



## **Buried Distribution Products**

CoolPED AC Power Kit

Description and Installation Manual (631-200-063), Revision D

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## ADMONISHMENTS USED IN THIS DOCUMENT



**DANGER!** Warns of a hazard the reader *will* be exposed to that will *likely* result in death or serious injury if not avoided. (ANSI, OSHA)



**WARNING!** Warns of a potential hazard the reader *may* be exposed to that *could* result in death or serious injury if not avoided. This admonition is not used for situations that pose a risk only to equipment, software, data, or service. (ANSI)



**CAUTION!** Warns of a potential hazard the reader *may* be exposed to that *could* result in minor or moderate injury if not avoided. (ANSI, OSHA) This admonition is not used for situations that pose a risk only to equipment, data, or service, even if such use appears to be permitted in some of the applicable standards. (OSHA)



**ALERT!** Alerts the reader to an action that *must be avoided* in order to protect equipment, software, data, or service. (ISO)



**ALERT!** Alerts the reader to an action that *must be performed* in order to prevent equipment damage, software corruption, data loss, or service interruption. (ISO)



**FIRE SAFETY!** Informs the reader of fire safety information, reminders, precautions, or policies, or of the locations of fire-fighting and fire-safety equipment. (ISO)



**SAFETY!** Informs the reader of general safety information, reminders, precautions, or policies not related to a particular source of hazard or to fire safety. (ISO, ANSI, OSHA)

# IMPORTANT SAFETY INSTRUCTIONS

## Safety Precautions Definition

Definitions of the safety admonishments used in this document are listed under “Admonishments Used in this Document” on page 4.

## General Safety Precautions

The following precautions shall be observed at all time when handling and installing the enclosure:

- Observe the general safety precautions against personal injury and equipment damage.
- The procedures outlined in this manual are only recommended guidelines. Ensure that all NEC (National Electric Code) and local codes for safety and wiring are followed.
  - Use listed two-hole compression connectors (lugs) to terminate all ground connections. Selected lug shall match wire and type, and crimped applied as specified by the lug manufacturer.
  - Apply NO-OX-ID-A to all ground connections.
  - Insulation of field-wire conductors should be rated no less than 105 °C, and gauge in a manner that is consistent with the NEC and local codes.
- Always use a non-contact voltage detector, when approaching an enclosure, to verify no leaks or shorts are presents on the external body.
- Read Enclosure Placement in its entirety prior to attempting to handle or secure the enclosure.
- A minimum of two persons are required to safely install the enclosure.
- Hard hats and steel-toed boots should be worn while maneuvering the enclosure.
- Safety glasses should always be on while on-site.
- Safety gloves should be on when working in temperature extremes, with batteries, or with sharp objects.
- All electricians, operators, and technicians have been trained for the task at hand.
- Keep bystanders away.
- Ensure that all personnel on site are familiar with the first-aid kit location and emergency procedures in the event of an injury.
- Never leave the enclosure unattended. If leaving the site, close and secure the enclosure.

## **You Must Follow Approved Safety Procedures**



**DANGER!** Performing the following procedures may expose you to hazards. These procedures should be performed by qualified technicians familiar with the hazards associated with this type of equipment. These hazards may include shock, energy, and/or burns. To avoid these hazards:

- a) The tasks should be performed in the order indicated.
- b) Remove watches, rings, and other metal objects.
- c) Prior to contacting any uninsulated surface or termination, use a voltmeter to verify that no voltage or the expected voltage is present. Check for voltage with both AC and DC voltmeters prior to making contact.
- d) Wear eye protection.
- e) Use certified and well maintained insulated tools. Use double insulated tools appropriately rated for the work to be performed.

## **Voltages**

### **AC Input Voltages**



**DANGER!** This system operates from AC input voltage capable of producing fatal electrical shock. AC input power must be completely disconnected from the branch circuits wiring used to provide power to the system before any AC electrical connections are made. Follow local lockout/tagout procedures to ensure upstream branch circuit breakers remain de-energized during installation. **DO NOT** apply AC input power to the system until all electrical connections have been completed and checked.

### **DC Output and Battery Voltages**



**DANGER!** This system produces DC power and may have a battery source connected to it. Although the DC voltage is not hazardously high, the rectifiers and/or battery can deliver large amounts of current. Exercise extreme caution not to inadvertently contact or have any tool inadvertently contact an output terminal or battery terminal or exposed wire connected to an output terminal or battery terminal. **NEVER** allow a metal object, such as a tool, to contact more than one termination or battery terminal at a time, or to simultaneously contact a termination or battery terminal and a grounded object. Even a momentary short circuit can cause sparking, explosion, and injury.

## Specific Safety Precautions



**DANGER!** RISK OF ELECTRICAL SHOCK, GENERAL

All ground connections must be installed and verified prior to connecting any power cables (AC or DC) and turning-up of enclosure.

When connecting any discrete power connection, make the connection first with the ground/return and break last with ground/return.

Do not install equipment showing any physical damage.



**DANGER!** RISK OF ELECTRICAL SHOCK, AC

Proper actions, include, but not limited to:

- a) Verify before contacting the enclosure that no current leakage or ground fault condition is present.
- b) Verify a proper ground is in place.
- c) Verify for AC hook-up, all enclosure circuit breakers are OFF and the utility incoming feed is OFF.

Use a trained licensed electrician.



**DANGER!** RISK OF ELECTRIC SHOCK

The DC bus is powered by DUAL power sources – Rectifiers and DC Batteries.

To properly work on the system, de-energize by disconnecting BOTH power sources. Even with the batteries turned off by using a local battery (circuit breaker) disconnect, batteries are still “LIVE” and hazardous, including a voltage >50 VDC, and a source of high short circuit current.

Use extreme caution around the batteries and terminals.

Do not smoke.



**DANGER!** RISK OF ELECTRICAL SHOCK, OSP CABLES

If joint buried cables are used, check the cable sheath for voltage in accordance with local standards. If voltage is detected, do not proceed with the installation. Contact the supervisor and do not proceed until the voltage hazard is eliminated.

## Personal Protective Equipment (PPE)



**DANGER!** ARC FLASH AND SHOCK HAZARD.

Appropriate PPE and tools required when working on this equipment. An appropriate flash protection boundary analysis should be done determine the “hazard/risk” category, and to select proper PPE.



Only authorized and properly trained personnel should be allowed to install, inspect, operate, or maintain the equipment.

Do not work on LIVE parts. If required to work or operate live parts, obtain appropriate Energized Work Permits as required by the local authority, per NFPA 70E “Standard for Electrical Safety in the Workplace”.

## Handling Equipment Containing Static Sensitive Components



**ALERT!** Installation or removal of equipment containing static sensitive components requires careful handling. Before handling any equipment containing static sensitive components, read and follow the instructions contained on the Static Warning Page.

## Maintenance and Replacement Procedures



**CAUTION!** When performing any step in procedures that requires removal or installation of hardware, use caution to ensure no hardware is dropped and left inside the unit; otherwise service interruption or equipment damage may occur.



**NOTE!** When performing any step in procedures that requires removal of existing hardware, retain all hardware for use in subsequent steps, unless otherwise directed.

# STATIC WARNING



This equipment contains static sensitive components. The warnings listed below must be observed to prevent damage to these components. Disregarding any of these warnings may result in personal injury or damage to the equipment.

1. Strictly adhere to the procedures provided in this document.
2. Before touching any equipment containing static sensitive components, discharge all static electricity from yourself by wearing a wrist strap grounded through a one megohm resistor. Some wrist straps have a built-in one megohm resistor; no external resistor is necessary. Read and follow wrist strap manufacturer's instructions outlining use of a specific wrist strap.
3. Do not touch traces or components on equipment containing static sensitive components. Handle equipment containing static sensitive components only by the edges that do not have connector pads.
4. After removing equipment containing static sensitive components, place the equipment only on conductive or anti-static material such as conductive foam, conductive plastic, or aluminum foil. Do not use ordinary Styrofoam™ or ordinary plastic.
5. Store and ship equipment containing static sensitive components only in static shielding containers.
6. If necessary to repair equipment containing static sensitive components, wear an appropriately grounded wrist strap, work on a conductive surface, use a grounded soldering iron, and use grounded test equipment.



# ABOUT THIS DOCUMENT

## Purpose

This practice provides a description of the CoolPed AC Power Kit (F1007112 ACPOWKIT) as well as installation instructions.

## Reason for Reissue

Whenever this practice is reissued, the reasons for reissue will be stated in this paragraph.

## Other Practices

Refer to other company and local practices for the correct methods, tools, and materials to be used in performing procedures not specifically described within this practice.

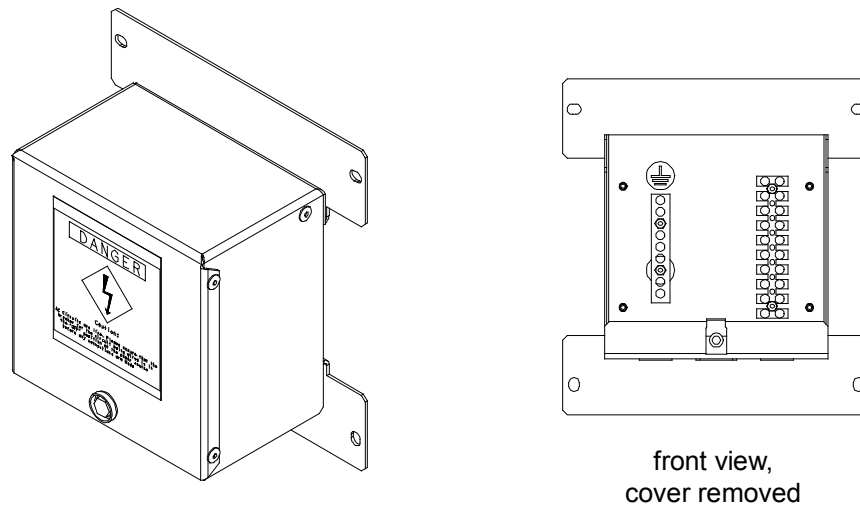


**NOTE!** *The information contained in this practice may not be suitable for all applications and is subject to change without notice.*

# APPLICATION

The CoolPed AC Power Kit (shown in **Figure 1**) allows AC power to be brought into a CoolPed (F1006912 CPED1536PLUS or F1010449 CPED1844) Splice Cabinet from an adjacent power pedestal to provide power for up to four Digital Subscriber Line Access Modules (DSLAMs) mounted in the cabinet. A fifth AC power circuit can also be accommodated.

**Figure 1:** The CoolPed AC Power Kit



## Physical Specifications

### Dimensions

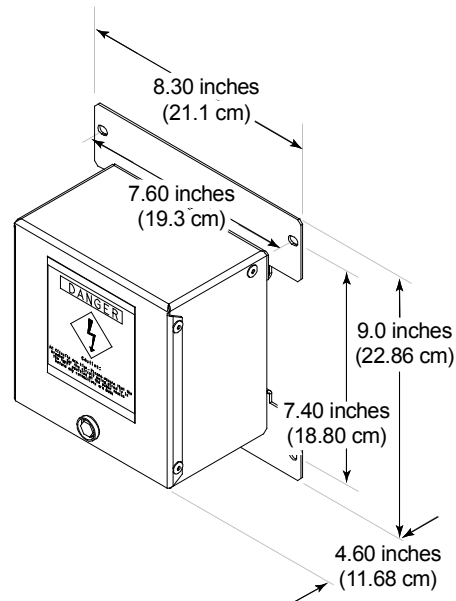
The junction box of the CoolPed AC Power Kit is constructed from off-white powder coated G-90 steel. The dimensions are shown in **Figure 2**.

### Features

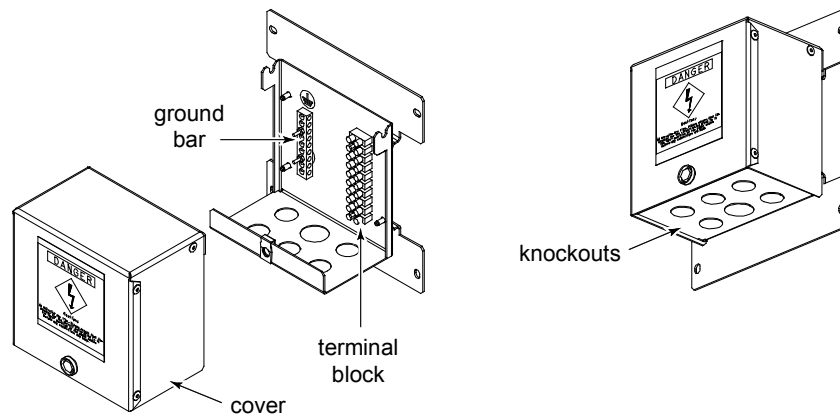
The junction box of the CoolPed AC Power Kit is equipped with the following features (shown in **Figure 3**):

- a cover, which is secured with a captive bolt;
- one knockout that accommodates 1-inch (2.5 cm) trade size conduit for the incoming AC power;
- five knockouts, each of which accommodates a Liquid Tight connector (supplied) for a DSLAM power cable or other AC power application;
- a seven-position ground bar; and
- a ten-position terminal block.

**Figure 2:** Junction Box Dimensions



**Figure 3:** Features



## Mounting

The junction box of the CoolPed AC Power Kit mounts on one of the lower front mounting rails of a CoolPed Splice Cabinet (opposite side of the ground bar) using provided hardware. (See Installation.)

# INSTALLATION

## Tools Needed

To install the CoolPed AC Power Kit, you will need:

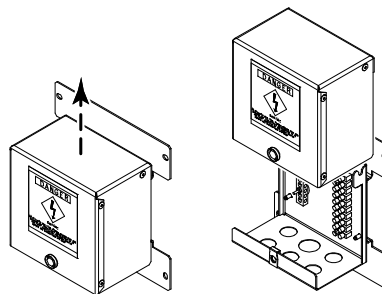
- a large flathead screwdriver,
- a hammer,
- a 216-type tool, and
- enough 1-inch (2.5 cm) trade-size conduit, connecting hardware, and wiring to run AC power from the adjacent power pedestal.

## Checking the Loose Parts Kit

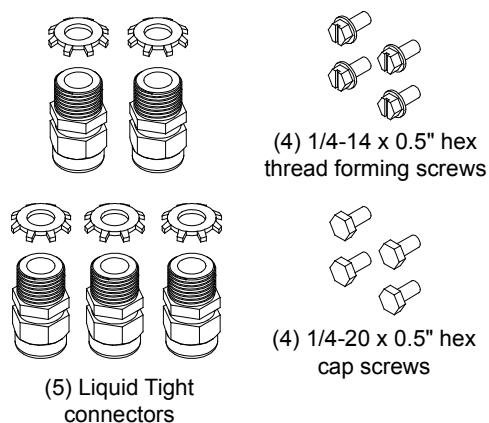
Perform the following steps to verify that the loose parts kit contains the required hardware:

1. Use a 216-type tool to loosen the 1/4-20 x 0.80 inch (2.02 cm long) captive bolt that secures the cover to the junction box, remove the cover (as shown in **Figure 4**), and set the cover safely aside.
2. Remove the loose parts kit packed inside the junction box, and verify that it contains the required hardware (shown in **Figure 5**).

**Figure 4:** Removing the Junction Box Cover



**Figure 5:** Contents of the Loose Parts Kit

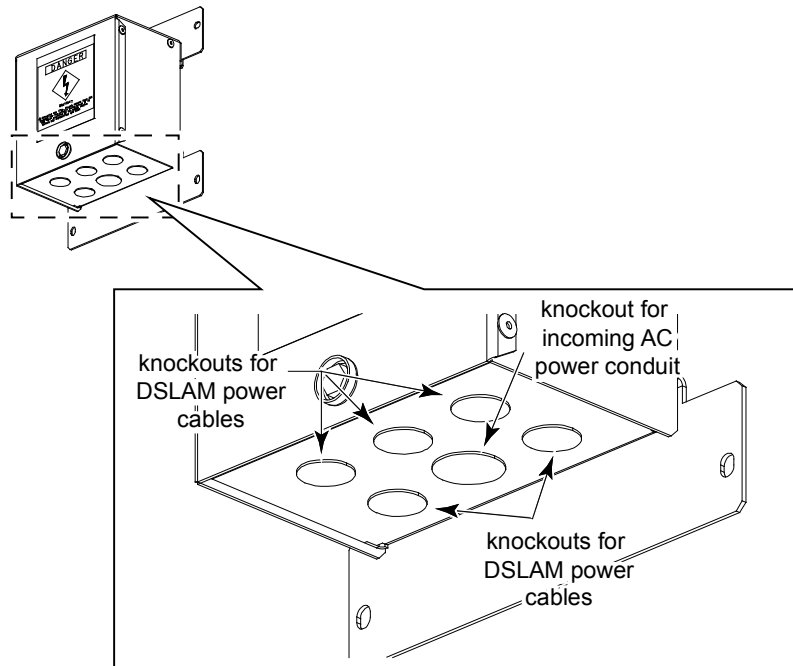


## Mounting the Junction Box

Perform the following steps to mount the junction box of the kit in a CoolPed Splice Cabinet:

1. Use a hammer and a large flathead screwdriver to remove the knockout for the incoming AC power conduit (shown in **Figure 6**).

**Figure 6:** Knockouts



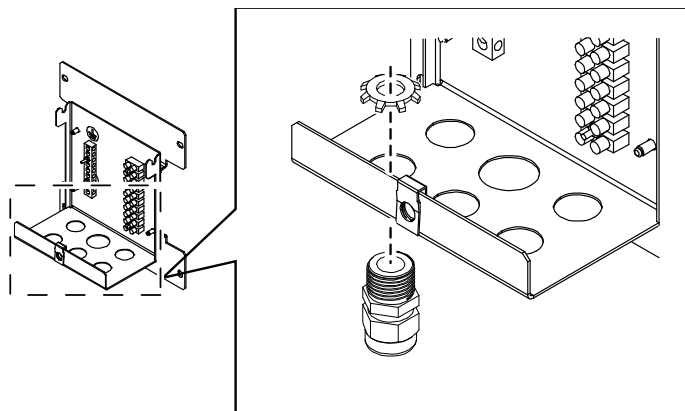
2. As required, remove knockouts for the DSLAM power cables or other AC power applications (shown in **Figure 6**).



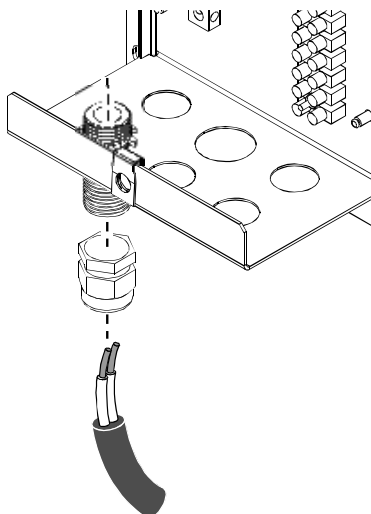
**ALERT!** Do not remove knockouts that you will not be using.

3. On the bottom of the junction box, attach one of the supplied Liquid Tight connectors to each of the smaller holes that you will be using for DSLAM power cables or other AC power applications (as shown in **Figure 7**).
4. Connect the DSLAM power cables (or other AC power cables) to the Liquid Tight connectors per local practices. (See **Figure 8**.)


**Figure 7:** Attaching a Liquid Tight Connector



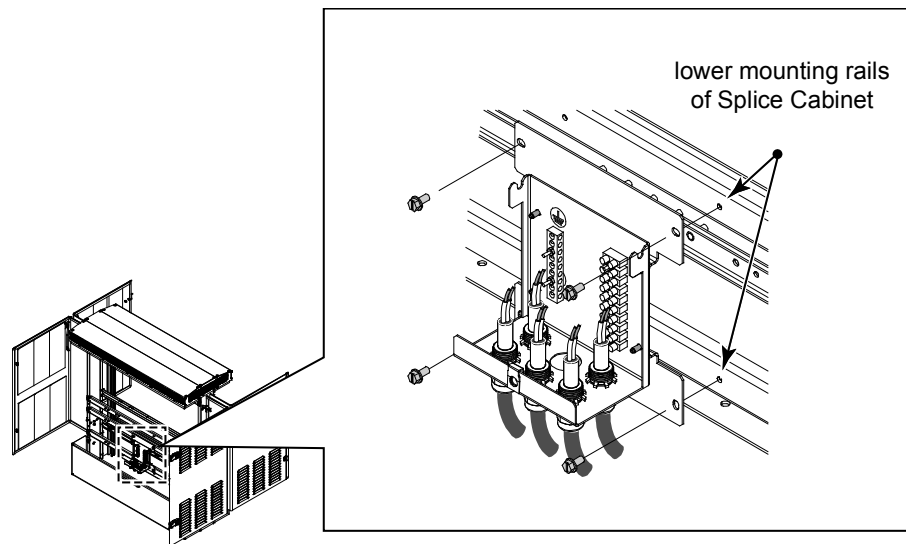
**Figure 8:** Connecting a DSLAM Power Cable to the Junction Box



5. Use a 216-type tool and the four bolts from the loose parts bag to mount the junction box on the lower mounting rails of the CoolPed Splice Cabinet, in the center position.

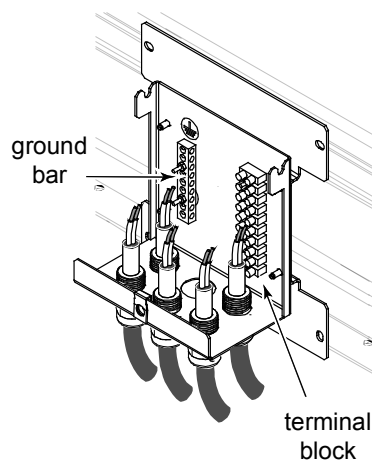
 **NOTE!** Use the ¼-20 x 0.5-inch bolts for mounting into CPED1536PLUS or the ¼" self-tapping bolts for mounting into CPED1844.

**Figure 9:** Mounting the Junction Box in the CoolPed Splice Cabinet

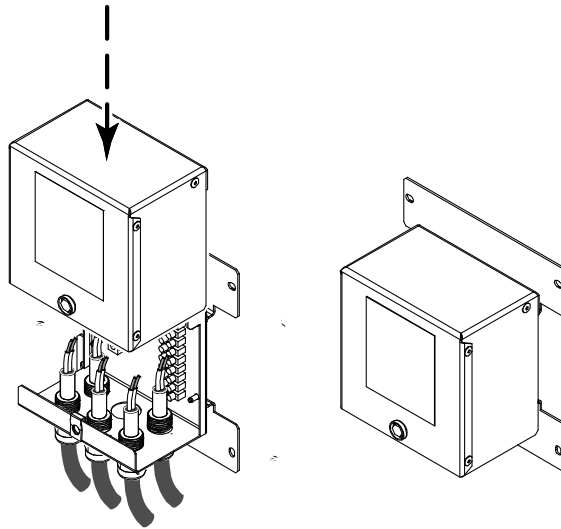


6. Per local practices, install a run of 1-inch (2.5 cm) trade size conduit from the adjacent power pedestal to the large hole on the bottom of the junction box for the incoming AC power (shown in **Figure 6**), and run wiring from the adjacent power pedestal.
7. Per local practices, connect the wiring for the incoming AC power and for the DSLAMs (and other AC power applications) to the junction box's terminal block and ground bar (shown in **Figure 10**).

**Figure 10:** The Terminal Block and Ground Bar



**Figure 11:** Securing the Junction Box Cover



8. When you have completed the wiring, replace the junction box's cover (as shown in **Figure 11**), and secure it by using a 216-type tool to tighten the cover's cup SEMS bolt.



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