

Phoenix Controls Portal device is used to visualize data from critical environments using Phoenix Controls airflow control systems, sensors, and monitors as well as third party systems over BACnet® IP.

The Portal collects data from the Phoenix Controls MicroServer™ or MacroServer™ via BACnet or directly from a BACnet MS/TP network, then pushes web pages in the form of dashboards to a web browser. The dashboards are readily available from any computer with access to the building network via a browser or can be embedded as hyper-links within the BAS graphics.

The Portal offers standard dashboard pages for energy management, safety, compliance monitoring, equipment maintenance, and diagnostics.

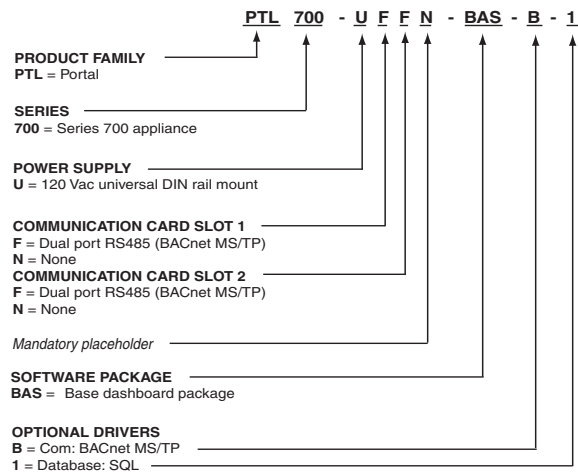
The dashboards can be used as is or customized by the user so only individually pertinent information is shown. Dashboards display real-time data via gadgets such as gauges and indicators as well as short-term historical data in trend displays.

FEATURES

- Standard HTML5 web pages for energy management, safety monitoring, and equipment maintenance.
- Can display up to 500 dashboard points.
- Displays real-time as well as short-term, rolling historical data.
- Ability to push data to customer's Microsoft® SQL database for long-term archiving.
- Non-invasive, flexible installation with existing or new integrations.
- Supports visualization of third party BACnet devices.
- Integrates with BACnet IP or BACnet Ethernet with options for BACnet MS/TP.
- Supports standard Niagara objects and feature set components.
- Rechargeable internal NIMH battery backup, for short term power fail events.
- Mounting options - DIN rail mounting or panel mounting using tabs on unit base.
- Role-based access and security.



ORDERING GUIDE



- Notes:
1. Each communication Card Slot can connect up to two Phoenix Controls BACnet MS/TP trunks via a dual, optically-isolated, RS-485 adapter with two 3-position connector plugs. A trunk is limited to a maximum of 50 BACnet Traccel or Theris valve controllers or 4,000 feet.
 2. Com Slot 1 requires Optional Driver B.
 3. Communication Card Slot 2 can only be F if Communication Card Slot 1 is also F.
 4. Optional Driver B is required when the single built-in MS/TP port is used and when any optional dual port RS-485 communication cards are used.
 5. Optional Driver 1 is required for long-term archiving to push data to the customer's SQL database.
 6. A universal power supply module (left side in the above picture) is provided standard with each PTL700.

TABLE OF CONTENTS

Specifications.....2
 Applications.....3
 Installation5
 Wiring.....7
 Maintenance.....9
 Spare Parts.....9
 Troubleshooting.....9

SPECIFICATIONS

Microprocessor

652 MHz 440Epx Power PC processor

Operating System

Niagara^{AX}® release 3.7 or higher running on embedded QNX OS

Memory

- Base unit - 1 GB DDR-2 333 MHz RAM
- 512 MB NAND flash memory on board for database storage, trend storage, and system software

Communications

- Two 1-gigabit Ethernet ports
- One built-in RS-485 port for BACnet MS/TP communications
- Two optional communication slots - support for up to four more RS-485 BACnet MS/TP communication ports
- One RS-232 port
- Supports SSL communications

Power

- 90 - 263 Vac, 50/60 Hz to the universal power supply module (PHX-NPB-PWR-UN) which provides 15 Vdc at 20 watts max to the Portal
- Internal battery backup for system database save after power failure, plus maintenance of real-time clock for up to one year
- Connection for optional external, re-chargeable 12 V sealed lead-acid battery for continuous system operation over longer power outages - provides trickle charge and monitoring support to *customer-supplied battery*

Operating Temperature Range

32 - 122 F (0 - 50 C)

Storage Temperature Range

32 - 158 F (0 - 70 C)

Operating Humidity Range

0-90% RH, non-condensing (for electronics)

Chassis

- Molded plastic enclosure
- DIN rail or screw mounted
- Cooling: internal air convection

Dimensions

Including power supply module: approximately 12" wide X 6" high X 2 5/8" tall (304.80 mm wide X 152.40 mm high X 66.68 mm tall)

Approximate Weight:

Including power supply module:

- Net: 5 lbs. (2.3 kg)
- Gross: 6.5 lbs. (2.9 kg)

Agency Listings:

- UL 916
- C-UL listed to Canadian Standards Association (CSA)
- C22.2 No. 205-M1983 "Signal Equipment"
- CE
- FCC part 15 Class A.
- RoHS compliant
- BTL B-BC listed

HTML5 Web Browsers

Dashboards require:

- Internet Explorer® 9.0 or later
- Chrome 24.0 or later
- Firefox® 18.0 or later
- Safari 5.1.7 for Windows® or later

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Niagara^{AX} is a trademark of Tridium, Inc.
Powered by Niagara is a trademark of Tridium, Inc.

APPLICATIONS

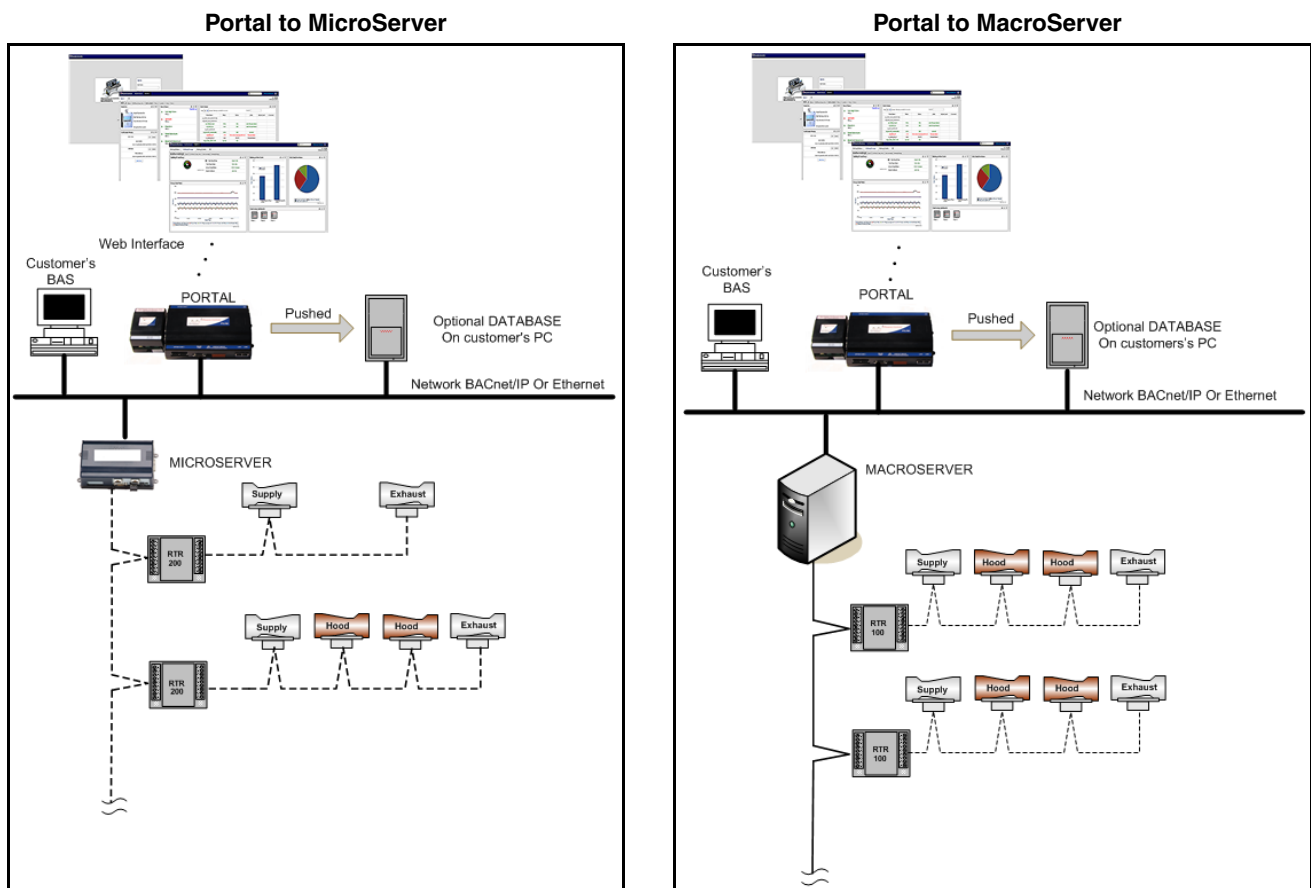
The Phoenix Controls Portal is a web server that provides the engine for visualizing and controlling Phoenix Controls equipment via web browsers supporting HTML5. User-friendly dashboards served by the Portal provide device feedback, limited short term trend data, alarms, system health, scheduling, and control functions. The Portal also supports trend log and historical data pushes through a SQL driver to a database on the customer's computer.

To visualize Phoenix Controls devices, the Portal must be used in conjunction with Phoenix Controls MicroServers, MacroServers, or with a Phoenix Controls BACnet MS/TP system. In addition, the Portal has the ability to pull in any third party information that is on the BACnet network in a building (with proper permissions from the IT department and/or BAS vendor). Data is displayed on the dashboard using a library of base graphics representing Phoenix Controls room applications or a wide range of blank, customizable templates (gadgets). The Portal also supports multiple users; each user can customize the base graphics as well as build their own *My Dashboards*.

The Portal is configured with Phoenix Controls Workbench. Since the Portal runs on the Tridium® Niagara Framework®, all the features of the Niagara^{AX} JACE® platform are also available.

Used with Phoenix Controls MicroServer or MacroServer

The Portal is connected to the same IP or Ethernet subnet as the Servers or through BBMD and pulls data over the LAN via BACnet IP or Ethernet (depending on how the server was configured).



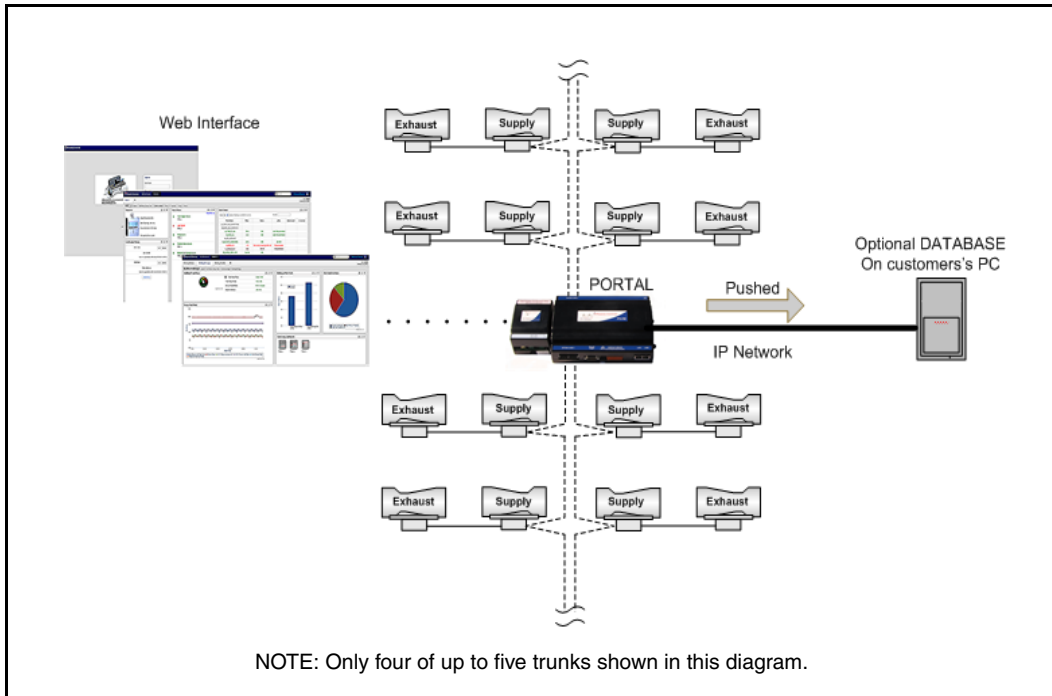
The Portal can support 500 points. Phoenix Controls Celeris devices are visualized in the Portal via a smart import wizard. Any points available for monitoring and control from the Server are available on the graphical dashboards.

- Points available from the Server that may not have been added to the BAS during startup can easily be added to the Portal dashboards.
- Additional non-Phoenix BACnet points can be added for monitoring and control through standard Niagara^{AX} discovery functions.

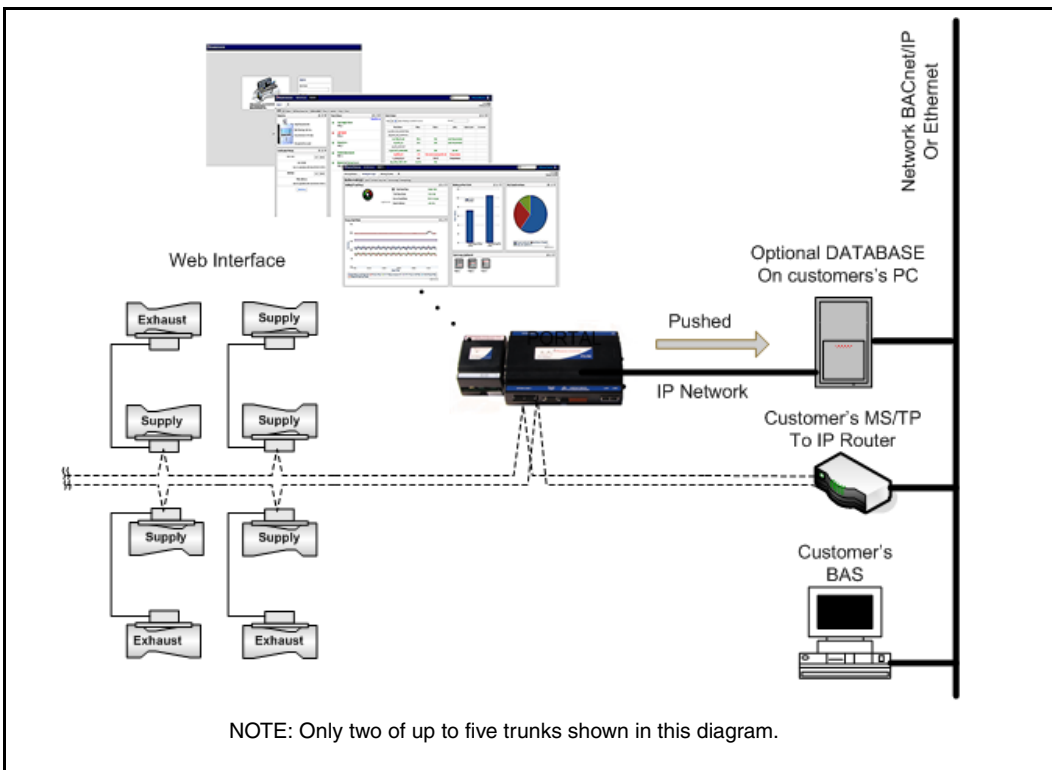
Used with Phoenix Controls BACnet MS/TP Devices

The Portal can sit on up to five BACnet MS/TP trunks with the Phoenix Controls devices.

Stand-alone MS/TP Network to Portal



MS/TP Network to Portal & Building Network



- The Phoenix Controls BACnet MS/TP devices can be integrated into the Portal dashboards via point mapping templates.
- Additional non-Phoenix BACnet MS/TP points can be integrated through standard Niagara^{AX} discovery functions.

INSTALLATION

The Phoenix Controls Portal can be wall or panel mounted using a DIN rail or screws. DIN rail or screws provided by others. Locate the Portal near a viable Ethernet connection. Allow enough space to access the LAN and option card connections.

If mounting in an enclosure, the enclosure should be able to dissipate 20 Watts from this device plus any other devices in the same enclosure to maintain operating range.

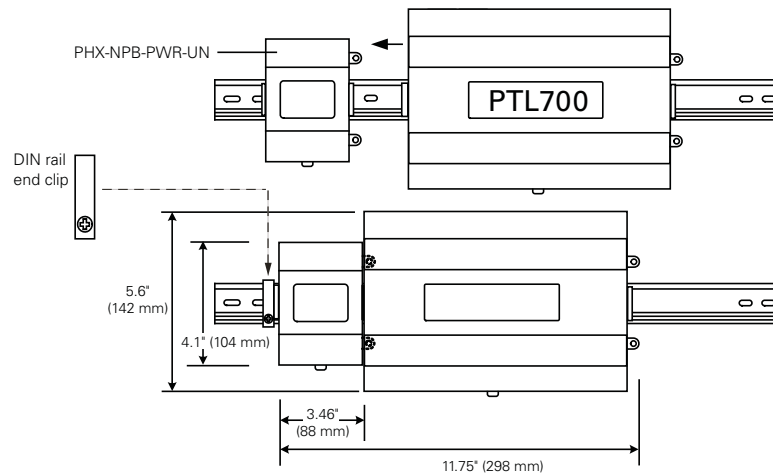
Mounting the Portal on a DIN Rail (preferred method)

1. Securely install the DIN rail using at least two screws, one on each end.
2. Position the PHX-NPB-PWR-UN module on the rail.
3. Use a screwdriver to pry down the plastic locking clip and push down and in on the module to force the locking clip to snap over the other edge of the DIN rail.
4. Mount the PTL700 on the DIN rail in the same manner.
5. Slide the two units together along the DIN rail to connect their 6-pin connectors.
6. To keep the final assembly together, secure at both ends with DIN rail end-clips provided by the DIN rail vendor; or screws if the end clip interferes with 6-position end connector.

IMPORTANT:

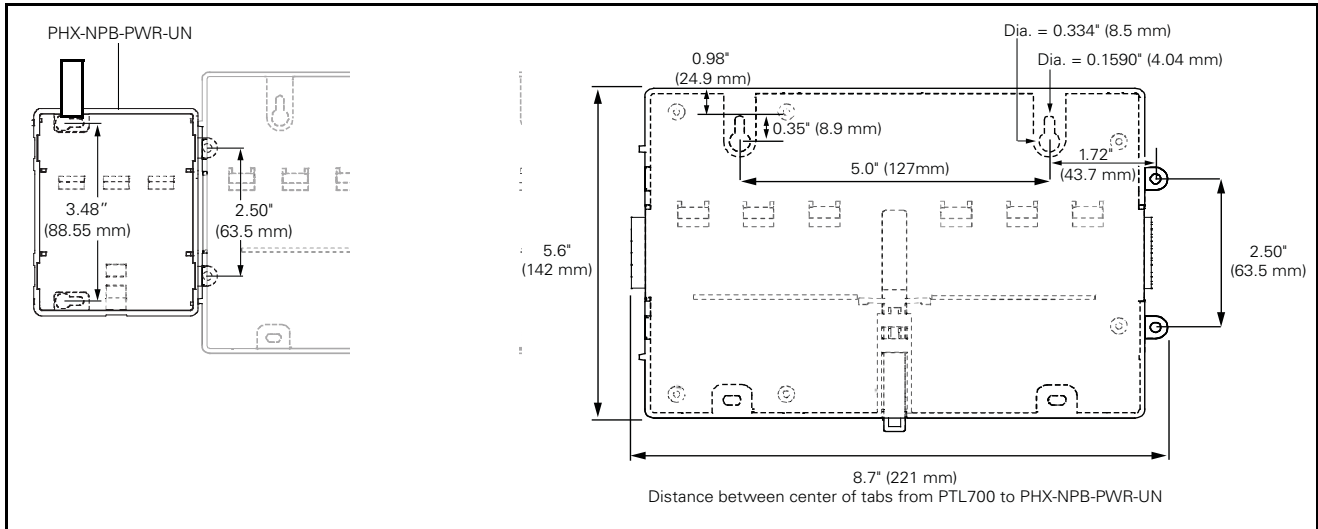
Place the Portal where it will be protected from:

- Direct sunlight, rain or moisture
- Corrosive gases/liquids or explosive vapors
- Vibration or shock
- Extreme temperatures
- Airborne dust or metallic particles
- Electrical noise



Mounting the Portal with Screws

If DIN rail mounting is impractical, use the screw tabs and #6 or M4 size screws. Mounting tab dimensions shown in the following diagrams *are not* to scale.

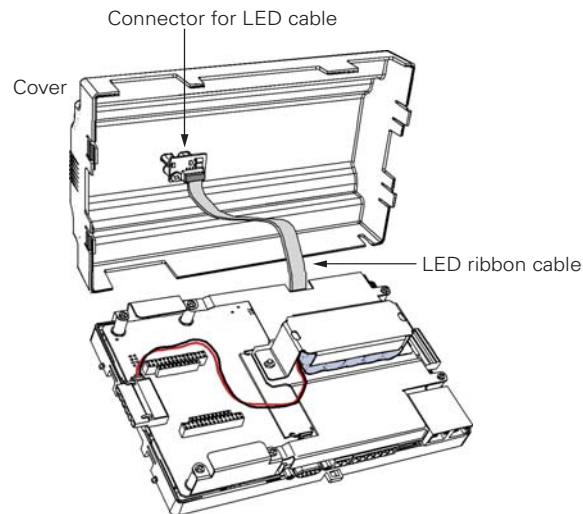


Removing and Replacing the Cover

The PTL700's cover must be removed to connect the NiMH back-up battery pack on new units and to replace it over time.

NOTE: The NiMH battery pack used in this device may present a risk of fire or chemical burn if mistreated. Do not disassemble, heat above 122 F (50 C), or incinerate.

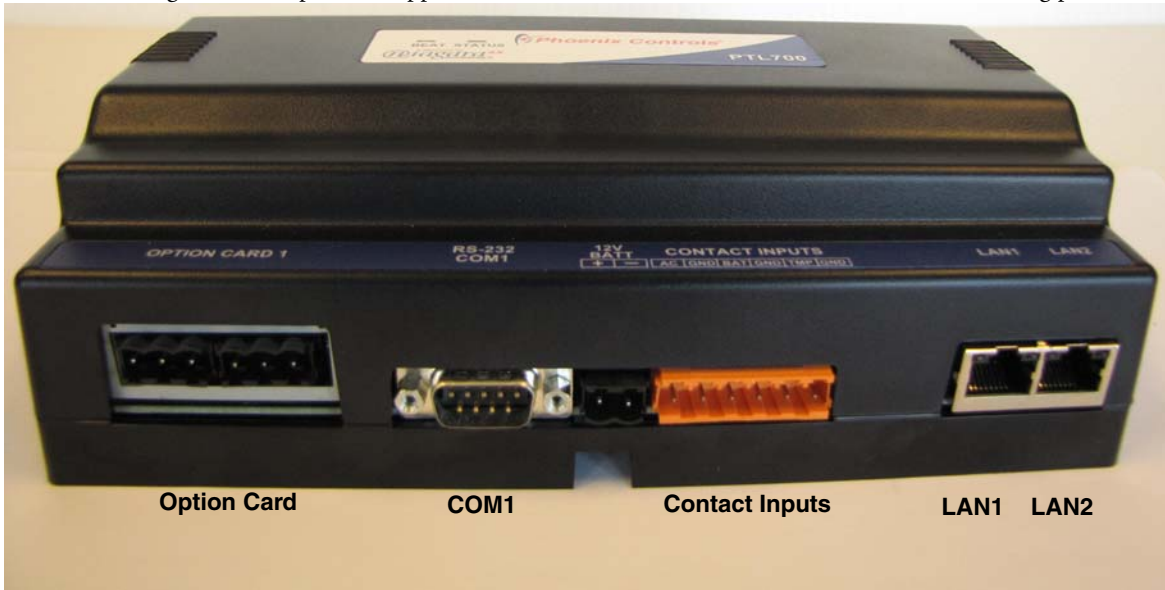
The cover snaps onto the base via four plastic end tabs - two on each end. Slide the PHX-NPB-PWR-UN module away from the Portal to access its four cover tabs. Unplug the LED cable from the cover at the connector on back of the cover.



CAUTION: An LED ribbon cable connects the cover to the main board. Be careful when lifting the cover off.

WIRING

Refer to the network diagrams in the previous Applications section and the connector locations in the following picture.



Overview

Make electrical connections in the following order using the detailed instructions that follow.

1. Connect the communications cable.
2. Verify the backup battery in the Portal is connected.
3. Apply power to the unit.

Phoenix Controls Wiring Recommendations

- Use cables recommended by Phoenix Controls.
- Follow good wiring practices:
 - Do not run the signal cable in the same conduit or wireway as the power cables.
 - If the signal cable must cross power cables, it is best to do so at a 90-degree angle.
 - Shield or drain wires, if required, should be wrapped with insulating tape to prevent contact with exposed conductors or contacts.
 - Prior to connecting cables, provide strain relief for them to prevent damage to the controller.
 - Maintain a consistent color code or polarity all the way through the wiring system.
 - Local and national electrical codes take precedence.

For BACnet Communications

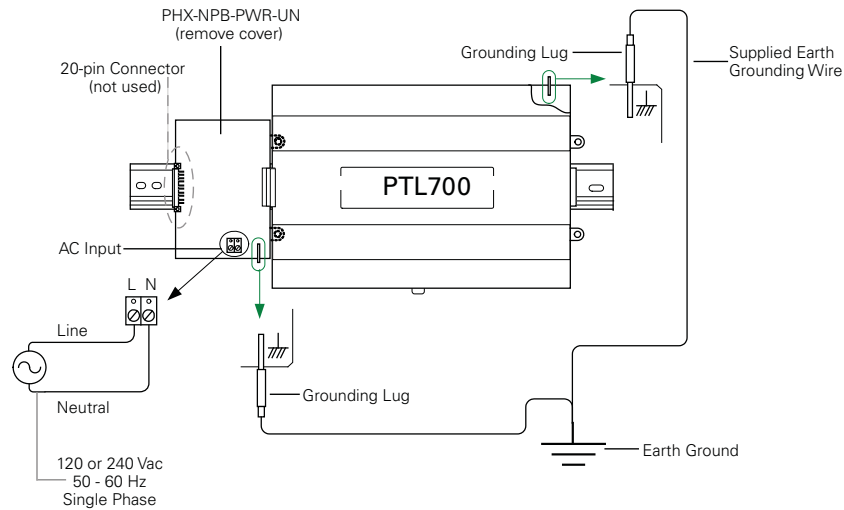
- Connect one end of the BACnet/Ethernet (CAT-5) cable to the LAN1 RJ-45 connector on the bottom of the Portal.
- Connect the other end of the CAT-5 cable to any available building Ethernet connection or hub.
- The network cable connecting the Portal to the network may not exceed 328 feet (100 meters).

For BACnet MS/TP

Refer to the Phoenix Controls project wiring diagrams for proper cable and connections.

Grounding and Power Wiring

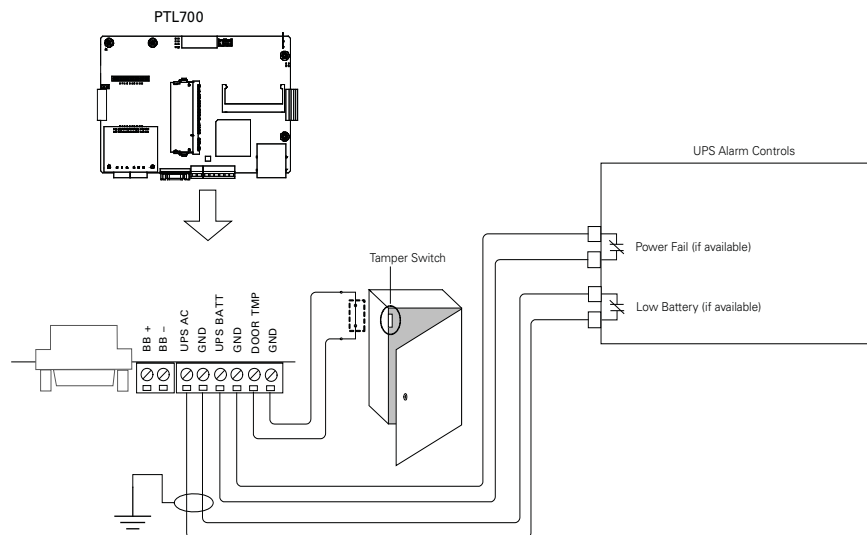
1. Remove power from the AC circuit being wired to the PHX-NPB-PWR-UN.
2. Remove the PHX-NPB-PWR-UN cover.
3. Connect the two supplied earth grounding wires from the earth ground spade lugs on the PTL700 and PHX-NPB-PWR-UN to a nearby earth ground, keeping these wires as short as possible (see following diagram).
4. Make the line and neutral connections to the L and N terminals on the PHX-NPB-PWR-UN (see following diagram).
5. Replace the cover on the PHX-NPB-PWR-UN.
6. **DO NOT** apply power to the PHX-NPB-PWR-UN AC power circuit until ready to commission the Portal.



CAUTION: The Portal does not have an On/Off switch. Applying or removing AC power serves as the means to power or un-power the device. To completely power down the PTL700 after the AC power has been removed, the internal battery pack must be unplugged.

Optional Connections

- A 2-position connector provides support for an external 12 V sealed lead-acid rechargeable battery provided by others (see BB+ and BB- in the following diagram).
- Three contact inputs are available to monitor normally-closed (N.C.) alarm contacts from a UPS or door tamper switch of a nearby enclosure.



MAINTENANCE

When properly installed, the Portal does not require preventative or scheduled maintenance other than periodic replacement of the NiMH battery. If the Portal is installed in a conditions space, this battery should provide dependable service for approximately three years (average). In an environment where the operating temperature is higher (122 F or 50 C), the battery is expected to last approximately one year.

SPARE PARTS

Part Number	Description
PRT-PTL-BATT	Replacement NiMH battery pack for PTL700
PRT-PTL-PWR	Replacement power supply
PRT-PTL-2X-485	Dual port RS-485 card (BACnet MS/TP)
DRV-PTL-DB-SQL	SQL database driver, <i>see Notes 1 and 2</i>
DRV-PTL-CM-MSTP	MS/TP communications driver, <i>see Note 1</i>
NOTES: 1. Contact Phoenix Controls Applications Engineering to associate this driver with the specific PTL700 Host ID. 2. Requires DRV-PTL-CM-MSTP be licensed on the PTL700.	

TROUBLESHOOTING

Status LEDs on the Portal provide information for the functional and communications status of the unit.

LED	Description
Status	The front-cover green Status LED should remain lit whenever the Portal is powered on or blinking during the boot sequence. If the Status LED does not light while power is applied, contact Phoenix Controls Product Support for assistance.
Beat	After the boot sequence has finished, the front-cover yellow Beat LED should start blinking at an ~1 Hz rate. Typically, this occurs about 30 seconds after power has been applied. If the Beat LED stays on constantly, does not light, or blinks very fast (more than once per second), contact Phoenix Controls Product Support for assistance.
Ethernet Ports	The LAN1 and LAN2 Ethernet ports each have two LEDs visible on the back of the LAN connector housing under the cover. Left-side green LEDs indicate activity on the port as follows: Off - no Ethernet link is made On - Ethernet link is present, but no activity on the LAN Blinking - Ethernet link is present with data activity on the LAN Right-side yellow LEDs indicate Ethernet connection speed: Off - Fast Ethernet or Ethernet (100 Mbps or 10 Mbps) On - Gigabit Ethernet (1000 Mbps)