

Instructions for Site Installation and Commissioning

Overview

1. Briefing/Teamed Training/Technical Assistance: Technicians who have not installed PACE+PACE Cloud will be briefed on operation and installation, either in person, via Webinar or tele-training. Training will include instructions on installation, documentation, closeout, and contacting technical support.
2. About Installing the PACE4 Suite: The PACE4 module installs within the low voltage control lines, and using adaptive software, periodically simulates a thermostat-satisfied signal to compressor/fan and burner elements while maintaining the OEM sequence of operation and blower/fan operation for cooling, to improve heat transfer during either cooling or heating. Equipment run time is reduced while cooling and heating is continued, and as with an automobile's engine, the PACE4 module's "hypermiling" software enforces maximum-cycle and anti-short cycling limits. Refer to the help section in the on-screen menu for more details.
3. PACE4 Cloud Connectivity: In addition to standalone offline operation, the PACE4 module can connect to the PACE4 Cloud using either WiFi or Cellular (4G LTE) communication. A single-purpose cellular or WiFi antenna, or a Cellular + WiFi combo antenna will be provided when communication is opted-in by the customer.
 - Cellular: In this configuration, the PACE4 module uses the integrated cellular radio for communication, without the need for an additional device.
 - WiFi: In this configuration, all PACE4 modules at a site connect via WiFi, to a central WiFi to internet gateway, which in turn connects to PACE4 Cloud.

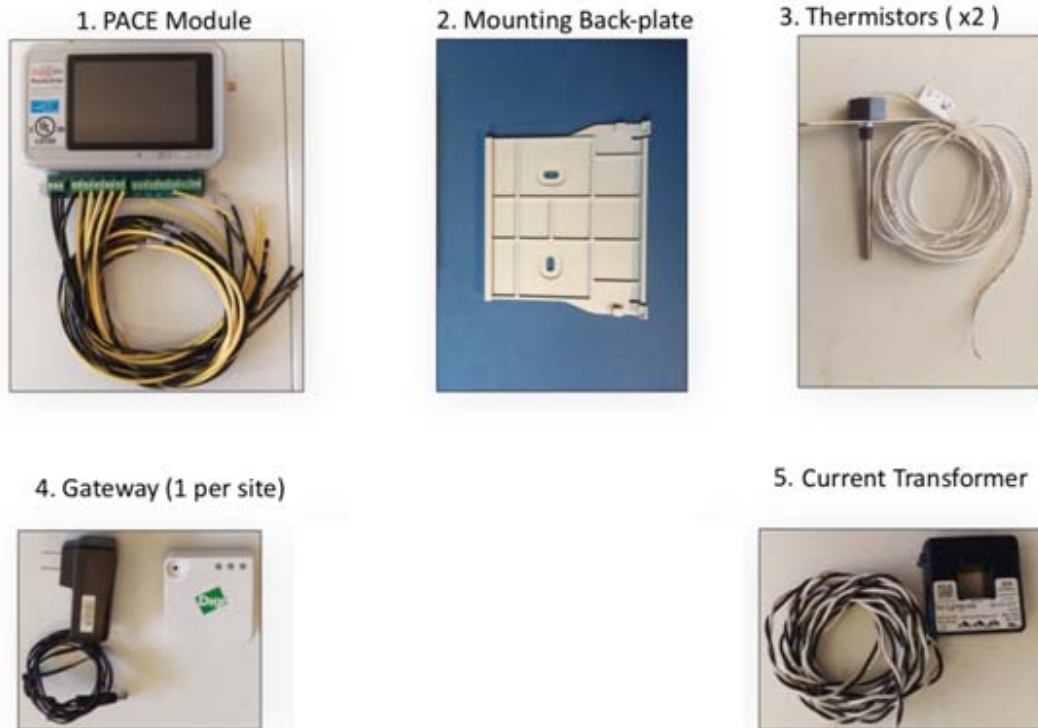
Features added with PACE4 Cloud connectivity include the ability to:

- Participate in Automated Demand Response programs
- Bypass and program PACE4 modules remotely
- Remote monitoring of:
 - Thermostat signals
 - PACE4 state
 - Supply, return and other temperatures dependent on thermistors installed

o Energy consumption and savings

(The connection method must be configured using the on-screen options on the device. Refer to the document “Project Specific Guidelines” to determine means of communication)

4. Components: The following components are included in typical PACE4 installations. Their purpose and other details shall be covered during training.



Summary of Steps

1. Initial HVAC Data/HVAC Survey: A goal of the project is to complete, for each site, a 100% HVAC site survey providing the manufacturer, model number, equipment condition notes, and retrofits installed. A Web link utility to assist in this survey will be provided to you. The Web link is to a site with pull-down menus to allow anyone with an Internet-connected mobile device (phone, tablet, laptop) to enter site HVAC data and condition notes, and upload it to a database for the customer to review. The link below is to the Web link:

2. Mounting the hardware: The PACE4 module can be mounted inside the control cabinet of the HVAC unit, using the provided back plate. Screw the back-plate at an appropriate spot inside the cabinet. Slide the PACE4 module into the top lip of the back plate, and snap the bottom into the 2 clips at the bottom of the back plate.

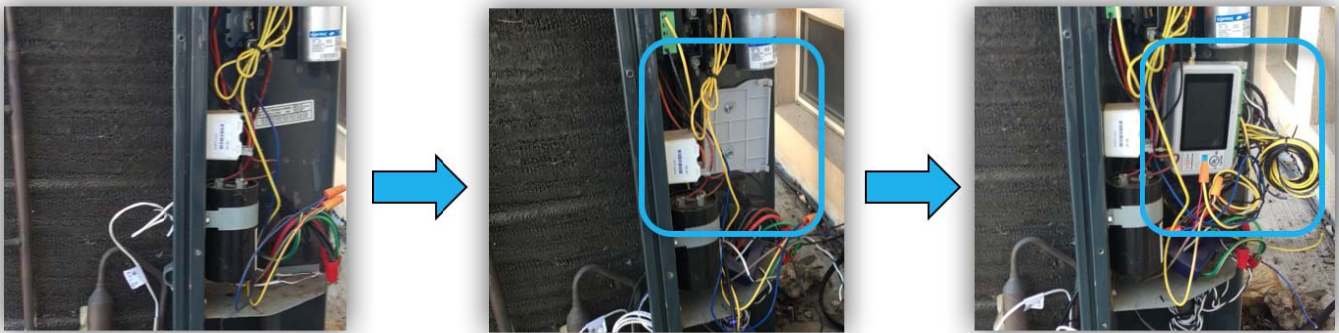


Figure 1. Mounting the PACE44

3. PACE4 Node Installation: Assess the HVAC unit schematics and controls and instructions provided during the training to determine a suitable Interception point for the PACE4 Node. Refer to terminal labels while wiring the PACE44 to the HVAC controls. Use an on-board 24 V AC/DC source to power the PACE44. If a 24 V source is not available, the provided power adapter may be used instead.

4. Installing Other Components: Typical PACE4 installations require the installation of supply and return air temperature sensors, a current transformer & a thermal switch (referred to as extend sensor). For communication, an antenna must be attached to the PACE4 module, and mounted on the outside of the HVAC cabinet (See Figure 2.). Step-by-step instructions in the section below provide detailed instructions.

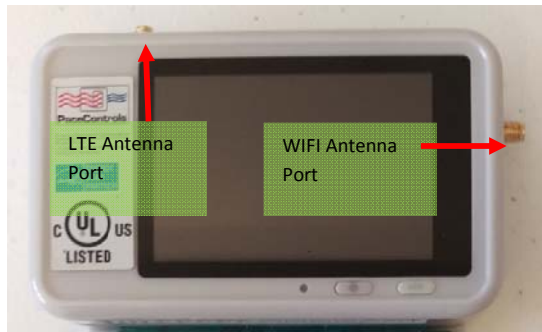


Figure 2. Antenna mounted on an HVAC unit

5. PACE4 Configuration: PACE4 modules are equipped with an LCD touchscreen to allow configuration. Once powered-up, configure the PACE4 node using the on-screen instructions. Configuration steps include entering the HVAC unit type, location serviced, nameplate data, and other parameters to tweak the algorithm behavior.
6. Site Access/Site Closeout: Please follow procedures outlined by client project staff for site access, and use only the contact information provided. Follow instructions on the HVAC survey web link or as designated for project site closeout, with signatures obtained per direction of the client project staff or PACE4Controls.
7. Hardware Inventory/Inventory Control: Installing technicians should refer to packing lists and other inventory documentation provided. At the end of each project day, technicians should e-mail PACE4Controls at techgroup@PACE4controls.com to report remaining inventory and make requests for additional inventory, based upon current work plans.

FCC Statement

§ 15.19 Labeling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

§ 15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.