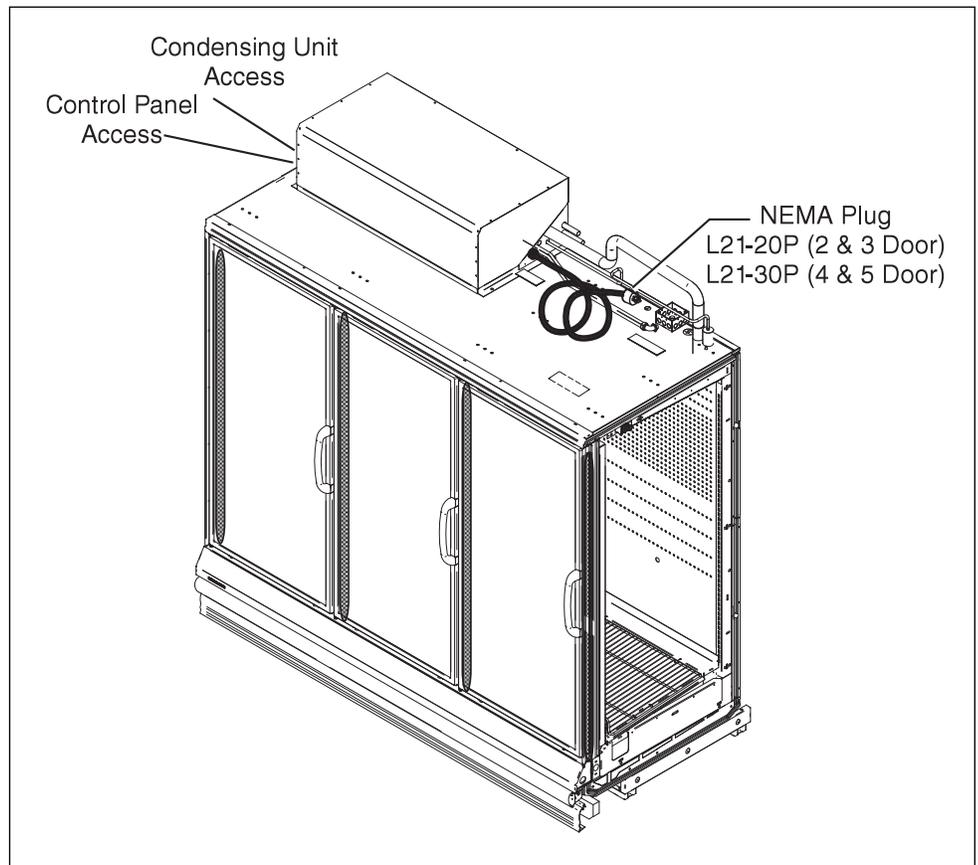


HUSSMANN®

RLSCP Self-Contained Low Temperature Reach-in with Single Compressor Protocol Installation and Service Manual Addendum



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Marrch 2013**

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WARRANTY

IMPORTANT

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REVISION HISTORY

REVISION B — March 2013

Added **CAUTION** box to page 1.

Added last item to *Prior to Start-up Check*
List on page 4.

REVISION A — December 2010

Original Issue

ACRONYMS

RLSCP – Low Temperature Reach-in
Merchandiser with Self-Contained Single
Compressor Protocol

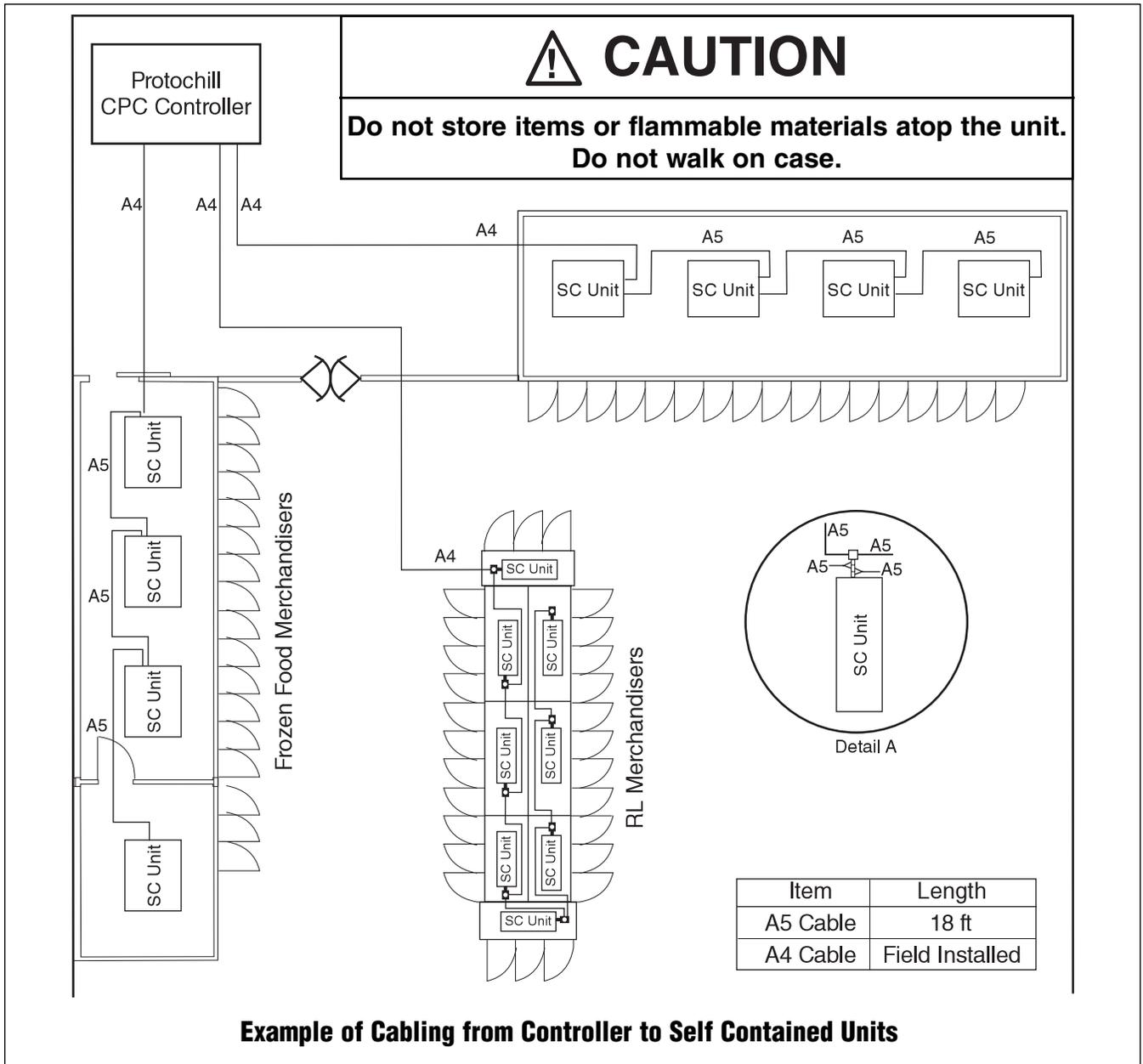
CPC – Computer Process Controls

SCP – Single Compressor Protocol

OVERVIEW

This addendum is to be used in conjunction with the standard RL Service and Installation Manual as well as the appropriate Technical Data Sheet. Although similar in content, this addendum will only cover the differences from the other existing manuals.

The RLSCP cases are self-contained cases with water cooled condensers. They are controlled by the Safe-NET II electronic control which communicates with a CPC controller for monitoring and communication. The case temperature is controlled by cycling the compressor, based on the discharge air temperature input. The sensor for this input is located above the interior top panel at the RH door.



Another sensor, located on the bottom center evaporator coil return bend, is used for defrost termination. The Safe-NET control is pre-programmed for either ice cream or frozen food operation.

The water cooled condenser is designed to operate with a water/glycol mix, supplied at a temperature between 60°F and 105°F (15.5°C and 40.5°C). Flow rate is controlled by a circuit-setter valve in the water supply line.

RLSCP cases may be installed as stand-alone cases with ends, or as a part of a lineup. When installed in a lineup, Hussmann recommends that partitions be installed between individual cases to prevent frost buildup and other problems that might result from different defrost schedules and operating temperatures.

ACCESSIBILITY

The RLSCP units are serviced from the front, with the cover lifting up to provide access to the control panel and internal components. The cover requires a 22 inch (559 mm) clearance above the SCP unit to open fully.



WIRING AND ELECTRICAL SUPPLY

Refer to the Engineering data sheet supplied with the unit for the correct receptacle and power requirements. An electrical diagram is included here, on Page 10, and with the unit.

When the unit is shipped with the optional power supply cord and plug, it extends out of the condensing unit, bundled and attached to the top of the assembly. The cover of the unit must be raised and the control box cover removed to access the main disconnect switch (circuit breaker).

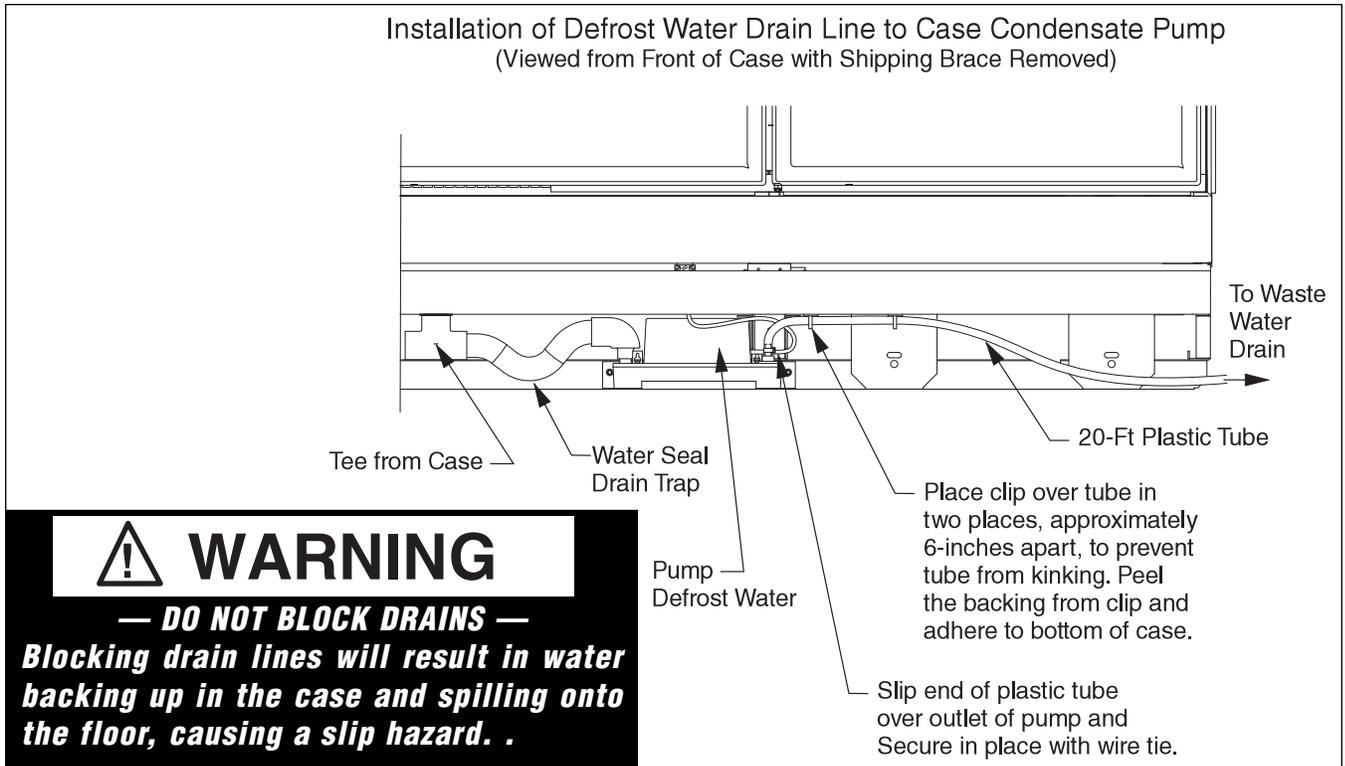
The power supply cord plug consists of 3 power leads, a neutral, and a ground wire, and requires a matching receptacle.

If the cord / plug option is not selected, refer to the wiring diagram on Page 10 for field connection locations.

ALL WIRING MUST BE IN COMPLIANCE WITH NEC AND LOCAL CODES.

CONDENSATE WATER AND PUMP

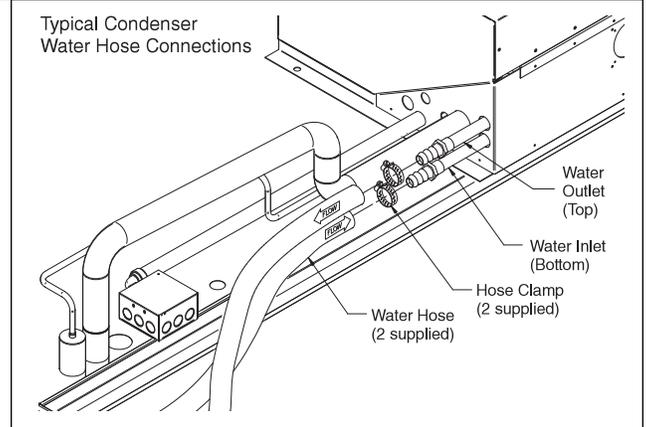
The defrost water that drains from the evaporator coil of the RLSCP case must be connected to a drain line for evacuation. The case is supplied with an evacuation pump and 20-ft (6 m) length of ³/₈-inch plastic drain tubing, bundled and packaged inside the case. This tubing must be connected to the outlet of the pump, using a tube clamp, as shown in the next illustration. The other end must be routed to a drain. It is acceptable to extend the length of the drain tube with plumbing fittings, as long as the drain is not obstructed. Ensure that the drain line is not kinked or obstructed through its entire length. The condensate pump is rated for a maximum head of 22 feet.



WATER SUPPLY FOR WATER COOLED CONDENSER

The water cooled condenser is designed to operate with a 35% glycol/water mix, supplied at a temperature between 60° and 105°. Flow rate is controlled by a circuit-setter valve in the water supply line. Two 3/4-in. × 8 ft. (19 mm × 2438 mm) water supply lines and two clamps are supplied, and must be connected to the 3/4-inch hose barb on the condenser inlet and outlet, as shown in the illustration at right.

The circuit-setter valve will be factory set to provide adequate condensing temperature at design conditions. It may need adjusted upon installation, depending on store conditions. The valve must be set to provide sufficient flow to keep condensing temperature below 115°F (46°C). This should equate to a maximum outlet water temperature of 115°F (46°C).



All air must be removed at highest point of closed loop water cooled condenser piping by means of automatic bleeders located throughout the system supplied by installing contractor.

Note:
If startup occurs during low ambient (winter) conditions, water inlet temperature may be lower than during high ambient conditions. See engineering data sheet for minimum required condenser supply flow rate for optimum performance during summer conditions.



WARNING

— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

STARTUP SEQUENCE

START-UP SHOULD BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN.

Follow all instructions in the main Protocol Manuals.

Prior to Start-up Check List

- Is the case connected to its proper name-plate power supply?
- Is the power on at the breaker panel?
- Is the water to the condenser on?
- Is the chiller on and circulating water through the condenser?
- Are there any leaks from condenser water connections? *Clamps may need to be tightened.*
- Are the doors properly torqued and self closing? *Check each door at the fully open position and at 1-inch open position.*
- Do evaporator fans rotate freely? Are they plugged in? (Inspect fans by lifting the deck pans in the bottom of the cases; manually rotate each fan to confirm free rotation and visually inspect that they are plugged into the receptacles.)
- Are the refrigeration line shut-off valves in the back-seated (open) position? If not, open them by turning counter-clockwise.
- Has all unnecessary material been removed from top of unit?

Upon Start-up Check List

RAISE the SCP cover. Remove the electrical cover to gain access to the main switch located in the electrical box, under the condensing unit cover, on the condensing unit. Once the case is considered ready to start, trip the main switch to the “on” position.

START-UP IS TO BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN.

CHECK the display on the Safe-NET II control which displays the case temperature. This control is located on the inside top panel, at the top of the right-most door of the case. The display will indicate room temperature upon start up and decrease with run time.

LISTEN for any unusual sounds or events. Examples: evaporator fan blade interference; compressor trip on high head due to no or inadequate water flow to the condenser; circuit breaker trip; etc.)

CHECK the fan at each door to ensure each is running. The discharge air output at the top inside front of the case (honeycomb area) should be relatively even across the length of the case.

VERIFY there are no leaks from the connections for the condenser water.

Note: There is a random delay on start-up, from 15 to 240 seconds, to prevent high electrical circuit demand. This will cause a noticeable delay when starting up the unit and should be expected.

12 Hours After Startup Check List

CHECK case temperature.

CHECK water connections to the condensing unit for any leaks or accumulation of water.

VERIFY that the fans are running. The fans will be off if the case is in a defrost cycle. They will come back on shortly after the completion of this cycle. The fans have a delay thermostat to prevent fan start-up in warm conditions.

INITIATE a defrost cycle and ensure the heaters are working properly. See the Safe-NET II manual for instruction on how to force a defrost cycle. The amp draw can be checked at the terminal block located in the front electrical raceway, just below the right most door of the case.)

CHECK the door operation again, to ensure they close properly once the case is down to operating temperature.

CHECK that all inspection plates and covers have been properly replaced

INSPECT for any water accumulation due to incorrect or unsealed penetrations where electrical or other lines pass through insulated walls of the case.

VERIFY that the lights come on when the light switch is in the “on” position.

DESCRIPTION OF COMPONENTS ON SCP UNIT

The condensing unit is equipped with a non-adjustable high and low pressure control, and internal compressor motor protector for added compressor protection.

IMPORTANT: The high pressure control will open in the event of excessive pressures; for example, the loss or reduction in condenser coolant flow. The high pressure control will open at approximately 395 psig. This control is manually reset by the actuation of the toggle switch located on the condensing unit. Move the switch to the “off” position and then back to “on”. The control will reset if the pressure has decreased below 320 psig.

If the compressor experiences an excessive load that causes the motor protector to trip, this same method is used to reset the protection device. Move the toggle switch to the “off” position and then back to “on”.

The low pressure control will open in the event the compressor is operating at pressure below its design operating conditions, such as in the case of a loss of refrigerant. This control is automatic and will not reset until the condition is corrected.

SAFE-NET™ CONTROL SETTINGS AND OPERATION

WARNING

Opening condensing unit electrical box exposes personnel to electrical hazard and should only be performed by a qualified service technician!

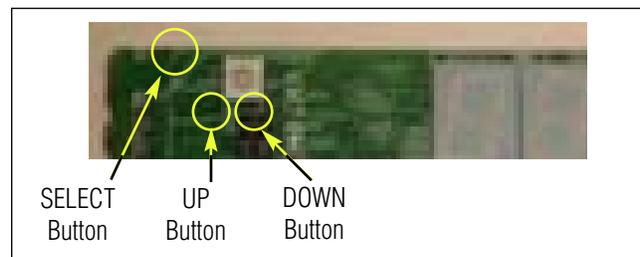
These instructions are written for normal frozen food or ice cream application, and provide optimum defrost, discharge air, etc. settings for normal store conditions. To change these operational settings refer to the Safe-NET II manual available on the Hussmann website.

SETTING SAFE-NET II WITHOUT REMOTE CONTROL (Example: Unit Coolers with SCP Condensing Units)

1. Locate the Safe-NET II Control Display on the model of SCP that you have. The control is located inside the electrical box on the condensing unit.
2. Remove the Safe-NET II cover. Open the Safe-NET II controller using a small flat blade screwdriver to pop off the oval cover (this may be tight).



3. You will see three buttons on the control board as shown in the photo below. The **SELECT** button is used to scroll through menus, and to edit/confirm values. Use the **UP** or **DOWN** button to move to the next item in the menu or change the value of a parameter. Simultaneous presses of the **UP** and **DOWN** button will escape to default display.



SET THE PASSWORD.

4. Press the **SELECT** button. The display should read **EASY**, then **dSET** and then the setpoint temperature.
5. Next press the UP button once until you see **PASS**. The display should alternate back and forth between **PASS**, and **0**.
6. Press the **SELECT** button once. The **0** should be flashing.
7. Press the DOWN button until you reach **595**.
8. Then press the **SELECT** button once. The password is set. The display alternates between **PASS** and **595**. Password is set.

READ NETWORK ADDRESS.

9. Press the **SELECT** button once. The display should read **StUP** and alternates between **dSET** and the setpoint temperature.
10. Press the **DOWN** button 3 times. The display should alternate between **Addr** and the set network address.
11. **IMPORTANT!** Write down the network address! You will need to reload this address later.
12. If display is still cycling between **Addr** and the set network address, press the **UP** button 5 times and proceed to Step 15
13. If the display is displaying default temperature, press the **SELECT** button until the display reads **StUP** and then alternating between **dSET** and the setpoint temperature.
14. Press the **UP** button twice.

CHANGE THE CASE MODEL

15. The display should alternate between **CASE** and the set case model (**rLiC** or **rLFF**).
(Note: **rLiC** is for a -10°F (-23°C) setpoint and **rLFF** is for a -2°F (-19°C) setpoint.)
16. Press the **SELECT** button once. The **rLiC** or **rLFF** should be flashing.
17. Press the **UP** or **DOWN** button to find the other case model to be selected.
18. Then press the **SELECT** button once. The display should read **CASE**, then **rLiC** or **rLFF**.
19. Press the **DOWN** button 6 times. The

display should read **rSt**.

20. Press the **SELECT** button once. The unit should reboot.

REASSIGN NETWORK ADDRESS.

21. If the network address written from Step 11 is **nonE**, then proceed to Step 29 to skip reassigning network address and confirm the new case model.
22. While rebooting, the display should read **SAFE** for about 6 seconds then followed by **-nEt** for 6 seconds. Anytime during display reading **SAFE** or **-nEt**, press the **DOWN** button.
23. Display continues reading **SAFE**, then **-nEt**, then **10.50**, then the new selected case model (**rLiC** or **rLFF**).
24. After displaying case model, the display reads **Addr** and then flashes **nonE**. (Default no communication network address)
25. Press the **UP** or **DOWN** to navigate to the address which was written down in Step 11.
26. Press the **SELECT** button once; the display should alternate between **Addr** and the new assigned network address.
27. Press **DOWN** button once when display is alternating between **Addr** and the new assigned network address. The display should read **rSt**.
28. Press the **SELECT** button once. The unit should reboot.

CONFIRM THE NEW CASE MODEL.

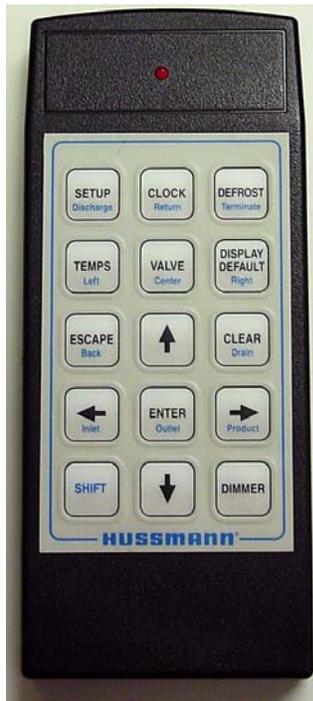
29. Display reads **SAFE**, then **-nEt**, then **10.50**, then the new selected case model **rLiC** or **rLFF**) followed by the temperature reading.
30. Press the **SELECT** button once. The unit should display **EASY**, then **dSET**, then **-10** for **rLiC** or **-2.0** for **rLFF**.
31. The RLSCP default parameters have been reloaded.
32. In a few seconds the display will return to the temperature reading.
33. Replace the Safe-NET cover.

SETTING SAFE-NET II WITH REMOTE CONTROL

The Safe-NET II cover does not have to be removed.

SET THE PASSWORD.

1. Press the **SETUP** key. (upper left corner) The display should read **StUP** and alternate between **dSET** and the setpoint temperature.



2. Press the **UP ARROW** key once until you see **PASS**. The display should alternate back and forth between **PASS**, and **0**.
3. Press the **ENTER** key once. The **0** should be flashing.
4. Press the **DOWN ARROW** key until you reach **595**.
5. Then press the **ENTER** key once. The password is set. The display alternates between **PASS** and **595**. Password is set.

READ NETWORK ADDRESS.

6. Press the **SETUP** key once. The display should read **StUP** and alternates between **dSET** and the setpoint temperature.
7. Press the **DOWN ARROW** key 3 times. The display should alternate between **Addr** and the set network address.
8. **IMPORTANT!** Write down the network address! You will need to reload this address later.
9. If display is still cycling between **Addr** and the set network address, press the **UP ARROW** key 5 times and proceed to Step 12
10. If the display is displaying default temperature, press the **SETUP** key once and the display reads **StUP** and then alternating between **dSET** and the setpoint temperature.
11. Press the **UP ARROW** key button twice.

CHANGE THE CASE MODEL.

12. The display should alternate between **CASE** and the set case model (**rLiC** or **rLFF**).
(Note: **rLiC** is for a -10°F (-23°C) setpoint and **rLFF** is for a -2°F (-19°C) setpoint.)
13. Press the **ENTER** key once. The **rLiC** or **rLFF** should be flashing.
14. Press the **UP ARROW** or **DOWN ARROW** key to find the other case model to be selected.
15. Then press the **ENTER** key once. The display should read **CASE**, then **rLiC** or **rLFF**.
16. Press the **DOWN ARROW** key 6 times. The display should read **rSt**.
17. Press the **SETUP** key once. The unit should reboot.

REASSIGN NETWORK ADDRESS.

18. If the network address written from Step 8 is **nonE** then proceed to Step 26 to skip reassigning network address and confirm the new case model.
19. While rebooting, the display should read **SAFE** for about 6 seconds then followed by **-nEt** for 6 seconds. Anytime during display reading **SAFE** or **-nEt**, press the **DOWN ARROW** key.
20. Display continues reading **SAFE**, then **-nEt**, then **10.50**, then the new selected case model (**rLiC** or **rLFF**).
21. After displaying case model, the display reads **Addr** and then flashes **nonE** (Default no communication network address.)

22. Press the **UP ARROW** or **DOWN ARROW** key to navigate to the address which was written down in step 8.
23. Press the **ENTER** key once and then the display should alternate between **Addr** and the new assigned network address.
24. Press **DOWN ARROW** key once when display is alternating between **Addr** and the new assigned network address. The display should read **rSt**.
25. Press the **SETUP** key. The unit should reboot.

CONFIRM THE NEW CASE MODEL.

26. Display reads **SAFE**, then **-nEt**, then **10.50**, then the new selected case model (**rLiC** or **rLFF**) followed by the temperature reading.
27. Press the **SETUP** key once. The unit reads **StUP** and then alternating between **dSET** and then **-12.0** for **rLiC** or **-5.0** for **rLFF**.
28. The **WALK IN UNIT** default parameters have been reloaded.
29. In a few seconds the display will return to the temperature reading.

INSTRUCTIONS TO FORCE A DEFROST CYCLE

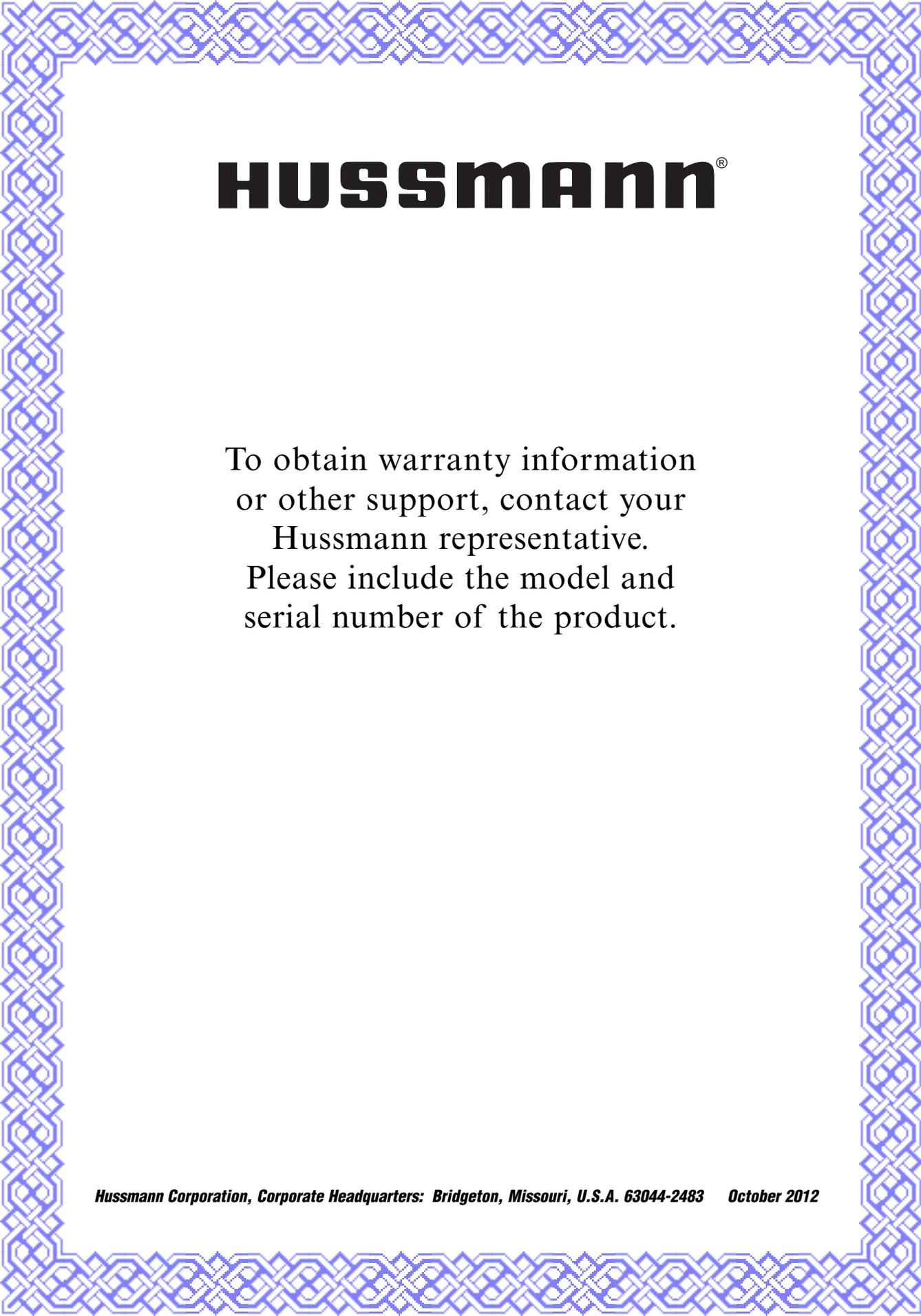
1. Set the password as explained in Steps 4 to 8.
2. Press the **SELECT** button until the display reads **dEFr** followed by display alternating between **dTyP** and **ELE1** (**ELE1** is defrost type for RLSCP, For other case models any other selected defrost type is displayed based on the case)
3. Press the **DOWN** button three times. The display should read **Strt**.
4. Then press the **SELECT** button once. This should initiate the defrost cycle. The compressor and evaporator fans should terminate and the defrost heater energized.

Once manual defrost is initiated, defrost will automatically terminate on defrost termination temperature or time.

INSTRUCTIONS FOR RESETTING THE SENSORS ON SAFE-NET CONTROLS.

In the event a new control is installed on an existing case or is moved from one case, of the same model, the control will need to be reset to find the new sensors. The control must be set to communicate with the sensors.

1. Remove the cover and then reconnect the power (Unplug and re-plug). The display will show **Safe**, then **NET**, then the version number, case model and then will search for the sensors.
2. For the control to find sensors, press and hold the **SELECT** button for about one second, as the **Safe** or **NET** is being displayed. (This represents a 3-second for **Safe** and a 3-second window for **NET**, or a total of 6 seconds to perform this procedure.
3. Once the above has initiated, the control should go through the start up process describe in Step 29 and end with the temperature of the case being displayed, as the sensors are found.
4. If the temperature is being displayed the sensor is now set to the control.



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To obtain warranty information
or other support, contact your
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Please include the model and
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