



Albér™ Universal Xplorer
Industrial Monitor (UXIME)
Battery Monitor

Installation Guide

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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

1 Safety Information	1
1.1 General Safety Precaution	1
1.2 Product Safety Precaution	1
1.2.1 Equipment service	1
1.2.2 Equipment operation	1
1.2.3 Fuses	1
1.2.4 Equipment access	2
1.2.5 Operating damaged equipment	2
1.2.6 Servicing and adjusting	2
1.2.7 Substituting parts or modifying equipment	2
1.2.8 Insulation rating for wires	2
1.2.9 Ventilation	2
2 Preventive Maintenance	3
2.1 Visual Inspection	3
2.2 System Component Cleaning	3
2.3 Sense Lead and Ring Terminal Cleaning	3
2.4 Internal Component Replacement	3
3 Product Overview	5
3.1 Understanding the System	5
4 Installation	7
4.1 System Installation Considerations	7
4.1.1 Disconnect device	7
4.1.2 Equipment location	7
4.1.3 Rack mounting	8
4.1.4 Equipment mounting options	8
4.1.5 19" Rack mounting	8
4.1.6 Flush mounting	8
4.1.7 Wire length	10
4.1.8 Battery string isolation	10
4.1.9 Cell number 1 identification	10
4.2 Installation of Tab Washers	11
5 Unit Configuration	13
5.1 Digital Input Configuration	13
5.2 RS-485 Termination	15
6 Sense Lead Harness Connections	17
6.1 Voltage Sense Lead Connection Preparation	17
6.2 Systems with Dual or Multiple Positive and Negative Posts	19
6.3 Fused Resistance Load Lead Harness Connections	20

- 6.4 Charger Cable Resistance Reading Connection 22
- 6.5 Ambient Temperature Sensor Connection 23
- 6.6 Digital Inputs Connection 24
- 6.7 RS-485 Communication Connection 25
- 6.8 Network Communication Connection 26
 - 6.8.1 Network protocols supported 26
- 6.9 Parameter Alarm Connection 27
- 6.10 Hardware Alarm Connection 28
- 6.11 Vertiv™ Albér™ ELS2 Connections 29
- 7 Alber UXIME Battery Monitor Drawings 31**
- Appendices 35**
- Appendix A: Technical Specifications 35
- Appendix B: Cell Measurements 37
- Appendix C: System Measurements 39

1 Safety Information

1.1 General Safety Precaution

The protective features of this product may be compromised if it is used in a manner not specified in this guide and/or related operation or installation instructions. This manual describes the general installation of the system. If the system has features or accessories not described in this manual, contact Vertiv.

The following general safety precautions must be observed during all phases of installation, operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Vertiv assumes no liability for the customer's failure to comply with these requirements.

NOTE: Use safety equipment when working with and around the batteries.

NOTE: The Vertiv™ Albér™ Universal Xplorer Industrial Monitor (UXIME) battery monitor should never be turned on before the installation is complete.



CAUTION: Do not exceed the voltage, power ratings, or capabilities of the equipment.



CAUTION: Do not connect the wire harness to the Albér UXIME battery monitor unit until the wire harness installation is complete and terminated to the battery posts.

1.2 Product Safety Precaution

The following sections describe safety practices for the installation and operation of the Albér UXIME battery monitor.

1.2.1 Equipment service

Proper installation and testing are essential for the correct functioning of the system. If you have any questions, contact Vertiv and request monitor assistance. Except as explained in this installation guide, do not attempt to service Vertiv equipment.

Any adjustment, maintenance, or repair of this product must be performed by qualified and trained personnel. Contact a Vertiv customer service engineer and request assistance. Only qualified and trained personnel can perform the operations described in this manual. All safety information must be read, understood, and strictly adhered to before installing, powering up, or using the equipment or software (the "system").

1.2.2 Equipment operation

The protective features of this Albér UXIME battery monitor equipment can be compromised if used in a manner not specified in this guide and/or related installation guides. Refer to this installation guide for the correct connection and usage of this equipment.

1.2.3 Fuses

Fuses with the required rated current, voltage, and type, such as normal, slow blow, fast blow, or time delay must be used for continued protection.

1.2.4 Equipment access

Operating personnel must not remove equipment covers, shields, or panels. Component repair, replacement, and internal adjustments must be made only by qualified service personnel.

1.2.5 Operating damaged equipment



CAUTION: Do not operate the damaged equipment.

Equipment that appears damaged or defective must be made inoperative and secured against unintended operation until repaired by qualified service personnel. Whenever the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, remove the power and do not use the product until the safe operation of this product is verified by the qualified service personnel. If necessary, contact Vertiv to ensure the safety features are maintained.

1.2.6 Servicing and adjusting



CAUTION: Do not service or adjust the equipment alone.

Do not attempt internal servicing or adjustment of this equipment while it is connected to the battery circuit without another person who can call or perform first aid and resuscitation is present.

1.2.7 Substituting parts or modifying equipment



CAUTION: Do not substitute parts of the equipment or modify equipment.

Do not substitute parts or perform any unauthorized modifications to the product, to avoid the possibility of introducing additional hazards. If necessary, contact Vertiv to ensure the safety features are maintained.

1.2.8 Insulation rating for wires

Use only the wires that are supplied with the installation kit.

1.2.9 Ventilation

Ensure that the ventilation ports or openings of the equipment are not blocked. The equipment must have adequate ventilation to prevent overheating. Ensure the equipment is operated within specified temperature and humidity ranges.

2 Preventive Maintenance

This section describes the preventive maintenance for the Albér UXIME battery monitor system.

2.1 Visual Inspection

Visually inspect all the monitor system components for damaged or frayed power cords and cables and for damaged component panels, controls, and connectors. When damage is detected, remove the equipment from the service until the damage is repaired.

2.2 System Component Cleaning



WARNING! Before cleaning the equipment, ensure the system is disconnected and the power to the units has been shut off. If a cabinet is being used, the monitor system cabinet as well as the system components must be disconnected from the AC and/or DC power sources.

Clean the system components using a soft cloth. Do not use commercial or industrial cleaners that can damage the computer display and housing. Never expose the computer or system components to water, high humidity, or dampness.

2.3 Sense Lead and Ring Terminal Cleaning

On some applications, it could be necessary to clean the sense leads where they connect to the battery. Due to the possibility of electrolyte dripping or splashing onto the sense lead connections, this is typically required while monitoring the flooded batteries. Sense leads exposed to electrolyte must be neutralized. Follow the battery manufacturer's recommendations for cleaning battery connections.

2.4 Internal Component Replacement

The Albér UXIME battery monitor system has no user-replaceable components. In case the component has to be replaced, only qualified and trained personnel should remove the covers from the components since high voltage exists in most of the system components.



CAUTION: Failure to comply with this restriction can cause a safety hazard and/or void the product warranty.

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3 Product Overview

The Albér UXIME battery monitor is a stationary battery monitor designed for use in industrial or utility applications. The battery monitor system's standard configurations are specifically designed for utility substations with 120V and 48V applications, making it ideal for NERC PRC-005 compliance. Since no external computer is required for normal operation, each monitor is considered to be a standalone system. Standard provisions are included to allow integration into customer-owned building management or enterprise systems.

Complete and comprehensive remote monitoring capabilities include:

- Remote access via Ethernet or RS-485 using industry standard protocols such as Modbus or SNMP for simple BMS integration.
- Local service port USB connectivity to view and analyze battery systems using laptop computers.

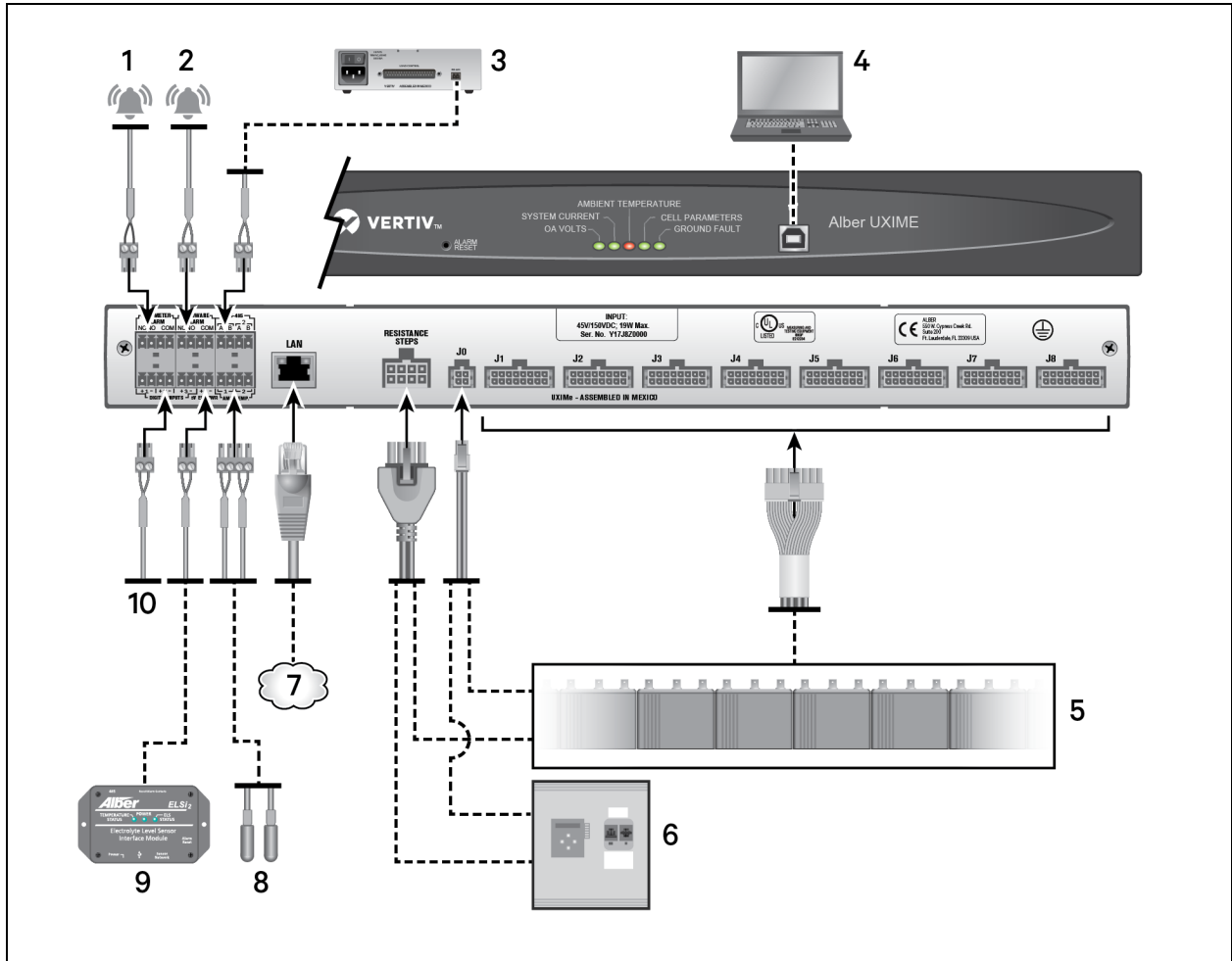
With the Albér UXIME battery monitor, all your battery parameters are measured and constantly monitored against user-defined thresholds. What sets Vertiv monitors apart from others is the ability to provide early warning of potential battery problems by performing a proactive, patented resistance test, a proven technology to reliably predict battery performance. To complement the proactive resistance test, the following parameters are monitored to ensure optimal battery performance and life:

- Cell Level Measurements.
 - Individual Cell Resistance.
 - Individual Cell Voltage.
 - Individual Intercell Resistance.
 - Electrolyte Level (Optional).
- System Level Measurements.
 - Overall Volts.
 - String Current (Discharge/Float).
 - Ripple Current.
 - Ambient Temperatures.
 - Charger Cable Resistance.
 - Ground Fault Currents.

3.1 Understanding the System

The Albér UXIME battery monitor ships with a Quick Installation Guide that provides initial installation and configuration instructions to get your system up and running. After referencing that document for initial set-up, this extended installation guide provides additional details and configuration information you may need for your system. For a comprehensive view of the system and additional instructions on operating the hardware and software components, please reference the product description guide and web user interface guides available on the product page at www.vertiv.com/alberuxime. For a high-level view of typical system connections for the battery monitor system, see [Figure 3.1 on the next page](#).

Figure 3.1 Typical System Connection



Item	Description
1	Parameter Alarm
2	Hardware Alarm
3	BMS (BCTI)
4	Local Service Port
5	Battery String to be Monitored/Tested
6	Battery Charger
7	BMS or Web
8	Ambient Temperature Sensors
9	Vertiv™ Albér™ ELS or Vertiv™Albér™ ELSi2 Electrolyte Sensor Power
10	Digital Inputs for External Device Monitoring

4 Installation

NOTE: The Albér UXIME battery monitor must be installed in a restricted access location.

The tools required for Albér UXIME battery monitor installation are standard hand tools like cutters, strippers, and screwdrivers. A drill is also required, if the unit is to be wall mounted.

Please see to the steps mentioned in [Table 4.1 below](#) for successful Albér UXIME battery monitor system installation. Some items may not apply due to system requirements.

Table 4.1 Installation Task List

Installation Task	Refer to Section
Items to consider before system installation	System Installation Considerations below
Isolate the battery string	Battery string isolation on page 10
Identify cell/monobloc Number 1	Cell number 1 identification on page 10
Properly install the tab washers	Installation of Tab Washers on page 11
Configure the unit	Unit Configuration on page 13
Mount the equipment	Equipment mounting options on the next page
Route and terminate all wiring harnesses before connecting to Albér UXIME battery monitor	See Sense Lead Harness Connections on page 17 to Hardware Alarm Connection on page 28
Connect the sense lead harnessing	Sense Lead Harness Connections on page 17
Connect the fused load lead harnessing	Fused Resistance Load Lead Harness Connections on page 20
Connect the ambient temperature sensor	Charger Cable Resistance Reading Connection on page 22
Connect the digital inputs if applicable	Digital Inputs Connection on page 24
Connect RS-485 communications if applicable	RS-485 Communication Connection on page 25
Connect the Network communications if applicable	Network Communication Connection on page 26
Connect the Parameter alarm contacts if applicable	Parameter Alarm Connection on page 27
Connect the Hardware alarm contacts if applicable	Hardware Alarm Connection on page 28

4.1 System Installation Considerations

This section describes items that should be considered before installing the Albér UXIME battery monitor system.

4.1.1 Disconnect device

The Load Lead harness which plugs into the Resistance Steps connector is the primary disconnect device. Unplug this connector to disconnect power from the Albér UXIME battery monitor.

4.1.2 Equipment location

Consider the placement of the equipment in the event service is required. For example, access to the rear of the equipment or visual access to the status lights may be needed. The equipment is convection cooled and no cooling fans are used. To maintain proper operating temperature, the equipment must not be enclosed in another cabinet without adequate ventilation.

4.1.3 Rack mounting

If the unit is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment can be greater than the ambient room temperature. Therefore, it is recommended to install the equipment in an environment that is compatible with the maximum ambient temperature specified in the Product Description Guide. Installation of the equipment in a rack should be such that the amount of airflow required for the safe operation of the equipment is not compromised. Mounting of the equipment in the rack should be such that a hazardous condition is prevented from occurring due to uneven mechanical loading.

4.1.4 Equipment mounting options

The equipment can accommodate two types of mountings.

4.1.5 19" Rack mounting

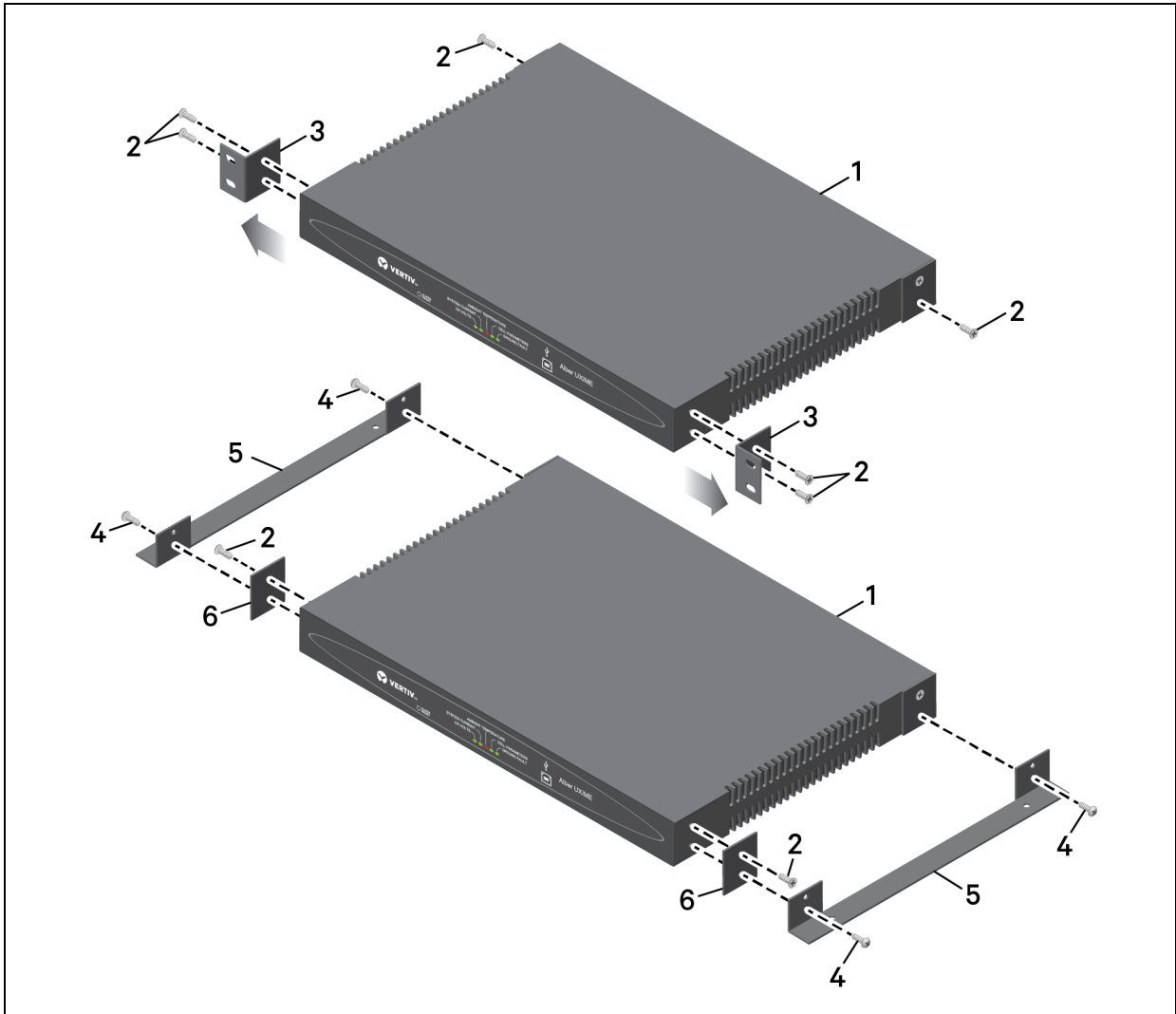
19" rack mounting is the standard mounting. Commercially available 1U rack reducing brackets are commercially available and would be required for 23" rack mounting.

4.1.6 Flush mounting

If the flush mount option is required, optional angle brackets must be installed on each side of the unit. To connect the flush mount brackets to the unit, follow the below steps:

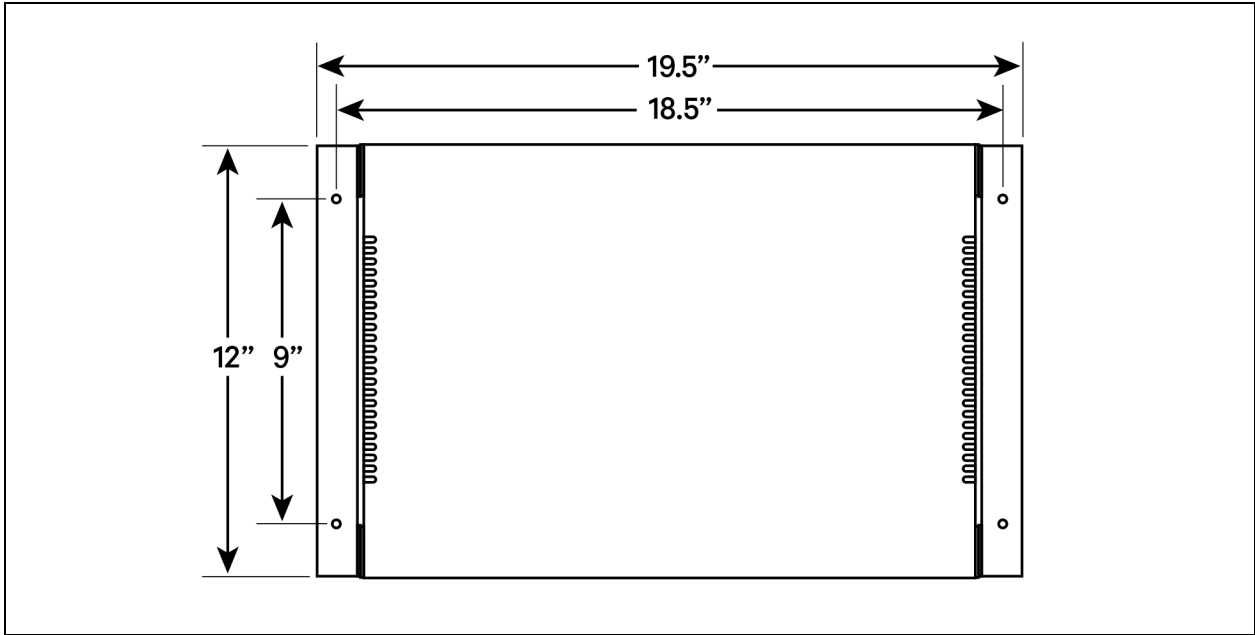
1. Remove the two screws from each side of the unit that secure the rack mount brackets to the unit.
2. Install the front spacer brackets that are supplied in the kit using the top mounting hole and the flat head screws that were removed from the rack mount bracket.
3. Remove the lower flat head screw from the rear spacer bracket.
4. Secure the flush mount bracket through both the bracket and bracket spacer using the rack mounting kit-supplied pan head screws at both the front and rear locations for each side. Flush mounted equipment footprint is shown below.

Figure 4.1 Optional Flush Mount Kit Mounting



Item	Description
1	Albér UXIME battery monitor
2	Flat Head Screw
3	Pre-installed Mounting Bracket
4	Pan head screw
5	Flush Mount Bracket
6	Front Spacer Bracket

Figure 4.2 Flush Mount Dimension



4.1.7 Wire length

All the harnesses are of standard length (25' or 50') and should not require any additional length. While selecting the length of the harness, consider the distances between the battery, battery charger, and the battery monitoring equipment. If longer harness lengths are required, harnesses are available in a maximum of 100' lengths.

4.1.8 Battery string isolation

The battery string should be isolated before the system is installed.

IMPORTANT! Do not attempt installation on a battery string that is in service and not fully isolated from the DC bus and load circuits.

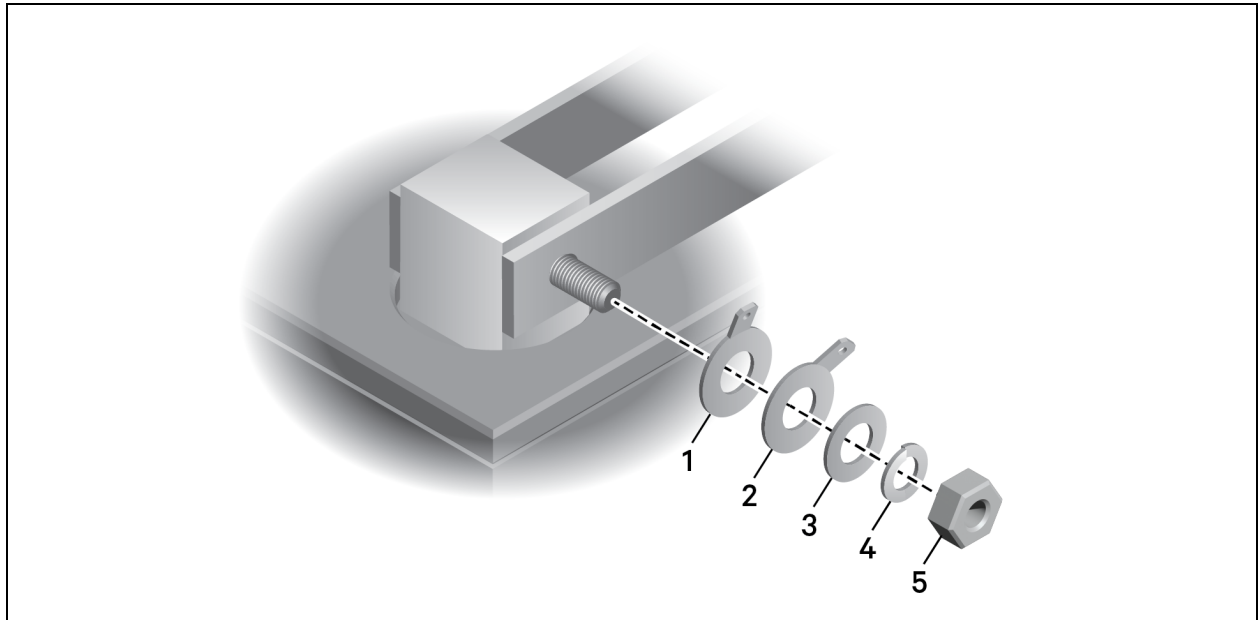
4.1.9 Cell number 1 identification

Always consider Cell 1 as the most positive end of the battery with respect to the battery charger, whenever an actual cell number is referenced while referring to any material in this installation guide. As the cells increment towards the negative end of the string, increment the cell numbers as well.

4.2 Installation of Tab Washers

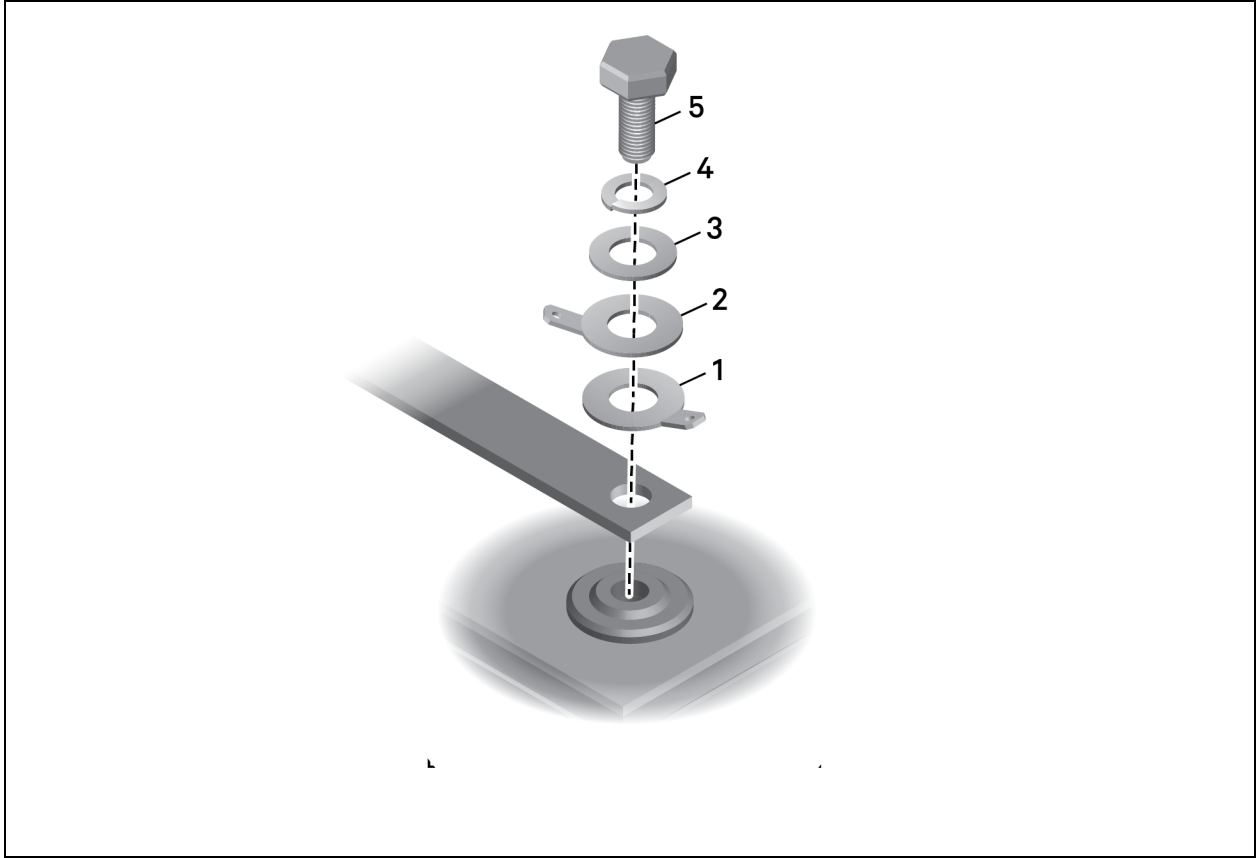
Tab washers allow connection of the monitoring system to the battery. Hardware with a 5/16" diameter fits standard tab washers. The location and quantity of the tab washer depends on the system configuration. The actual placement of these tab washers in relation to the battery post and existing hardware is critical. In instances where only one load tab washer and one or more sense tab washers are required, the load tab washer should be placed closest to the cell post and beneath the sense tab washer. The below [Figure 4.3](#) below illustrate some common applications.

Figure 4.3 Exposed Post Tab Washer Assembly



Item	Description
1	Single Tab Washer for Load Lead
2	Single Tab Washer for Sense Lead
3	Flat Washer
4	Lock washer
5	Nut

Figure 4.4 Recessed Post Tab Washer Assembly



Item	Description
1	Single Tab Washer for Load Lead
2	Single Tab Washer for Sense Lead
3	Flat Washer
4	Lock Washer
5	Bolt

To determine tab washer placement, see [Alber UXIME Battery Monitor Drawings on page 31](#) in the back of this manual. Locate the desired configuration that will be installed. Using the wiring diagram, install the appropriate tab washer on each required post.

5 Unit Configuration

5.1 Digital Input Configuration

Each digital input can be configured either for a voltage or contact closure input. See [Table 5.1](#) below.

NOTE: Digital input configuration should only be performed by a qualified technician. Contact Technical Support for details.

Table 5.1 Digital Input Modes

Mode	Acceptable Input Range
Voltage	> 4V = False < 1V = True Maximum nondestructive input: 60Vdc
Open/Close Contact	< 2K = True

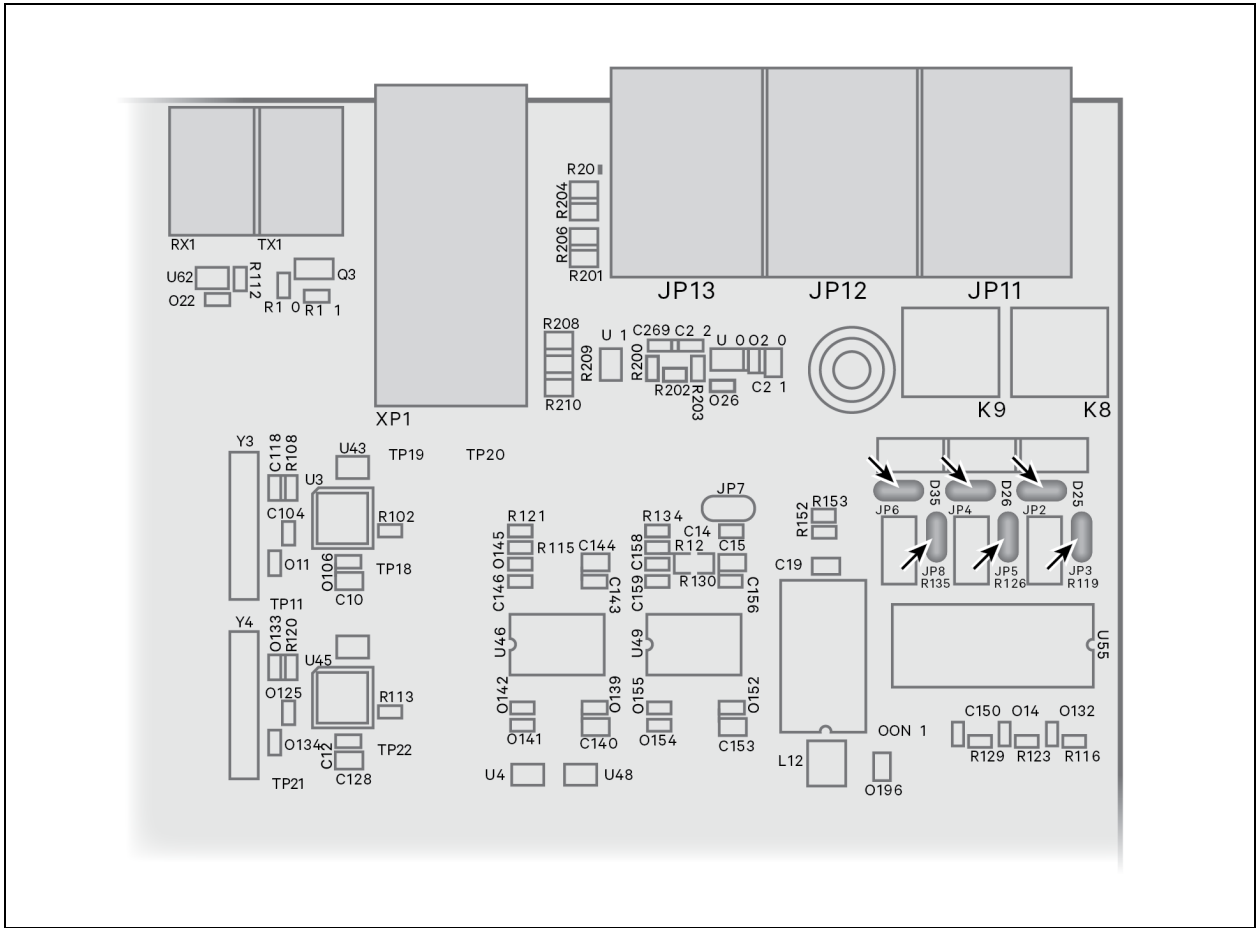
Seven jumpers for digital input and one jumper for RS-485 are supplied with the Albér UXIME battery monitor for configuration. Each digital input has a pair of 2-pin jumpers that must be configured according to the mode desired. The cover of the unit must be removed to gain access to these jumpers. Jumpers should be replaced by a certified Vertiv technician only. To determine the mode that is required and the location of the jumpers, See [Table 5.2](#) below.

Table 5.2 Digital Input Jumper Settings

Channel	Mode	Jumpers
Digital Input 1	Voltage	JP2 and JP3 are not installed
	Open/Close Contact	JP2 and JP3 are installed
Digital Input 2	Voltage	JP4 and JP5 are not installed
	Open/Close Contact	JP4 and JP5 are installed
Digital Input 3	Voltage	JP6 and JP8 are not installed
	Open/Close Contact	JP6 and JP8 are Installed

The location of the jumpers is shown in the [Figure 5.1 on the next page](#). By default, digital input jumpers come pre-installed from the factory.

Figure 5.1 Digital Input Jumper Locations

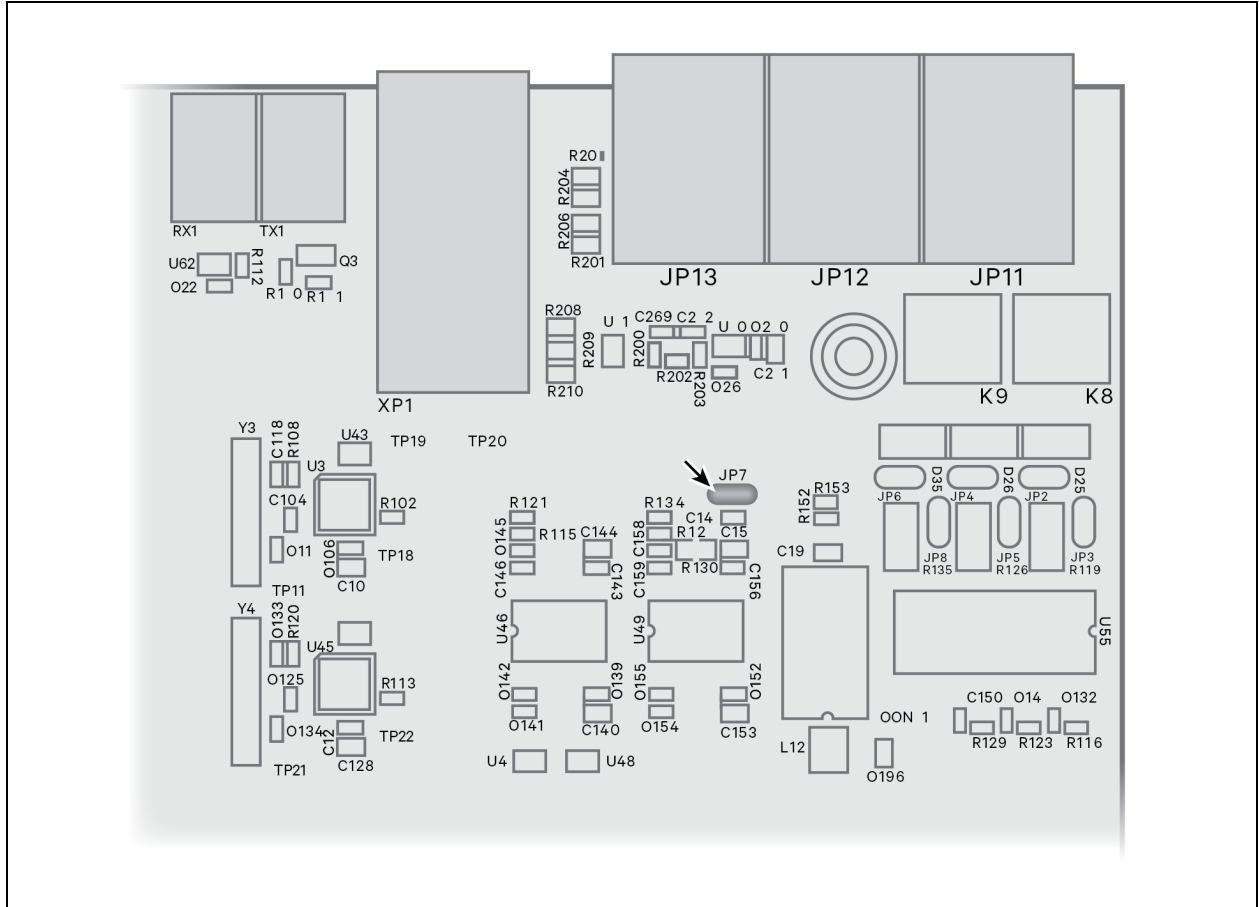


5.2 RS-485 Termination

A jumper on the circuit board is used for selecting a *termination resistor* for a RS-485 connection. In most cases, RS-485 termination is not necessary because maximum baud rate is 19200 bps (default is 9600). RS-485 termination is recommended when intermittent communications occur and is enabled when the jumper is installed across Pins 1 and 2 of JP7 (not the factory default setting). It is disabled when the jumper is removed across Pins 1 and 2. The location of the jumper is [Figure 5.2](#) below.

NOTE: The factory default setting will not include the jumper installed across Pins 1 and 2 of JP7.

Figure 5.2 RS-485 Jumper Locations



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6 Sense Lead Harness Connections

To determine the routing path from each connection point (J1-J8) of the Sense Lead Harnesses on the equipment to the required cell voltage sense point on the battery, See [Figure 6.1 on the next page](#).

NOTE: Wires that are terminating on a positive post are of solid colors, and the wires that are terminating on negative posts are white with colored stripe.

For ease of future cell maintenance, leave some slack in the wiring to the cells. A write-on label is provided on each harness to mark the correct harness assembly number to the appropriate equipment connector location of the harness. If the connections are removed for maintenance, the labels on the harness will be a useful reference to reconnect the cables to the correct connector. See [Voltage Sense Lead Connection Preparation below](#) to install the proper termination to each battery connection point.



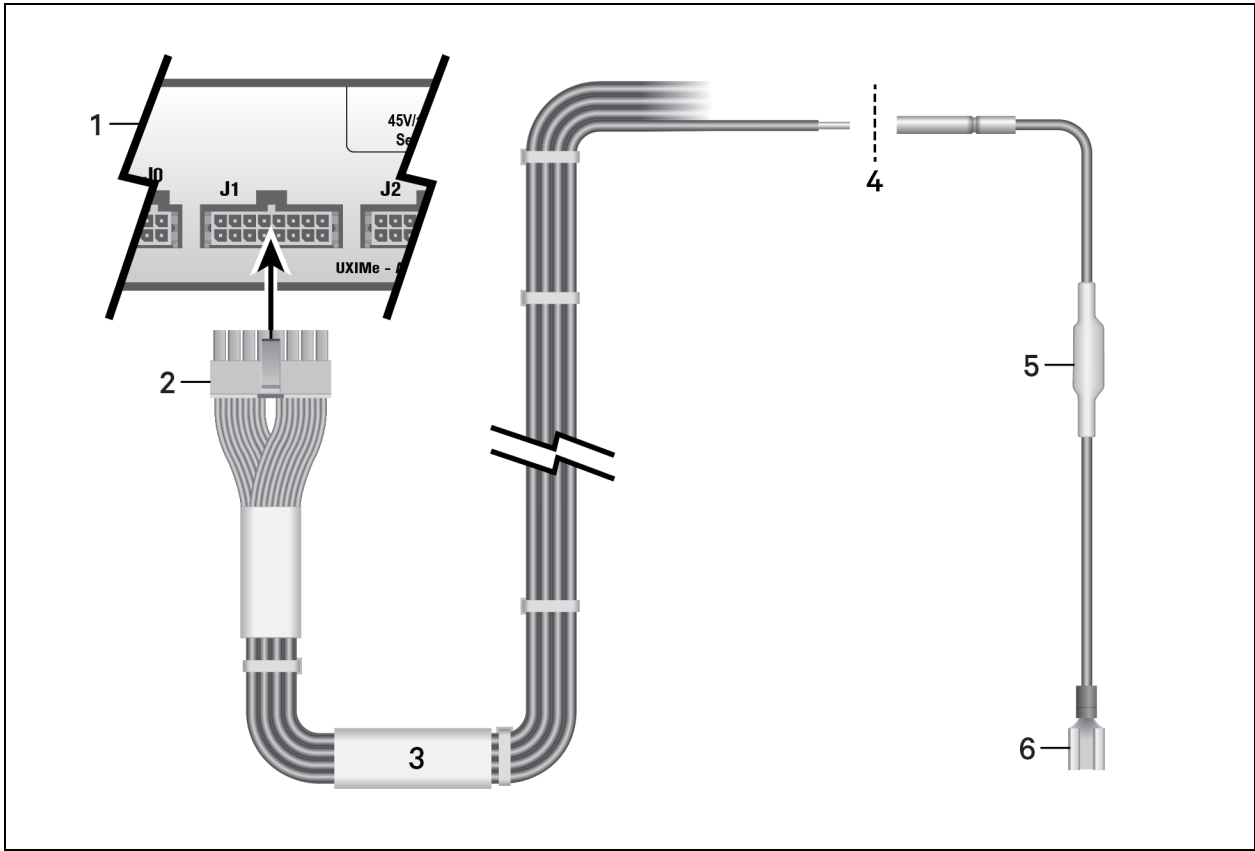
CAUTION: Never connect wire harness to UXIME unit until wire harness installation is complete and terminated to the battery posts.

6.1 Voltage Sense Lead Connection Preparation

In order to prepare the sense lead harness connection, follow these steps:

1. Each voltage sense lead wire from the sense lead harness must have a 10K Ω (0.1%) flameproof resistor sense lead assembly installed before connection to the tab washer.
2. Once the routing path and the required wire length from the equipment to the connection point are determined start assembling the 10K Ω (0.1%) resistor sense lead assembly to the sense lead harness. Start by cutting each wire to the required length and strip the wire at approximately ¼" of the insulation from the end of the wire.
3. Place the stripped wire into the butt-splice of the 10K Ω (0.1%) resistor sense lead assembly.
4. Place the wire and insulated section of the butt-splice into the first die of the Panduit crimper, making sure that the intersection is centered within the die.
5. Crimp the connection.
6. Check the crimped connection to make sure it is secure and holds well.
7. Connect the completed voltage sense lead to its appropriate cell sensing point tab washer.

Figure 6.1 Voltage Sense Lead Connections to Battery



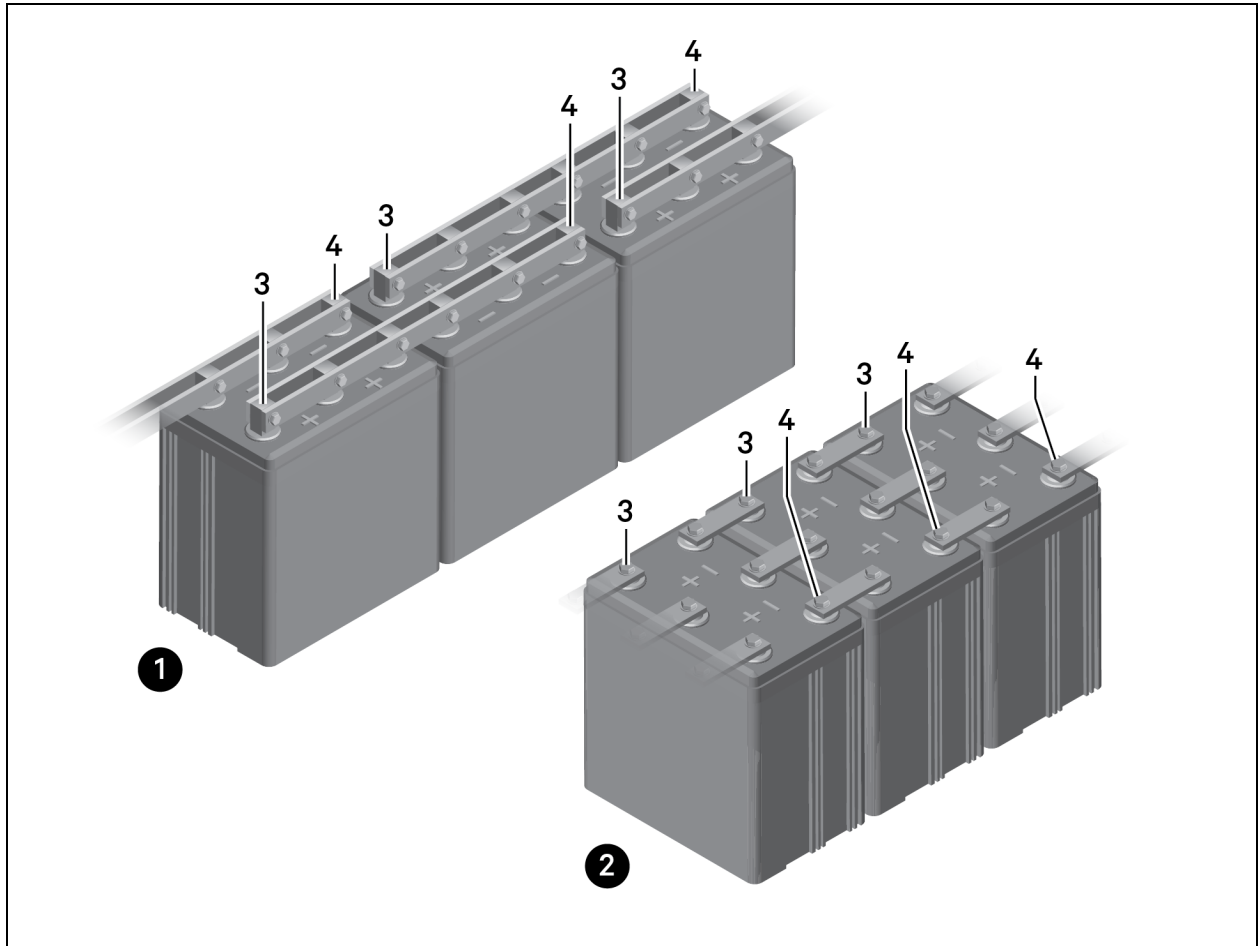
Item	Description
1	Albér UXIME battery monitor
2	1102-560-XX
3	Write in Connector Identification Information
4	Cut to Length, Strip, and Crimp Resistor Assembly to Harness
5	1102-555
6	Connect to Tab Washer

! CAUTION: When a load lead wire connects to the same point as a voltage sense lead, the load lead wire must be the closest to the cell's post. Ensure that the fuse is a 15A Slo-Blo.

6.2 Systems with Dual or Multiple Positive and Negative Posts

Systems that use dual or multiple positive and negative post interconnections require connection of the sense lead harness using the following guidelines. The positive sense lead wires (solid colors) and negative sense lead wires (white with colored stripe) of the harness attached to the corresponding positive and negative terminals of the battery in a way that will monitor as many strap connections as possible. To achieve optimum results, it is recommended that sense leads should be connected as described in [Figure 6.2](#) below and duplicated at each cell for consistent readings.

Figure 6.2 Exposed Dual or Multiple Posts Connections



Item	Description
1	Exposed Square/Flag Post Configuration
2	Recessed Threaded Insert Posts
3	Positive Sense Lead
4	Negative Sense Lead

6.3 Fused Resistance Load Lead Harness Connections

There are a maximum of seven load connections available. To identify connection locations, See [Figure 7.1 on page 31](#) to the battery for each available configuration.



WARNING! Before making any connections to the battery, ensure that the fuses are not installed in the load lead fuse holders. Do not install the fuses until the entire system is commissioned.

Each Resistance Load cable assembly is made up of seven color-coded load wires to distinguish each resistance load step for proper termination at the battery. The Resistance Load cables are routed from the Albér UXIME battery monitor to the installation location and cut to the appropriate length.

NOTE: For ease of future cell maintenance, leave some slack in the wiring to the cells.

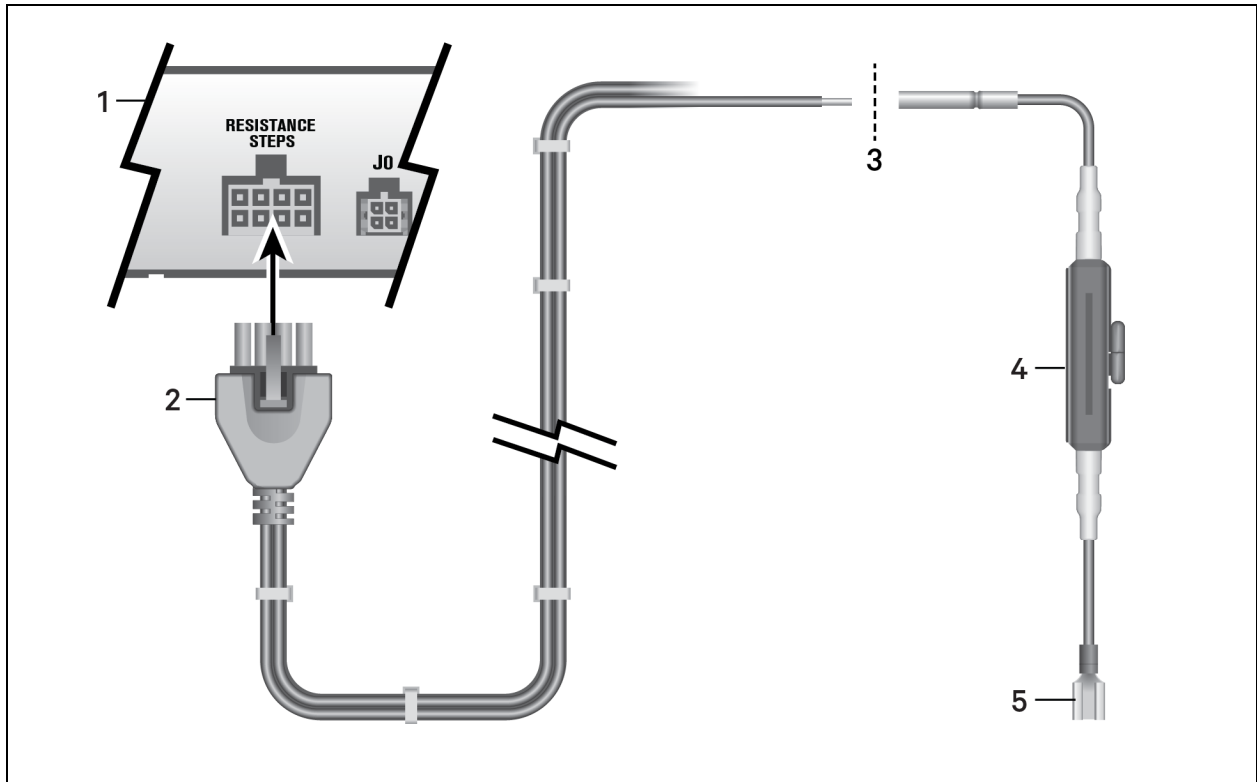
The wire should be stripped to remove approximately 5/16" of insulation and crimped into the butt splice on the Fuse Holder Assembly. It could be necessary to replace the 10K Ω (0.1%) resistor leads and/or FASTON terminal on the load lead with a ring terminal in order to complete the connection to the charger bus.



CAUTION: Proper location and crimp termination of these cables are critical and could cause equipment failures if done improperly.

NOTE: When installing load lead cables, cut them to the appropriate length. Do not coil these cables. Failure to cut cables to the correct length could result in inaccurate readings.

Figure 6.3 Resistance Steps Connection to Battery



Item	Description
1	Resistance Steps
2	1102-550-XX
3	Cut to Length, Strip, and Crimp Fuse Assembly to Harness
4	1102-551
5	Connect to Tab Washer

The fused load lead will be placed on a single tab washer. At instances where the sense and load leads are at the same location, it is important that the load connection is placed closest to the battery post. Ensure that the fuse is not installed before installing the tab washer. The fuse will be installed at the time of startup.

NOTE: If two-tab washers are used, it is important that the load connection is placed closest to the battery post as failure to do this could result in inaccurate resistance readings.



CAUTION: Connecting the load wires incorrectly could cause an equipment failure if a resistance test is performed. Such failures are not covered under warranty.



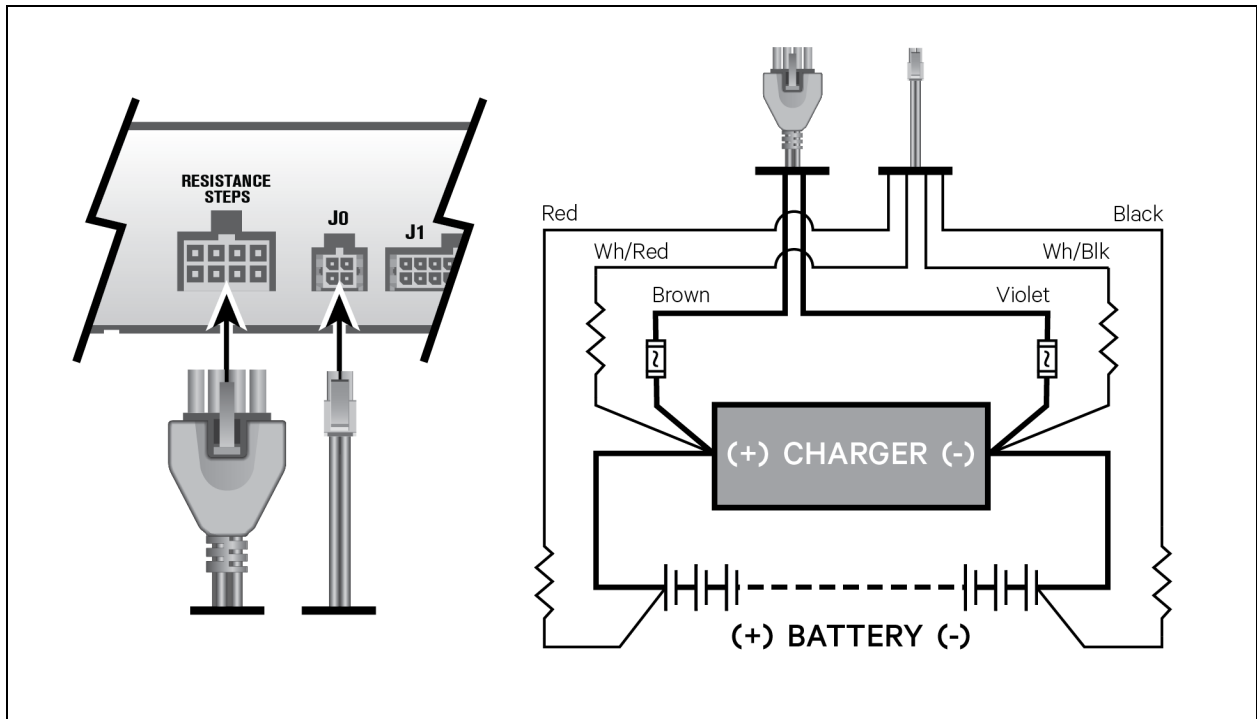
WARNING! Installation of the load lead fuses must follow the appropriate order indicated in the Vertiv™ Albér™ Universal Xplorer Industrial Monitor (UXIME) Quick Installation Guide.

6.4 Charger Cable Resistance Reading Connection

Each unit includes one 25', 50', 75', or 100' Charger Cable Resistance Reading harness. The Charger Cable Sense Lead cables are routed from the Albér UXIME battery monitor to the installation locations shown in [Figure 6.4 below](#). Once the routing path and the required wire length from the equipment (JO) to the connection points are determined, start assembling the 10K Ω (0.1%) resistor sense lead assembly to the charger sense lead harness as described in [Voltage Sense Lead Connection Preparation on page 17](#). It could be necessary to replace the 10K Ω (0.1%) resistor leads and/or FASTON terminal on the load lead with a ring terminal in order to complete the connection to the charger bus.

! CAUTION: Proper location and crimp termination of these cables are critical and could cause equipment failures if done improperly.

Figure 6.4 Charger Control Sense Lead Connection to Battery and Charger

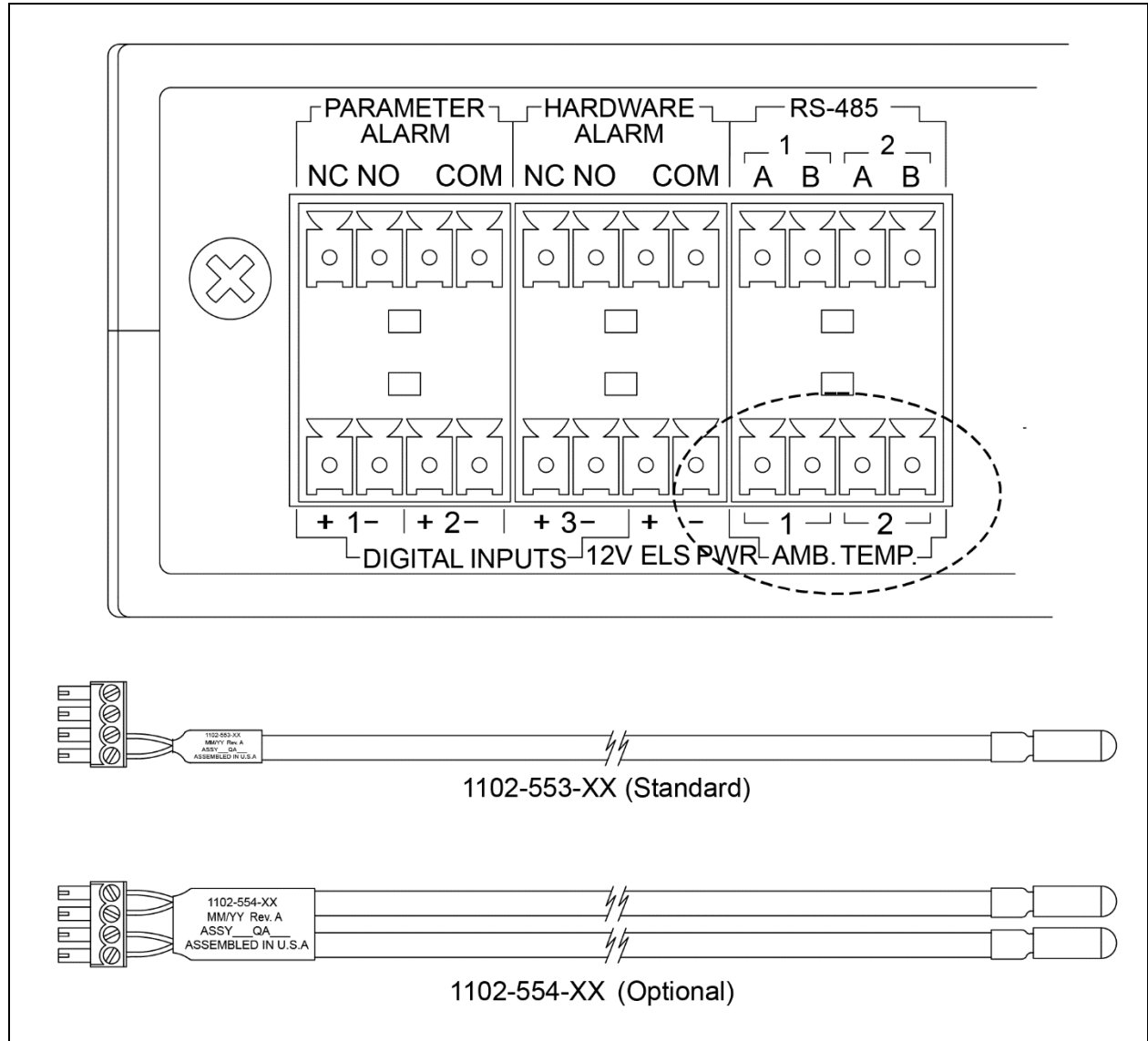


6.5 Ambient Temperature Sensor Connection

Each unit includes one ambient temperature sensor. This sensor comes with a prefabricated harness with 25', 50', 75,' or 100' of cable. Route the cable to the desired location to measure ambient room temperature and plug the connector into the rear of the unit.

NOTE: The Albér UXIME battery monitor device comes with one single temperature harness. A dual harness can be purchased from your Vertiv Sales representative. Either a single or dual harness can be used on the Albér UXIME battery monitor.

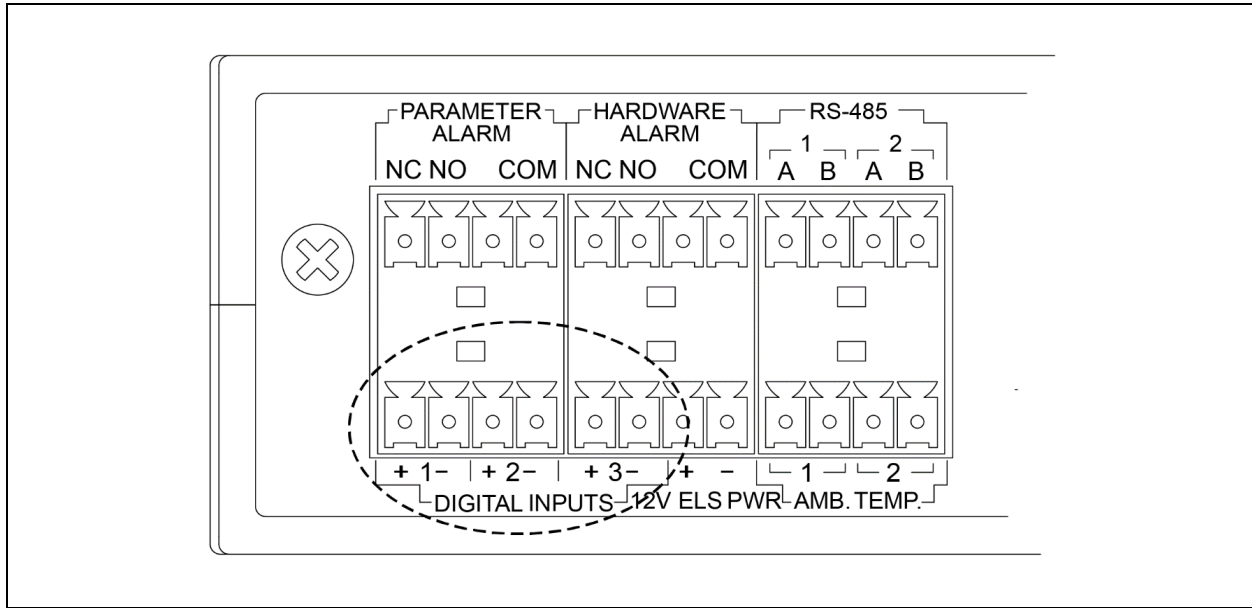
Figure 6.5 Single and Dual Ambient Temperature Harness 25', 50', 75', or 100'



6.6 Digital Inputs Connection

Provisions are made to support- three separate digital inputs. These digital inputs can be configured to operate in two different ways. See [Figure 6.6 below](#) to connect the device monitored, connect to one of the three inputs located on the rear of the unit, to connect the monitored device. If only a switch "open/close contact" mode is being used, then polarity is not important. However, if a voltage source is being used, then the polarity must be correct.

Figure 6.6 Digital Inputs

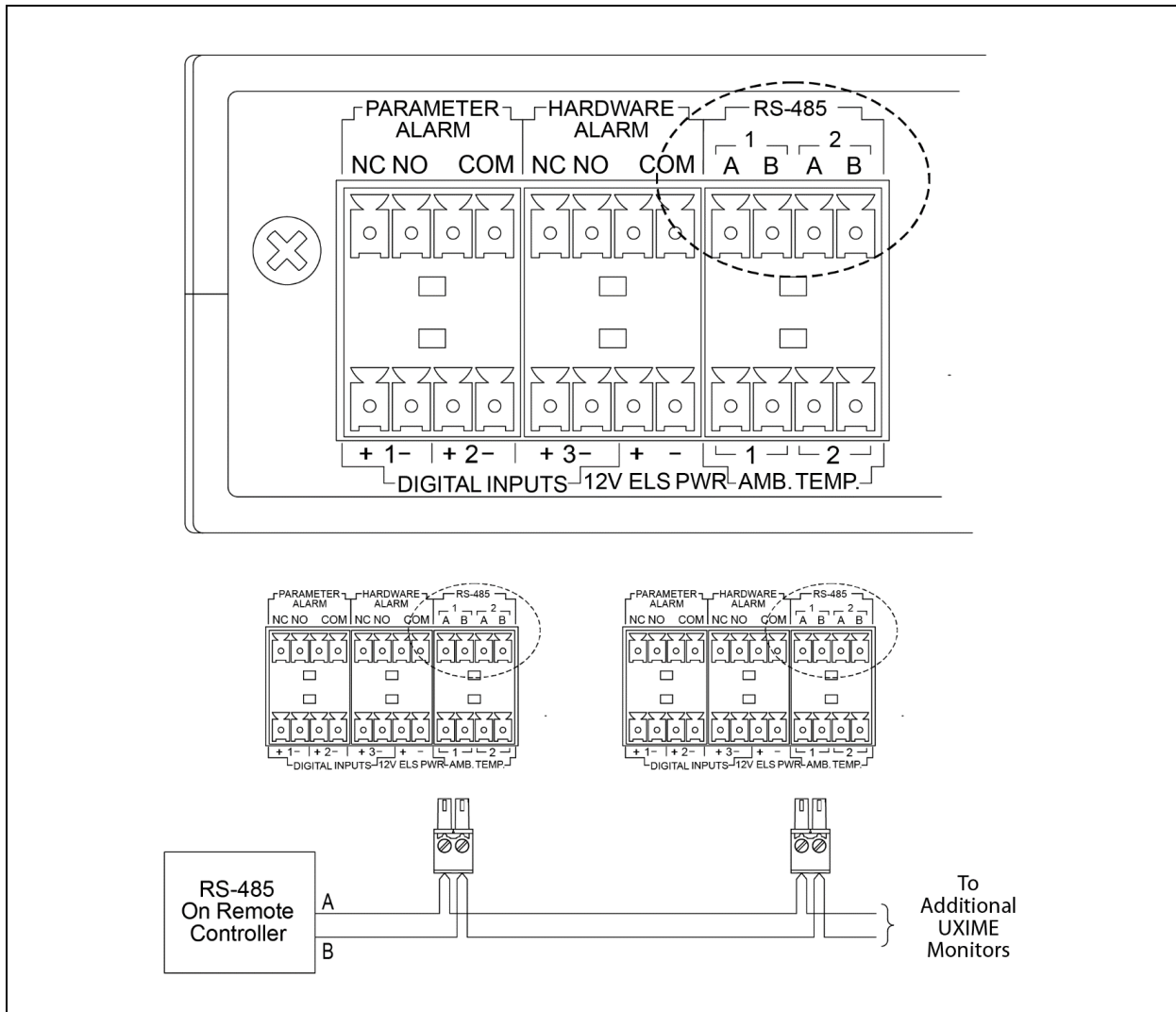


CAUTION: When connecting digital input connections, pay close attention to polarity and voltage. The equipment will get damaged if the polarity of the digital inputs is reversed, or the voltage mode exceeds 60Vdc.

6.7 RS-485 Communication Connection

Communication between the Albér UXIME battery monitor and remote controllers (BMS) or accessory modules (currently not supported) is available through two RS-485 ports. Each of these ports are labeled as 1 and 2. When connecting to a remote controller, connect the A and B connection of port 1 to the remote controller. When multiple units are used together and need to be connected to a remote controller, these modules can be networked together using the RS-485 (1) terminals A and B. See [Figure 6.7](#) below.

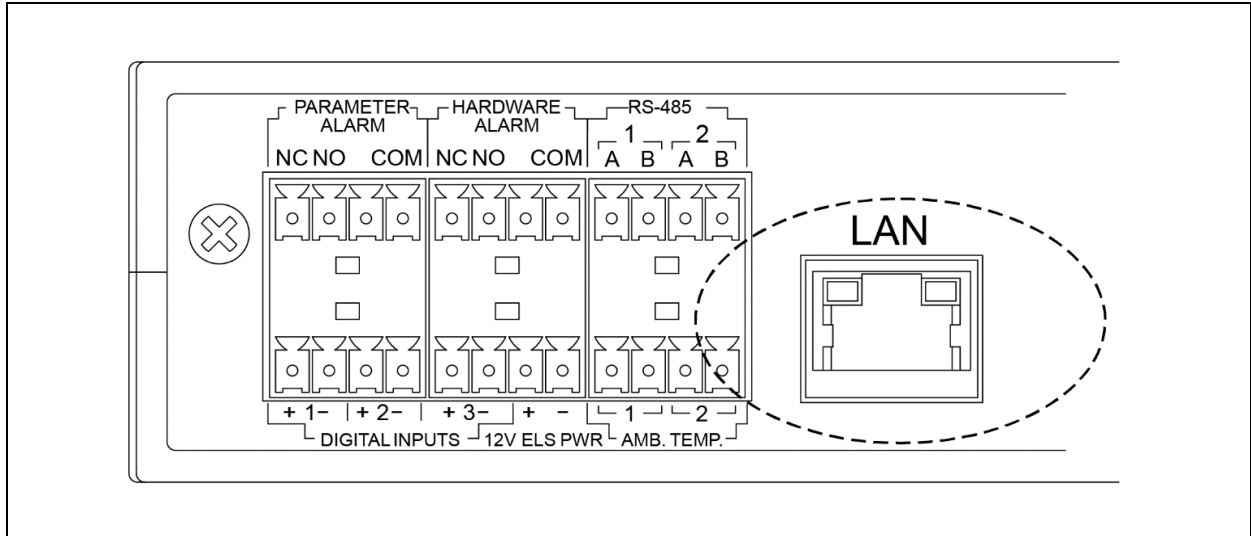
Figure 6.7 RS-485 Connections



6.8 Network Communication Connection

The LAN network connector allows the Albér UXIME battery monitor to be connected to an Ethernet network. Connect the network cable to the LAN connector on the Albér UXIME battery monitor, from an existing network.

Figure 6.8 Network Communication Connection



6.8.1 Network protocols supported

The network interface supports a number of protocols and can require specific ports to be opened up on the network. The protocols supported by the network interface can be used are listed below:

- TCP 502 (Modbus).
- TCP 3002 (Application debug port).
- TCP 9999 (Telnet setup).
- TCP 10001 (TCP to serial pass through).
- UDP 69 (TFTP), only to load code updates.
- UDP 161 (SNMP).
- UDP 162 outbound (SNMP traps).

6.9 Parameter Alarm Connection

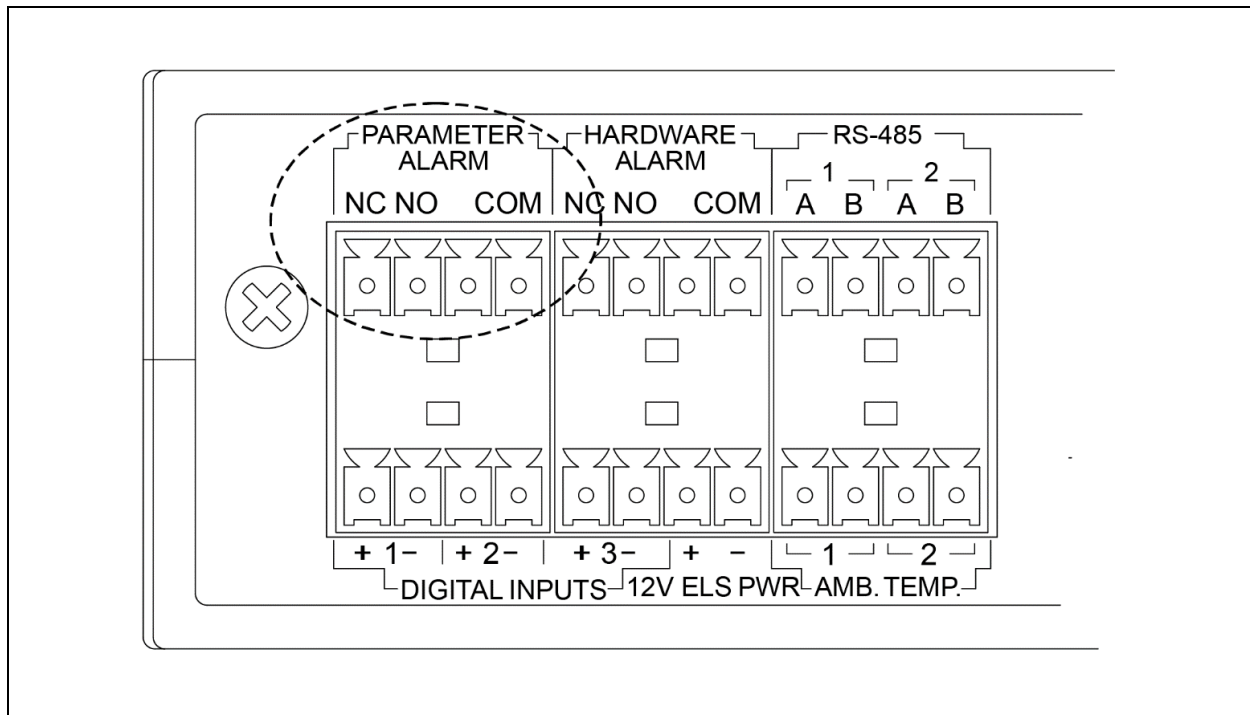
The Parameter Alarm Form C contact activates if a critical parameter exceeds any of the programmed thresholds. Critical parameters are user-defined on the Major Alarm tab in Configurator software, or by checking a major alarm box on Digital Inputs tab. This contact has three connections:

- NC (Normally Closed).
- NO (Normally Open).
- COM (Common).

The NO (Normally Open) contact becomes active when a critical parameter exceeds programmed thresholds or any Major Alarm is otherwise present.

NOTE: The Connection can be made directly to the facility's alarm reporting system. If multiple units are used, then these contacts can be connected in series or parallel, depending on the requirements for the facility's wiring of NC (Normally Closed) or NO (Normally Open).

Figure 6.9 Alarm Contacts



6.10 Hardware Alarm Connection

The Hardware Alarm Form C alarm contact notifies if a hardware failure has been detected within the Albér UXIME battery monitor. This contact has three connections:

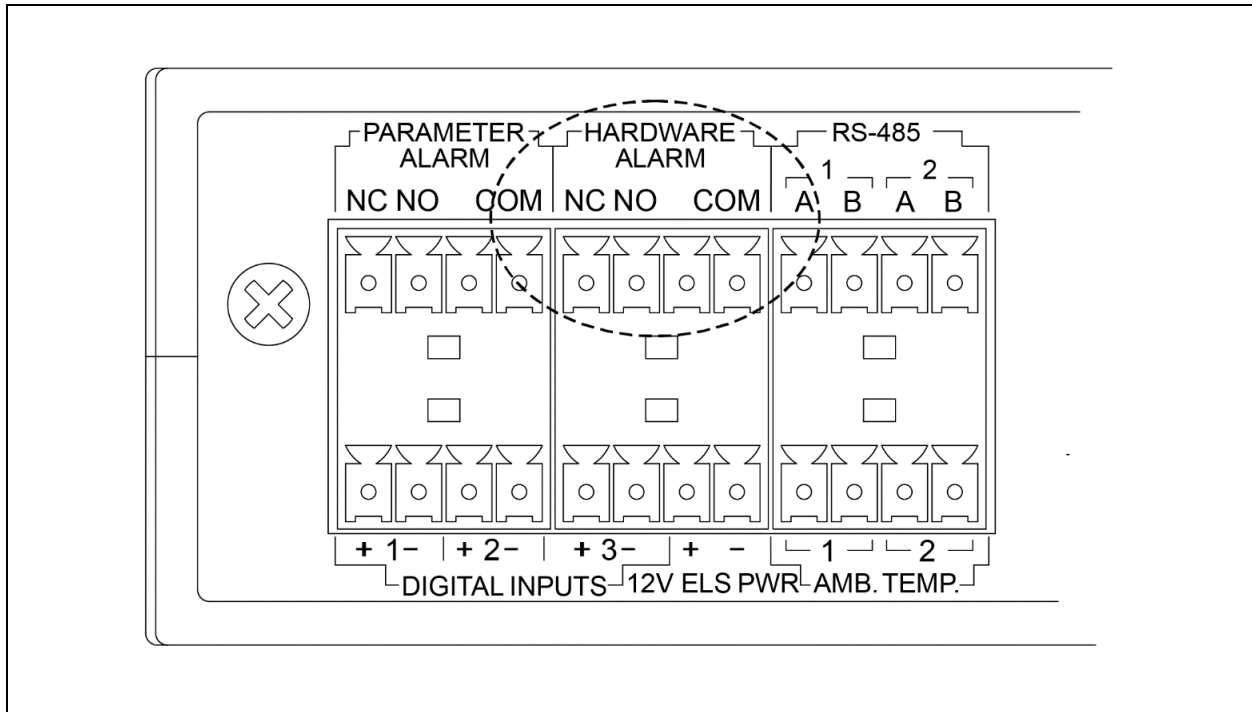
- NC (Normally Closed).
- NO (Normally Open).
- COM (Common).

The NO (Normally Open) contact becomes active once the Albér UXIME battery monitor successfully boots up and remains in this state during normal operation. The relay changes to state and the NC (Normally Close) contact becomes active during any of the following fault conditions:

- Power fault.
- Application code fault accompanied by an unsuccessful recovery.
- MLM (Load Module) failed.

NOTE: The Connection can be made directly to the facility's alarm reporting system. If multiple units are used, then these contacts can be connected in series or parallel, depending on the requirements for the facility's wiring of NC (Normally Closed) or NO (Normally Open).

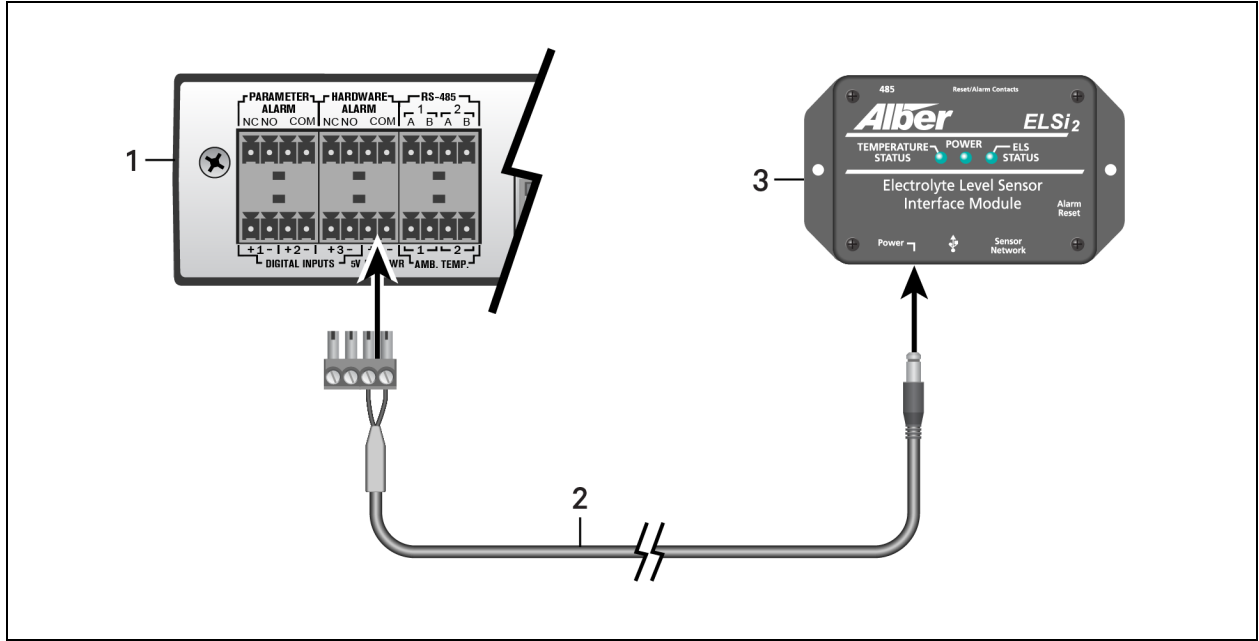
Figure 6.10 Hardware Alarm Contacts



6.11 Vertiv™ Albér™ ELS2 Connections

The Albér™ ELS2 power connections are made to the +12VDC connection using the optional harness 1108-175-XX. Connect from the 12V ELS PWR port to the POWER jack on the Albér™ ELSi2.

Figure 6.11 Albér™ ELS2 Power Connections



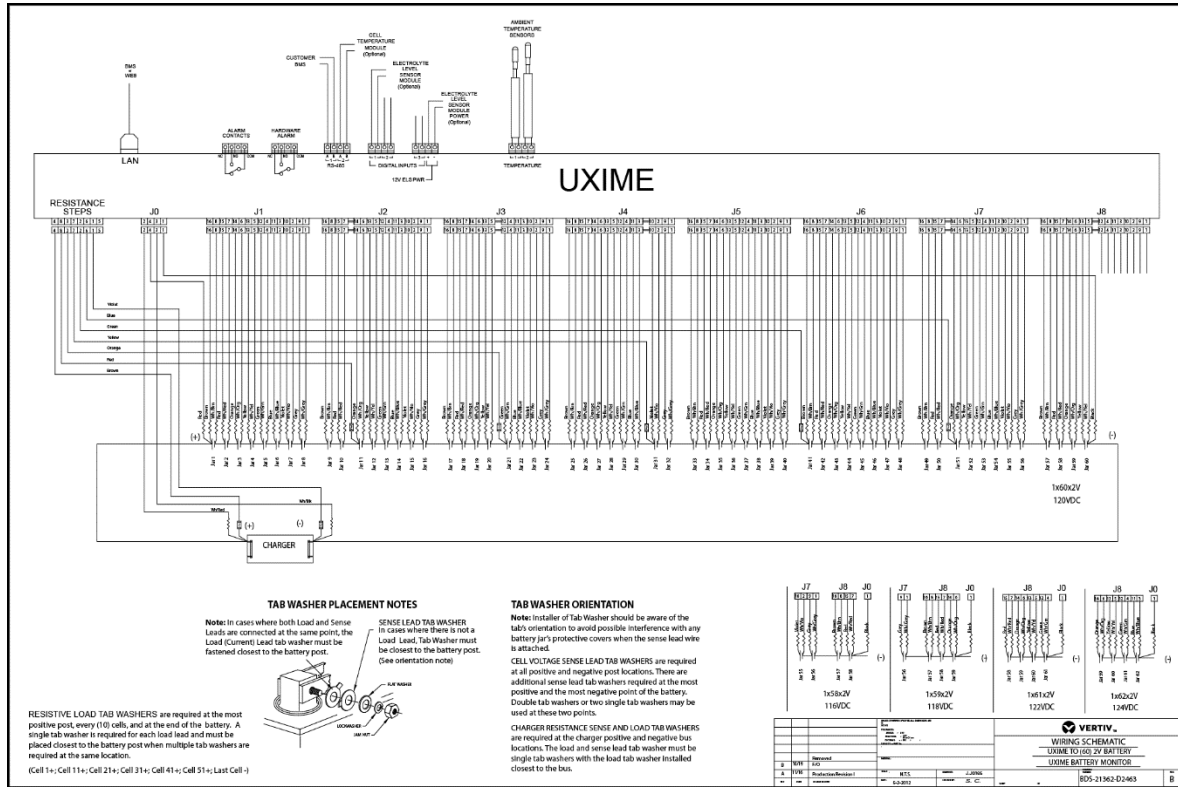
Item	Description
1	Albér UXIME battery monitor
2	1108-175-XX
3	Albér™ ELSi2

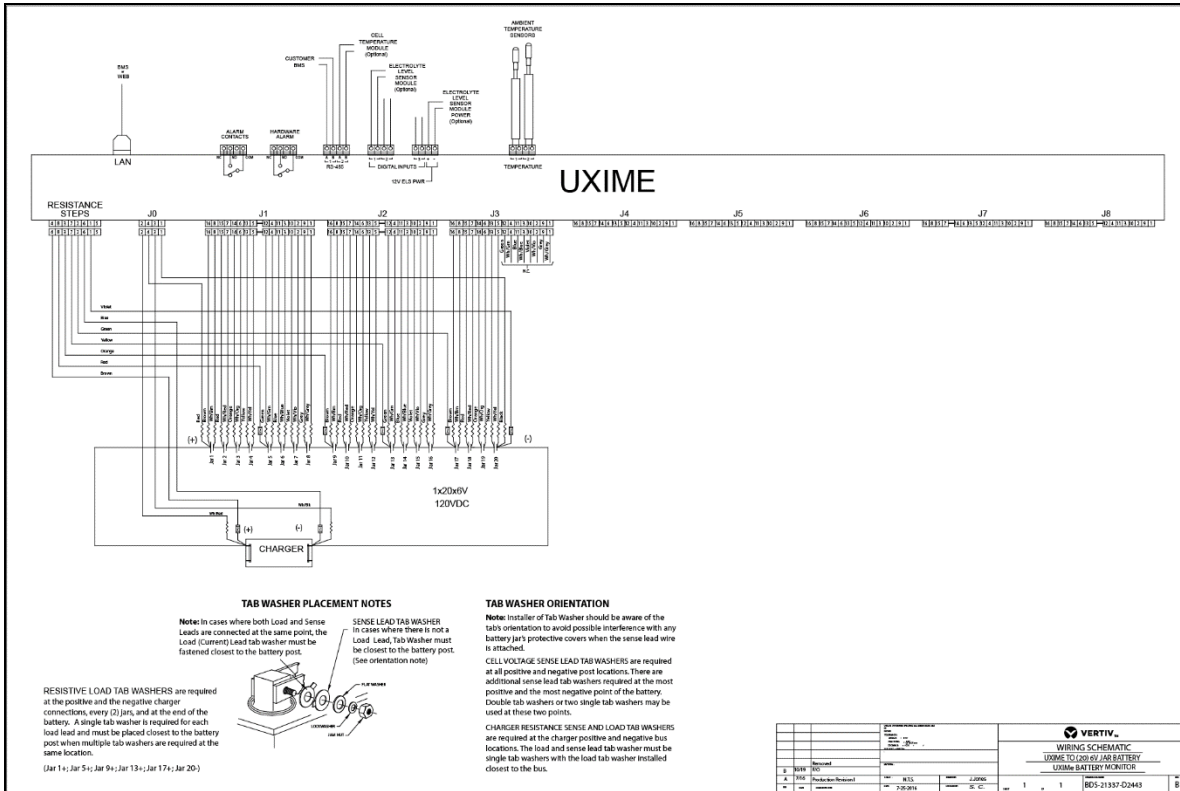
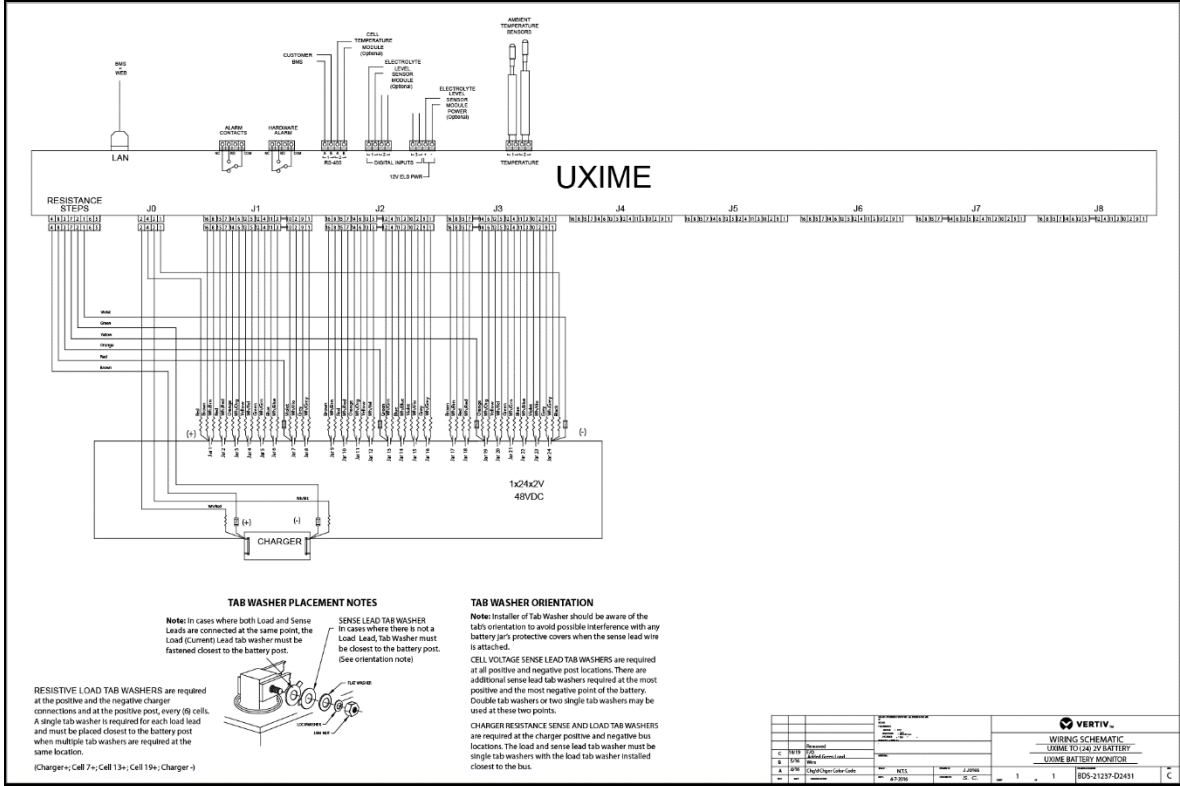
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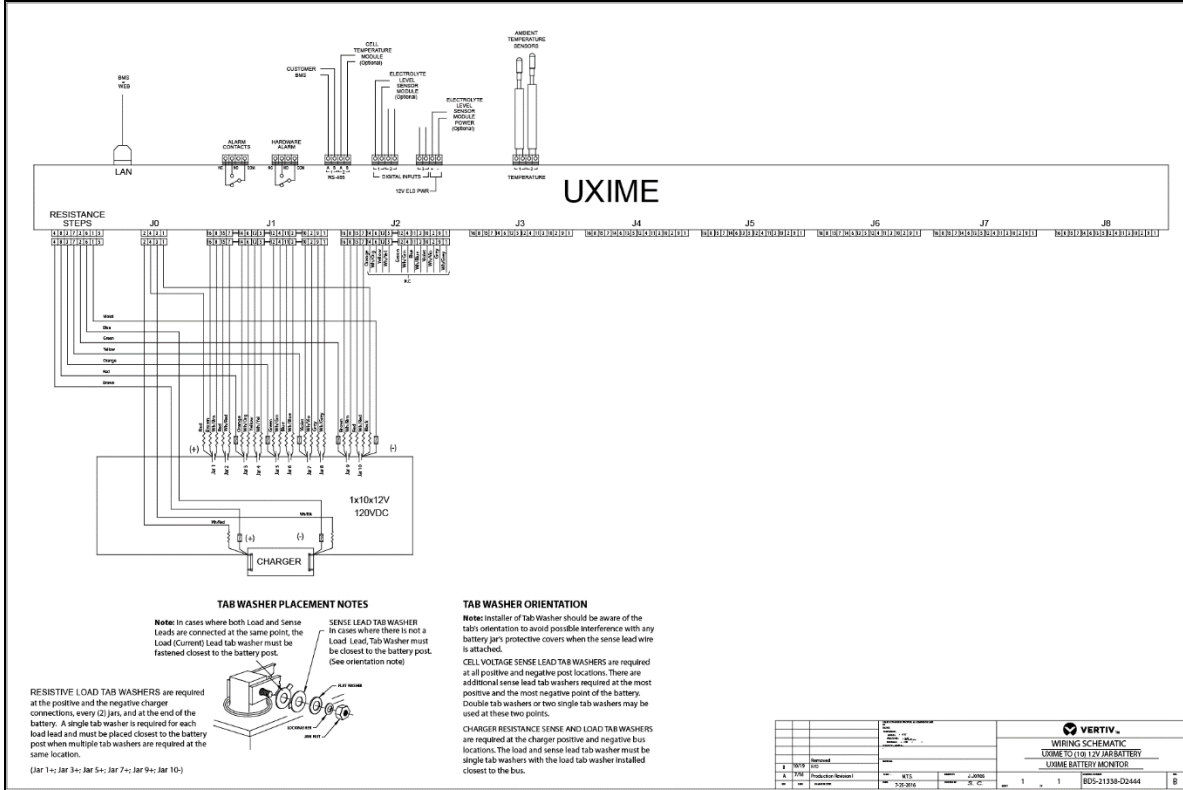
7 Alber UXIME Battery Monitor Drawings

NOTE: Please visit www.vertiv.com/alberuxime and select Documents and Downloads to access an online version of the battery wiring schematic diagrams that can be expanded for easier viewing.

Figure 7.1 Alber UXIME Battery Monitor Wiring Schematic Diagram







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Appendices

Appendix A: Technical Specifications

Table A.1 Alber UXIME Battery Monitor Technical Specification

Item	Value
Safety Approvals	<ul style="list-style-type: none"> UL61010-1. EN61010-1. IEC61010-1.
EMC Approvals	<ul style="list-style-type: none"> EN61326-1. FCC part 15 class A.
Operating Environment	
Temperature Range	0°C to 55°C (32°F to 131°F)
Humidity Range	0% to 80% RH (non-condensing) at 5°C to 31°C 0% to 50% RH (non-condensing) at 31°C to 40°C
	Indoor Use Only
	Measurement Category O (500V Transient Rating)
	Pollution Degree 2
	Altitude: 0 to 2000 meters above sea level
Alarms	
2 - Form C relay contact, 2A at 30VDC	<ul style="list-style-type: none"> 2A at 30VDC. 0.25A at 125VDC.
Power	
Input Power	DC Power, 45VDC to 150VDC, 11.3W max. +/-10%
Communications	<ul style="list-style-type: none"> RS485/1 - MODBUS. RS-485/2 - Proprietary for optional accessories. Ethernet -TCP/IP MODBUS, SNMP, SMTP. USB.
Packaging	<ul style="list-style-type: none"> 1U chassis. 17.00 in. W x 1.75 in. H x 12.00 in. D. 4.0 lbs. Wall or 19 in. Rack Mount.

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Appendix B: Cell Measurements

This section describes cell measurement specifications.

Table B.1 Cell Measurement Specifications

Parameter	Tolerance
Cell Voltage	0 to 3V, 0.1% \pm 2mV
Internal Cell Resistance	0 to 32,000 μ W, 5% of reading \pm 2mW
Intercell Resistance	0 to 5000 μ W, 5% of reading \pm 5mW
Intertier/charge Cable Resistance	0 to 5000 μ W, 5% of reading \pm 5mW
Cell/Monobloc Temperature	0°C to 80°C \pm 0.1°C (32°F to 176°F)

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Appendix C: System Measurements

This section describes system measurement specifications.

Table C.1 System Measurement Specifications

Parameter	Tolerance	Number of Inputs
String Voltage	17 Vdc to 150 Vdc \pm .5%	Measured
String Current	0 to 2000ADC \pm 1% of full scale	Measured
Ripple Current	0 to 250 Amperes RMS, \pm 5% of full scale	Measured
Float Current	0 to 5000mADC, \pm 50mA	Measured
Ambient Temperature	0°C to 80°C \pm 0.1°C (32°F to 176°F)	Up to 2

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