



# 48/50N2,N3,N4,N5,N6,N7,N8,N9 Controls Expansion Module (CEM) Accessory 50/60 Hz

## Installation Instructions

Part Number CRCTLEXP005A00

### SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure).

Only trained, qualified installers and service technicians should install, start up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply.

- Follow all safety codes.
- Wear safety glasses and work gloves.
- Use care in handling and installing this accessory.

#### ⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during accessory installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

### INTRODUCTION

The controls expansion module accessory (CEM) is required for additional features that are offered from a *ComfortLink* controller. See Fig. 1. The following features are supported by this accessory:

- Humidistat
- Demand limit — redline and load shed
- Fire pressurization
- Fire evacuation
- Fire smoke purge
- IAQ (indoor air quality) switch
- OAQ (outdoor air quality) sensor
- SAT (supply air temperature) reset
- Remote supply air set point
- Demand limit controller
- OA (outdoor air) humidity
- Space humidity
- Return humidity
- Outdoor air cfm control
- Static pressure set point reset

### PACKAGE USAGE

UNIT	SIZE
48/50N2,N3,N4,N5,N6,N7,N8,N9	75 to 150 Ton

### ACCESSORY PACKAGE CONTENTS

ITEM	QTY
Control Expansion Module, 30GT515218	1
Terminal Board, TB202, 48HG500121	1
Harness Assembly, 48NGHLRLALF020A	1
Terminal Block, TB203, ET-259	1
Bracket, 38APMMSAAA-A40	1
Edge Guard	1
Screw, no. 6-20 x 1-in.	5
Screw, no. 8-18 x 1/2-in.	2
Screw, Hex Head, no. 10 x 1/2-in.	1
Screw, Pan Head, no. 8-18 x 1/2-in.	7

### INSTALLATION

NOTE: See Fig. 1 for all CEM board wiring connection locations. See Fig. 2 for control box board and plug locations. See Fig. 3 for all MBB (main base board) wiring connection locations.

1. Inspect the package contents for missing or damaged parts. File a claim with the shipping agency if parts are damaged. Notify your Carrier representative if any items are missing.
2. Open and tag all electrical disconnects.
3. Open main control box access doors.
4. Attach the CEM board in the main control box in the location shown in Fig. 2 using the 5 no. 6-20 x 1 in. screws provided.
5. Connect accessory wiring harness plugs CEM-J1, CEM-J3, CEM-J5, CEM-J6, CEM-J7 to the J1, J3, J5, J6, J7 terminals of the CEM board.
6. Connect the accessory wiring harness plugs TB202-J10, TB202-J11, TB202-J12 to the J10, J11, J12 terminals on the TB202 terminal board supplied with the accessory kit. See Fig. 4.
7. Attach terminal board TB202 to the bracket in the control box in the location shown in Fig. 2 using the 7 no. 8-18 x 1/2-in. screws provided. See Fig. 4.
8. Install edge guard on TB202 bracket to prevent wire chafing.
9. Attach TB203 in the control box in the location shown in Fig. 2 using the 2 no. 8-18 x 1/2-in. screws provided.
10. Connect the accessory wiring harness connections to TB203 terminals 1, 2, 3, 4 as marked.
11. Route the accessory wiring harness leads labeled TB101 to terminal block TB101 and connect to terminals 1, 2, 3 as marked.
12. Connect accessory wiring harness plug labelled MBB-J2 to the J2 terminal on the MBB.
13. Connect the ground wire in the accessory harness to the ground screw in the control box.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

- Route PL29 from the accessory wiring harness to the plug in the bottom of the control box and connect to the mating plug PL29.

## CONTROL MODULE COMMUNICATIONS

**Red LED** — Proper operation of the control boards can be visually checked by looking at the red status LEDs as shown on Fig. 1 and 3. When operating correctly, the red status LEDs on all boards should blink in unison at a rate of once every 2 seconds (1 second ON, 1 second OFF). If the red LEDs on all boards are blinking, but not in unison, then either the communication wiring between boards is incorrect, one or more of the boards is faulty, or there is a software problem.

Verify that the wiring between boards is correct, and that the main base board (MBB) is supplied with the current software. If necessary, reload current software. If the problem still persists, replace any board determined to be faulty.

A red LED on any board that is lit continuously or blinking at a rate of once per second or faster (0.8 second ON, 0.2 second OFF) may indicate either a software problem or a faulty board. Reload current software. If the problem persists, replace the board.

**Green LED** — Each board also has a green LED, which acts as an activity light. This LED lights sporadically, whenever the board communicates with another board. On the MBB board this local equipment network (LEN) LED should always

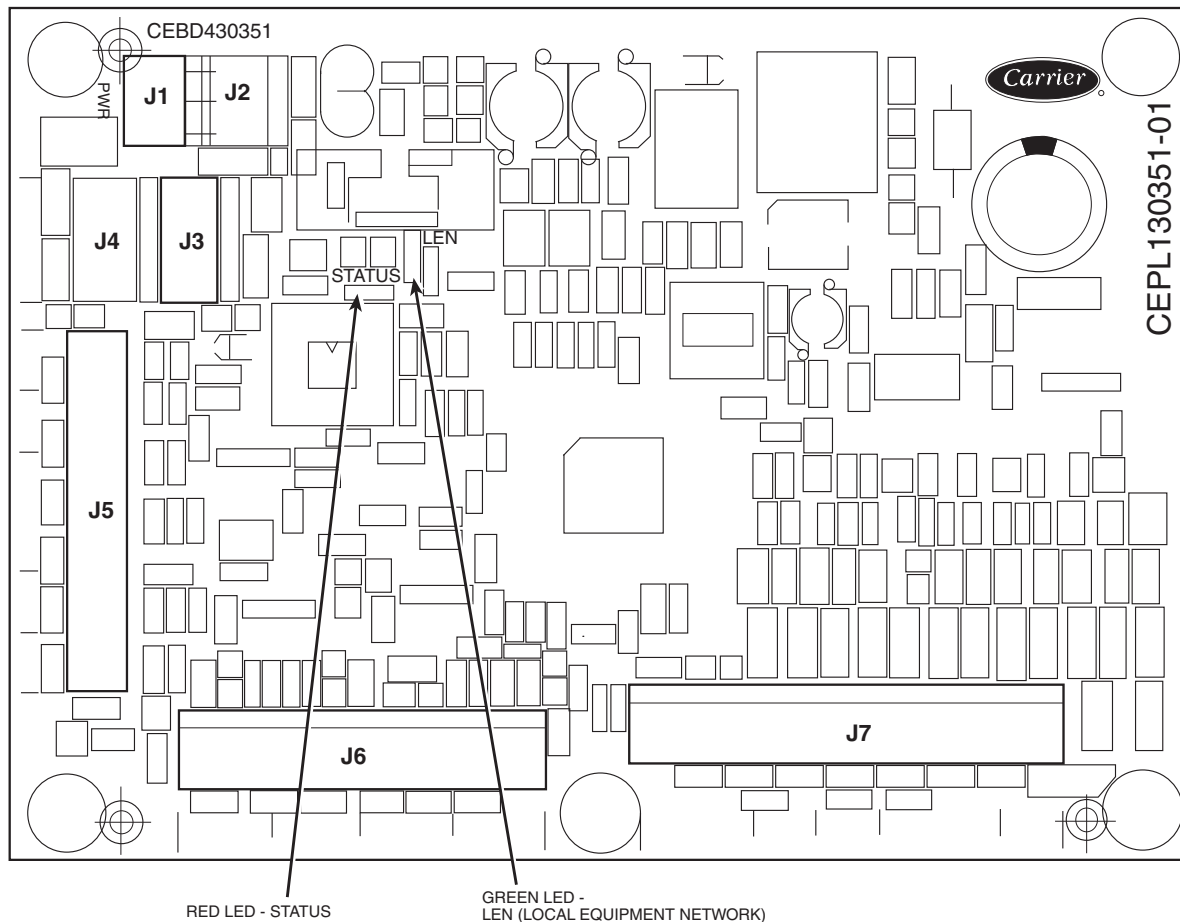
be blinking whenever power is on. All other boards have a LEN LED that will blink whenever power is on and there is communication occurring. If the LEN LED is not blinking, check LEN connections for potential wiring errors (J3 and J4 connectors). A 3-wire sensor bus allows communication between modules. These 3 wires run in parallel from module to module.

## CONFIGURE COMFORTLINK CONTROLS

Configure the following:

- Demand limit — redline and load shed
- Fire pressurization
- Fire evacuation
- Fire smoke purge
- IAQ switch
- Outdoor air cfm control
- OAQ sensor
- SAT reset
- Remote supply air set point
- Demand limit controller
- OA (outdoor air) humidity
- Space humidity
- Return humidity
- Humidistat
- Static pressure set point reset

Refer to Controls and Troubleshooting Guide for configuration details.



**Fig. 1 — CEM Board**

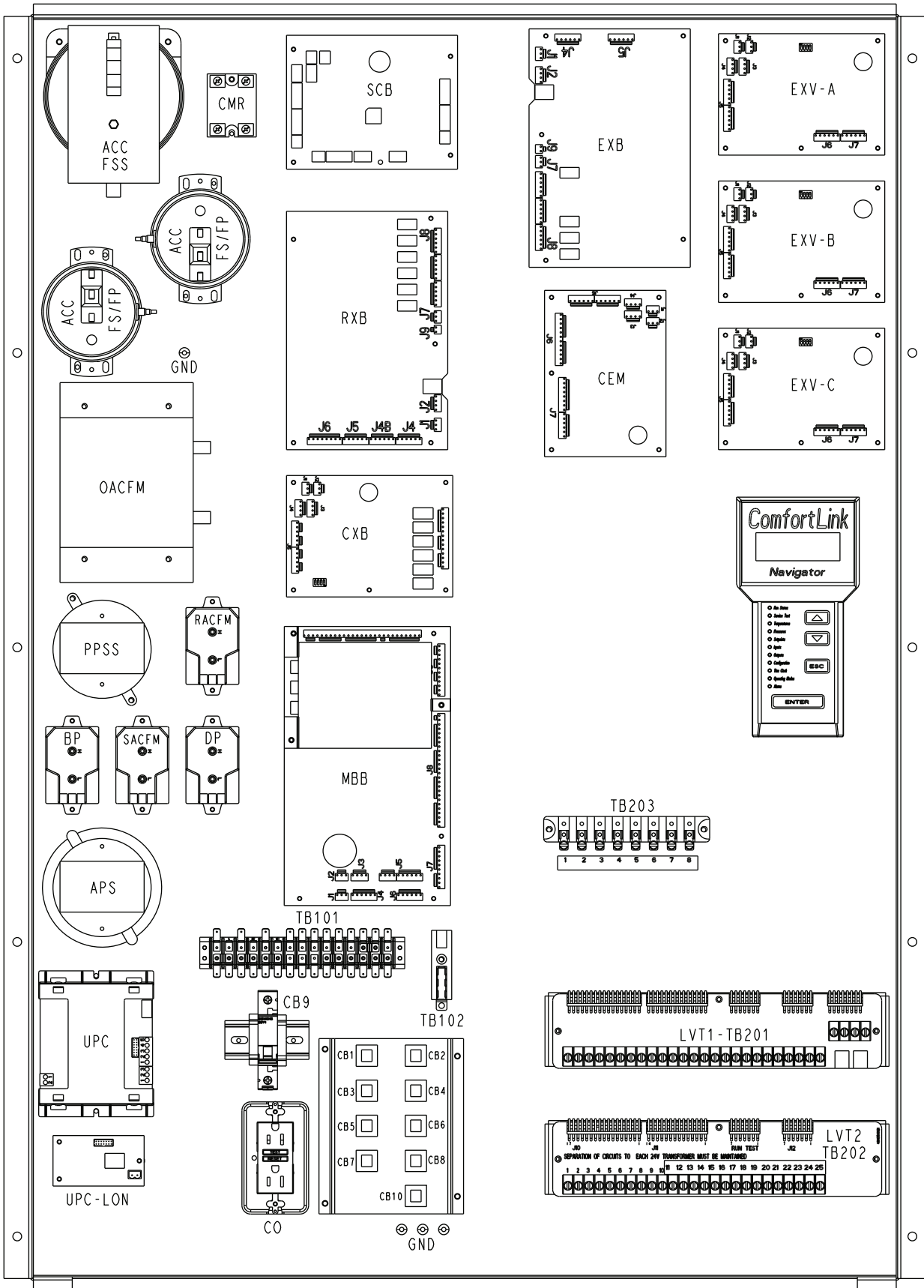


Fig. 2 — Main Control Box

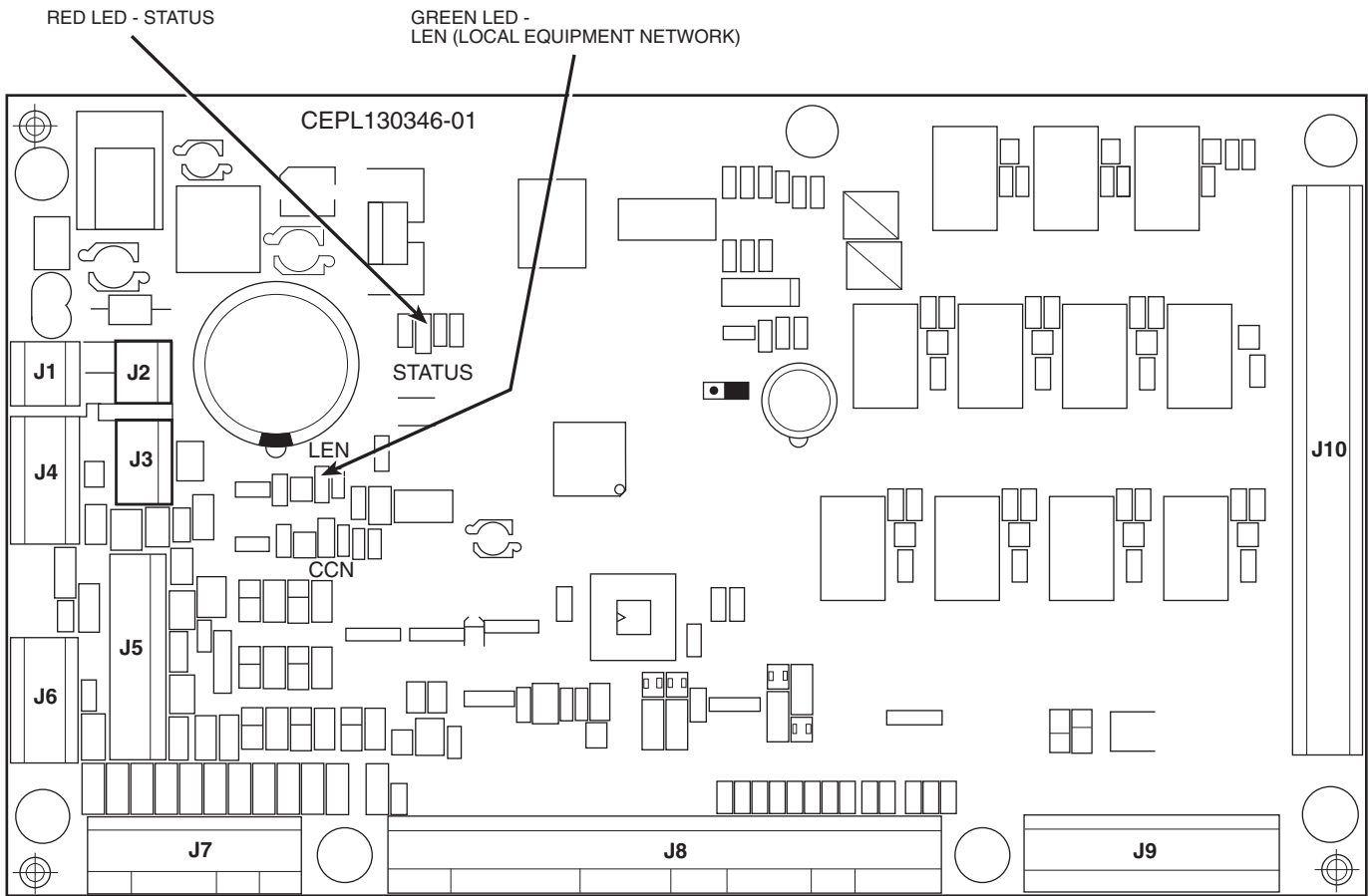


Fig. 3 — Main Base Board (MBB)

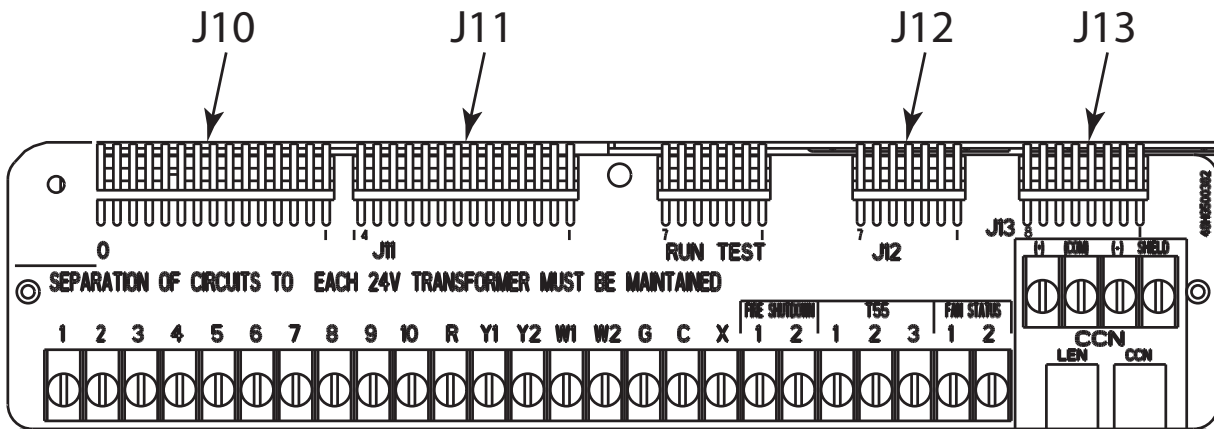


Fig. 4 — Terminal Board Details (TB-202)