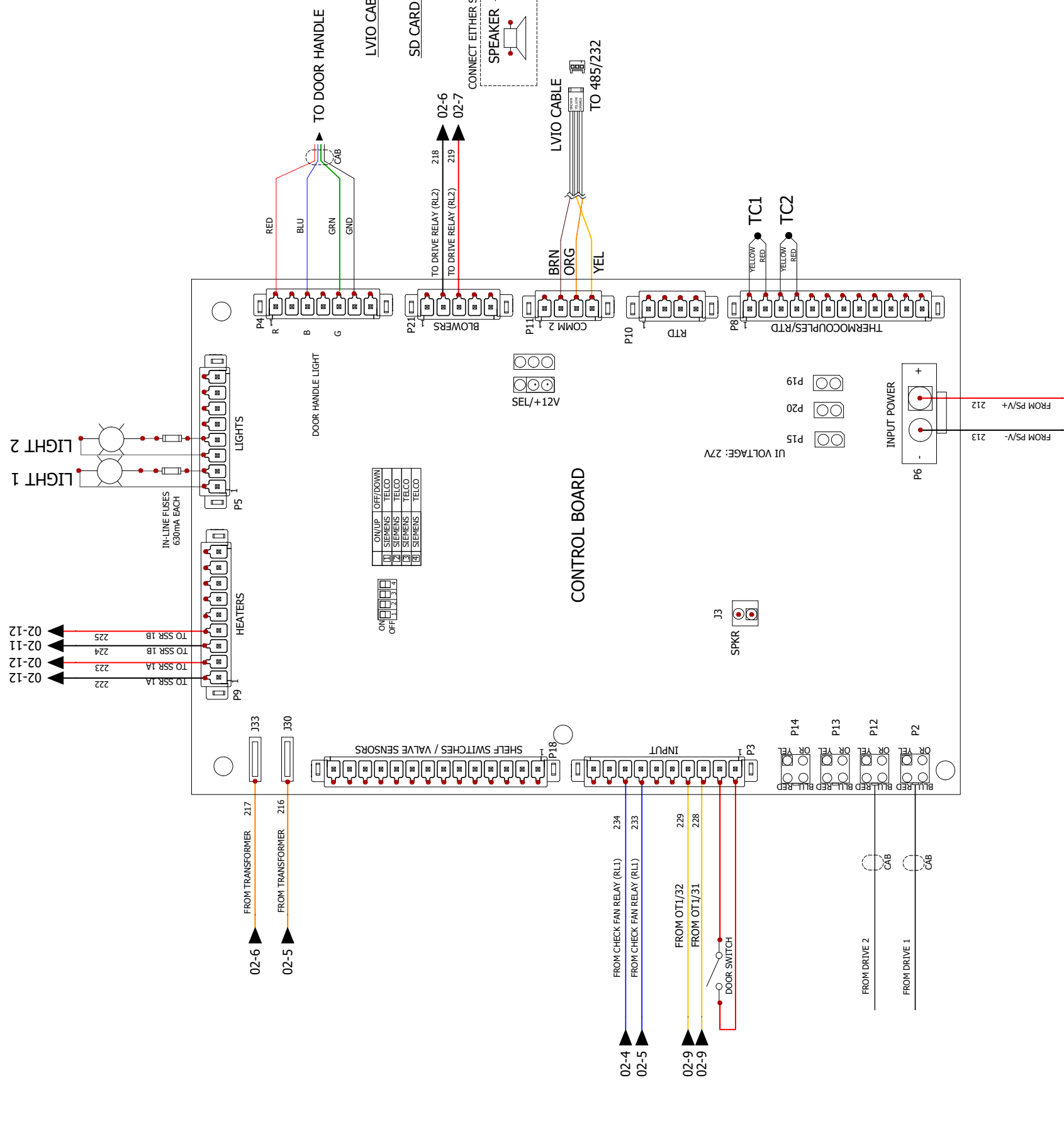
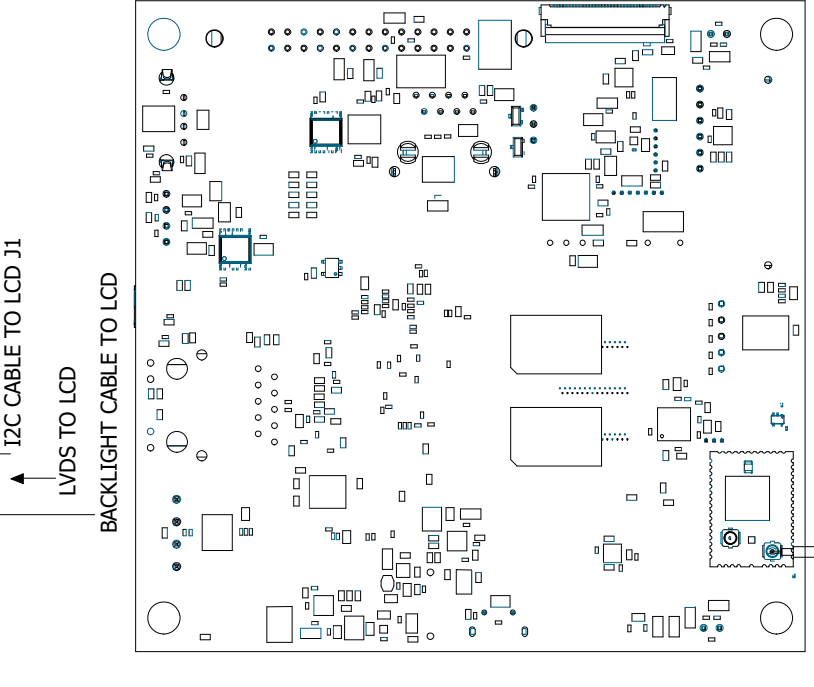
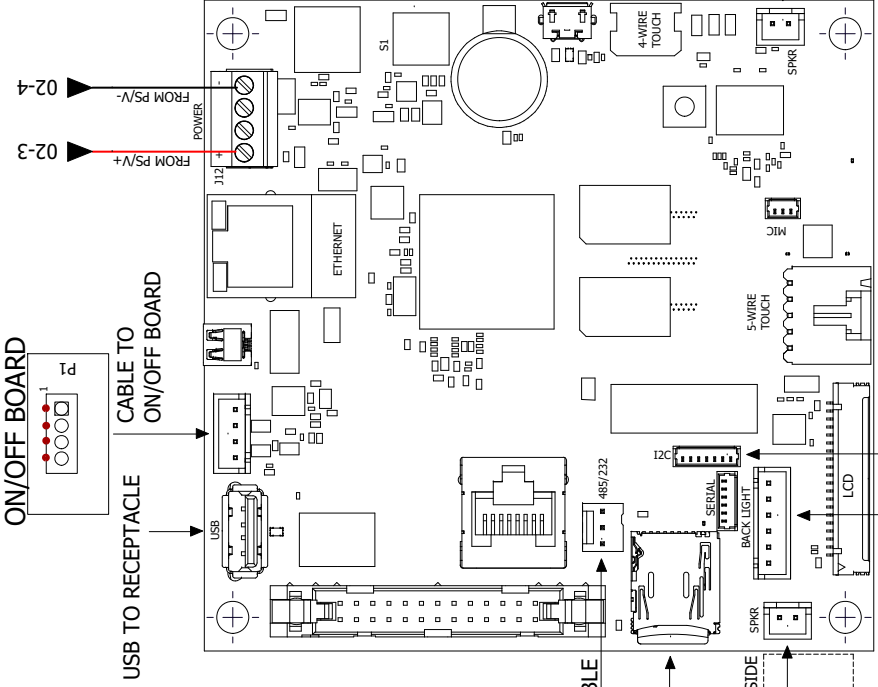


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- LEGEND
- CB - CONTROL BOARD
  - IB - INTERFACE BOARD
  - OT - HIGH LIMIT
  - PS - DC POWER SUPPLY
  - SSR - SOLID STATE RELAY
  - TC - THERMOCOUPLE



ON/UP	OFF/DOWN
11	SIEMENS
2	SIEMENS
3	SIEMENS
4	SIEMENS

ON	OFF
11	SIEMENS
2	SIEMENS
3	SIEMENS
4	SIEMENS

02-4 FROM PS/V- 213

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02-4 FROM CHECK FAN RELAY (RL1) 234

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02-6 TO DRIVE RELAY (RL2) 218

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02-6 TO DRIVE RELAY (RL2) 218

02-7 TO DRIVE RELAY (RL2) 219

02-6 TO DRIVE RELAY (RL2) 218

02-7 TO DRIVE RELAY (RL2) 219

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02-7 TO DRIVE RELAY (RL2) 219

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E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR N8 = BOILER TEMP PROBE TM = TERMINAL --- = -----

1

# H2HW 380-415V 3PH

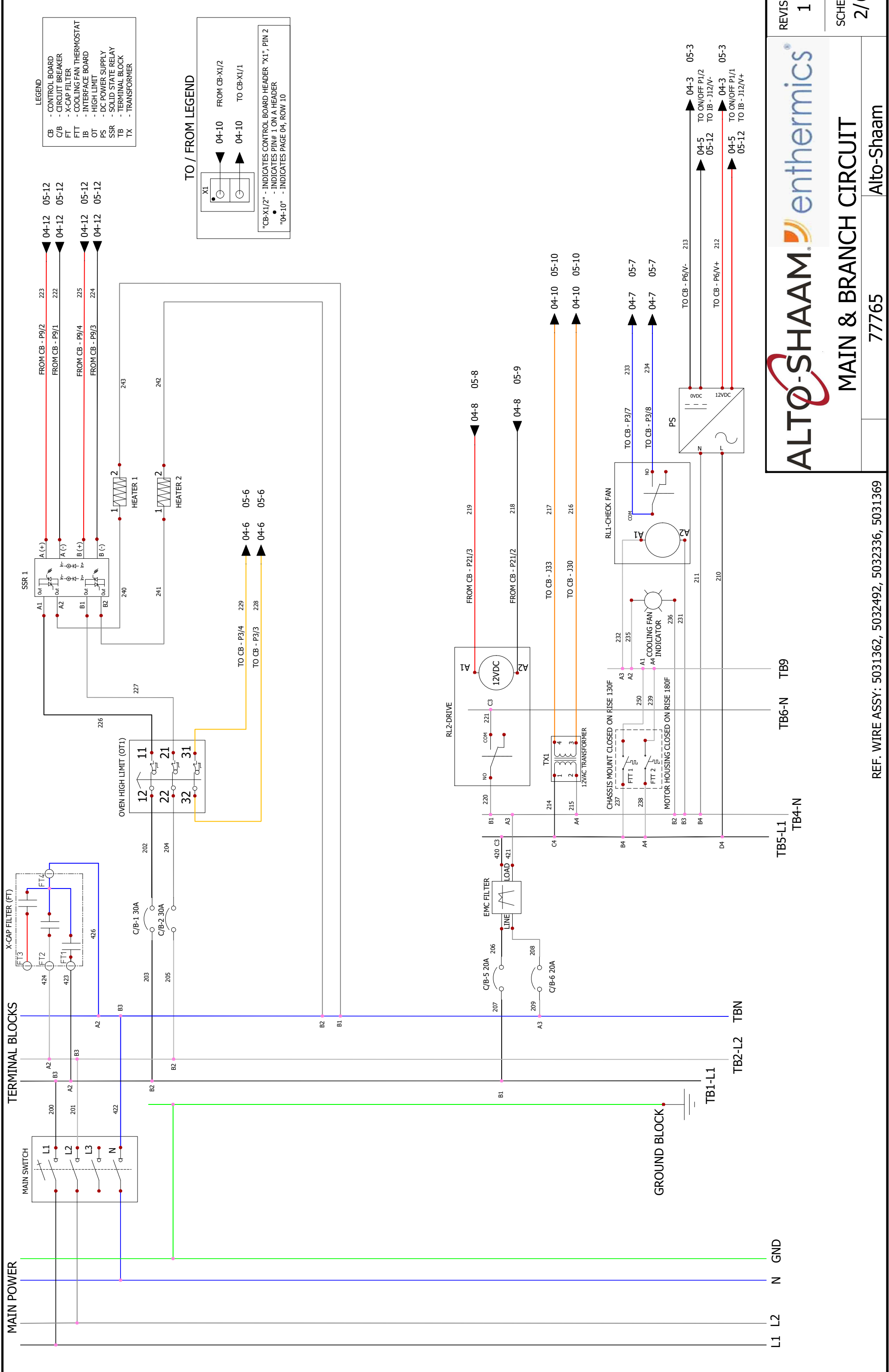
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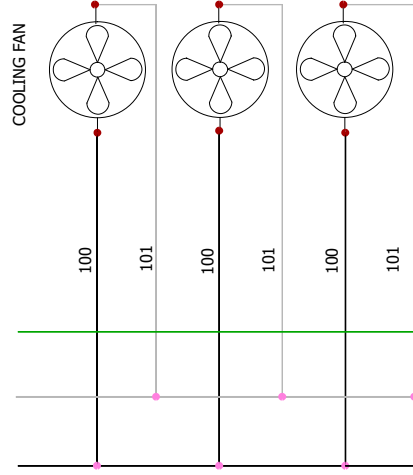
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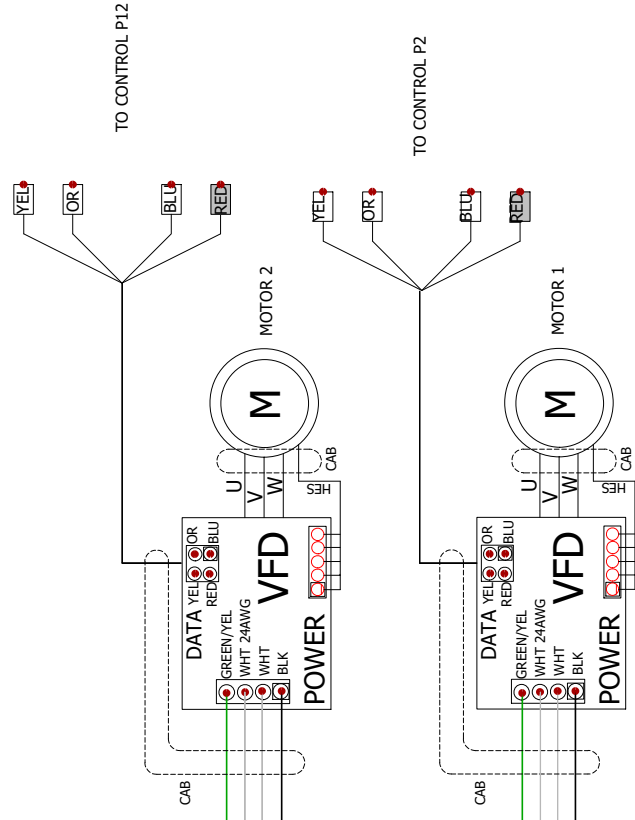
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0	7/8/2021	grantp	182363	NEW	PAGE
					1/6
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TERMINAL BLOCK



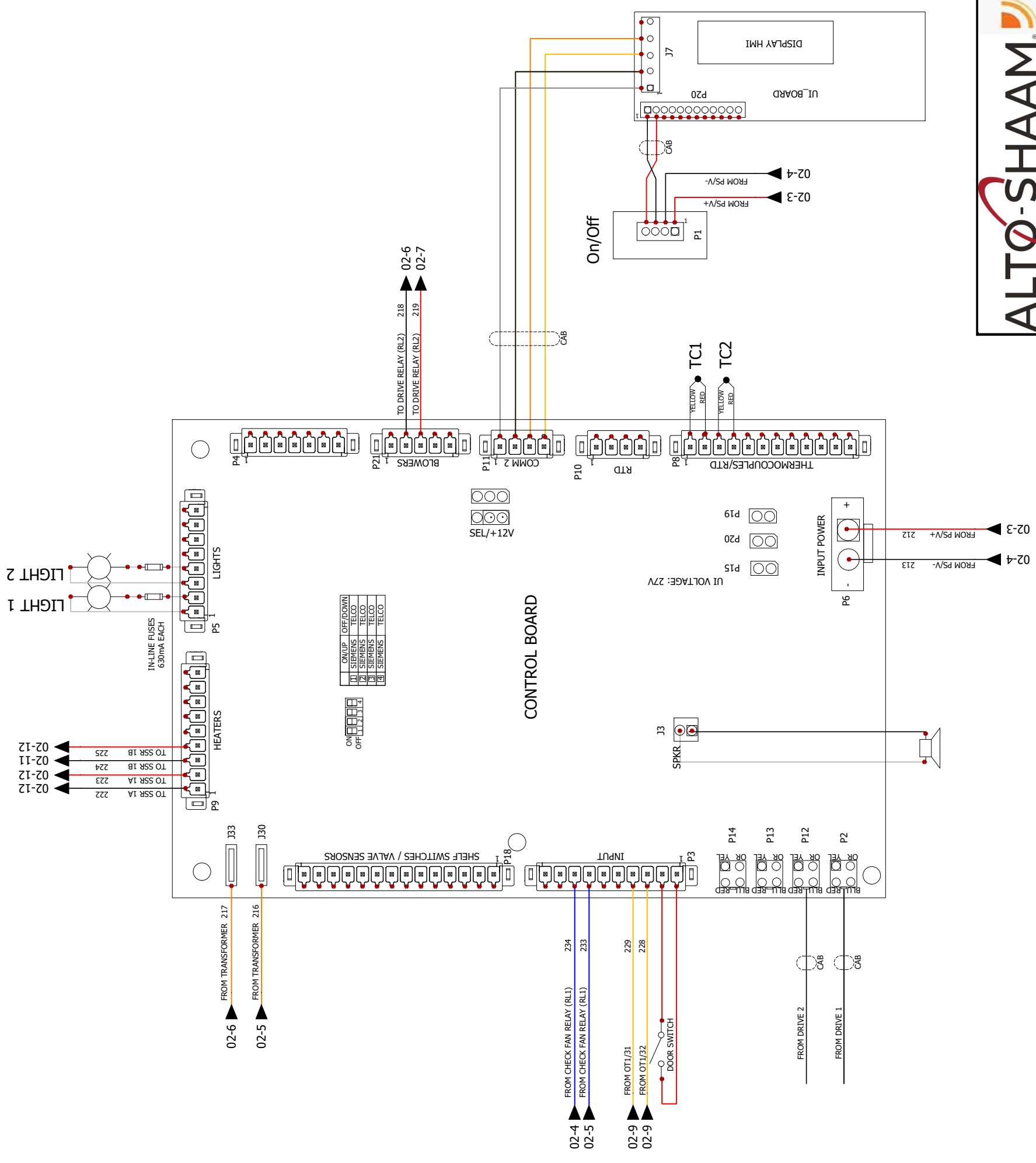
LEGEND  
 CB - CONTROL BOARD  
 TB - TERMINAL BLOCK  
 VFD - VARIABLE FREQUENCY DRIVE



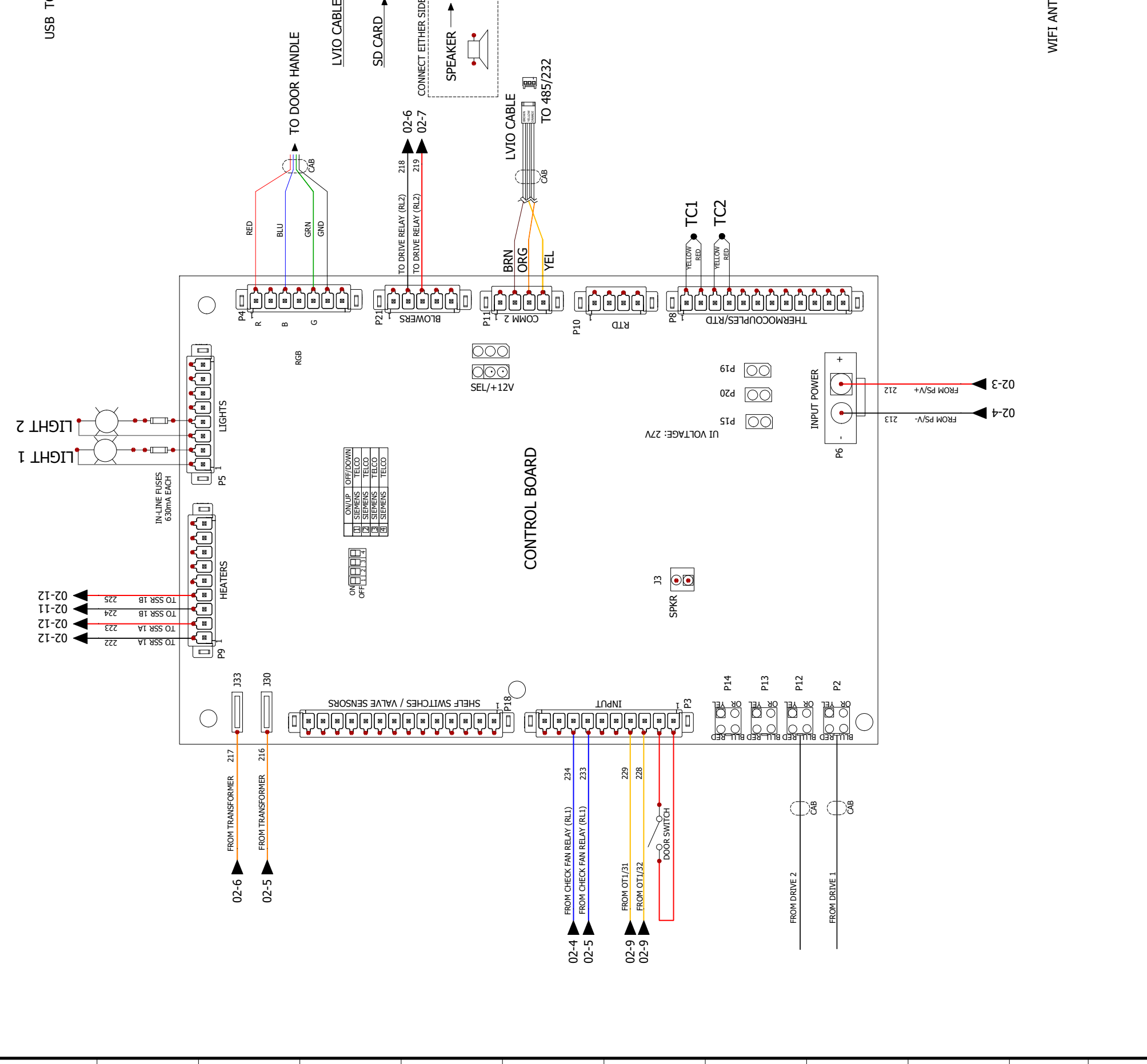
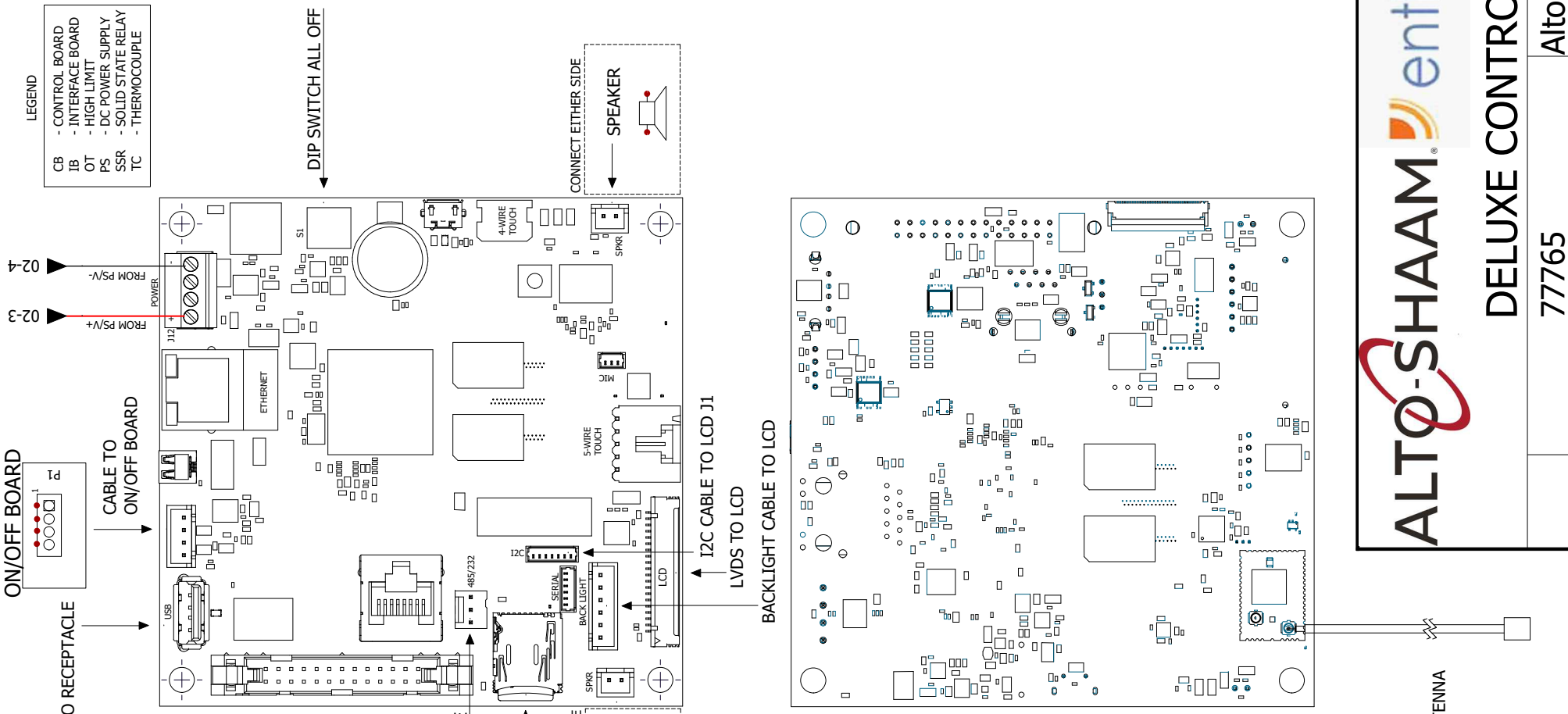
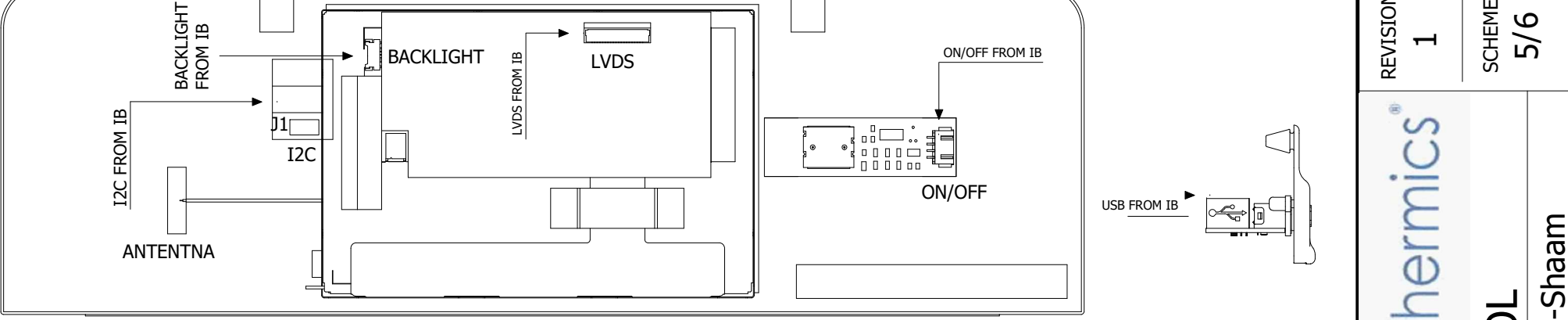
TB5-L1 TB7-GND  
 TB6-N

LEGEND

CB	- CONTROL BOARD
OT	- HIGH LIMIT
PS	- DC POWER SUPPLY
SSR	- SOLID STATE RELAY
TC	- THERMOCOUPLE

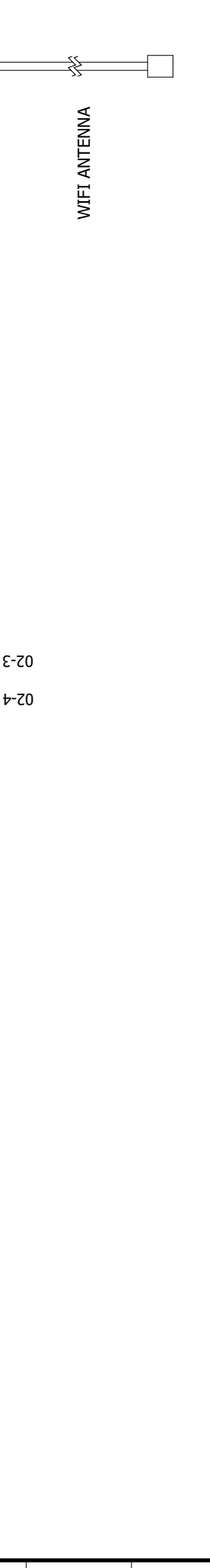
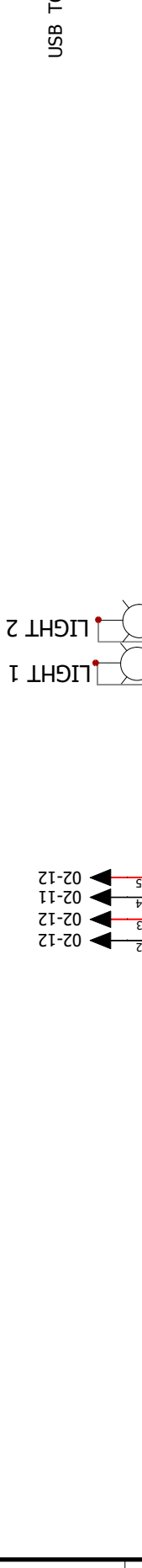
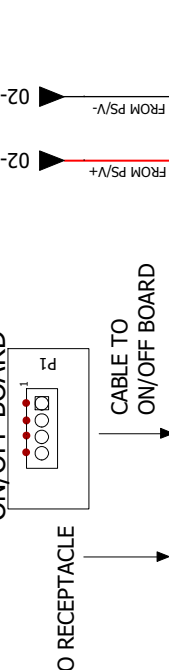


ON	OFF/DOWN
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26



LEGEND

- CB - CONTROL BOARD
- IB - INTERFACE BOARD
- OT - HIGH LIMIT
- PS - DC POWER SUPPLY
- SSR - SOLID STATE RELAY
- TC - THERMOCOUPLE





12

B1 = H2O PROBE LOW E43 = CONV ELEMENT SET K41 = CONV CONTACTOR N9 = HIGH LIMIT TB = TERMINAL BLOCK

11

B2 = H2O PROBE HIGH EL = ELEMENT K42 = CONV CONTACTOR N10 = HIGH LIMIT TX = TRANSFORMER

B3 = WATER PROBE

FA = FAN K43 = CONV CONTACTOR NC X = NO CONNECTION UPP = UPPER

10

B4 = BOILER PROBE FE = BOILER FUSE K44 = CONV CONTACTOR NC = NORMALLY CLOSED VFD = VARIABLE FREQUENCY DRIVE

B5 = STEAM BY-PASS PROBE

FST = CONV FUSE K45 = CONV CONTACTOR NO = NORMALLY OPEN Y1 = STEAM VALVE

9

B10 = FOOD PROBE

FSW = FILTER SWITCH K50 = MOTOR CONTACTOR LOW OB = OPTION BOARD Y2 = MIXED WATER VALVE

8

B11 = MULTI-POINT PROBE

FT = X-CAP FILTER K51 = MOTOR CONTACTOR LOW OT = HIGH LIMIT Y3 = CLEAN VALVE

BLWR = GAS CONV BLOWER

FTT = COOLING FAN THERMOSTAT K60 = MOTOR CONTACTOR LOW PS = POWER SUPPLY Y4 = CLEAN PUMP

7

C/B = CIRCUIT BREAKER

FU = FUSE K61 = MOTOR CONTACTOR LOW PSW = PRESSURE SWITCH Y5 = HAND SHOWER

CAB = CABLE

G. PUMP = GREASE PUMP K77 = MASTER CONTACTOR RLY = RELAY --- = -----

6

CB = CONTROL BOARD

GND = GROUNDING K78 = MASTER CONTACTOR RV = STEAM RELIEF VALVE --- = -----

CC = CATALYTIC CONVERTER

GU = HALOGEN LIGHT LED = LIGHT EMITTING DIODE S7 = REED SWITCH --- = -----

5

CH = CONV HEATER

HSI = HOT SURFACE IGNITOR LF = LINE FILTER SMK = SMOKER --- = -----

CV = CONVECTION

IB = INTERFACE BOARD LQ. PUMP = LIQUID PUMP SMO = STEAM MOTOR --- = -----

4

E1 = BOILER ELEMENT SET

IM = IGNITION MODULE LWR = LOWER SPI = SPARK IGNITOR --- = -----

3

E2 = BOILER ELEMENT SET

K1 = BOILER CONTACTOR MO = MOTOR SSR = SOLID STATE RELAY --- = -----

E3 = BOILER ELEMENT SET

K2 = BOILER CONTACTOR N6 = CAVITY PROBE SV = STEAM VALVE --- = -----

2

E41 = CONV ELEMENT SET

K3 = BOILER CONTACTOR N7 = HIGH LIMIT TC = THERMOCOUPLE

E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR N8 = BOILER TEMP PROBE TM = TERMINAL

# H2HW 208-240V 3PH

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LEGEND	PG 06



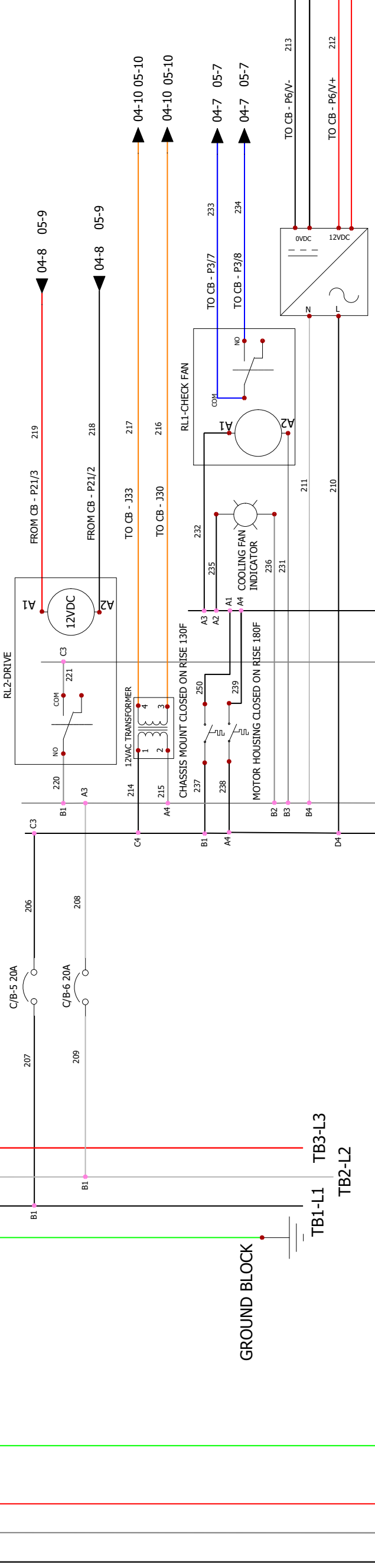
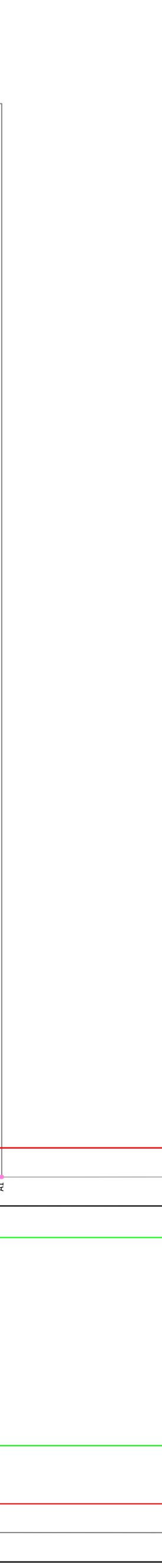
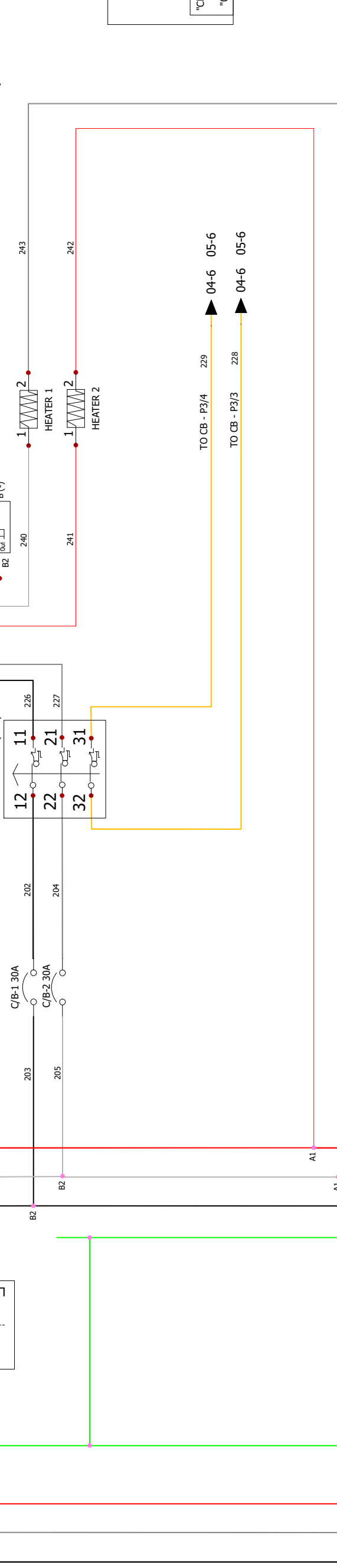
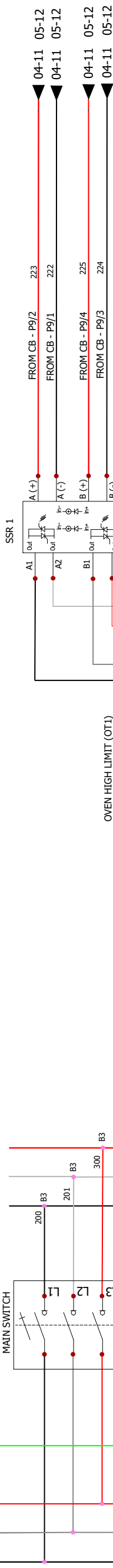
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2	7/12/2021	grantp	182363	Updated to New Standard, Corrected Wire 228/229 To/From points
1	3/23/2021	grantp	182115	Added Wire/Cutsheet Ref #s, Updated to/from labels and Component Markings
0	3/9/2021	grantp	731156	NEW

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MAIN POWER

TERMINAL BLOCKS



12

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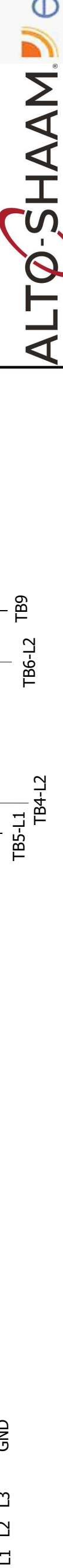
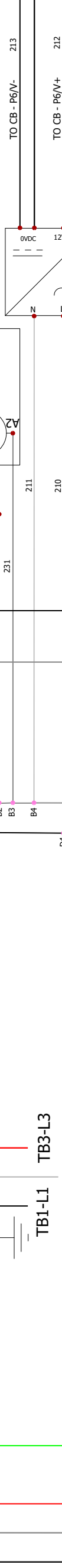
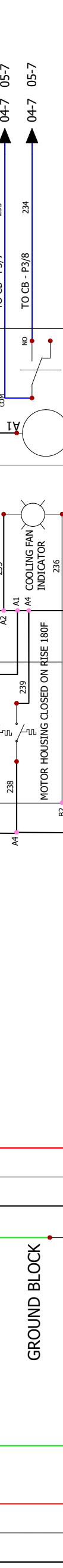
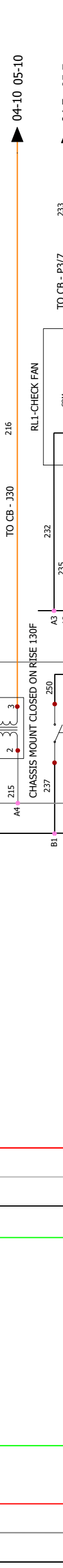
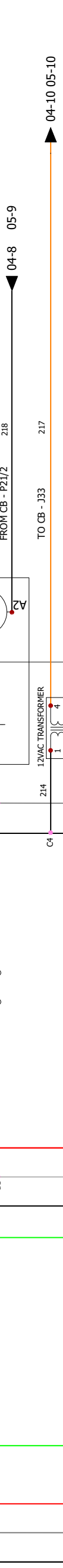
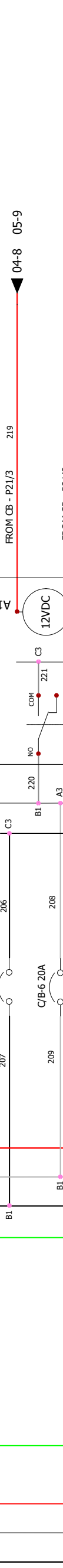
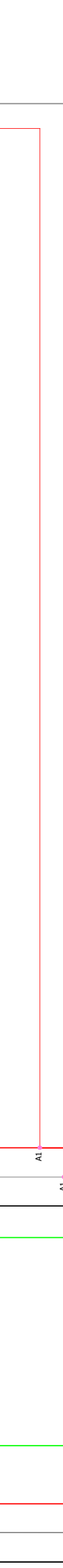
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REFERENCE CUTSHEETS: 5031362, 5032492, 5032336

77766

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SCHEME

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REVISION

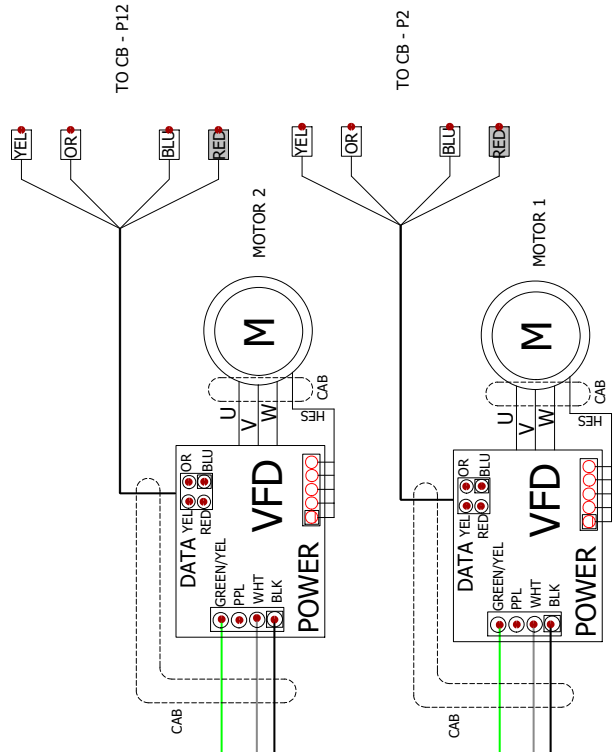
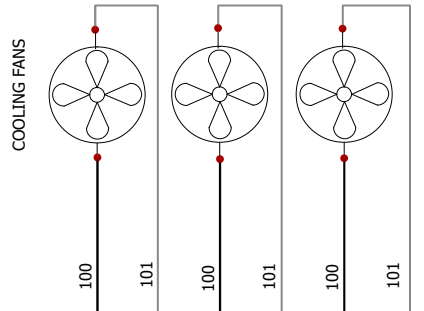
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**ALTO-SHAAM**

MAIN & BRANCH CIRCUIT

TERMINAL BLOCKS



LEGEND  
 CB - CONTROL BOARD  
 TB - TERMINAL BLOCK  
 VFD - VARIABLE FREQUENCY DRIVE

TB5-L1 TB7-GND  
 TB6-L2

**ALTO-SHAAM**  enthermics®

**DRIVE, MOTOR, COOLING FANS**

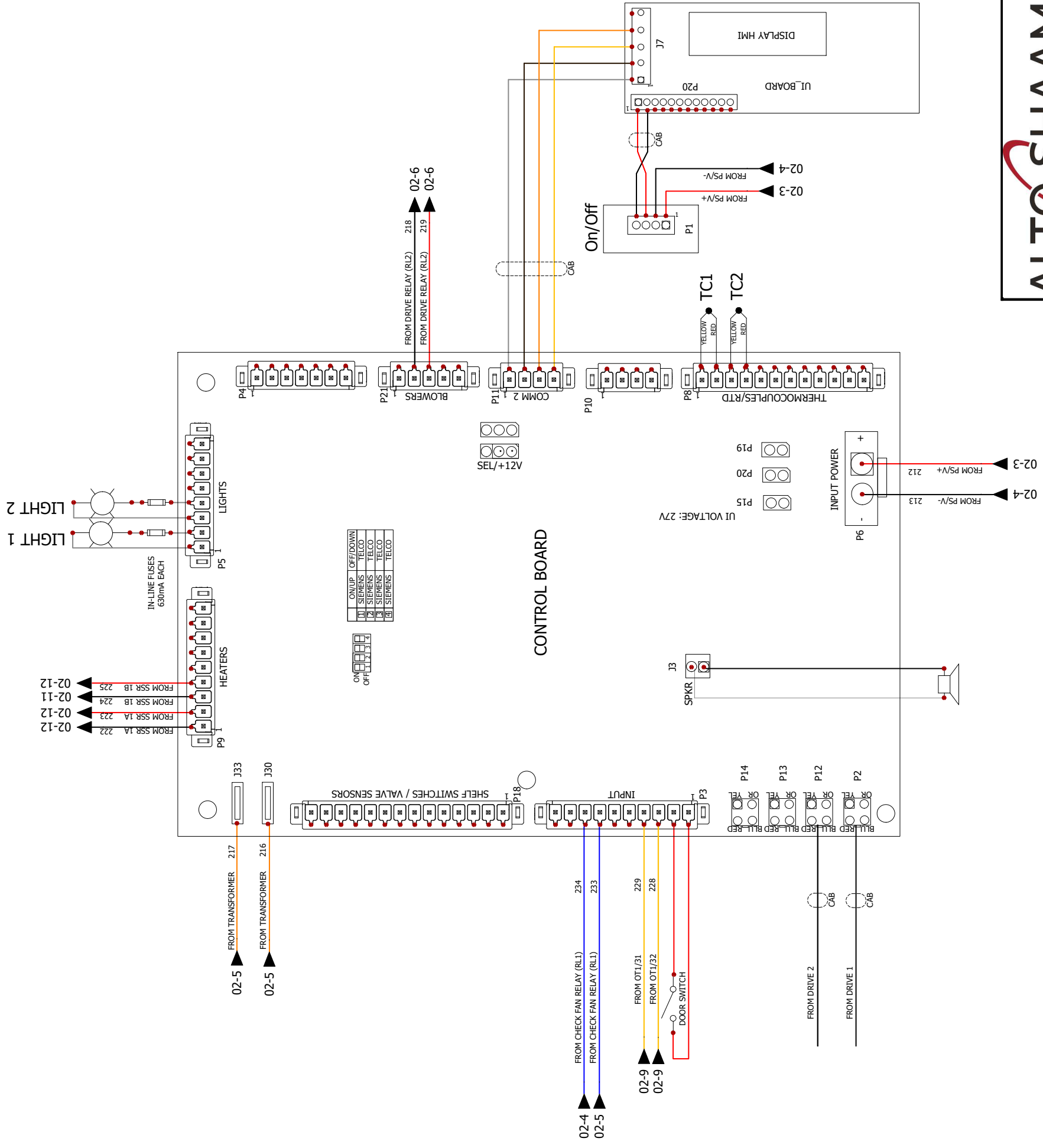
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LEGEND

CB	- CONTROL BOARD
OT	- HIGH LIMIT
PS	- DC POWER SUPPLY
SSR	- SOLID STATE RELAY
TC	- THERMOCOUPLE



ON/UP	OFF/DOWN
SIEMENS	TELO
SIEMENS	TELO
SIEMENS	TELO
SIEMENS	TELO

ALTO-SHAAM® enthermics®

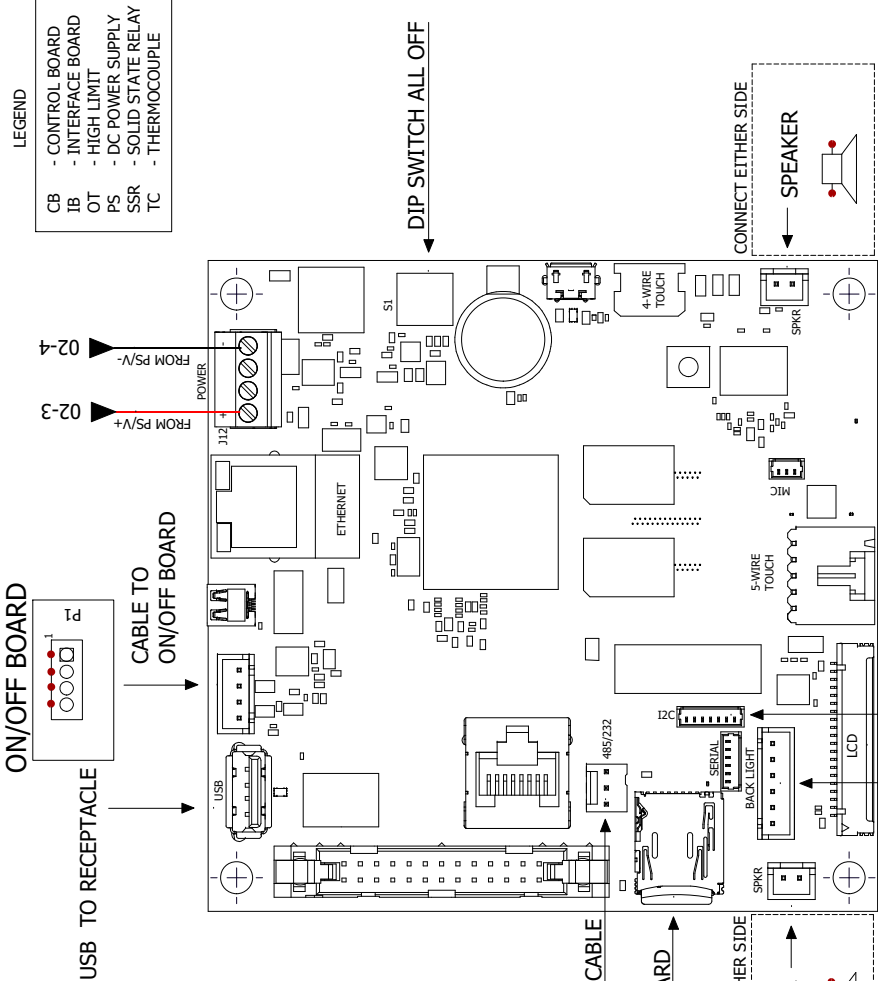
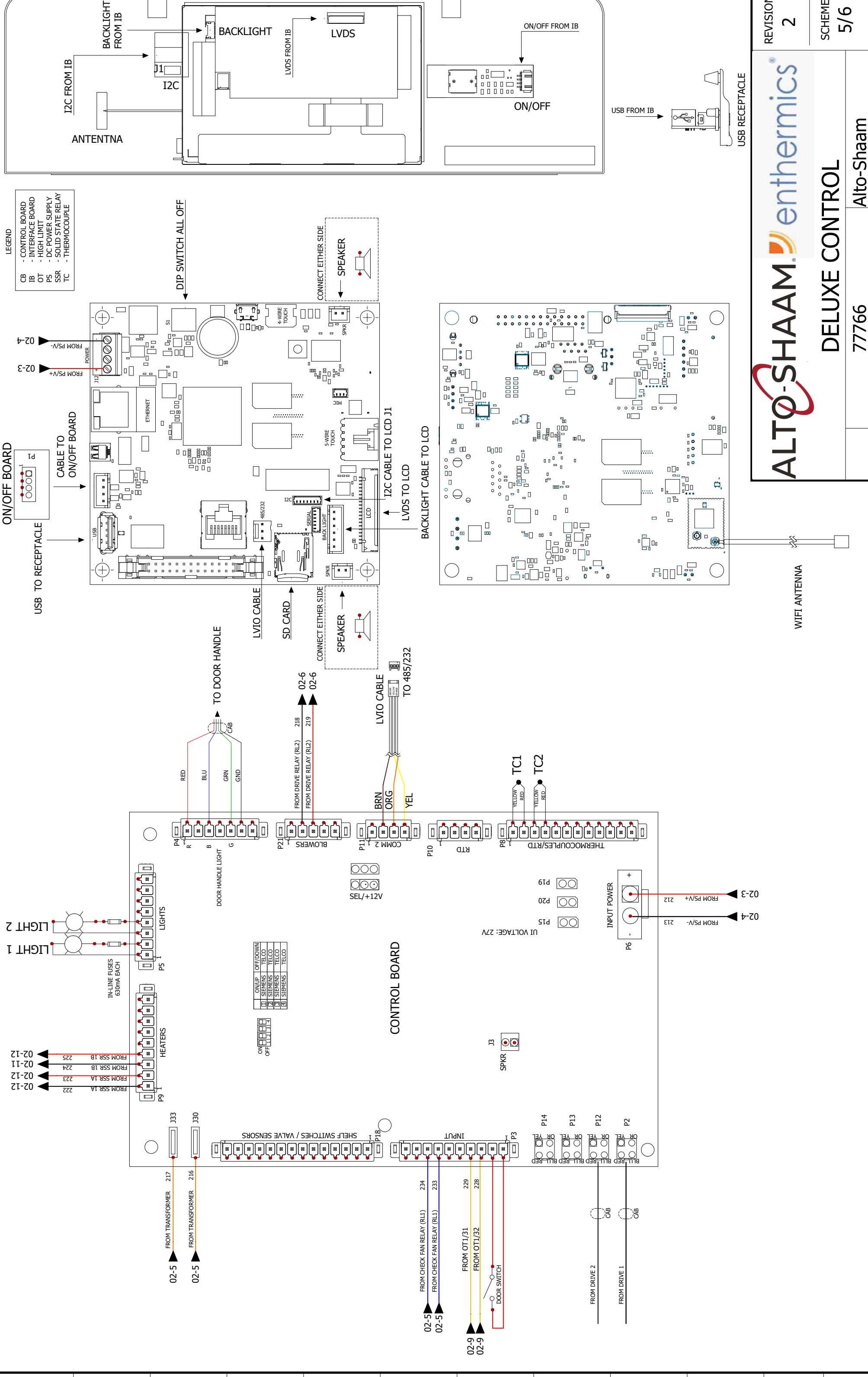
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**SIMPLE CONTROL**



**LEGEND**

- CB - CONTROL BOARD
- IB - INTERFACE BOARD
- OT - HIGH LIMIT
- PS - DC POWER SUPPLY
- SSR - SOLID STATE RELAY
- TC - THERMOCOUPLE

REVISION 2

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**ALTO-SHAAM enthermics**

**DELUXE CONTROL**

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12

B1 = H2O PROBE LOW E43 = CONV ELEMENT SET K41 = CONV CONTACTOR N9 = HIGH LIMIT TB = TERMINAL BLOCK

11

B2 = H2O PROBE HIGH EL = ELEMENT K42 = CONV CONTACTOR N10 = HIGH LIMIT TX = TRANSFORMER

B3 = WATER PROBE

FA = FAN K43 = CONV CONTACTOR NC X = NO CONNECTION UPP = UPPER

10

B4 = BOILER PROBE FE = BOILER FUSE K44 = CONV CONTACTOR NC = NORMALLY CLOSED VFD = VARIABLE FREQUENCY DRIVE

B5 = STEAM BY-PASS PROBE

FST = CONV FUSE K45 = CONV CONTACTOR NO = NORMALLY OPEN Y1 = STEAM VALVE

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B10 = FOOD PROBE

FSW = FILTER SWITCH K50 = MOTOR CONTACTOR LOW OB = OPTION BOARD Y2 = MIXED WATER VALVE

8

B11 = MULTI-POINT PROBE

FT = X-CAP FILTER K51 = MOTOR CONTACTOR LOW OT = HIGH LIMIT Y3 = CLEAN VALVE

BLWR = GAS CONV BLOWER

FTT = COOLING FAN THERMOSTAT K60 = MOTOR CONTACTOR LOW PS = POWER SUPPLY Y4 = CLEAN PUMP

7

C/B = CIRCUIT BREAKER

FU = FUSE K61 = MOTOR CONTACTOR LOW PSW = PRESSURE SWITCH Y5 = HAND SHOWER

CAB = CABLE

G. PUMP = GREASE PUMP K77 = MASTER CONTACTOR RLY = RELAY --- = -----

6

CB = CONTROL BOARD

GND = GROUNDING K78 = MASTER CONTACTOR RV = STEAM RELIEF VALVE --- = -----

CC = CATALYTIC CONVERTER

GU = HALOGEN LIGHT LED = LIGHT EMITTING DIODE S7 = REED SWITCH --- = -----

5

CH = CONV HEATER

HSI = HOT SURFACE IGNITOR LF = LINE FILTER SMK = SMOKER --- = -----

CV = CONVECTION

IB = INTERFACE BOARD LQ. PUMP = LIQUID PUMP SMO = STEAM MOTOR --- = -----

4

E1 = BOILER ELEMENT SET

IM = IGNITION MODULE LWR = LOWER SPI = SPARK IGNITOR --- = -----

3

E2 = BOILER ELEMENT SET

K1 = BOILER CONTACTOR MO = MOTOR SSR = SOLID STATE RELAY --- = -----

E3 = BOILER ELEMENT SET

K2 = BOILER CONTACTOR N6 = CAVITY PROBE SV = STEAM VALVE --- = -----

2

E41 = CONV ELEMENT SET

K3 = BOILER CONTACTOR N7 = HIGH LIMIT TC = THERMOCOUPLE --- = -----

E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR N8 = BOILER TEMP PROBE TM = TERMINAL --- = -----

1

# H3HW 208-240V 3PH

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LEGEND	PG 06



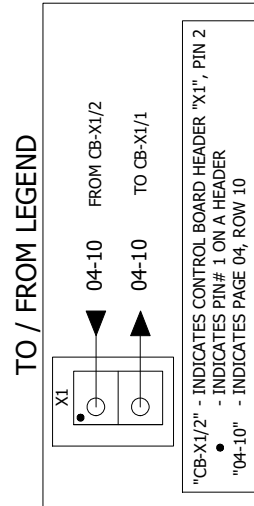
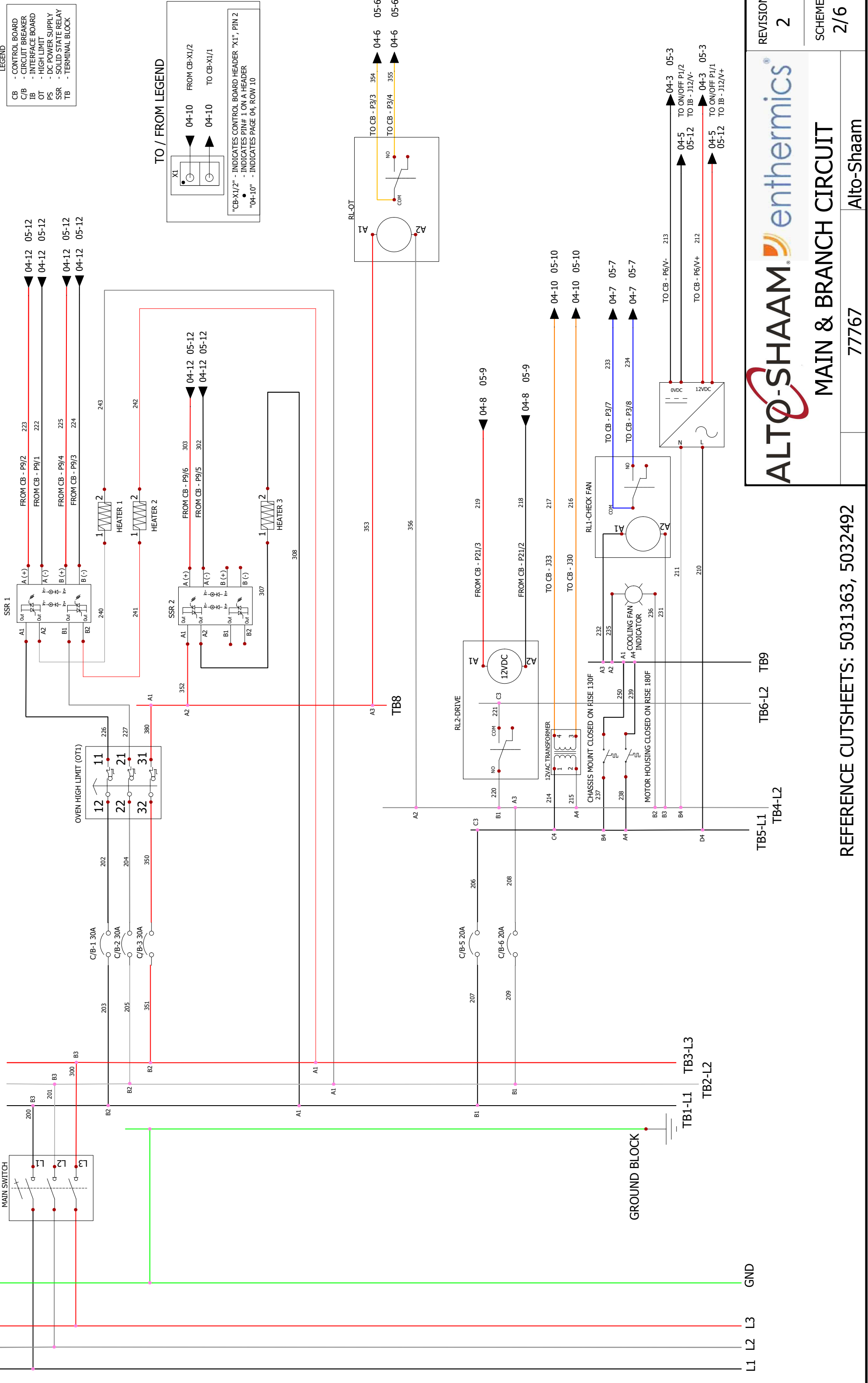
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1	3/23/2021	grantp	182115	Added Wire/Cutsheet Ref #s, Updated to/from labels and Component Markings	PAGE
0	3/9/2021	grantp	731156	NEW	1/6
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H3HW 208-240V 3PH					



MAIN POWER

TERMINAL BLOCKS

- LEGEND
- CB - CONTROL BOARD
  - C/B - CIRCUIT BREAKER
  - IB - INTERFACE BOARD
  - OT - HIGH LIMIT
  - PS - DC POWER SUPPLY
  - SSR - SOLID STATE RELAY
  - TB - TERMINAL BLOCK



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REVISION 2

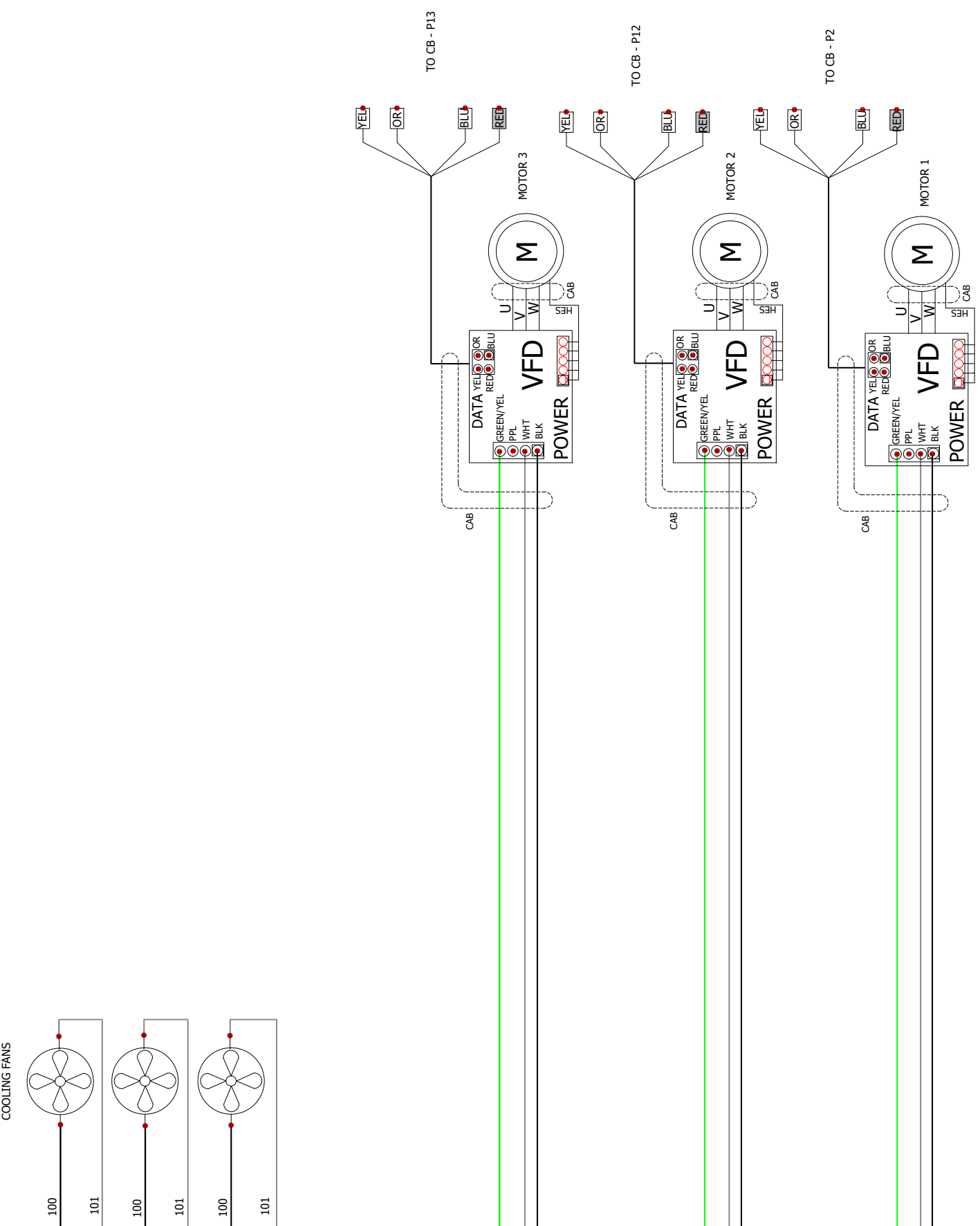
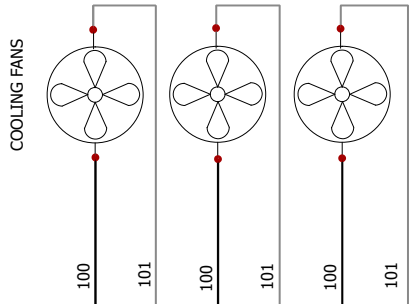
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Alto-Shaam

REFERENCE CUTSHEETS: 5031363, 5032492

TERMINAL BLOCKS



LEGEND  
 CB - CONTROL BOARD  
 TB - TERMINAL BLOCK  
 VFD - VARIABLE FREQUENCY DRIVE

TB5-L1 TB7-GND  
 TB6-L2

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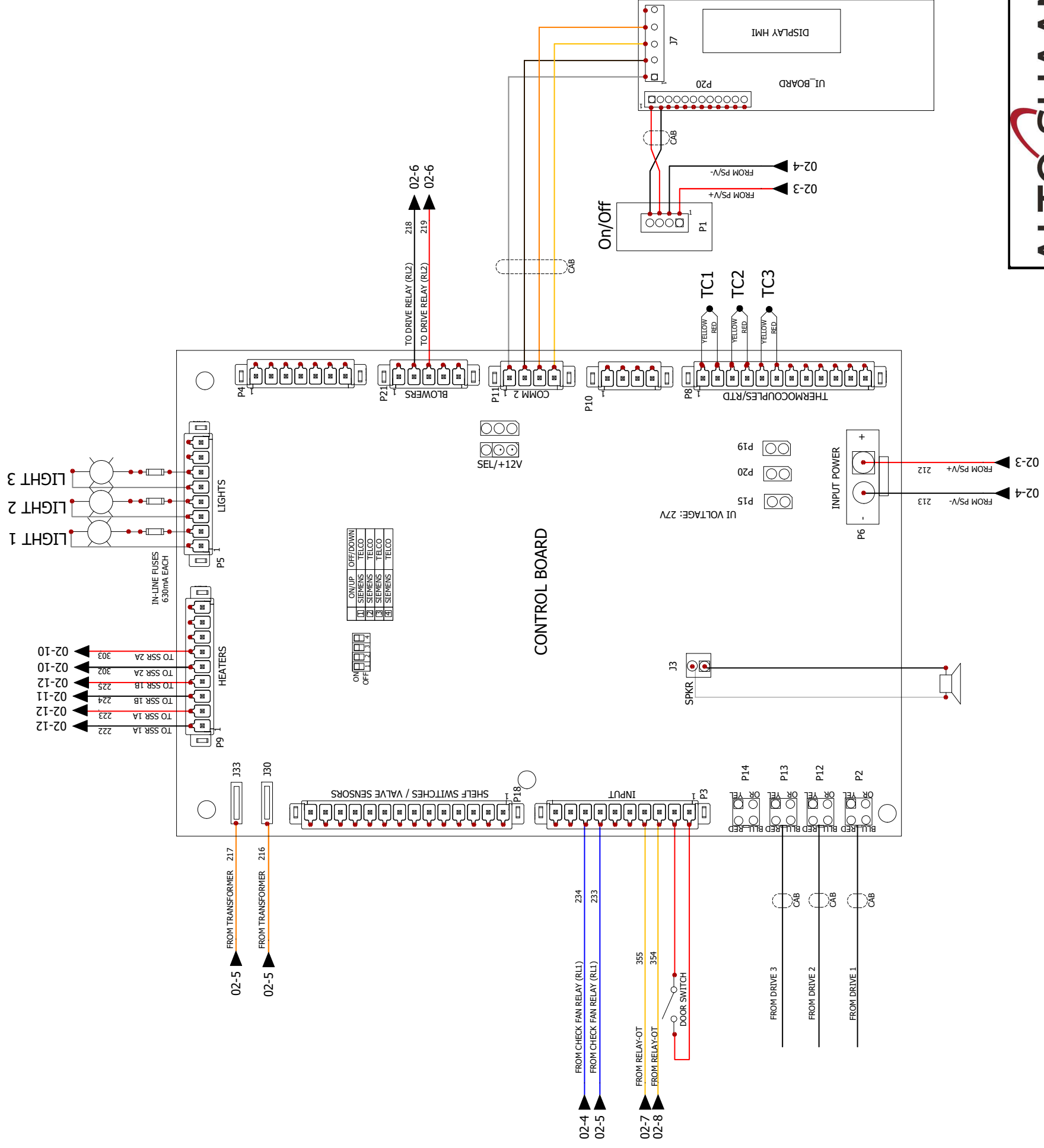
DRIVE, MOTOR, COOLING FANS

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LEGEND

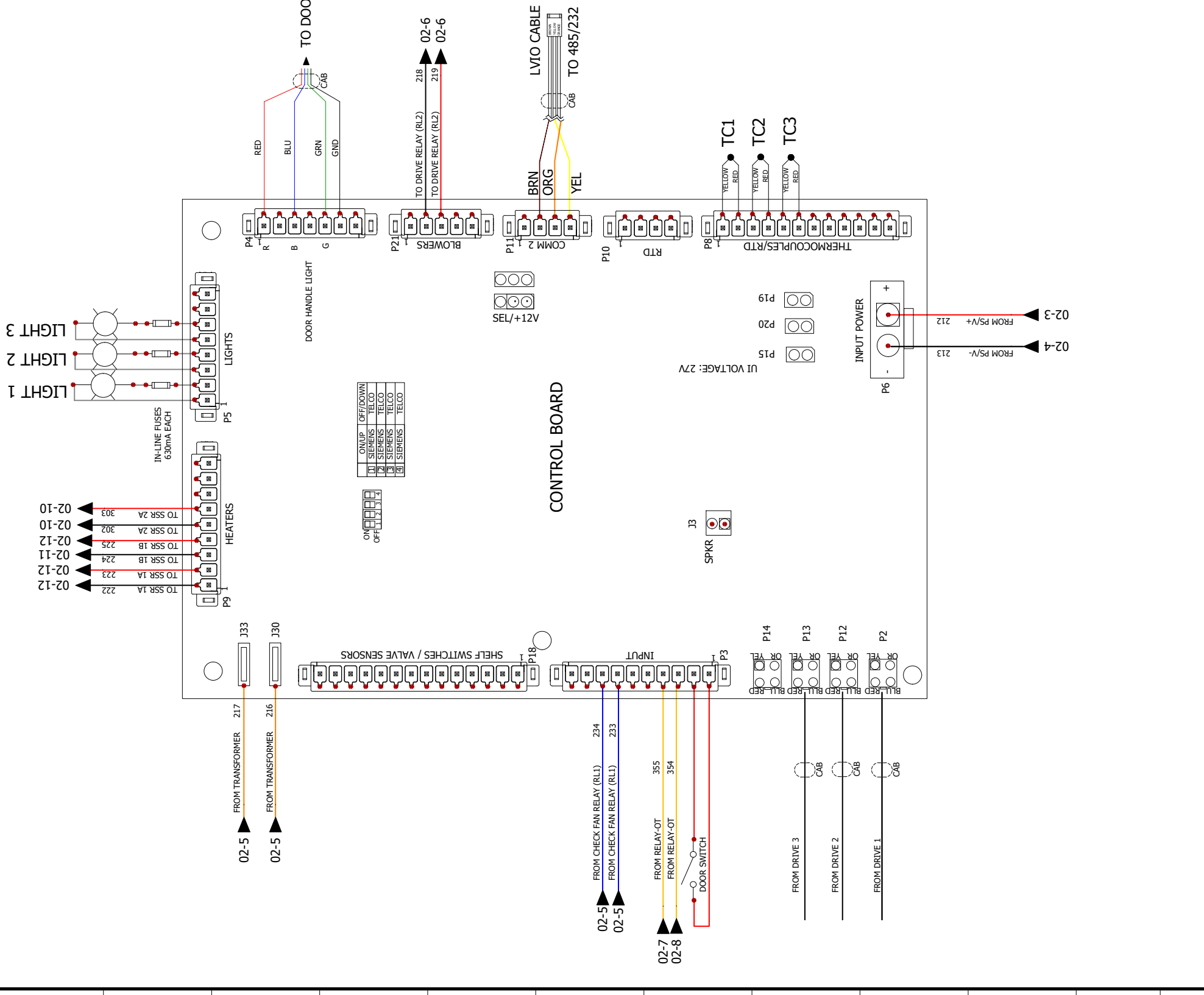
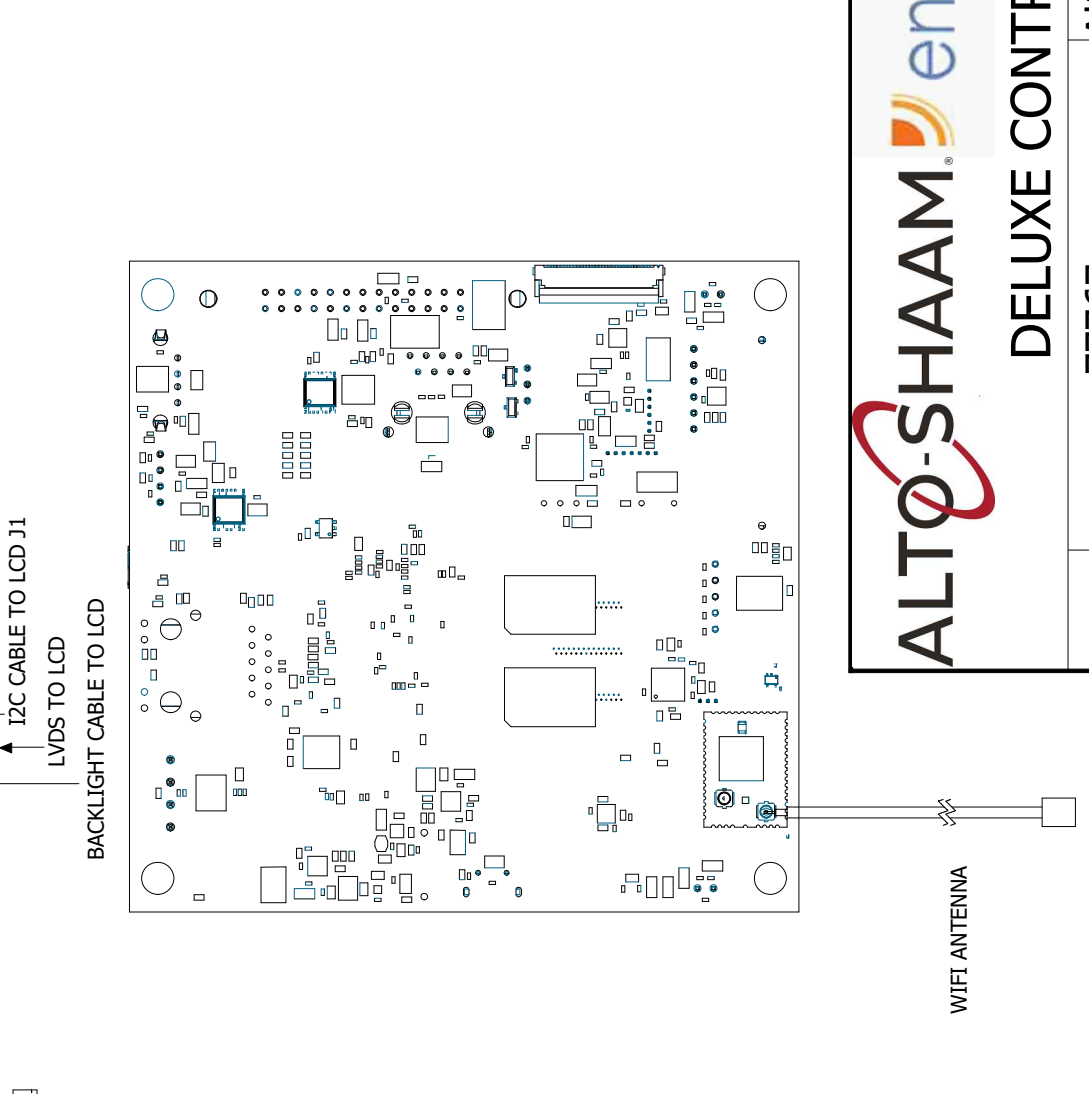
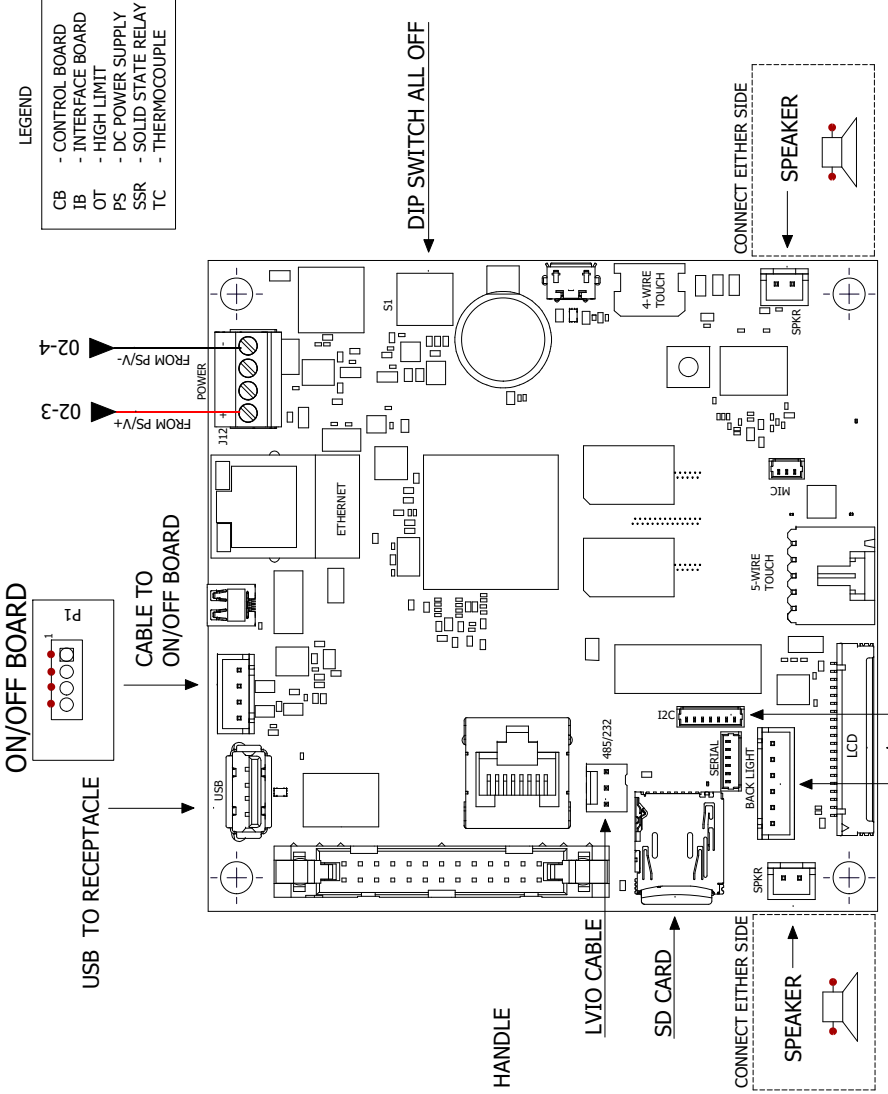
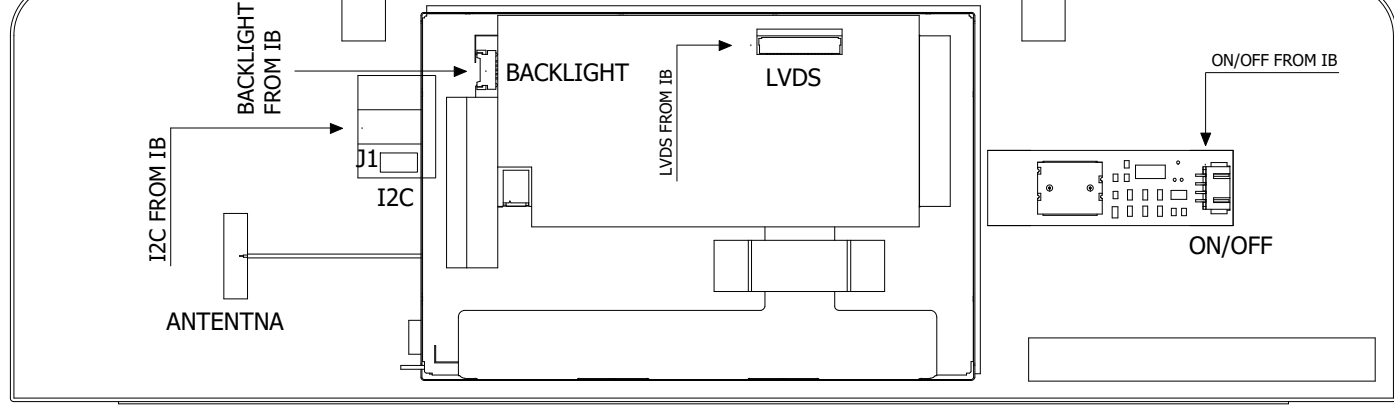
CB	- CONTROL BOARD
OT	- HIGH LIMIT
PS	- DC POWER SUPPLY
SSR	- SOLID STATE RELAY
TC	- THERMOCOUPLE



ON/UP	OFF/DOWN
10	SIEMENS
21	SIEMENS
32	SIEMENS
43	SIEMENS

SIMPLE CONTROL

- LEGEND
- CONTROL BOARD
  - INTERFACE BOARD
  - HIGH LIMIT
  - DC POWER SUPPLY
  - SOLID STATE RELAY
  - THERMOCOUPLE
- CB  
IB  
OT  
PS  
SSR  
TC



12  
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2  
1

12

B1 = H2O PROBE LOW E43 = CONV ELEMENT SET K41 = CONV CONTACTOR N9 = HIGH LIMIT TB = TERMINAL BLOCK

11

B2 = H2O PROBE HIGH EL = ELEMENT K42 = CONV CONTACTOR N10 = HIGH LIMIT TX = TRANSFORMER

B3 = WATER PROBE

FA = FAN

K43 = CONV CONTACTOR

NC X = NO CONNECTION

UPP = UPPER

10

B4 = BOILER PROBE

FE = BOILER FUSE

K44 = CONV CONTACTOR

NC = NORMALLY CLOSED

VFD = VARIABLE FREQUENCY DRIVE

B5 = STEAM BY-PASS PROBE

FST = CONV FUSE

K45 = CONV CONTACTOR

NO = NORMALLY OPEN

Y1 = STEAM VALVE

9

B10 = FOOD PROBE

FSW = FILTER SWITCH

K50 = MOTOR CONTACTOR LOW

Y2 = MIXED WATER VALVE

8

B11 = MULTI-POINT PROBE

FT = X-CAP FILTER

K51 = MOTOR CONTACTOR LOW

OT = HIGH LIMIT

Y3 = CLEAN VALVE

BLWR = GAS CONV BLOWER

FTT = COOLING FAN THERMOSTAT

K60 = MOTOR CONTACTOR LOW

PS = POWER SUPPLY

Y4 = CLEAN PUMP

7

C/B = CIRCUIT BREAKER

FU = FUSE

K61 = MOTOR CONTACTOR LOW

PSW = PRESSURE SWITCH

Y5 = HAND SHOWER

CAB = CABLE

G. PUMP = GREASE PUMP

K77 = MASTER CONTACTOR

RLY = RELAY

--- = -----

6

CB = CONTROL BOARD

GND = GROUNDING

K78 = MASTER CONTACTOR

RV = STEAM RELIEF VALVE

--- = -----

CC = CATALYTIC CONVERTER

GU = HALOGEN LIGHT

LED = LIGHT EMITTING DIODE

S7 = REED SWITCH

--- = -----

CH = CONV HEATER

HSI = HOT SURFACE IGNITOR

LF = LINE FILTER

SMK = SMOKER

--- = -----

CV = CONVECTION

IB = INTERFACE BOARD

LQ. PUMP = LIQUID PUMP

SMO = STEAM MOTOR

--- = -----

4

E1 = BOILER ELEMENT SET

IM = IGNITION MODULE

LWR = LOWER

SPI = SPARK IGNITOR

--- = -----

3

E2 = BOILER ELEMENT SET

K1 = BOILER CONTACTOR

MO = MOTOR

SSR = SOLID STATE RELAY

--- = -----

E3 = BOILER ELEMENT SET

K2 = BOILER CONTACTOR

N6 = CAVITY PROBE

SV = STEAM VALVE

--- = -----

2

E41 = CONV ELEMENT SET

K3 = BOILER CONTACTOR

N7 = HIGH LIMIT

TC = THERMOCOUPLE

--- = -----

E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR

N8 = BOILER TEMP PROBE

TM = TERMINAL

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## LEGEND

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# H3HW 380-415V 3PH

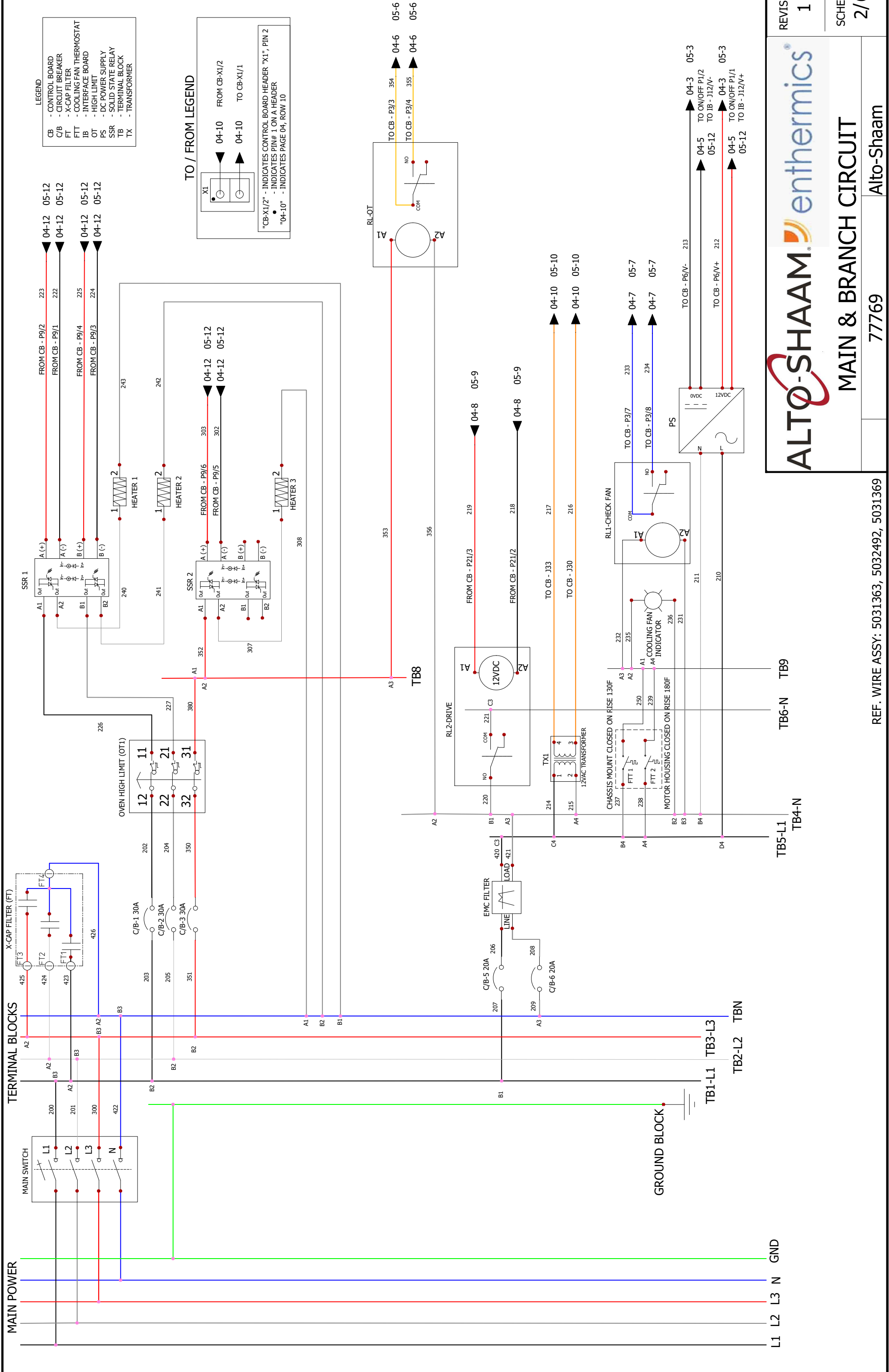
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1	9/13/2021	grantp	182506	Updated VFD Markings and Connections					
0	7/8/2021	grantp	182363	NEW					
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				77769					
				H3HW 380-415V 3PH					
				Alto-Shaam					
				REVISION	1				
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TERMINAL BLOCK

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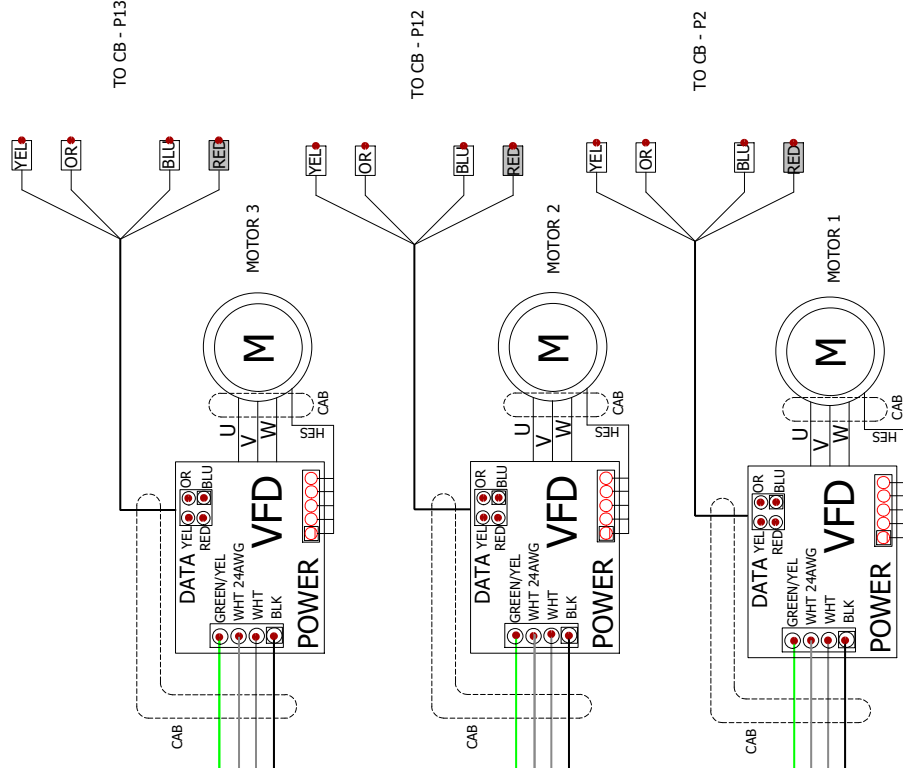
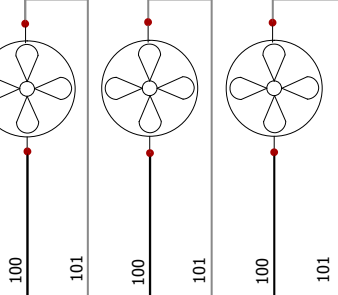
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3

2

1

COOLING FAN



TB5-L1 TB7-GND  
TB6-N

LEGEND

- CB - CONTROL BOARD
- TB - TERMINAL BLOCK
- VFD - VARIABLE FREQUENCY DRIVE

**ALTO-SHAAM**

**DRIVE, MOTOR, COOLING FANS**

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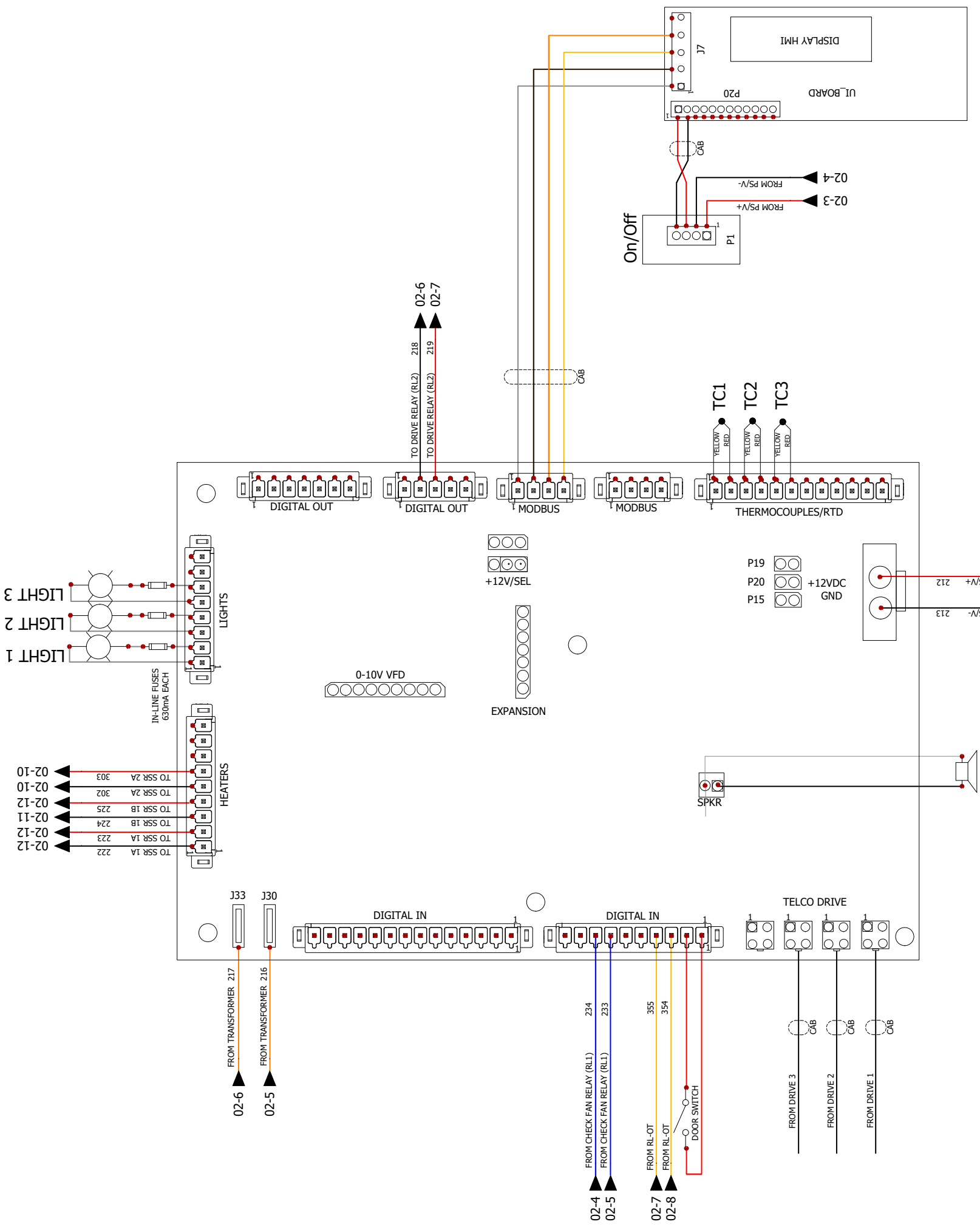
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LEGEND

CB	- CONTROL BOARD
OT	- HIGH LIMIT
PS	- DC POWER SUPPLY
SSR	- SOLID STATE RELAY
TC	- THERMOCOUPLE



ALTO-SHAAM® enthermics®

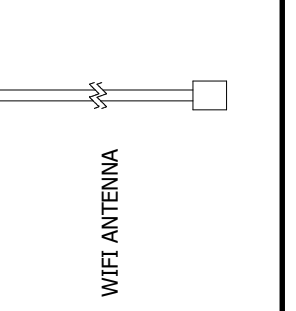
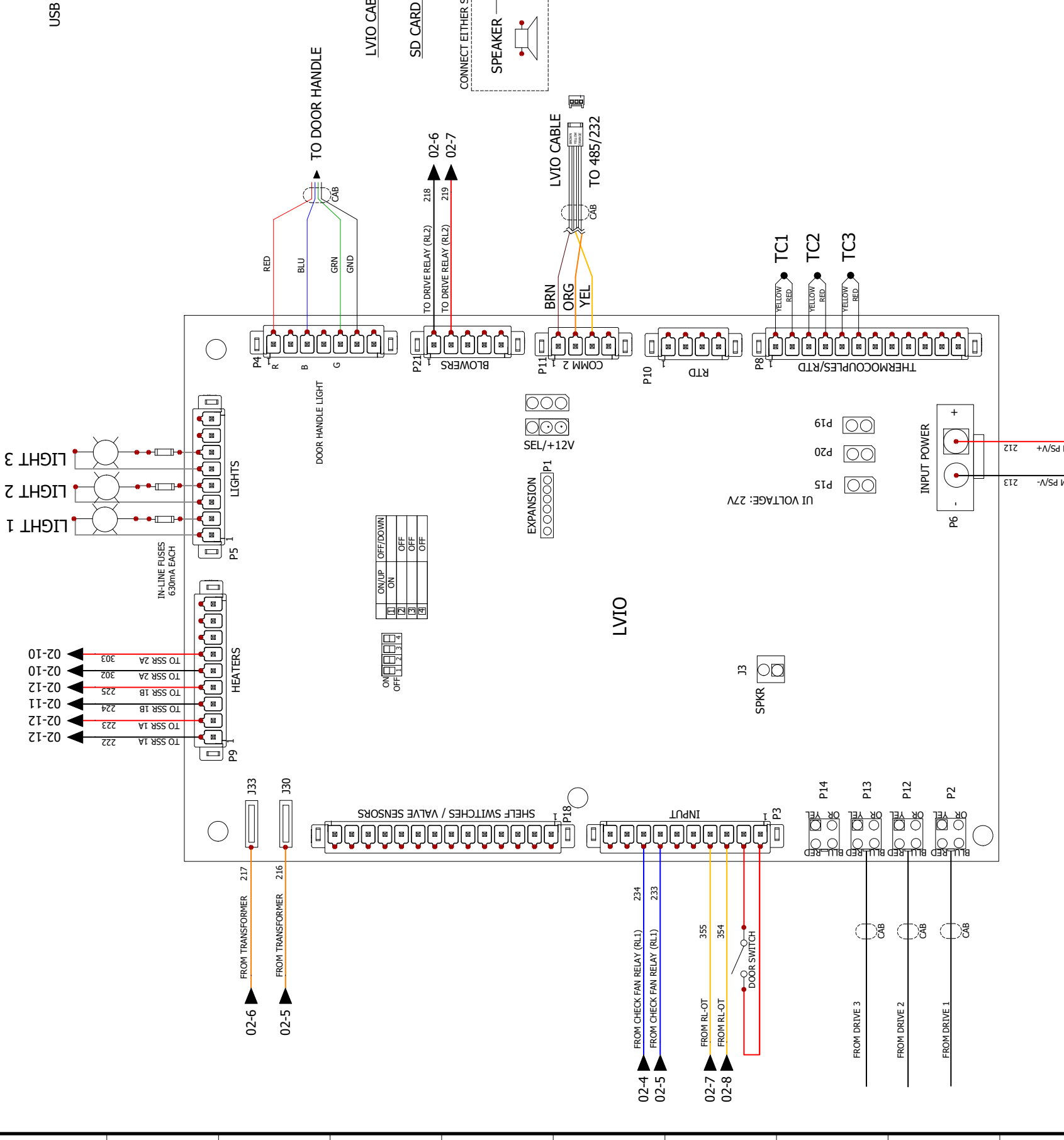
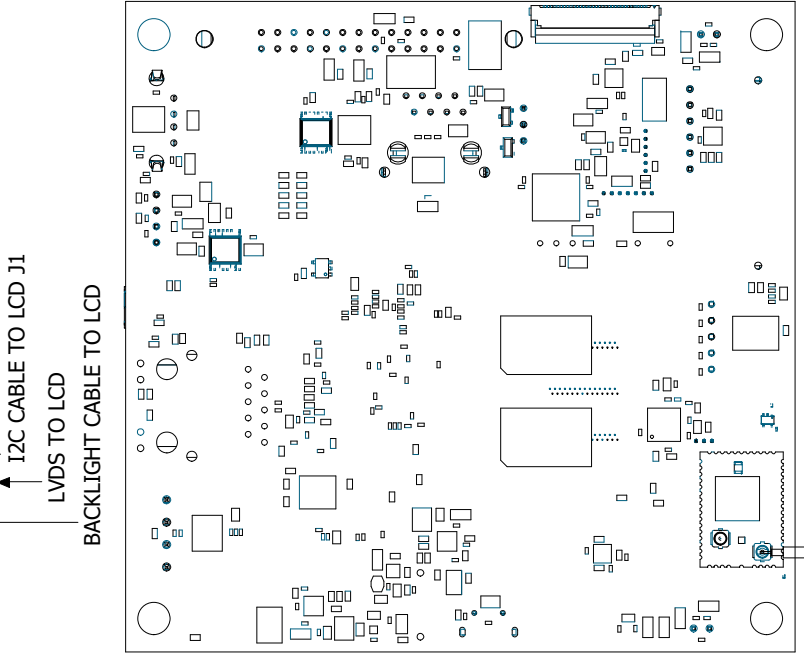
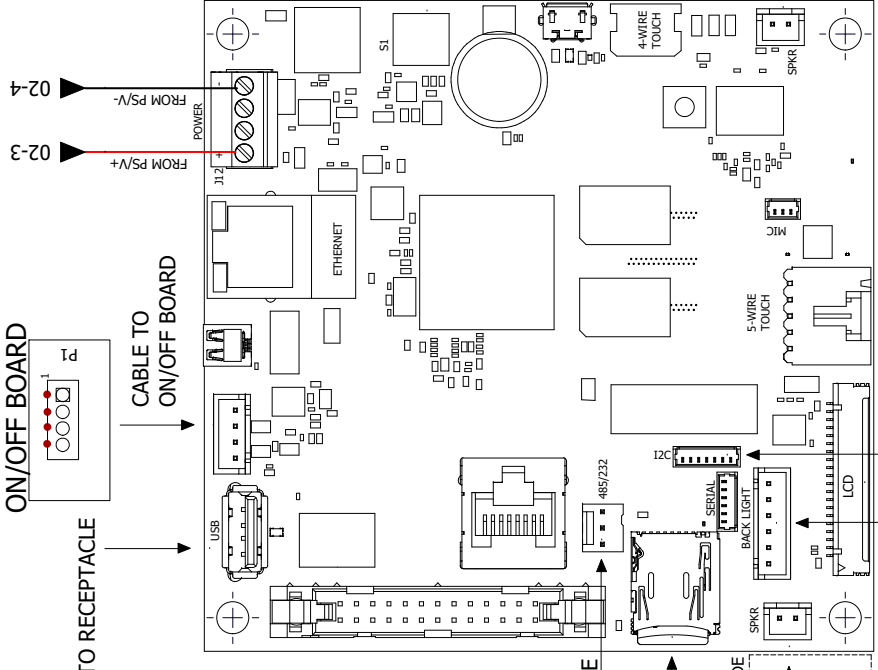
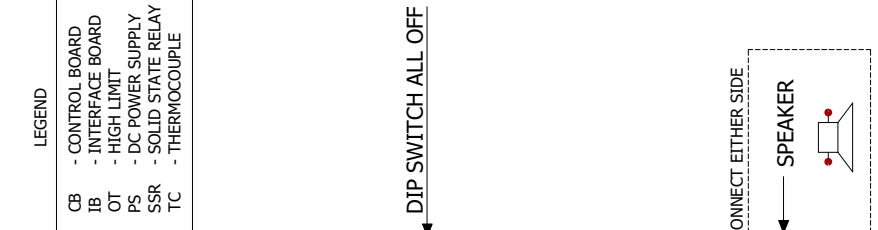
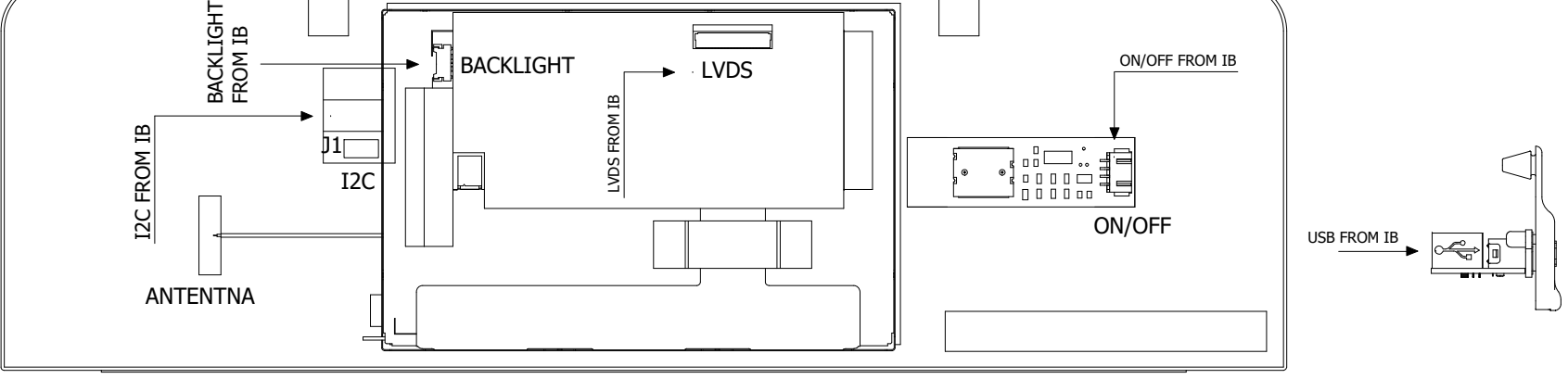
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SCHEME 4/6

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SIMPLE CONTROL



12

B1 = H2O PROBE LOW E43 = CONV ELEMENT SET K41 = CONV CONTACTOR N9 = HIGH LIMIT TB = TERMINAL BLOCK

11

B2 = H2O PROBE HIGH EL = ELEMENT K42 = CONV CONTACTOR N10 = HIGH LIMIT TX = TRANSFORMER

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FA = FAN K43 = CONV CONTACTOR NC X = NO CONNECTION UPP = UPPER

10

B4 = BOILER PROBE FE = BOILER FUSE K44 = CONV CONTACTOR NC = NORMALLY CLOSED VFD = VARIABLE FREQUENCY DRIVE

B5 = STEAM BY-PASS PROBE

FST = CONV FUSE K45 = CONV CONTACTOR NO = NORMALLY OPEN Y1 = STEAM VALVE

9

B10 = FOOD PROBE

FSW = FILTER SWITCH K50 = MOTOR CONTACTOR LOW OB = OPTION BOARD Y2 = MIXED WATER VALVE

8

B11 = MULTI-POINT PROBE

FT = X-CAP FILTER K51 = MOTOR CONTACTOR LOW OT = HIGH LIMIT Y3 = CLEAN VALVE

BLWR = GAS CONV BLOWER

FTT = COOLING FAN THERMOSTAT K60 = MOTOR CONTACTOR LOW PS = POWER SUPPLY Y4 = CLEAN PUMP

7

C/B = CIRCUIT BREAKER

FU = FUSE K61 = MOTOR CONTACTOR LOW PSW = PRESSURE SWITCH Y5 = HAND SHOWER

CAB = CABLE

G. PUMP = GREASE PUMP K77 = MASTER CONTACTOR RLY = RELAY --- = -----

6

CB = CONTROL BOARD

GND = GROUNDING K78 = MASTER CONTACTOR RV = STEAM RELIEF VALVE --- = -----

CC = CATALYTIC CONVERTER

GU = HALOGEN LIGHT LED = LIGHT EMITTING DIODE S7 = REED SWITCH --- = -----

5

CH = CONV HEATER

HSI = HOT SURFACE IGNITOR LF = LINE FILTER SMK = SMOKER --- = -----

CV = CONVECTION

IB = INTERFACE BOARD LQ. PUMP = LIQUID PUMP SMO = STEAM MOTOR --- = -----

4

E1 = BOILER ELEMENT SET

IM = IGNITION MODULE LWR = LOWER SPI = SPARK IGNITOR --- = -----

3

E2 = BOILER ELEMENT SET

K1 = BOILER CONTACTOR MO = MOTOR SSR = SOLID STATE RELAY --- = -----

E3 = BOILER ELEMENT SET

K2 = BOILER CONTACTOR N6 = CAVITY PROBE SV = STEAM VALVE --- = -----

2

E41 = CONV ELEMENT SET

K3 = BOILER CONTACTOR N7 = HIGH LIMIT TC = THERMOCOUPLE

E42 = CONV ELEMENT SET

K40 = CONV CONTACTOR N8 = BOILER TEMP PROBE TM = TERMINAL







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