PTS 9042x Series
Small Cell AC Power Distribution Load Center

INSTALLATION GUIDE

SAP# 33364 T-Mobile PTS90420-3-7777##-P-0

Compact Small Cell Power box
30AMP main, Single SPD (L-G), 4 x 7 AMP load breakers
No External AC Disconnect Switch

SAP# 33365 T-Mobile PTS90422-3-7777##-P-8

Compact Small Cell Power box
30AMP main, Single SPD (L-G), 4 x 7 AMP load breakers
Integrated External AC Disconnect Switch

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PTS 9042x Series Small Cell AC Power Distribution Load Centers Installation Guide

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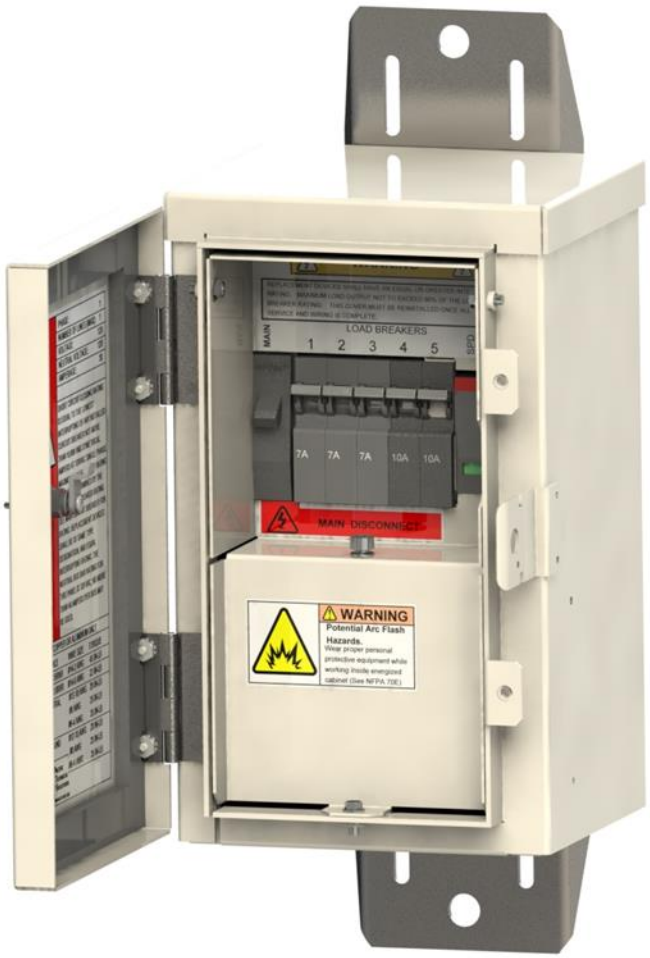
1.0 Model Overview

The PTS9042x Series of Small Cell AC Power Distribution Load Centers with optional External Disconnect Switch provides a custom factory fully assembled load center for Small Cell and CRAN deployments. The PTS9042x Series products conform to UL standards.

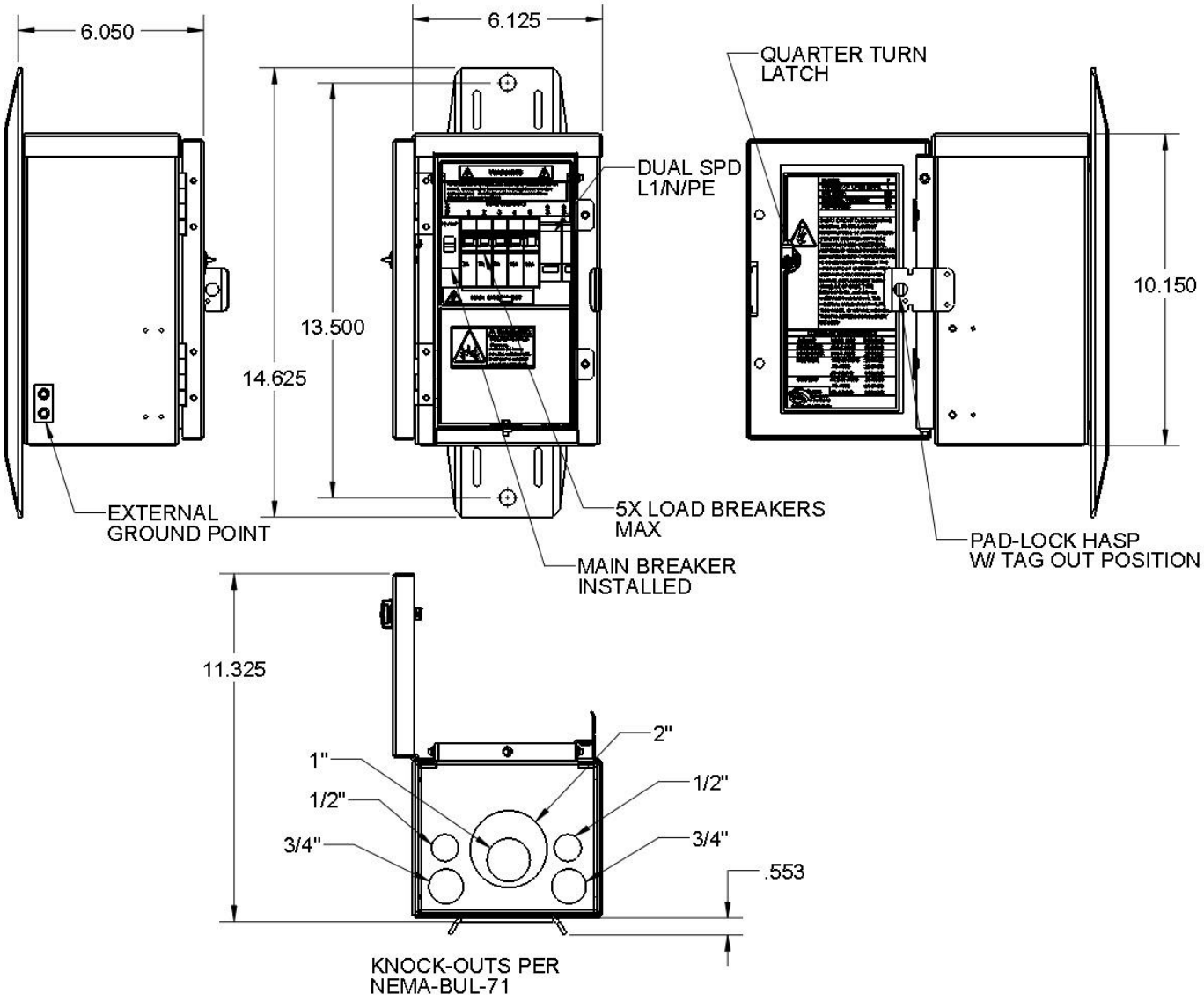
PTS90420 – Small Cell AC Power Distribution Load Center



PTS90422 – Small Cell AC Power Distribution Load Center with External Disconnect

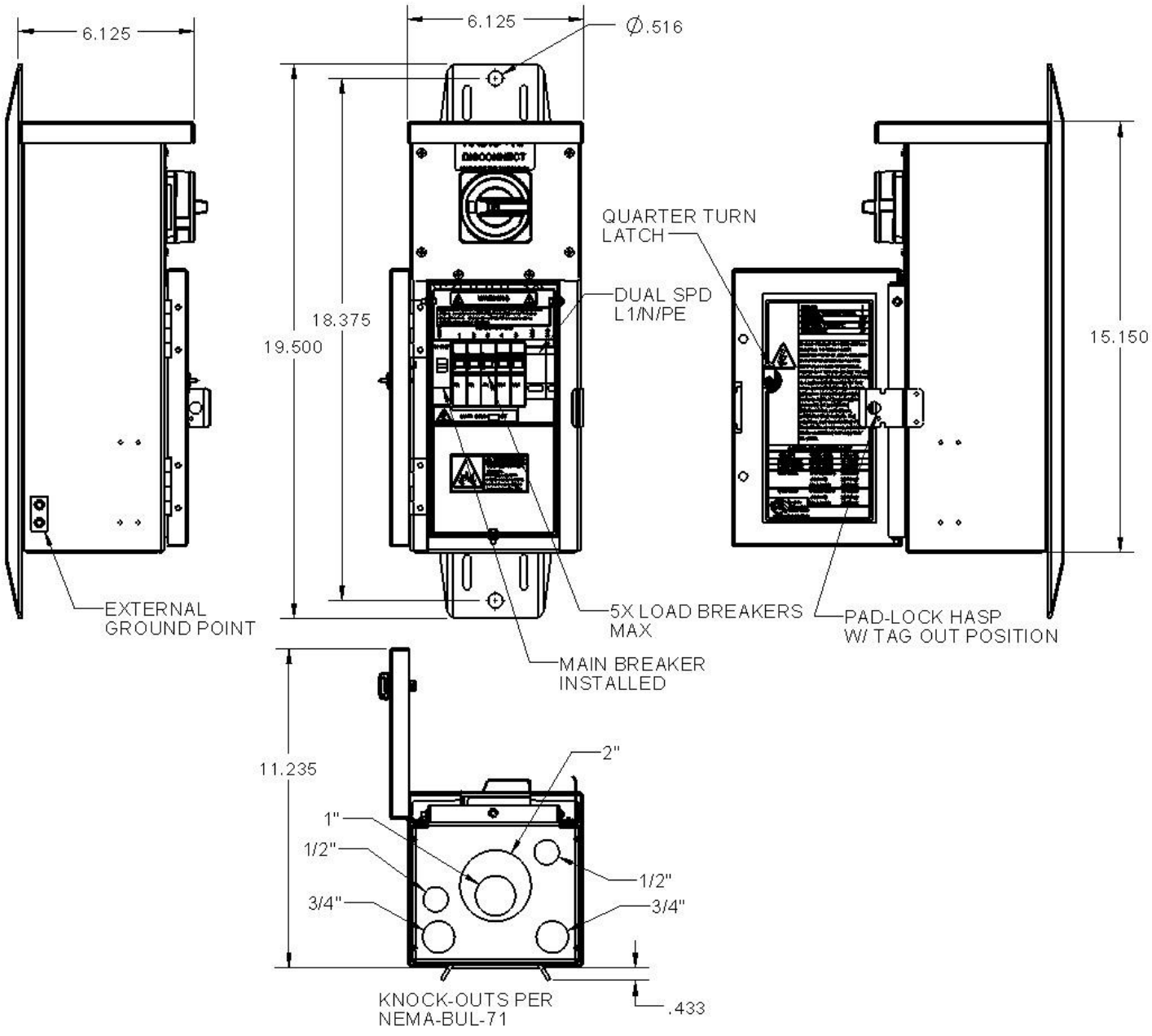
Figure 1: Dimensional Drawings

PTS90420 Outline Drawing



Caution: Installation shall be completed per all NEC and Local Codes. Do not install PTS9042x Systems before reading and understanding all specifications and installation guides provided. Installation should be performed by a qualified installer.

PTS90422 Outline Drawing



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1.1 Specifications

Electrical	
Operating Voltage	120VAC
Main Breaker	40Amp MAX
Distribution Breakers	Max of (6) UL489 Breakers 0-20Amp
Power Input Wire Size	#14 - #2 awg Cu - Al
Power Output Wire Size	#20 - #2 awg Cu - Al
Neutral and Ground Contacts	#14 - #4 awg Cu - Al
Rated Conditional Short	10kAIC
SPD, Dual MOV (L-G)	20Ka 8/20us Nominal
External Ground Connection	2-hole ¼-20 w/ 5/8" spacing
22 Series External Disconnect Switch Rating	80 Amp Standard

Physical	
Housing Material	Powder Coated Aluminum
Breaker Access	Thumb knob and lockable hasp
Wire Access, Internal	¼" hex head or #2 Phillip
Housing Dimensions (H x W x D)	(Excludes hasp and bracket)
PTS90420	10.13 x 6.15 x 6.00
PTS90422	15.14 x 6.15 x 6.00
Unit Weight / Shippping Weight	
PTS90420	10lbs / 12lbs
PTS90422	12lbs / 15lbs
Mounting	Supplied Bracket

Environmental	
Operating Temperature	(-40°C) to (60°C)
Relative Humidity	95% Non-Condensing

1.2 Breaker Specifications

Breaker Specifications		
PTS P/N	Description	
PT-KM1N-07A	UL489A DIN rail Breaker, 07 AMP	
PT-KM1N-10A	UL489A DIN rail Breaker, 10 AMP	
PT-KM1N-12A	UL489A DIN rail Breaker, 12 AMP	
PT-KM1N-16A	UL489A DIN rail Breaker, 16 AMP	

Torque Recommendations	
Main QOU Breaker	42-47 in-lbs
Load Breaker	17-22 in-lbs
Surge Protection	17-22 in-lbs
Neutral Block and Bar	24-27 in-lbs
Ground Bar	24-27 in-lbs

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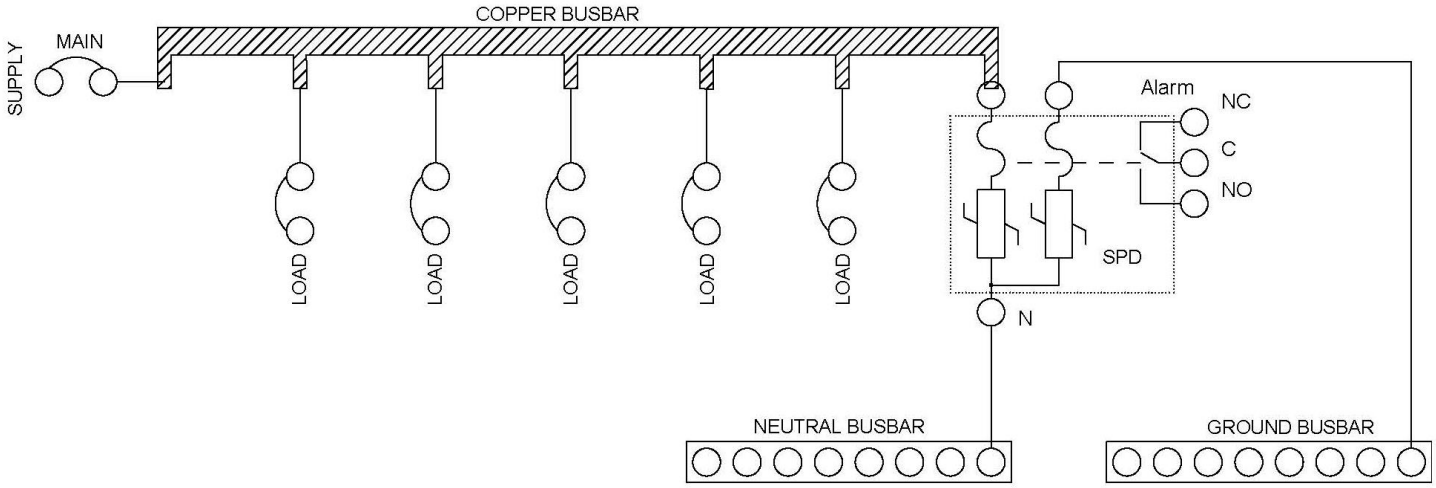
1.3 Wiring Diagrams

PTS90420 Wiring Diagram



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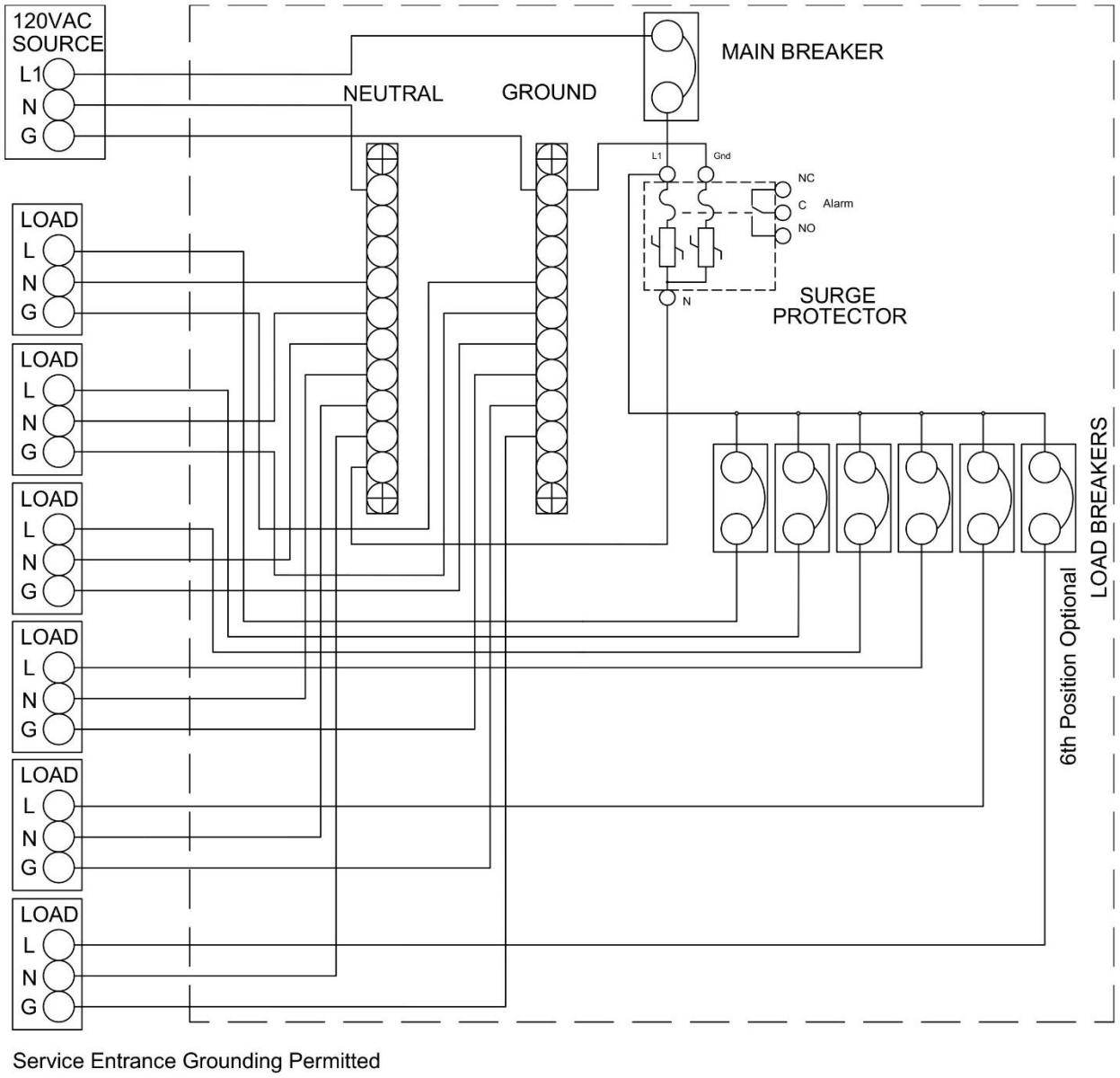
PTS90420 Cabling Diagram



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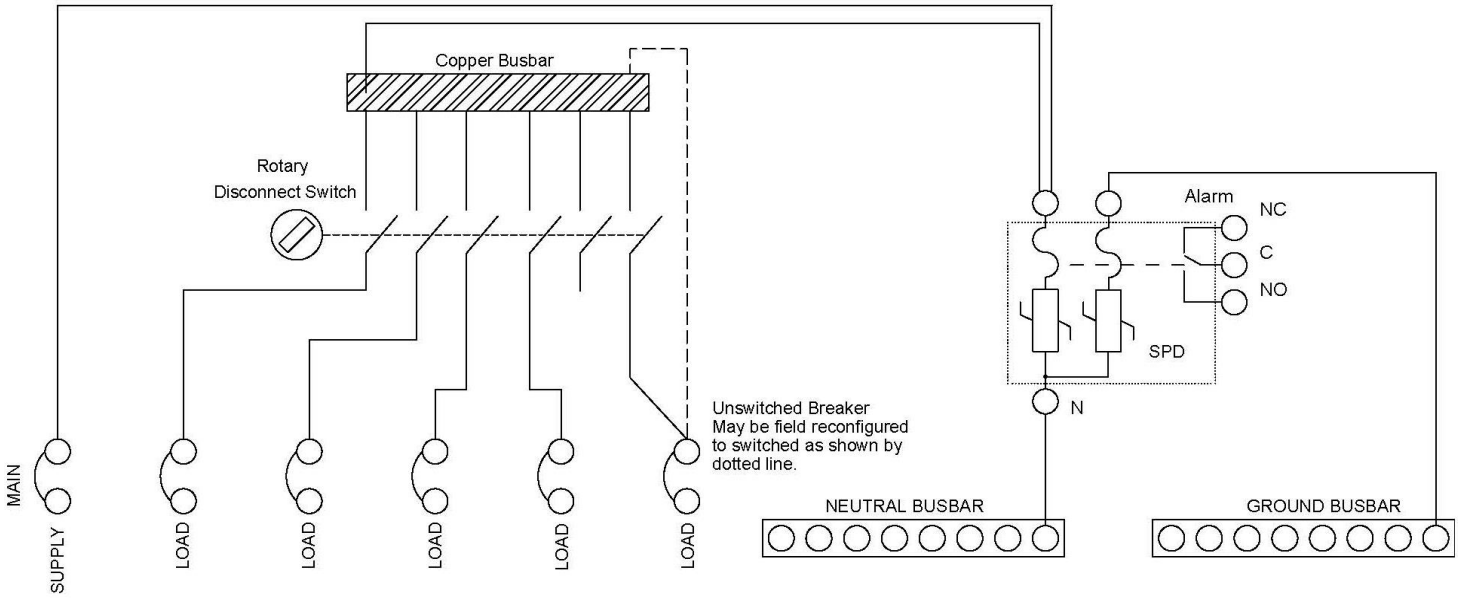
PTS90422 Wiring Diagram



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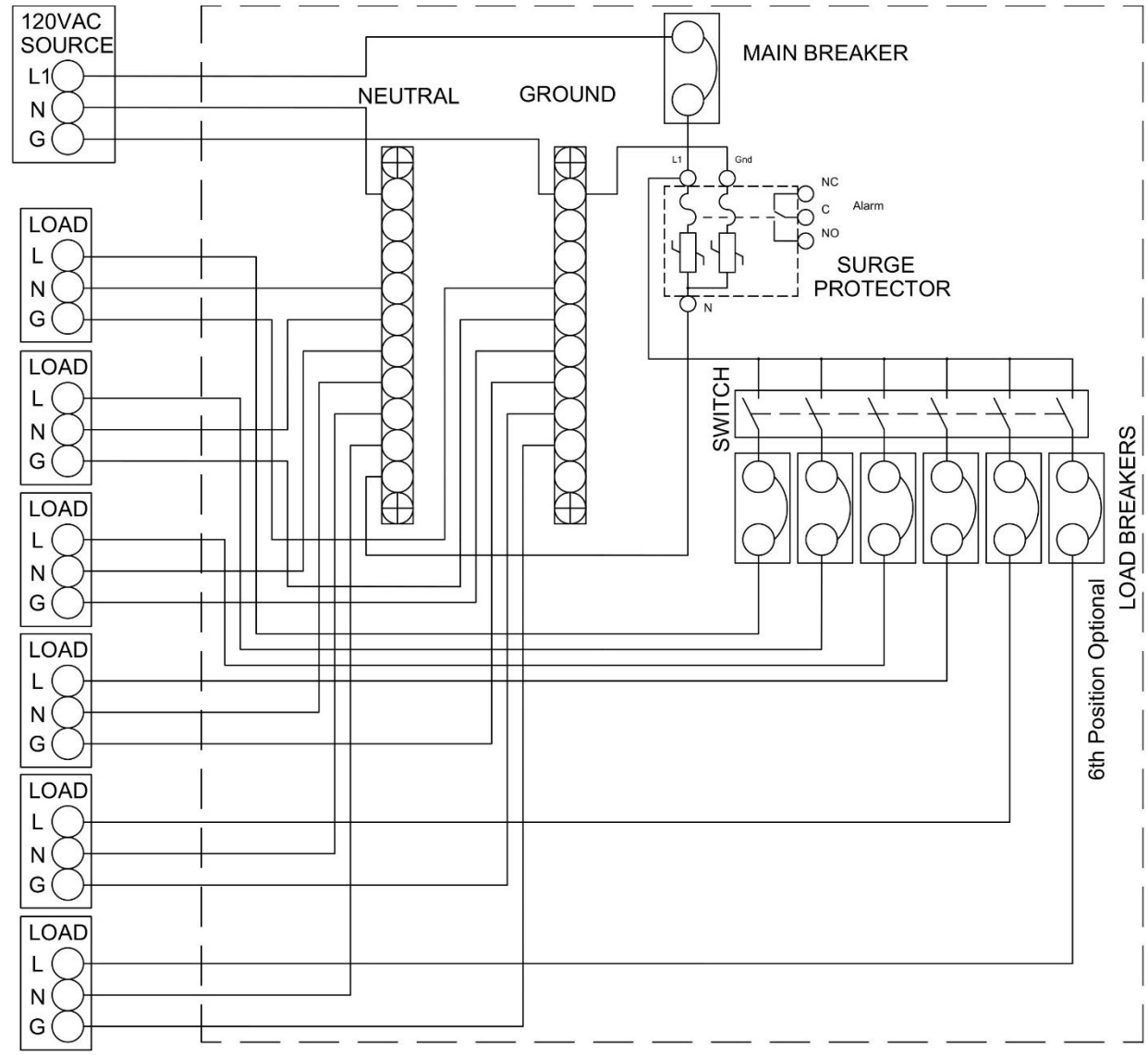

Service Entrance Grounding Permitted

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1.4 Application

The PTS90420 and PTS90422 are compact AC Load Centers designed for Small Cell and CRAN Deployments where distribution of AC power is required.

The PTS9042x Series of compact AC Load Centers can also be used for AC Power Distribution applications where limited space exists, excluding the ability to use a larger load center.

The PTS9042X Series of compact AC Load Centers can also be used as a subtending branch panel when modernizing or expanding existing sites.

The PTS90422 Series includes an external rotary disconnect switch, allowing for the utility, fire safety and first responders to quickly and safely disconnect power.

2.0 Features

The PTS9042x Series of Small Cell AC Load Centers packaged as a custom configuration, ready for install in new and expansion environments.

2.1 Main Breaker

The PTS9042x Systems can support main breaker ampacity up to 40Amps.

2.2 Distribution Breakers

The PTS9042x Systems support upto (6) UL489 Breakers rated from 0-20 Amps.

2.3 Optional Single-SPD or Dual–SPD Protection

The PTS9042x Systems can support either Single SPD (L-G) or Dual SPD (L-N) & (N-G) modules.

2.4 Optional External Disconnect Switch

The PTS90422 Series includes an external rotary disconnect switch rated up to 80 Amp.

3.0 Inspecting and Unpacking of PTS9042x Series Load Centers

3.0.1 Inspection
3.0.2 Inspect the packaging for obvious signs of rough handling and/or external damage.
3.0.3 Review Installation Guide.
3.0.4 Remove from plastic packaging.

(PTS90422 Shown)

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4.0 Installation

The PTS9042x Systems are certified for outdoor installations This section provides installations guidelines to insure the appropriate requirements are met.

4.1 Mounting Bracket

4.1.1 A mounting bracket is included and pre-installed with the enclosure and can be used as a template, or the mounting details below can be used, if preferred.

4.1.2 If mounting bracket is removed, a lock-tite like adhesive should be applied to the screws when replacing.

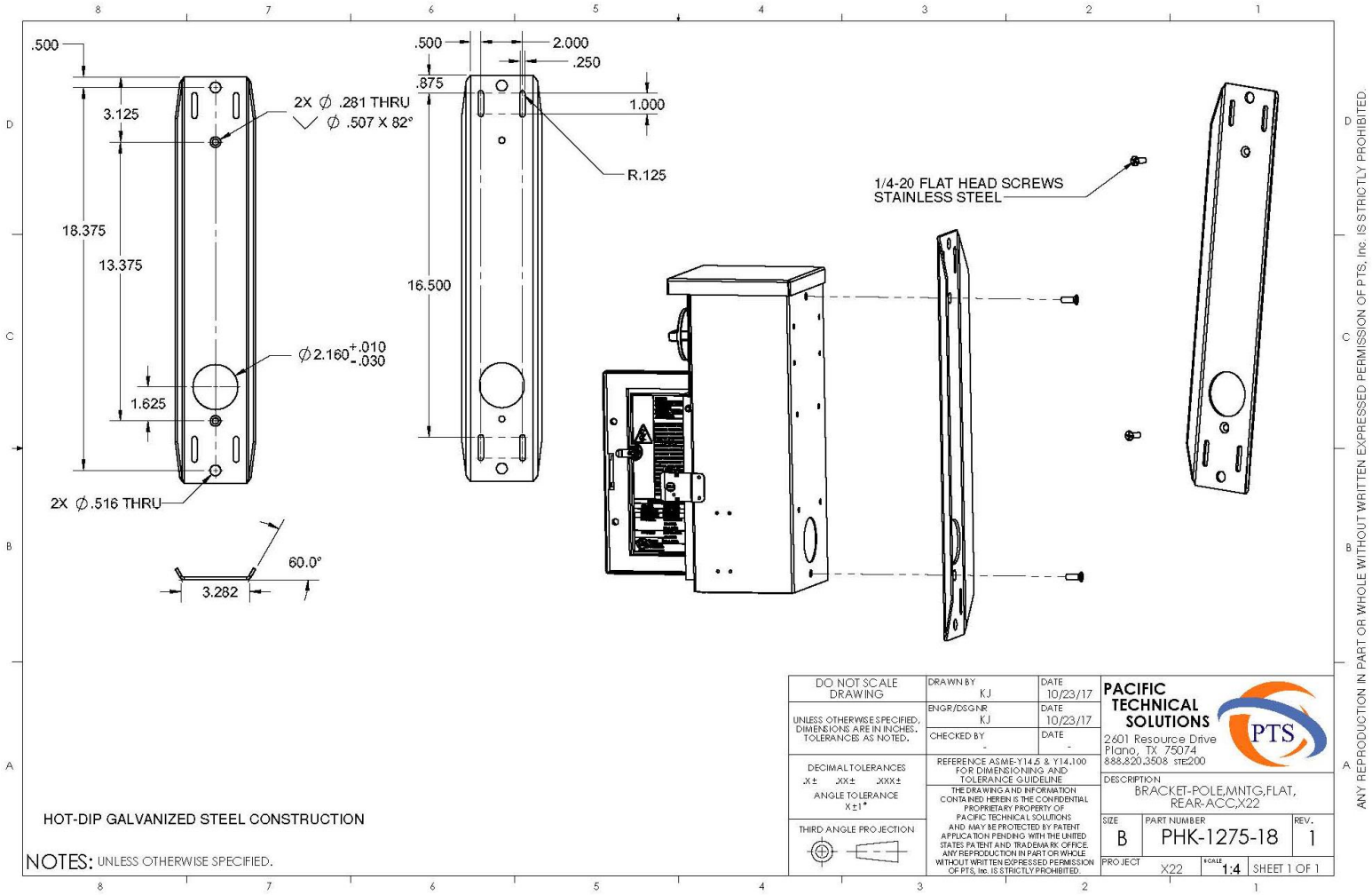

Figure 4: Mounting Bracket Pattern

4.2 Mounting enclosure to Pole, Stanchion or Round Surfaces

4.2.1 Customer is responsible to identify suitable location for mounting
4.2.2 Verify Customer Acceptable mounting requirements by type
4.2.3 Install Pole Straps and tighten per specifications -or -
4.2.4 Mark and drill anchors locations using Fig. 4 or template provided.
4.2.5 Wood Poles should be Lag Bolted or Through Bolted
4.2.6 Fiberglass or Metal pole shall be strap mounted.
4.2.7 Torque to mounting hardware specifications.

Figure 5: Typical Mounting Configuration for enclosure on a Pole, Stanchion or Round Surface

4.3 Mounting enclosure on flat surfaces

4.3.1 Customer is responsible to identify suitable location for mounting.

4.3.2 Mark and drill anchors or clips to secure enclosure to surface.

4.3.3 Torque to mounting hardware specifications.

Figure 6: Mounting Configuration for enclosure on flat surfaces

4.4 Removing Dead Front Access Plate

4.4.1 Locate Dead Front Access Plate set screw and remove

4.4.2 Set aside for reuse.

4.4.3 Review Equipment Ground Connection Points

4.4.4 Review Neutral Connection Points

Figure 7: As from Factory
(Generic PTS90420 Shown)

4.5 Wiring Ground Connections

4.5.1 Ensure enclosure is grounded as per NEC and Local Jurisdictions Code requirements.

4.5.2 Ensure that the neutral buss bar is grounded per NEC and Local Jurisdictions Code requirements.

4.5.3 Tighten connections as per manufacturers specifications.

Figure 8: Mounting Location of External Enclosure Ground Connection

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4.6 Wiring Service and Load Connections

4.6.1 Wiring to be done in accordance with NEC and Local Jurisdictions Code.

4.6.2 Ensure connections are properly seated in set screw openings prior to tightening per specifications.

4.6.3 Re-check all connections are labeled

4.6.4 If completed, re-install Dead Front Plate as per Section 5.3

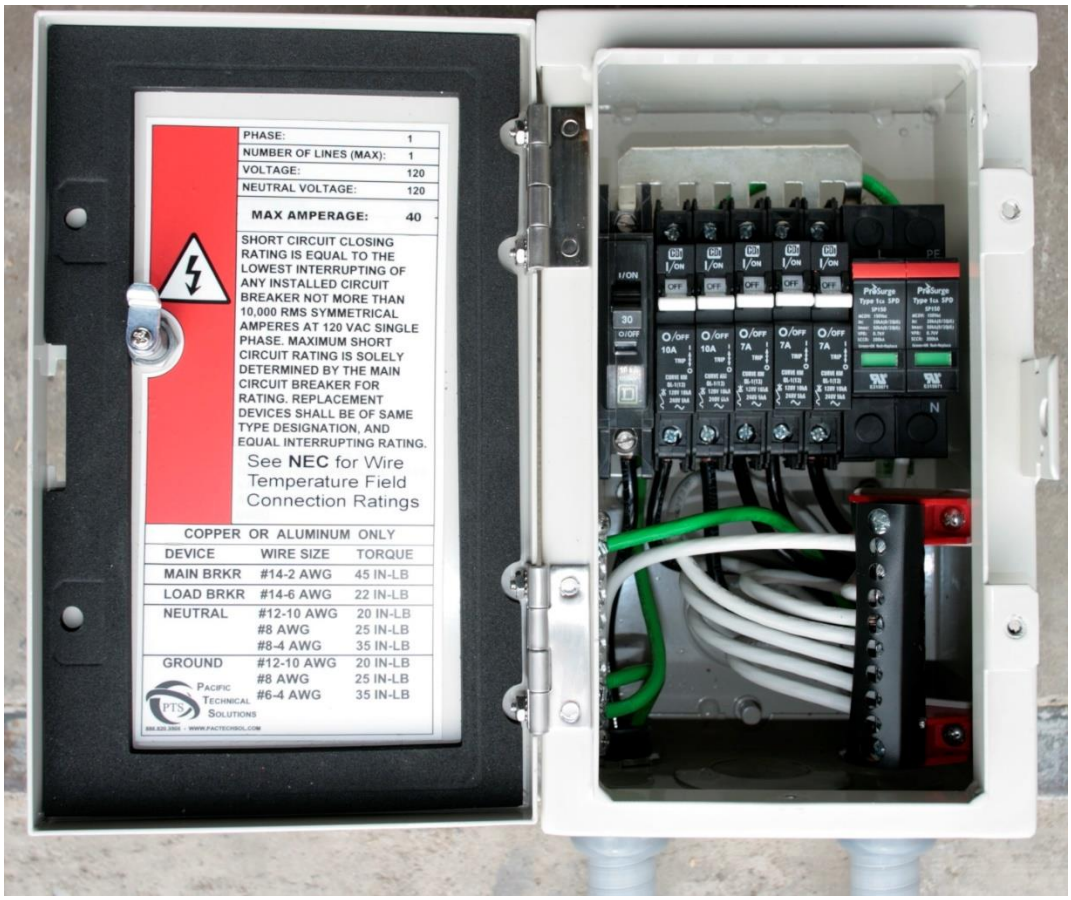

Figure 9: Standard Wiring Practice Example

5.0 Main Breaker Replacement or Re-Configuration

5.0.1 Ensure Electrical Service feeding PTS9042X System is turned off and de-energized.

5.0.2 Verify Power is de-energized with test meter or DVM at input to Main Breaker

5.0.3 Equipment may be wired as Service Equipment and will not have an external main disconnect

5.0.4 Turn off Main Breaker

5.0.5 Loosen the bottom set screw holding commercial side power feed, remove wire and secure safely out of the way

5.0.6 Loosen the top set screw of main breaker, allowing the capture ring to fully open

5.0.6.1 If PTS90420

5.0.6.1.1 Loosen all breaker and SPD top side set screws to fully open

5.0.6.1.2 Remove bus bar and place in bottom of cabinet

5.0.6.2 If PTS90422

5.0.6.2.1 Loosen top main breaker set screw to fully open

5.0.6.2.2 Disconnect wire at top of main breaker coming from the SPD if optioned, or the rotary switch or and secure safely out of the way

5.0.7 Release DIN Locking tab on top of main breaker

5.0.8 Pull top side of breaker away and off of the DIN rail, and remove breaker

5.0.9 Mark and place breaker on the side.

5.0.10 Check that the new breaker has the set screw and capture ring fully open

5.0.11 Re-install new main breaker by seating bottom of breaker onto DIN rail

5.0.12 Secure DIN locking tab at top of main breaker.

5.0.12.1 If PTS90420,

5.0.12.1.1 Ensure that all breakers and or SPD have the set screw and capture ring fully open

5.0.12.1.2 Reinstall bus bar by seating into breakers and SPD if optioned

5.0.12.1.3 Ensure bus bar fingers seat properly within the set screw capture ring prior to tightening.

5.0.12.1.4 Check and verify with an inspection mirror

5.0.12.1.5 Tighten all top side set screws to breaker specifications

5.0.12.2 If PTS90422,

5.0.12.2.1 Re-connect rotary switch wire back into the top of the main breaker

5.0.12.2.2 Ensure the wire is properly seated with the capture ring

5.0.12.2.3 Check and verify with an inspection mirror

5.0.12.2.4 Tighten set screw to breaker specifications

5.0.13 Re-connect commercial power feed into bottom of main breaker

5.0.14 Ensure the wire is properly seated in the capture ring

5.0.15 Tighten set screw per breaker specifications

5.0.16 Re-Energize PTS9042X System

5.1 Load Breaker Replacement or Re-Configuration

5.1.1 Ensure Electrical Service feeding PTS9042X System is turned off and de-energized

5.1.2 Verify Power is de-energized with test meter or DVM at input to Main Breaker

5.1.3 Equipment may be wired as Service Equipment and will not have an external main disconnect

5.1.4 Turn off Main Breaker

5.1.5 Turn off Load Breaker

5.1.6 Loosen the top set screw feeding load breaker being changed

5.1.6.1 If PTS90420,

5.1.6.1.1 Loosen set screw to allow breaker to be removed from buss bar

5.1.6.2 If PTS90422,

5.1.6.2.1 Loosen set screw to allow rotary switch wire to be disconnected from the top of the breaker and secure safely

5.1.7 Disconnect equipment load wire from bottom of breaker and secure safely.

5.1.8 Release DIN Locking tab on bottom of breaker

5.1.9 Pull lower side of breaker off DIN rail, and remove breaker

5.1.10 Mark and place breaker on the side.

5.1.11 Ensure the new load breaker has the set screw and capture ring fully open prior to installation

5.1.12 Re-install new breaker by seating top of breaker to the DIN rail

5.1.12.1 If PTS90420

5.1.12.1.1 Slide top of breaker onto DIN rail to meet the buss bar connection

5.1.12.1.2 Ensure bus bar finger seats properly within the set screw capture ring

5.1.12.1.3 Secure breaker locking tab on bottom of breaker

5.1.12.1.4 Check and verify with an inspection mirror

5.1.12.1.5 Tighten set screw

5.1.12.2 If PTS90422

5.1.12.2.1 Slide breaker onto DIN rail

5.1.12.2.2 Secure breaker locking tab on bottom of breaker

5.1.12.2.3 Re-insert rotary switch wire into the top of load breaker

5.1.13 Re-connect load side wire back into bottom of breaker

5.1.14 Tighten both set screws per breaker specifications

5.1.15 Re-Energize PTS9042X System

5.2 SPD Replacement or Re-Configuration

5.2.1 Ensure Electrical Service feeding PTS9042X System is turned off and de-energized.

5.2.2 Verify Power is de-energized with test meter or DVM at input to Main Breaker

5.2.3 Equipment may be wired as Service Equipment and will not have an external main disconnect

5.2.4 Turn off Main Breaker

5.2.5 Loosen the top set screw(s) of SPD, allowing the capture ring to fully open

5.2.6 SPD options are Single or Dual

5.2.6.1.1 Single SPD has one (L-G) module

5.2.6.1.2 Dual SPD has (L-N) and (N-G) modules

5.2.6.1.3 If PTS90420

5.2.6.1.3.1 If Single SPD

5.2.6.1.3.1.1 Loosen all breaker and SPD (L) top side set screws to fully open

5.2.6.1.3.1.2 Remove bus bar and place in bottom of cabinet

5.2.6.1.3.1.3 Disconnect the ground (G) wire at the bottom of the SPD, mark and secure safely out of the way

5.2.6.1.3.2 If Dual SPD

5.2.6.1.3.2.1 Loosen all breaker and SPD (L) top side set screws to fully open

5.2.6.1.3.2.2 Remove bus bar and place in bottom of cabinet

5.2.6.1.3.2.3 Disconnect the ground (G) wire at the top of the SPD, mark and secure safely out of the way

5.2.6.1.3.2.4 Disconnect the neutral (N) wire at the bottom of the SPD, mark and secure out of the way

5.2.6.1.4 If PTS90422

5.2.6.1.4.1 If Single SPD

5.2.6.1.4.1.1 Disconnect line (L) wire at the top of SPD and secure safely out of the way

5.2.6.1.4.1.2 Disconnect the ground (G) wire coming from the bottom of the SPD and secure safely out of the way

5.2.6.1.4.2 If Dual SPD

5.2.6.1.4.2.1 Disconnect line (L) wire at top of SPD, mark and secure safely out of the way

5.2.6.1.4.2.2 Disconnect ground (G) wire at top of SPD, mark and secure safely out of the way

5.2.6.1.4.2.3 Disconnect the neutral (N) wire from the bottom of the SPD and mark secure safely out of the way

5.2.7 Release DIN Locking tab on top of SPD

5.2.8 Pull top side of SPD away and off of the DIN rail, and remove SPD

5.2.9 Mark and place SPD on the side.

5.2.10 Check that the new SPD has set screw and capture ring fully open

5.2.11 Re-install new SPD by seating bottom of SPD onto DIN rail

5.2.12 Secure DIN locking tab at top of SPD

5.2.12.1 If PTS90420

5.2.12.1.1 Ensure that all breakers and or SPD have the set screw and capture ring fully open

5.2.12.1.2 Reinstall bus bar by seating into breakers and SPD

5.2.12.1.3 Ensure bus bar finger seats properly within the set screw capture ring prior to tightening.

5.2.12.1.4 Check and verify with an inspection mirror

5.2.12.1.5 Tighten all top side set screws to breaker specifications.

5.2.12.2 If PTS90422,

5.2.12.2.1 Re-connect the line wire to terminal marked (L)

5.2.12.2.2 Ensure the wire is properly seated with the capture ring

5.2.12.2.3 Check and verify with an inspection mirror

5.2.12.2.4 Tighten set screw to breaker specifications

5.2.13 Re-connect SPD neutral and/or ground

5.2.13.1. If Single SPD

5.2.13.1.1. Reconnect ground wire at bottom of SPD marked (G)

5.2.13.1.2. Ensure the wire is properly seated in the capture ring

5.2.13.1.3. Check and verify with an inspection mirror

5.2.13.1.4. Tighten set screw per breaker specifications

5.2.14 If Dual SPD

5.2.14.1 Re-connect neutral wire to SPD marked (N)

5.2.14.2 Ensure the wire is properly seated in the capture ring

5.2.14.3 Re-connect the ground wire to the top of the module marked (G)

5.2.14.4 Ensure the wire is properly seated in the capture ring

5.2.14.5 Check and verify with an inspection mirror

5.2.15 Tighten set screw per SPD specifications

5.2.16 Re-Energize PTS9042X System

5.3 Re-Installing Dead Front Access Plate

5.3.1 Reinstall the Dead Front Access Plate and ensure that it is seated correctly.

5.3.2 Reinstall the Dead Front Access Plate set screw and tighten.

5.3.3 Check to ensure all breakers are sitting square in the dead plate opening

5.3.4 Check to ensure all blank breaker positions are covered

5.3.5 Label breaker positions as per customer requirements.

Figure 8: Dead Front Re-Installed

Caution: Installation shall be completed per all NEC and Local Codes. Do not install PTS9042x Systems before reading and understanding all specifications and installation guides provided. Installation should be performed by a qualified installer.

6.0 Installation Review

Inspect the installation, verifying that all is in accordance with this document, NEC, and local Codes.

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7.0 Document and Revision Control

Author	Tom Cooleen
Date	12/08/2017
File Location	www.pactechsol.com/TMOVendor
Revision Control	
Issue Number	05
Date	12/08/2017
Description	PTS9042X Series Installation Guide
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