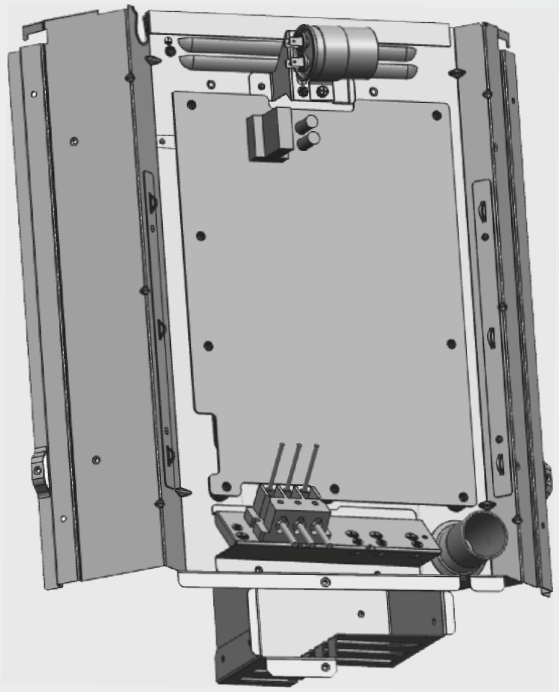
BOSCH

Technical Instructions

E-Box Replacement

Bosch IDS BOVA 1.0

3 Ton



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Unitary Small HP
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1 Key to Symbols and Safety Instructions

1.1 Key to Symbols

Warnings

Warnings in this document are identified by a warning triangle printed against a grey background. Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.
- **NOTICE** is used to address practices not related to personal injury.

Important information

This symbol indicates important information where there is no risk to people or property.

2 Outdoor Unit Model Numbers

Bosch Part Number	Bosch Model Number	Description
7739832068	BOVA-36HDN1-M18M	36kBTU, Inverter Condensing Unit

Table 1 ODU Model & Part Numbers

3 Components

The following components are included in the kit:

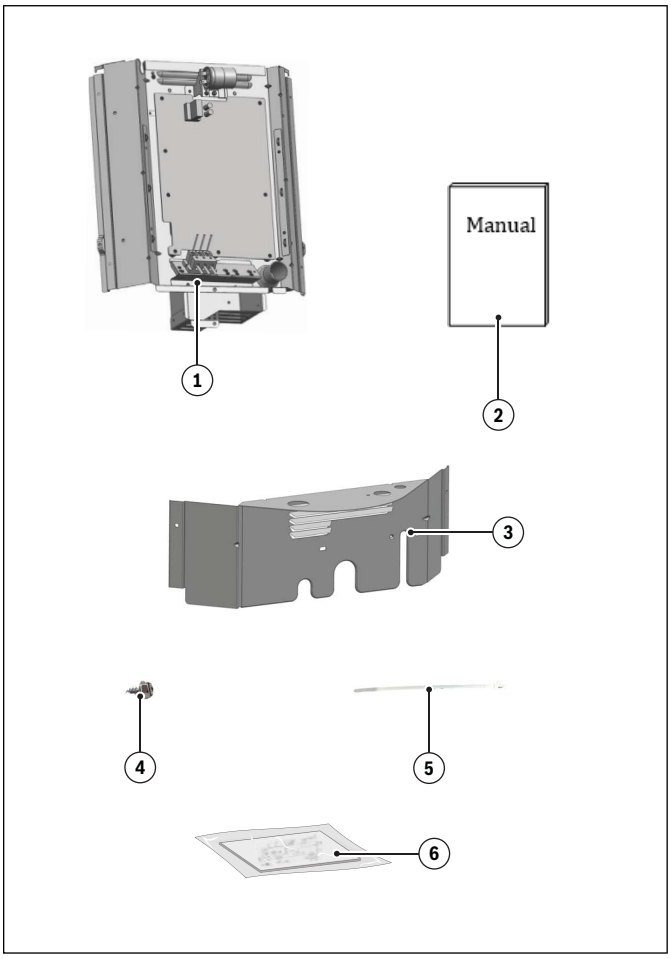

Figure 1 Components

Updated wiring diagram included in kit. Replace the old wiring diagram on the back of the access panel.

Item	Description	Qty
1	3T Control Board + E-box	1
2	Replacement Manual	1
3	3T Bottom Access Panel	1
4	Screws	8
5	Zip Ties	8
6	Wiring Diagram	1

Table 2 3T E-Box Kit Components

4 Replacement Instructions

1. Turn off power to the unit and wait at least 3 minutes.

WARNING: HAZARDOUS VOLTAGE 380 VOLTS DC

- Wait 3 minutes after disconnecting power, then verify DC voltage is less than 43 VDC at inverter test points P-N.
- Components may store a dangerous electrical potential of 380 Volts DC. Failure to follow these instructions could result in personal injury or death.

2. Remove the access panel to the control board (Figure 2). Keep Screws for re-use.

NOTICE: PRODUCT DAMAGE

- Do not directly touch the components on the main board to avoid static electricity damage.

Figure 2 Control Board Access

3. Cut the 6 zip ties to unbundle the control board wires
4. Cut the 2 zip ties around gaskets at the bottom of the E-box
5. Remove all of the component wires from the Control Board. Take a picture before wire removal for dip switch and wiring reference.

The wires will need to be connected to the new control board once installed.

To remove T3 and T4 sensors, remove white cover to disconnect sensor. See Figure 3.

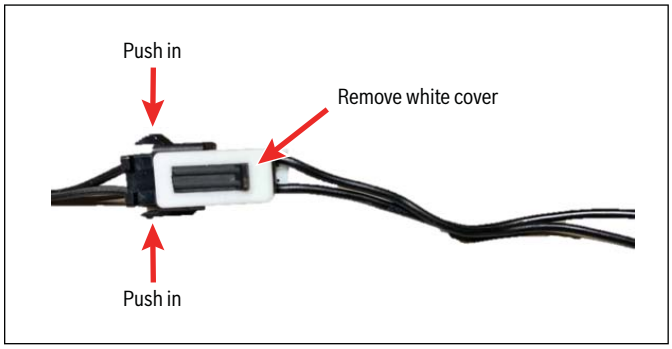

Figure 3

6. Unscrew 16 screws to remove the top cover of the unit. When removing the top cover, be careful not to damage the heat exchanger fins. Lean top panel against wall. Refer to Figure 4.

Ensure fan motor is removed from control board to remove top cover.

Figure 4 Remove Top Cover

7. Carefully pull the wires from the bottom left and right hole through the back of the E-Box. See Figure 5.

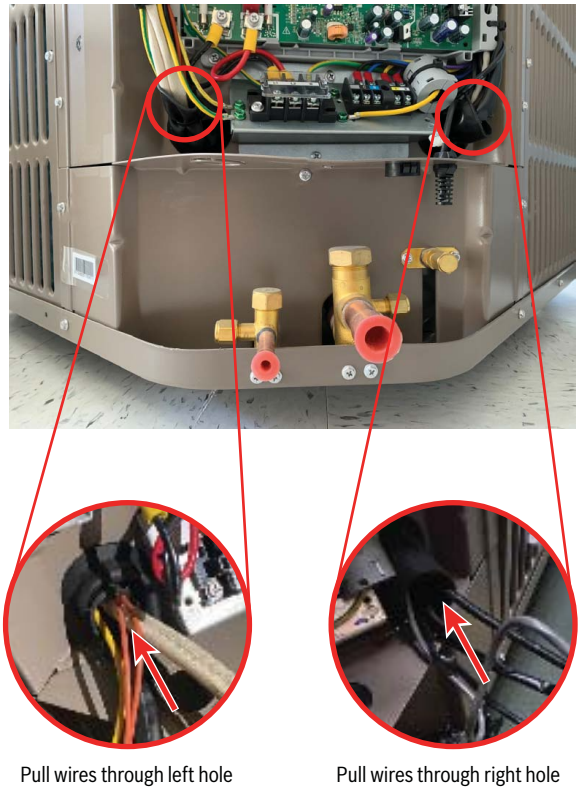

Figure 5 Remove Wires From Holes in E-Box

8. Unscrew the 7 screws to remove E-box. Slide E-box up to remove. Keep all screws for reuse. Refer to Figure 6.

Remove E-box by first lifting up and then out.

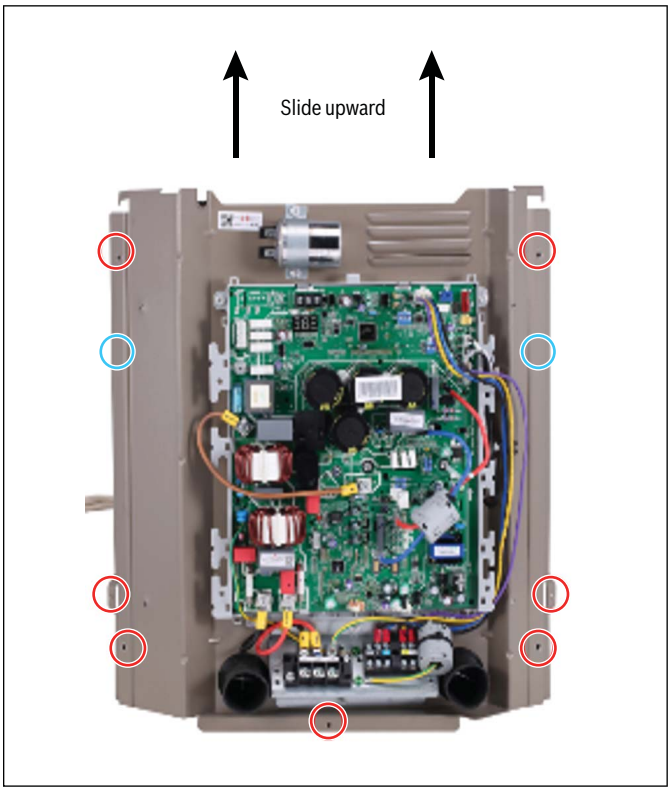

Figure 6 E-Box Removal

9. Unscrew 2 screws (red) on the panel and 2 screws (blue) mounting the “true suction” service port. Remove Bottom Access Panel. Keep screws to re-install later. See Figure 7.

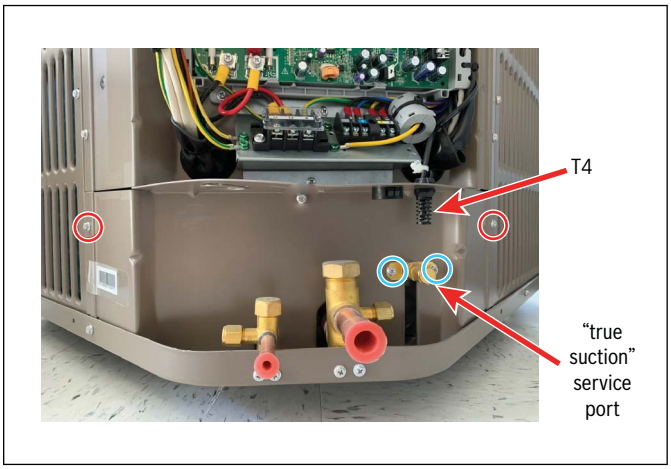

Figure 7 Remove Bottom Access Panel

10. Cut 3 zip ties bundling the reactor box white harness

11. Unscrew 4 screws to remove reactor box and white wiring harness. This is not needed for the new control board. Refer to Figure 8.

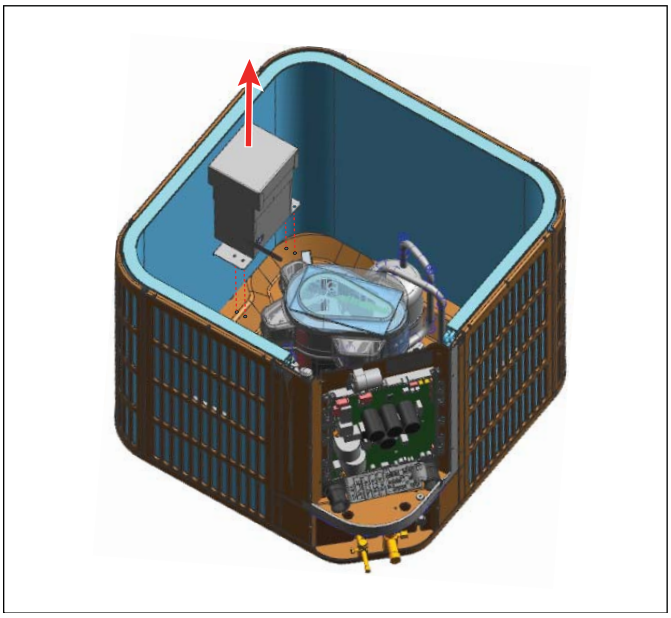

Figure 8 Reactor Box Removal

CAUTION: PERSONAL INJURY

- Reactor box is heavy, be careful when removing.

NOTICE: PRODUCT DAMAGE

- Potential risk for fan motor/blades to become damaged if reactor box and connected white wiring harness are not removed from unit.

12. Unit should look like should look like Figure 9.

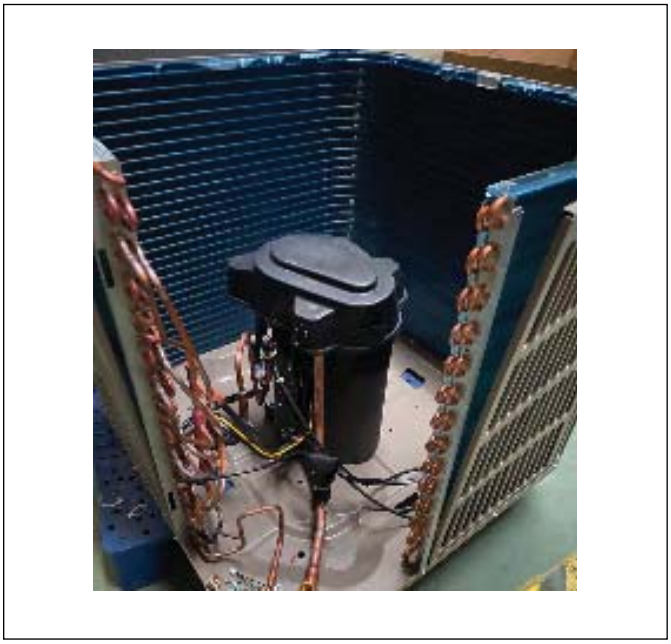

Figure 9 E-box, Bottom Access Panel, Reactor Box Removed

13. Slide in the new E-box in from the top and secure with screws saved in Step 8. Note: The sides of the E-box should line up and slide into the guide rails on the unit. Refer to Figure 10.

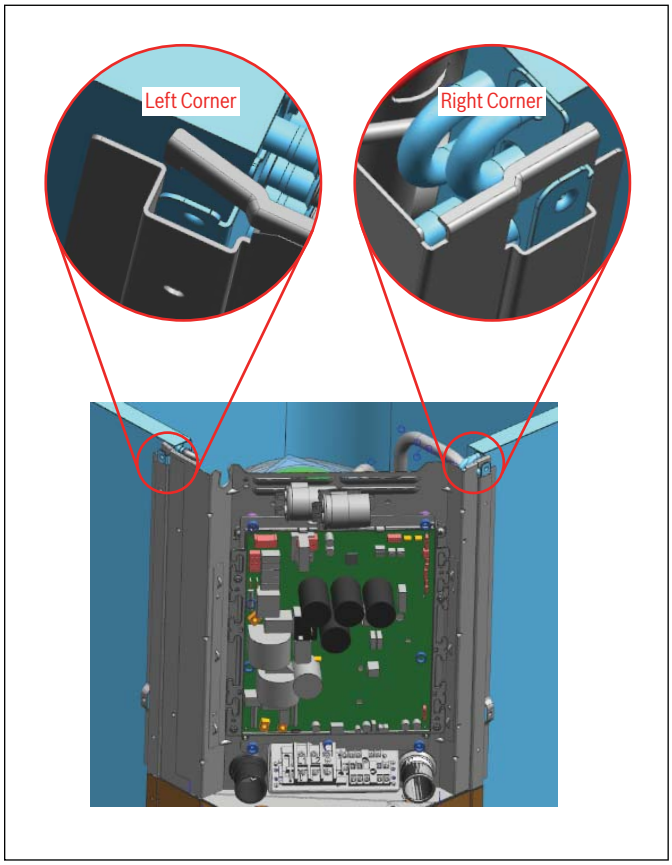

Figure 10 Top Corner of E-Box

14. Route the compressor wires and compressor ground to the top of the E-box and secure using wire clip. Refer to Figure 11.

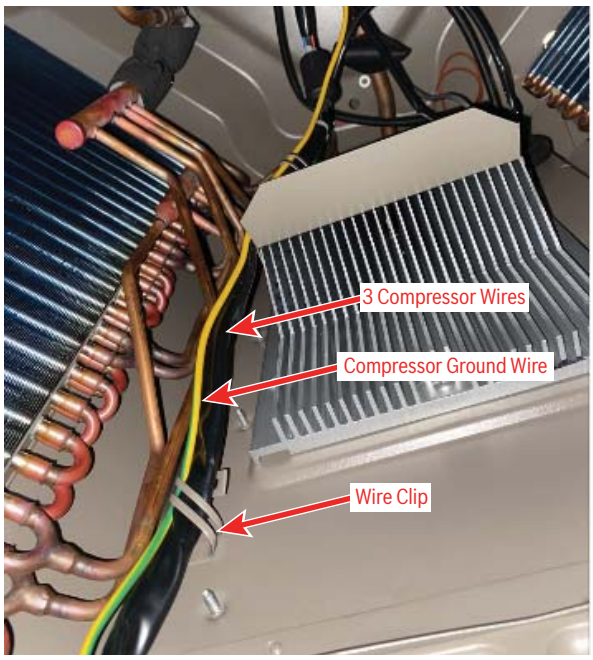

Figure 11 E-box High Voltage Routing

CAUTION: GROUNDING REQUIRED

- Failure to inspect or use proper service tools may result in equipment damage or personal injury. Reconnect all grounding devices. All parts of this product that are capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

15. All other component wires should be fed through the right gasket hole. Feed the wires through the hole one by one. Route the CCH wire (orange wire) through the separate slot on the E-box. Refer to figure 12.

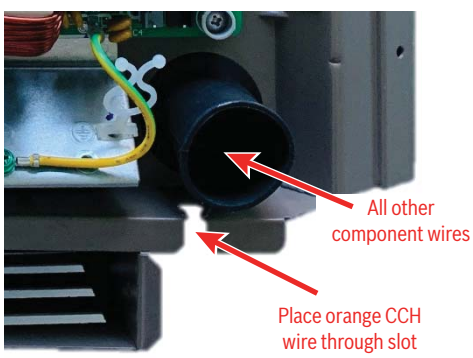

Figure 12 Routing Wires to Front of Board

16. Mount new Bottom Access Panel on with 4 screws and secure the true suction service port. Careful when sliding the true suction service port into the slot on the panel.

17. Make sure to reinstall T4 temperature sensor in Bottom Access Panel, refer to Figure 13. Lock sensor in strainer and push up through hole in panel.

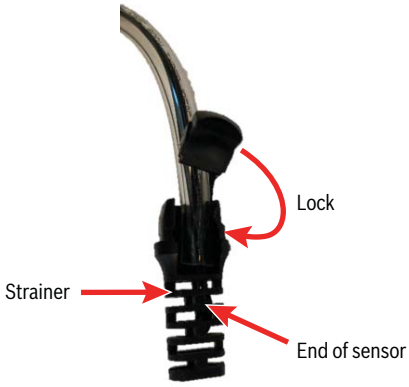

Figure 13 T4 Sensor Reinstallation

18. Put top panel back on. Make sure the wires from the top panel, OD fan wire, Motor capacitor and capacitor ground (for 3T units), are fed through the slot at the top left of the E-box.

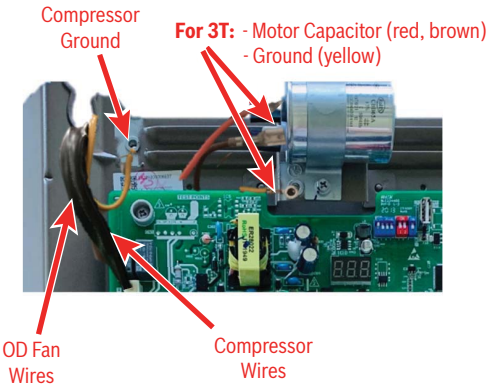

Figure 14 Top Panel Wiring to E-box

19. Secure top panel with screws from step 6

20. Connect all wires according to the wiring diagram. See Figure 15.

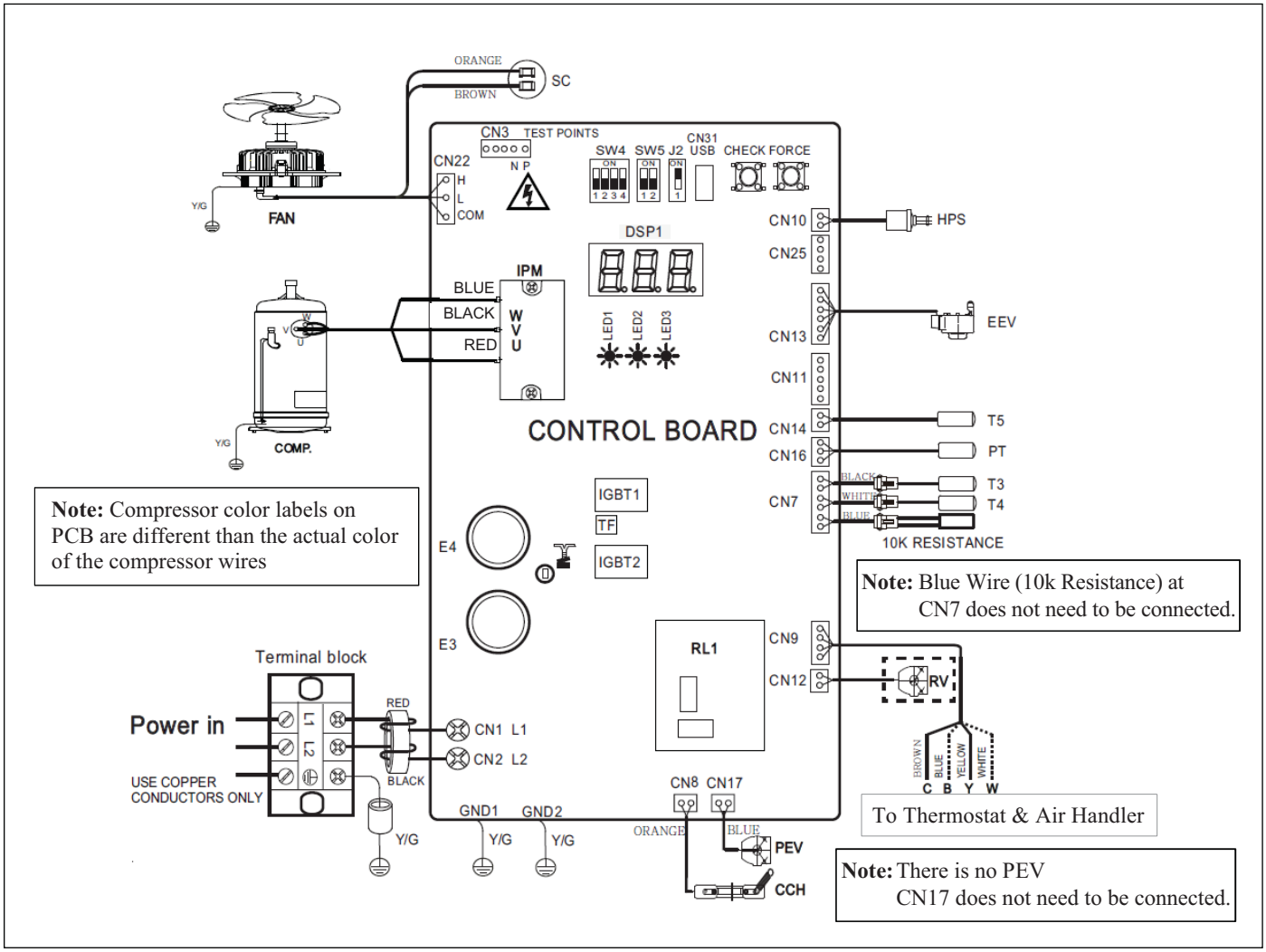

Figure 15 3T Control Board with All Wires Connected

21. Feed thermostat wires through the Bottom Access Panel to the CN9 wire harness on the control board. Splice wires and use field supplied wire nuts to make connection. See Figure 17.

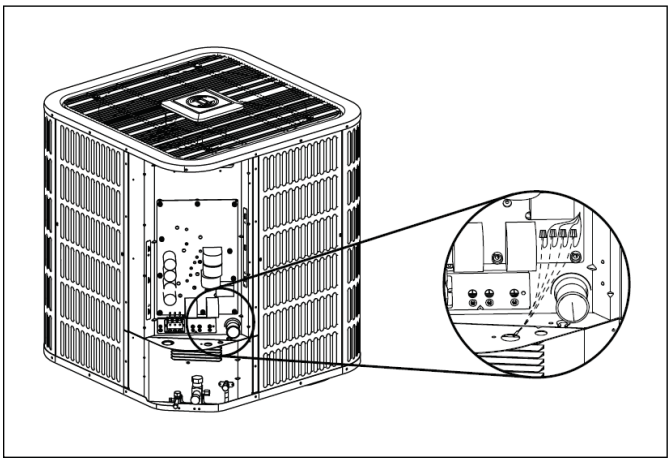

Figure 16 Thermostat Wiring Connection

- Low voltage connection must be made inside the outdoor unit control board access panel.
- There is no terminal block for low voltage connections, wires must be spliced using field supplied wire nuts.
- Field supplied wire nuts should be 22-16 gauge.
- Refer to unit wiring diagram for more information.

22. Make sure all wires are secured and not interfering with control board. Feed zip ties through holes in the E-box to secure wiring. Refer to Figure 18.

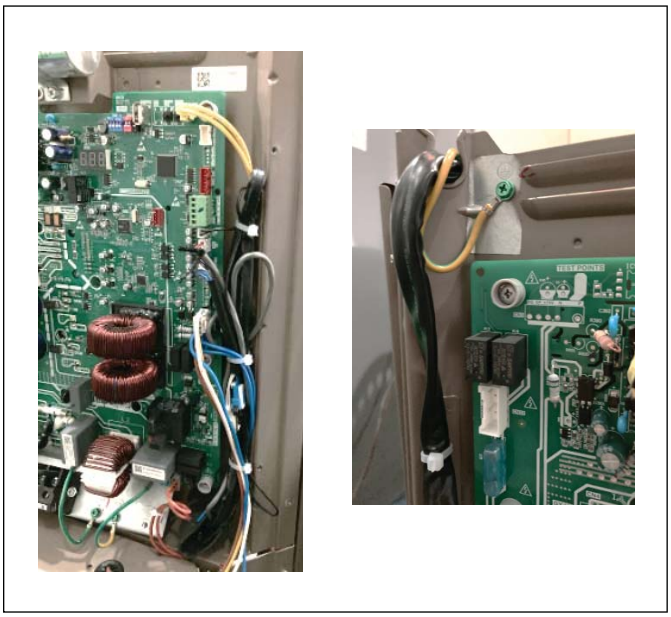

Figure 17

23. Feed L1, L2 and GND through the Bottom Access Panel.

24. Connect L1 and L2 to high voltage terminal block. Refer to Figure 19.

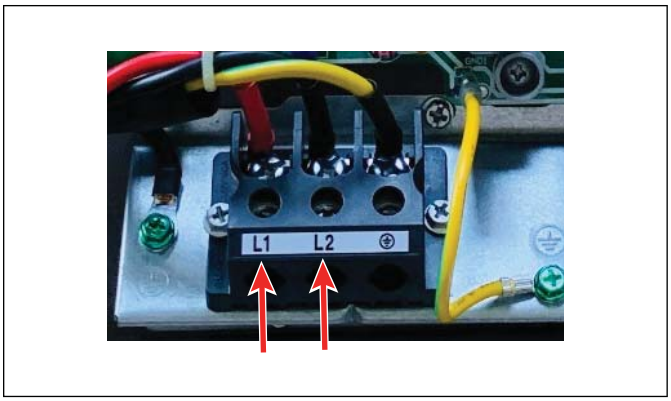

Figure 18 High Voltage Terminal Block

25. Check SW4/SW5/J2 dip switch positions. Make sure they are the same as what was configured on the replaced control board. Refer to IOM or the picture taken in Step 3.

26. Double check all wire connections, grounding, and screw positions before powering on.

27. Screw the access panel to the control board back on using screws from Step 2.

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