



DC NORRIS

NORTH AMERICA

Operating & Maintenance Manual

Model CT-1 Sous Vide Machine

Defrost, Heat, Chill

Designed & Manufactured by:

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Table of Contents

Preface.....3

1.0 Safety4

1.1 Health and Safety at Work.....5

1.2 Statutory Requirements5

1.3 Limitations of Use5

1.4 Using the Equipment5

1.5 Use of Personal Protective Equipment.....6

1.6 Maintenance of Equipment.....6

1.7 Guards and Machine Covers6

1.8 Power Isolation Switch7

1.9 Moving the Equipment.....7

1.10 Emissions of Fumes.....7

1.11 Materials of Construction7

1.12 Lighting Levels.....7

1.13 Safety Warning Labels7

2.0 General Description8

3.0 Installation and Service Connections8

3.1 Installation8

3.2 Services Required.....9

4.0 Controls.....9

4.1 HMI9

4.2 Auto Selection.....12

4.3 Settings Screen12

4.4 Cycle Screen14

4.5 Cooking Example.....14

5.0 Alarms15

5.1 Error.....15

6.0 Cleaning15

7.0 Routine Maintenance.....21

5.1 Maintenance Schedule.....21

8.0 Spares List22

9.0 Electrical Drawings.....23

Preface:

This manual describes the operation and maintenance of the Model CT-1 Sous Vide

It is important that you read and fully understand this manual.

Adhere to the instructions provided. Failure to do so may cause irrevocable damage and invalidate the warranty.

Only personnel of suitable authority and training should operate or adjust the equipment.


To ensure safe and trouble-free use of this machine, it is important that the routine maintenance section be strictly adhered to.


A list of spares is provided (See Section 8) along with our recommendation for those you should consider holding in case of part failure.


In all communications with the manufacturer, please quote the machine model and serial number. The numbers are shown on the label mounted on the machine.


1.0 Safety

Explanation of Text Boxes:

| CAUTION - DANGER | |
|---|---|
|  | BEFORE STARTING WORK ON THE MACHINE FOR THE FIRST TIME, ALL PERSONS MUST READ AND FULLY UNDERSTAND THE COMPLETE SECTION 1 SAFETY AND APPLY ITS RECOMMENDATIONS. |

| CAUTION - NOTICE | |
|---|---|
|  | BLUE CAUTIONS INDICATE A SITUATION WHICH CAN CAUSE DAMAGE TO THE MACHINE, PROPERTY OR PRODUCT IF NOT OBSERVED AND AVOIDED |

| CAUTION - BE AWARE | |
|--|---|
|  | YELLOW CAUTIONS INDICATE A SITUATION WHICH COULD RESULT IN MINOR OR MODERATE INJURY IF NOT OBSERVED AND AVOIDED |

| CAUTION - WARNING | |
|---|--|
|  | YELLOW CAUTIONS INDICATE A SITUATION WHICH COULD RESULT IN DEATH OR SERIOUS INJURY IF NOT OBSERVED AND AVOIDED |

Before starting work on the machine for the first time, all persons must read and fully understand this section and apply its recommendations.

1.1 Health & Safety at Work

Before installing or using the equipment, owners must carefully read this section of the manual and become thoroughly aware of the safety needs of the equipment and the production process.

This section of the manual must be made readily available to operators, cleaners, maintenance staff and any other persons involved with the day-to-day use of the equipment.

1.2 Statutory Requirements

It is a requirement of current European legislation that suppliers of machinery ensure that stringent health and safety requirements are met.

The provision of a 'Certificate of Conformity' or 'Declaration of Incorporation' for the equipment is your confirmation that D C Norris North America LLC has designed and manufactured your machinery such that it satisfies the essential health and safety requirements of the various US directives stated thereon.

Please ensure that these certificates are kept safely as copies cannot easily be obtained.

1.3 Limitations of Use

The machinery to which this manual refers has been designed for cooking bagged, vacuum sealed, food products. The system must not be used for any purpose other than that for which it was designed.

The machinery is not designed for the processing of, nor should it be used in areas containing explosive materials or atmospheres.

The recommended capacity of the vessel must not be exceeded.

Section 3 contains details of the capabilities of the machinery, with regard to flow rates, temperatures, power requirements, etc.

Attempting to use the equipment for purposes outside of these limitations could result in damage to the equipment and injury to the operator and bystanders.

Similarly, modifying the equipment, for any reason whatever, may result in damage or injury for which the manufacturer accepts no responsibility and would almost certainly invalidate the legal framework that allows the equipment to be put into use. Any guarantee or warranty would also be rendered null and void by such actions.

1.4 Using the Equipment

- The recommended capacity of the vessel must not be exceeded
- Personnel must not climb on or around the apparatus. Personnel must keep clear of all moving parts as these may cause injury. Non-essential personnel must be kept clear of operating areas when the system is in operation.

- Any person using the equipment must:
 - Have received adequate safety training in using the equipment
 - Be able to demonstrate competency regarding safe operation of the equipment

1.5 Use of Personal Protective Equipment

In view of the probability of exposure to hot liquids and materials, consideration should always be given to the provision and use of personal protective equipment (PPE) to reduce the possibility of burns and scalds. Gloves, aprons, ear protection, and face shields are examples of the possible items that may be required.

1.6 Maintenance of Equipment


Refer to the equipment reference drawings in section 8 in order to become familiar with the equipment and its various parts.


Note: Your particular model of machine may differ slightly from that shown.

In order to provide a reasonable level of safety, the equipment should be maintained on a regular basis. Section 6 outlines details of the recommended maintenance requirements of the equipment.

D.C. Norris will be happy to quote on request for the provision of a contract to carry out the required maintenance for those users who do not have the in-house expertise for this work.

1.7 Guards and Machine Covers

| | |
|---|---|
| CAUTION – DANGER | |
|  | <p>THE ELECTRICAL POWER MUST BE SHUT OFF AND LOCKED OFF PRIOR TO COMMENCING CLEANING OR ANY MAINTENANCE WORK.</p> |

| | |
|---|---|
| CAUTION – DANGER | |
|  | <p>UNDER NO CIRCUMSTANCES SHOULD THE ELECTRICAL POWER BE RESTORED TO THE MACHINE UNTIL ALL GUARDS AND PANELS HAVE BEEN REPLACED AND PROPERLY SECURED.</p> |

Guards and machine covers, protecting the controls, must not be removed.

Specific Safety Measures for Maintenance Purposes

It is important, whenever any maintenance work is carried out on the equipment that the electrical power supply is isolated. We recommend that the machine is disconnected from

the mains power supply or if using a plug and socket, the plug is removed from the socket on the wall and the cable neatly coiled up whilst working on the machine.

1.8 Power Isolation Switch

This is located on the rear of the machine. This isolates the equipment from the electrical supply. It must be turned to the off position (quarter turn) prior to commencing cleaning or maintenance work. A padlock must be fitted to the slot to prevent accidental or unauthorized operation of the unit. Further Lockout Tagout procedures may be required upstream and must be followed.

1.9 Moving the Equipment

- The machine is set upon castors for mobility.
- The machine must be emptied of water and any product prior to moving it.
- All external electrical and utility connections must be removed prior to moving it.
- Trailing cables should be neatly coiled up and securely tied to the equipment to prevent jamming under the machinery castors.
- Ensure that the route to be taken is clear and there are no obstacles or deep ruts, drains, or other similar grooves into which the machine could become ensnared.

1.10 Emission of Fumes

The equipment does not emit hazardous fumes during operation.

1.11 Materials of Construction

No intrinsically hazardous or toxic materials are used in the construction of the equipment

1.12 Lighting Levels

It is recommended that lighting levels in the range 750 to 1000 lux be provided in the area in which the equipment is used.

1.13 Safety Warning Labels

It is important to note the details of any safety warning labels fitted to the equipment and their positions. It is important that labels are kept clean and legible. If the labels are removed for any reason they must be replaced before the machine is returned to service

2.0 General Description

The system is designed to cook vacuum sealed food products. Where possible, parts have been manufactured using stainless steel or food approved materials

The CT-1 Sous Vide Machine comprises of the following:

- Stainless steel housing
- Lift out product baskets
- Filling and draining lines connections
- Overflow line connection
- Chiller line connections
- Electrical panel and Human Machine Interface (HMI)
- Heating elements
- Circular pump
- Control valves
- Water temperature probe mounted in pipework
- Product temperature probe (handheld)
- Necessary guarding for safe operation

The CT-1 offers the following features:

- Defrost
- Heat
- Chill

3.0 Installation & Service Connections

This section provides details on installation and service connections.

3.1 Installation

Any damage to the machine must be reported to the shipper and to D.C. Norris North America LLC immediately. Suitably qualified personnel must install the machine. Incorrect installation can cause injury to personnel and/or damage to the equipment. Install the machine on a firm base. Always supply DC Norris with the serial number (SN) found on the inside of the electrical control cabinet.

3.2 Services Required

Ensure that you connect all utilities and power in accordance with all state and country regulations

- **Electrical: 240V 3ph 60Hz Neutral @ min 32 Amps per phase**
- **Water Supply: min 10 gal/min @ 30 psi – 3/4” FNPT**
- **Chilled Water: min 10 gal/min @ 32° F – 3/4” FNPT**
- **Drain: 15 gal/min – 3/4” FNPT**
- **Overflow: 20 gal/min – 1 1/4” FNPT**

4.0 Controls

This section describes the controls and how to operate the machine. The lid must always be in place while using the HMI



4.1 HMI

This machine functions are controlled by the HMI.

| CAUTION - NOTICE | |
|---|--|
|  | <p>DO NOT SPRAY THE CONTROL PANELS DIRECTLY WITH WATER!</p> |

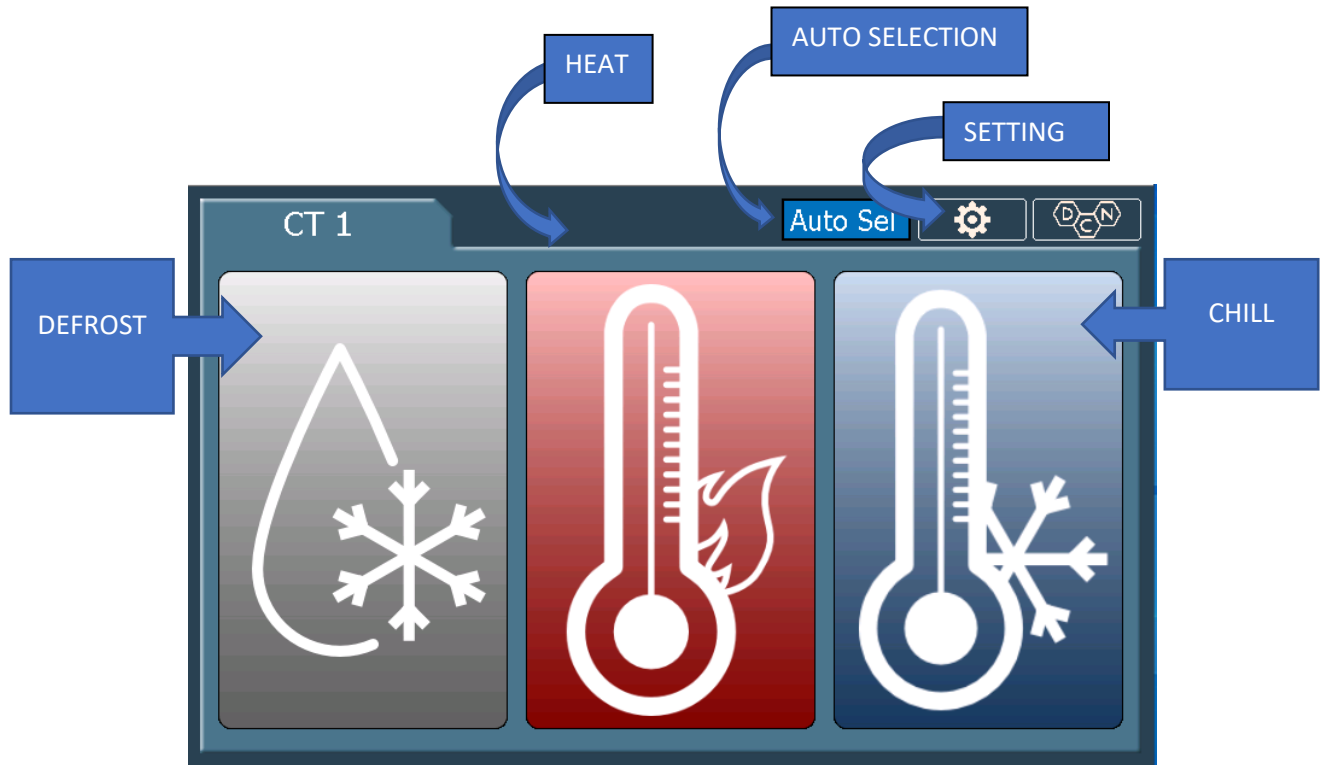
The Interface panel is IP65 rated. However, it is inadvisable to clean the panel using a high-powered water jet. In most cases, wiping the panel with a suitable damp cloth will be sufficient.

The HMI display unit is used to display information and control machine functions. The unit is programmable and has been pre-set for the machine.

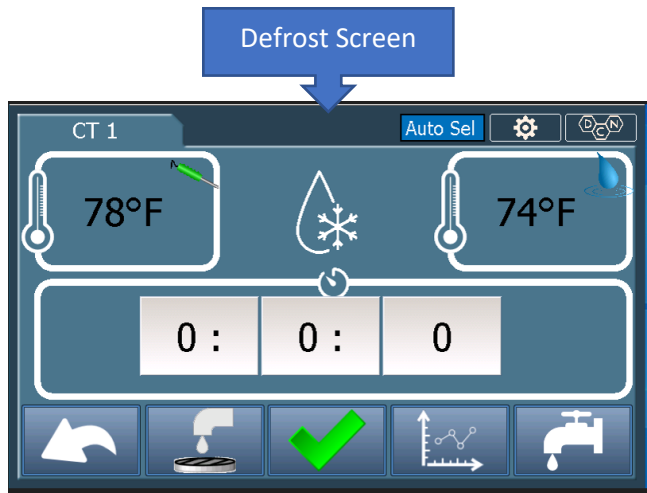
It is assumed that all supplies are correctly fitted and switched on

- Switch on the isolator (located on the rear of the machine)

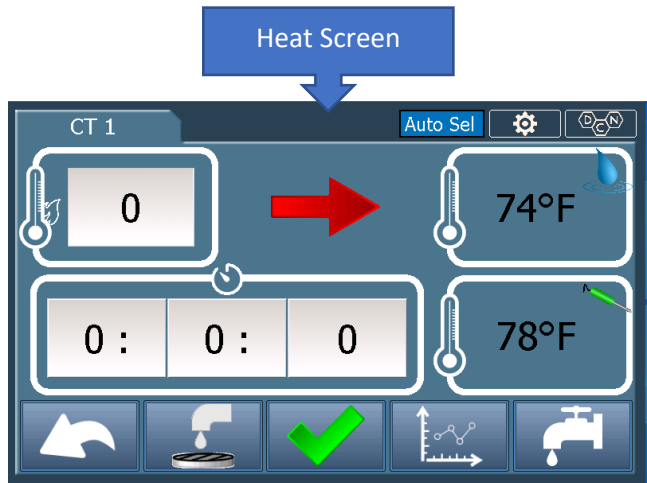
The HMI display will illuminate and run through an internal software check. When the check is complete the system displays the home page. All the icons are soft buttons that will take you to the desired state and screen. Each button is described below.



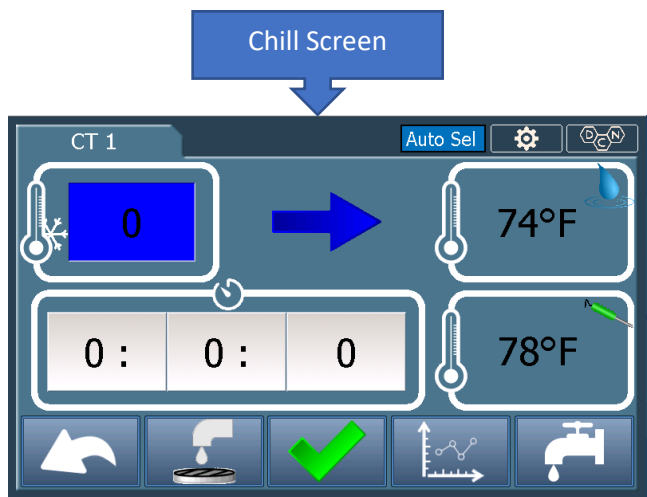
- **Auto Selection:** The button is used to set up auto mode between the three options of run mode in the tank.
- **Setting:** Changes screen to probe, water fill, and chill parameters, also see vales in use
- **Defrost:** Circulates water at temp for a specified amount of time
- **Heat:** Circulates heated water for cook cycle for a specified amount of time
- **Chill:** Circulates cool water for chilling cycle for a specified amount of time



Defrost Screen



Heat Screen



Chill Screen



Settings



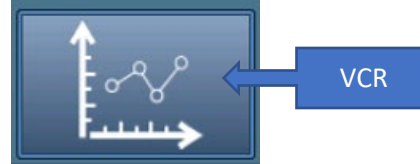
Return



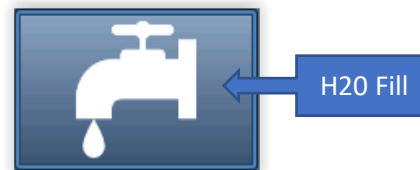
Drain



Accept



VCR



H2O Fill

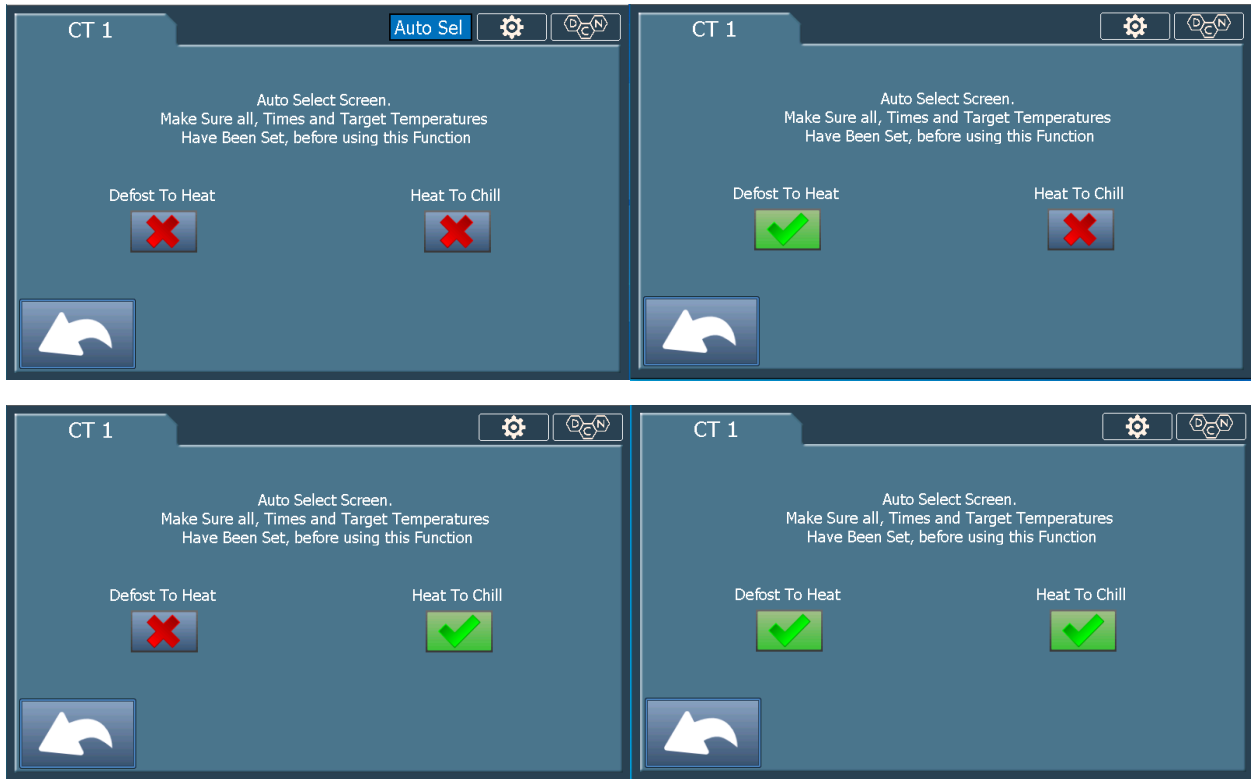
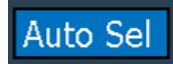


Green is active

When function key has been pressed the key is active and it will be highlighted in green

4.2 Auto Selection:

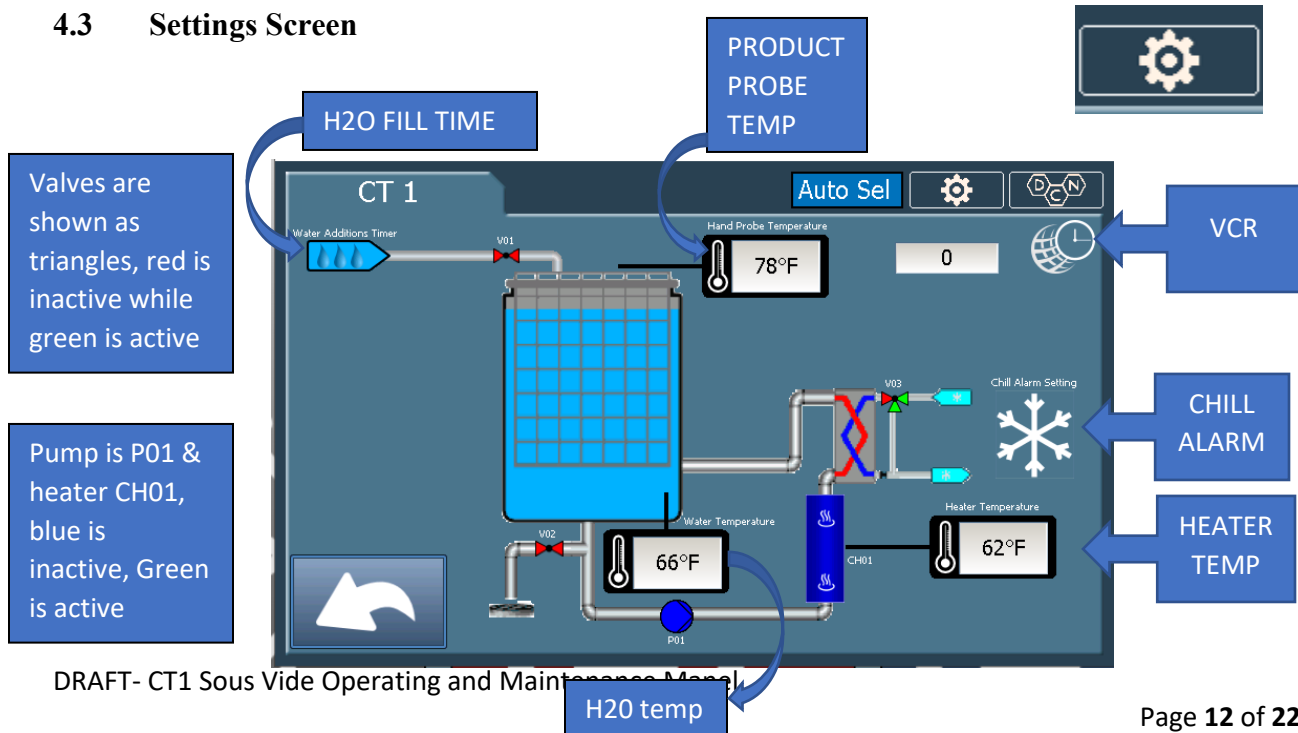
This screen allows for a continuous cycle form Defrost to heat to Chill. It will also only go from defrost to heat or Heat to chill if desired



The Auto Selection button will flash green if any of the combination of the auto mode has been selected. To return to the home screen press the return button



4.3 Settings Screen



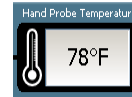
H2O Fill time:

This setting designated the amount of time that the water will fill the tank. Your water supply will determine your time needed. Each supply is unique to the customer's setting and will need to be determined per unit. Remember that the amount of product present in the tank will play a factor.



Product Probe Temp:

This is the temperature of the product probe. Temperature can be calibrated +/- 10 degrees Fahrenheit



VCR:

Time and date setting for Virtual Chart recording needs only



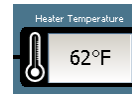
Chill Alarm Setting:

A customer derived time that a particular product should reach temp by.



Heater Temp:

Denotes internal heater element temperature. Temperature can be calibrated +/- 10 degrees Fahrenheit Caution, never run heater with water.

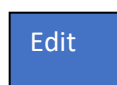
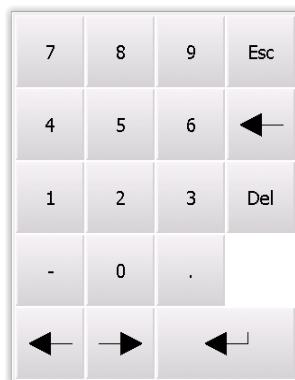
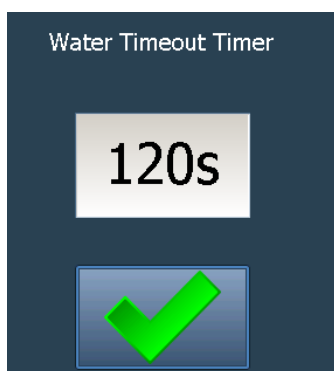


H2O Temp:

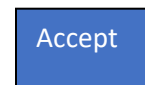
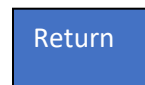
Denotes temperature of water running through the pipework of the sous vide machine and coming into the tank. Temperature can be calibrated +/- 10 degrees Fahrenheit



Setting Temperate and Timers:



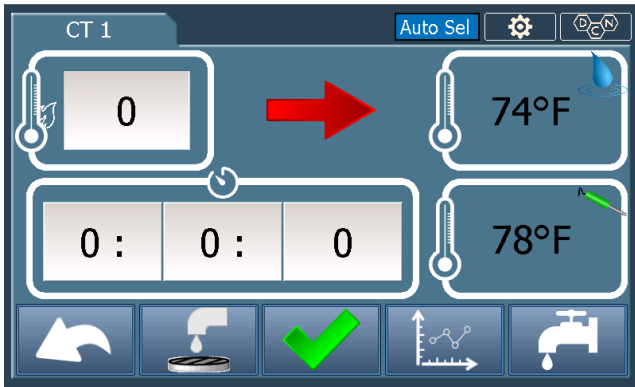
Upon pressing any soft icon above, excluding the VCR, pressed icon screen will appear. Press the numerical button and the Edit Box will appear. Set the timer and temperature enter the value and press return, then press the green check box to return to the previous screen



4.4 Cycle Screens

From the home page you can set the three-cooking cycles of the machine. The heat and chill cycles are controlled using a similar procedure. The defrost cycle cycles water temp water that is presently in the system for a designated amount of time.

4.5 Cooking example:

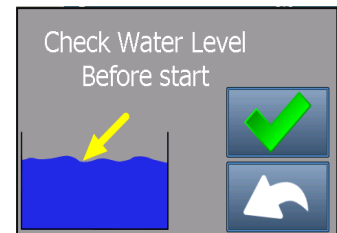


Press the temp button under CT1 to set the temperature of the heat using the edit and set screens

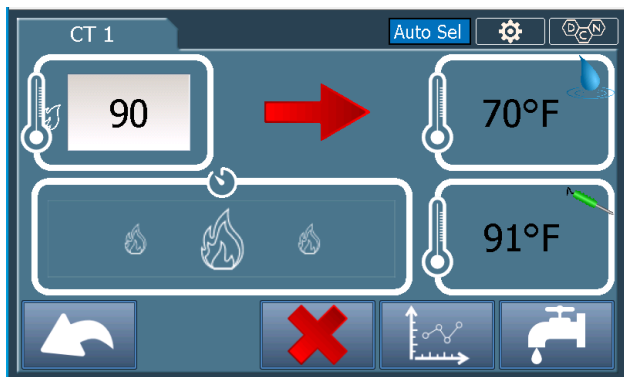
Press either the water droplet or probe to determine which temperature will control the cook. Whichever icon (water drop/green probe) is across from the arrows is in control.

The example shows H2O temp will control the cook

Upon entering the required data press accept (green check). This will prompt a check screen. Press accept again to start the cycle. Be aware that the lid should be in place to avoid burns.

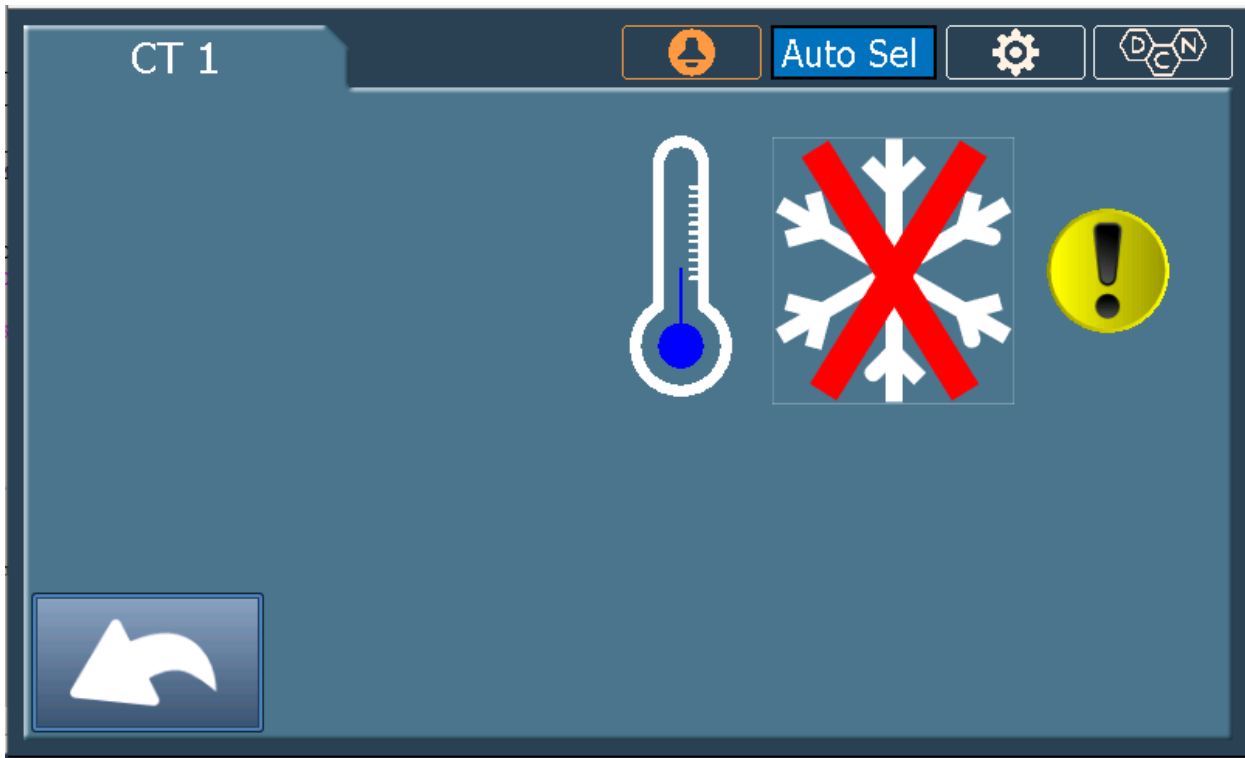


If no water is present, press return and fill the tank with the required water. The system will fail and cause harm if ran without H2O is in the system.



The next screen will show the heating cycle. This will continue until the temperature reaches the controlling temp to the right of the red arrow. Then timer will start holding the controlled temp.

5.0 Alarms

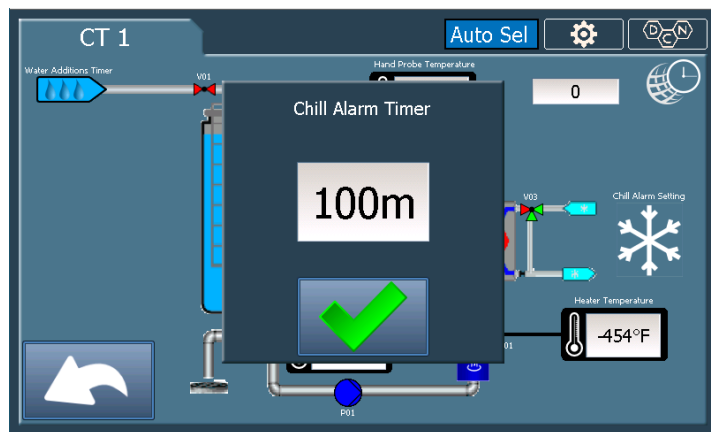


If the alarm button is active, you can press it and move the alarm screen. This alarm indicates that your chill time was not achieved based on your chill timer setting. This must be set per batch to ensure proper colling times. To reset press the yellow explanation button.



5.1 Error

If any of your temp readings denote an unreachable reading (-454 F deg) as shown to the right, the thermocouple or RTD is not working properly. You will need to contact DCN and may need the assistance of a qualified electrician to trouble shoot the problem.



6.0 Cleaning

This section contains general guidance on cleaning the equipment. Good hygiene practice should always be used when cleaning equipment for use in the food industry, to comply with all food hygiene laws. Effective cleaning of the equipment can only be achieved by using the correct procedures, chemicals, effort and allowing time for this to be undertaken. Care should always be taken to only use cleaning products suitable for use on this type of equipment. Advice should be taken from the supplier of your products if in any doubt as to their suitability.

Advisory Notes

Chloride-containing solutions, including hydrochloric acid-based cleaning agents and hypochlorite bleaches can cause unacceptable surface staining and pitting and should not be used in contact with stainless steels

Under no circumstances should concentrated bleaches contact stainless steel surfaces

Hydrochloric acid-based solutions must not be used in contact with stainless steels

Hypochlorite containing bleaches must be used in the dilutions suggested in the manufacturers' instructions and contact times kept to a minimum

Thorough rinsing after use is especially important

A frequent cause of staining and micro pitting of stainless steels is splashing with undiluted bleach solutions

Clean as soon as possible after cooking

De-scale the system at regular intervals.

CAUTION - NOTICE



DO NOT USE ABRASIVE MATERIAL TO CLEAN ANY SURFACE, AS THIS WILL DAMAGE THE SURFACE FINISH


MEASURE ALL CLEANERS AND DISINFECTANTS

DO NOT SPRAY WATER DIRECTLY ONTO THE CONTROL PANEL OR ELECTRICAL EQUIPMENT

Materials used in DC Norris equipment

The following list of material used in the construction of DCN equipment is provided to help determine the best chemicals and concentrations that should be used for cleaning. The list is not specific to your equipment and may contain materials not fitted to the machine you are cleaning. For this reason, take care to identify appropriate parts correctly.

| Material | Where used | Resistance to Chemicals |
|--------------------------------|---------------------------|--|
| Metals | | |
| Stainless Steel | All general assemblies | High (in normal conditions, for example temperatures between -20 to + 30°C [-4 to 86°F]) |
| Aluminum | Pneumatic cylinders | Low – easily attacked by strong alkalis and acids |
| Plastics | | |
| Polyamides (PA) | Bearings, | High |
| Polycarbonate (PC) | Displays | Limited – easily attacked by strong alkalis and acids |
| Polypropylene (PP) | Modular conveyor belts | High |
| Acetal (POM) | Bearings, spacers, bushes | High – may be affected by chlorine |
| Polyether-ether ketone (PEEK) | Bearings | High |
| Polytetrafluoroethylene (PTFE) | Bearings | High |

| | |
|---|---|
| CAUTION - NOTICE | |
|  | <p>ADVICE FOR THE TYPE AND STRENGTH OF CHEMICALS USED FOR CLEANING SHOULD ALWAYS BE SOUGHT FROM THE SUPPLIER OR QUALIFIED DISTRIBUTOR OF THE SOLUTION</p> |

Cleaning

This is the process of removing all traces of soiling from the equipment. It can involve the use of manual cleaning equipment (sponges, brushes etc.) water, detergents. The equipment must be cleaned after each product discharge and at the end of each shift. It is important that the personnel involved have a good understanding of the distinct types of soiling and the method for their removal.

One option is to use a high alkaline foaming detergent, mixed to a 3% to 5% solution, for standard daily cleaning. The foaming agent should contain corrosion inhibitors. Avoid using detergents with elevated levels of sodium hypochlorite.

Before using the detergent remove all traces of major debris and soiling and then pre-rinse the surfaces using water. The use of hot water will aid the removal of soil but do not exceed 45°C [113°F].

Note! When cleaning make sure the shadow areas are clean, that is items that you cannot see behind. Some examples of these are the temperature probe, vortex breaker, agitator, and the underside of the lid where splashing may have occurred.


Spray the detergent on all surfaces, avoiding control switches, HMI panels etc. Leave the detergent to work for the time specified by the supplier and, once ready, wash off with clean cold water.

The detergent can also be applied by hand using sponges, brushes or similar. Using this method combined with a scrubbing action allows the detergent to be used in a lower concentration, typically 0.5% to 2%. Gloves must be worn for this method.

Internal cooking surfaces of the machine can be cleaned also by filling the product zone with water and adding the required amount of chemical to the water. The solution can then be heated to a temperature, recommended by the supplier, and left for the specified contact time. Avoid temperatures of more than 55°C [131°F] due to the corrosive nature of most chemical sanitizers.

After the detergent has been thoroughly removed, spray the surface with an approved chemical sanitizer.

CAUTION - NOTICE

| | |
|---|--|
|  | <p>COMMON IN THE FOOD INDUSTRY ARE CLEANING PRODUCTS THAT CONTAIN QUANTENARY AMMONIUM COMPOUNDS (QAC'S). THESE ARE EFFECTIVE AGAINST MOST BACTERIA BUT ACT MORE SLOWLY ON SOME COMMON SPOILAGE BACTERIA. COMMON BACTERIA CAN ALSO DEVELOP A TOLERANCE AGAINST QAC'S AND SHOULD, THEREFORE, NOT BE USED FOR EXTENDED PERIODS OF TIME. IT IS ADVISABLE TO ROTATE THEM WITH OTHER FORMS OF CLEANING COMPOUNDS</p> |
|---|--|

QAC's may also leave a light film on the surfaces of the equipment which should not come into contact with food. Ensure that this is rinsed off with cold and clean water before processing is continued.

Sanitizing

In general, chemical sanitizers are used for this stage of the cleaning regime. Thermal sanitizing, using hot water can be used for removable components of the machine. It should be borne in mind that this process requires longer contact times and has safety issues for employees, regarding the hot temperatures involved.

When choosing a sanitizing product, consider that chlorine will corrode some of the materials of construction, particularly stainless steel, especially when used at higher temperatures. It is

however a good sanitizer so occasional use of products containing chlorine may be necessary to control microbial growth.

The chosen sanitizer should be sprayed on the surfaces and left to work as recommended by the supplier’s instructions. Ensure that all hard-to-reach areas and crevices are treated.

Once sanitized and left for the required period of time, rinse the equipment with cold and clean water before any more processing is carried out.

If chlorine-based products are used the strength should never exceed 200 ppm.

Training Cleaning Personnel

It is important that cleaning staff are given the correct training and guidance on cleaning regimes. They should be particularly made aware of the dangers of using some of the chemicals in this process and the need to wear the correct protective equipment whilst undertaking the cleaning. Safety plays an essential part of the training about correctly isolating the machine before working on it and highlighting any areas where due care is especially required.

Cleaning Procedures

Before any cleaning is undertaken the following steps should be read and understood, to ensure that the correct procedure is followed, and maximum safety is achieved.

The process is expected to be performed using the following steps:

Preparation

| Step | Action |
|------|--|
| 1 | Isolate the machinery from any electrical supplies by setting the main isolator to the off (0) position and secure with a lock |
| 2 | Isolate the machinery from any pneumatic supplies by setting the shut off valve to the off (0) position and secure with a lock |
| 3 | The cleaning staff must have read and understood the Safety and Operation (Controls and HMI) sections of this manual |

Rinse the Environment

| Step | Action |
|------|--|
| 1 | Thoroughly rinse the surrounding area, walls & floors, before cleaning the DCN equipment. This is to prevent any cross contamination from these areas after the DCN equipment has been cleaned |
| 2 | If possible, avoid using water with a temperature greater than 55°C (131°F) so as to avoid heat denatured proteins |

Rinse the DCN Equipment

| Step | Action |
|------|--|
| 1 | Using a water jet or brush, rinse soiling from the DCN equipment. Work from the top down with clean water |
| 2 | Avoid high water pressure as this just scatters the soiling all over the machine |
| 3 | If possible, avoid using water with a temperature greater than 55°C (131°F) so as to avoid heat denatured proteins |

Foaming the DCN Equipment

| Step | Action |
|------|---|
| 1 | Apply the foam cleaner to all surfaces, corners and hard to reach areas |
| 2 | Leave the detergent to work as directed by the suppliers' instructions |

Washing the DCN Equipment

| Step | Action |
|------|---|
| 1 | Wash off all the soiling dissolved by the foam, using a water jet and working from the top down |
| 2 | Stubborn dirt and hard to access area can be cleaned using a brush |
| 3 | Allow the equipment to air dry as much as possible before applying sanitizer |
| 4 | Do not allow dirt to build up on the equipment |
| 5 | Do not allow dirt to build up on any sensors, temperature probes etc. |

Sanitizing the DCN Equipment

| Step | Action |
|------|---|
| 1 | All product contact surfaces should be sanitized at the end of every day of use |
| 2 | It is important that any surfaces to be sanitized are dry. This ensures that the sanitizer is not diluted by any remaining water from the washing step |
| 3 | For the daily sanitization, consider using products containing quaternary ammonium compounds. Once a week use a chlorine sanitizer (< 200 ppm) or comparable products |
| 4 | Once the sanitizer has been applied, according to the supplier instructions, rinse the equipment thoroughly with clean water. This ensures that there is no contact between the sanitizer and product on the next production run. It also avoids any potential corrosion in the stainless steel being caused by the aggressive sanitizers and forming of any unwanted film is avoided |

Special Cleaning Instructions: Cleaning the outside of the electrical control cabinet

| Step | Action |
|------|--|
| 1 | The external surfaces of the electrical components should never be cleaned using high pressure jet washers or excessive amounts of water |
| 2 | Using a cloth or sponge and a suitable cleaning product, wash the exterior surfaces of the panel taking care to avoid the HMI display and any plastic switchgear. These can be cleaned with a damp cloth and light pressure. |

7.0 Routine Maintenance

To ensure trouble free operation of the equipment and for safety reasons, routine maintenance is essential. Only suitably qualified personnel should carry out the following maintenance tasks at the stated intervals.

CAUTION - DANGER

| | |
|---|---|
|  | IMPORTANT! BEFORE DISCONNECTING ANY PIPEWORK, ALWAYS ENSURE THE MACHINE HAS BEEN DRAINED AND TURNED OFF AND ISOLATED BEFORE COMMENCING |
|---|---|

7.1 Maintenance Schedule

Operators of the equipment must also check the status of guards at the start of their working shift

| Procedure | Day | Week | Month | Year |
|---|-----|------|-------|------|
| Electrical test sensors and PLC interface | | | X | X |
| Inspect pipes, hoses and their fittings for leaks and fatigue | X | X | X | X |
| Inspect and test all valves for leaks, wear, and fatigue | X | X | X | X |
| Calibrate all probes | | | | X |
| Inspect all fixings, clamps, and joints. Tighten as required | | X | X | X |
| Ensure all guards and covers are present and secure | | X | X | X |
| Check the smooth operation of the pump | | X | X | X |
| Lubricate all moving parts using food grade lubricant where appropriate | | X | X | X |

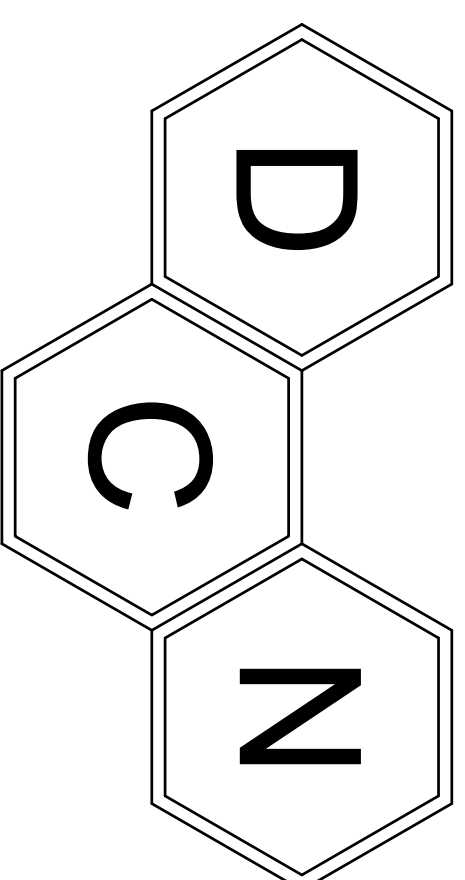
CAUTION - DANGER

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|---|--|
|  | <p>IMPORTANT! REPAIR OR REPLACE ANY DEFECTIVE ITEMS IMMEDIATELY</p> |
|---|--|

8.0 Spares List

| Item | DCN Number | Description | Quantity |
|------|------------|----------------------|----------|
| 1 | 0604301 | RTD H20 | 1 |
| 2 | CTA1-2 | RTD PRODCUT PROBE | 1 |
| 3 | CTA7-1 | CIRCULATION PUMP | 1 |
| 4 | CTA5-0 | HEAT EXCHANGER | 1 |
| 5 | CTA6-0 | MOTORIZED BALL VALVE | 3 |
| 6 | CTA3-0 | IMMERSION HEATER | 1 |
| 7 | 0607879 | HMI | 1 |

DC NORRIS
food processing solutions



NORTH AMERICA

1564 Northern Star Drive Traverse City, MI 49696
Tel: 231.935.1519 Website: <http://www.dcnorrisna.com>

MODEL CT-1 COMMERCIAL SOUS VIDE COOKING SYSTEM


| SHEET | DRAWING NAME | DESCRIPTION |
|-------|-----------------|--------------------------------|
| E000 | COOKER_E000.DWG | TITLE PAGE/TABLE OF CONTENTS |
| E001 | COOKER_E001.DWG | 240/208 VAC POWER DISTRIBUTION |
| E002 | COOKER_E002.DWG | SPARE |
| E003 | COOKER_E003.DWG | 24 VDC CONTROL |
| E004 | COOKER_E004.DWG | 24 VDC CONTROL |
| E005 | COOKER_E005.DWG | SPARE |
| E006 | COOKER_E006.DWG | SYSTEM LAYOUT |
| E007 | COOKER_E007.DWG | SPARE |
| E008 | COOKER_E008.DWG | SPARE |
| E009 | COOKER_E009.DWG | PANEL AND PUSHBUTTON LAYOUT |

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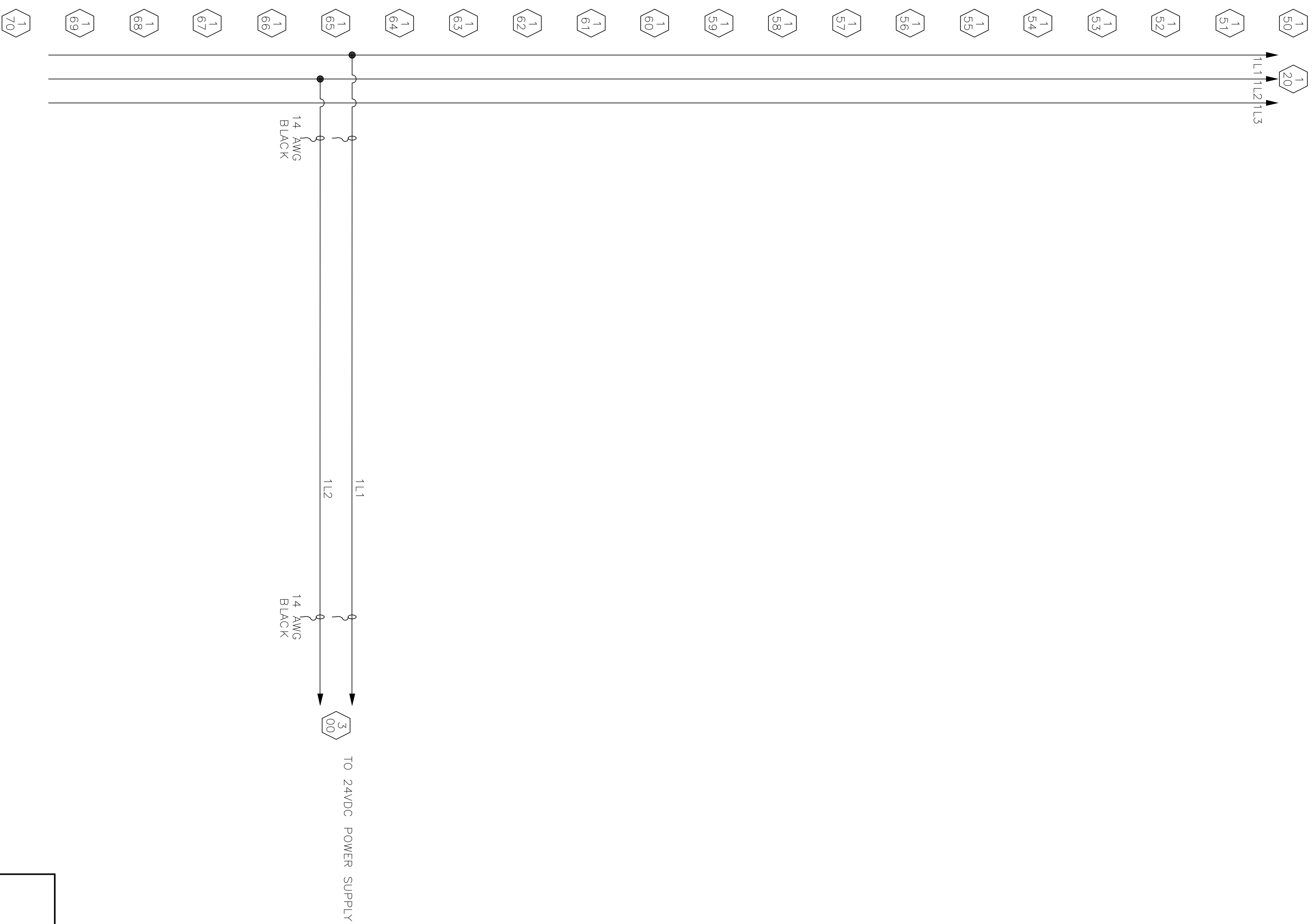
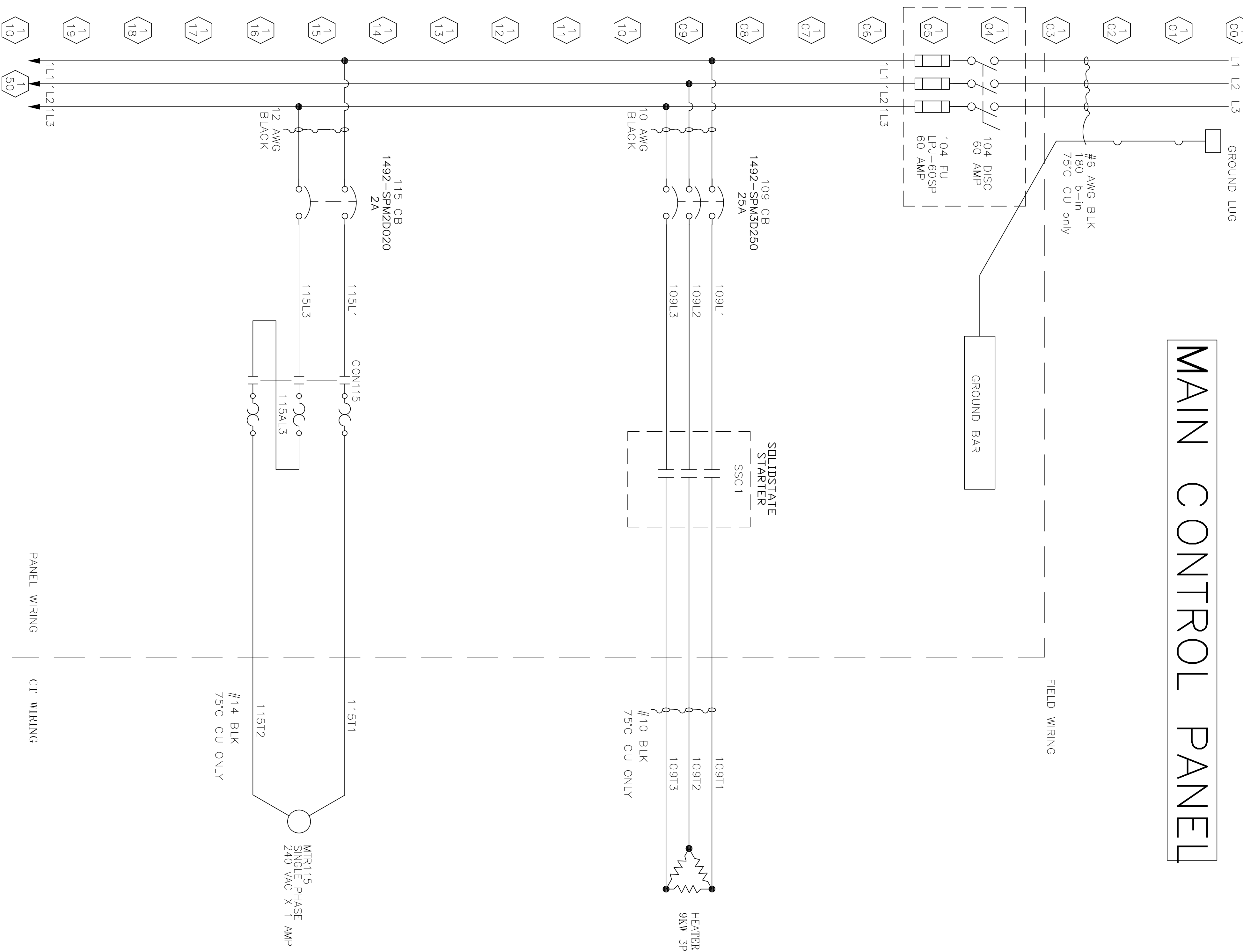
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| MODEL CT-1 COMMERCIAL SOUS VIDE COOKING SYSTEM | SHEET NO. 0 | TOTAL NO. OF SHEETS XXX | SHEET NO. B |
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|  DC NORRIS food processing solutions NORTH AMERICA <small>1564 Northern Star Drive, Traverse City, MI 49696 Tel: 231.935.1519 Website: http://www.dcnorrisna.com</small> | | SECTION: S&K APPROVED BY: _____ CHECKED BY: _____ DATE: _____ SCALE: NONE DATE: 25MAY2021 PLOTTER YEAR - DRAWING NUMBER: _____ DATE: _____ |
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REV. # REV. BY REV. DATE REVISION DESCRIPTION

208/240 VAC, 60 Hz
3 PHASE
PLANT POWER

MAIN CONTROL PANEL



| REV. # | REV. BY | REV. DATE | REVISION DESCRIPTION |
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| | | <p>SHEET NO. 1</p> <p>NB OF SHEETS B</p> |

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| <p>DC NORRIS FOOD PROCESSING SOLUTIONS NORTH ANDOVER, MA TEL: 978.683.8200 FAX: 978.683.8201</p> | <p>SECTION: S&K</p> <p>APPROVED BY: [Signature]</p> <p>CHECKED BY: [Signature]</p> <p>DATE: 25MAY2021</p> |
| | <p>DATE: 25MAY2021</p> <p>PREFIX: YEAR - DRAWING NUMBER</p> <p>CDDKER_E001</p> |

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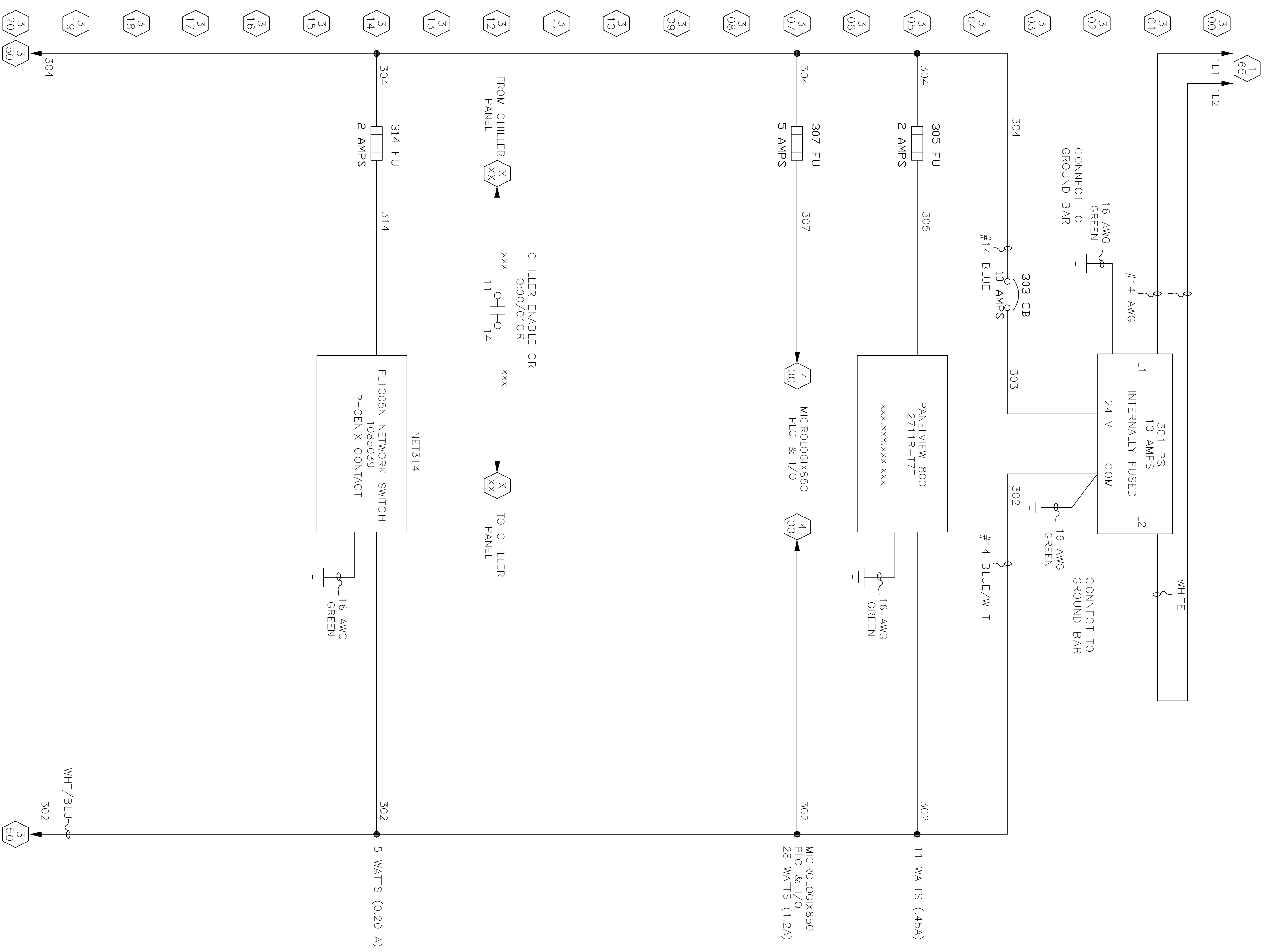
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| | | | SDUS VIDE COOKING SYSTEM | | SECTION APPROVED BY: S&K CHECKED BY: NONE DATE: 25MAY2021 |
| 2 | | | SHEET NO. 2 | NO. OF SHEETS 8 | PREFIX YEAR - DRAWING NUMBER CODDNER_E002 |



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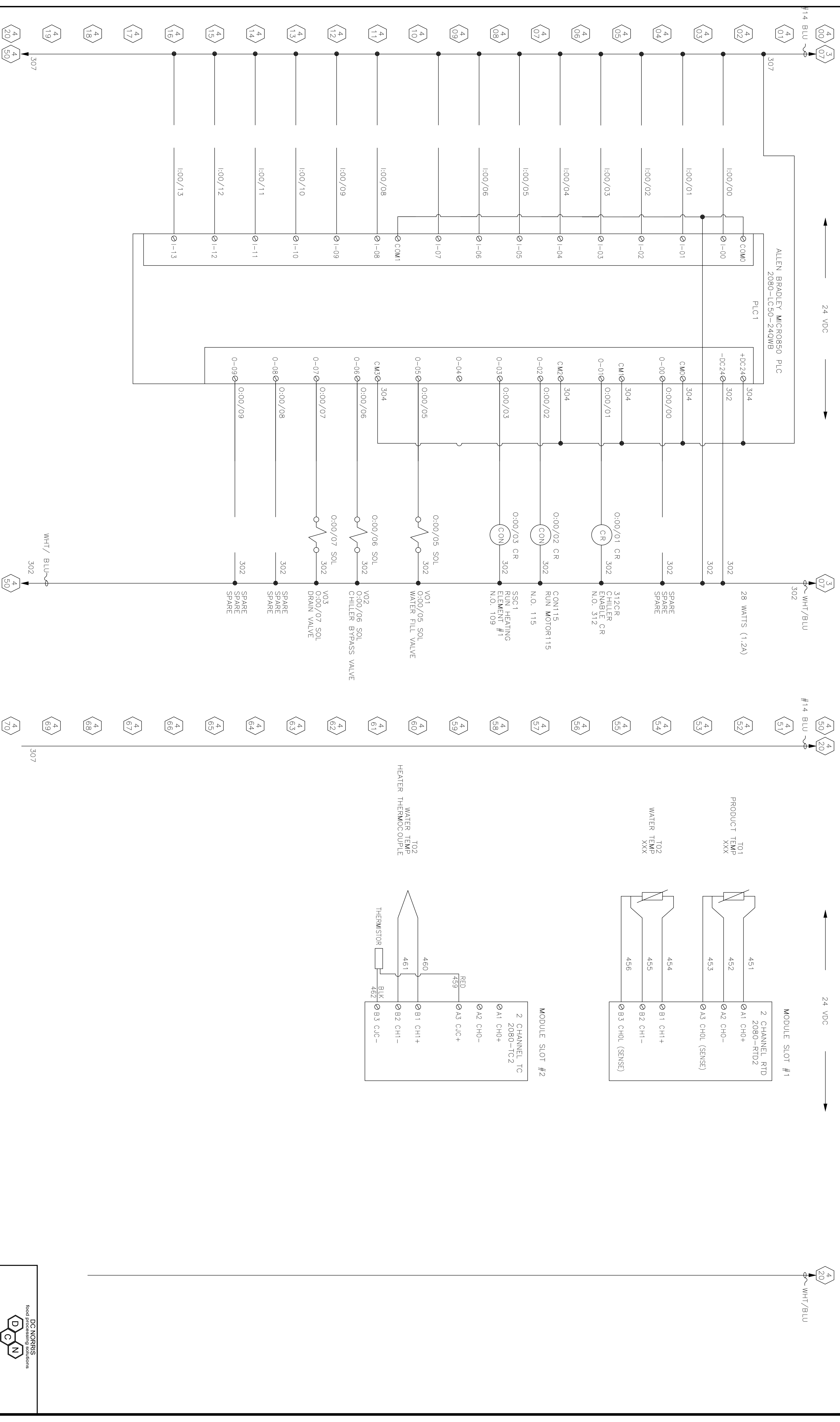
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| 15460 Harris Blvd., Houston, TX 77060 Tel: 281.800.0100 Fax: 281.800.0101 www.dcnorris.com | DATE: 25MAY2021 | DRAWING NUMBER: CDDKER_E003 |



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| PROJECT YEAR - DRAWING NUMBER | COOKER_E004 |

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MODEL CT-1 COMMERCIAL
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SHEET NO. 5
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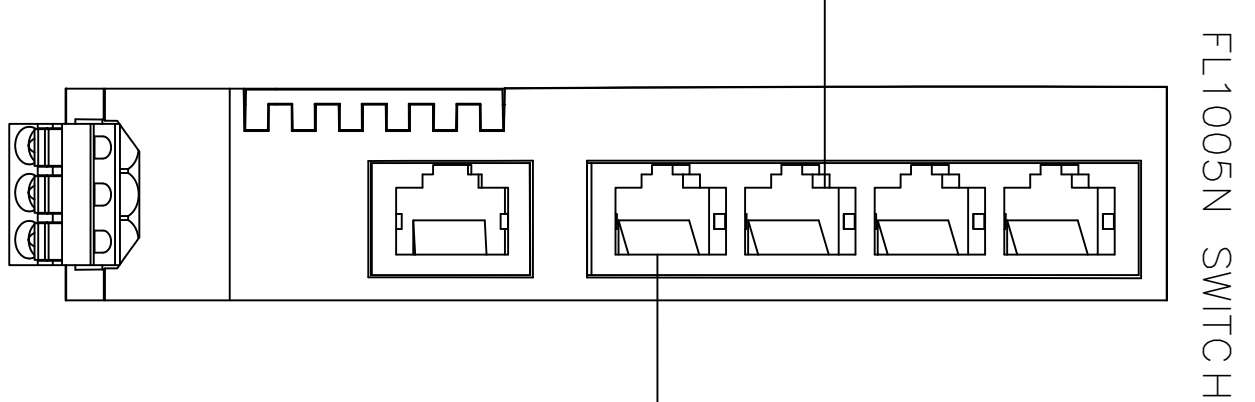
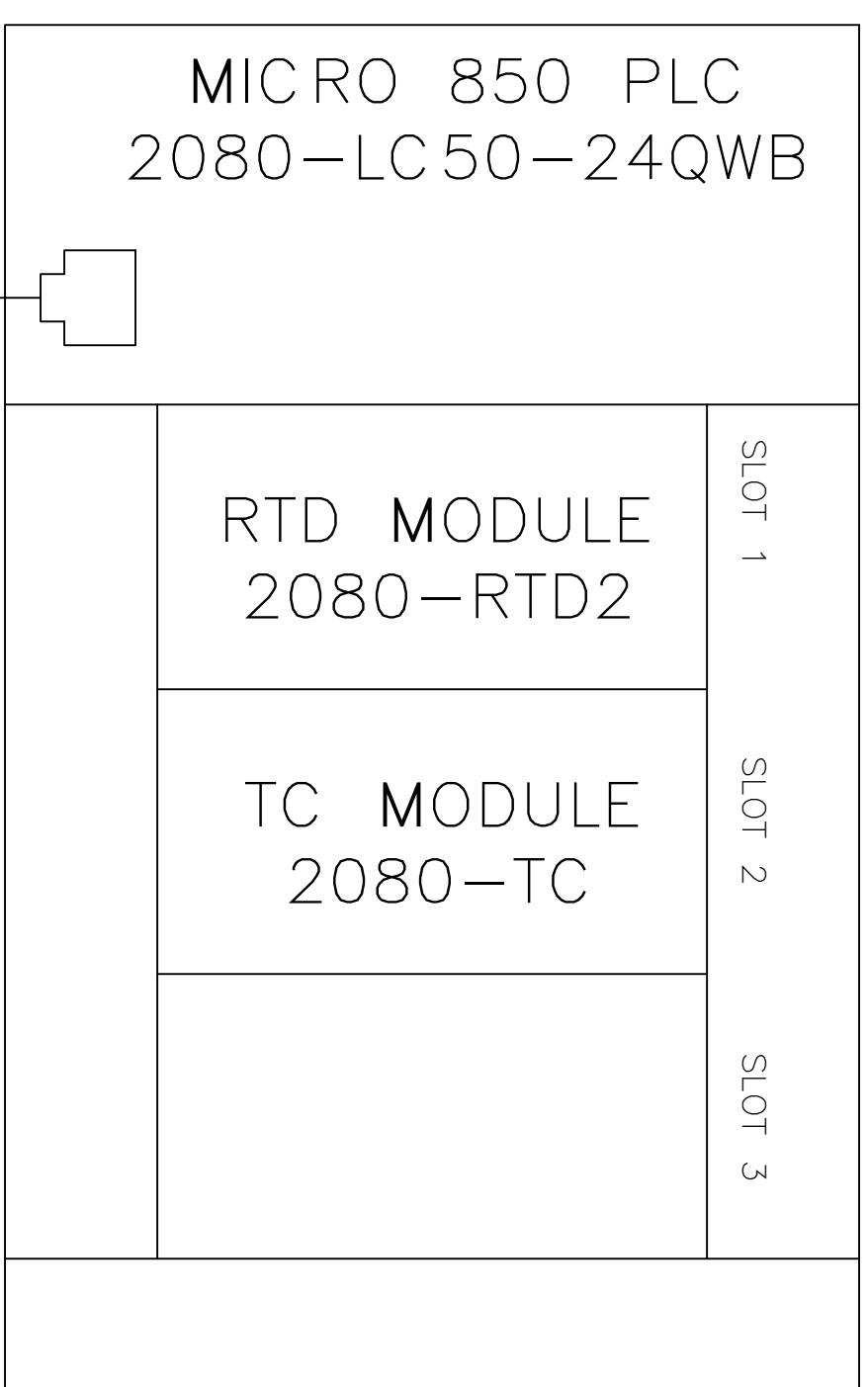
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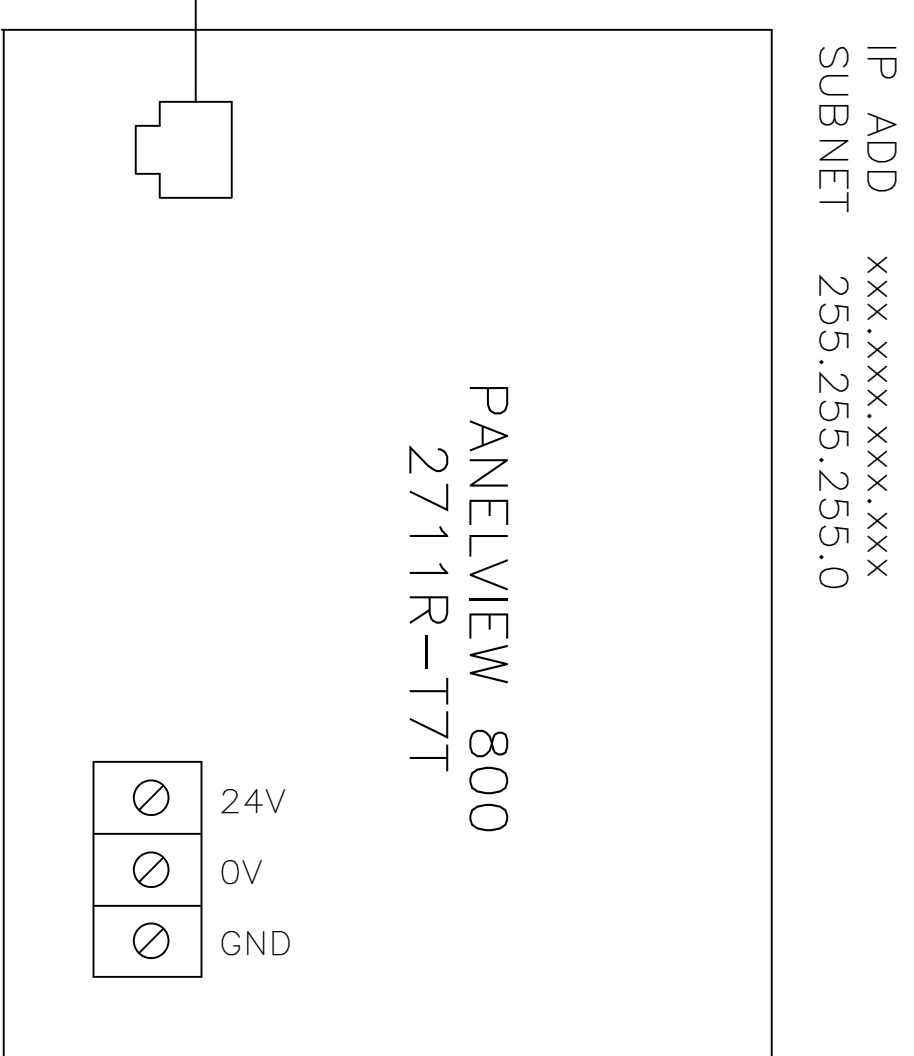
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Food Processing Solutions

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Tel: 281.801.0100 Email: info@dcnorriscorp.com

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MODEL CT-1 COMMERCIAL SIOUS VIDE COOKING SYSTEM
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| | | SECTION | S&K |
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| DATE | DATE | 25MAY2021 | |
| DC NORRIS food processing solutions NORTH AMERICA <small>1640 Harris Blvd. Oak, Illinois, IL 60454 Tel: 201.901.0100 Email: sales@dcnorriscorp.com</small> | | PREP'N YEAR - DRAWING NUMBER CODKCR_E006 | |

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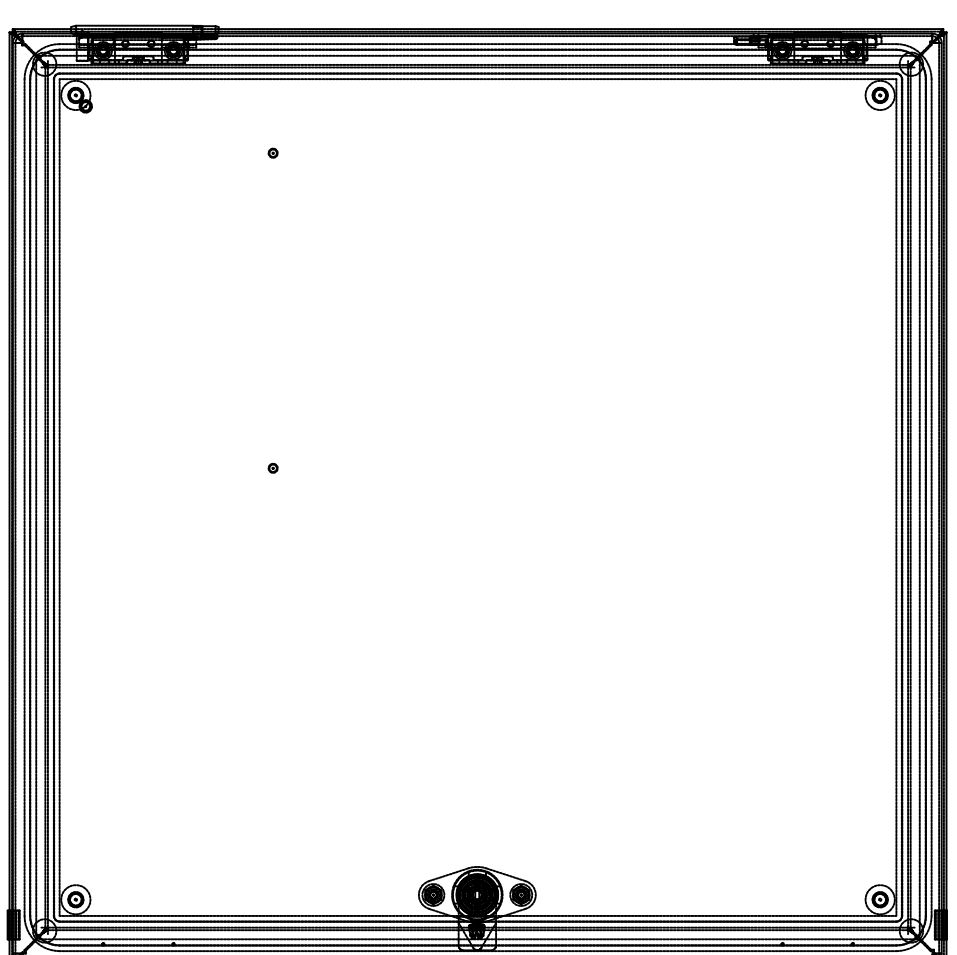
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MODEL CT-1 COMMERCIAL
SDUS VIDE
COOKING SYSTEM

SHEET NO. 8
NO. OF SHEETS B
DATE 25MAY2021
DRAWING NUMBER CDDKER_E008

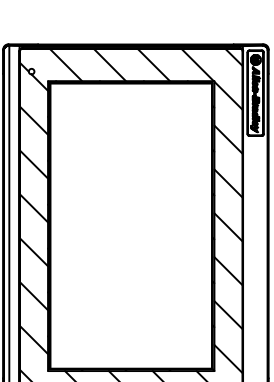
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DATE 25MAY2021



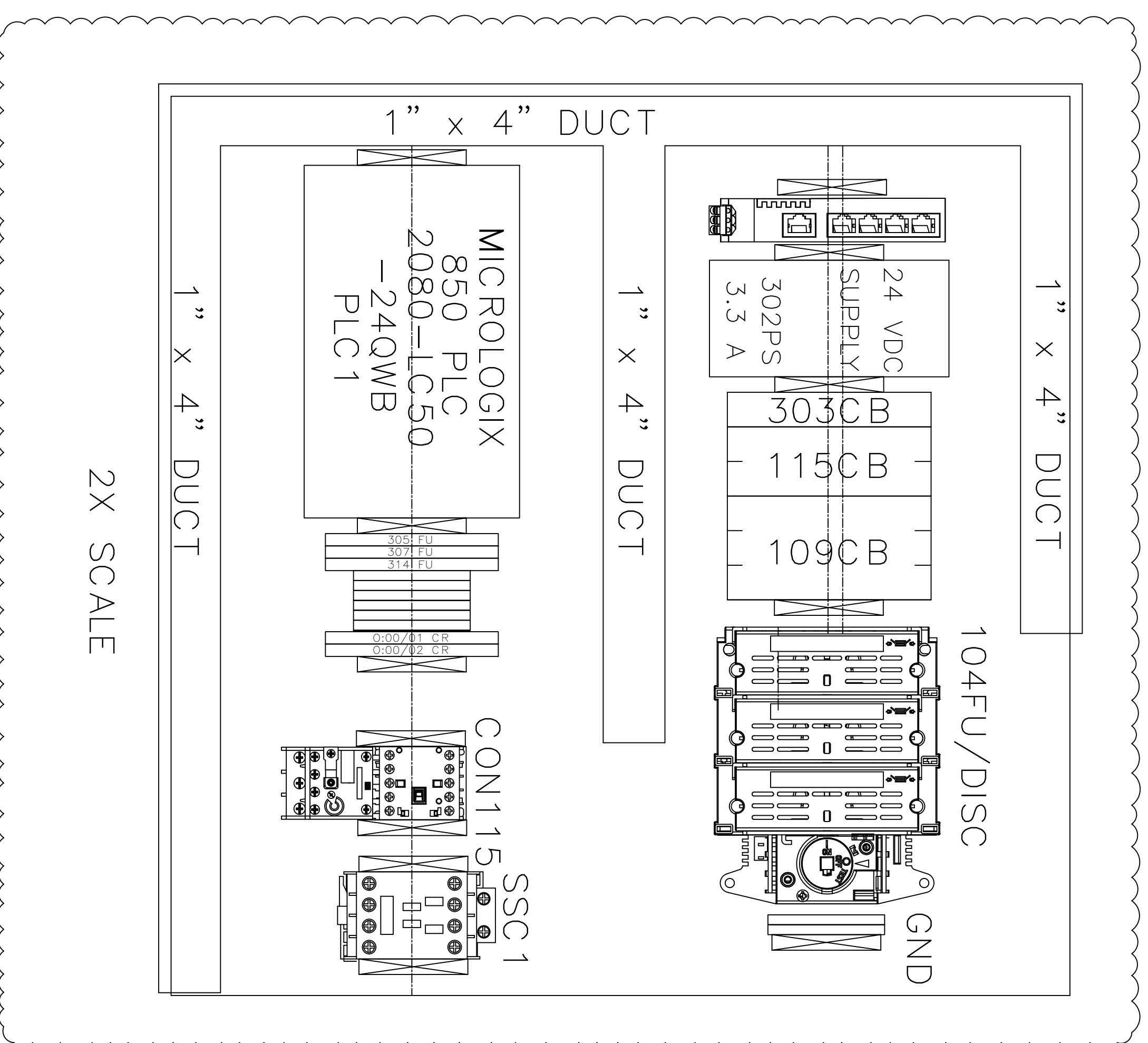


HOFFMAN_CSD20208SS
20" x 20" x 8" PANEL

THIS IS HOFFMAN'S DRAWING FOR THIS PANEL HINGE AND LATCH CONFIGURATION CAN BE CORRECTED WHEN CONFIRMED



AB PANELVIEW 7"
LOCATED IN REMOTE PANEL



2X SCALE

| REV. # | REV. BY | REV. DATE | REVISION DESCRIPTION |
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