



NetSure™ External Distribution Box (EDB) Contactor Kit

Installation Manual

Kit Specification Number: F1011267

For Use in Spec. Nos. F1011259 and F1011265 Vertiv™ NetSure™ External Distribution Box (EDB)

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

TABLE OF CONTENTS

| | |
|--|-----------|
| Admonishments Used in this Document..... | iv |
| Important Safety Instructions..... | v |
| 1 Vertiv™ NetSure™ External Distribution Box (EDB) Contactor Kit Installation Instructions..... | 1 |
| 1.1 Kit Description | 1 |
| 1.2 Kit Contents | 1 |
| 1.3 Tools and Material Required | 1 |
| 1.4 Installation Procedure..... | 2 |

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 Admonishments Definitions

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

General Safety



DANGER! Installation of this kit should only be performed by a qualified technician following approved safety procedures. If a qualified technician is not available, arrangements can be made with a Vertiv service facility to have the kit installed.



DANGER! YOU MUST FOLLOW APPROVED SAFETY PROCEDURES.

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.

DC Input/Output Voltages



DANGER! This system has a DC source connected to it and provides DC distribution. Although the DC voltage is not hazardously high, the DC source can deliver large amounts of current.

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 to 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”.

Replacement Procedures



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

1 Vertiv™ NetSure™ External Distribution Box (EDB) Contactor Kit Installation Instructions

1.1 Kit Description

These instructions provide a step-by-step procedure to field install this kit into a Vertiv™ NetSure™ External Distribution Box (EDB) (Spec. No. F1011259 and F1011265). Installation of this kit in other equipment should not be attempted.

This kit adds a Low Voltage Disconnect (LVD) contactor to a Vertiv™ NetSure™ External Distribution Box (EDB), Spec. No. F1011259 or F1011265.

- Spec. No. F1011259 ships with no Low Voltage Disconnect (LVD). One (1) or two (2) Spec. No. F1011267 Contactor Kits are required to add LVD. One (1) Spec. No. F1011267 Contactor Kit is required to field add LVD to the left-side or right-side DC distribution panel's DC input. Two (2) Spec. No. F1011267 Contactor Kits are required to field add LVD to the left-side and right-side DC distribution panels' DC input.
- Spec. No. F1011265 ships with a Low Voltage Disconnect (LVD) contactor factory installed on the left-side DC distribution panel's DC input. One (1) Spec. No. F1011267 Contactor Kit is required to field add LVD to the right-side DC distribution panel's DC input.

1.2 Kit Contents

Table 1.1 lists the items furnished as a part of this kit. Before installing the kit, check the items furnished against those listed to ensure that there are no shortages.

Table 1.1 Kit Contents

| P/N | Description | Qty. |
|-----------|--|------|
| 545468DCP | LVD Contactor | 1 |
| 60028912 | Contactor Wire Harness | 1 |
| 60031372 | External LVD Jumper | 1 |
| 60031373 | External LVD Power System to External Distribution Box (EDB) Cable | 1 |

1.3 Tools and Material Required

Table 1.2 lists the items required to install this kit.

Table 1.2 Tools and Material Required

| Description |
|-----------------------------------|
| Torque Wrench |
| 1/2" Drive Ratchet and Socket Set |
| Needle-Nose Pliers |
| Anti-Oxidation Compound |

1.4 Installation Procedure

THESE INSTRUCTIONS SHOULD BE READ THROUGH COMPLETELY BEFORE INSTALLING THE KIT.

The following is a step-by-step procedure to install the kit. The procedure has been written for ease of use and to minimize the possibility of contact with potentially hazardous energy. This procedure should be performed in the sequence given, and each step should be completely read and fully understood before performing that step. Observe all “Important Safety Instructions” starting on page v and also those presented in the following procedure. As each step of the procedure is completed, the box adjacent to the respective step should be checked. This will minimize the possibility of inadvertently skipping any steps. If the step is not required to be performed for your site, also check the box to indicate that it was read.

Procedure



DANGER! Observe the “Important Safety Instructions” starting on page v and those listed in the system manual.



DANGER! This system must be isolated from all DC input power. All DC input power to the system must be turned off and all DC input disconnects must be locked out / tagged out before installing this kit.



NOTE! Apply electrical anti-oxidizing compound to all busbar mating surfaces.

- [] 1. Performing this procedure may activate external alarms. Do one of the following. If possible, disable these alarms. If these alarms cannot be easily disabled, notify the appropriate personnel to disregard any future alarms associated with this system while the procedure is being performed.
- [] 2. Shutdown the system. Turn off all DC input disconnects to remove DC power from the system. Follow local lockout/tagout procedures to ensure DC input disconnects remain off during installation.
- [] 3. Open the left side front door.
- [] 4. Refer to Figure 1.1 and locate the contactor bypass busbar(s) to be replaced with an LVD contactor. Remove the contactor bypass busbar by removing the hardware securing it. Save the hardware for later use in installing the LVD contactor. The contactor bypass busbar can be saved incase the Vertiv™ NetSure™ External Distribution Box (EDB) needs to be returned for use without an LVD contactor.
- [] 5. Connect kit supplied wire harness P/N 60028912 to kit supplied LVD contactor P/N 545468DCP as shown in Figure 1.2. Refer also to the schematic diagram in Figure 1.6. Repeat if a second LVD contactor is to be installed.
 - Connect the Violet wire to the Normally Closed terminal.
 - Connect the Violet/White wire to the Common terminal.
 - Connect the White/Black wire to the Coil- terminal.
 - Connect the Red/White wire to the Coil+ terminal.
- [] 6. Refer to Figure 1.3 and install the LVD contactor(s) in the same place the contactor bypass busbar(s) was removed from in a previous step. Use the hardware previously removed, see Figure 1.3. Torque the hardware securing the LVD contactor(s) as indicated in Figure 1.3.

Figure 1.1 Removing Contactor Bypass Busbar(s)

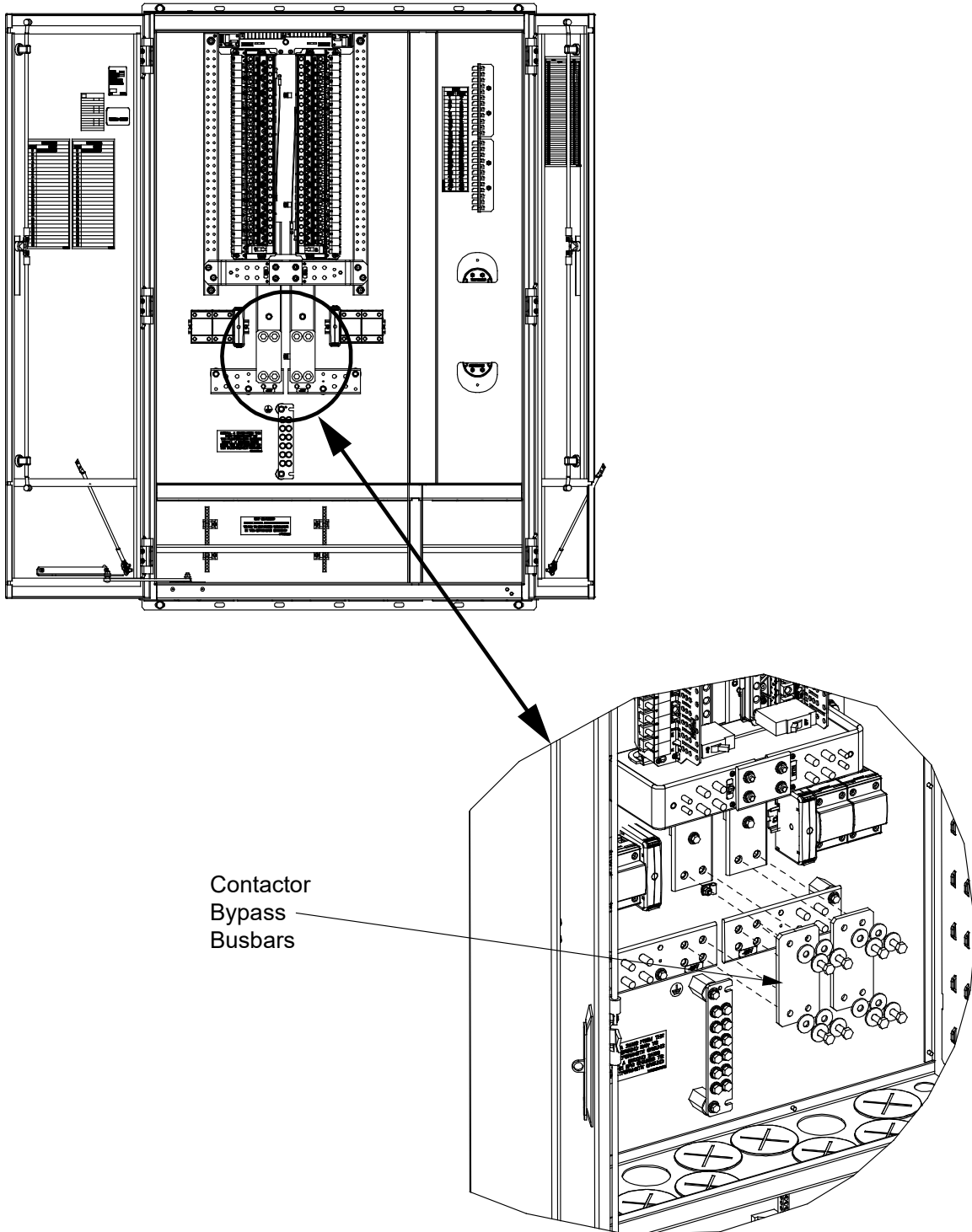


Figure 1.2 Connecting Harness to LVD Contactor(s)

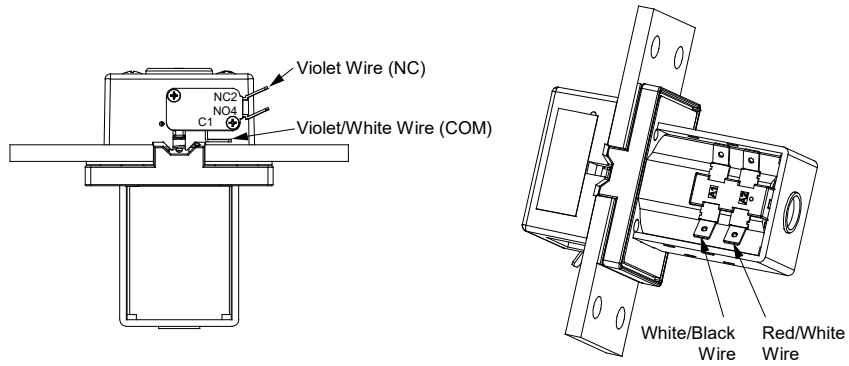
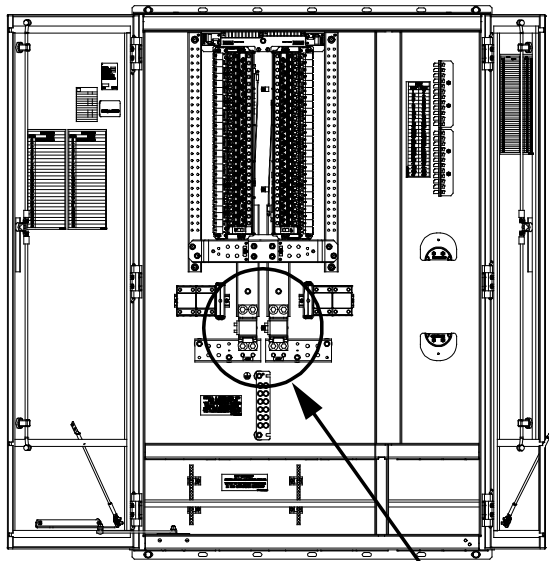


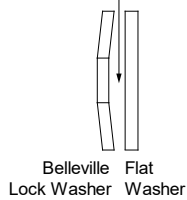
Figure 1.3 Installing LVD Contactor(s)



Note: Concave Side of Belleville Washer Faces Flat Washer, Convex Side Faces Bolt Head.

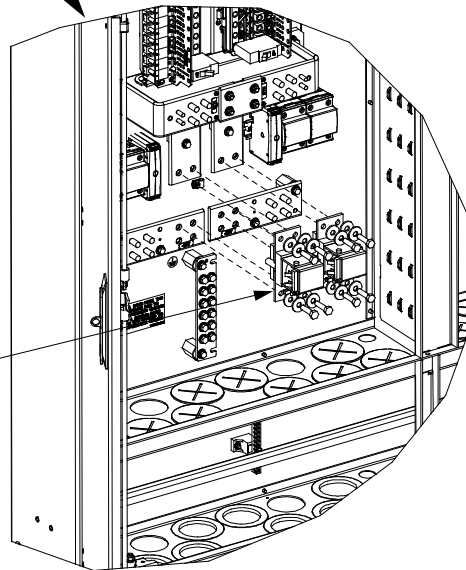
Apply electrical anti-oxidizing compound to busbar mating surfaces.

Orient concave side of Belleville washer towards flat washer



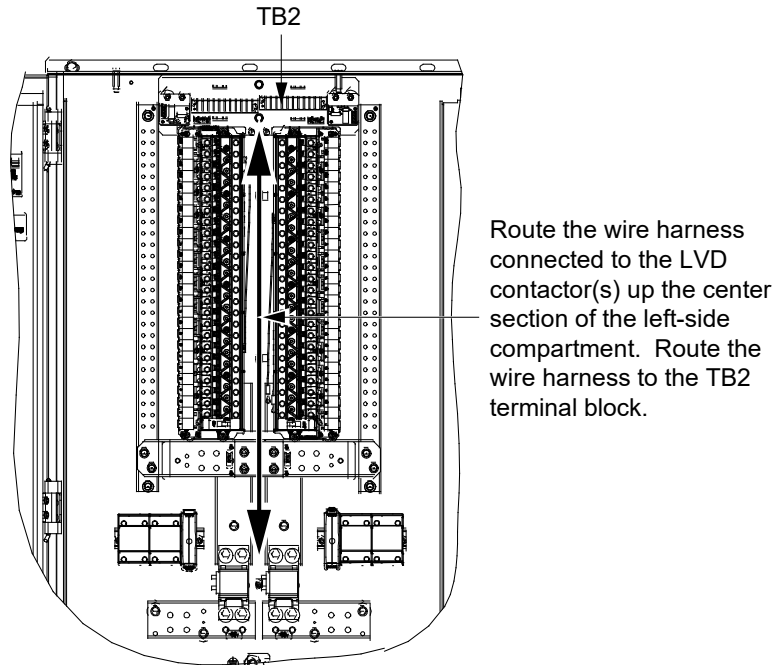
LVD Contactor

Hardware Build-Up
 5/16-18 x 1.25" Bolt
 5/16" Belleville Lock Washer
 5/16" Flat Washer
 Torque to 108 in-lbs.



- [] 7. Route the wire harness connected to the LVD contactor(s) up the center section of the left-side compartment to Alarm BLOCK 2. See Figure 1.4.

Figure 1.4 Route Wire Harness



- [] 8. Connect the wire harness to Alarm BLOCK 2 as shown in Figure 1.5. Refer also to the schematic diagram in Figure 1.6.

Figure 1.5 Connect Wire Harness to Terminal Block TB2

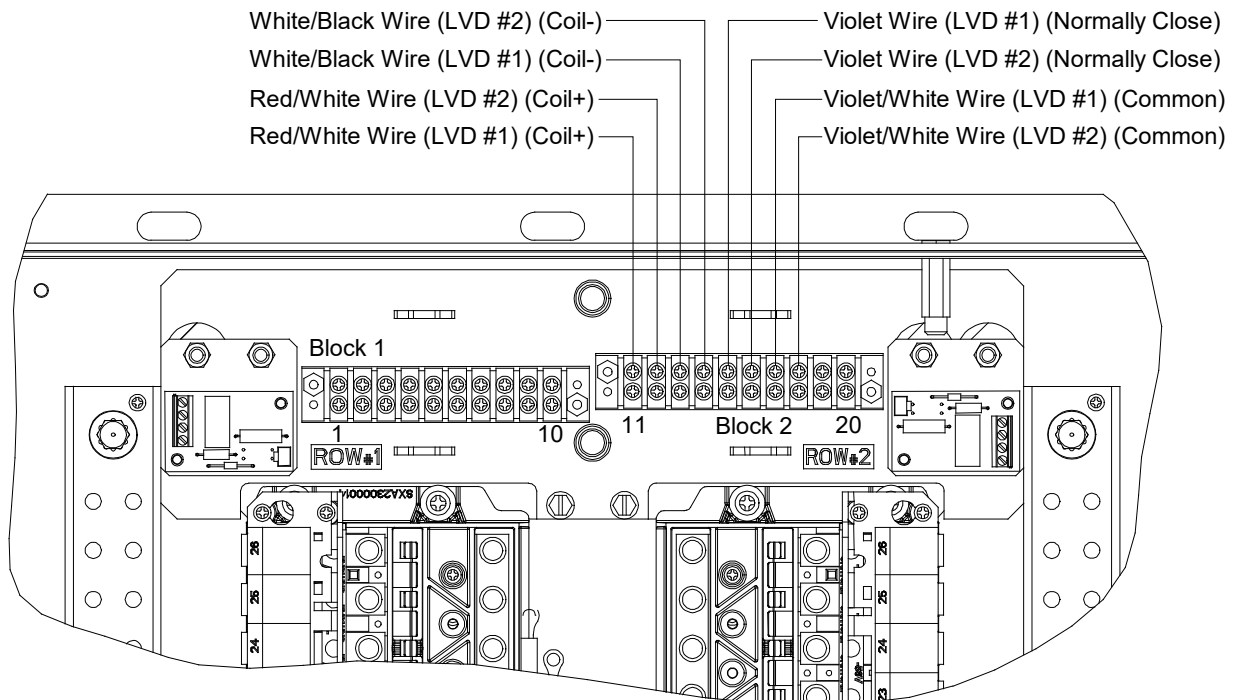
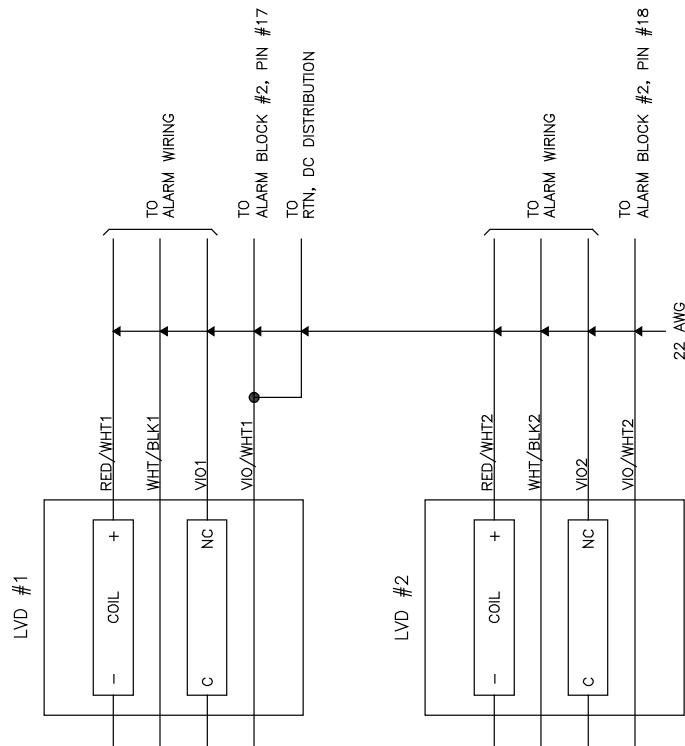
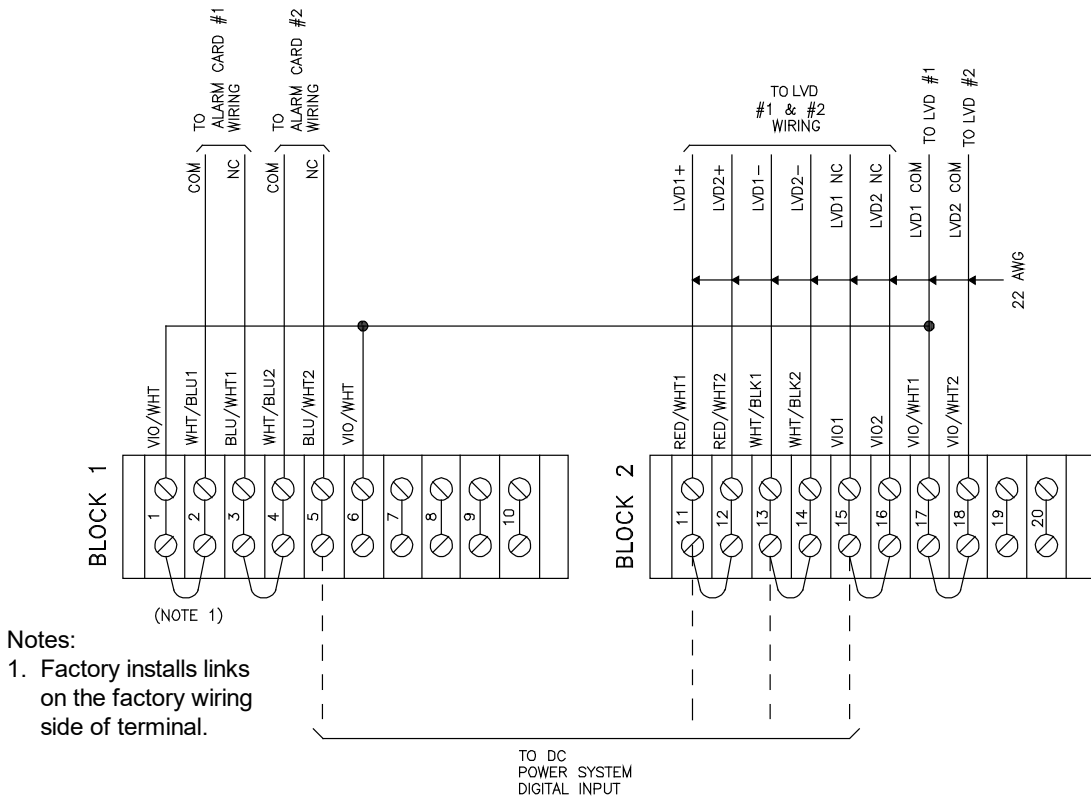
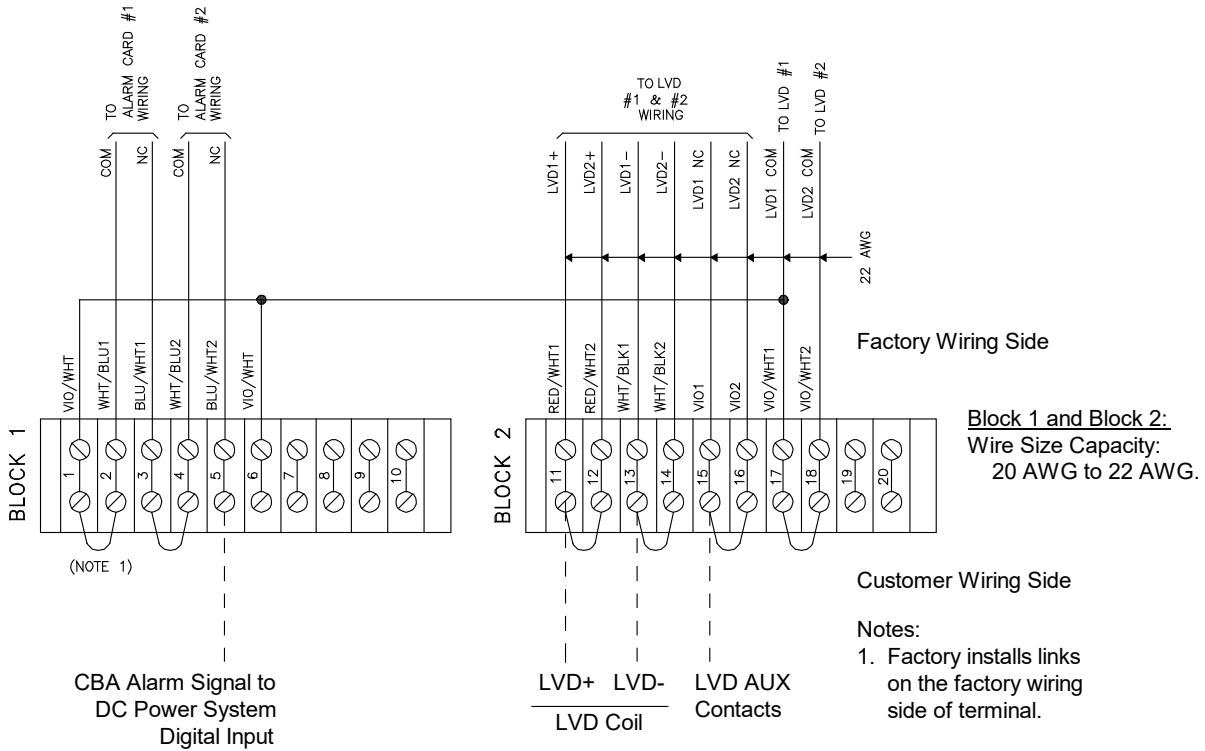


Figure 1.6 Typical Schematic Diagram



- [] 9. Dress and secure the wire harness.
- [] 10. Connect the power system LVD connections to Alarm BLOCK 2 per site requirements. Refer also to the schematic diagram in Figure 1.6. Use kit supplied cable harness P/N 60031372 and/or P/N 60031373 as required for the installation (see Figure 1.7). Route cable harness P/N 60031373 from the power system to Alarm BLOCK 2 in the Vertiv™ NetSure™ External Distribution Box (EDB). Route the cable harness through a bottom port into the left side chamber of the Vertiv™ NetSure™ External Distribution Box (EDB). Route along the right cable lacing panel up to Block 2. Secure as required to the cable lacing panel.
- [] 11. Close the left front door.
- [] 12. Close the external disconnects or protective devices that supply DC input power to the system.
- [] 13. Enable the external alarms or notify appropriate personnel that this procedure is finished.
- [] 14. Ensure that there are no local or remote alarms active on the system.

Figure 1.7 Typical Power System LVD Connections to Alarm BLOCK 2 (Vertiv™ NetSure™ 512 DC Power System, Spec. No. 582137000 List 27, 582137000ZZ007 Shown. Others Similar.)



Red Wire to LVD+
Black Wire to LVD-
White Wire to LVD AUX Contacts

Strip the wire and crimp P/N 140968 spade lug to end of each wire.

P/N 60031373 (30 Feet)

Plug the two wire harness connectors labeled LVD1 together.

Vertiv™ NetSure™ 512 DC Power System, Spec. No. 582137000 List 27 (582137000ZZ007) Shown. Others Similar.

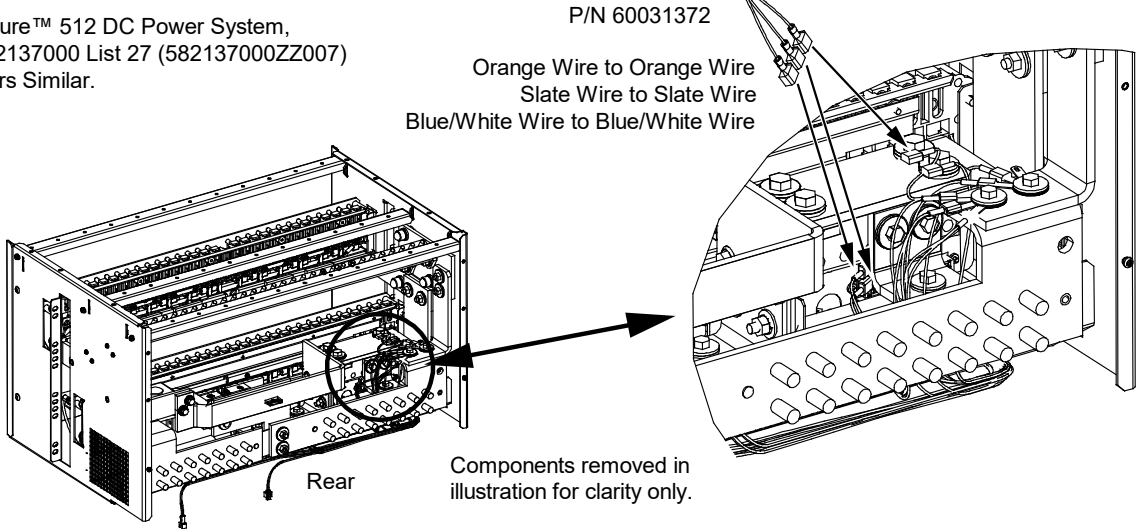
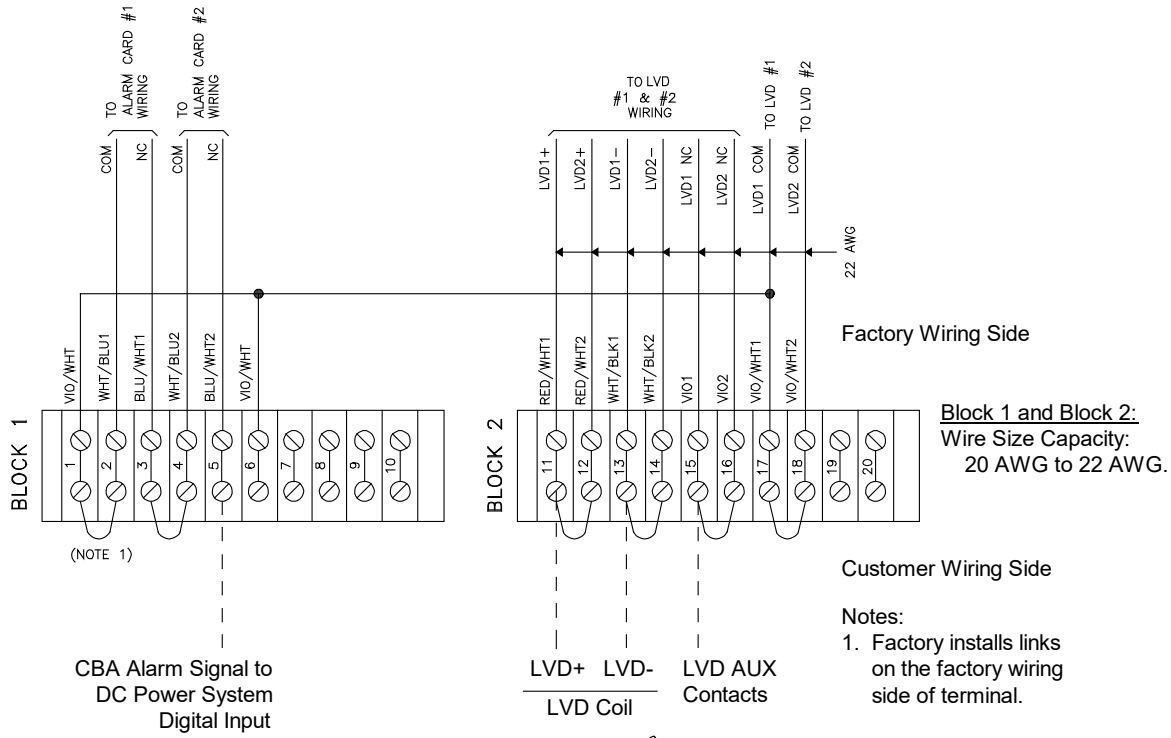


Figure 1.7 Typical Power System LVD Connections to Alarm BLOCK 2 (Vertiv™ NetSure™ 5100 DC Power System, Spec. No. 582137100 List 26, 582137100ZZ028 Shown. Others Similar.)



Strip the wire and crimp P/N 140968 spade lug to end of each wire.

Red Wire to LVD+
Black Wire to LVD-
White Wire to LVD AUX Contacts

P/N 60031373 (30 Feet)
Plug the two wire harness connectors labeled LVD1 together.

Vertiv™ NetSure™ 5100 DC Power System,
Spec. No. 582137100 List 26 (582137100ZZ028)
Shown. Others Similar.

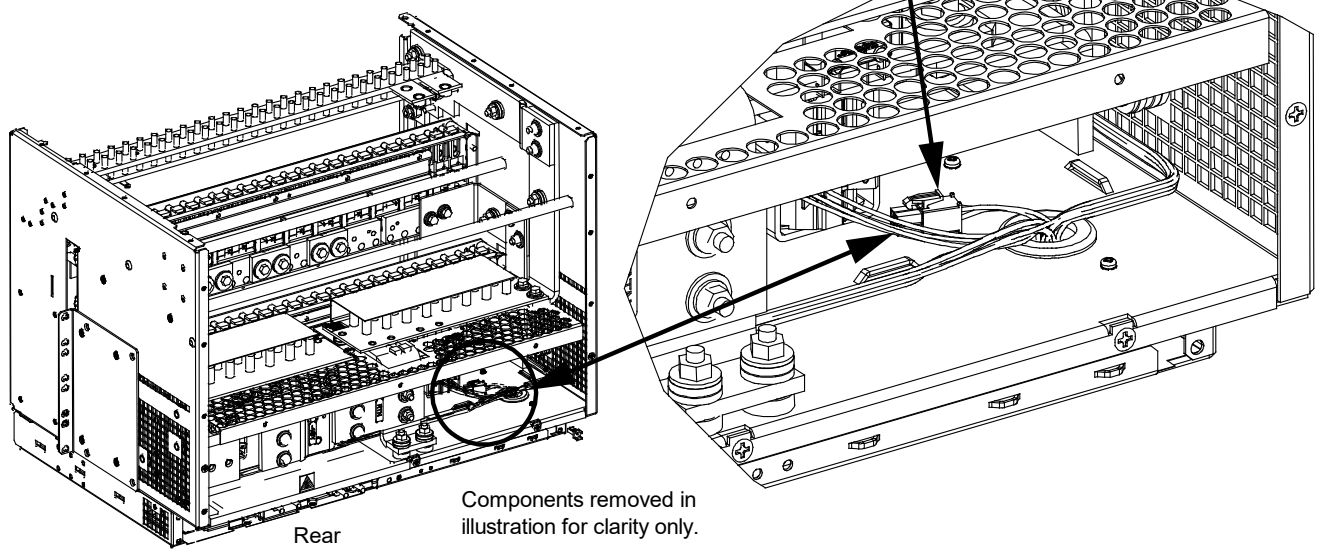
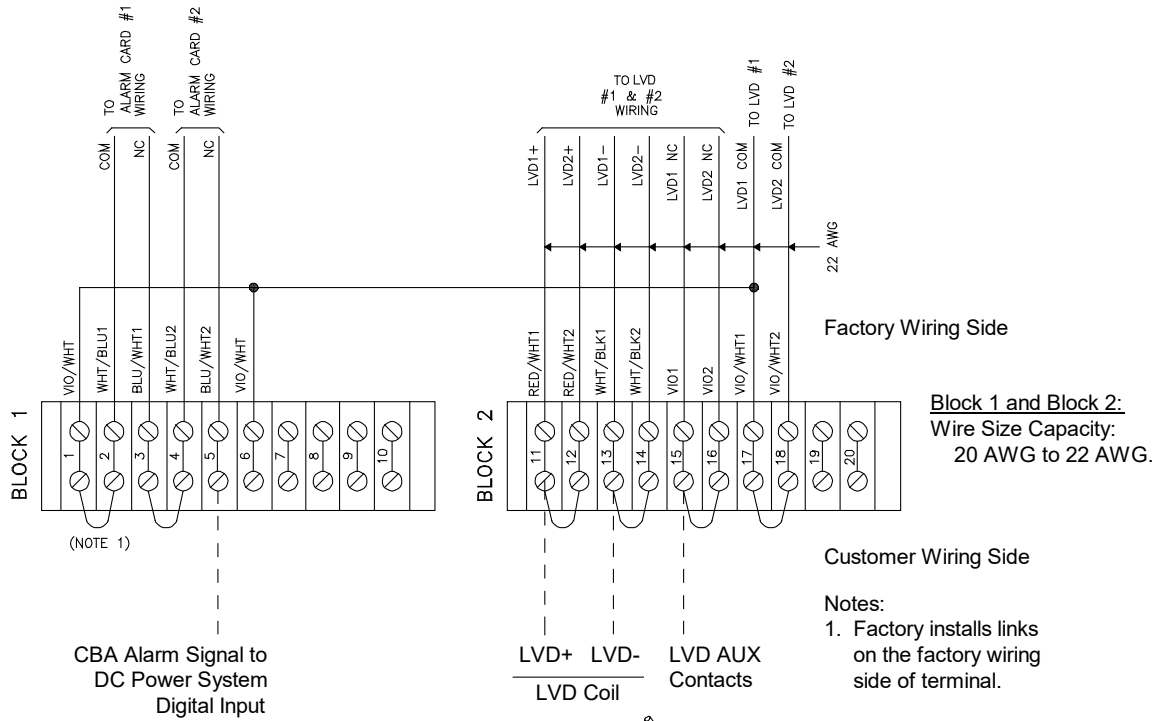


Figure 1.7 Typical Power System LVD Connections to Alarm BLOCK 2 (Vertiv™ NetSure™ 7100 DC Power System, Spec. No. 582127000203 Shown. Others Similar.)



Strip the wire and crimp P/N 140968 spade lug to end of each wire.

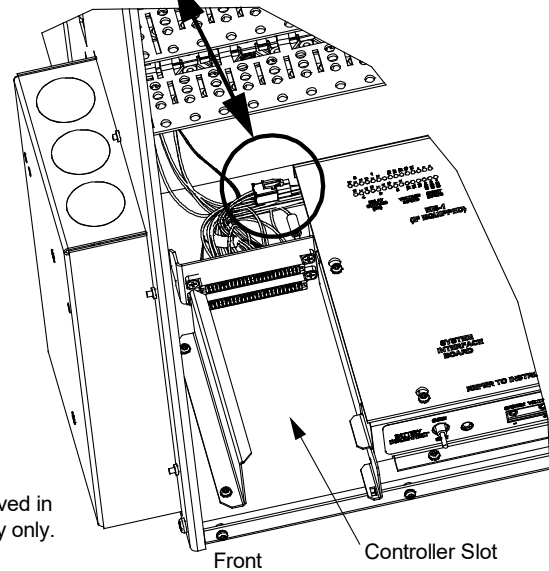
Red Wire to LVD+
Black Wire to LVD-
White Wire to LVD AUX Contacts

P/N 60031373 (30 Feet)

Plug the two wire harness connectors labeled LVD1 together.

Vertiv™ NetSure™ 7100 DC Power System, Spec. No. 582127000203 Shown. Others Similar.

Components removed in illustration for clarity only.



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