HUSSMANN®

P/N 3048889_B

June 2018

RTN400

CONTROLLER
RETROFIT

REPLACEMENT FOR SAFENET III
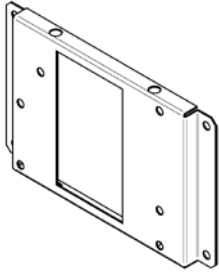CONTROLLERS

ISM5/10
ISF5/10

INSTRUCTION-RETROFIT RTN ISF/ISM

3025276-Support Controller

3023553-Cable Controller

3060966-PRE-PRGM-CONT RTN ISM
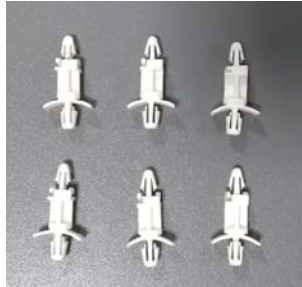3060968-PRE-PRGM-CONT RTN ISF

3023552-Control Display KDE

3023554-Sensor NTC Green
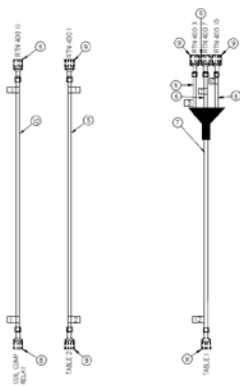

3031571-Sensor NTC Orange

3048888-Label PRMTR for ISF
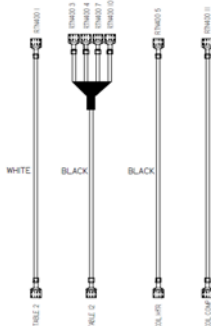3048887-Label PRMTR for ISM
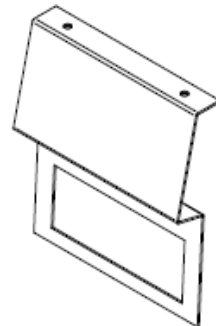

3025272-Plastic Spacer

1900677-Hex Head
5/16" Screw

0514567-ELECTRIC
BOX HARNESS ISM
(ONLY FOR ISM)

3041994-HARNESS-RTN400 ISF
(ONLY FOR ISF)

0510526-SUPPORT-DISPLAY

INSTALLATION TOOL LIST
- Phillips-head screw driver
- Hex-head 5/16" screw driver
- Wire cutters
- Silicone sealant
- Cable ties

The RTN400 is pre-programmed for this application. However, we recommend verifying the program by confirming the correct set-point. The setpoint verification procedure is on pages 7 & 8.

**1. Disconnect all power to the case !!!**

2. Remove front grille.

3. Remove front bracket and Safe-Net III display.

Note: The Controller Display RTN400 will not fit in the existing bracket. You must use the new Support Display provided.

4. Insert the Controller Display into the Support Display. Connect Cable Controller to Control Display.

Support Display

Cable Controller

Control Display
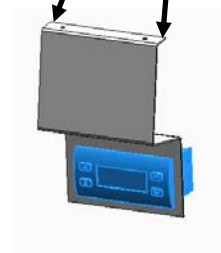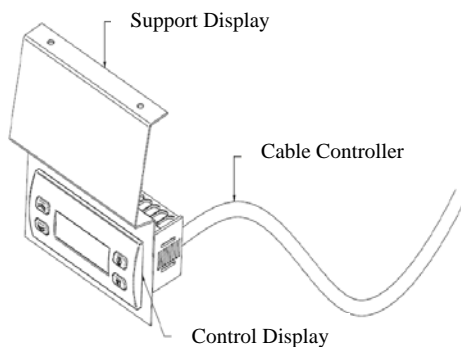
5. Replace black Safe-Net air sensor with green RTN sensor.

6. Replace yellow Safe-Net defrost sensor with orange RTN sensor.
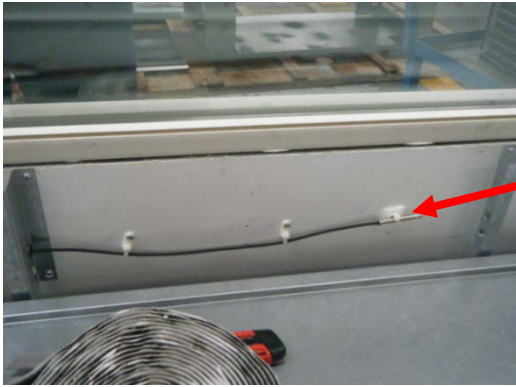
Air Sensor
Old Sensor-Black
New Sensor-Green

Defrost Sensor
Old Sensor-Yellow
New Sensor-Orange

Note: The existing sensors are NOT compatible with the RTN400 and must be replaced with the sensors provided in the retrofit kit.

DO NOT SPLICE SENSOR WIRES !!

7. Install Plastic Spacers onto Support Controller.

8. Secure Control RTN400 to Plastic Spacers
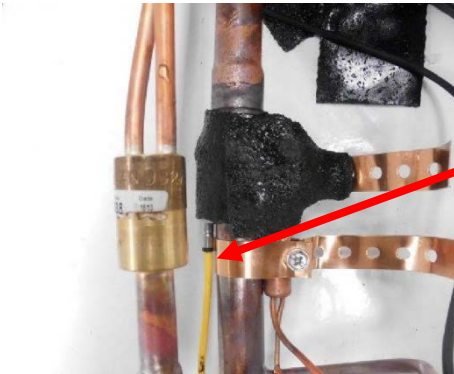

9. Use the Hex Head 5/16" screw to secure the assembly inside the control box
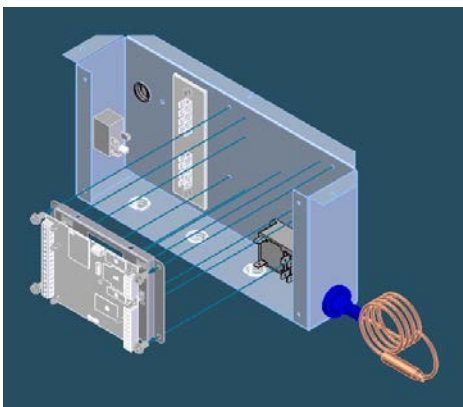
*Optional Procedure: Instead of mounting the completed assembly, consider mounting the base (with spacers only) first. The board can then be snapped onto the spacers. This will prevent any damage to the board caused by being hit with a drill during the mounting procedure.

10. Remove Safenet III controller and harness wiring from control box
   Note: Make sure to remove the controller's harness wires from the terminal board.

Terminal board

Remove existing
controller safe-net III

Remove all wires that are connected
with old controller safe-net III

Place the new bracket and RTN
controller

Terminal board

Relay

Use the new harnesses and sensors for
connection of new controller
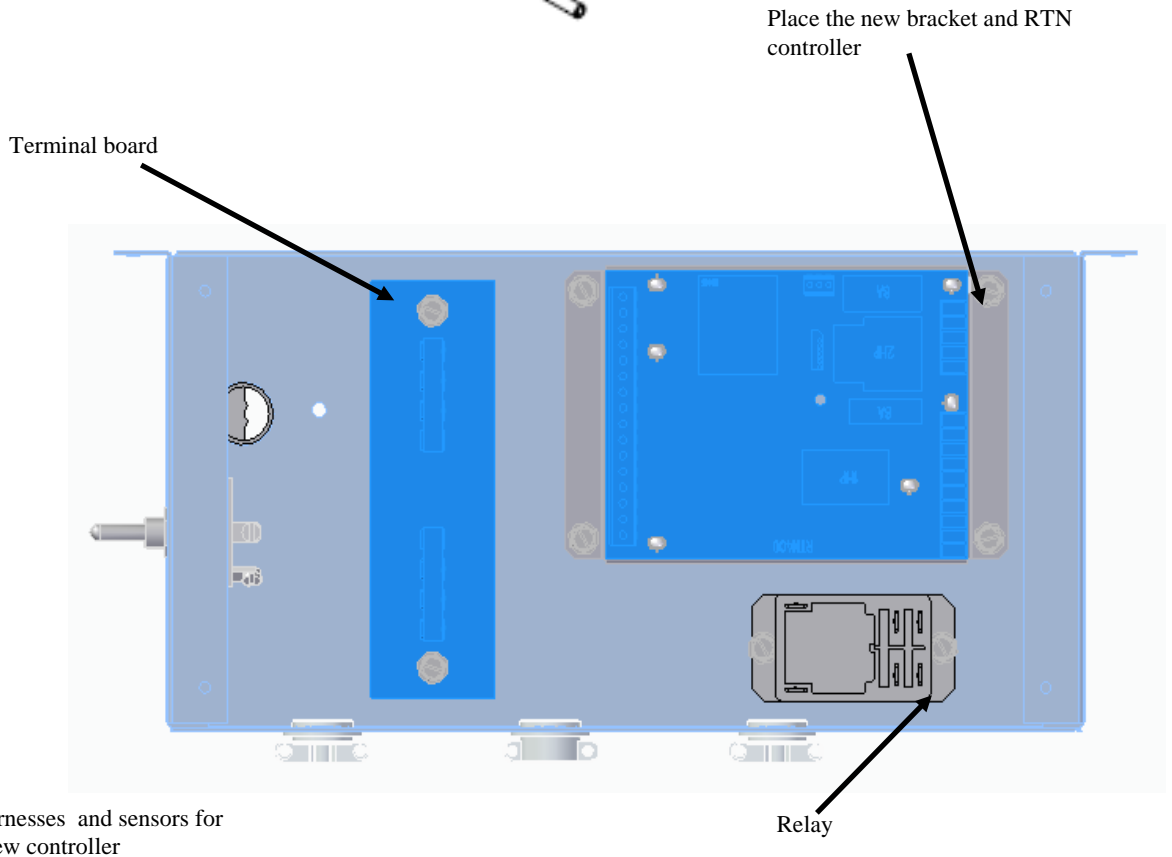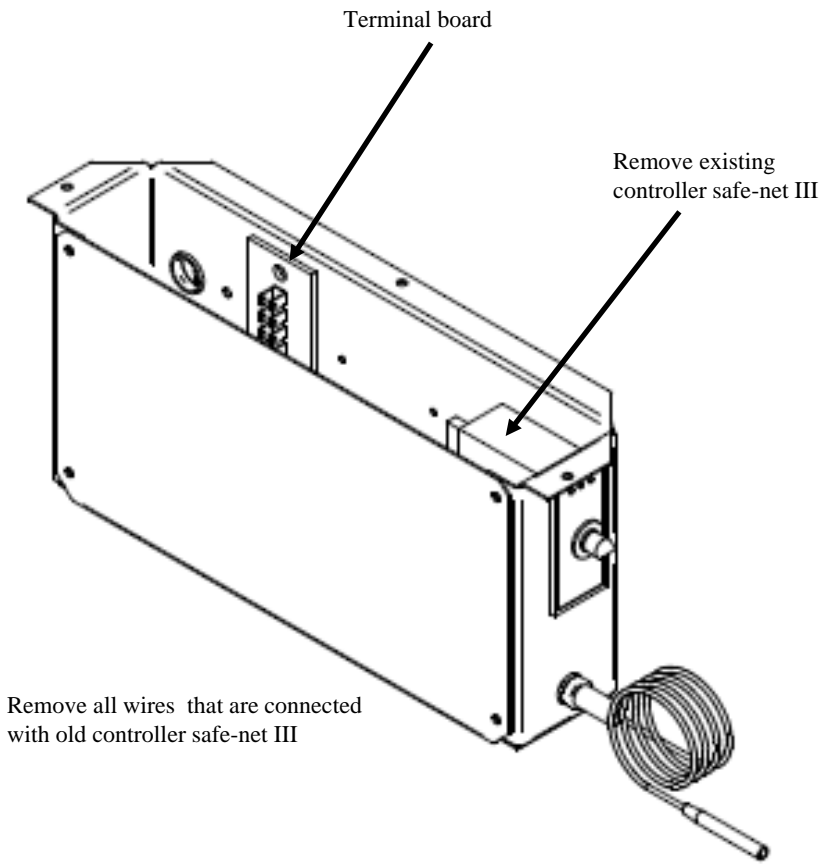
11. Install wires to controller and terminal board as shown below:
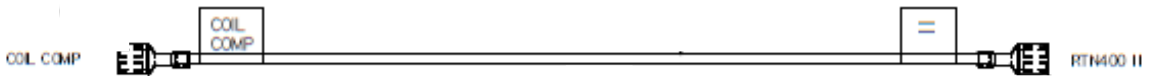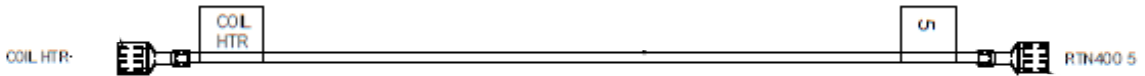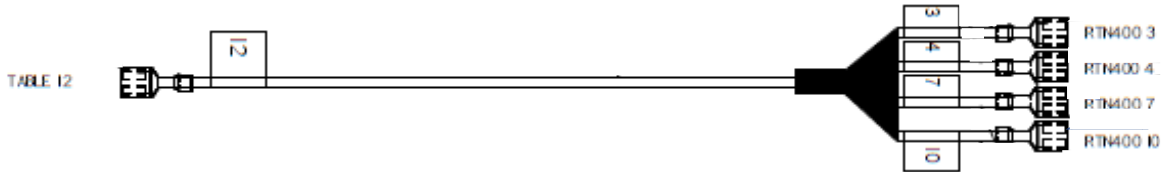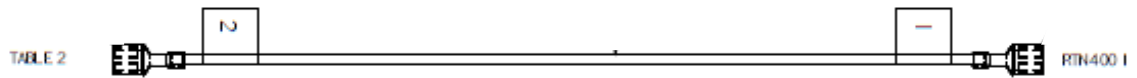
3041994-HARNESS-RTN400 ISF
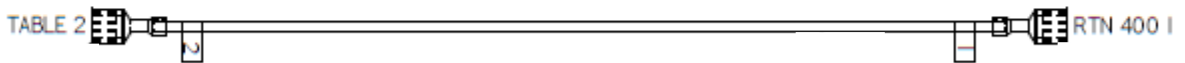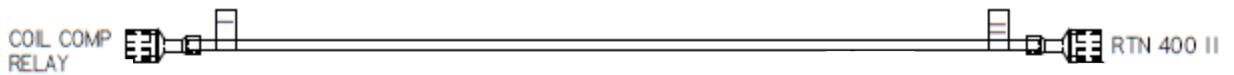
0514567-ELECTRICAL BOX HARNES ISM

12. Connect Sensors wires to controller as shown below:

Sensor connections
Orange: #21 Black wire & #20 White wire
Green: #19 Black wire & #18 White wire
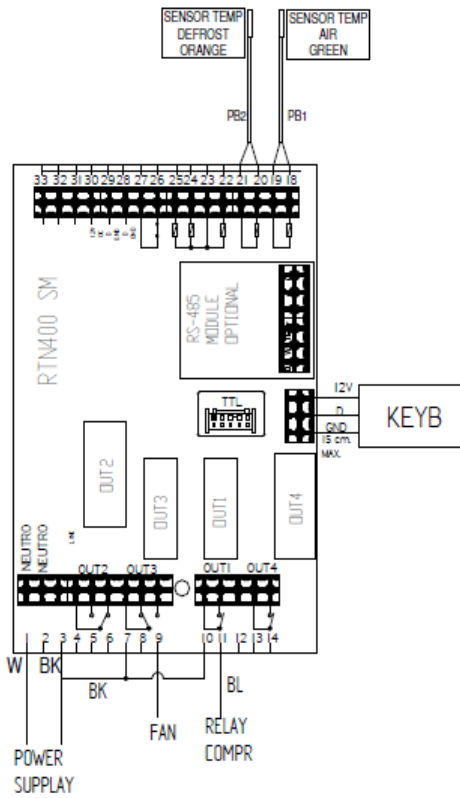
RTN Connections Diagram (ISM)
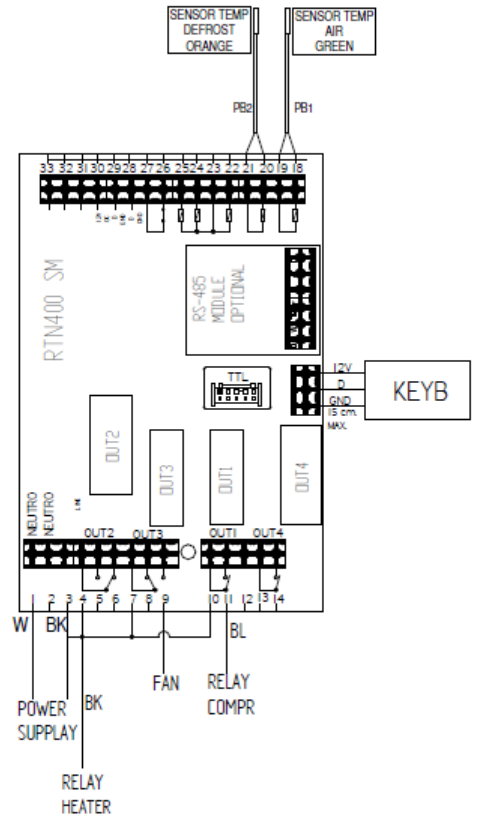
RTN Connections Diagram (ISF)
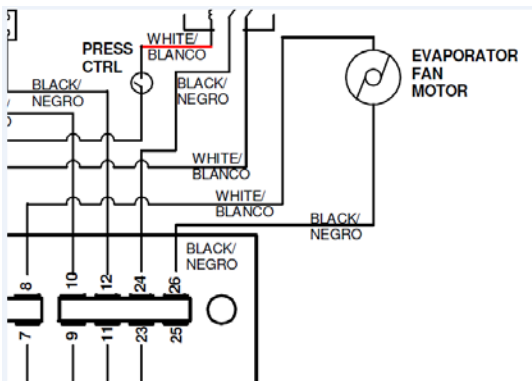
13. Verify black wire to terminal board #26 is connected to evaporator fan motor.

14. Disconnect this wire from terminal board #26 and connect again to RTN400 controller #9.

The new controller is preprogrammed and should not require adjustments. You are now ready to start the unit and verify the set-points.

- Apply power to the unit (Fans should start immediately and compressor should start in a few seconds).
- Confirm the setpoint by following "Step 1". The preprogrammed setpoint is show in sheet depending of your equip ISM is 14°F and ISF is -33°F.
- Go to "Step 2" and verify the sensor probes are reading correctly.
- Proceed to page 9 to complete the start-up process.

1) SETPOINT: SETTING AND EDIT LOCK

To display the Setpoint value, press the **set** key to enter the "Machine Status" menu, then press the **set** key again when the "SEt" label is displayed.
The Setpoint value appears on the display. To change the Setpoint value, press the ⌃ and ⌄ keys within 15 seconds. Press **set** to confirm the modification.

set ········· $\boxed{5Et}$ ······ set ········· $\boxed{0.0}$ ⌃

······ set ································· $\boxed{0.1}$

2) DISPLAY PROBES VALUE

To display the value read by probes connected to the device, press the **set** key and enter the "Machine Status" menu, then press the key again when one of the probe-related labels "Pb1...Pb5" press the **set** key again. The value measured by the associated probe will appear on the display.

NOTE: The displayed value is read-only and cannot be modified.

KDEPLUS BUTTONS

The **KDEPlus** keyboard has 4 keys, as shown in the illustration:

UP ① ⌃   ① ③ STANDBY or ESC
DOWN ② ⌄   SET ④ SET

To see Parameters info please refer to document depending of the situation

3048887-LABEL-PRMTR RTN ISM

3048888-LABEL-PRMTR RTN ISF

KDEPLUS BUTTONS

The **KDEPlus** keyboard has 4 keys, as shown in the illustration:

Each key has a different function depending on whether it is:
- Pressed and released
- Pressed for at least 5 seconds
- Pressed and held at start-up
- Pressed in combination with another key.

KEYS

The following table summarizes the function of each key:

No	Key	Action		
		Pressed and released	**Press for at least 5 secs**	**Start-up**
1	(up)	• Scrolls through menu items • Decreases values	Activates the **Manual Defrost function** (from outside menus).	---
2	(down)	• Scrolls through menu items • Decreases values	Function can be configured by the user (from outside menus). (see parameter H32)	---
3	(standby)	• Returns to the previous menu level • Confirms parameter value	Activates the Stand-by function (from outside menus).	---
4	set	• Displays any alarms (if active) • Opens Machine Status menu • Confirms commands	Opens the Programming Menu (User and Installer parameters)	When pressed during start-up it enables the user to select the application to be loaded.

RTN-400 LED Indicator Lights

Meaning of LEDs:

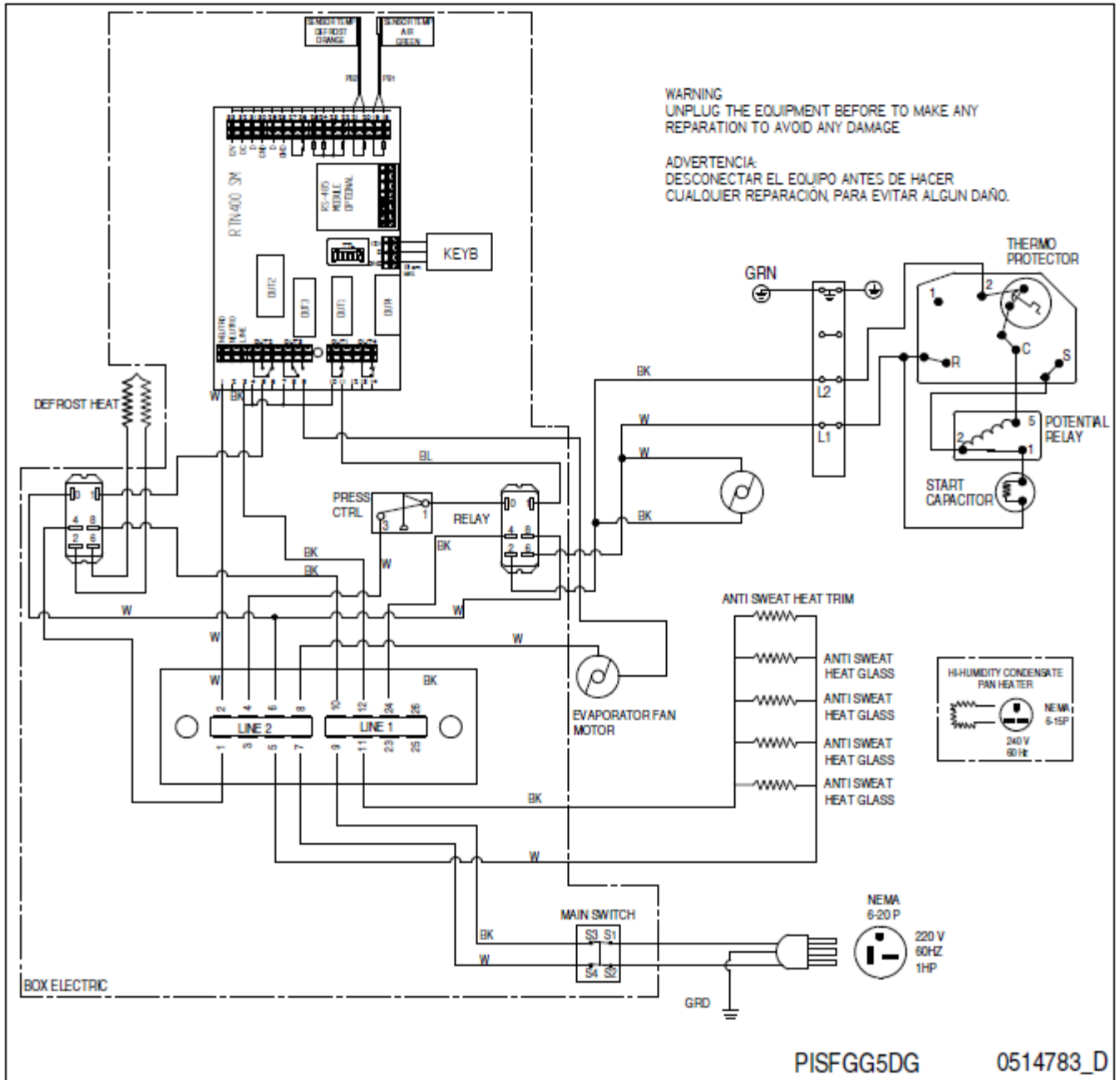| No	Icon	LED	Operation	Meaning
1	❄	Compressor	Permanently on	compressor on
			Blinking	Delay, protection or start-up blocked
			OFF	otherwise
2	❄	Defrost	Permanently on	Defrost active
			Blinking	Activated manually or from Digital Input
			OFF	otherwise
3	✖	Fans	Permanently on	Fans active
			OFF	otherwise
4	🟢	Reduced SET / Economy	Permanently on	Energy Saving active
			Blinking	Reduced setpoint active
			OFF	otherwise
5	((●))	Alarm	Permanently on	alarm active
			Blinking	Alarm acknowledged
			OFF	otherwise
6	°F	°F readout	Permanently on	°F setting (dro =1)
			OFF	otherwise
7	AUX	AUX	Permanently on	Aux output active and/or light on
			Blinking	Deep cooling on
			OFF	otherwise
8	°C	°C readout	Permanently on	°C setting (dro = 0)
			OFF	otherwise

N.B.: When the instrument is powered on it performs a lamp test, during which time the display and LEDs will flash for several seconds to check that they all function correctly.

Wiring Diagram ISFGG5DG / ISFGG10DG

WARNING
UNPLUG THE EQUIPMENT BEFORE TO MAKE ANY
REPARATION TO AVOID ANY DAMAGE

ADVERTENCIA:
DESCONECTAR EL EQUIPO ANTES DE HACER
CUALQUIER REPARACIÓN, PARA EVITAR ALGUN DAÑO.

PISFGG5DG   0514783_D

Wiring Diagram ISMGG5B/ ISMGG10B

WARNING
UNPLUG THE EQUIPMENT BEFORE TO MAKE ANY
REPARATION TO AVOID ANY DAMAGE

ADVERTENCIA:
DESCONECTAR EL EQUIPO ANTES DE HACER
CUALQUIER REPARACION, PARA EVITAR ALGUN DAÑO.

COMPRESSOR

RUN CAPACITOR

START CAPACITOR

PRESS CTRL

RELAY

EVAPORATOR FAN MOTOR

HI-HUMIDITY CONDENSATE PAN HEATER
NEMA 5-15P
115V
60 Hz

ANTI SWEAT HEAT TRIM

LINE 2

LINE 1

MAIN SWITCH

NEMA 5-20 P
115V
60-HZ
1HP

GRD

BOX ELECTRIC

PISMGG5B   0514802_D