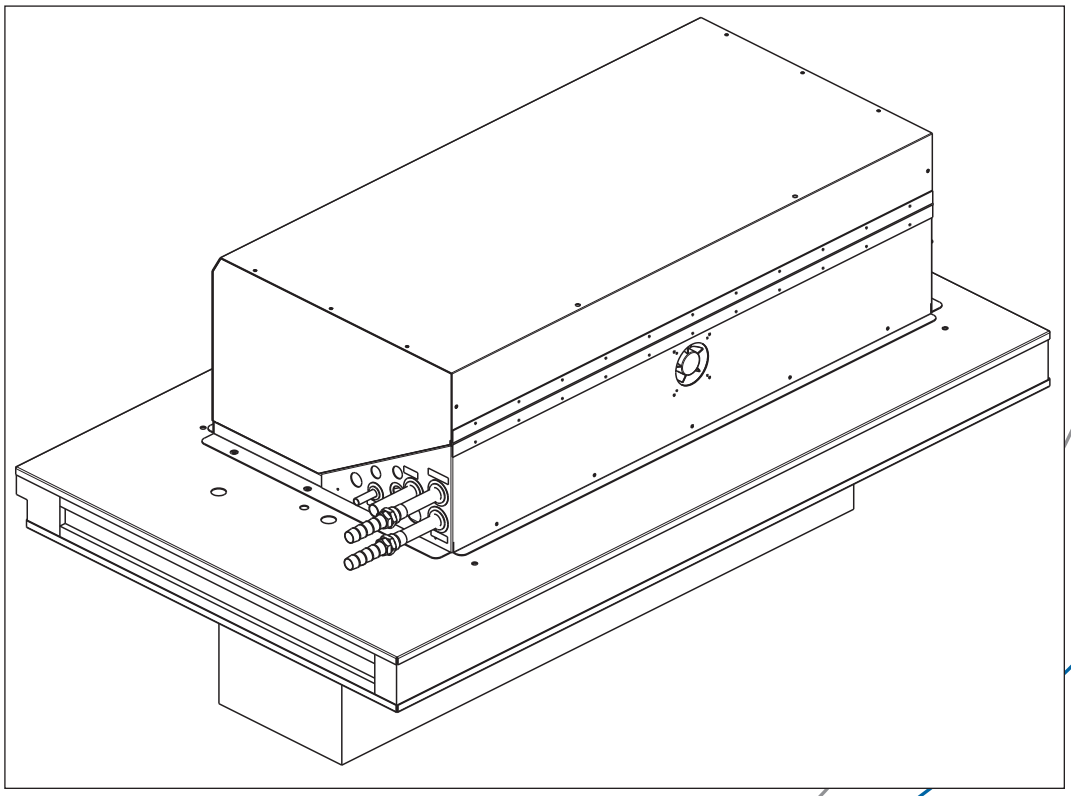
HUSSMANN®

KRSCP
Self-Contained Walk-In Unit
Installation and Service Manual Addendum



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IMPORTANT

KEEP IN STORE FOR FUTURE REFERENCE

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REVISION HISTORY

REVISION B — April 2011
Adds medium temperatue operation; adds compressors.

REVISION A — December 2010
Original Issue

ACRONYMS

KRSCP – Self Contained Unit; Single Compressor Protocol™ and Krack Unit Cooler

CPC – Computer Process Controls

SCP – Single Compressor Protocol™

GENERAL

I. Overview

This addendum is to be used in conjunction with the standard Protocol™ Service and Installation Manual as well as the appropriate unit cooler Installation and Operating Manual. Although similar in content, this addendum will only cover the differences from the other existing manuals.

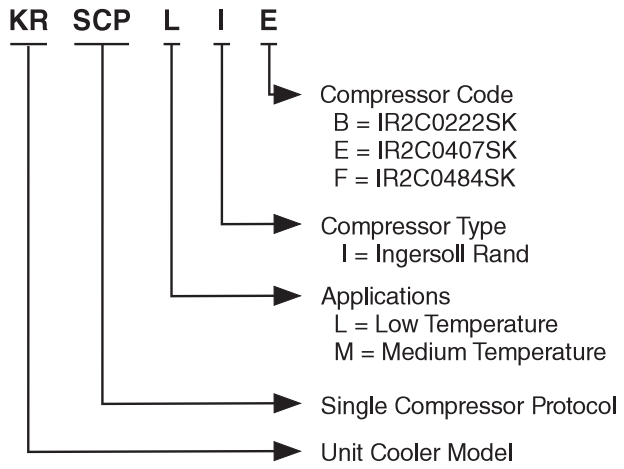
The KRSCP units are self-contained systems incorporating the SCP, or Single Compressor Protocol™ condensing unit with a Krack Unit Cooler. The KRSCP unit is pre-piped, wired, and charged with refrigerant so that it can be installed in the ceiling of the walk-in, ready to plug in and connect water lines.

These units are controlled by the Safe-NET™ II electronic control. It communicates with a CPC controller for monitoring and communication. The separate units can be "daisy-chained" together with communication cables to a single CPC controller. The walk-in temperature is controlled by cycling the compressor of the KRSCP unit based on the coil entering air temperature sensor. This sensor is located near the top of the unit cooler coil face in the center of the coil. Another sensor is located on a return bend of the unit cooler coil and is used for defrost termination in the low temperature units. Fan delay is controlled by a standard clamp-on thermostat, also mounted on a coil return bend. The Safe-NET™ II control has pre-programmed default settings for Medium Temperature, Frozen Food and Ice Cream applications.

The water-cooled condenser is designed to operate with a water-glycol mixture, supplied at a temperature between 60° and 105°F. Flow rate can be controlled by adjusting the control valve included in the unit.

II. KRSCP Unit Nomenclature

KRSCP models are designed to use R404A refrigerant and to operate at 208 volts, so the nomenclature will not include descriptors for refrigerant or voltage. Nomenclature inter - pretation is shown below:



III. Dimensions and Weight

Length (in.)	Height (in.)	Depth (in.)	Maximum Shipping Weight *
60	36	35	350 lb.

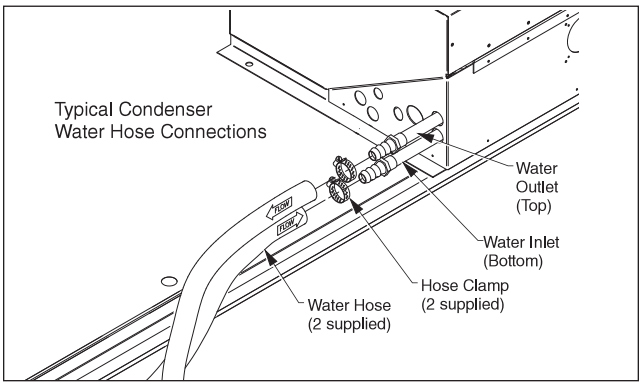
* UC = KR26E model

IV. Receivers

All KRSCP units include a factory installed receiver. The KRSCP units are pre-charged at the factory: 7 lbs for the KRSCPMIB; 6 lbs for KRSCPLIE; and 7 lbs for KRSCPLIF. The receiver total capacity is 8 lbs, based on 80% liquid fill at 105°F.

V. Field Supplied and Installed Water Components

The KRSCP unit comes with an installed flow control/shutoff valve. The water connections are made outside of the SCP condensing unit and 3/4-inch barbed fittings are factory installed. There are two 3/4-in. × 8 ft. (19 mm × 2438 mm) water hose lines and two clamps shipped with the unit to make the field connection. A 16-20 mesh strainer (1 mm) is required immediately upstream of each SCP unit.



The water flow control valve may need to be adjusted upon installation. It must be set to provide sufficient flow to keep the condensing temperature below 115°F (46°C). This should equate to a maximum outlet water temperature of 115°F (46°C).

Note: If startup occurs during low ambient (winter) conditions, water inlet temperature will be lower than during the summer. See the Engineering data sheet for water flow rates for summer conditions.

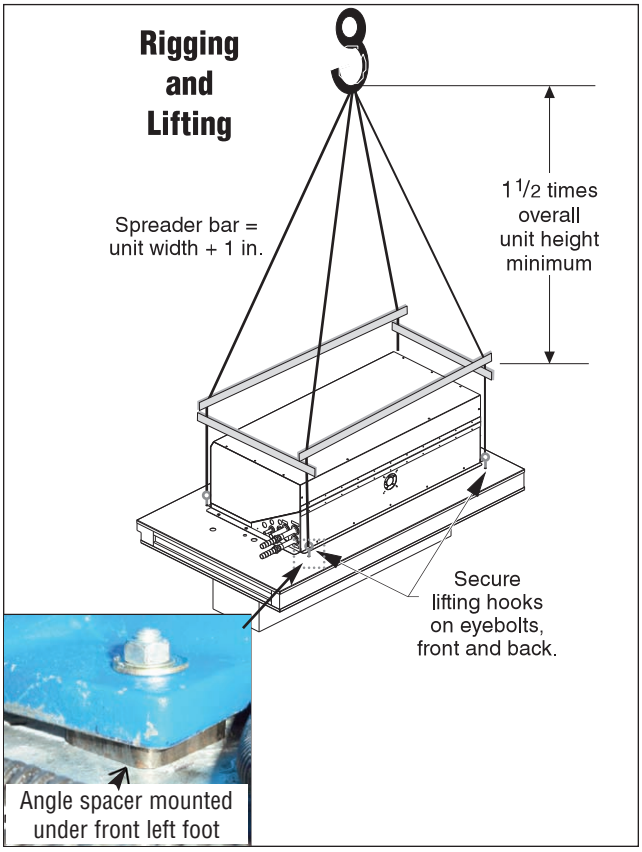
VI. Accessibility

The KRSCP 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 fully open.

VII. Rigging and Hoisting

The installer is responsible for ensuring that the equipment used to move the KRSCP unit is operated within its limits. Under no circumstances should the unit panels or the unit cooler be used for lifting or moving the unit. The condensing unit and unit cooler are both mounted to a 4-inch thick insulated panel, which has internal cross-bracing. There are four eyebolts mounted to this panel that should be used to lift the entire self-contained unit (see below). The panel of the KRSCP also has built-in cam-lock fittings to facilitate installation in the ceiling of the walk-in.

Only the KRSCPLIF has shipping blocks located under each compressor foot, at the outer corner. The blocks should be removed after the unit is set. Loosen the nut on top then pry the foot up enough to push the block out. After all blocks are removed, the nuts must be retightened (see photo below).



VIII. Electrical

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 or Page 11, and with the unit.

When the unit is shipped with the optional power supply cord and plug, it extends out of the condensing unit, is 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 disconnet 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 or Page 11 for field connection locations.

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

IX. Start Up and Component Description

WORK SHOULD BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN.

Follow all instructions in the main Protocol™ and Unit Cooler Manuals.

PRE-STARTUP CHECK LIST:
Is the case connected to its proper nameplate power supply?

Is the power on at the breaker panel?

Is the water to the condenser on?

⚠ 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.

Is the chiller on and circulating water through the condenser?

Check that there are no leaks from the connections for the condenser water. (Clamps may not have been tightened.)

Are the evaporator fans free to rotate? Refrigeration line shutoff valves must be in the backseated (open) position.

START UP
Raise the condensing unit cover, then remove the electrical cover to gain access to the main switch on the condensing unit. Move the switch to the "on" position. Replace electrical cover.

START UP CHECK LIST:
The Safe-NET II control is located inside the control panel inside the condensing unit. Remove the control panel cover.

CHECK the display on the Safe-NET II control, which should be displaying the unit cooler entering air temperature.

LISTEN for any unusual sounds or events, such as 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 fans to ensure they are running.

CHECK that there are no leaks from the connections for the condenser water.

Note: There is a random delay on initial system startup of up to 4 minutes to provide for a staggered start, to prevent high electrical circuit demand. This will cause a noticeable delay when starting up the unit and should be expected.

After Startup Checklist:
Following a 12 hour run after startup (balanced out):

SET TEV SUPERHEAT according to the unit cooler Operating Manual instructions.

CHECK entering air 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 unit 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 startup at warm conditions.)

INITIATE a defrost cycle and ensure the heaters are working properly. See the Safe-NET II instructions for how to force a defrost cycle.

REPLACE the control panel cover.
Are all inspection plates and covers properly replaced?

REPLACE the condensing unit cover.

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

Description of components on SCP unit
The condensing unit is equipped with non-adjustable high and low pressure controls, a phase monitor, and an internal compressor motor protector for added compressor protection—all in the control circuit with the compressor contactor coil. The high pressure control will open in the event of excessive pressures; for an 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 approximately 320 psig.

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

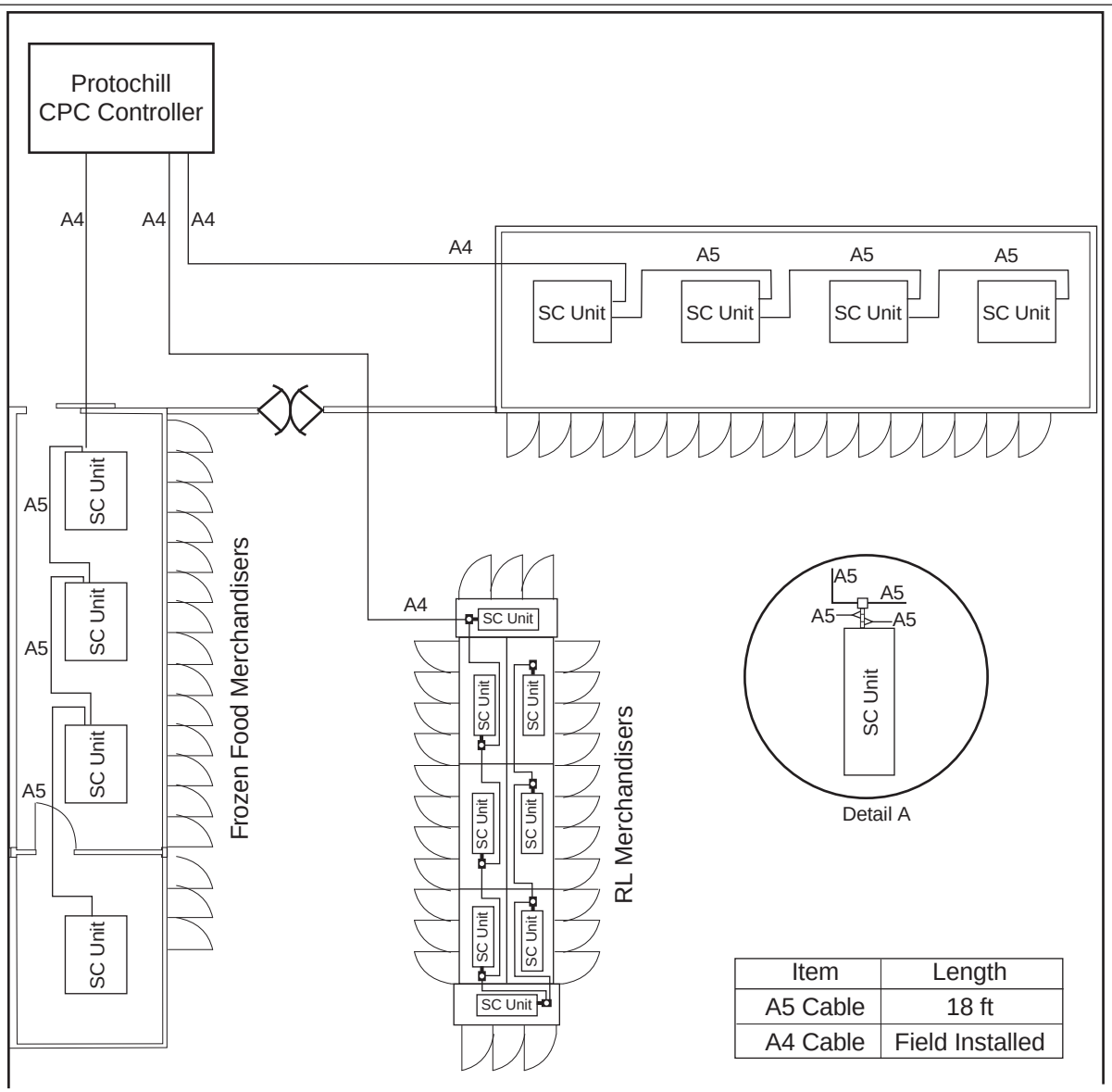
The low pressure control will open in the event the compressor is operating at pressure below its design operating conditions, such as in the case of a loss of refrigerant. This control is automatic and will reset when the condition is corrected.

The KRSCPMIB includes a suction/liquid line heat exchanger to provide adequate superheat at the compressor suction side. This also subcools the liquid and increases the capacity as well.

X. Safe-NET™ Control Settings and Operation

These instructions are written for normal walk-in applications, 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 http://www.hussmann.com/Pages/welcome.aspx , or watch the series of nine ***YouTube*** videos beginning with http://www.youtube.com/watch?v=N9TU0fWPVKY&feature=related

Shown below is a schematic of the cabling from the self-contained units in the store to the CPC controller:



Exmple of Cabling from Controller to Self Contained Units

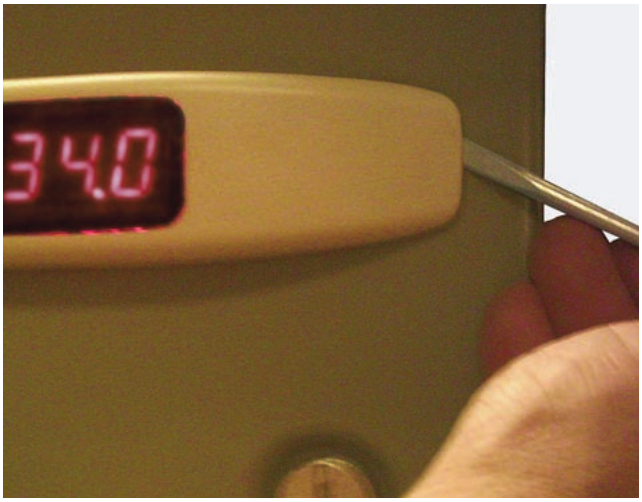
SETTING SAFE-NET II WITHOUT REMOTE CONTROL (Example: Unit Coolers with SCP Condensing Units)

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.

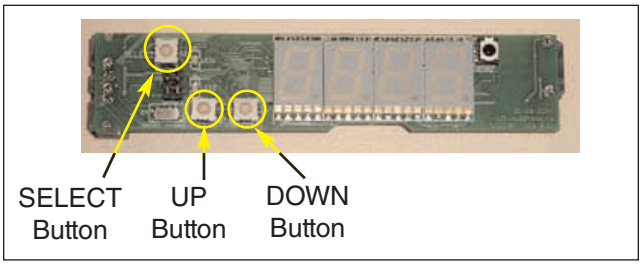
⚠ WARNING

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

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 next photo. 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. Press the **UP** and **DOWN** buttons at the same will escape to the 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 alternate 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 (for example, **uCiC, uCFF or uCCL)**. (Note: **uCiC** is for a –10ºF (–23ºC) setpoint, **uCFF** is for a –2ºF (–19ºC) setpoint, and **uCCL** is for a +35°F (+1.6°C setpoint.)

16. Press the **SELECT** button once. The **uCiC, uCFF** or **uCCL** 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 **uCiC, uCFF or uCCL.**

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 (**uCiC, uCFF or uCCL**).

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 **uCiC, uCFF or uCCL**) followed by the temperature reading.

30. Press the **SELECT** button once. The unit should display **EASY**, then **dSET**, then **–10** for **uCiC**, **–2** for **uCFF** or **+35** for **uCCL**.

31. The KRSCP default parameters have been reloaded.

32. In a few seconds the display will return to the temperature reading.

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 alternates 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 alternates 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
    (for example, **uCiC, uCFF or uCCL)**.
    (Note: **uCiC** is for a –10ºF (–23ºC) setpoint, **uCFF** is for a –2ºF (–19ºC) setpoint, and **uCCL** is for a +35°F (+1.6°C setpoint.)
13. Press the ENTER key once. The**uCiC** or **uCFF** 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 **uCiC, uCFF or uCCL** should be flashing.

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 (**uCiC, uCFF or uCCL**).

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 step8.

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 (**uCiC, uCFF or uCCL** followed by the temperature reading.

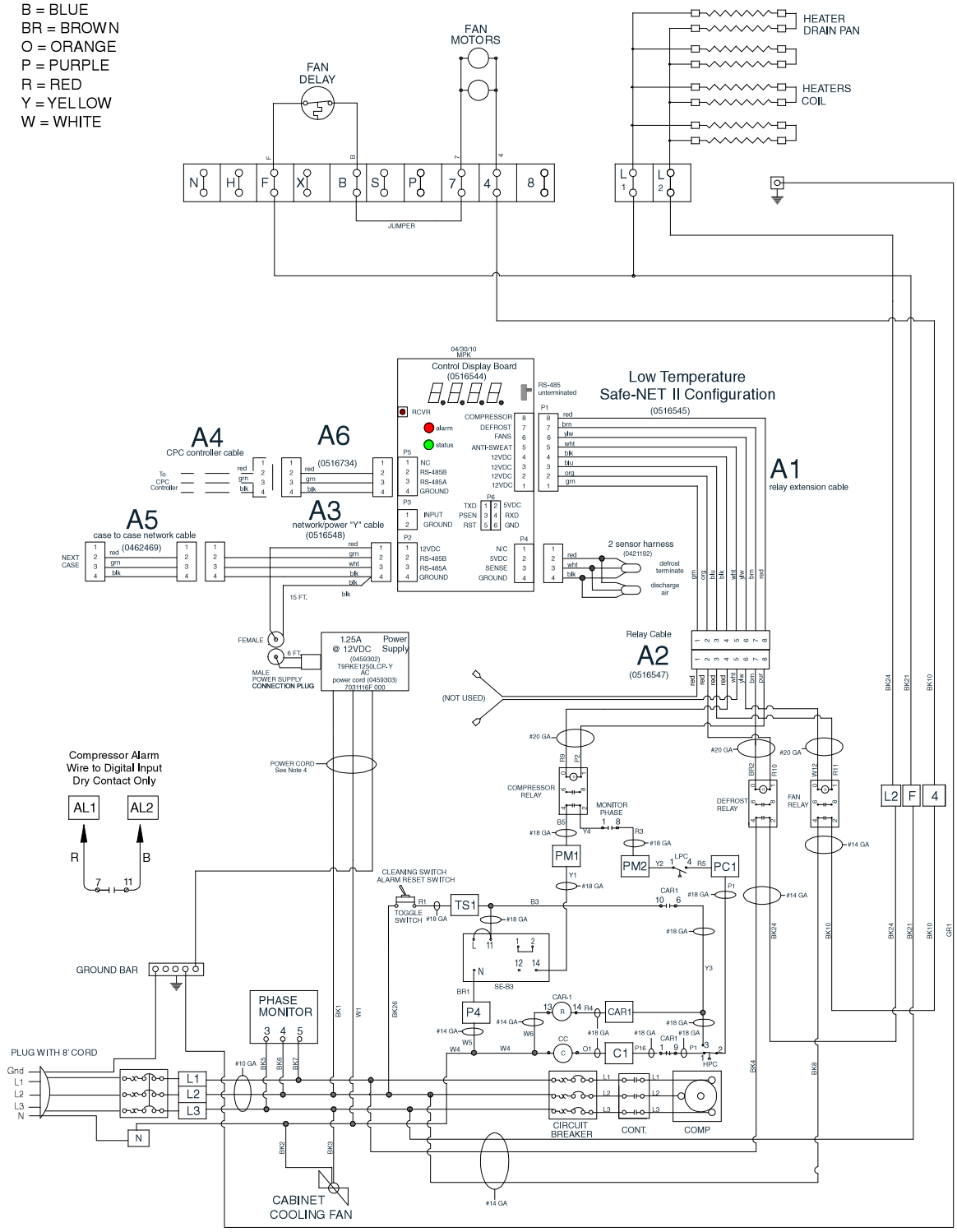
27. Press the SETUP key once. The unit reads **StUP** and then alternating between **dSET** and then **–10** for **uCiC**, **–2** for **uCFF** or **+35** for **uCCL**.

28. The WALK IN UNIT default parameters have been reloaded.

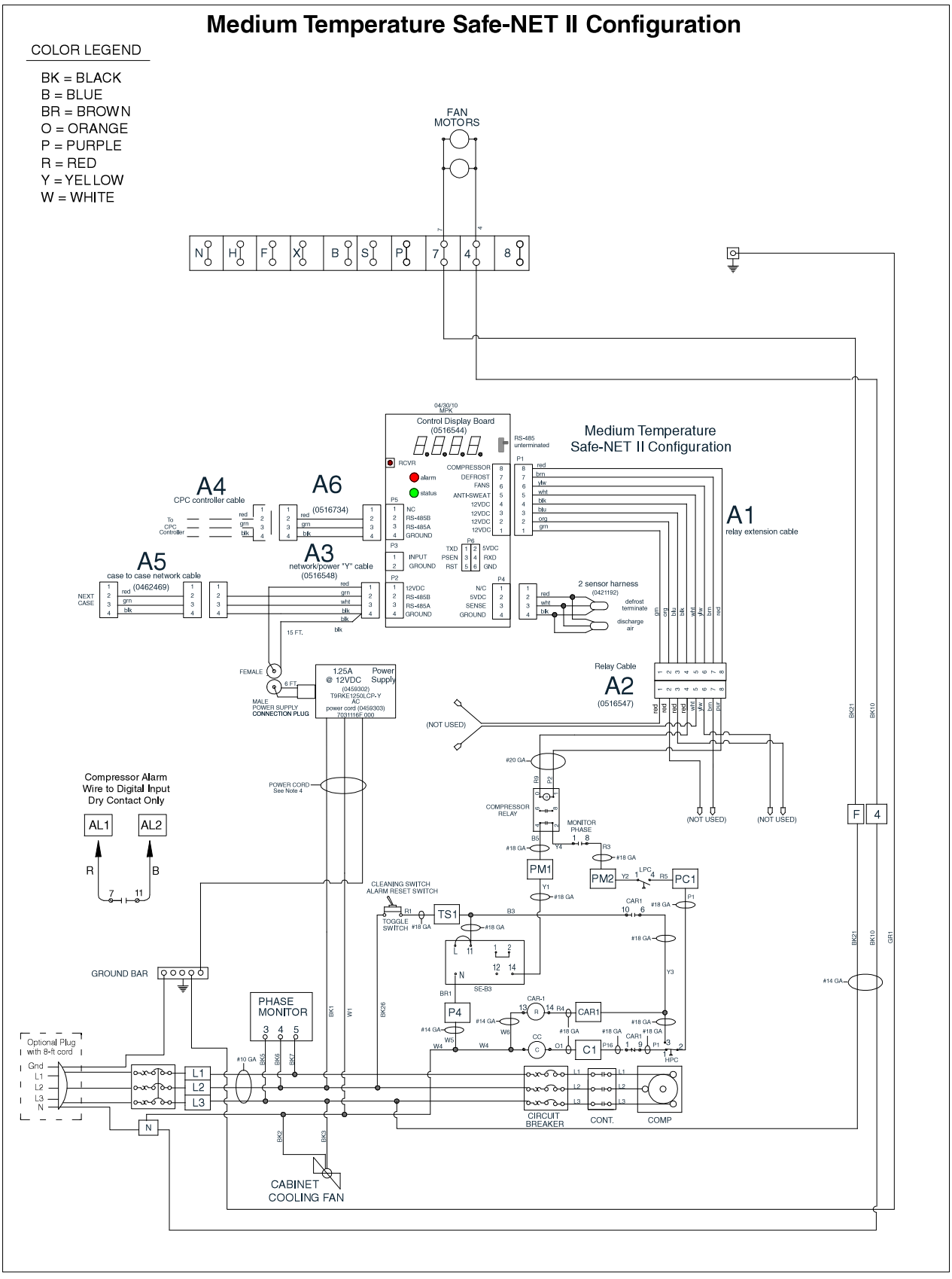
29. In a few seconds the display will return to the temperature reading.

Low Temperature Safe-NET II Configuration

(0516545)



Medium Temperature Safe-NET II Configuration



Notes:

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To obtain warranty information or other support, contact your Hussmann representative. Please include the model and serial number of the product.

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