HUSSMANN®/CHINO

RGDC

REFRIGERATED CURVED
SELF-SERVICE MERCHANDISER

Installation
& Operation
Manual

REV. 1023

HUSSMANN®

RGDC

REFRIGERATED CURVED SELF-SERVICE MERCHANDISER

INSTALLATION & OPERATION GUIDE

General Instructions

Table of Contents

This Booklet Contains Information on:

RGDC Refrigerated Curved Self-Service Merchandiser

Shipping Damage

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, claim must be made to the carrier.

Apparent Loss or Damage

If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim. The carrier will supply necessary claim forms.

Concealed Loss or Damage

When loss or damage is not apparent until after equipment is uncrated, a claim for concealed damage is made. Make request in writing to carrier for inspection within 15 days, and retain all packaging. The carrier will supply inspection report and required claim forms.

Shortages

Check your shipment for any possible shortages of material. If a shortage should exist and is found to be the responsibility of Hussmann Chino, notify Hussmann Chino. If such a shortage involves the carrier, notify the carrier immediately, and request an inspection. Hussmann Chino will acknowledge shortages within ten days from receipt of equipment.

Hussmann Chino Product Control

The serial number and shipping date of all equipment has been recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved, in order to provide the customer with the correct parts.

Keep this booklet with the case at all times for future reference.

HUSSMANN®/CHINO
A publication of HUSSMANN® Chino
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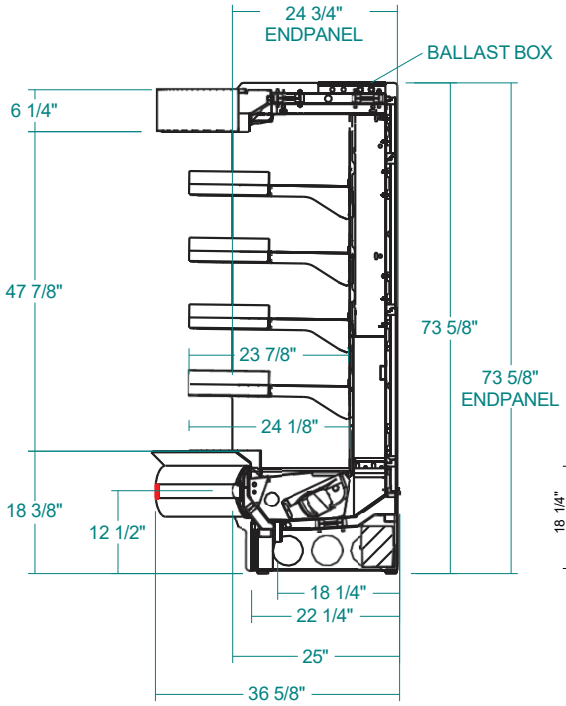
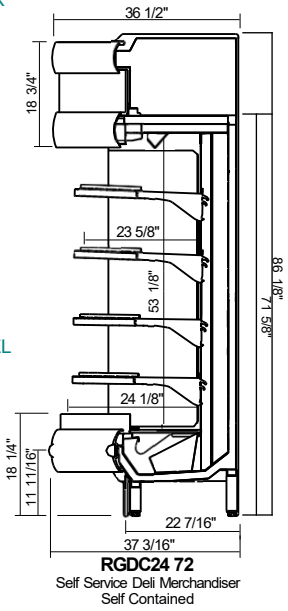
(909) 590-4910
(800) 395-9229

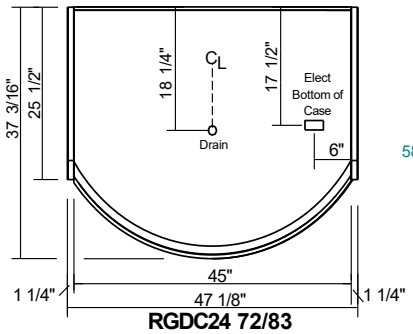
This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

Cut and Plan Views

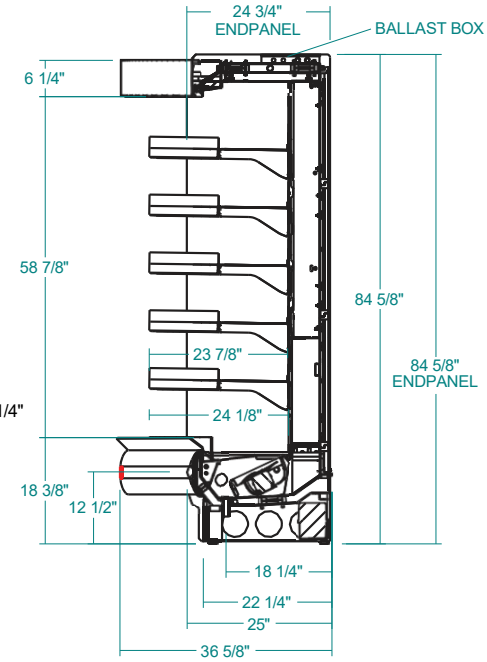




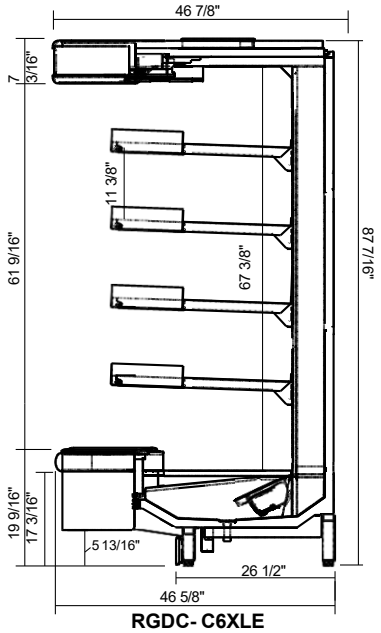
RGDC24 72
Self Service Deli Merchandiser
Self Contained



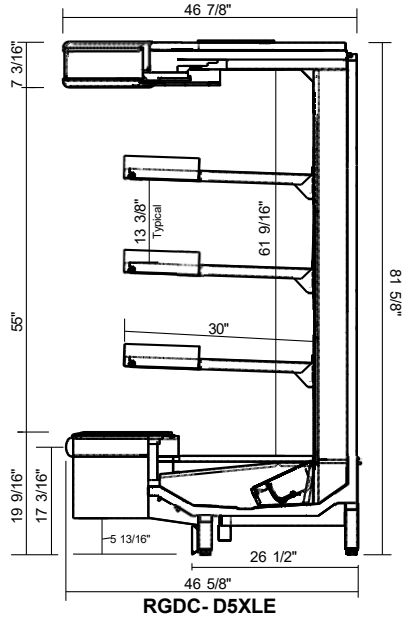
RGDC24 72/83
Plan View
Scale=1/2"



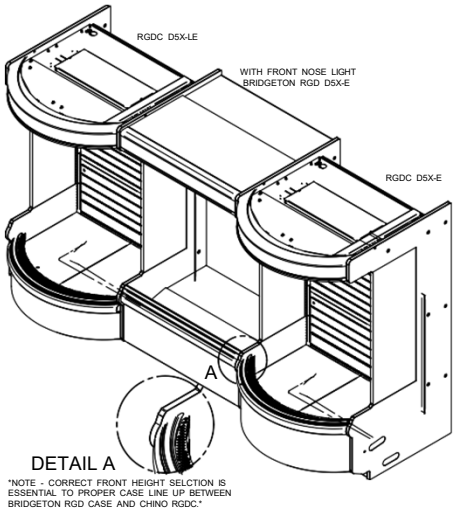
Cut and Plan Views (Cont'd)

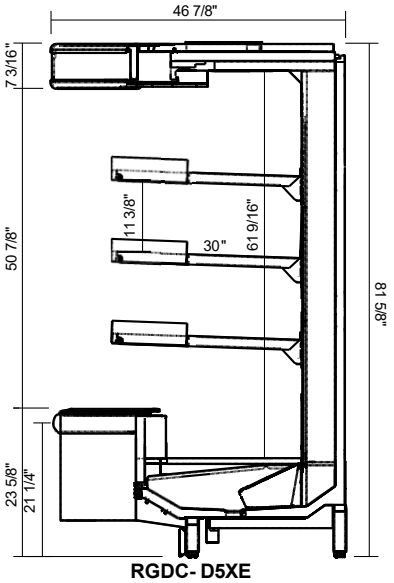


RGDC- C6XLE
Self Service Refrigerated Bump-out
with Self Serive Refrigerated Straight C6XLE Case
Line-Up



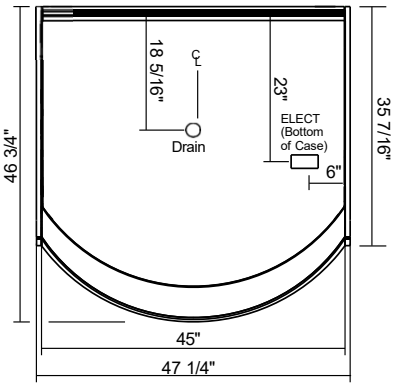
RGDC- D5XLE
Self Service Refrigerated Bump-out
with Straight case





RGDC- D5XE
Self Service Refrigerated Bump-out
with Self Serive Refrigerated Straight D5XE Case
Line-Up

Scale = 1/2"



RGDC
Plan View

Installation

Location

The refrigerated merchandisers have been designed for use only in air conditioned stores where temperature and humidity are maintained at or below 75°F and 55% relative humidity. DO NOT allow air conditioning, electric fans, ovens, open doors or windows (etc.) to create air currents around the merchandiser, as this will impair its correct operation.

DANGER

DO NOT place Self Contained versions of this case, having the electric evaporator pan, underneath or adjacent to any flammable structure or structure housing flammable merchandise!

Uncrating the Stand

Place the fixture as close to its permanent position as possible. Remove the top of the crate. Detach the walls from each other and remove from the skid. Unbolt the case from the skid. The fixture can now be lifted off the crate skid. **Lift only at base of stand!**

Exterior Loading

These models have **not** been structurally designed to support excessive external loading. **Do not walk on their tops;** This could cause serious personal injury and damage to the fixture.

Setting and Joining

The sectional construction of these models enable them to be joined in line to give the effect of one continuous display. A joint trim kit is supplied with each joint.

ATTENTION INSTALLER

This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

Leveling

IMPORTANT! IT IS IMPERATIVE THAT CASES BE LEVELED FROM FRONT TO BACK AND SIDE TO SIDE PRIOR TO JOINING. A LEVEL CASE IS NECESSARY TO INSURE PROPER OPERATION, WATER DRAINAGE, GLASS ALIGNMENT, AND OPERATION OF THE HINGES SUPPORTING THE GLASS. LEVELING THE CASE CORRECTLY WILL SOLVE MOST HINGE OPERATION PROBLEMS.

NOTE: A. To avoid removing concrete flooring, begin lineup leveling from the highest point of the store floor.

B. When wedges are involved in a lineup, set them first.

All cases were leveled and joined prior to shipment to insure the closest possible fit when cases are joined in the field. When joining, use a carpenters level and shim legs accordingly. Case must be raised correctly, under legs where support is best, to prevent damage to case.

1. Check level of floor where cases are to be set. Determine the highest point of the floor; cases will be set off this point.
2. Set first case, and adjust legs over the highest part of the floor so that case is level. Prevent damage - case must be raised under leg or by use of 2x6 or 2x4 leg brace. Remove side and back leg braces after case is set.
3. Set second case as close as possible to the first case, and level case to the first using the instructions in step one.
4. Apply masking tape 1/8" in from end of case on inside and outside rear mullion on both cases to be joined.

METHOD: RGD/RGDC ALIGNMENT FOR LINE UPS

1. Surface must be clean, dry, and free of debris. Apply Devan Sealant to RGDC case sides along joint faces.
   (See Figure 1)
2. Identify Alignment/Bolting points provide as shown. (See Figure 1)
3. Align and adjoin cases in line up configuration.
4. Bolt cases together at Alignment/Bolting points using provided hardware or equivalent hardware.
   BOLT HEX HEAD 3/8-16 X 3/4"
   NUT TOP LOCK 3/8-24 ZINC
   Devan Sealant 255-2
5. Once bolting is complete. Apply silicone to wrapper case joints. (See Figure 1)

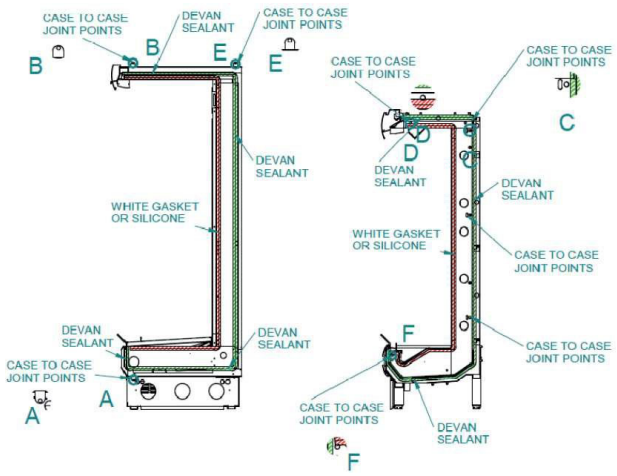
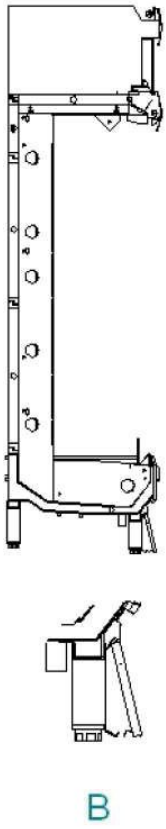
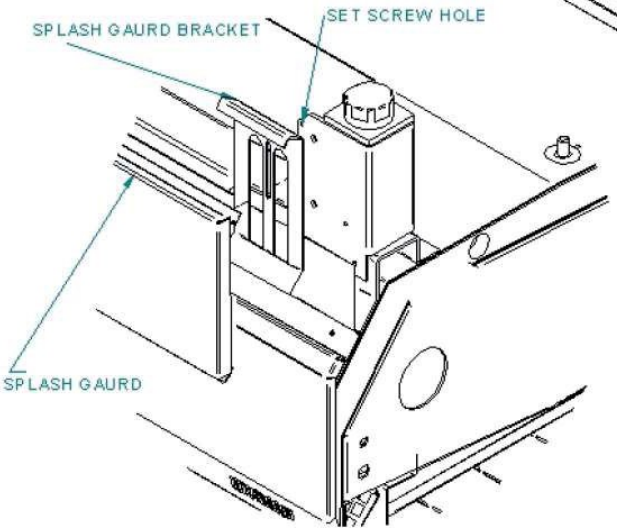


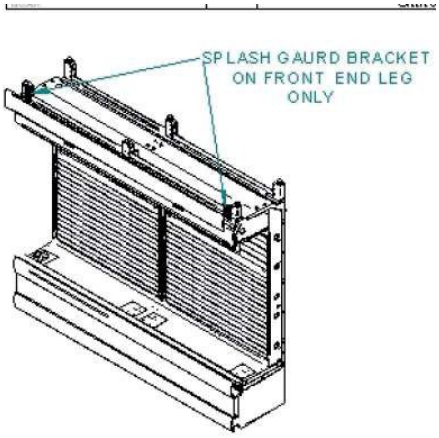
Figure 1

Installation (Cont'd)

Installation (Cont'd)







Mount Splashguard and Bracket

- Set bracket, align ¼ slot to set screw hole
- Screw bracket, loosely to a low to drop to floor
- Snap in splashguard by setting the top in first
- And push in firmly to snap in.
- See drawing above

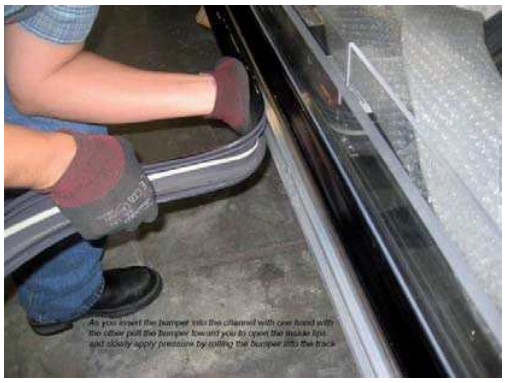
Installation (Cont'd)

Bumper Installation Instructions

Step 1: Make sure the aluminum channel and end caps are installed.

Step 2: Use silicone lubricant to help the bumper slide into the channel.

Step 3: Starting on one end: while inserting the bumper, push it up against the end cap to prevent the bumper from shrinking after installation (when it gets cold).



Step 4: As you insert the bumper into the channel with one hand, pull the bumper toward you with the other to open the inside lips. Slowly apply pressure by rolling the bumper into the track.

Plumbing

Waste Outlet and P-TRAP

The waste outlet is located in the center, 8” from the front of the case.

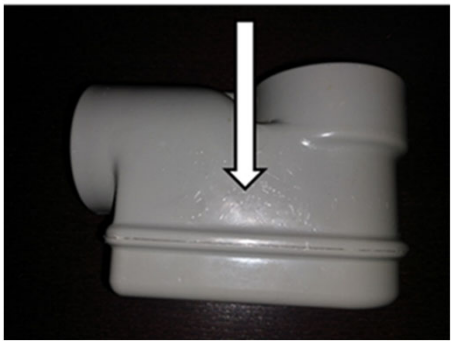
P-traps must be installed at the base of all refrigerated cases. The 1 ½” P-TRAPS and threaded adapters must be installed to prevent air leakage and insect entrance into the fixture.

Installing Condensate Drain

Poorly or improperly installed condensate drains can seriously interfere with the operation of this refrigerator, and result in costly maintenance and product losses. Please follow the recommendations listed below when installing condensate drains to insure a proper installation:

1. Never use pipe for condensate drains smaller than the nominal diameter of the pipe or P-TRAP supplied with the case.
2. When connecting condensate drains, the P-TRAP must be used as part of the condensate drain to prevent air leakage or insect entrance. Store plumbing system floor drains should be at least 14” off the center of the case to allow use of the P-TRAP pipe section. Never use two water seals in series in any one line. Double P-TRAPS in series will cause a lock and prevent draining.
3. Always provide as much down hill slope (“fall”) as possible; 1/8” per foot is the preferred minimum. PVC pipe, when used, must be supported to maintain the 1/8” pitch and to prevent warping.
4. Avoid long runs of condensate drains. Long runs make it impossible to provide the “fall” necessary for good drainage.
5. Provide a suitable air break between the flood rim of the floor drain and outlet of condensate drain. 1” is ideal.
6. Prevent condensate drains from freezing:
   a. Do not install condensate drains in contact with non-insulated suction lines. Suction lines should be insulated with a non absorbent insulation material such as Armstrong’s Armaflex.
   b. Where condensate drains are located in dead air spaces (between refrigerators or between a refrigerator and a wall), provide means to prevent freezing. The water seal should be insulated to prevent condensation.

WARNING!
Do NOT apply thread sealer to ABS P-Trap.



RGDC (Self Contained)

The waste outlet and P-TRAP are the same as the remote except the case condensate drains to a pump assembly mounted to the top of the case into the top of the water evap assembly. Hot air from the condenser is forced through the water evap assembly, evaporating the water. Any overflow from the water evap assembly is directed back to the pump assembly. **It is critical that the case be level to keep the water evap assembly from overflowing!!** The metal cover over the top of the condensing unit must be in place to force the hot condenser air through the water evap assembly.

The condensate pump can be accessed through the front of the closeoff panel.

Refrigeration

Refrigerant Type
The standard refrigerant will be R-404A unless otherwise specified on the customer order. Check the serial plate on the case for information.

Piping
The refrigerant line outlets are located under the case. Locate first the electrical box, the outlets are then on the same side of the case but at the opposite end. Insulate suction lines to prevent condensation drippage.

Access Panels
All electrical and drain access panels are clearly labeled on the deck of the produce stand. The access for condensing units (in the self contained units) is located on the side of the stand, at the end. Ends of stand are fitted for removal, if condensing unit has to be taken out.

Refrigeration Lines

Liquid	Suction
3/8" O.D.	5/8" O.D.

NOTE: The standard coil is piped at 5/8" (suction); however, the store tie-in may vary depending on the number of coils and the draw the case has. Depending on the case setup, the connecting point in the store may be 5/8", 7/8", or 1 1/8". Refer to the particular case you are hooking up.

Refrigerant lines should be sized as shown on the refrigeration legend furnished by the store.

Oil traps must be installed at the base of all suction line vertical risers on refrigerated cases.

Pressure drop can rob the system of capacity. To keep the pressure drop to a minimum, keep refrigerant line run as short as possible, using the minimum number of elbows. Where elbows are required, use long radius elbows only.

Control Settings
See RGDC technical data sheet for the appropriate settings for your merchandiser. Maintain these parameters to achieve near constant product temperatures. Product temperature should be measured first thing in the morning, after having been refrigerated overnight. For all multiplexing, defrost should be time terminated. Defrost times should be as follows: OFF CYCLE - One time daily for 110 minutes. The number of defrosts per day should never change. The duration of the defrost cycle may be adjusted to meet conditions present at your location.

Access to TX Valves and Drain Lines
Mechanical - Remove product from end of case. Remove product racks. Remove refrigeration and drain access panels (labeled). TX valve (mechanical only) and drain are located under each access panel at end of the case.

Electronic - The Electronic Expansion valve master and slave cylinder(s) are located within the electrical access panel(s).

Electronic Expansion Valve (Optional)
A wide variety of electronic expansion valves and case controllers can be utilized. Please refer to EEV and controller manufacturers information sheet. Sensors for electronic expansion valves will be installed on the coil inlet, coil outlet, and in the discharge air. (Some supermarkets require a 4th sensor in the return air). Case controllers will be located in the electrical raceway or under the case.

Thermostatic Expansion Valve Location
An Alco balanced port expansion valve model is furnished as standard equipment, unless otherwise specified by customer. There is one expansion valve located on the right side of each evaporation coil under the bottom deck pans.

Expansion Valve Adjustment

Expansion valves must be adjusted to fully feed the evaporator. Before attempting any adjustments, make sure the evaporator is either clear or very lightly covered with frost, and that the fixture is within 10°F of its expected operating temperature.

Measuring the Operating Superheat

1. Determine the suction pressure with an accurate pressure gauge at the evaporator outlet.
2. From a refrigerant pressure temperature chart, determine the saturation temperature at the observed suction pressure.
3. Measure the temperature of the suction gas at the thermostatic remote bulb location.
4. Subtract the saturation temperature obtained in step No. 2 from the temperature measured in step No. 3.
5. The difference is superheat.
6. Set the superheat for 5°F - 7°F.

Condenser Ventilation
Be sure to supply adequate ventilation for the condenser in Self Contained units. Allow 150 square inches for units up to 1 1/2 h.p., and 200 for condenser units over 2 h.p.

T-STAT Location
The T-STATS are located within the electrical raceway. The raceway location is dependent on the style of the front panel and whether the case is going to be pushed up against a wall. In all cases, the T-STAT is located on the same side of the case. If you are looking at the case from the front, it is the right-hand side. If you are looking at the case from the back, it is the left-hand side.

Start-up

Self Contained

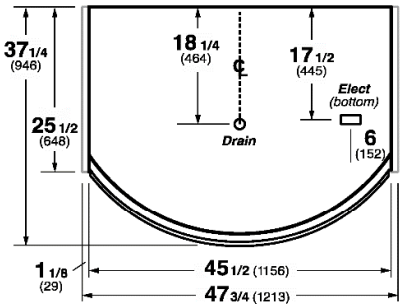
On self contained cases the unit is completely charged and tested to the proper temperature. Switch on the compressor. Set the time clock to the proper time of day by turning the dial in the direction of the arrow until the pointer and current time of day align.

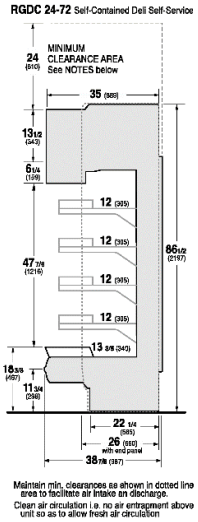
SELF-SERVICE DELI TYPE I REVISION DATE 05/04/20

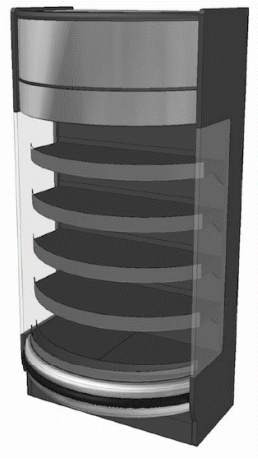
HUSSMANN - RGDC-24-72 SELF-CONTAINED (CHINO)

DOE 2017 Energy Efficiency Compliant

Hussmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2017 energy efficiency standards.







REFRIGERATION DATA:

CASE LENGTHS	CASE USAGE	CONVENTIONAL CAPACITY ** (BTU/HR/FT)	AVERAGE DISCHARGE AIR* (°F) (SEE SETPOINTS BELOW)	VELOCITY (FT/MIN)
3'9"	SS DELI	2050	28~30	150~200

***FRONT DISCHARGE AIR MEASURED INSIDE AIR CURTAIN HONEYCOMB**

****REFRIGERATION NOTES:**

1) CAPACITY FOR REFERENCE ONLY.
2) ALL CASES PROVIDED WITH VIEW END PANELS
3) USE DEW POINT FOR HIGH GLIDE REFRIGERANTS. CARE SHOULD BE TAKEN TO USE THE DEW POINT IN P/T TABLES FOR MEASURING AND ADJUSTING SUPERHEAT. ADJUST EVAPORATOR PRESSURE AS NEEDED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SHOWN.
4) RATING CONDITION IS NSF TYPE I, 75°F/55% RH

REFRIGERATION DATA CONTINUED:

CONTROLLER / AIR SENSOR SETTINGS			DEFROST TYPE	FAILSAFE TIME (MIN)	DEFROST FRE-QUENCY (#/DAY)	TERM. TEMP (°F) AIR	DRIP TIME (MIN)	DEFROST WATER (LBS/DAY/FT)
USAGE	SET POINT (°F)	DIFFER-ENTIAL (°F)						
DELI	24	8	OFF TIME	25	4	48	NA	4.2

END PANEL WIDTH KEY		
# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

ELECTRICAL DATA:

STANDARD FANS, HEATERS, LED LIGHTS (115 VOLT)

CASE LENGTH	EVAPORATOR FANS					CANOPY LIGHTS LED		OPTIONAL LED SHELF LIGHTS		MAX. LED LOAD (W/ ALL OPTIONS)		ANTI-SWEAT HEATERS		CONVENIENCE OUTLETS (OPTIONAL)		
	# OF EVAP FANS	BLADE DIA. (IN.)	BLADE PITCH (°)	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	# OUTLETS	VOLTS	AMPS
3'9"	1	8	25	0.3	8	0.09	10	0.43	49	0.51	59	N/A	N/A	N/A	N/A	N/A

CONDENSING UNIT AND EVAPORATIVE PANS

CASE LENGTH	CONDENSING UNIT					EVAPORATIVE PAN			EST. REFG. CHRG. 404A (LBS)	PLUG TYPE
	NOM. HP	REFRIG.	Hz/Ph	Volts	RLA	VOLTS	AMPS	WATTS		
3'9"	1	R-404A	60 / 1	208/240	9.3	240	6.3	1500	6.0	L14-30P
3'9"	1 1/4	R-448A	60 / 1	208/240	10.0	240	6.3	1500	6.0	L14-30P

OPTIONAL HIGH OUTPUT LED LIGHTS (115 VOLT)

CASE LENGTH	CANOPY LIGHTS H.O. LED		OPTIONAL SHELF		MAX. H.O. LED LOAD	
	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
3'9"	N/A	N/A	N/A	N/A	N/A	N/A

Electrical

Wiring Color Code

Standard Case Wire Color Code

Color Decsription	Color
Ground	Green
Anti-Sweat	Purple
Lights	Orange
Receptacles	Yellow
T-Stat/Solenoid 230VAC	Red/Black
T-Stat/Solenoid 115VAC	White/Black
T-Stat/Solenoid 24VAC	Red/White
Fan Motors	Brown
Blue Condensing Unit	

Use Copper Conductors Only
430-01-0338 R101003

CASE MUST BE GROUNDED

NOTE: Refer to label illustrated above that is affixed to case to determine the actual configuration as checked in the "TYPE INSTALLED" boxes.

Electrical Circuit Identification

Standard lighting for all models will be full length fluorescent lamps located within the case at the top.

The switch controlling the lights, the plug provided for digital scale, and the thermometer are located at the rear of the case mullion.

The receptacle that is provided on the exterior back of these models is intended for computerized scales with a five amp maximum load, not for large motors or other high wattage appliances. It should be wired to a dedicated circuit.

BEFORE SERVICING ALWAYS DISCONNECT ELECTRICAL POWER AT THE MAIN DISCONNECT WHEN SERVICING OR REPLACING ANY ELECTRICAL COMPONENT.
This includes (but not limited to) Fans, Heater Thermostats, and Lights

Field Wiring and Serial Plate Amperage

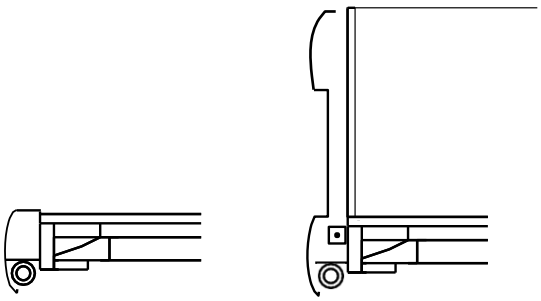
Field Wiring must be sized for component amperes printed on the serial plate. Actual ampere draw may be less than specified. Field wiring from the refrigeration control panel to the merchandisers is required for refrigeration thermostats. Case amperes are listed on the wiring diagram, but always check the serial plate.

LED Driver Location

Drivers are located within the access panel that runs the length of the rear of the case.

Finishing Touches

If more than one RGDC is being installed next to each other, the factory fitted continuous fascia may need to be installed. All fasciae rest on the top of their cases. The self contained fascia has a hook that needs to be slid through a gusset on the side of the case.



User Information

Stocking

Improper temperature and lighting will cause serious product loss. Discoloration, dehydration and spoilage can be controlled with proper use of the equipment and handling of product. Product temperature should always be maintained at a constant and proper temperature. This means that from the time the product is received, through storage, preparation and display, the temperature of the product must be controlled to maximize life of the product. Hussmann cases were not designed to “heat up” or “cool down” product - but rather to maintain an item’s proper temperature for maximum shelf life. To achieve the protection required always:

1. Minimize processing time to avoid damaging temperature rise to the product. Product should be at proper temperature.
2. Keep the air in and around the case area free of foreign gasses and fumes or food will rapidly deteriorate.
3. Maintain the display merchandisers temperature controls as outlined in the refrigerator section of this manual.
4. Do not place any product into these refrigerators until all controls have been adjusted and they are operating at the proper temperature. Allow merchandiser to operate a minimum of 6 hours before stocking with any product.
5. When stocking, never allow the product to extend beyond the recommended load limit. **Air discharge and return air flow must be unobstructed at all times to provide proper refrigeration.**
6. There are vents located at the base of the front of the glass, just above the front rail. These vents supply a continuous, gentle flow of air across the front glass which inhibits condensation. **Do not place any signs or other restrictive objects on the front of the refrigerator that will block these vents.**
7. Keep the service doors closed (when applicable). Refrigeration performance will be seriously affected if left open for a prolonged period of time.
8. Avoid the use of supplemental flood or spot lighting. Display light intensity has been designed for maximum visibility and product life at the factory. The use of higher output fluorescent lamps (H.O. and V.H.O.), will shorten the shelf life of the product.
9. In the Deli, Meat and Fish cases, completely cover the product each night with a clean damp cloth or butcher paper (never use plastic, as it does not allow for proper circulation). Make sure the cloth or paper is in direct contact with the product.
10. Turn and rotate the meat fairly often. The blood which gives the pink color works its way downward with time.
11. Cold coils remove heat and moisture from the case and deposit this as frost onto the coil. Thus, a defrost is required. Our humidity system induces moisture into the case and helps slow down the dehydration process. The only other moisture within the case is that in the product itself. A single level of meat will dry out faster than a fully loaded case of 3-4 levels of meat.

Important Steps

1. Do not set temperature too cold, as this causes product dehydration. **Product Temperature: 33°F-35F°!**

   Set thermostat to cut in at 28°F discharge air. Meat holding box: 32°F. Meat prep room: 55°F. Meat bloom box: 36°F.

   Process the meat to enter case at 40°F or below. Product deterioration is very rapid above 400.
2. Temperature control should be by means of a T-STAT and Suction Stop Solenoid at each case. Do not use EPR valves, Liquid Line Solenoids or electronic control devices of any kind, as these allow temperature swings causing dehydration and excessive energy consumption.
3. Product should be worked and rotated on a regular basis, not to exceed a 4-hour period.
4. At night, turn off case lights and cover the product with a damp (not wet) cloth similar to cheese cloth (etc.). This should be washed out in the morning and kept in a walk-in box during the day - so that it is cool and moist when covering the product.
5. Discharge air temperature should be approximately 26°F, with between 150-200 FPM air velocity. Do not display product directly within the air discharge.
6. Clean Humidity system a minimum of every 90 days for proper system operation.

Case Cleaning

Long life and satisfactory performance of any equipment are dependent upon the care given to it. To insure long life, proper sanitation and minimum maintenance costs, the refrigerator should be thoroughly cleaned frequently. SHUT OFF FAN DURING CLEANING PROCESS. It can be unplugged within the case, or shut off case at the source. The interior bottom may be cleaned with any domestic soap or detergent based cleaners. Sanitizing solutions will not harm the interior bottom, however, these solutions should always be used according to the manufacturer’s directions. It is essential to establish and regulate cleaning procedures. This will minimize bacteria causing discoloration which leads to degraded product appearance and significantly shortening product shelf life.

Soap and hot water are not enough to kill this bacteria. A sanitizing solution must be included with each cleaning process to eliminate this bacteria.

User Information (Cont'd)

1. Scrub thoroughly, cleaning all surfaces, with soap and hot water.
2. Rinse with hot water, but do not flood.
3. Apply the sanitizing solution according to the manufacturer's directions.
4. Rinse thoroughly.
5. Dry completely before resuming operation.

Cleaning Glass and Mirrors

Only use a soft cloth and mild glass cleaner for cleaning any glass or mirrored components. Be sure to rinse and! or dry completely.

Never use hot water on cold glass surfaces! It may shatter and cause serious injury! Allow glass surfaces to warm first.

CAUTION

CLEANING PRECAUTIONS

When cleaning:

- **Do not use high pressure water hoses**
- **Do not introduce water faster then waste outlet can drain**
- **NEVER INTRODUCE WATER ON SELF CONTAINED UNIT WITH AN EVPORATOR PAN**
- **NEVER USE A CLEANING OR SANITIZING SOLUTION THAT HAS AN OIL BASE (these will dissolve the butyl sealants) or an AMMONA BASE (this will corrode the copper components of the case)**
- **TO PRESERVE THE ATTRACTIVE FINISH:**
- **DO USE WATER AND A MILD DETERGENT FOR THE EXTERIOR ONLY**
- **DO NOT USE A CHLORANITED CLAENER ON ANY SURFACE**
- **DO NOT USE ABRASIVES OR STEEL WOOL SCOURING PADS (these will mar the finish)**

Plexiglass and Acrylic Care

Cleaning

Clean with plenty of nonabrasive soap (or detergent) and lukewarm water, using the bare hand to feel and dislodge any caked-on dirt. A soft, grit-free cloth, sponge or chamois may be used, but only as a means of carrying the water to the plastic. Dry with a clean damp chamois or clean soft cloth such as cotton flannel. Hard, rough cloths or paper towels will scratch the acrylic and should not be used.

NOTE: The base channel insert must slide out in order to be cleaned. A hose can be used for cleaning purposes of this base insert channel only when no end panel is provided on the case.

Waxing

If after removing dirt and grease, the acrylic can be waxed with a good grade commercial wax. This will improve the appearance of the surface by filling in most minor scratches. Wax should be applied in a thin even coat and brought to a high polish by rubbing lightly with a dry clean soft cloth, such as a cotton flannel. Excessive rubbing may cause scratching and/or buildup an electrostatic charge which attracts dust and dirt to the surface. Blotting with a clean damp cloth is recommended to remove charge.

Antistatic Coatings

For acrylic used indoors, antistatic coatings successfully prevent the accumulation of an electrostatic charge for periods of several months - if the surface is not washed or wiped down with a wet cloth. Between applications of the antistatic coatings, the parts need only be dusted with a soft clean cloth to maintain a good appearance. In use, liquid antistatic coatings should be applied in a very thin even coat. If beads appear as it is applied, the coat is too thick and the excess should be removed with another cloth. Allow the coating to dry, then bring to a high gloss with a soft cloth.

Maintenance

BEFORE SERVICING ALWAYS DISCONNECT ELECTRICAL POWER AT THE MAIN DISCONNECT WHEN SERVICING OR REPLACING ANY ELECTRICAL COMPONENT.
This includes (but not limited to) Fans, Heater Thermostats, and Lights

Tips and Troubleshooting

Before calling for service, check the following:

1. Check electrical power supply to the equipment for connection.
2. Check fixture loading. Overstocking case will affect its proper operation.
3. If frost is collecting on fixture and/or product, check that Humidity Control is working properly, and that no outside doors or windows are open - allowing moisture to enter store.

Evaporator Fans

The evaporator fans are located at the center front of these merchandisers directly beneath the display pans. *Should fans or blades need servicing, always replace fan blades with the raised embossed side of the blade TOWARD THE MOTOR.*

Copper Coils

The copper coils used in Hussmann merchandisers may be repaired in the field. Materials are available from local refrigeration wholesalers.

Hussmann recommends using #15 Sil-Fos for repairs.

FOR PROMPT SERVICE
When contacting the factory, be sure to have the Case Model and Serial Number handy. This information is on a plate located on the case itself.

Maintenance (Cont'd)

Stainless Steel Cleaning and Care

There are three basic things, which can break down your stainless steel's passivity layer and allow corrosion.

1. **Mechanical Abrasion**
   Mechanical Abrasion means those things that will scratch the steels surface. Steel Pads, wire Brushes, and Scrapers are prime examples.
2. **Water**
   Water comes out of our tap in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots. Also, when heated, hard water leaves deposits behind that if left to sit, will break down the passive layer and rust your stainless steel. Other deposits from food preparation and service must be properly removed.
3. **Chlorides**
   Chlorides are found nearly everywhere. They are in water, food and table salt. One of the worst perpetrators of chlorides can come from household and industrial cleaners.

Don't Despair! Here are a few steps that can help prevent stainless steel rust.

1. **Use the Proper Tools**
   When cleaning your stainless steel products, take care to use non-abrasive tools. Soft Clothes and plastic scouring pads will NOT harm the steel's passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the same direction of the manufacturer's polishing marks.
2. **Clean With the Polish Lines**
   Some stainless steels come with visible polishing lines or "grain". When visible lines are present, you should ALWAYS scrub in a motion that is parallel to them. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.
3. **Use Alkaline, Alkaline Chlorinated or Non-chloride Containing Cleaners**
   While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask for an alternative. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel & cause pitting and rusting.
4. **Treat your Water**
   Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. Salts in a properly maintained water softener are your friends. If you are not sure of the proper water treatment, call a treatment specialist.
5. **Keep your Food Equipment Clean**
   Use alkaline, alkaline chlorinated or non-chlorinated cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in your stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides has a similar effect.
6. **RINSE, RINSE, RINSE**
   If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when sit contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steel's passivity film.
7. **Never Use Hydrochloric Acid (Muriatic Acid) on Stainless Steel**
8. **Regularly Restore/Passivate Stainless Steel**

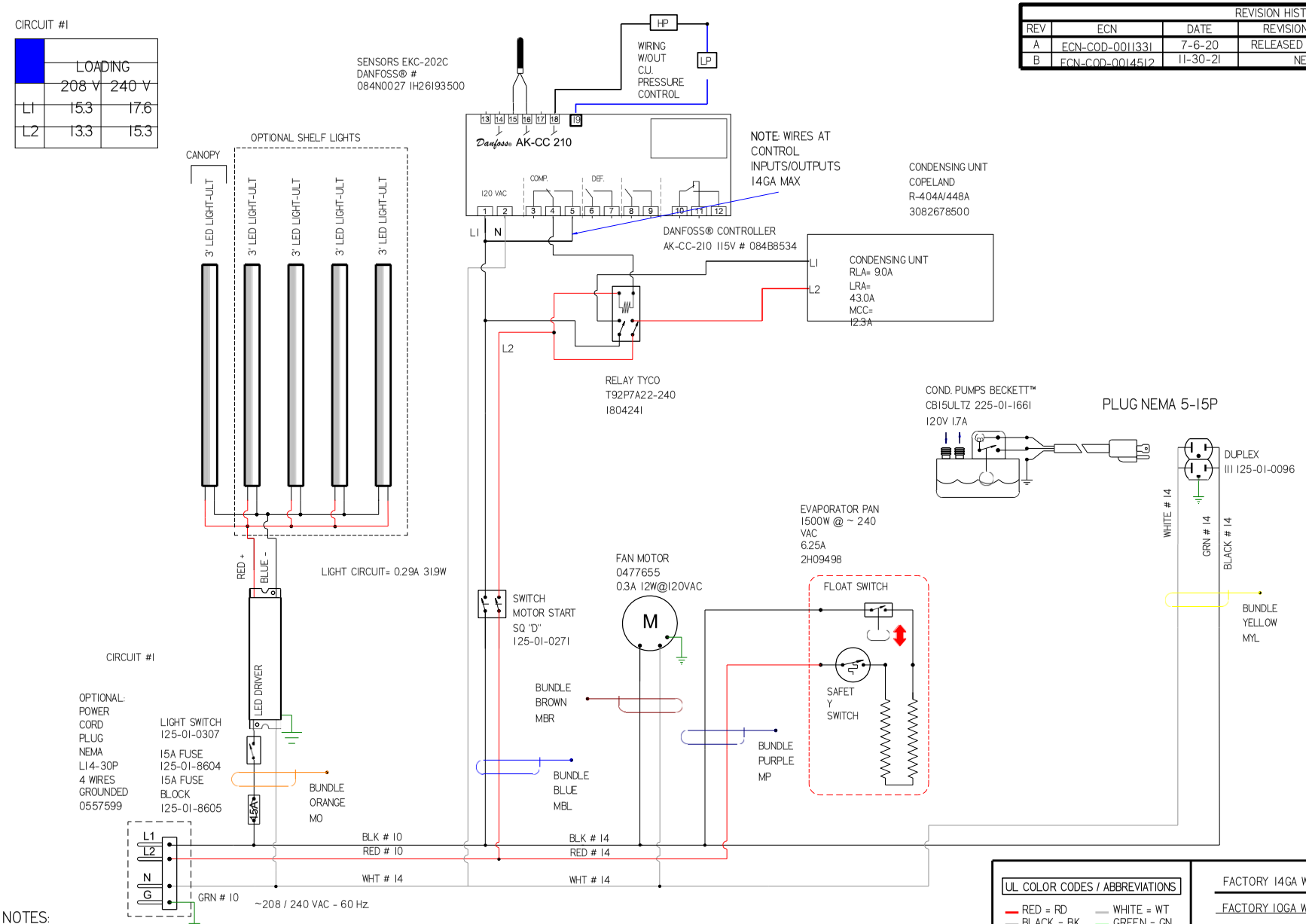
RGD-24-72-3-SC R-404/448	3'	3127775
RGD-24-72-3'9"-SC R-404/448	3'9"	3127776
RGD-24-72-4-SC R-448	4'	3127777
RGD-30-72-4-SC R-448	4'	3127778
RGD-24-72-5-SC R-404/448	5'	3127779
RGD-30-72-5-SC R-404/448	5'	3127780
RGD-24-72-6-SC R-404/448	6'	3127781
RGD-30-72-6-SC R-404/448	6'	3127782
RGD-24-72-8-SC R-448	8'	3127783
RGD-30-72-8-SC R-448	8'	3127784

RGD-24-72-3-S W/XR75 CTLR	3'	3160912
RGD-24-72-4R-S/XR75 CTLR	4'	3157196
RGD-24-72-3'9"-S W/XR75 CTLR	45"	3165420
RGD-24-72-5-S W/XR75 CTLR	5'	3168017
RGD-24-72-6-S W/XR75 CTLR	6'	3164576
RGD-24-72-8-S W/XR75 CTLR	8'	3160937
RGD-30-72-4-S W/XR75 CTLR	4'	3157197
RGD-30-72-5-S W/XR75 CTLR	5'	3164902
RGD-30-72-6-S W/XR75 CTLR	6'	3157201
RGD-30-72-8-S W/XR75 CTLR	8'	3160914

CIRCUIT #1

	LOADING	
	208 V	240 V
L1	15.3	17.6
L2	13.3	15.3

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-6-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014512	11-30-21	NEW LIGHT	CB	CB	CB



NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
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3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

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- BLUE = BL
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- YL GRAY = GY
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- ORANGE =
- OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

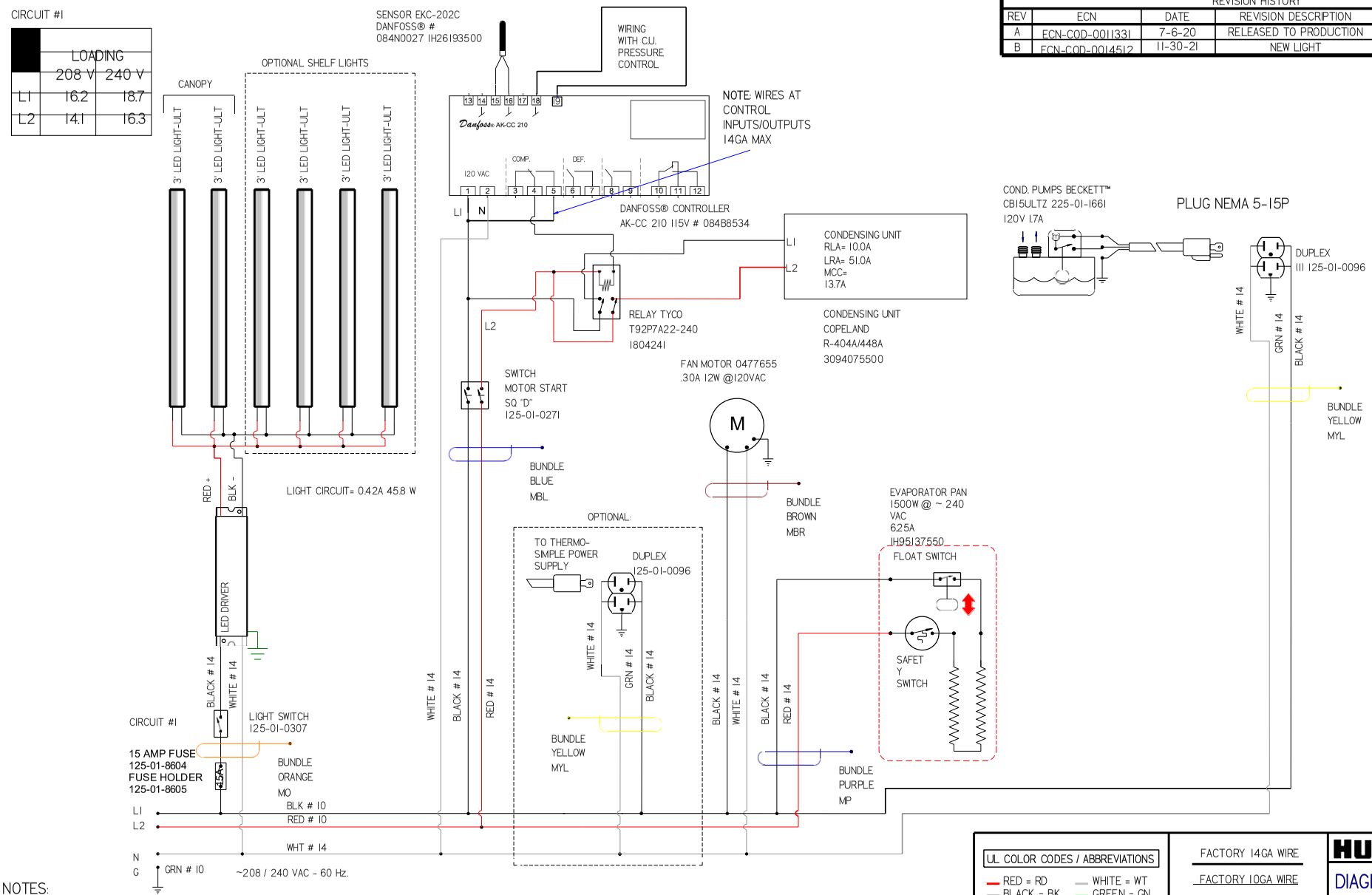
HUSSMANN®
DIAGRAM-RCG-24-7 2-3-SC
P/N 3127775
REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208 V	240 V
L1	16.2	18.7
L2	14.1	16.3

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-6-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014512	11-30-21	NEW LIGHT	CB	CB	CB



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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®
DIAGRAM-RGD-24-7 2-3'9"-SC
P/N 3127776
REV B

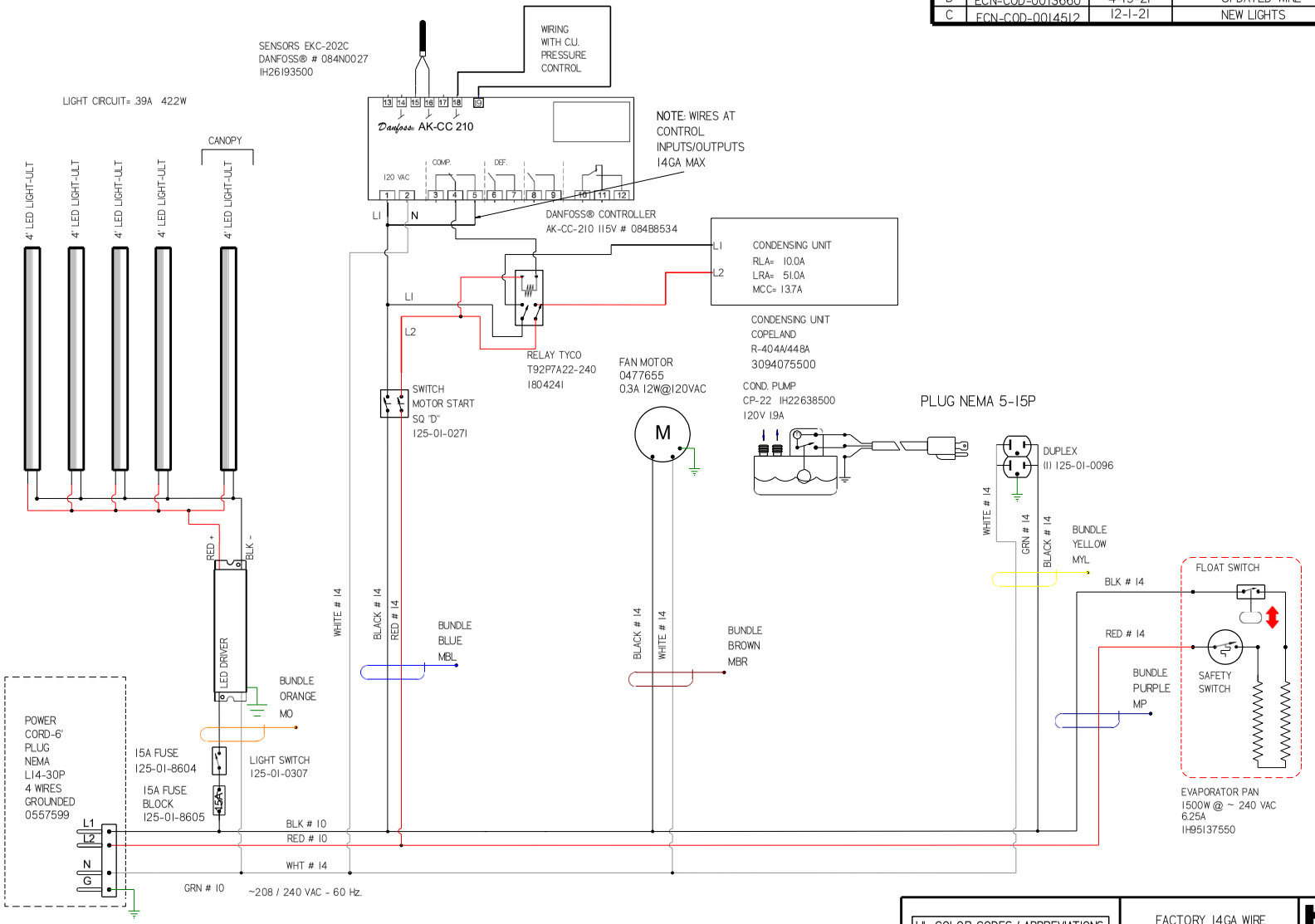
CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

ADING		
	208V	240
L1	16.5	19.0
L	14.1	16.3

2

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
B	ECN-COD-0013660	4-19-21	UPDATED WIRE	CB	CB	CB
C	ECN-COD-0014512	12-1-21	NEW LIGHTS	CB	CB	CB



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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®

DIAGRAM-RGD-24-7 2-4-SC

P/N 3127777 REV C

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208 V	240 V
L1	16.3	18.8
L2	14.1	16.3

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
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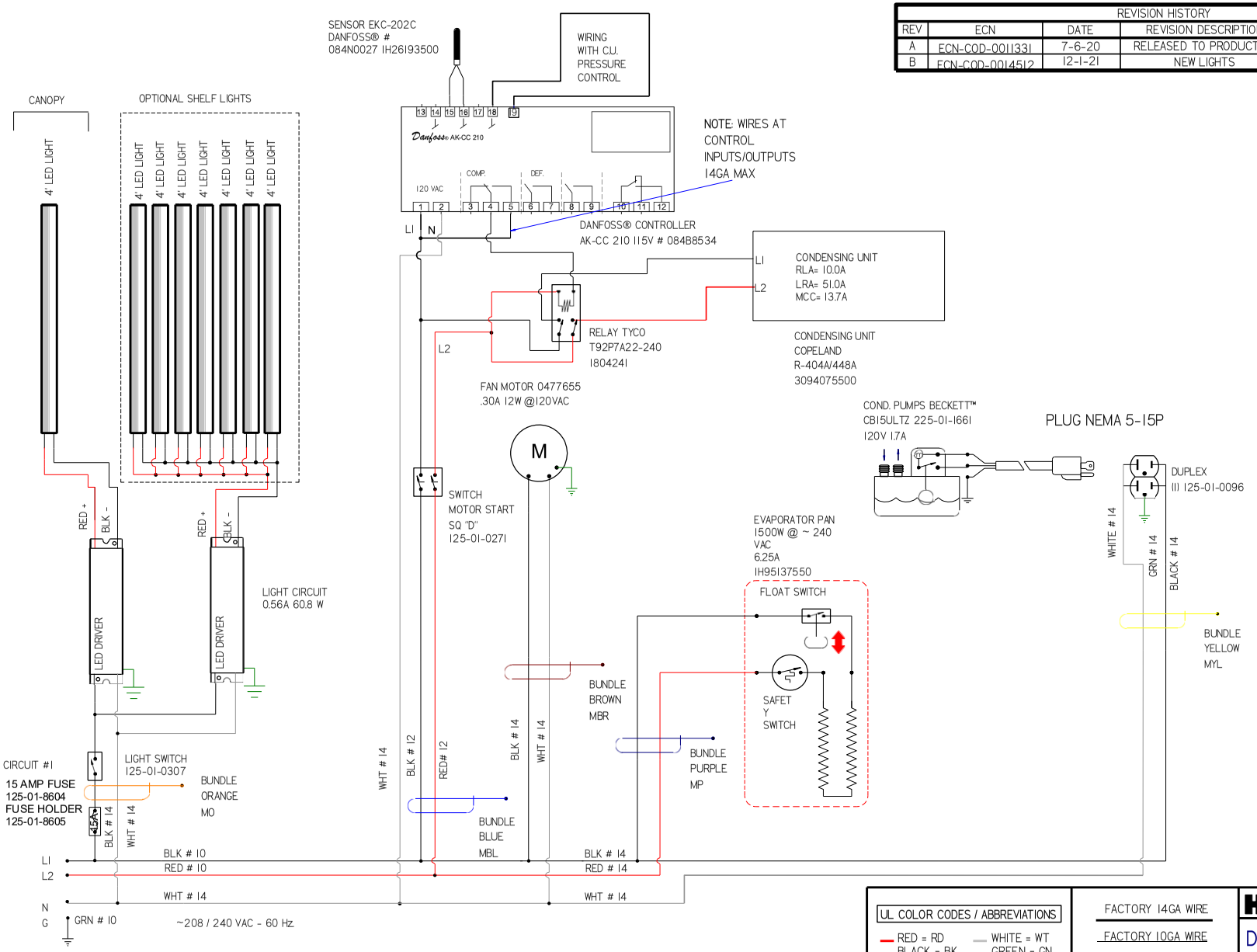
B	ECN-COD-0014512	12-1-21	NEW LIGHTS	CB	CB	CB



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- ORANGE = OR
- VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN

DIAGRAM-RGD-30-7 2-4-SC

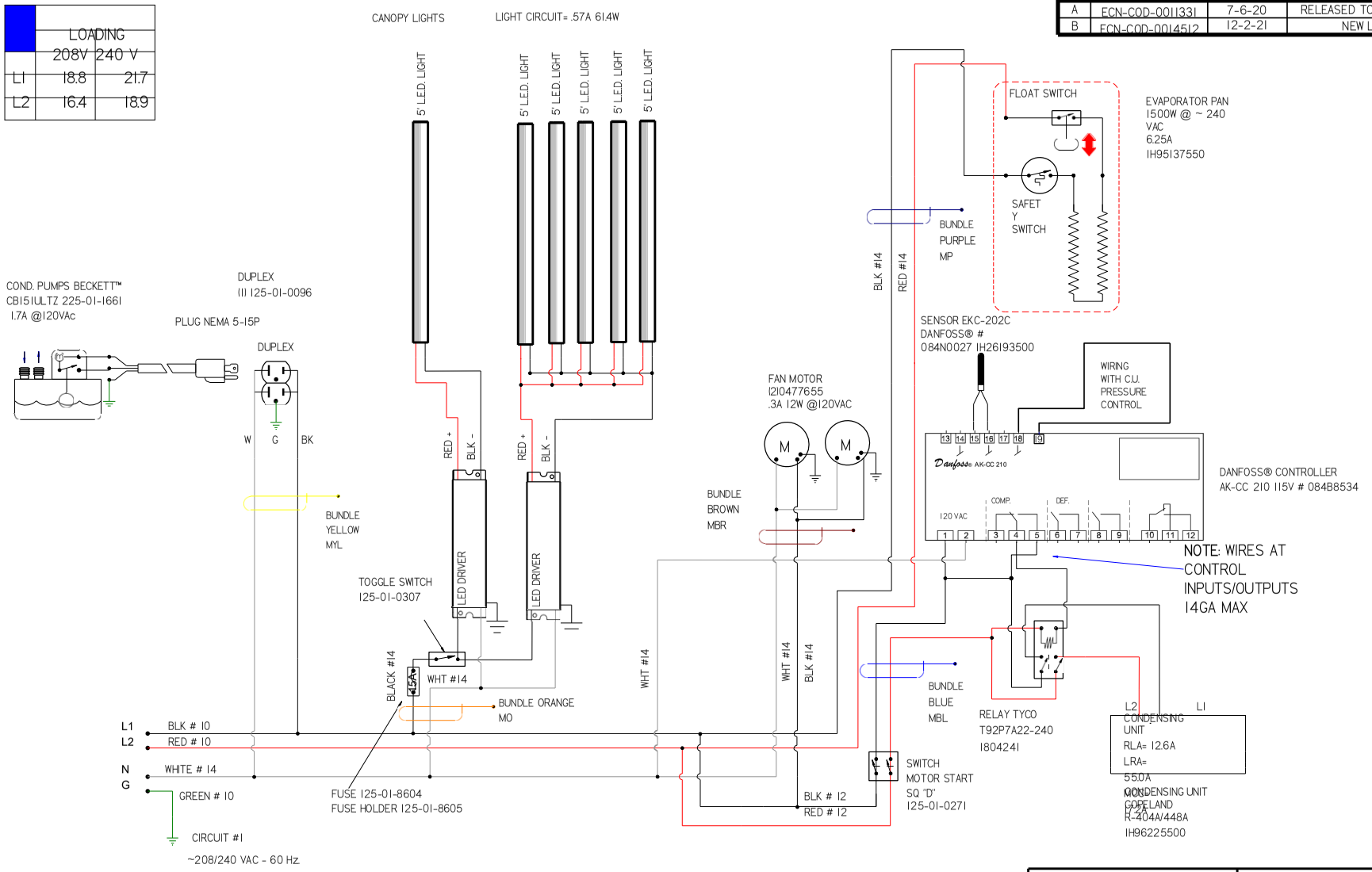
P/N 3127778 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208V	240 V
L1	18.8	21.7
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-6-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014512	12-2-21	NEW LIGHTS	CB	CB	CB



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RED = RD	WHITE = WT	FACTORY 14GA WIRE
BLACK = BK	GREEN = GN	FACTORY 10GA WIRE
BLUE = BL	BROWN = BN	FIELD WIRE
YELLOW =	ORANGE =	
YL GRAY = GY	OR VIOLET = VT	

DO NOT SCALE DRAWING

SHEET 1 OF 1

HUSSMANN®

DIAGRAM-RGD-24-7 2-5-SC

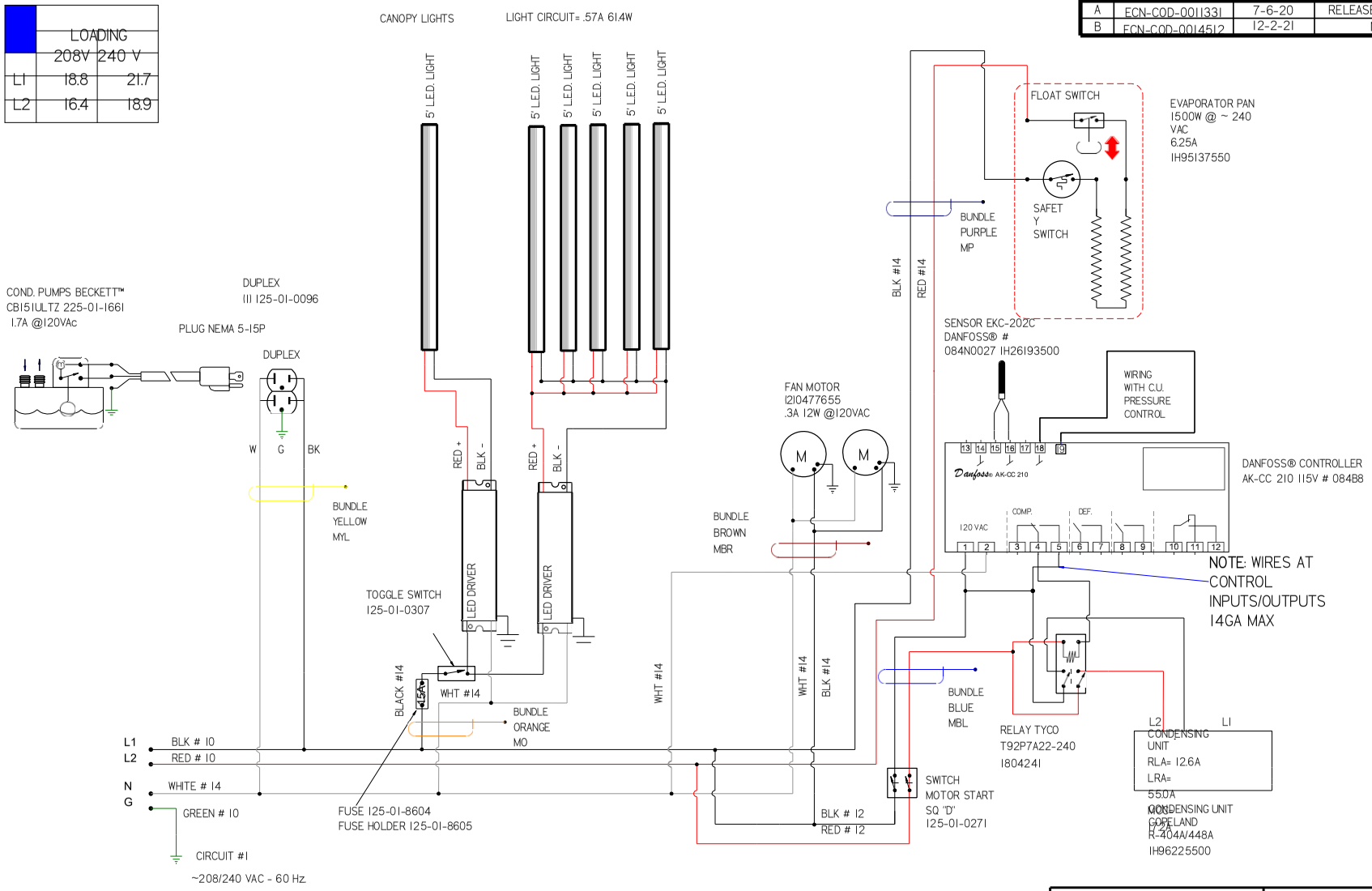
P/N 3127779 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208V	240 V
L1	18.8	21.7
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-6-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014512	12-2-21	NEW LIGHTS	CB	CB	CB



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BLACK = BK	GREEN = GN	FACTORY 10GA WIRE
BLUE = BL	BROWN = BN	FIELD WIRE
YELLOW =	ORANGE =	
YL GRAY = GY	OR VIOLET = VT	

DO NOT SCALE DRAWING
SHEET 1 OF 1

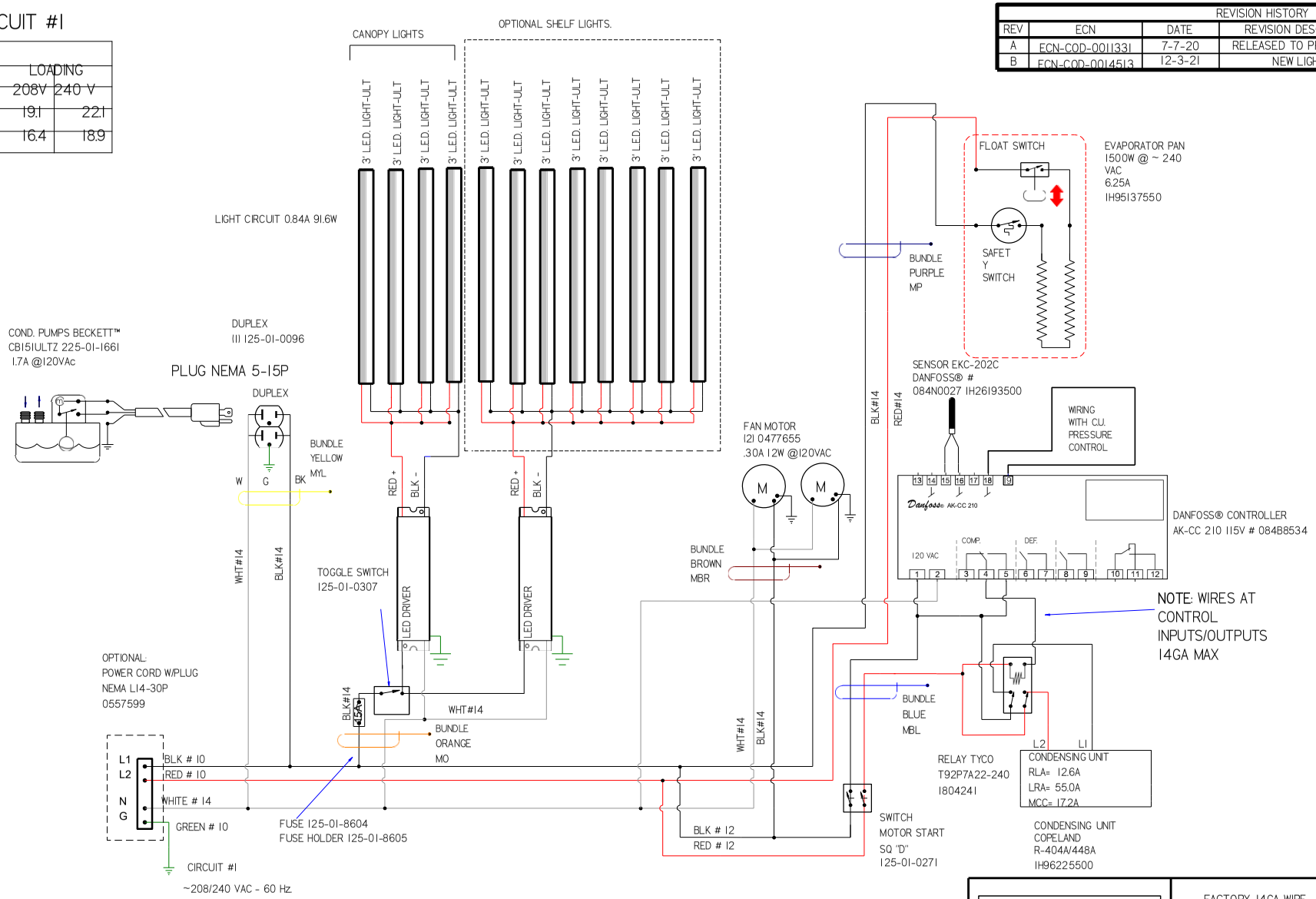
HUSSMANN®
DIAGRAM-RGD-30-7 2-5-SC
P/N 3127780 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING 208V	240 V
L1	19.1	22.1
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-7-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014513	12-3-21	NEW LIGHTS	CB	CB	CB



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BLUE = BL	BROWN = BN	FIELD WIRE
YELLOW =	ORANGE =	
YL GRAY = GY	OR VIOLET = VT	

DO NOT SCALE DRAWING
SHEET 1 OF 1

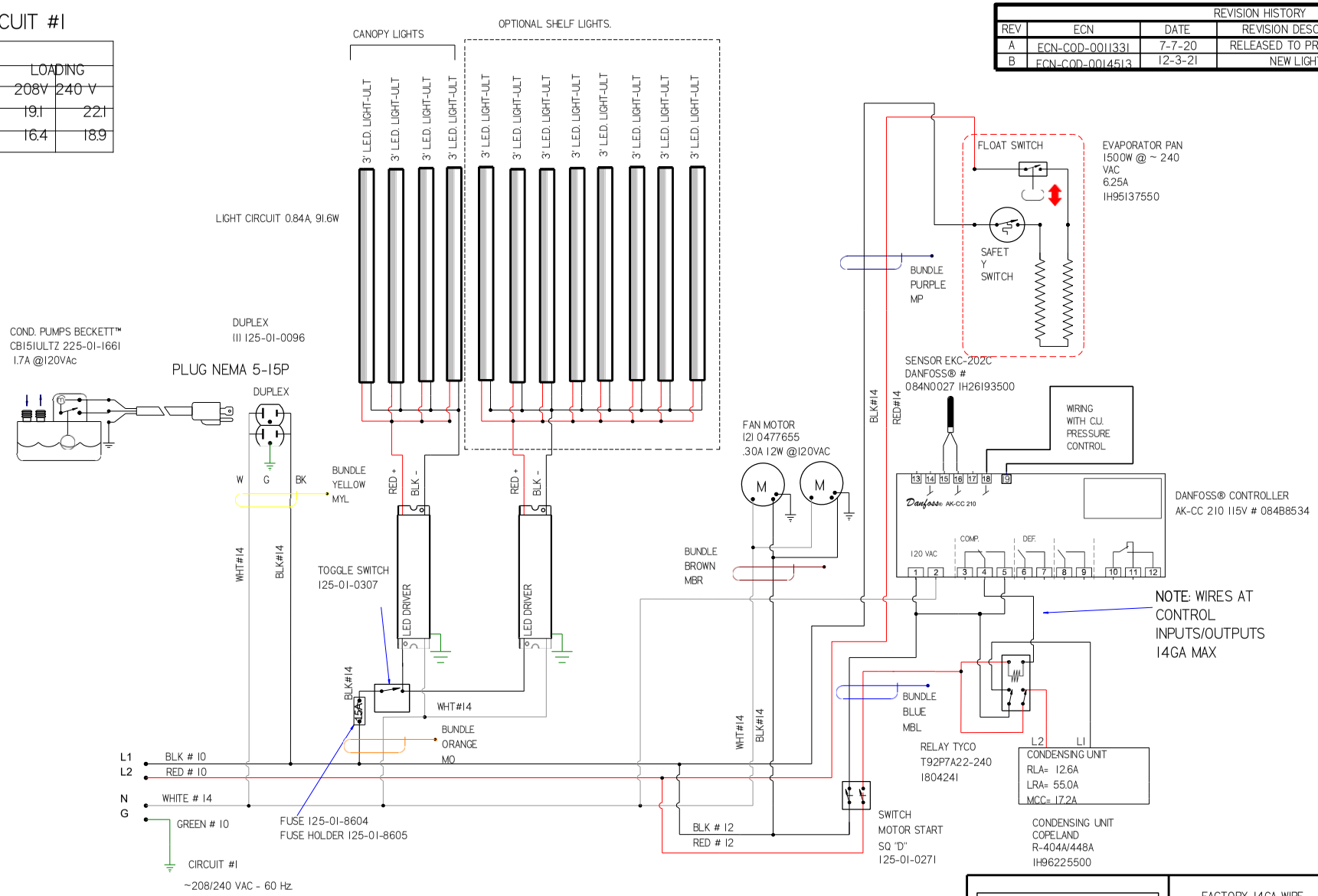
HUSSMANN®
DIAGRAM-RGD-24-7 2-6-SC
P/N 3127781 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING 208V	240 V
L1	19.1	22.1
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-7-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014513	12-3-21	NEW LIGHTS	CB	CB	CB



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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®

DIAGRAM-RGD-30-7 2-6-SC

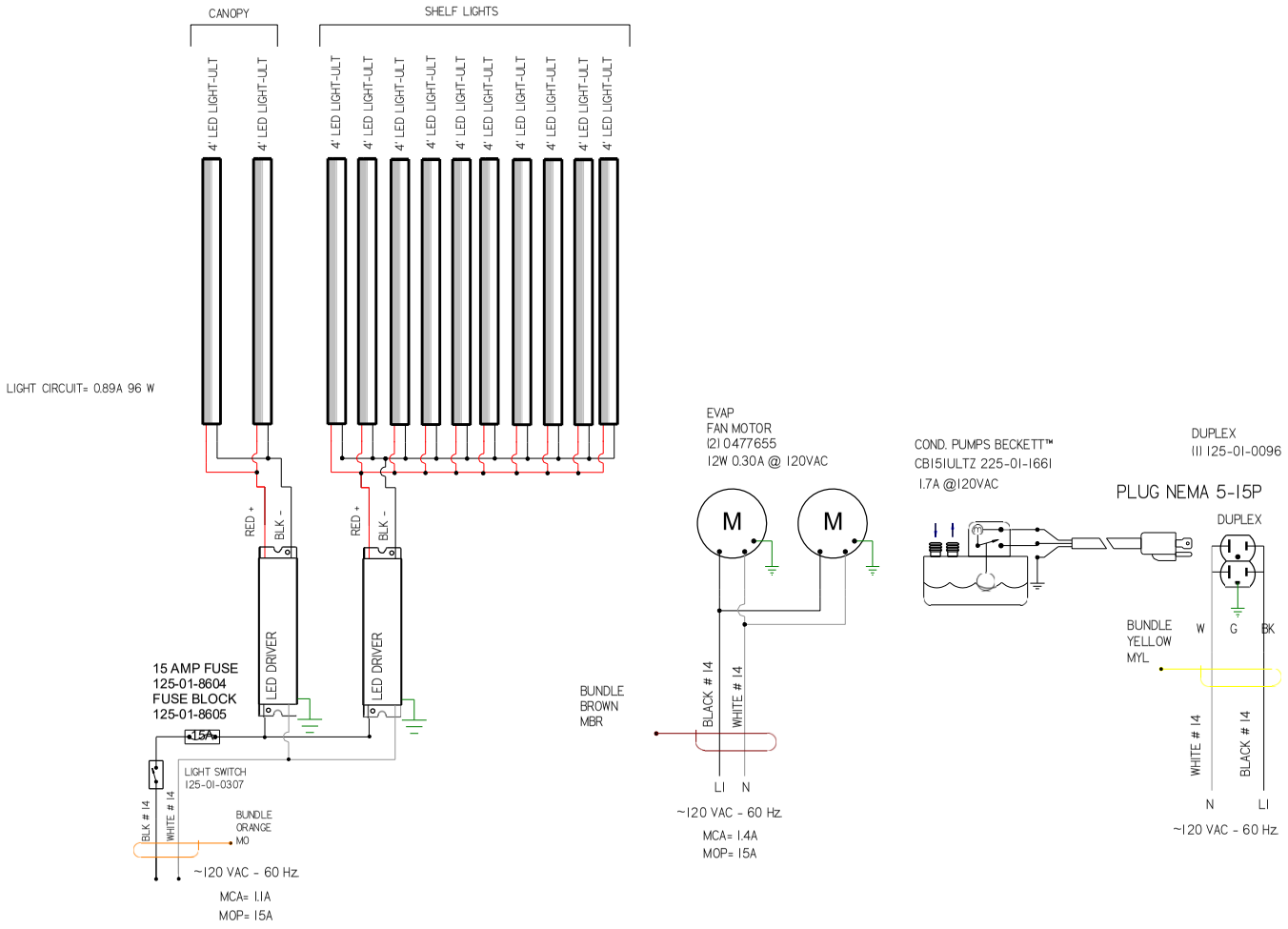
P/N 3127782 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	120 V	
L1	3.2	

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-7-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014513	12-3-21	NEW LIGHTS	CB	CB	CB



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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

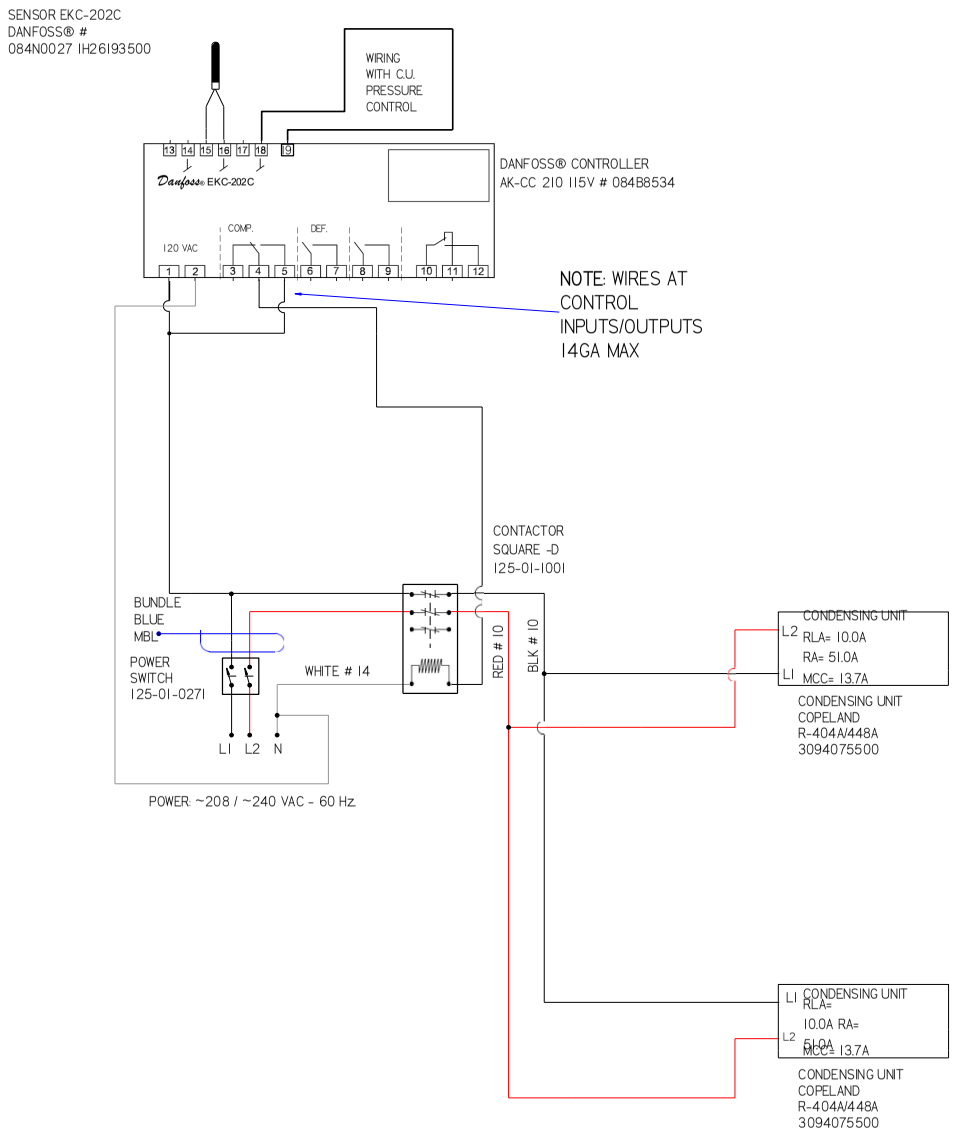
DO NOT SCALE DRAWING
SHEET 1 OF 3

HUSSMANN®
DIAGRAM-24-72-8-SC
P/N 3127783
REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #2

	LOADING	
	208 V	240 V
L1	17.3	20.0
L2	17.3	20.0



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- WHITE = WT
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- BROWN = BN
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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

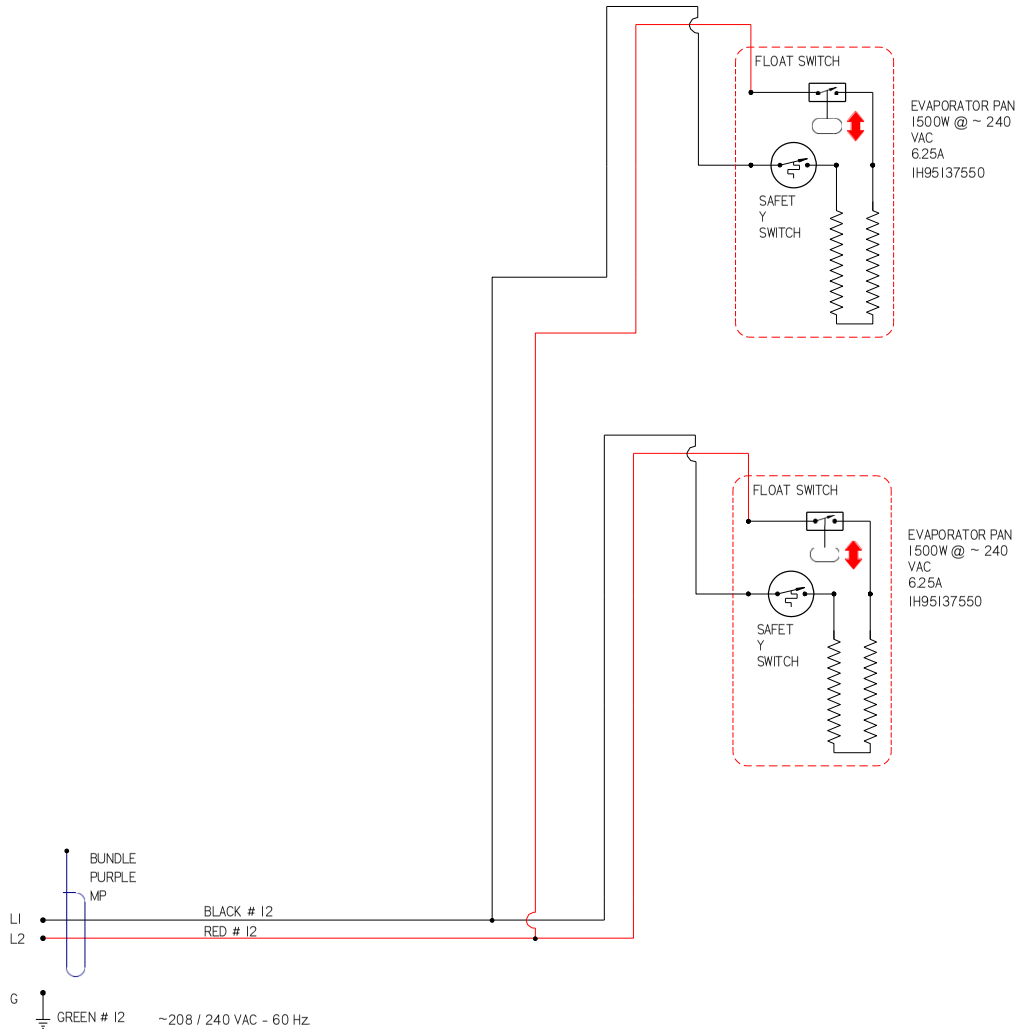
DO NOT SCALE DRAWING
SHEET 2 OF 3

HUSSMANN®
DIAGRAM-24-72-8-SC
P/N 3127783
REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #3

	LOADING	
	208 V	240 V
L1	10.8	12.5
L2	10.8	12.5



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1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

UL COLOR CODES / ABBREVIATIONS

- RED = RD
- BLACK = BK
- BLUE = BL
- YELLOW =
- YL GRAY = GY
- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE =
- OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 3 OF 3

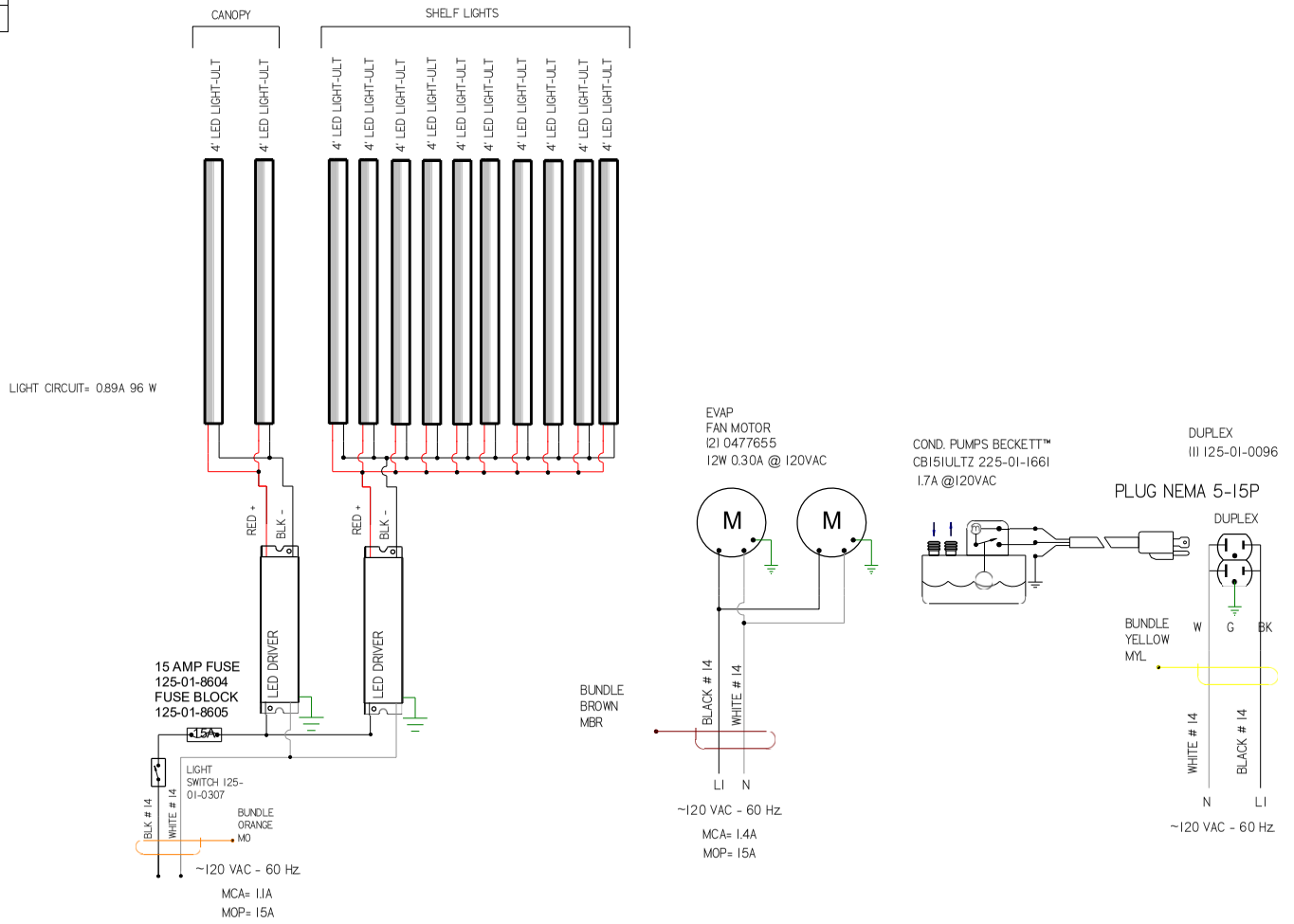
HUSSMANN®
DIAGRAM-24-72-8-SC
P/N 3127783
REV B

CN0_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	120 V	
L1	3.7	

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0011331	7-7-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0014513	12-3-21	NEW LIGHTS	CB	CB	CB



NOTES:
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- OR VIOLET = VT

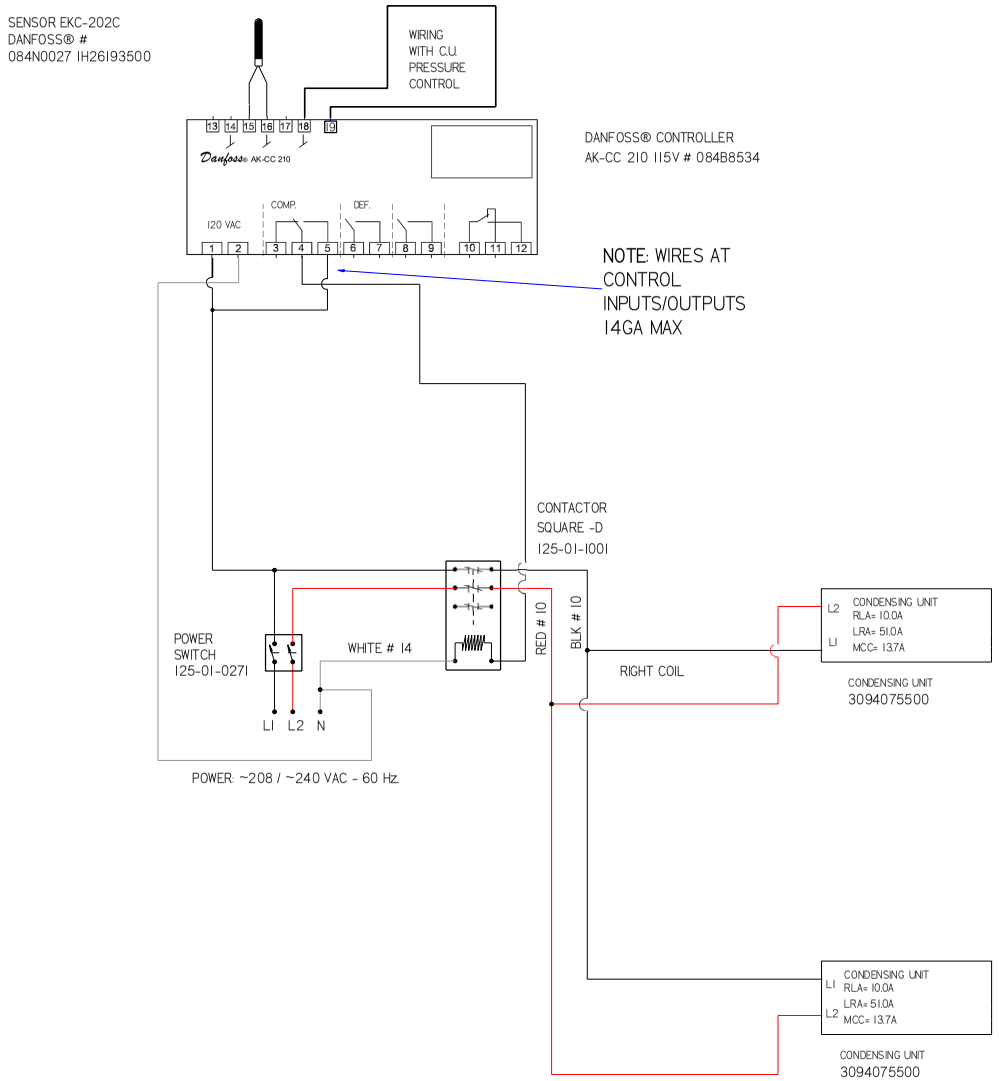
FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 3

HUSSMANN®
DIAGRAM-RGD-30-7 2-8-SC
P/N 3127784
REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #2

	LOADING	
	208 V	240 V
L1	17.3	20.0
L2	17.3	20.0



NOTES:
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- BLACK = BK
- BLUE = BL
- YELLOW =
- YL GRAY = GY
- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE =
- OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

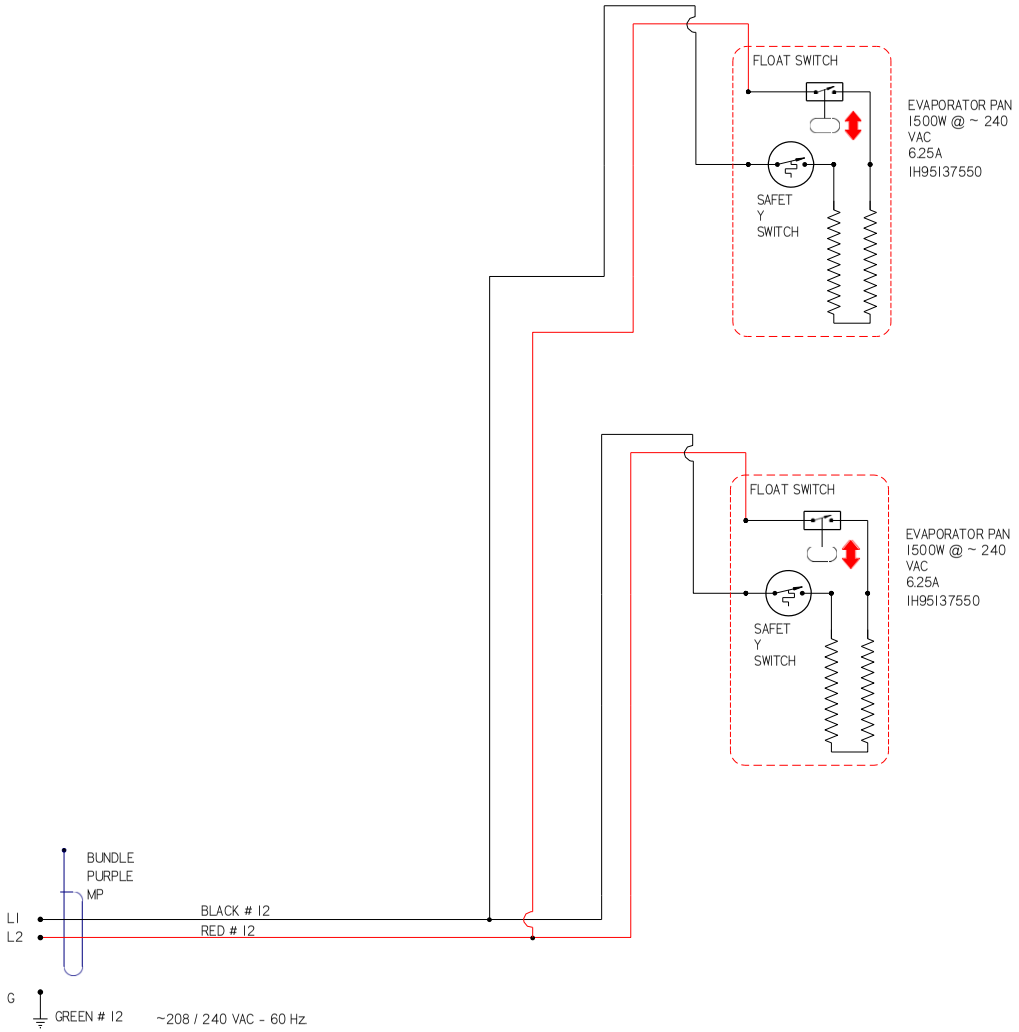
DO NOT SCALE DRAWING
SHEET 2 OF 3

HUSSMANN®
DIAGRAM-RGD-30-72-8-SC
P/N 3127784
REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #3

	LOADING	
	208 V	240 V
L1	10.8	12.5
L2	10.8	12.5



NOTES:
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UL COLOR CODES / ABBREVIATIONS

- RED = RD
- BLACK = BK
- BLUE = BL
- YELLOW =
- YL GRAY = GY
- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE =
- OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 3 OF 3

HUSSMANN®

DIAGRAM-RGD-30-72-8-SC

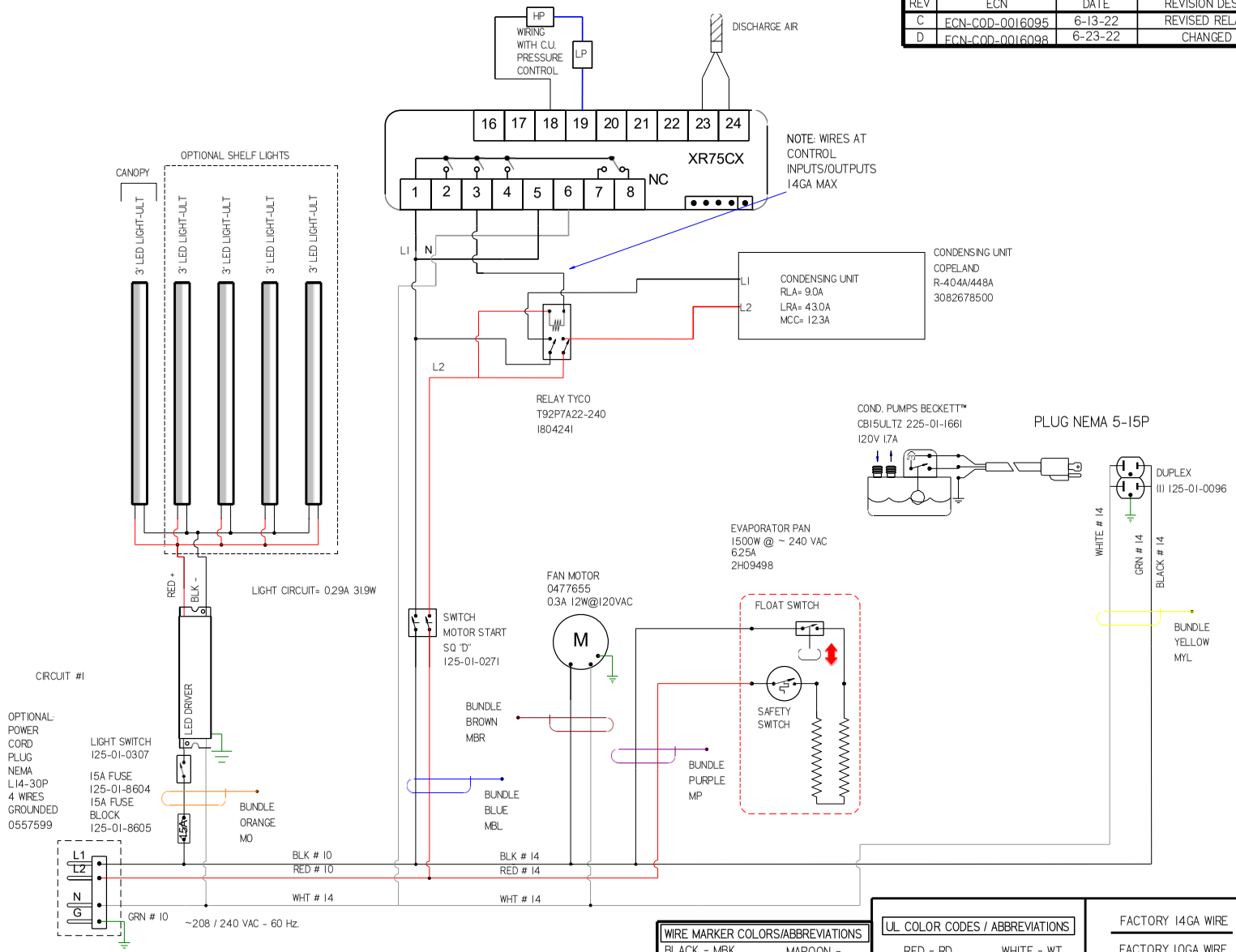
P/N 3127784 REV B

CN0_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208 V	240 V
L1	15.3	17.6
L2	13.3	15.3

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
C	ECN-COD-0016095	6-13-22	REVISED RELAY WIRING	CB	CB	CB
D	ECN-COD-0016098	6-23-22	CHANGED RELAY	CB	CB	CB



WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR
BLUE = MBL	ORANGE = MO
BROWN = MBR	PINK = MPI
DARK BLUE = MLB	PURPLE = MP
GREEN = MG	RED = MR
LIGHT BLUE =	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = GY
GRAY = GY	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®
DIAGRAM-RGD-24-7 2-3-S XR75CX
P/N 3160912
REV D

CN0_10 WIRE DIAGRAM SIZE C

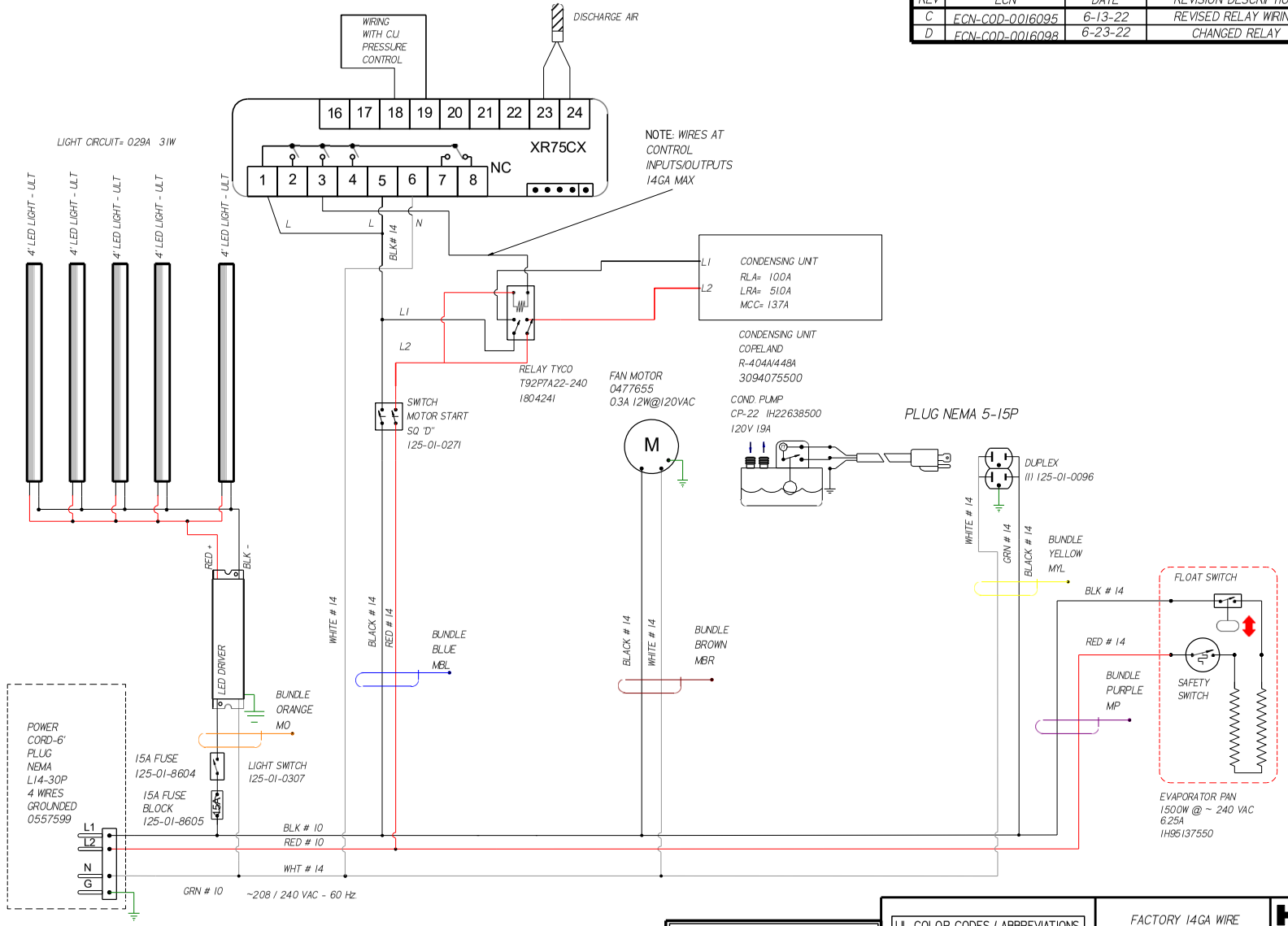
NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1

	ADING	
	208V	240
L1	10.2	18.7
L	14.1	10.3

2

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
C	ECN-COD-0016095	6-13-22	REVISED RELAY WIRING	CB	CB	CB
D	ECN-COD-0016098	6-23-22	CHANGED RELAY	CB	CB	CB



NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE.
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WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR
BLUE = MBL	ORANGE = MO
BROWN = MBR	PINK = MPI
DARK BLUE = MLB	PURPLE = MP
MDB GREEN = MG	RED = MR
LIGHT BLUE =	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = GY
GRAY = GY	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

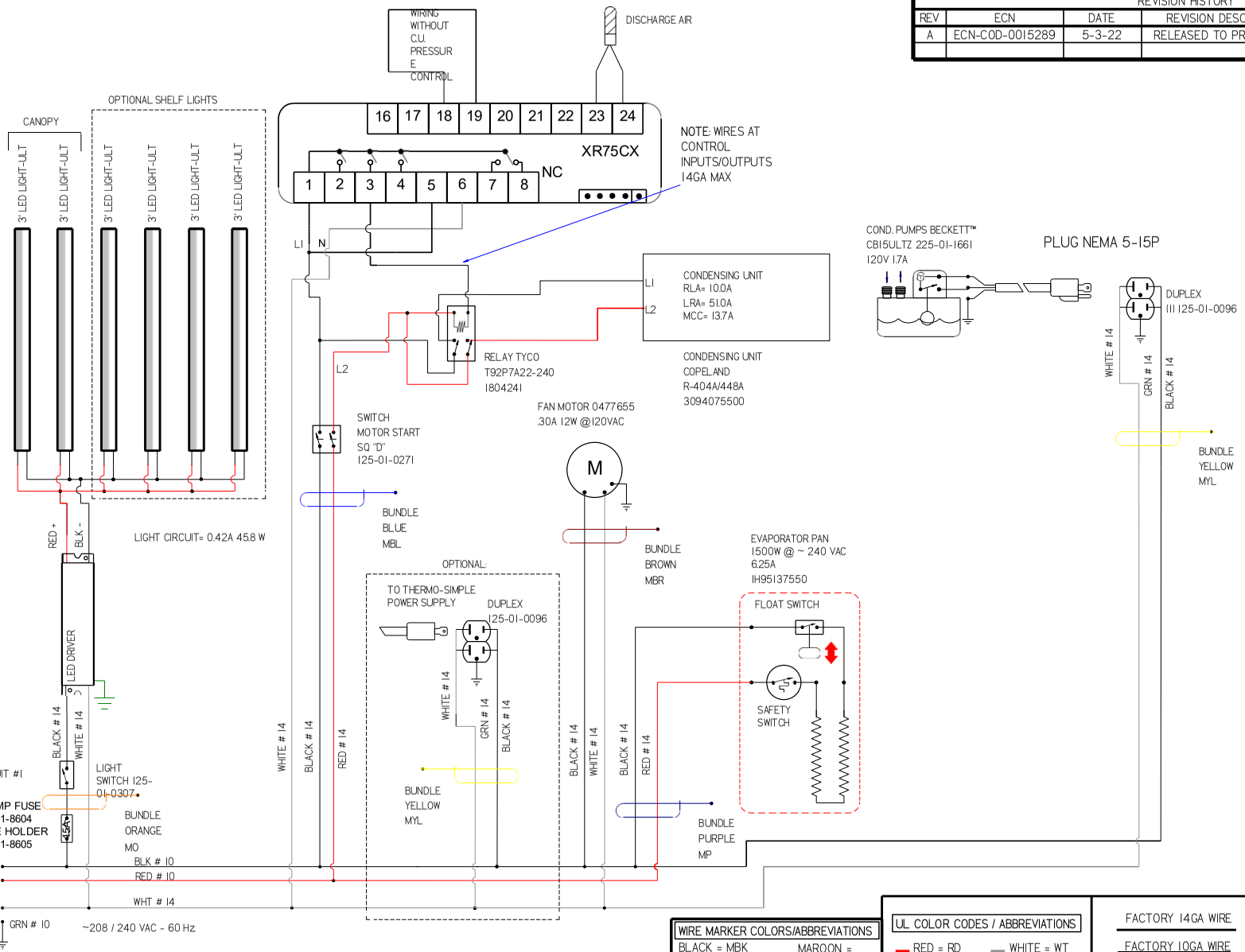
HUSSMANN®
DIAGRAM-RGD-24-7
2-4-S W/XR75 CTLR
P/N 3157196
REV D

CND-10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208 V	240 V
L1	16.2	18.7
L2	14.1	16.3

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0015289	5-3-22	RELEASED TO PRODUCTION	CB	CB	CB



NOTES:
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2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR
BLUE = MBL	ORANGE = MO
BROWN = MBR	PINK = MPI
DARK BLUE = MLB	PURPLE = MP
GREEN = MG	RED = MR
LIGHT BLUE =	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE =
GRAY = GY	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

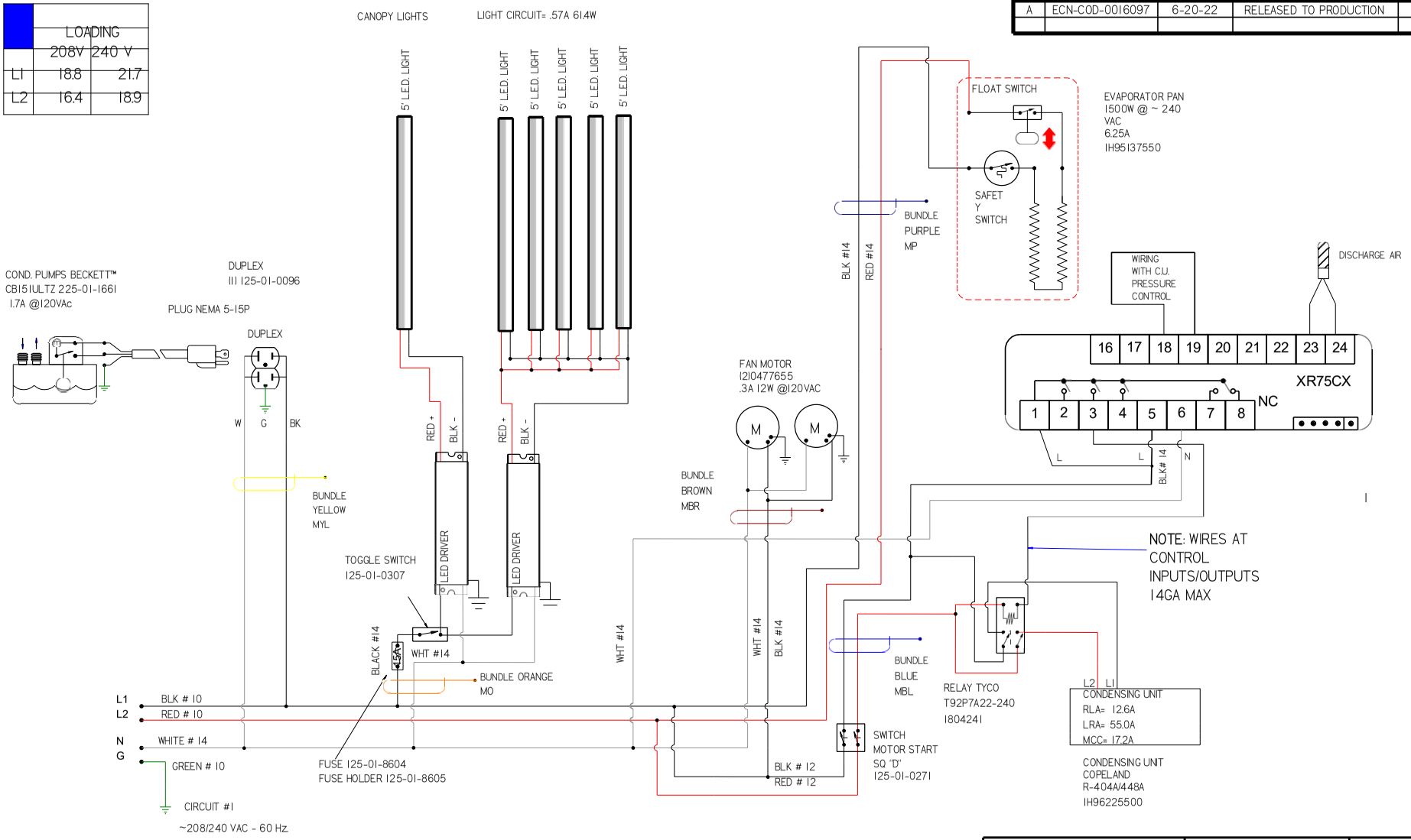
HUSSMANN®
DIAGRAM-RGD-24-7 2-3'-9"-S W/XR75 CTLR
P/N 3165420 REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208V	240 V
L1	18.8	21.7
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0016097	6-20-22	RELEASED TO PRODUCTION	CB	CB	CB



NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
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WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR ORANGE = MO PINK = MPI
BLUE = MBL	PURPLE = MP
BROWN = MBR	RED = MR
DARK BLUE = MDB GREEN = MG	YELLOW = MYL
LIGHT BLUE = MLB	

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

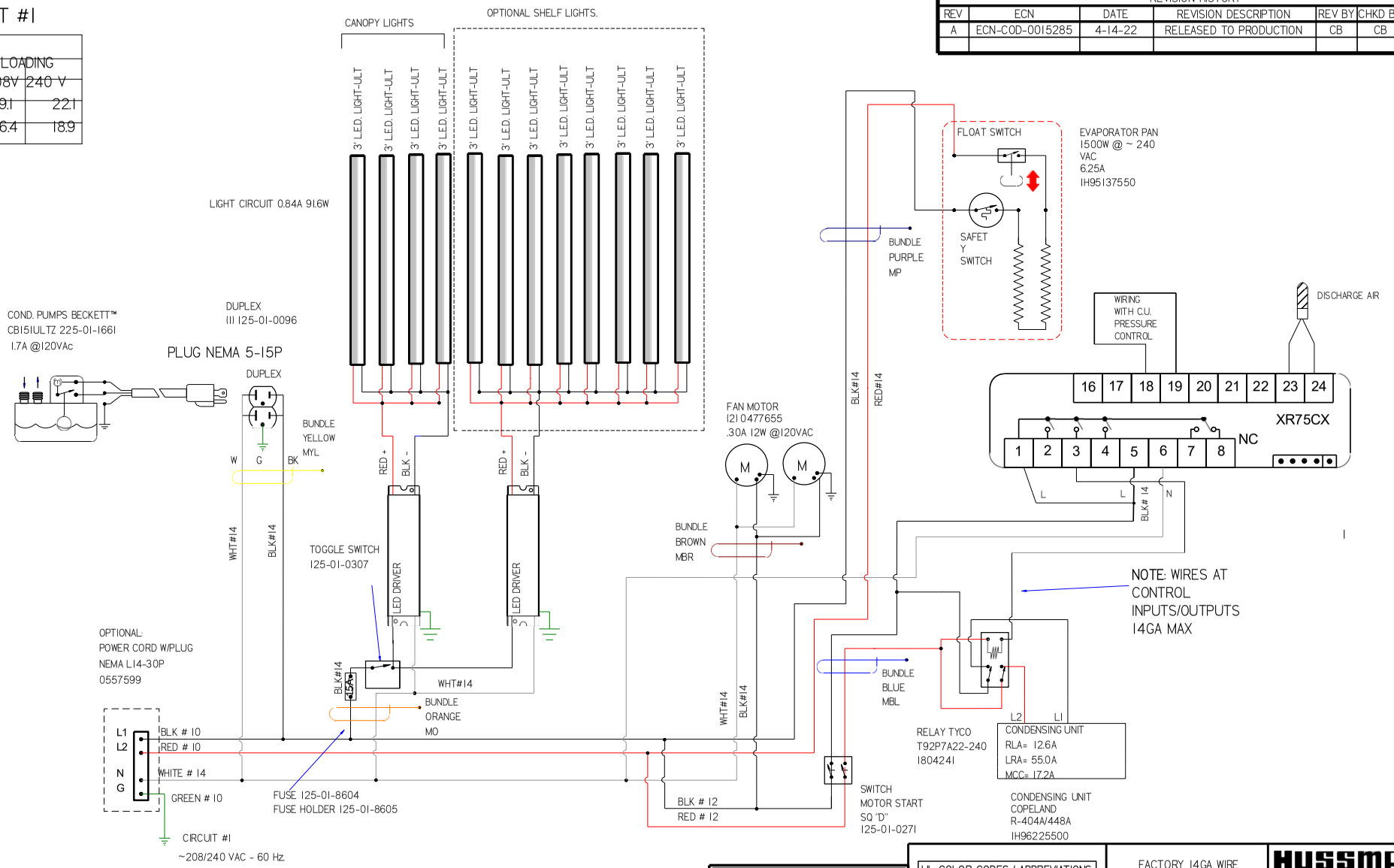
HUSSMANN®
DIAGRAM-RGD-24-7
2-5-S W/XR75
CTLR
P/N 3168017 REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208V	240 V
L1	19.1	22.1
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0015285	4-14-22	RELEASED TO PRODUCTION	CB	CB	CB



NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
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3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON =
BLUE = MBL	MMR ORANGE =
BROWN = MBR	MO PINK = MPI
DARK BLUE =	PURPLE = MP
MDB GREEN = MG	RED = MR
LIGHT BLUE = MLB	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

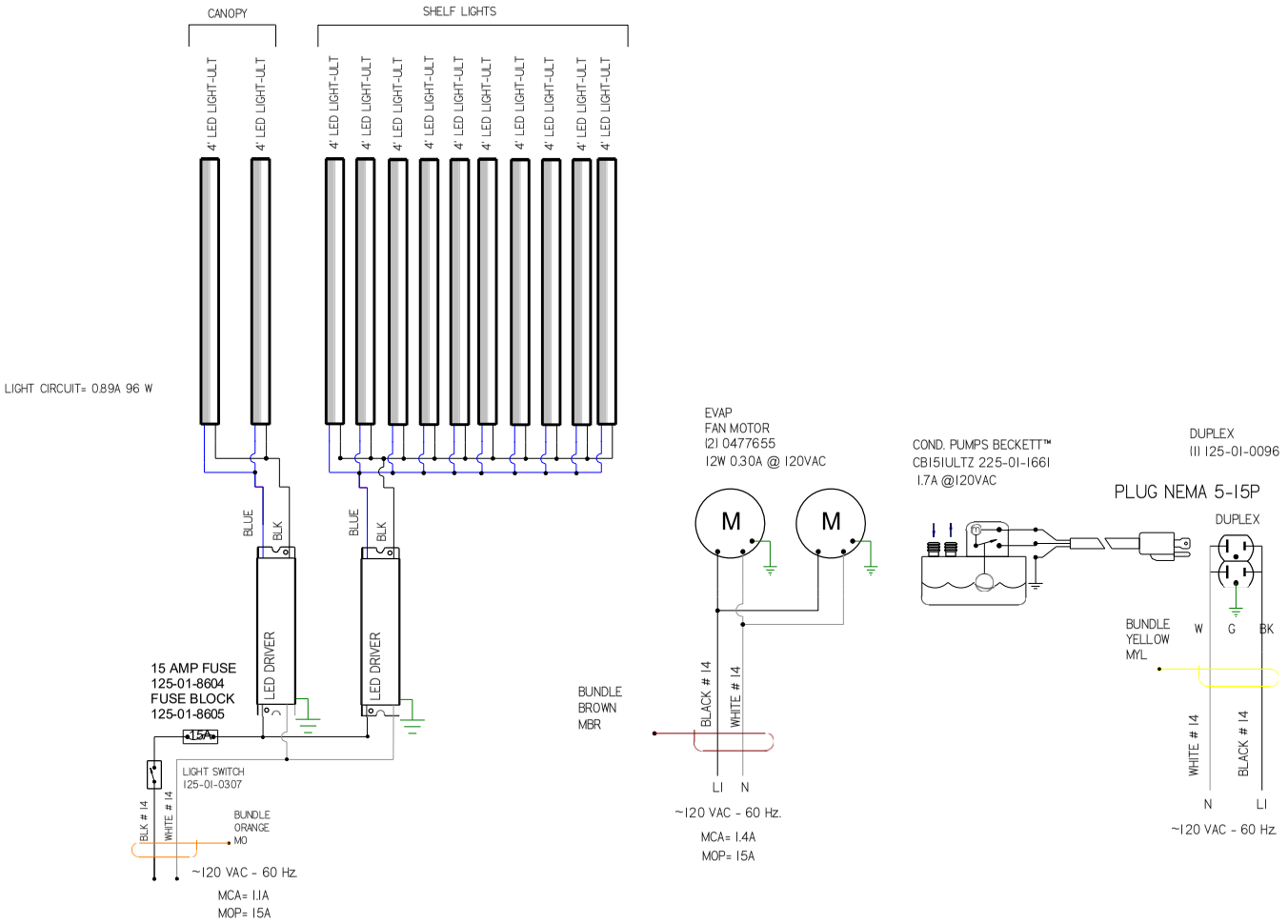
HUSSMANN®
DIAGRAM-RGD-24-7
2-6-S W/XR75
CTLR
P/N 3164576
REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	120 V	
L1	3.2	

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0015377	01-31-22	RELEASED TO PRODUCTION	AL	CB	CB



NOTES:
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WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR
BLUE = MBL	ORANGE = M0
BROWN = MBR	PINK = MPI
DARK BLUE = MLB	PURPLE = MP
GREEN = MG	RED = MR
LIGHT BLUE =	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GY	VIOLET = VT

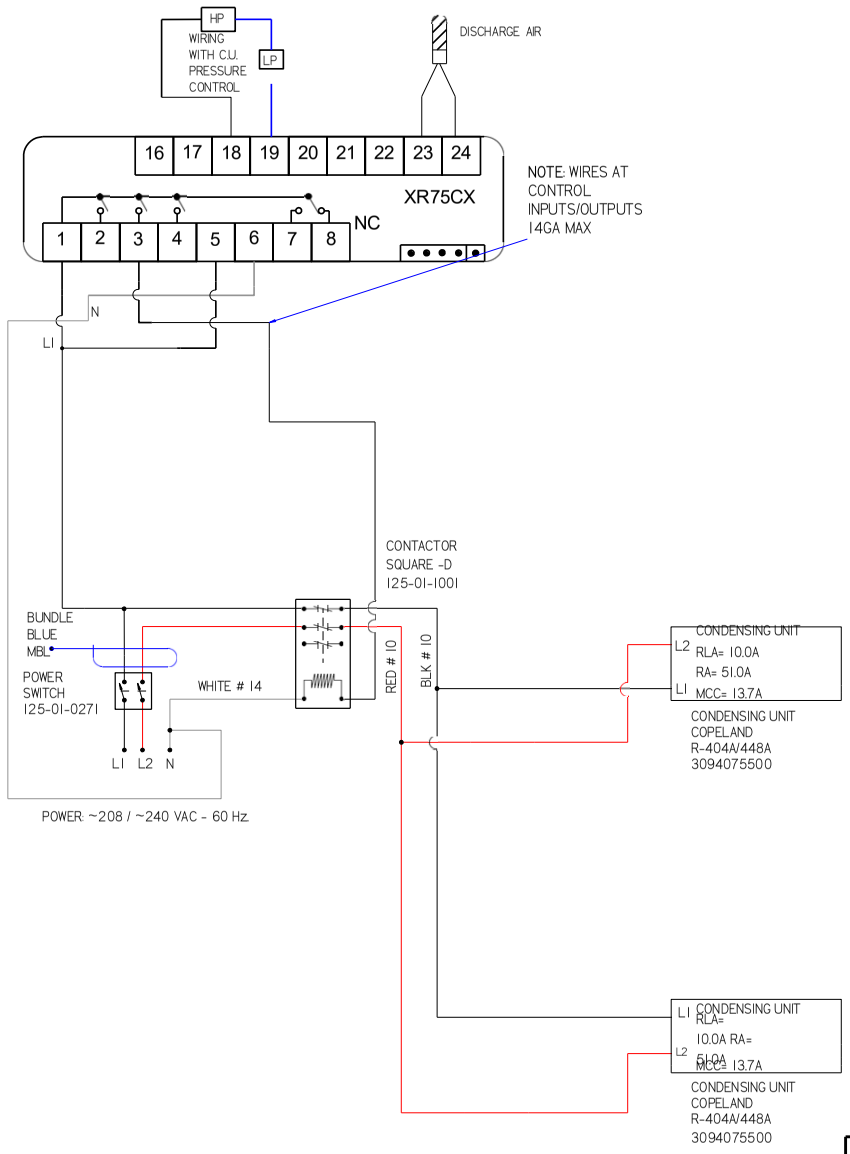
FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 3

HUSSMANN®
DIAGRAM-RGD-24-7 2-8-S XR75
P/N 3160937 REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #2

	LOADING	
	208 V	240 V
L1	17.3	20.0
L2	17.3	20.0



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BLUE = MBL	PURPLE = MP
BROWN = MBR	RED = MR
DARK BLUE = MDB GREEN = MG	YELLOW = MYL
LIGHT BLUE = MLB	

UL COLOR CODES / ABBREVIATIONS	
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BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 2 OF 3

HUSSMANN®

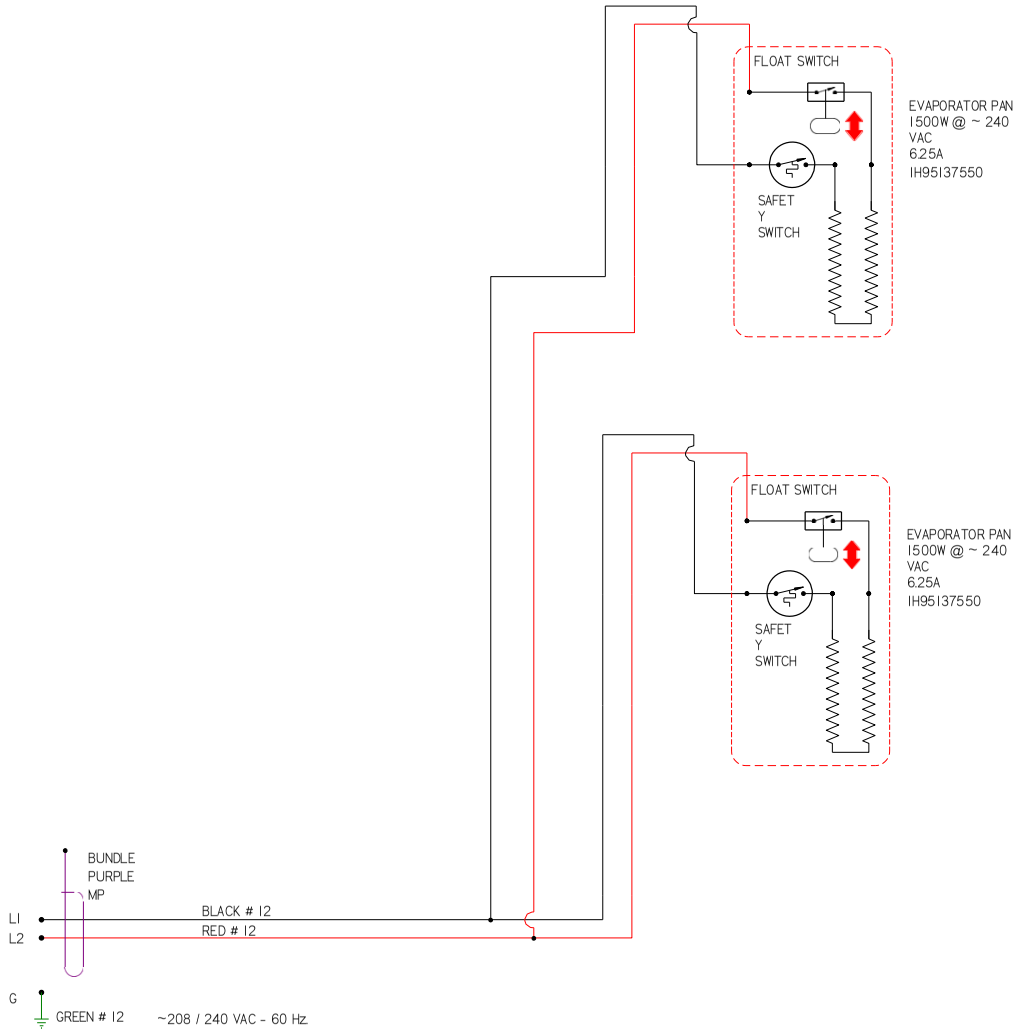
DIAGRAM-RGD-24-7 2-8-S XR75

P/N 3160937 REV A

CN0_10 WIRE DIAGRAM SIZE C

CIRCUIT #3

	LOADING	
	208 V	240 V
L1	10.8	12.5
L2	10.8	12.5



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BROWN = MBR	MO PINK = MPI
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LIGHT BLUE = MLB	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
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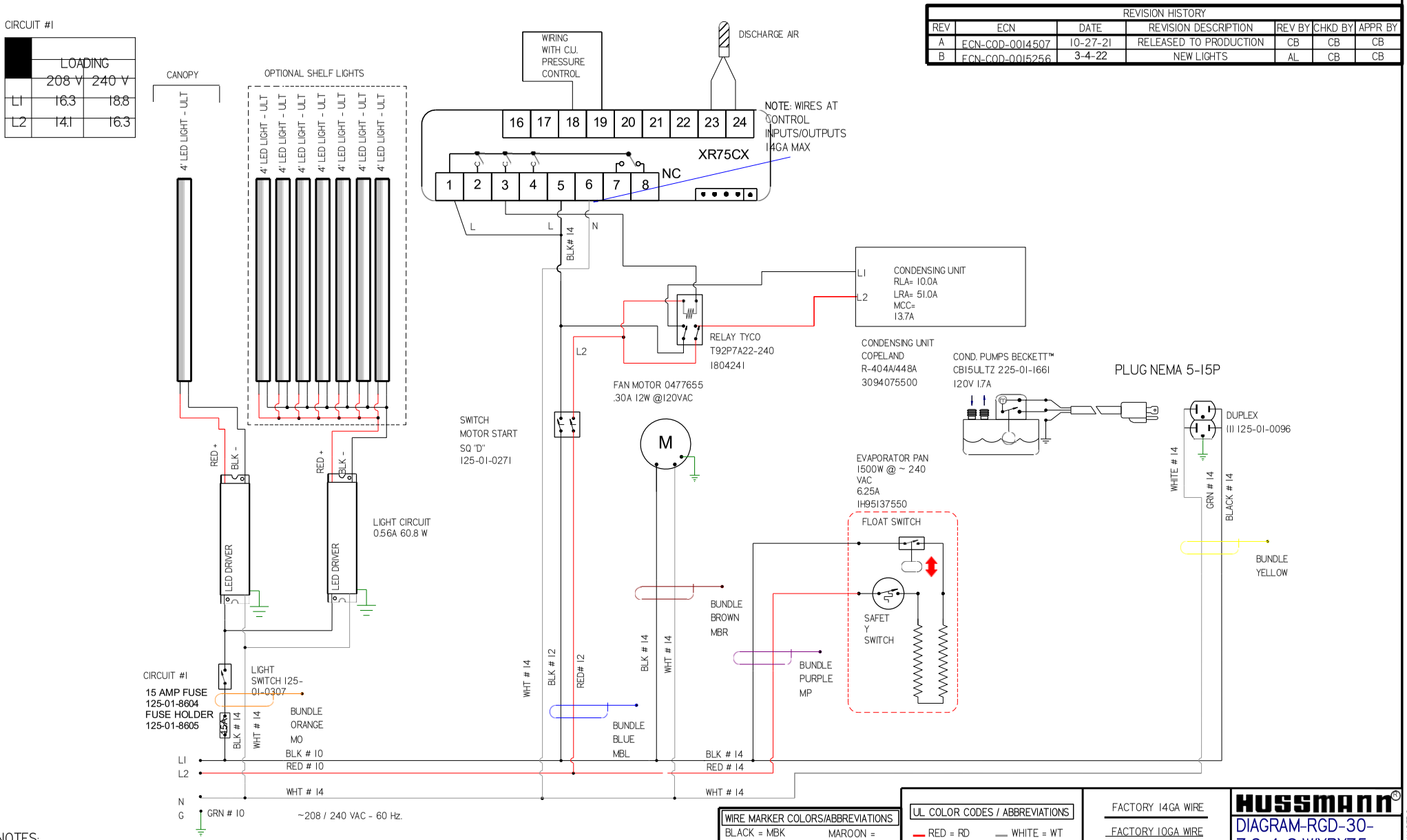
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 3 OF 3

HUSSMANN®
DIAGRAM-RGD-24-7 2-8-S XR75
P/N 3160937 REV A

CND_10 WIRE DIAGRAM SIZE C



REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0014507	10-27-21	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0015256	3-4-22	NEW LIGHTS	AL	CB	CB

NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
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DARK BLUE = MDB	PURPLE = MP
GREEN = MG	RED = MR
LIGHT BLUE = MLB	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GY	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

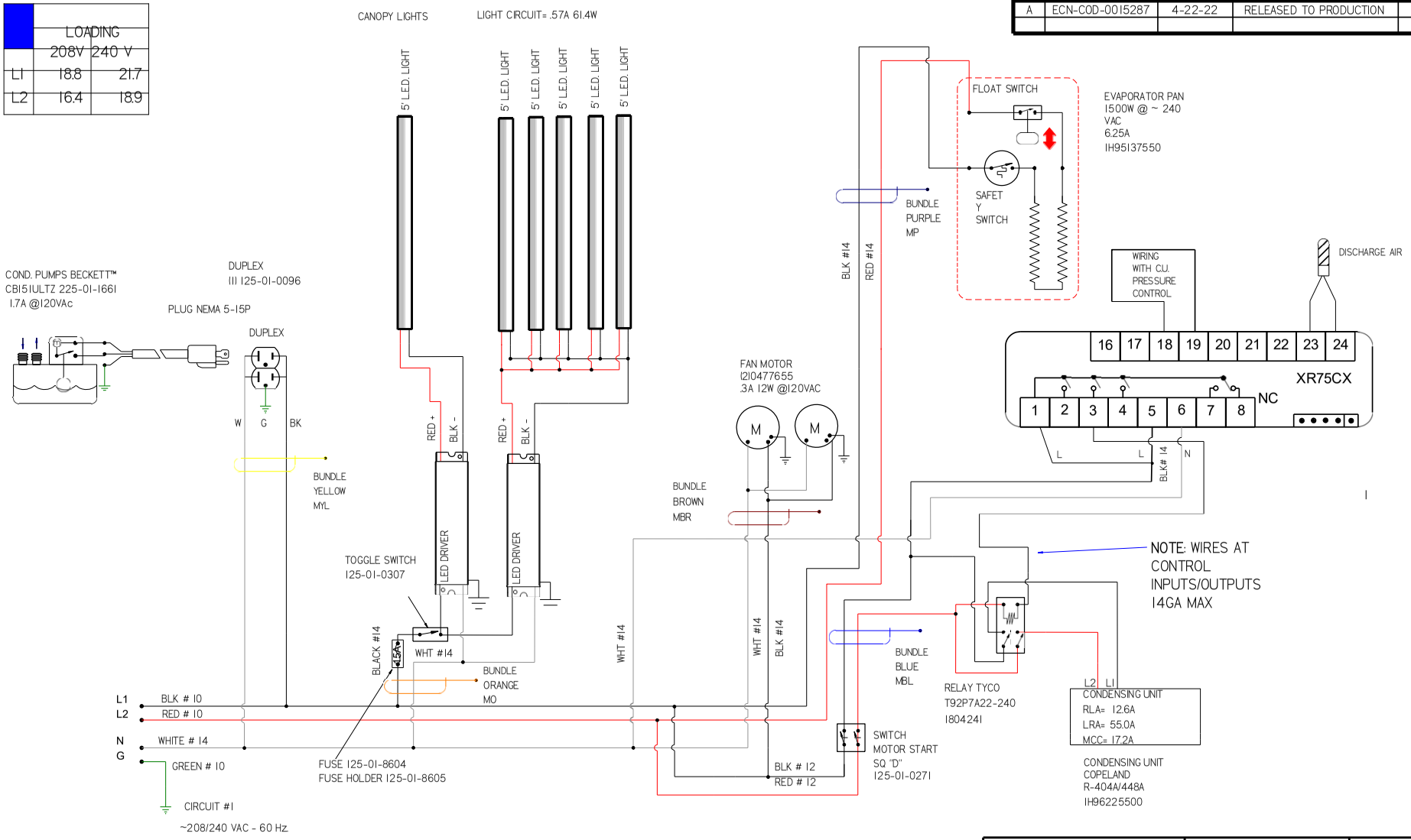
HUSSMANN®
DIAGRAM-RGD-30-7 2-4-S W/XRX75 CTLR
P/N 3157197 REV B

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING 208V	240 V
L1	18.8	21.7
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0015287	4-22-22	RELEASED TO PRODUCTION	CB	CB	CB



WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR ORANGE = MO PINK = MPI
BLUE = MBL	PURPLE = MP
BROWN = MBR	RED = MR
DARK BLUE = MDB GREEN = MG	YELLOW = MYL
LIGHT BLUE = MLB	

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®
DIAGRAM-RGD-30-7
2-5-S W/XR75 CTLR
P/N 3164902
REV A

NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #1

	LOADING	
	208V	240 V
L1	19.1	22.0
L2	16.4	18.9

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0014507	10-27-21	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-COD-0015256	3-7-22	NEW LIGHTS	AL	CB	CB

CANOPY LIGHTS

OPTIONAL SHELF LIGHTS.

3' LED. LIGHT - ULT (x12)

LIGHT CIRCUIT INPUT)
0.85A 91.8W @ 120 VAC

COND. PUMPS BECKETT™
CB15IULTZ 225-01-1661
1.7A @120VAc

DUPLEX
111 125-01-0096

PLUG NEMA 5-15P

DUPLEX

W G BK

WHT#14

BLK#14

TOGGLE SWITCH
125-01-0307

RED + BLK -

LED DRIVER

BUNDLE
YELLOW
MYL

BUNDLE
ORANGE
MO

FAN MOTOR
121 0477655
.30A 12W @120VAC

M M

BUNDL
E
BROWN
MBR

BLK#14 RED#14

FLOAT SWITCH

SAFET
Y
SWITCH

EVAPORATOR PAN
1500W @ ~ 240 VAC
6.25A
1H95137550

WIRING
WITH C.U.
PRESSURE
CONTROL

DISCHARGE AIR

16 17 18 19 20 21 22 23 24

XR75CX

1 2 3 4 5 6 7 8

NC

L L N

BLK# 14

NOTE: WIRES AT CONTROL INPUTS/OUTPUTS 14GA MAX

RELAY TYCO
T92P7A22-240
1804241

L2 L1
CONDENSING UNIT
RLA= 12.6A
LRA= 55.0A
MCC= 17.2A

CONDENSING UNIT
COPELAND
R-404A/448A
1H96225500

L1 BLK # 10
L2 RED # 10
N WHITE # 14
G GREEN # 10

CIRCUIT #1
~208/240 VAC - 60 Hz.

FUSE 125-01-8604
FUSE HOLDER 125-01-8605

BLK # 12
RED # 12

SWITCH
MOTOR START
SQ "D"
125-01-0271

BUNDLE
BLUE
MBL

WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MMR
BLUE = MBL	ORANGE = MO
BROWN = MBR	PINK = MPI
DARK BLUE = MDB	PURPLE = MP
GREEN = MG	RED = MR
LIGHT BLUE = MLB	YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN®

DIAGRAM-RGD-30-7
2-6-S W/XR75
CTLR

P/N 3157201 REV B

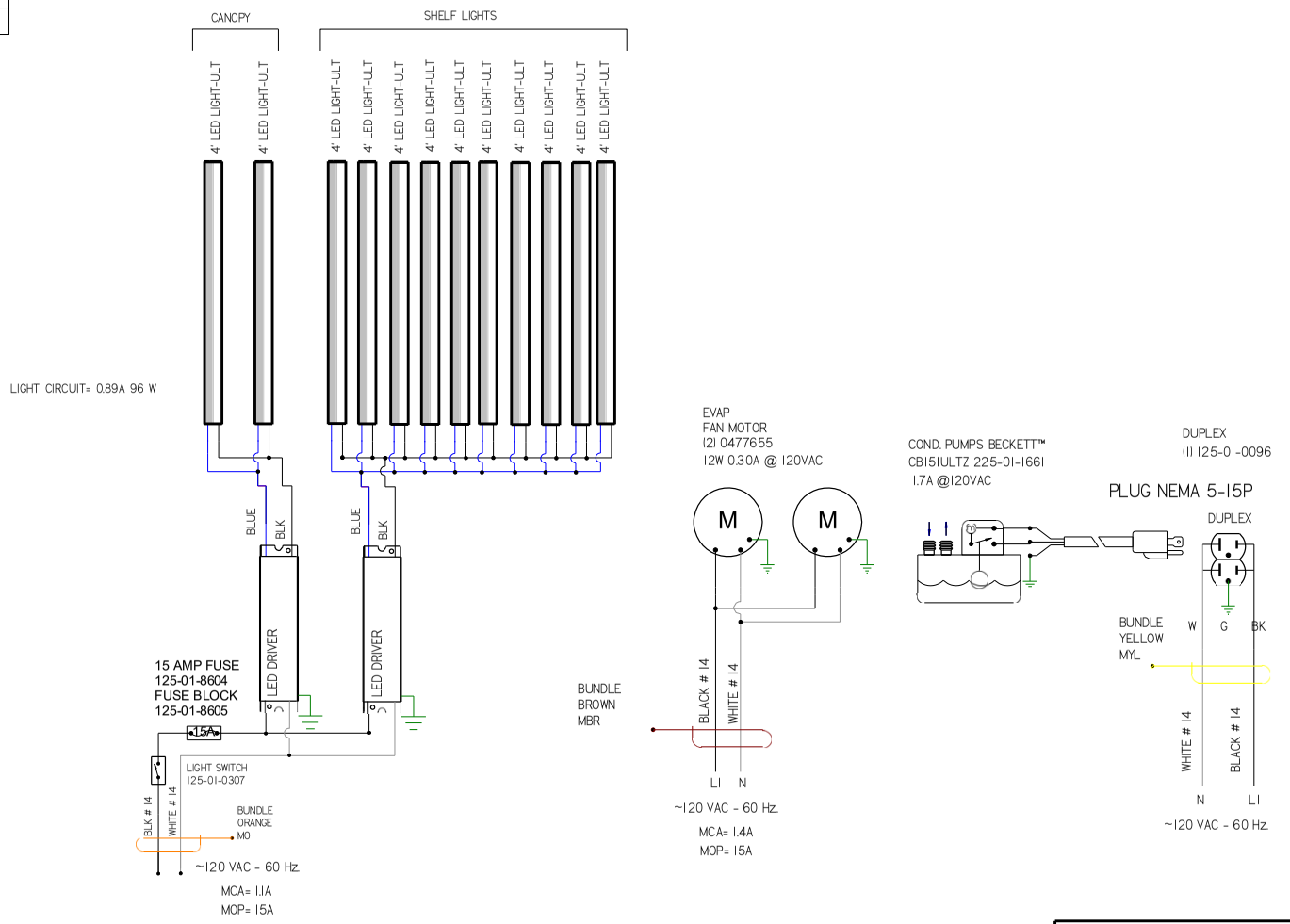
CND_10 WIRE DIAGRAM SIZE C

NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1

	LOADING	
	120 V	
L1	3.2	

REVISION HISTORY						
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0015377	01-31-22	RELEASED TO PRODUCTION	AL	CB	CB



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WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON =
BLUE = MBL	MMR ORANGE =
BROWN = MBR	MO PINK = MPI
DARK BLUE =	PURPLE = MP
MDB GREEN = MG	RED = MR
LIGHT BLUE =	YELLOW = MYL
MLB	

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW =	ORANGE =
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

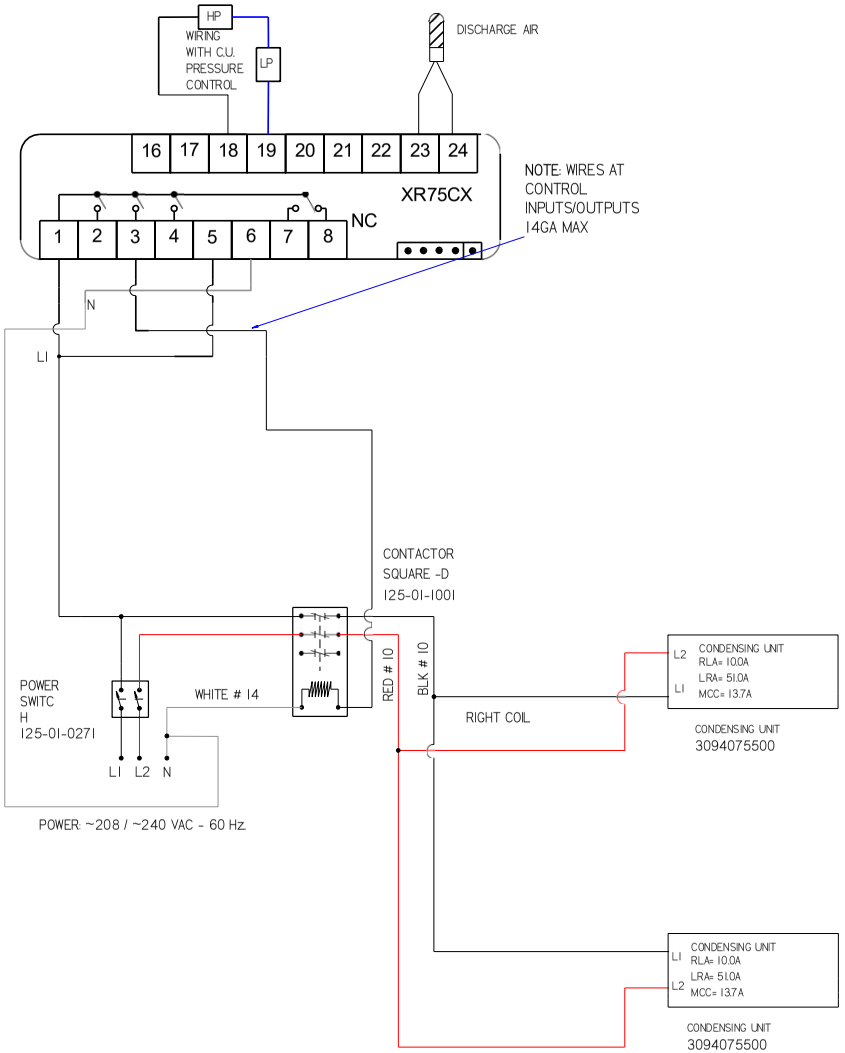
DO NOT SCALE DRAWING
SHEET 1 OF 3

HUSSMANN®
DIAGRAM-RGD-30-7 2-8-S XR75CX
P/N 3160914 REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #2

	LOADING	
	208 V	240 V
L1	17.3	20.0
L2	17.3	20.0



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YELLOW =	ORANGE =
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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

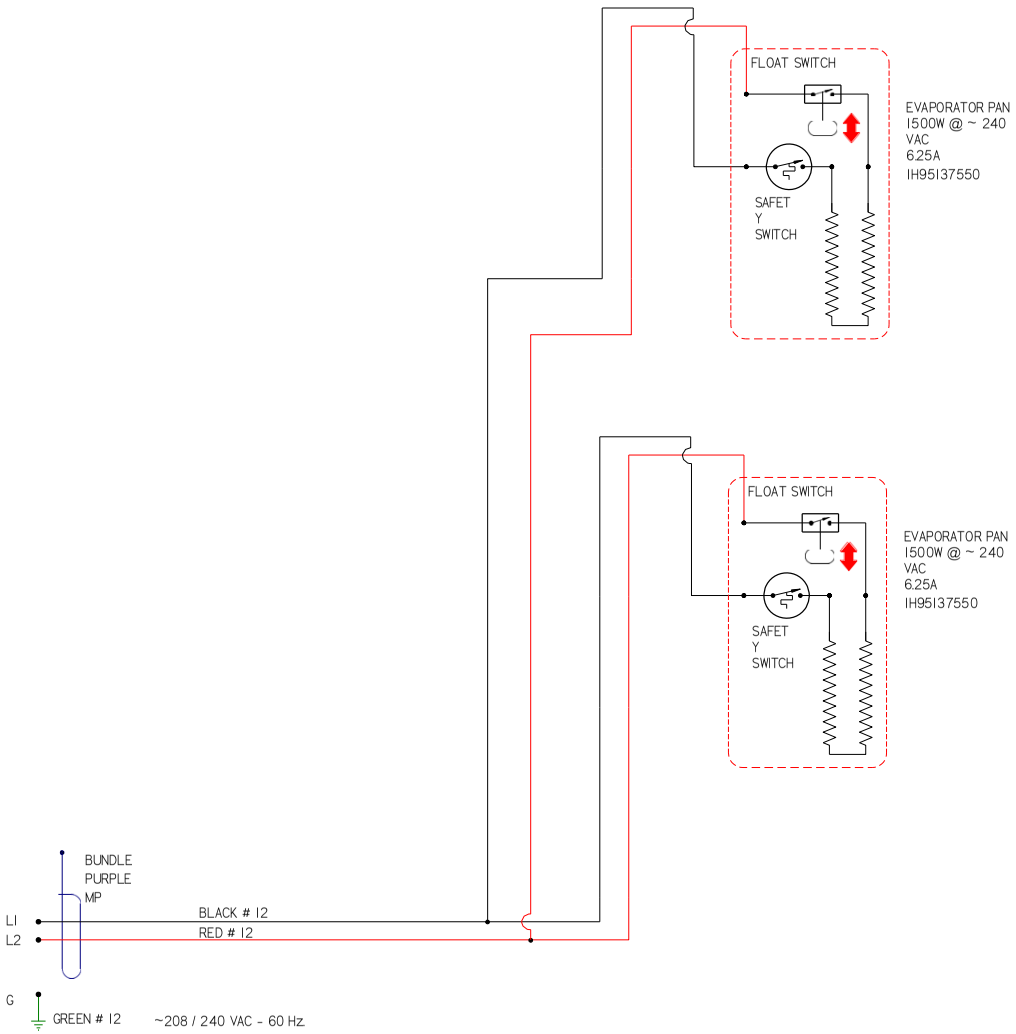
DO NOT SCALE DRAWING
SHEET 2 OF 3

HUSSMANN®
DIAGRAM-RGD-30-7 2-8-S XR75CX
P/N 3160914 REV A

CND_10 WIRE DIAGRAM SIZE C

CIRCUIT #3

	LOADING	
	208 V	240 V
L1	10.8	12.5
L2	10.8	12.5



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FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 3 OF 3

HUSSMANN®
DIAGRAM-RGD-30-7 2-8-S XR75CX
P/N 3160914 REV A

CN0_10 WIRE DIAGRAM SIZE C

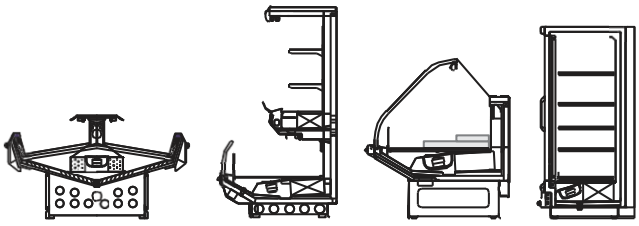
Appendices

Appendix A. - Temperature Guidelines

The refrigerators should be operated according to the manufacturer's published engineering specifications for entering air temperatures for specific equipment applications. Table 1 shows the typical temperature of the air entering the food zone one hour before the start of defrost and one hour after defrost for various categories of refrigerators. Refer to Appendix C for Field Evaluation Guidelines.

Table 1

Type of Refrigerator	Typical Entering Air Temperature
I. OPEN DISPLAY	
A. Non frozen:	
1) Meat	28°F
2) Dairy/Deli	32°F
3) Produce	
a. Processed	36°F
b. Unprocessed	45°F
B. Frozen	0°F
C. Ice Cream	-5°F
II. CLOSED DISPLAY	
A. Non frozen:	
1) Meat	34°F
2) Dairy/Deli	34°F
3) Produce	
a. Processed	36°F
b. Unprocessed	45°F
B. Frozen	0°F
C. Ice Cream	-5°F



Single Deck Multi Deck Service Case Reach-In

I. Open Display Styles ***II. Closed Display Styles***

Appendix B. - Application Recommendations

1. Temperature performance is critical for controlling bacteria growth. Therefore, the following recommendations are included in the standard. They are based on confirmed field experience over many years.
2. The installer is responsible for following the installation instructions and recommendations provided by Hussmann for the installation of each individual type refrigerator.
2. Refrigeration piping should be sized according to the equipment manufacturer's recommendations and installed in accordance with normal refrigeration practices. Refrigeration piping should be insulated according to Hussmann's recommendations.

1.3 A clogged waste outlet blocks refrigeration. The installer is responsible for the proper installation of the system which dispenses condensate waste through an air gap into the building indirect waste system.

4. The installer should perform a complete start-up evaluation prior to the loading of food into the refrigerator, which includes such items as:
   a) Initial temperature performance, Coils should be properly fed with a refrigerant according to manufacturer's recommendations.
   b) Observation of outside influences such as drafts, radiant heating from the ceiling and from lamps. Such influence should be properly corrected or compensated for.
   c) At the same time, checks should be made of the store dry-bulb and wet-bulb temperatures to ascertain that they are within the limits prescribed by Hussmann.
   d) Complete start-up procedures should include checking through a defrost to make certain of its adequate frequency and length without substantially exceeding the actual needs. This should include checking the electrical or refrigerant circuits to make sure that defrosts are correctly programmed for all the refrigerators connected to each refrigeration system.
   e) Recording instruments should be used to check performance.

Appendix C. - Field Recommendations

Recommendations for field evaluating the performance of retail food refrigerators and hot cases

1.0 The most consistent indicator of display refrigerator performance is temperature of the air entering the product zone (see Appendix A). In practical use, the precise determination of return air temperature is extremely difficult. Readings of return air temperatures will be variable and results will be inconsistent. The product temperature alone is not an indicator of refrigerator performance.

NOTE: Public Health will use the temperature of the product in determining if the refrigerator will be allowed to display potentially hazardous food. For the purpose of this evaluation, product temperature above the FDA Food Code 1993 temperature for potentially hazardous food will be the first indication that an evaluation should be performed. It is expected that all refrigerators will keep food at the FDA Food Code 1993 temperature for potentially hazardous food.

Appendices (Cont'd)

1. The following recommendations are made for the purpose of arriving at easily taken and understood data which, coupled with other observations, may be used to determine whether a display refrigerator is working as intended:
   a) INSTRUMENT - A stainless steel stem-type thermometer is recommended and it should have a dial a minimum of 1 inch internal diameter. A test thermometer scaled only in Celsius or dually scaled in Celsius and Fahrenheit shall be accurate to 1°C (1.8°F). Temperature measuring devices that are scaled only in Fahrenheit shall be accurate to 2°F. The thermometer should be checked for proper calibration. (It should read 32°F when the stem is immersed in an ice water bath).
   b) LOCATION - The probe or sensing element of the thermometer should be located in the airstream where the air first enters the display or storage area, and not more than 1 inch away from the surface and in the center of the discharge opening.
   c) READING - It should first be determined that the refrigerator is refrigerating and has operated at least one hour since the end of the last defrost period. The thermometer reading should be made only after it has been allowed to stabilize, i.e., maintain a constant reading.
   d) OTHER OBSERVATIONS - Other observations should be made which may indicate operating problems, such as unsatisfactory product, feel/appearance.
   e) CONCLUSIONS - In the absence of any apparent undesirable conditions, the refrigerator should be judged to be operating properly. If it is determined that such condition is undesirable, i.e., the product is above proper temperature, checks should be made for the following:
      1. Has the refrigerator been loaded with warm product?
      2. Is the product loaded beyond the “Safe Load Line” markers?
      3. Are the return air ducts blocked?
      4. Are the entering air ducts blocked?
      5. Is a dumped display causing turbulent air flow and mixing with room air?
      6. Are spotlights or other high intensity lighting directed onto the product?
      7. Are there unusual draft conditions (from heating/air-conditioning ducts, open doors, etc.)?
      8. Is there exposure to direct sunlight?
      9. Are display signs blocking or diverting airflow?
      10. Are the coils of the refrigerator iced up?
      11. Is the store ambient over 75°F, 55% RH as set forth in ASHRAE Standard 72 and ASHRAE Standard 117?
      12. Are the shelf positions, number, and size other than recommended by Hussmann?
      13. Is there an improper application or control system?
      14. Is the evaporator fan motor/blade inoperative?
      15. Is the defrost time excessive?
      16. Is the defrost termination, thermostat (if used) set too high?
      17. Are the refrigerant controls incorrectly adjusted?
      18. Is the air entering the condenser above design conditions? Are the condenser fins clear of dirt, dust, etc.?
      19. Is there a shortage of refrigerant?
      20. Has the equipment been modified to use replacements for CFC-12, CFC-502 or other refrigerant? If so, have the modifications been made in accordance with the recommendations of the equipment manufacturer? Is the refrigerator charged with the proper refrigerant and lubricant? Does the system use the recommended compressor?

Appendix D. - Recommendations to User

1.0 Hussmann Corporation provides instructions and recommendations for proper periodic cleaning. The user will be responsible for such cleaning, including the cleaning of low temperature equipment within the compartment and the cooling coil area(s). Cleaning practices, particularly with respect to proper refrigerator unloading and warm-up, must be in accordance with applicable recommendations.

Appendices (Cont'd)

1.1 Cleaning of non frozen food equipment should include a weekly cleaning of the food compartment as a minimum to prevent bacteria growth from accumulating. Actual use and products may dictate more frequent cleaning. Circumstances of use and equipment design must also dictate the frequency of cleaning the display areas. Weekly washing down of the storage compartment is also recommended, especially for equipment subject to drippage of milk or other liquids, or the collection of vegetable, meat, crumbs, etc. or other debris or litter. Daily cleaning of the external areas surrounding the storage or display compartments with detergent and water will keep the equipment presentable and prevent grime buildup.

2. Load levels as defined by the manufacturer must be observed.

3. The best preservation is achieved by following these rules:
   a) Buy quality products.
   b) Receive perishables from transit equipment at the ideal temperature for the particular product.
   c) Expedite perishables to the store's storage equipment to avoid unnecessary warm-up and prolonged temperature recovery. Food store refrigerators are not food chillers nor can they reclaim quality lost through previous mishandling.
   d) Care must be taken when cross merchandising products to ensure that potentially hazardous vegetable products are not placed in non refrigerated areas.
   e) Display and storage equipment doors should be kept closed during periods of inactivity.
   f) Minimize the transfer time of perishables from storage to display.
   g) Keep meat under refrigeration in meat cutting and processing area except for the few moments it is being handled in processing. When a cut or tray of meat is not to be worked on immediately, the procedure should call for returning it to refrigeration.
   h) Keep tools clean and sanitized. Since mechanical equipment is used for fresh meat processing, all such equipment should be cleaned at least daily and each time a different kind of meat product comes in contact with the tool or equipment.
   i) Make sure that all refrigeration equipment is installed and adjusted in strict accordance with the manufacturer's recommendations.
   j) See that all storage and refrigeration equipment is kept in proper working order by routine maintenance.

This warning does not mean that Hussmann products will cause cancer or reproductive harm, or is in violation of any product-safety standards or requirements. As clarified by the California State government, Proposition 65 can be considered more of a ‘right to know’ law than a pure product safety law. When used as designed, Hussmann believes that our products are not harmful. We provide the Proposition 65 warning to stay in compliance with California State law. It is your responsibility to provide accurate Proposition 65 warning labels to your customers when necessary. For more information on Proposition 65, please visit the California State government website.

Danfoss Controller Operations

ENGINEERING TOMORROW

User Guide

Controller for temperature control
AK-CC 210

ADAP-KOOL® Refrigeration control systems

1. Open Camera
2. IPhone User
   Hold the camera up to the QR code

   Android User
   Open QR Code Reader app if necessary.
   Hold the camera up to the QR code
3. Tap the notification to be taken to the destination of the QR code

Dixell Controller Operations

026-1210 Rev 3 03-FEB-2015

XR75CX Digital Controller for Medium-Low Temperature Refrigeration Applications Installation and Operation Manual

① Open Camera

② IPhone User
Hold the camera up to the QR code

Android User
Open QR Code Reader app if necessary.
Hold the camera up to the QR code

③ Tap the notification to be taken to the destination of the QR code

Service Record

Last service date:	By:

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The *MODEL NAME* and *SERIAL NUMBER* is required in order to provide you with the correct parts and information for your particular unit.
They can be found on a small metal plate on the unit. Please note them below for future reference.

MODEL:

SERIAL NUMBER: