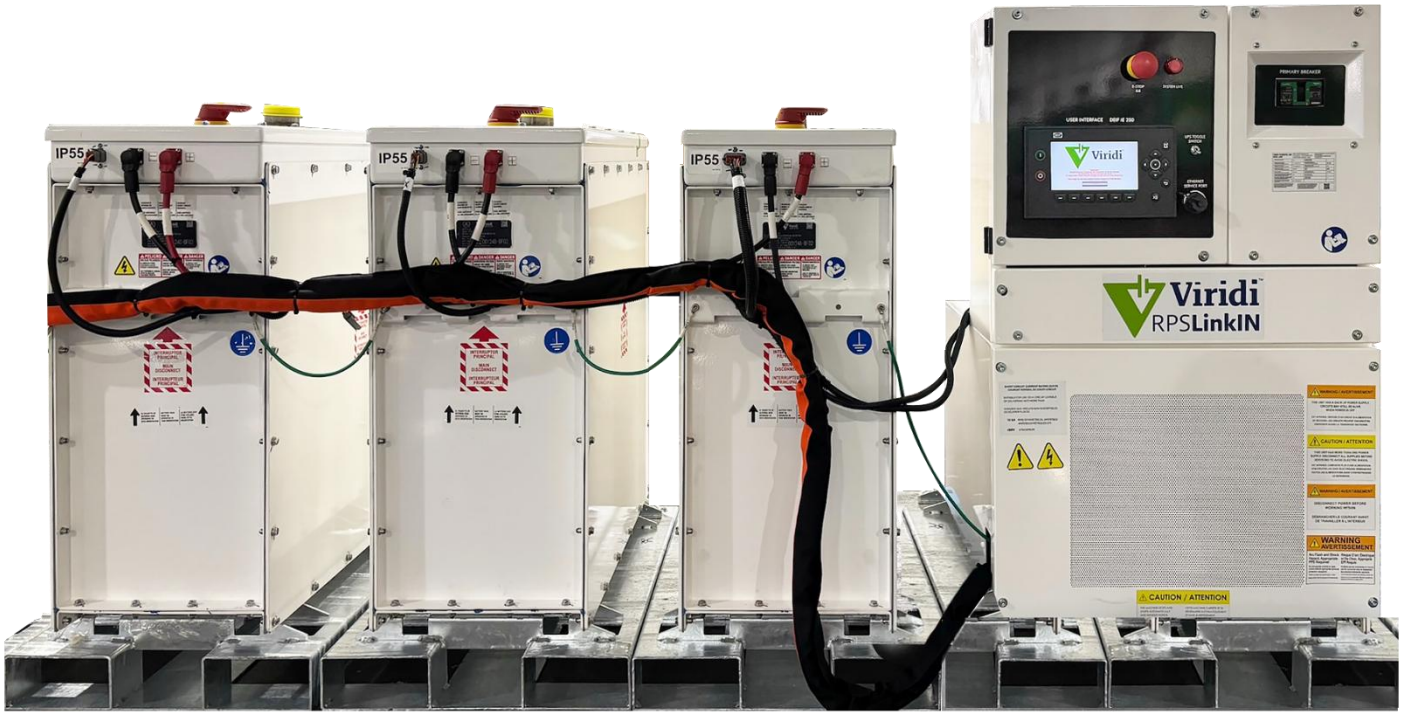
Installation, Operation, & Maintenance Manual



RPSLinkIN 3Φ

(9920-00092)

Modular Energy Storage System for Indoor Installations

Revision F: *Released 5-November-2026*

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Document Revision:

Item	Description of Revision	Current Rev	Date Released (MM-DD-YY)	Revision Initiated By:
1	1. Initial Release under revision control	A	26-NOV-25	J.A. Foulis
2	1. Paragraph 4.5 PCS Cabinet Components, updated 100A/50A Circuit Breaker, Terminal Blocks and Inverter callouts 2. Paragraph 9.1 Periodic Scheduled Maintenance [under task list] updates to reference paragraphs 3. Paragraph 9.4 VISTA Alarms, added (optional) to all ATS and EMS references 4. Paragraph 4.7.1, 4.7.2, 4.7.3 Replaced line drawing to reflect EMS as an optional component 5. Paragraph 4.6 updated to reflect 208 and 480 VAC systems	B	04-DEC-25	J.A. Foulis
3	1. Updated UL 1973 recognition to listing [UL 1973 (pack) cTÜVus Listed] 2. Updated cover page picture	C	23-JAN-26	J.A. Foulis
4	1. Updated contact information in paragraph 1 2. Added additional Warnings and Cautions to paragraph 2.1 3. Update paragraph 4.3.2 PCS Cabinet components 4. Update paragraph 4.5, PCS Cabinet Components 5. Added Combustible material warning to paragraph 6.1 6. Added paragraph 6.1.1 Room/area specific considerations 7. Added additional warnings to paragraph 6.3.1 8. Corrected Manufacturers and Viridi P/N for Exhaust Fan and Intake Filter	D	30-APR-26	J.A. Foulis
5	1. Updated Paragraph 4.4 Specification Table with updated Operating voltage and Cabinet Size and Weights 2. Updated 9.2 added decommissioning section 3. Changed RPS50 to rps50 4. Added 6.1.2 Battery Clearances 5. Added 9.1.5 Working Spaces 6. Aligned Cautions and Warnings with LinkEX where applicable 7. Provided enhanced Contact information (phone and email) data 8. Significant reformatting of the document 9. Changed all references from RPSLinkIN to RPSLinkIN 3Φ	E	30-July-26	J.A. Foulis
6	1. Updated DC-Usable Capacity	F	5-Nov-26	N.S. LaMendola

1. Notice

As an express condition of the Viridi Parente warranty and to encourage utilization of industry best practices, Viridi requires that the installation, mobilization, and operation of the RPSLinkIN 3Φ only be completed by, or at the direction of, a qualified professional as defined by the jurisdiction(s) within which the installation, mobilization, and operation occurs. Specific applications can vary, so please direct specific questions to Viridi's attention:

- **Customer Service, Parts and Warranty: 1-866-984-7434**
- **Parts Ordering:** parts@viridiparente.com
- **Service Issues:** service@viridiparente.com
- **Warranty Claims:** warranties@viridiparente.com
- **Sales: 1-716-968-8658; email:** sales@viridiparente.com
- **Customer Service: 1-866-984-7434; email:** service@viridiparente.com

Viridi expressly disclaims liability for applications made in a manner inconsistent with this guide and/or in non-compliance with local building and electrical codes. This Installation, Operations & Maintenance Manual, incorporates all the terms and conditions of sale. All information provided in this manual is subject to change with or without notice.

Please refer to the warranty documents provided at the point of sale for further information.

SAFETY

2. Safety

To make the best and proper use of the RPSLinkIN 3Φ, all personnel handling or operating the RPSLinkIN 3Φ are advised to follow these guidelines:

- Only fully trained and qualified personnel should operate or service the machine. Read and understand the Installation, Operations & Maintenance Manual before operating the equipment to make certain that safe practices are followed, including service and maintenance intervals.
- If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged RPSLinkIN 3Φ shall be removed from service, and no employee may use it until repairs and tests needed to render the equipment safe have been made.
- Always keep this Installation, Operations & Maintenance Manual in a convenient place for easy access.
- If this Installation, Operations & Maintenance Manual, is lost or damaged, contact Viridi Customer Service, referencing the equipment serial or asset number.
- This Installation, Operations & Maintenance Manual should be considered part of the RPSLinkIN 3Φ and remain with it.
- Constant efforts are made to improve the quality and performance of our products; it may be that some information in the User Manual differs from your equipment. If any questions arise, please contact Viridi Parente, Inc.
- All the information in this publication is based on the latest product information available at the time of printing. Viridi Parente, Inc. reserves the right to make changes to this Installation, Operations & Maintenance Manual, without notice or obligation.
- No part of this publication may be reproduced or copied without prior written permission from Viridi Parente, Inc.

2.1 Warnings, Cautions, and Important Notes



This “Safety Alert” symbol and others like it are in place to warn the operator of potential hazards. It means attention/become alert – the operator’s safety is involved!

This symbol can signify DANGER and, where used, documents a WARNING or CAUTION which is followed by text highlighting the potential hazard. This manual will detail the potential hazards so that necessary precaution(s) towards ensuring operator and equipment safety.

A **WARNING** signifies a situation whereby the operator, members of staff, or the public could be put in danger of personal injury by the improper operation of the RPSLinkIN 3Φ.

A **CAUTION** signifies a situation whereby damage to the RPSLinkIN 3Φ or associated parts could be caused by improper operation of the RPSLinkIN 3Φ.

Symbols Used in This Manual

	Warning/Cautions		Wear Gloves
	Shock Hazard		Quality
	General Safety		Tip

General Precautions

	COMPETENT PERSONNEL: The RPSLinkIN 3Φ is intended for use by suitable qualified, trained, and competent personnel who have read and understood this manual and are familiar with the equipment and its intended use. A certain level of user competence is assumed when operating power generating equipment.
	READ AND UNDERSTAND: Before personnel operate, service, or perform tasks on the equipment, the manual must be read and understood.
	VENTILATION: Do not obstruct the air vents and allow adequate space around the RPSLinkIN 3Φ for ventilation.
	ELECTRICAL SAFETY: Follow all applicable electrical codes and standards. Ensure proper grounding and bonding of the system components. Use appropriate PPE, including high voltage gloves, safety glasses, protective clothing, and insulated tools when working on electrical connections.
	PRECAUTIONS: Follow the precautions listed within this manual before operation and during operation, service, and maintenance activities for the safety of the operator and others and to protect the performance of the equipment.
	WARNING LABELS: Keep warning and caution labels from becoming dirty or torn and replace them if they become damaged. Replacements can be obtained by contacting Viridi Parente, Inc.
	SAFETY: Safety is an utmost concern. Safety statements are one of the primary ways to call attention to potential hazards associated with generator operations.
	FIRE SAFETY: Install fire suppression systems as required by local codes and regulations. Ensure that fire extinguishers and other firefighting equipment are readily accessible and properly maintained.
	EMERGENCY PROCEDURES: Establish and communicate emergency procedures, including shutdown protocols, evacuation routes, and first responder action plans. Ensure that all personnel are trained in these procedures.
	EARTH CONNECTION: The RPSLinkIN 3Φ requires a connection to an earth system. The RPSLinkIN 3Φ must always be connected to an external earth system.

Cautions and Warnings

	CRUSH HAZARD: The RPSLinkIN 3Φ is a crush hazard when elevated above ground level, and the area below the RPSLinkIN 3Φ should be cleared before hoisting the RPSLinkIN 3Φ above ground level.
	ELECTROCUTION HAZARD: The generator earth connection must be connected to a suitable earth point either on the equipment to which it is installed, to a recognized earth point on a building, or to an earth spike correctly installed in the ground. Correct earth bonding is an essential safety requirement of the BESS.
	DANGER OF FALLING: Do not stand on top of the RPSLinkIN 3Φ. The surface may be slippery.
	TRIP HAZARD: Take care not to trip over exposed cables in the area around the RPSLinkIN 3Φ. Install Road plates to cover exposed cables where necessary.
	HEAVY ITEM: The RPSLinkIN 3Φ is heavy; care must be taken when handling the unit to avoid injury.

	To prevent the risk of electric shock, Arc Flash, or equipment damage, ensure that the system is completely de-energized, and all power sources are fully disconnected before performing any internal maintenance on the Battery Energy Storage System (BESS). This includes: • Confirming that the toggle switch and 24v disconnect are in the **OFF** position. • Ensuring that all breakers, including those on the BESS system, are in the **open (OFF)** position. • Verify that all incoming and outgoing power sources are disconnected/unplugged.
	**SHOCK HAZARD**: Authorized access only. Do not remove panels to access internal components of the RPSLinkIN 3Φ. There are no user-serviceable parts inside the RPSLinkIN 3Φ. Only qualified, competent personnel are permitted to service internal components. Unauthorized Persons attempting to do so will be at risk of electric shock.
	**SITE ACCESS**: Restrict access to the installation site to authorized personnel only. Implement security measures such as fencing, surveillance, and access control systems to prevent unauthorized entry
	Do not allow connectors to drop or to be dragged across hard surfaces
	Make sure that dust caps are fitted and secure when not in use.
	Do not apply tension to connectors.
	Do not allow cable, connections or the RPSLinkIN 3Φ to lie in or underwater.
	Do not apply tension to or overtighten connectors.
	Do not make or break connections while the RPSLinkIN 3Φ is carrying a load.
	The RPSLinkIN 3Φ has a maximum power capacity up to 60 KW. Do not attempt to exceed the stated maximum power capacity.
	The RPSLinkIN 3Φ Dielectric Withstand Test Voltage is 1960Vac.
	**HIGH VOLTAGE**: The battery energy storage system contains high voltage components. Always de-energize the system before performing any maintenance or repairs. Use lockout/tagout procedures to ensure the system remains de-energized during work.
	**THERMAL RUNAWAY**: Be aware of the risks associated with thermal runaway in lithium-ion batteries. Implement measures to detect and mitigate thermal runaway events, such as temperature monitoring and automatic shutdown systems.
	**CHEMICAL HAZARDS**: Batteries contain hazardous chemicals that can pose health risks if released. In the event of a battery leak or spill, follow appropriate hazardous material handling procedures and use spill containment equipment.
	**MECHANICAL HAZARDS**: Use proper lifting techniques and equipment when handling heavy battery packs. Ensure that battery packs are securely mounted and supported to prevent tipping or falling.
	All areas containing ESS shall provide proper egress from the area in accordance with the local building codes
	Fire control and suppression is required for rooms or areas containing ESS, unless modified by applicable code or AHJ approval.
	System Alarms and Annunciation for the installation shall comply with applicable fire codes

⚠	Additional fire protection is managed through the RPSLinkIN 3Φ telecom device and ViSTA notification system. This system is programmed to send notifications to authorized users in the event of any abnormal functioning or temperature deviation so that immediate appropriate action can be taken. It is recommended that all Viridi BESS be operated with the ViSTA notification system.
⚠	Areas containing the ESS shall be provided with smoke detection or radiant energy-sensing systems unless modified by code or approved by the AHJ. The systems shall comply with applicable fire codes

2.2 Battery Precautions

The chemicals and materials in the battery are stored in a sealed container, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition, explosion, or hazardous material leakage. There is only a risk of exposure if a battery is mechanically, thermally, or electrically abused. There is no user access to the batteries. Do not remove panels. For the RPSLinkIN 3Φ to operate at an optimal capacity, they should be stored in a cool, dry place away from direct sunlight and sources of heat.

2.3 Disposal and Recycling

The RPSLinkIN 3Φ comprises components that must be disposed of responsibly. Many of the components can be reused or recycled. For advice on the safe and proper disposal of RPSLinkIN 3Φ, please contact the Viridi sales representative. Viridi Parente, Inc. partners with American Battery Technology Company to disassemble end of life battery cells into critical minerals to be reused.

3. Emergency Response Plan

The RPSLinkIN 3Φ includes internal fault mechanisms designed to prevent failures and subsequent risk hazards. However, Viridi cannot guarantee the safety performance of the RPSLinkIN 3Φ if the equipment is exposed to abuse, damage, or negligence.

If an installer or user happens to be exposed to the internal materials of the battery cell due to damage on the outer casing, the following actions are recommended:

- **In Case of Inhalation**: Leave the contaminated area immediately and seek medical attention.
- **In Case of Skin Contact**: Wash the contacted area thoroughly with soap and seek medical attention.
- **In Case of Ingestion**: Seek immediate medical attention.

If a fire breaks out at or near the location of the RPSLinkIN 3Φ, perform the following counter measures:

- In the event of a fire, appropriate extinguishing media should be used based on the type of incident. For battery-related fires, the system should be allowed to burn itself out while defensive firefighting strategies are employed to protect nearby exposures, if necessary. For non-battery-related fires, such as those occurring near an RPSLinkIN 3Φ unit, suitable extinguishing agents, including water or an ABC fire extinguisher, should be utilized. Additionally, if a fire occurs adjacent to the RPSLinkIN 3Φ, water may be applied as a defensive measure to cool the unit, if deemed necessary.

- Building occupants shall evacuate the building immediately upon discovery of fire, call local emergency services

- Follow the proper firefighting instructions. If a fire occurs when charging the RPSLinkIN 3Φ, press the E-STOP, then provided it is safe to do so, disconnect the battery pack circuit breaker. If the battery pack is not on fire, extinguish the fire before the battery pack catches fire, preferably with water. If the battery pack within the RPSLinkIN 3Φ is on fire, do not try to extinguish it, and evacuate people from the premises immediately.

- WARNING: Explosion is possible if the battery pack within the RPSLinkIN 3Φ experiences temperatures above 150°C (302°F). When a battery pack is burning, it will leak poisonous gases. Do not approach it.

- To deal with an accident with the RPSLinkIN 3Φ on land, refer to the site-specific emergency response plan, if available and move the damaged RPSLinkIN 3Φ to a segregated location and call your local fire department or service engineer. Service inspection must be completed by Viridi or an authorized service center before the unit can be cleared for operation.

- Note that proper lockout/tagout procedures must be followed in such cases. To deal with an accident with the RPSLinkIN 3Φ in the water, stay out of the water and do not touch anything if any part of the battery, inverter, or wiring is submerged. Do not use the submerged battery again.

    - Contact your Viridi Service Team for assistance at:
        - **Customer Service Line: 1–866–984-7434**
        - **Email: service@viridiparente.com**

3.1 Scenario-Based Emergency Response Considerations for Indoor Fixed Installation

The RPSLinkIN 3Φ is a modular lithium-ion Battery Energy Storage System (BESS) designed for fixed indoor installation in residential, commercial, and industrial buildings. The system has been successfully tested to UL 9540A Edition 5 under residential, indoor, floor-mounted conditions and met all five performance requirements of that standard, including zero detectable release of flammable or toxic gas during unit-level testing.

The following representative scenarios are provided to demonstrate how emergency response considerations may vary by context, while maintaining consistent hazard controls, system safeguards, and coordination with emergency responders.

These scenarios are illustrative only and do not replace the authority or operational discretion of the Fire Department. In all cases, emergency response actions shall align with Section 3 of this Emergency Response Plan and applicable codes and standards.

- ***Scenario A: Thermal Event During Normal Operation - Unoccupied Mechanical or Utility Space***
  - **Description:**
    The RPSLinkIN 3Φ is installed in a dedicated utility or mechanical room within a residential, commercial, or industrial building. The system is operating normally in charging, discharging, or standby mode when an abnormal thermal condition is detected. The space is unoccupied at the time of initial detection, and the event is identified through both a ViSTA Cloud remote monitoring, control, and alarm notification and by building occupants observing an alarm state on the DEIF IE250 HMI on the front face of the PCS Assembly.

  - **Primary Considerations:**
    - Fixed indoor installation in a confined or semi-confined space
    - Potential for limited egress from the installation room
    - System may will be in an active fault or alarm state upon responder arrival
    - BMS may will have already initiated automatic de-energization of the battery pack prior to responder arrival, either through detection of a cell-level fault or upon pack temperature exceeding 45°C (113°F)

  - **Emergency Response Considerations:**
    - Upon detection of an abnormal condition, building occupants shall evacuate the immediate area and call emergency services. The ViSTA Cloud monitoring platform may have already generated a remote alarm visible to the building operator or Viridi's service team.
    - Upon arrival, emergency responders shall be informed that the RPSLinkIN 3Φ is a fixed Lithium-ion Nmc battery energy storage system and that high voltage DC and AC components are present.
    - The external emergency stop (E-stop) is located on the front face of the PCS Cabinet, above the DEIF IE250 HMI. If deemed safe and appropriate by responding personnel, the E-stop may be activated to electrically isolate the system without opening the enclosure.
    - Responders should be aware that the RPSLinkIN 3Φ 's BMS is designed to automatically open the main contactors and de-energize the battery pack upon detection of a cell-level fault or if pack temperature exceeds 45°C (113°F), and either action may have already occurred prior to arrival.
    - The RPSLinkIN 3Φ has been tested per UL 9540A Edition 5 under residential, indoor, floor-mounted conditions and met all five performance requirements of that standard, including zero detectable release of flammable or toxic gas. Firefighting response shall nonetheless follow a defensive strategy consistent with the general Emergency Response Plan, with priority given to life safety and responder safety.
    - If no fire is present the system shall remain out of service until inspected and cleared by Viridi or an authorized service center.
    - Firefighting tactics, evacuation distances, and scene control remain at the discretion of the responding fire department.

- ***Scenario B: Fire External to the BESS Within the Same Space***
  - **Description**
    - A fire originates from a source other than the RPSLinkIN 3Φ — such as an adjacent electrical panel, HVAC equipment, stored materials, or building structure — within the same room or immediately adjacent space as the installed RPSLinkIN 3Φ. The system is not the origin of the fire but is present as an energized high-voltage system in the affected area.
  - **Primary Considerations**
    - The RPSLinkIN 3Φ is not the fire origin but represents an energized system within the fire environment
    - Thermal exposure from an external fire may affect the BESS enclosure
    - Responder decision-making regarding suppression tactics must account for the presence of the energized BESS
    - Building occupancy type may vary — residential, commercial, or industrial
    - BMS may have already initiated automatic de-energization of the battery pack prior to responder arrival upon internal pack temperature exceeding 45°C (113°F).
  - **Emergency** Response Considerations
    - Building occupants shall evacuate the building immediately upon discovery of fire and call emergency services.
    - Upon arrival, emergency responders shall be informed of the presence of a fixed lithium-ion NMC BESS in or adjacent to the fire area and that the system may be energized.
    - For the non-battery fire, suitable extinguishing agents including water or an ABC fire extinguisher may be used. Water may additionally be applied to the exterior of the RPSLinkIN 3Φ enclosure as a defensive cooling measure if deemed necessary by the responding fire department, to limit heat transfer to the battery system.
    - The ¼" steel IP55-rated enclosure of each rps50 Battery Pack provides a durable barrier against external thermal exposure.
    - Responders should be aware that the BMS within the RPSLinkIN 3Φ 's is designed to automatically de-energize the battery pack upon detection of a cell-level fault. Additionally, the BMS will automatically open the main battery contactors and de-energize the pack if the pack temperature exceeds 45°C (113°F). In an external fire scenario, this thermal threshold would be reached prior to or independent of any cell-level fault condition, providing an additional layer of automatic isolation as the thermal environment escalates.
    - If deemed necessary safe and appropriate, the E-stop located on the front face of the PCS Assembly, above the HMI may be activated to electrically isolate the system. If fire conditions prevent safe access to the E-stop, isolation shall not be attempted manually. Rather, it should be done through the ViSTA Cloud system. Note this is NOT necessary if the BMS has already de-energized the pack automatically, which can be determined through the ViSTA Cloud notification system.
    - The RPSLinkIN 3Φ has been tested per UL 9540A Edition 5 under residential, indoor, floor-mounted conditions and demonstrated zero detectable release of flammable or toxic gas under thermal stress conditions. This performance characteristic is relevant to responder safety assessments when the BESS is exposed to an external fire environment.
    - Firefighting tactics, suppression decisions, evacuation distances, and scene control remain at the discretion of the responding fire department.

- ***Scenario C: Occupied Building — First Responder Arrival with System in Fault or Alarm State***
  - **Description**
    - The RPSLinkIN 3Φ is installed in a residential, commercial, or industrial building that is occupied at the time of an incident. A fault or alarm condition has been triggered — detected either through the DEIF IE250 HMI on the PCS Assembly, a ViSTA Cloud remote monitoring, control, and alarm notification, or a building fire alarm integration — and emergency responders arrive at a building with occupants present and the BESS in an active alarm or fault state. No visible fire may be present at the time of arrival.

- **Primary Considerations**
  - Building is occupied; life safety and occupant coordination are the primary priorities
  - System is in a fault or alarm state but may not have progressed to a fire condition
  - Responders must assess an energized high-voltage system without the benefit of visible indicators of fire
  - Remote monitoring data may be available through the building operator or Viridi's service team to inform responder situational awareness

- **Emergency Response Considerations**
  - Building occupants shall be evacuated or sheltered in place at the direction of emergency responders, consistent with applicable life safety codes and the authority of the responding fire department.
  - Upon arrival, emergency responders shall be informed that the RPSLinkIN 3Φ is a fixed lithium-ion NMC BESS in an alarm or fault state, that high voltage DC and AC components are present, and that the BMS may will have already initiated automatic isolation of the battery pack — either through detection of a cell-level fault or upon internal battery pack temperature exceeding 45°C (113°F).
  - The E-stop is located on the front face of the PCS Assembly, above the DEIF IE250 HMI. If responders determine it is safe and appropriate to do so, the E-stop may be activated to electrically isolate the system without opening the enclosure.
  - The ViSTA Cloud control, monitoring, and alarm platform provides remote visibility into system alarm status and severity. Building operators or Viridi's Customer service team (1-866-984-7434 / service@viridiparente.com) may be able to provide responders with real-time system status information to support situational awareness.
  - In the absence of visible fire, responders should treat the area around the RPSLinkIN 3Φ as a potential hazard zone and avoid opening enclosures or attempting internal access. There are no user-serviceable components inside the RPSLinkIN 3Φ.
  - The RPSLinkIN 3Φ has been tested per UL 9540A Edition 5 under residential, indoor, floor-mounted conditions and met all five performance requirements of that standard, including zero detectable release of flammable or toxic gas. Responders should nonetheless approach any BESS fault condition with appropriate caution until the nature of the fault is determined.
  - The system shall remain out of service following any fault event until inspected and cleared by Viridi.
  - Evacuation decisions, hazard zone establishment, and all scene control remain at the authority of the responding fire department.

- **General Notes Applicable to All Scenarios**
  - Emergency response actions shall always prioritize life safety and responder safety above all other considerations.
  - The ViSTA remote control, monitoring, and alarm system can be accessed by Viridi owners, building owners, and first responders to determine the state of the system, and whether it is energized or not. This can be done prior to entering rooms where packs are located during an emergency response situation.
  - The RPSLinkIN 3Φ is a fixed, floor-mounted system and shall not be moved or relocated during or following an incident without direction from Viridi or an authorized service center.
  - Firefighting tactics, evacuation distances, suppression decisions, and scene control remain at the sole discretion of the responding fire department.
  - The E-stop located on the front face of the PCS Assembly above the DEIF IE250 HMI, provides a means of electrical isolation accessible without opening any enclosure. Activation does not substitute for full lockout/tagout procedures, which must be performed by qualified personnel prior to any post-incident inspection or service activity.
  - This scenario-based guidance is intended to supplement, not replace, site-specific emergency response planning where such plans are available and required by the authority having jurisdiction (AHJ).

- **Contact Viridi Customer Service for emergency support: 1-866-984-7434 | service@viridiparente.com**

SYSTEM OVERVIEW

4. System Overview

Disclaimer: The images contained within this section and the ensuing sections may not be directly reflective of a complete installation. Custom installation solutions are possible depending on space constraints of the installation location.

4.1 RPSLinkIN 3Φ Overview

The RPSLinkIN 3Φ is a modular Lithium-Ion Battery Energy Storage System for indoor installation in residential, commercial and industrial buildings. It is designed to scale in increments of roughly 50kWh to fit the spacing and energy requirements of nearly any application. It consists of two major components:

rps50 Battery Pack – the 50kWh building block allowing a system to be designed from 50kWh to multiple Megawatt hours

PCS Cabinet – containing the system's inverter, power electronics, and VCom IoT edge computer

4.1.1 RPSLink Configuration Naming Convention

RPSLinkIN 3Φ -480V-3p-150kWh-30kW

Configuration's maximum continuous charge & discharge power in kilowatts

Configuration's Approximate nameplate installed energy capacity rating in kilowatt-hours

Configuration's rated AC interconnection voltage and number of phases

EX: BESS equipment is skid mounted within a NEMA rated enclosure for outdoor installations on a concrete pad
IN: BESS equipment components are individually skid mounted for indoor installations

4.2 Fail-Safe Anti-Propagation Technology

Viridi's core value proposition lies in the Fail-Safe Anti-Propagation architecture built into **rps50** battery packs, each of which contains 48.9kWh of DC-Nameplate energy storage. RPS50 packs are cTÜVus Listed to the UL1973 standard.

Under UL9540A Ed. 5 testing, which involves intentionally heating a cell within the pack to the point of thermal failure, the pack met all five performance criteria of the residential indoor floor-mounted standard (the most severe test procedure). Test demonstrated that Viridi's passive technology halts cell-to-cell thermal propagation with no detectible release of heat, sparks, smoke, or flames.

The pack enclosure is built from ¼" steel and IP55 rated for an extremely durable industrial design built to survive harsh environments. This technology makes Viridi's BESS uniquely suitable for safe deployments in and around occupied spaces and critical equipment.

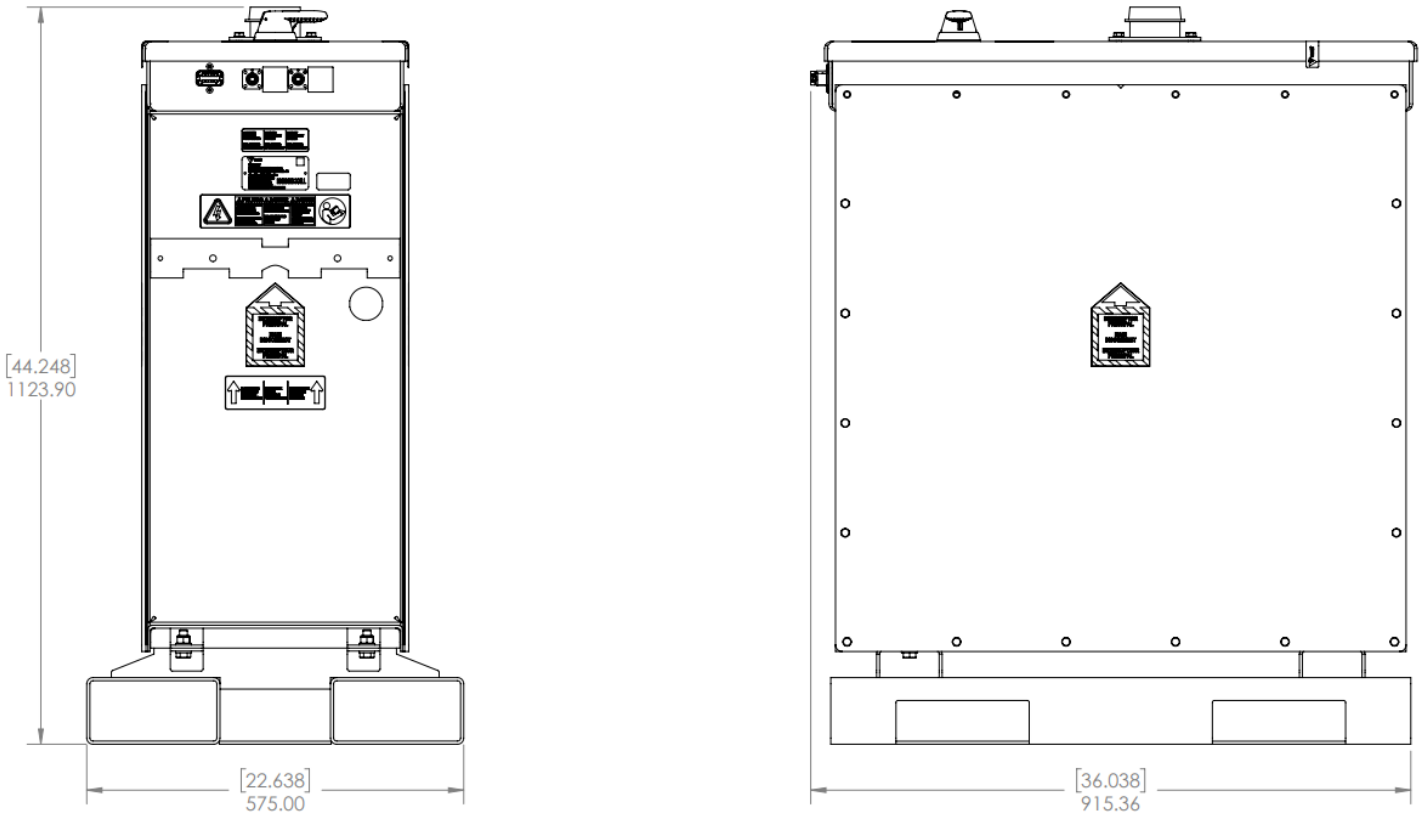


4.3 Physical Parameters

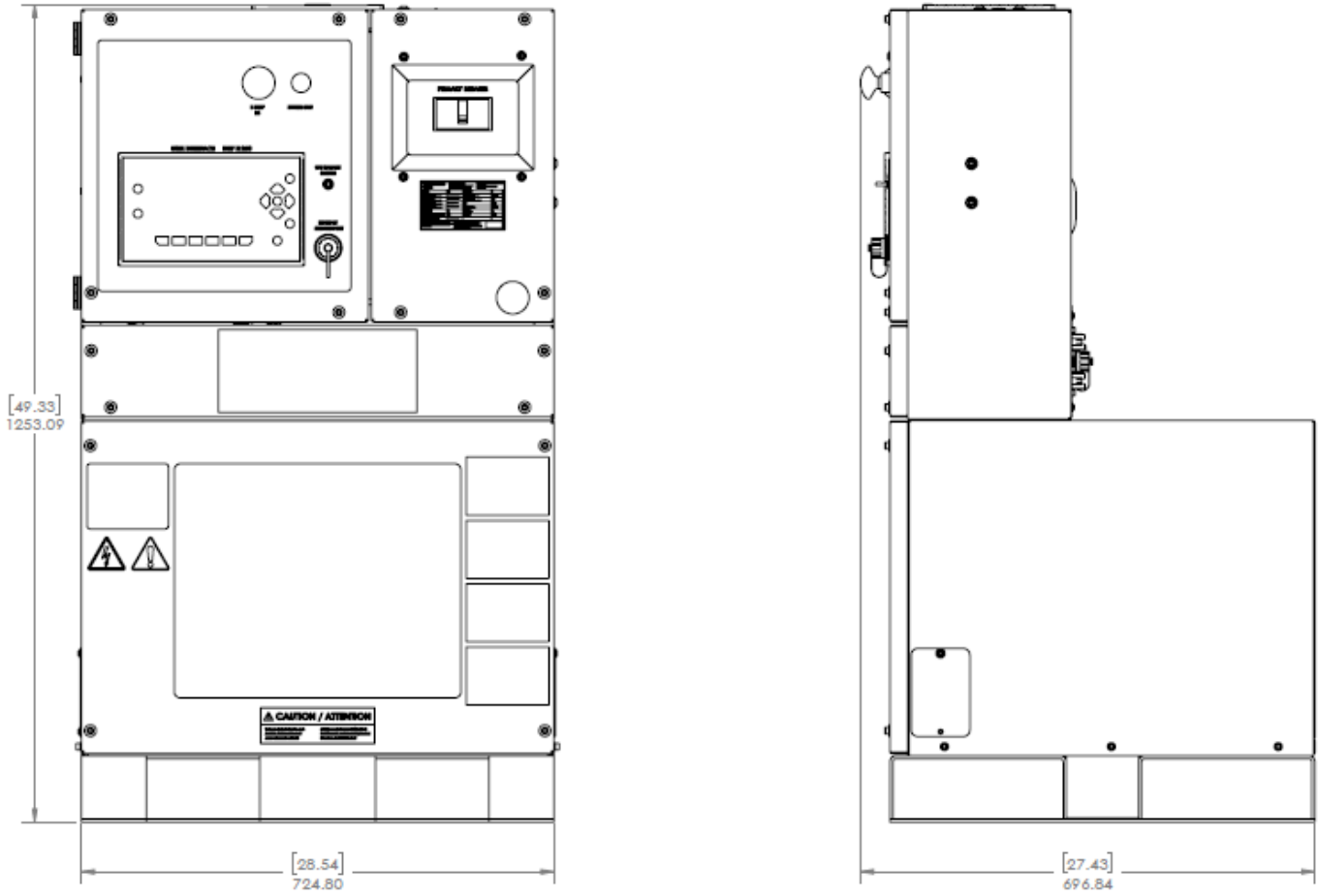
RPSLinkIN 3Φ is a modular system built from two major components: rps50 Battery Pack and PCS Cabinet. Dimensioning as follows:

$$\text{Dimensioning} = \frac{\text{[Inches]}}{\text{Millimeters}}$$

4.3.1 rps50 Battery Pack Dimensions



4.3.2 PCS Cabinet Dimensions



4.3.3 IP Ratings

The rps50 battery pack carries an IP55 rating

4.4 Specification Table

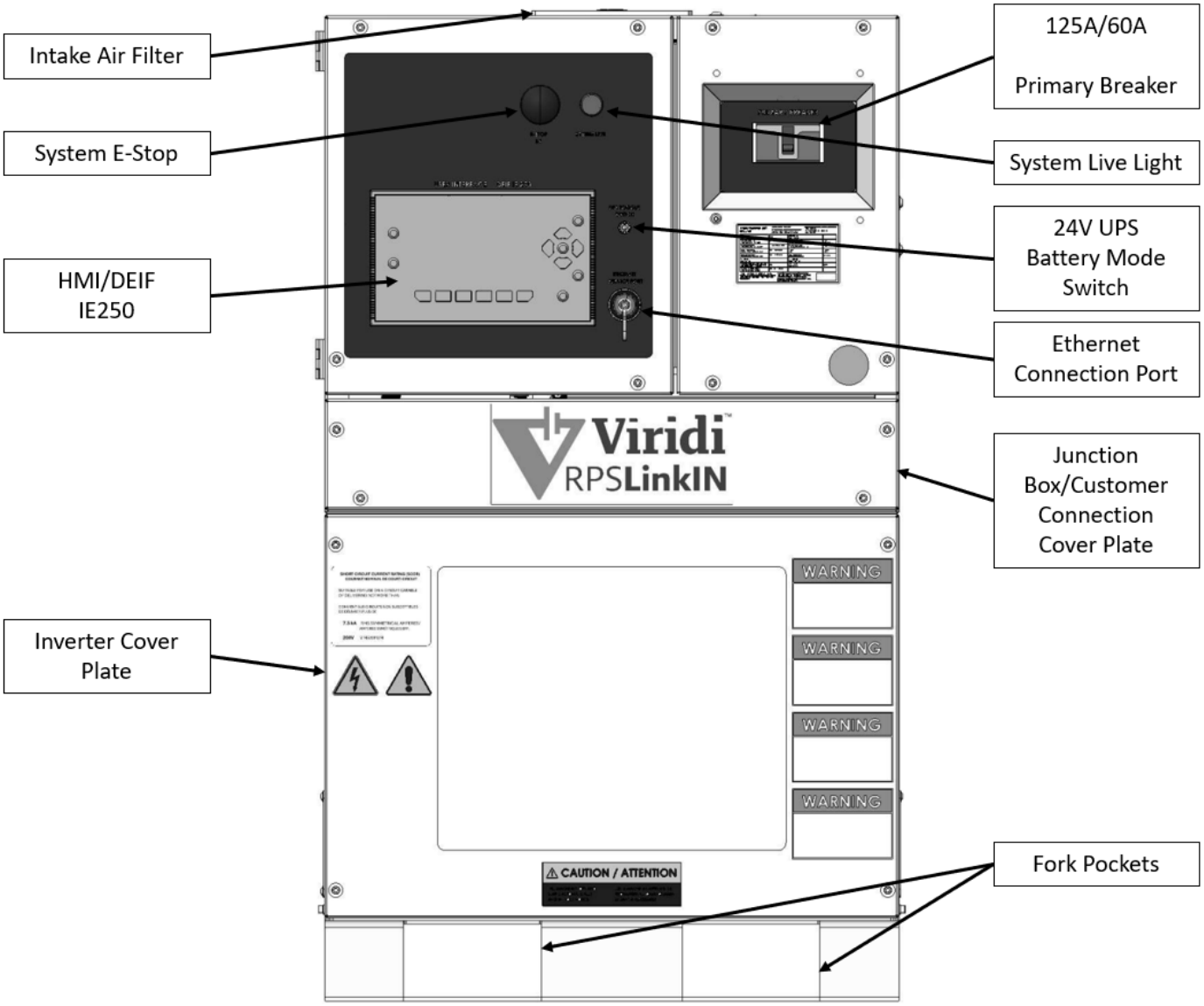
Model	480V-3p-300kWh-60kW	480V-3p-150kWh-30kW	480V-3p-100kWh-20kW	480V-3p-50kWh-10kW
System Contains	PCS Cabinet, qty=1	PCS Cabinet, qty=1	PCS Cabinet, qty=1	PCS Cabinet, qty=1
	Sinexcel PWS2-30P-NA, qty=2	Sinexcel PWS2-30P-NA, qty=1	Sinexcel PWS2-30P-NA, qty=1	Sinexcel PWS2-30P-NA, qty=1
	rps50 Packs, qty=6	rps50 Packs, qty=3	rps50 Packs, qty=2	rps50 Packs, qty=1
Nameplate Capacity	293.4 kWh	146.7 kWh	97.8 kWh	48.9 kWh
BOL Usable Capacity	249.6 kWh	124.8 kWh	83.2 kWh	41.6 kWh
Max Continuous AC Power, Charge/Discharge	60 kW	30 kW	20 kW	10 kW
Operating Voltage	480VAC 3Φ 3W+gnd			
Max Continuous AC Current, Charging/Discharging	72.2A	36.1A	24.1A	12.0A
PWS2-30P-NA Fault Current Contribution [AC side short circuit current on-grid]	260A / 100 mS	130A / 100 mS	130A / 100 mS	130A / 100 mS
Maximum Overcurrent Protection Device Rating	125A	60A	60A	60A
Allowed Conductor Type & Size Range	Cu/Al, Solid Core at 2-8 AWG	Cu/Al, Solid Core at 2-8 AWG	Cu/Al, Solid Core at 2-8 AWG	Cu/Al, Solid Core at 2-8 AWG
	Cu/Al, Stranded at 2/0 -1 AWG	Cu/Al, Stranded at 2/0 -1 AWG	Cu/Al, Stranded at 2/0 -1 AWG	Cu/Al, Stranded at 2/0 -1 AWG
Recommended Conductor Sizing	1 AWG	6 AWG	6 AWG	6 AWG
Grounding Requirements	*The grounding of the system and related components must comply with all applicable local electrical code of the installation.*			
Auxiliary Power Requirements	*RPSLinkIN 3Φ is an autonomous unit requiring no auxiliary power fed from outside the PCS cabinet*			
Backup Power	External Sinexcel PWD series Intelligent Transfer Switch required for RPSLink to auto-switch to off-grid mode and deliver power through a grid outage			
Operating Temp. Range[1]	14°F to113°F / -10°C to 45°C			
Battery Pack Primary Lifecycle[2]	Approx 4,000 cycles to 80% of Beginning-of-Life (BOL) DC-Usable kWh Rating			
Communication / Telematics	BESS uses WIFI / LAN / 5G / LTE to report EMS and performance data to Viridi ViSTA®.			
	RPSLink typically communicates to ViSTA® via LAN or WIFI.			
PCS Cabinet Size and Weight (Depth x Width x Height)	27.46-inch x 28.54-inch x 49.33-inch 696.84 mm x 724.80 mm x 1353.09 mm 300lbs / 136kg (including mounting skid)			
RPS50 Cabinet Size and Weight (Depth x Width x Height)	22.638-inch x 36.03-inch x 44.24-inch 575.0 mm x 915.36 mm x 1123.93 mm 1,200lbs / 498.9kg (including mounting skid)			

[1] Operating temperature range mirrors battery cell specifications. The Battery Management System (BMS) is programmed to manage the pack utilization rate to control the internal pack thermal conditions and prevent operation outside of pack interior temperature limits, which can be tailored for different applications/ installations. The BMS communicates applicable operating conditions continuously via CAN bus to the inverter and/or system controller. ***Note:*** Charging and discharging is unconstrained within operating temperature 0°C to 45°C. Outside of that temperature range, BMS derates maximum charging and discharging.

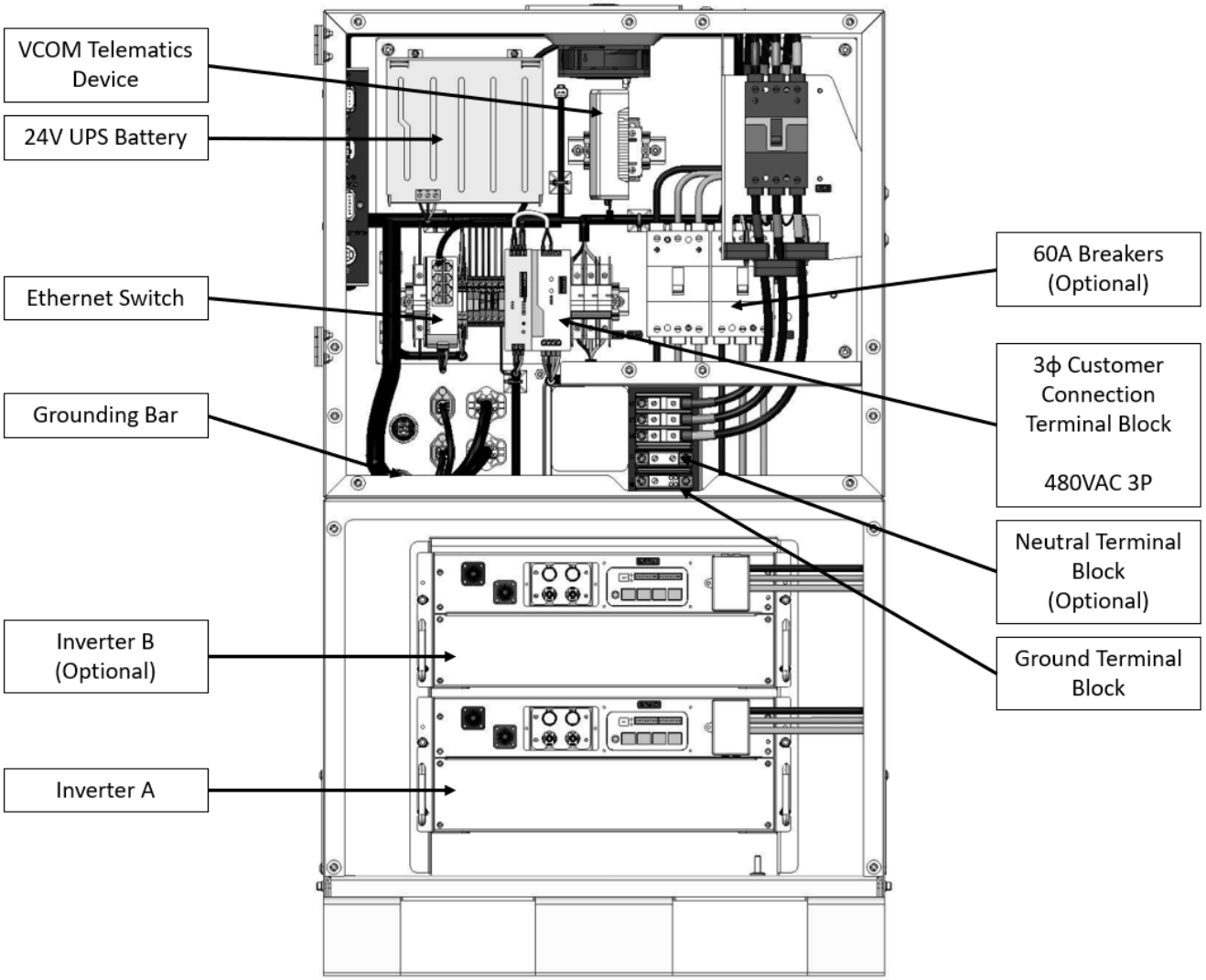
[2] Cycle life can be optimized for individual applications and operating conditions (depth of discharge, duty cycle, temperature, charge/discharge rate).

4.5 PCS Cabinet Components

PCS Assembly

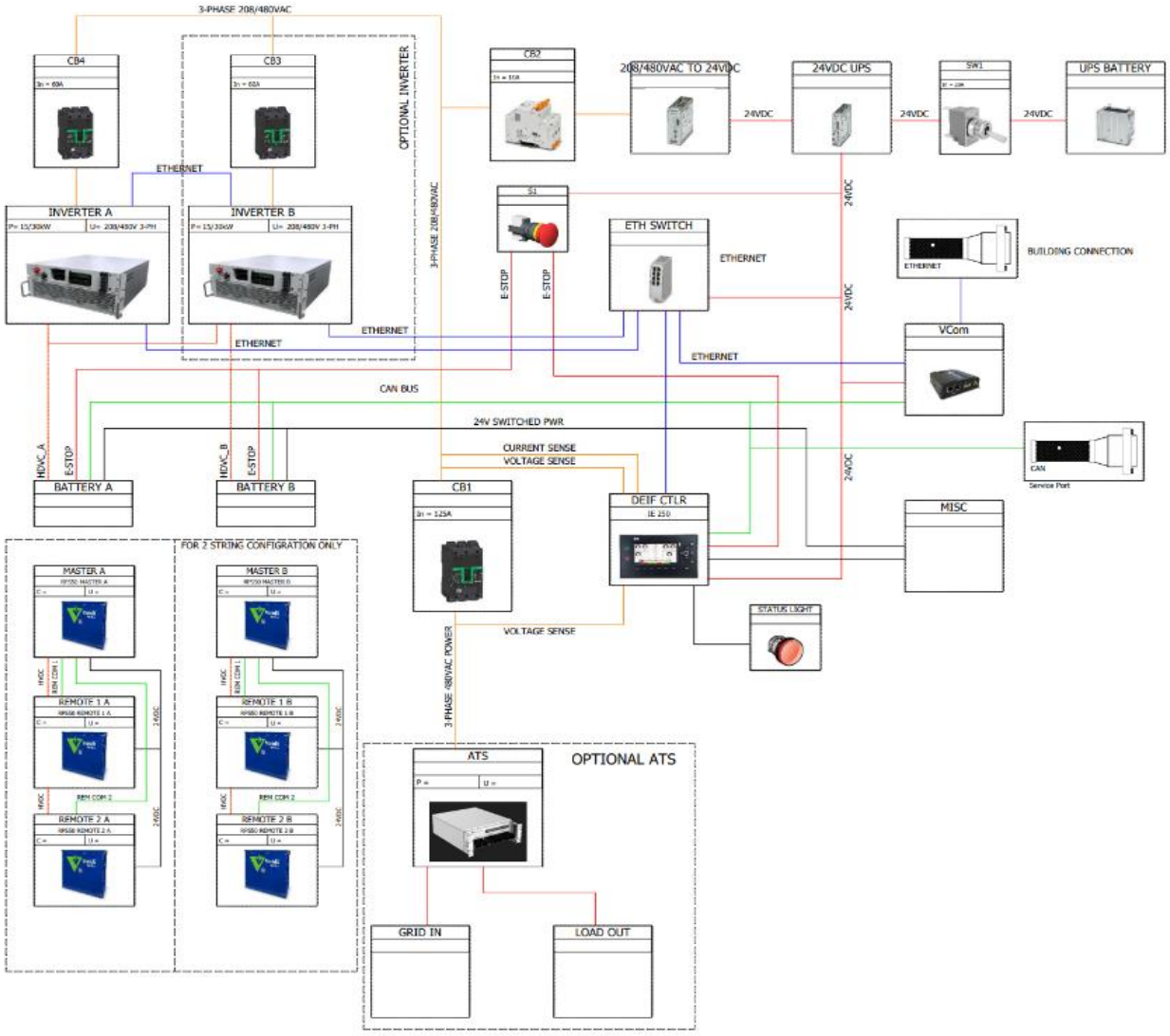


PCS Assembly Assess
(Panels Removed)


VCOM Telematics Device
24V UPS Battery
Ethernet Switch
Grounding Bar
Inverter B (Optional)
Inverter A
60A Breakers (Optional)
3ϕ Customer Connection Terminal Block
480VAC 3P
Neutral Terminal Block (Optional)
Ground Terminal Block

4.6 System Diagram

Note: Below are the System Diagrams for the RPSLinkIN 3Φ. If another version is needed, it is available via request to Viridi.



- NEC (National Electrical Code, 2023 edition, Article 250.53(B)):
  - Ground rods must be separated by at least 6 feet.

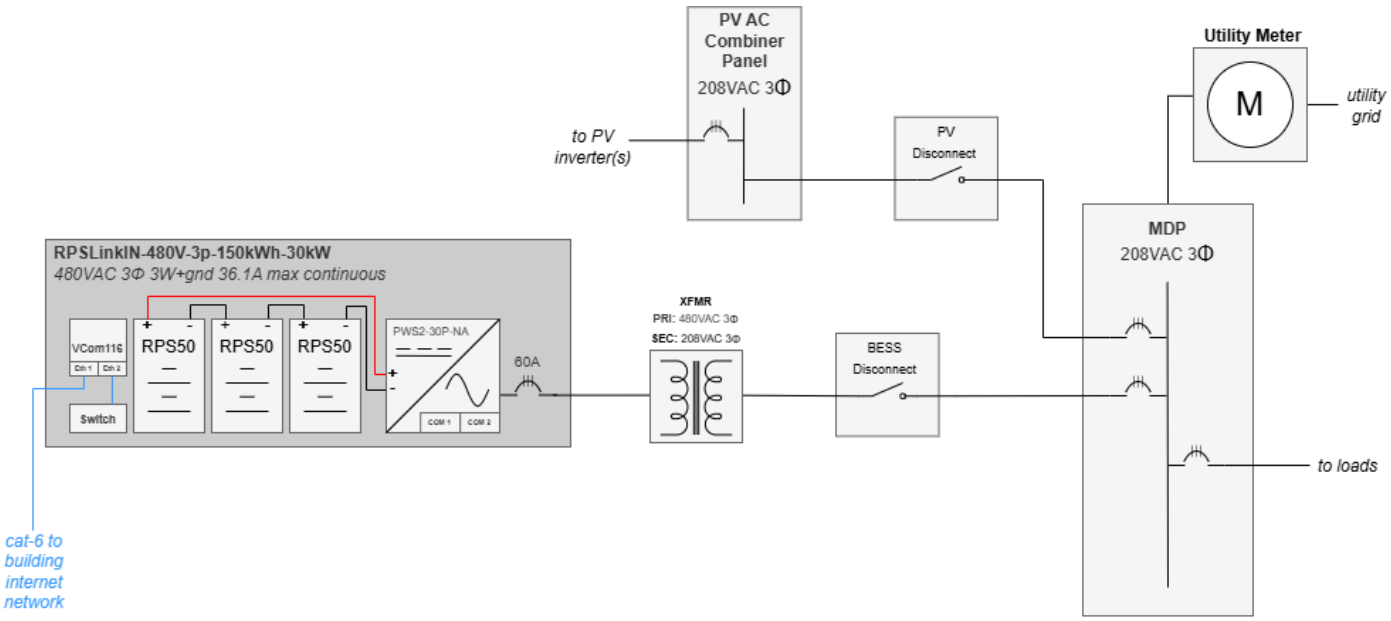
- CSA (Canadian Standards Association, 2023 edition, Rule 10-102 (2)):
  - Ground rods must be separated by at least 3 meters and driven at least 3 meters into the ground

4.7 Example RPSLinkIN 3Φ 1-line Diagrams

RPSLinkIN 3Φ is a modular system that can be designed into many configurations – the following 1-line diagrams represent a few typical arrangements but are by no means representative of every system. Please contact Viridi's Technical Sales Department at 716-968-8658 for configuration assistance.

4.7.1 Example 1: 150kWh On-Grid BESS

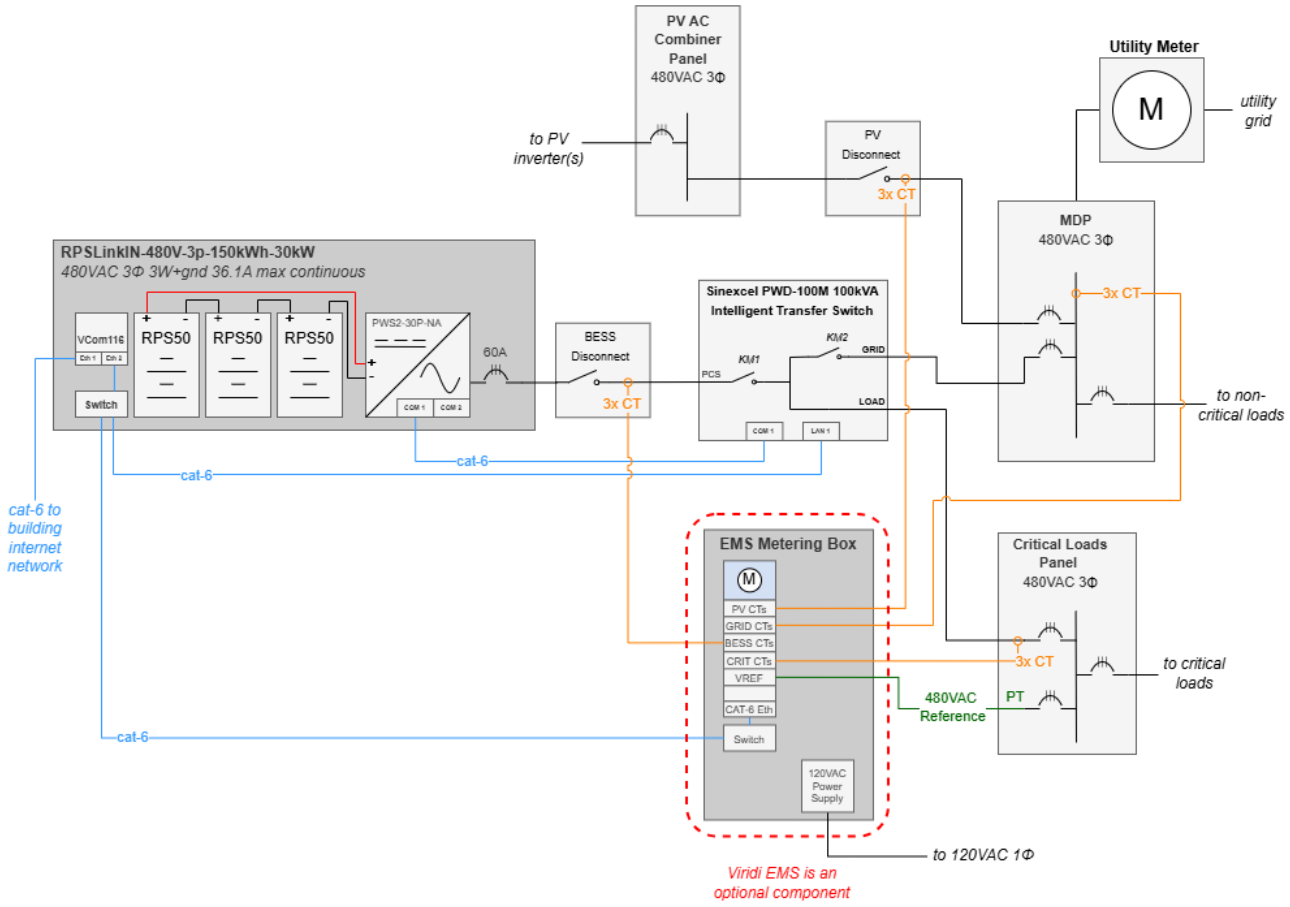
[Behind The Meter] 208VAC 3Φ Solar PV + RPSLinkIN 3Φ-480V-3p-150kWh-30kW



4.7.2 Example 2: 150kWh On / Off-grid BESS

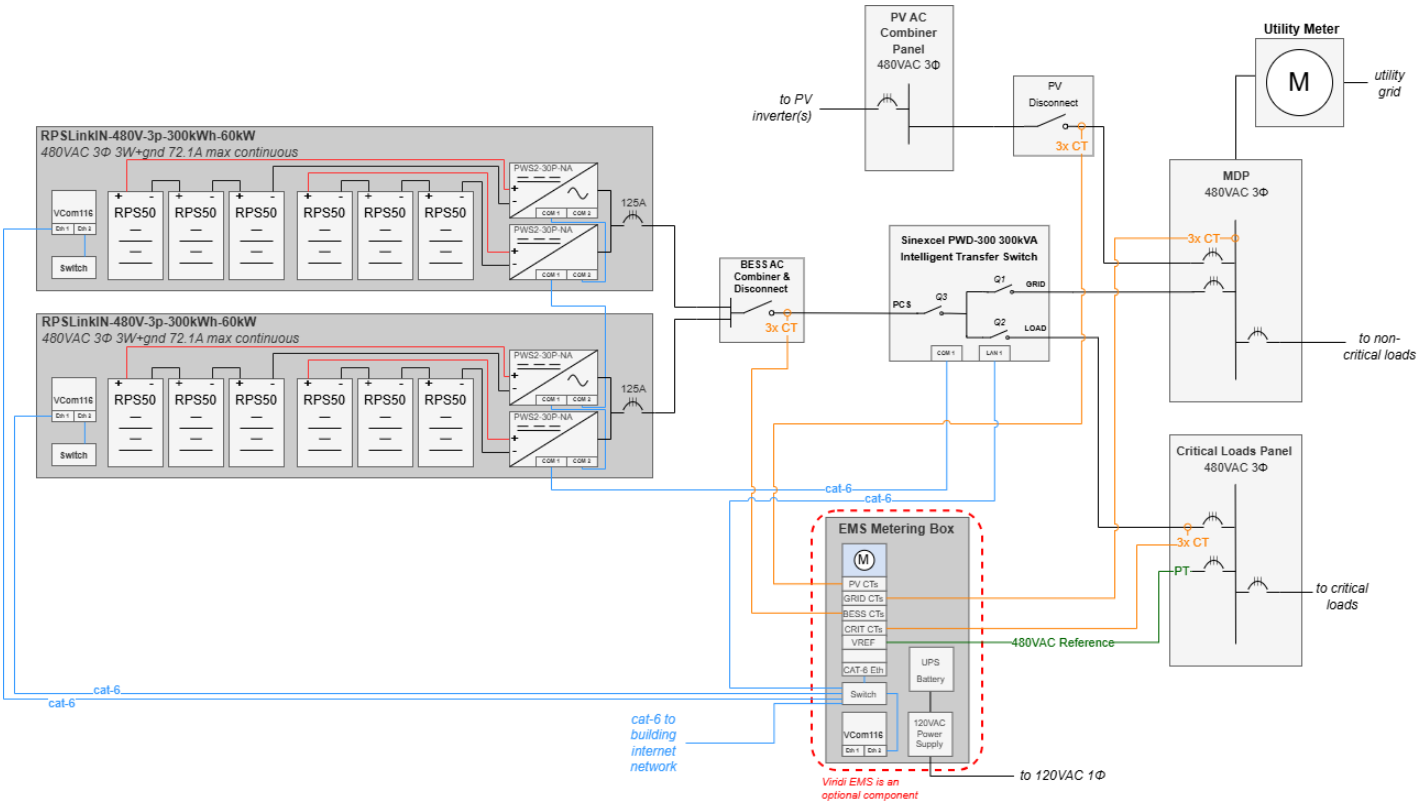
[Behind The Meter] 480VAC 3Φ Solar PV + RPSLinkIN 3Φ-480V-3p-150kWh-30kW + PWD-100M (for off-grid backup) + EMS

Example 2
Commercial Building PV + BESS Concept Drawing
480VAC 3Φ BESS into 480VAC 3Φ building
On-Grid and off-grid functionality including Sinexcel PWD-100M ATS
(includes Viridi Energy Management System)



4.7.3 Example 3: 600kWh On / Off-Grid BESS

[Behind The Meter] 480VAC 3Φ Solar PV + (4) RPSLinkIN 3Φ-480V-3p-150kWh-30kW + PWD-100M (for off-grid backup) + EMS



4.8 RPSLinkIN 3Φ Certifications

- UN 38.3 (cell, module)
- UL 1642 (cell) UL Recognized Component
- UL 1741 (Sinexcel PWS2-30P-NA inverter) cTÜV SÜDus Listed
- UL 1741 (Sinexcel PWD-100 & PWD300 Transfer Switches) cETLus Recognized Component
- IEEE 1547 (inverter) cTÜV SÜDus Listed
- UL 1973 (pack) cTÜVus Listed
- UL 2580 (cell) UL Recognized Component
- UL9540 (RPSLinkIN 3Φ BESS) cTÜVus Listed
- UL 9540A (cell/module/pack tested)
- NFPA 855, Standard for the Installation of Stationary Energy Storage Systems
- Installation Specific:
  - NEC (National Electrical Code, 2023 edition, Article 250.53(B)):
    - Ground rods must be separated by at least 6 feet.
  - CSA (Canadian Standards Association, 2023 edition, Rule 10-102 (2)):
    - Ground rods must be separated by at least 3 meters and driven at least 3 meters into the ground

5 ViSTA® Cloud

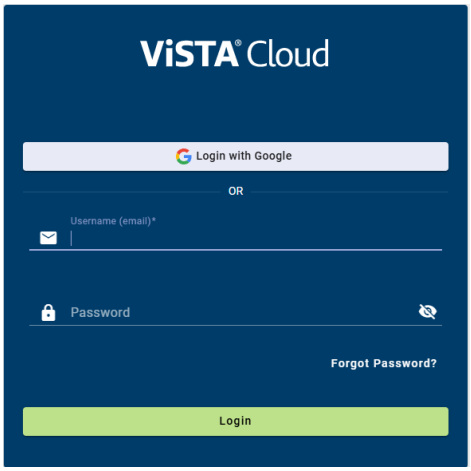
RPSLink utilizes a wireless cellular communications module to send location and usage metrics to an administrative dashboard called ViSTA Cloud. The following will provide the basics for utilizing ViSTA®.

5.1 Logging In

Request a ViSTA® Cloud account by emailing service@viridiparente.com.

An email will be sent from: vista.notifications@viridiparente.com with a link to setup the account.

Once setup, login by going to: https://vista.viridiparente.com/login.



5.1.1 Email Notification

Follow the link or QR Code below to submit the Viridi ViSTA® User Request Form. Requests can be submitted for BESS Alert Notifications and Basic Vista User Account.

Viridi ViSTA® User Request Form at https://forms.office.com/r/mjH2FQr9DR?origin=lprLink



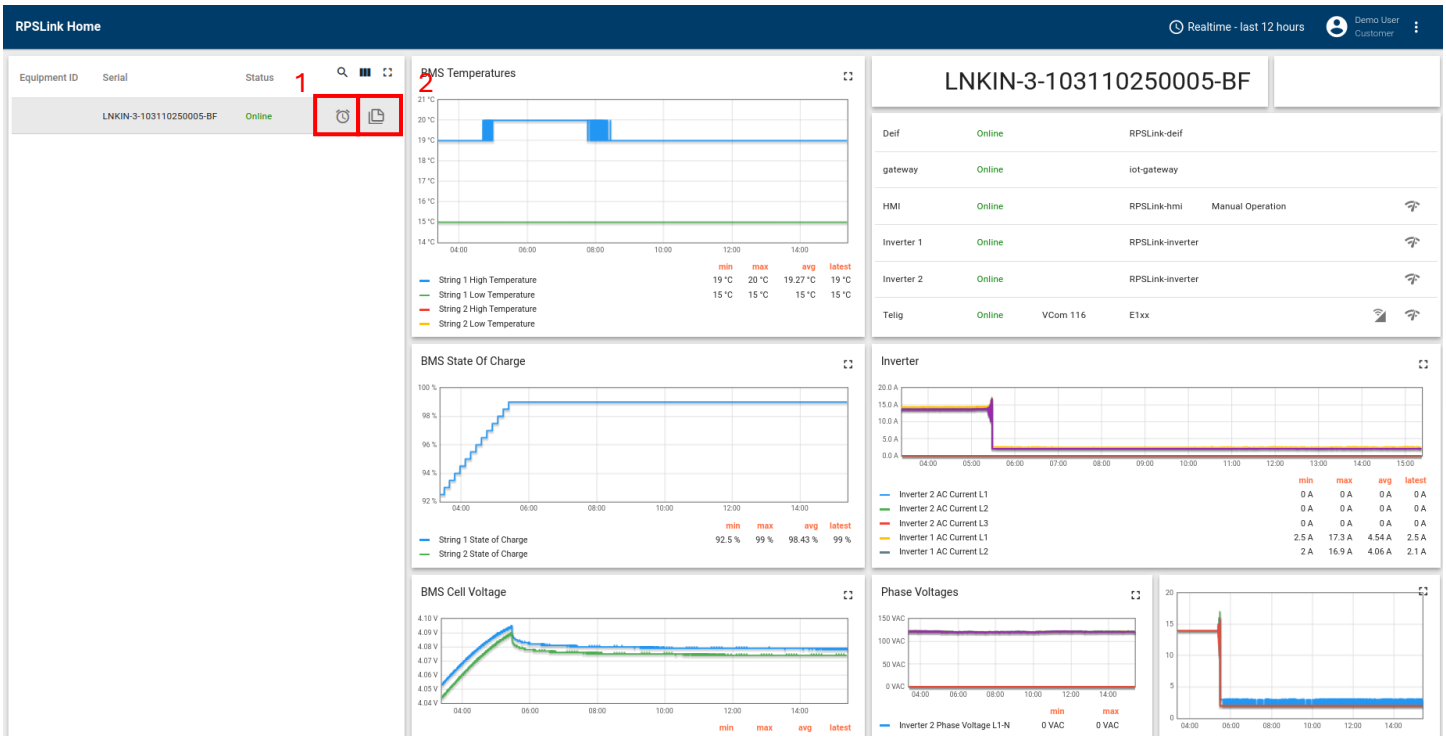
For additional assistance, questions, or custom requests, please contact Viridi Service at:

Phone: 1-866-984-7434

Email: service@viridiparente.com.

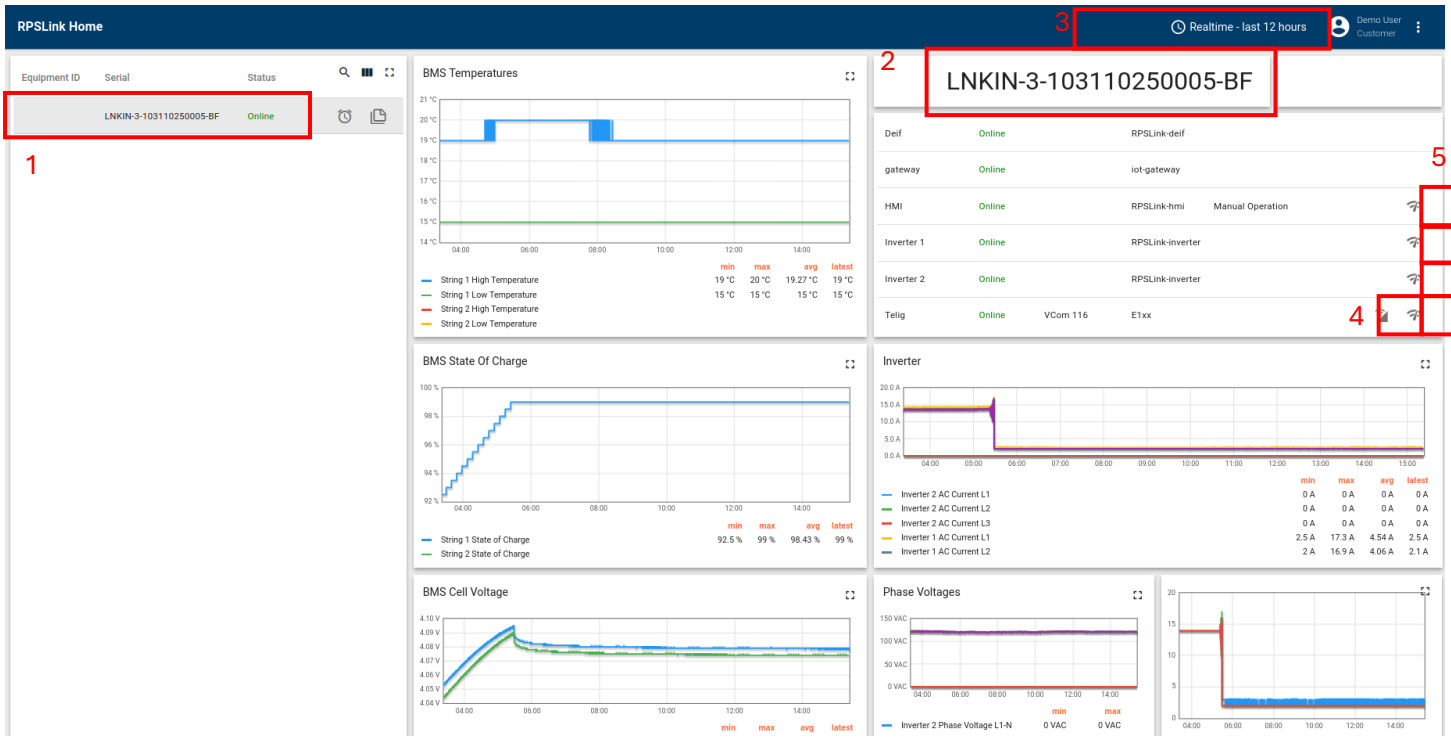
5.2 ViSTA® Dashboard

5.2.1 Fleet View



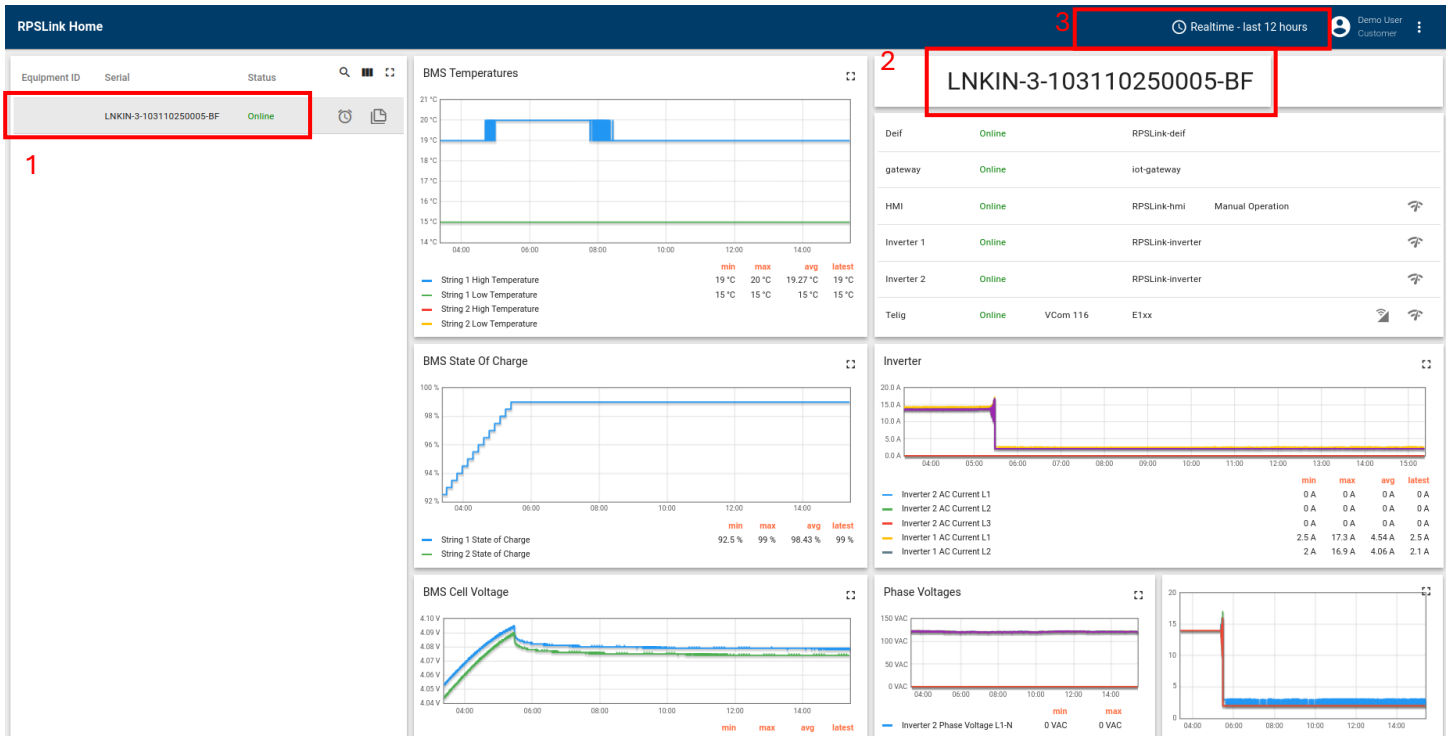
1. **Alarms**: This button opens a modal for viewing alarms, which can be filtered to show any alarms notifications status and severity.
2. **Notes**: This button allows the user to update notes for the unit.

5.2.2 Unit View



1. **Select Unit**: By Clicking on the row, you will select a unit
2. **Selected Unit**: This tells you which unit is currently selected
3. **Time Window**: This allows you to modify the time window. See section 5.2.4 (Time Window) for more information.
4. **Connectivity**: This allows you to view the connectivity statistics of the selected unit.
5. **Ping Sensor**: this allows you to ping the VCom and sensors to test connectivity.

5.2.3 Data Over Time



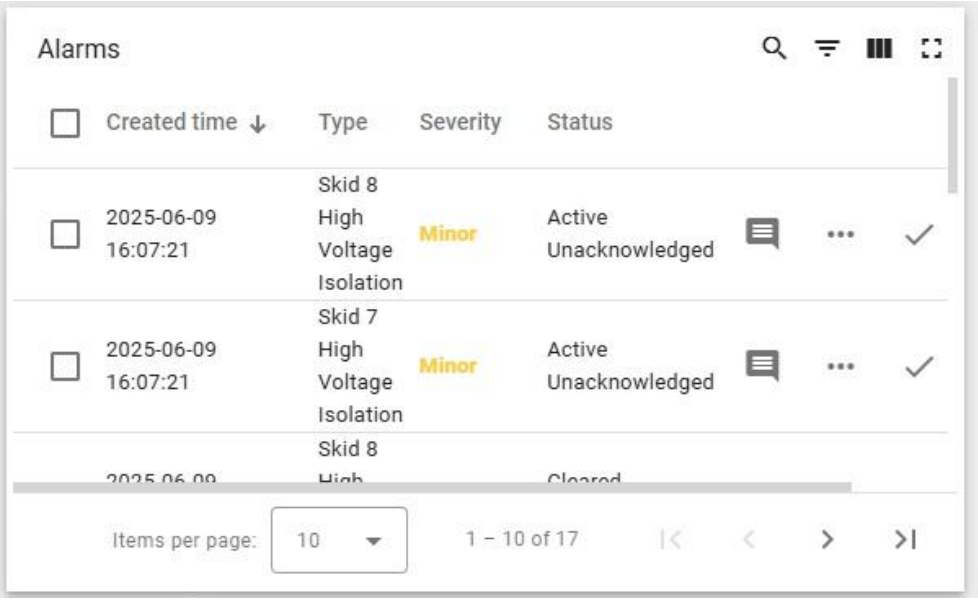
6 **Select Unit**: By Clicking on the row, you will select a unit.

7 **Selected Unit**: This tells you which unit is currently selected.

8 **Time Window**: This allows you to modify the time window.

5.2.4 Alarm View

The alarms area permits viewing of active alarms, the type of alarm, the severity, and the status of the alarm on RPSLink.



Clicking on the box to the left of the alarm will acknowledge and/or clear the alarm.

Note: The alarm is only cleared on ViSTA®, not on the RPSLink

Clicking on the word bubble icon on the right will allow a screen view to see the activity of the RPSLink add comments concerning the alarm.

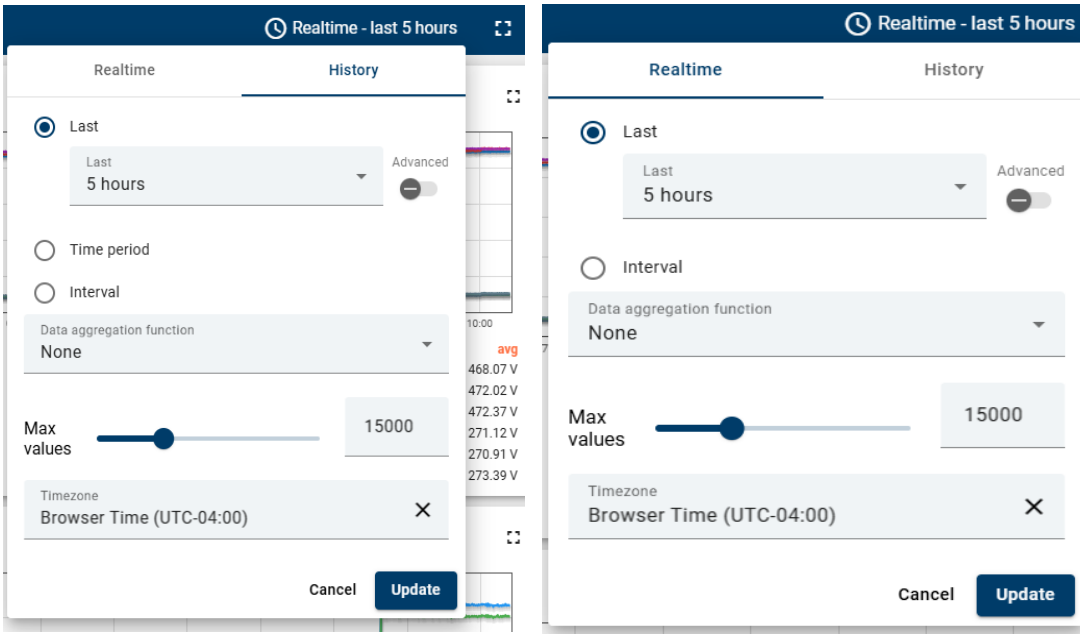
5.2.5 Time Window

By clicking the clock icon in the upper right-hand corner of any of the diagram or system devices screens will open a menu and allow viewing the real time activity or history of the system.

The real time tab allows you to choose a period to view from the current time to however long ago it is set for.

The History tab is the same as the real-time tab except for the ability to choose a period in the past to view instead of just allowing a view of what the system is doing for an ongoing time frame. For example, the selection can permit a view: a day from three weeks ago instead of the past 24 hours.

It is recommended when working with a time window larger than 1-day that the aggregation method is set to "Average".



INSTALLATION

6. Installation

6.1 Location Considerations

Determine the necessary size of energy storage/back-up system for your specific application. Different project sites require different kWh of energy storage.

	**Submit designs and plans to appropriate authorities for review**. Before beginning installation or utilization, permits and inspections must be obtained in accordance with local laws and regulations, as necessary
	**Coordinate site delivery and installation**. RPSLinkIN 3Φ components are heavy and must be installed with proper equipment. RPSLinkIN 3Φ must be installed according to the design plans above.
	**Combustible Material** shall not be stored within 3 ft (0.91m) of the RPSLinkIN 3Φ

Required equipment, tools, and other items depend on the final consumer and installation location. Consult your service engineer and local installer for further instruction.

6.1.1 Room/Area Specific Considerations

The following shall be considered when identifying an area and/or location to house the RPSLinkIN 3Φ

- Rooms containing the ESS shall have signage, per NFPA 855, installed on the front doors or in approved locations.
- The Signs shall contain:
  - Energy Storage Systems' with symbol of lightning bolt in a triangle
  - Type of Technology associated with the ESS
  - Any special hazards as identified in NFPA 855
  - Type of suppression system installed in the ESS area
  - Emergency Contact information
- Any guard post installed at the location shall be at least 3ft (0.91m) from the ESS.
- ESS shall be secured against unauthorized entry.
- ESS shall always be located on floors that can be accessed by external fire departments
- If the RPSLinkIN 3Φ is installed below building grade:
  - It shall be approved by the local Authority Having Jurisdiction (AHJ).
  - The ESS shall not be located inside an electrical room.
  - ESS shall be accessible to emergency responders without traversing through an electrical room.
- Rooms or spaces containing ESS shall be separated from other areas of the building by fire barriers with a minimum 2-hour fire resistance rating and horizontal assemblies with a minimum 2-hour fire resistance rating and constructed in accordance with the local building code unless otherwise modified by applicable codes or Authority Having Jurisdiction (AHJ).
- ESS installed in dedicated-use building shall comply with applicable fire codes.

6.1.2 Battery Clearances

The following spacing safety requirements should be considered when identifying a location to install the battery packs:

- Short Side to Wall: 2in. (50.8 mm) minimum distance
- Long Side to Wall: 2in. (50.8 mm) minimum distance
- Short Side Pack to Pack: 4in. (101.6mm) minimum distance
- Long Side Pack to Pack: 2in. (50.8 mm) minimum distance
- Top to Bottom (if Packs are Stacked): 5in. (127mm) minimum distance
- Top of Pack to Ceiling: 5in. (127mm) minimum distance

6.2 EMI/EMC Considerations

6.2.1 Definitions

Electromagnetic interference (EMI) and electromagnetic compatibility (EMC) are both important considerations when working with electronic components. EMI is caused by electromagnetic emissions that can disrupt the function of electronic devices and radio frequency (RF) systems. These devices and systems must be properly shielded from electromagnetic radiation for them to work well. EMC measures how well these devices and systems can work in the presence of disruptive electromagnetic interference. Additionally:

- The inverter UL lists safety standards for the Inverter 1741 Supplement B and the Battery UL 1973 (pack) cTÜVus Listed recognition standards.
- The inverter and battery undergo EMI/EMC testing.
- The BESS undergoes ground bond testing to verify low chassis/earth impedance on the ground lug in the EBox.
- Within RPSLinkIN 3Φ, all communication wiring if run near high voltage AC/DC wiring is shielded to reduce the potential effect. Otherwise, it is run in separate locations to remove the EMC/EMI potential on the communication lines.

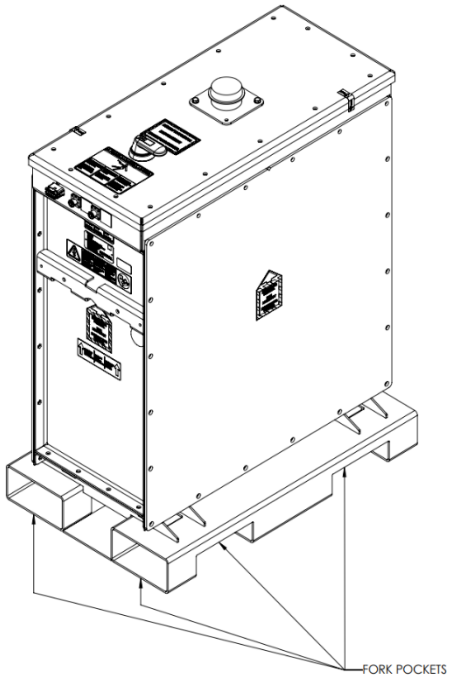
6.3 Handling and Transport

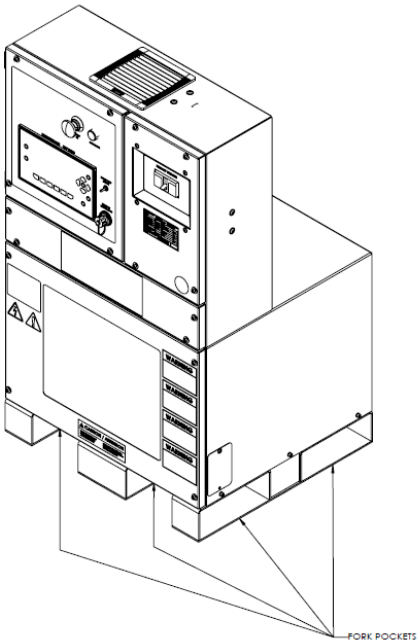
6.3.1 General Considerations

	Do not expose RPSLinkIN 3Φ components to an open flame.
	Do not place or store RPSLinkIN 3Φ components near highly flammable materials.
	Do not expose or place RPSLinkIN 3Φ components near water sources.
	Do not install RPSLinkIN 3Φ components in an airtight enclosure or in an area without ventilation.
	Store RPSLinkIN 3Φ components on a flat, level surface in a cool, dry location.
	Store the RPSLinkIN 3Φ out of reach of children and animals.
	Do not disconnect, disassemble, or repair RPSLinkIN 3Φ components with unqualified personnel. Only Qualified Personnel should handle, install, and service the RPSLinkIN 3Φ components.
	Do not deform, impact, cut, or penetrate the RPSLinkIN 3Φ components with a sharp object. Doing so may cause a fire or leakage of electrolytes.
	Do not step on or stand on RPSLinkIN 3Φ components or their packaging.
	Do not place any objects on top of RPSLinkIN 3Φ components.
	Do not charge or discharge RPSLinkIN 3Φ if damaged or malfunctioning.
	All units must be transported in compliance with 49 CFR 171-180, Pipeline and Hazardous Materials Safety Administration (PHMSA) Hazardous Materials Regulations, and UN38.3.
	Specific to ESS units transported within New York City, the movement of vehicles carrying hazardous materials is additionally subject to the New York City Fire Code (FC 2701–2707) and the New York City Department of Transportation (NYC DOT) Hazardous Materials Transportation Regulations
	Compliance includes but is not limited to: • Use of designated New York City HazMat routes. • Tunnel restrictions prohibiting most lithium battery shipments. • Required vehicle placarding per 49 CFR • No stopping/standing except in designated areas. • Driver HazMat endorsement and required training • Time-of-day restrictions, when applicable
	Upon receipt of the line, inspect the unit for any major damage that might have been incurred as part of the shipping process.
	If an RPSLinkIN 3Φ battery within the link is damaged during transport the battery will be shut off by the main contactor and the battery will not turn ON. If this is the case, please contact Viridi for support.

6.3.2 Loading and Unloading

Note: Lifting and unpacking guidelines will depend on the final consumer and local installation parameters. Follow established workplace safety guidelines and procedures when receiving, handling, transporting, unpacking, lifting, and installing RPSLinkIN 3Φ





RPS50 pack Unit Weight is Approximately Not To Exceed (NTE) 1,200lbs / 498.9Kg	PCS Cabinet Unit Weight is Approximately Not To Exceed (NTE) 300lbs / 136Kg

Components. Loading and Unloading

6.4 Wiring Install Instructions

Step 1 —of Batteries and Power skid & Electronics Box

- Run grounding wires between each battery in the string or strings
- Run ground wire from closest battery to the Power skid

Step 2 — Run High Voltage DC Cable

- Run High voltage DC cables between the string of batteries in series (Master, Remote 1, Remote 2)
- Run the DC cables from the string of batteries to the inverter inside the Power Skid
- Plug in all connectors into the Batteries and Inverter, verify with a push – pull – push method
- Repeat for string 2 and inverter 2 if present.

Step 3 — Run Low Voltage Harness

- Run Low Voltage / Communication harness between string of batteries and Electronic Box
- Make connections DT12 connections at the Electronics Box & Master Battery
- Make DT6 connections at Remote 1 and Remote 2 batteries if present
- Repeat for string 2 if applicable.

Step 4 — Run and Land utility connection AC wiring

- Drop Utility connection wiring into the RH side of the power skid (junction box)
- Land the 3-phase wire connections to the bottom of the 3-phase terminal block
- Land the Ground wire to the 1-Phase terminal block

6.4.1 Sinexcel Intelligent Transfer Switch

The Sinexcel PWD-100M / PWD-300M Intelligent Transfer Switch are optional components required for RPSLinkIN 3Φ to provide automatic backup during a loss of grid power.

6.4.2 Utility and Load connections w/ Intelligent Transfer Switch

- Drop Utility connection wiring into housing for Intelligent transfer switch and land on the “GRID” Connection
- Drop Load connection wiring into housing for Intelligent transfer switch and land on the “LOAD” Connection
- Drop PCS connection wiring into housing for Intelligent transfer switch from the PCS Cabinet and land on the “PCS” Connection

7. Commissioning

7.1 Introduction

Commissioning of a newly installed and existing ESS that has been retrofitted, replaced or previously decommissioned and is returned to service shall be conducted prior to the ESS being placed in service in accordance with a commissioning plan that has been approved prior to initiating commissioning.

7.2 RPSLinkIN 3Φ Commissioning Checklist

Commissioning Checklist – RPSLinkIN 3Φ				
Phase	**Step**	**Checklist Item**	**Status (OK / Pending / N/A)**	**Comments / Notes**
Phase – 1 **Pre-Commissioning and Documentation Review**	1.1	Verify design documentation set (single-line diagrams, layout, control logic, network diagram)		
	1.2	Confirm permits, interconnection approvals, and utility witness test plan readiness		
	1.3	Review as-built wiring vs drawings; mark deviations		
	1.4	Verify system labeling, nameplates, and warning signage		
	1.5	Safety documentation — lockout/tagout plan, emergency response plan		
	1.6	Verify quality QA/QC checks completed for RPSLinkIN 3Φ and site-specific Infrastructure		
Phase - 2 **Mechanical & Installation Inspection**	2.1	Check physical mounting of components are level / sufficient		
	2.2	Confirm system is located away from physical obstructions and has adequate access for maintenance support		
	2.3	Inspect conduit entries and gland seals to be properly secured		
	2.5	Verify Electronic Box is secured		
Phase - 3 **Electrical Verification (Before Energization)**	3.1	**ATS OPTION ONLY:** Torque check on terminal block for utility connection to ATS (as per manufacturer specifications)		
	3.2	**ATS OPTION ONLY:** Torque check on terminal block for load connection to ATS (as per manufacturer spec)		
	3.3	Torque checks on Main Load Over Current Protection Device (OCPD) inside electronic box (as per manufacturer spec)		
	3.4	Torque check on Breaker connections for inverters x2 inside the Electronic Box (as per manufacturer spec). Load side and line side		
	3.5	Confirm system grounding/bonding continuity meets the NEC, verified by electrical contractor		
	3.6	Verify Over Current Protection Device (OCPD) reset/close and open without issues		
	3.7	Verify auxiliary power circuits (control, UPS, Network Switch, VCOM)		
	3.8	Verify all ethernet connections are made to drawing		
	3.9	Verify all grounds are secured on the rps50 batteries		
	3.10	Verify all grounds are secured on the Power Skid		
Phase - 4 **Controls, Communication & Software**	4.1	Power up control system on auxiliary power only (no DC main contactors/disconnect closed)		
	4.2	Test communication links (VCOM ↔ HMI ↔ PCS)		
	4.3	Verify alarms and event logging functions		
	4.4	Verify VCOM antenna connections are correct and secured		
	4.5	Verify VCOM communication (LTE, Wi-Fi or Ethernet connection)		

Commissioning Checklist – RPSLinkIN 3Φ				
Phase	**Step**	**Checklist Item**	**Status (OK / Pending / N/A)**	**Comments / Notes**
Phase - 5 **Functional / Dry Run Tests**	5.1	Close main contactors under electrical contractor or engineering supervision (initial DC energization)		
	5.2	Run charge/discharge command tests at low power (< 10%)		
	5.3	Verify SOC reporting accuracy, voltage/current sensor calibration		
	5.4	Confirm alarm triggers: To HMI and to ViSTA® system		
	5.5	Test emergency stop [E-STOP] and system safe shutdown sequence		
	5.6	Verify RPSLinkIN 3Φ is visible and active on ViSTA® Monitoring Platform		
Phase - 6 **Performance / Integration Tests**	6.1	Run charge/discharge command tests at low power capacity (< 10%)		
	6.2	Run charge/discharge command tests at mid power capacity (50%)		
	6.3	Run charge/discharge command tests at full power capacity (approx. 100%)		
	6.4	**ATS OPTION ONLY:** Run full load with utility present through ATS to load		
	6.5	**ATS OPTION ONLY**: Shutdown utility and verify switchover to battery support through PCS		
	6.6	**ATS OPTION ONLY:** Run full load with support on battery power only (no utility present)		
	6.7	**ATS OPTION ONLY:** Turn utility back on, verify ATS switches back to normal utility operation		
	6.8	**ATS OPTION ONLY:** Charge battery unit to top of charge with utility present and supporting the load, verify stops and idles at top of charge		
Phase - 7 **Final Acceptance and Documentation**	7.1	Collect test data, sign-off sheets, torque records, calibration certificates		
	7.2	Train operations personnel on normal and emergency procedures		
	7.3	Submit commissioning report and punch-list closure		
	7.4	Provide as-built drawings and configuration backups as required		
	7.5	Transition to warranty/start of service period		

OPERATION

8. Startup

8.1 RPSLinkIN 3Φ General Startup Instructions

1 — Apply Power to the Unit
Move the front toggle switch to the “ON / Normal” position.
The DEIF IE250 should power on.
Verify that utility/grid power is present.

2 — Utility Hold-Up Behavior
If the correct AC utility voltage is present, the unit will remain powered even if the selector switch is returned to the “OFF” position.

Step 1 — Access WebVisu

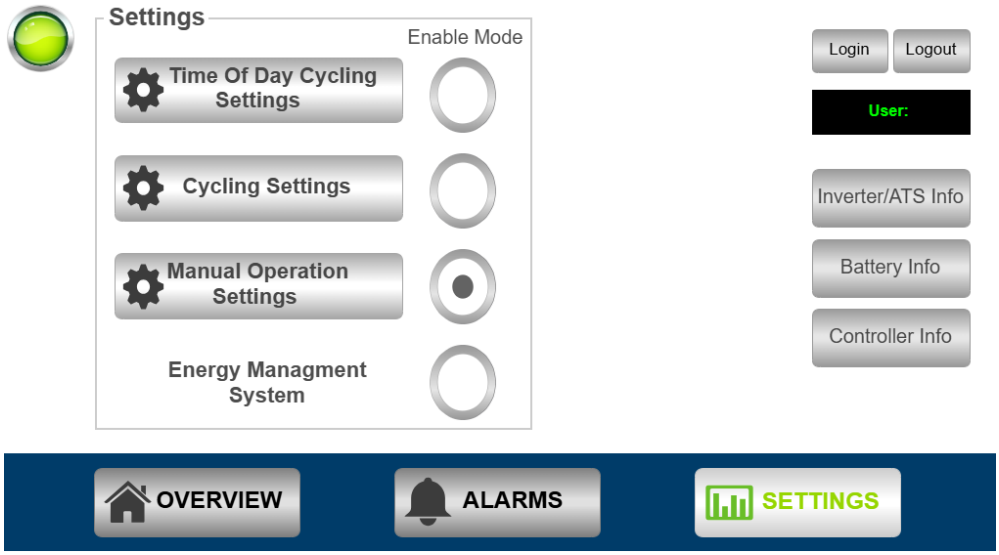
- On the **front HMI (DEIF IE250)**, tap the **back arrow**, then select **“WebVisu.”**

Step 2 — Accept Connection

- Select **“Accept.”**

Step 3 — Verify Unit Mode

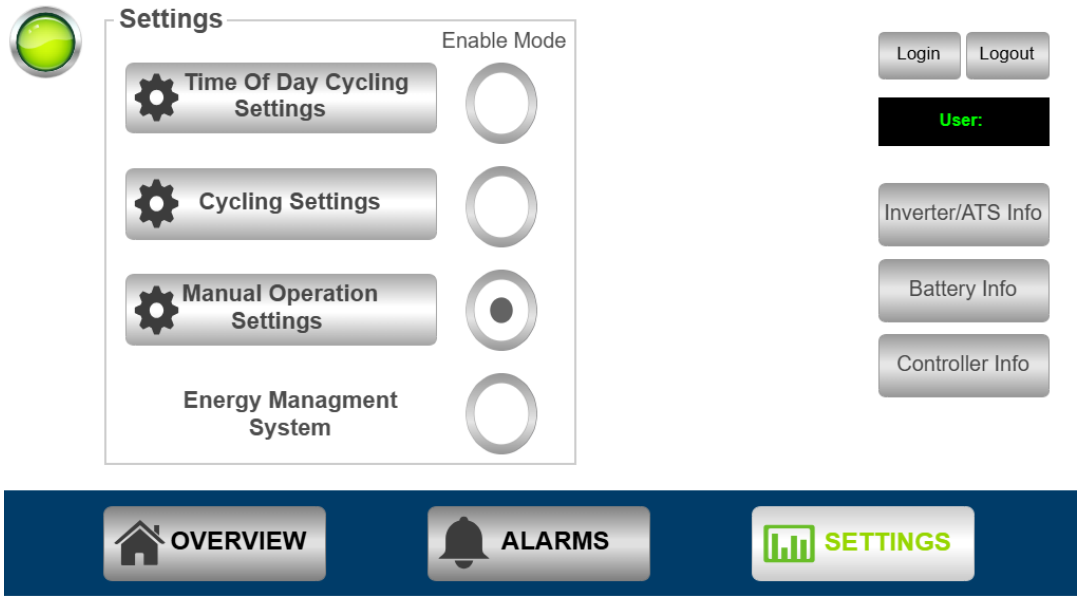
- Open the bottom menu and select **“Settings.”**



Step 4 — Select Operating Mode & Setpoints

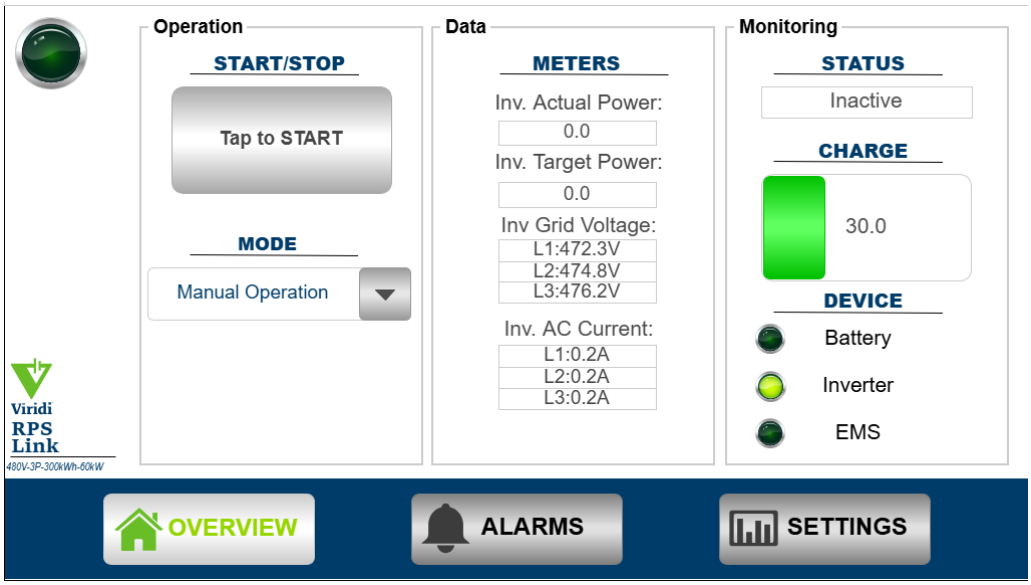
- Choose the desired mode and configure the associated setpoints:

1. **Time of Day**
   Allows input of time-of-day schedule, SOC limits, and charge/discharge power setpoints.
2. **Cycling**
   Allows input of power setpoints. The unit automatically cycles from top of charge to bottom of charge repeatedly.
3. **Manual Operation**
   Allows direct power command input. The unit will charge or discharge according to the setpoint.
4. **EMS - *Optional***
   Non-configurable. Unit follows all commands from the external EMS.



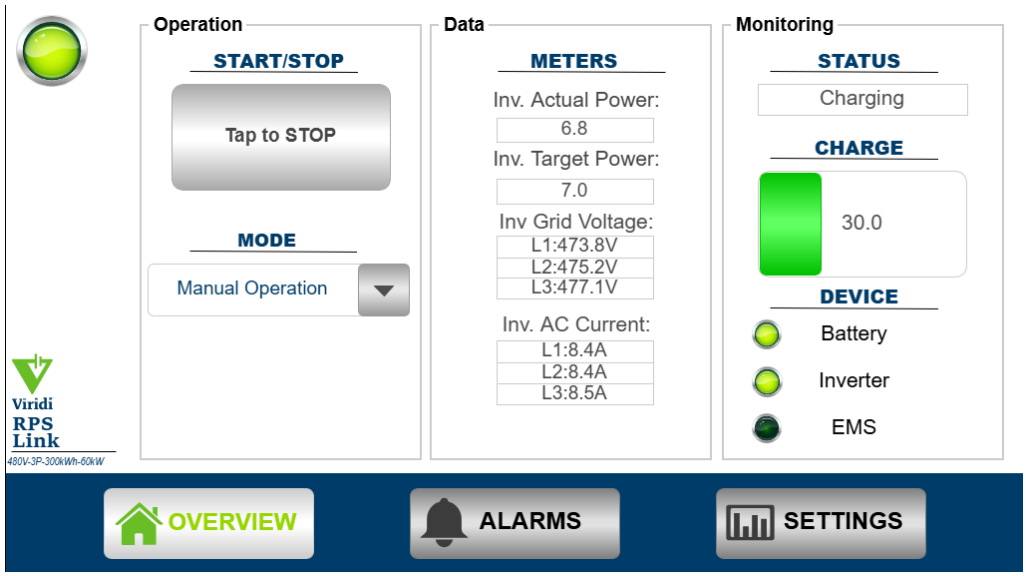
Step 5 — Start the System

- On the **Overview** tab, select **"Tap to Start."**



Step 6 — Verify Output

- Confirm the unit is producing the **desired power setpoint**.

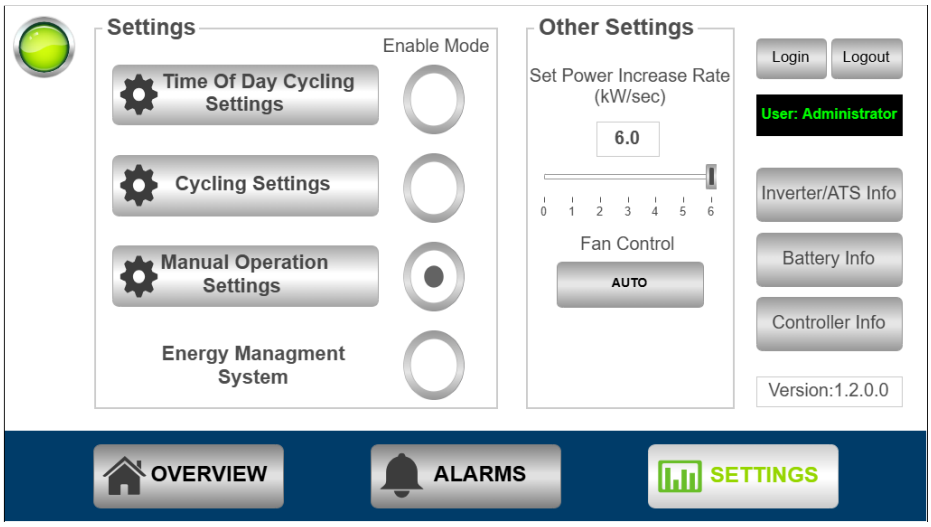


8.2 RPSLinkIN 3Φ Advanced Settings

Advanced Settings (Ramp Rate & Fan Mode)

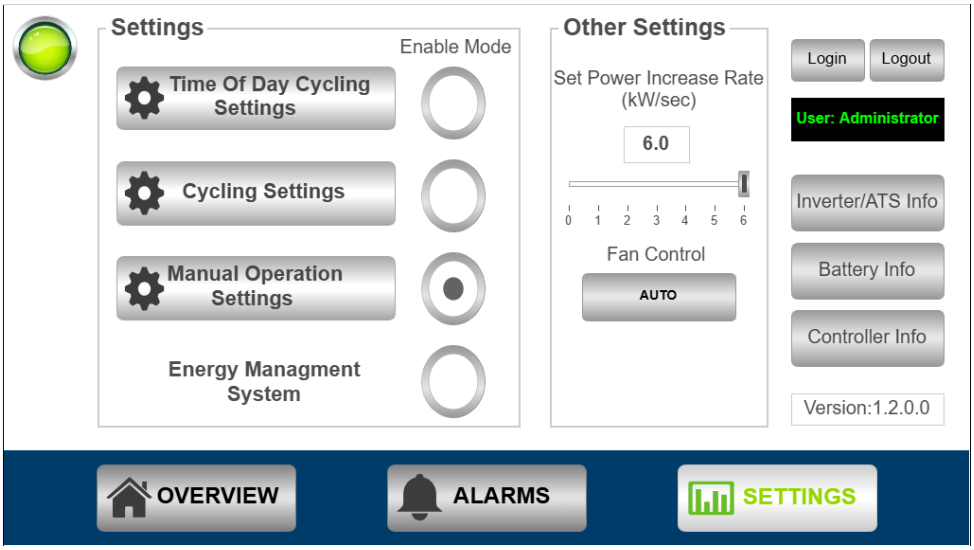
Step 7 — Login for Advanced Configuration
To change ramp rate or fan mode:

- Select **"Login."**
- **Username:** ADMIN
- **Password:** 1001



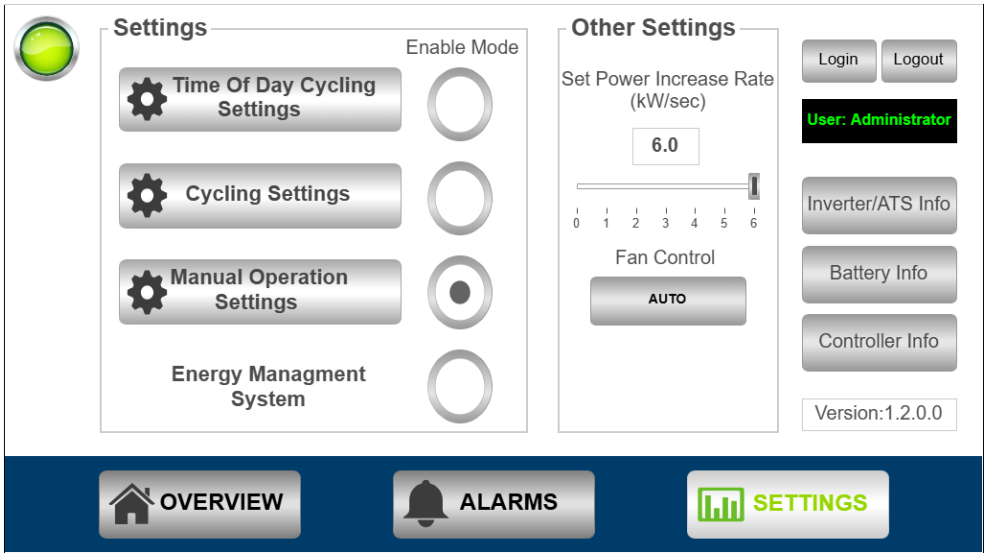
Step 8 — Verify Fan Mode
Fan Mode Options:

- **On:** Fan runs continuously.
- **Off:** Fan stays off.
- **Auto:** Fan turns on/off automatically as needed.



Step 9 — Adjust Ramp Rate

- Use the ramp-rate slider to set the desired **kW/sec inverter ramp rate.**



9. Shut Down

9.1 RPSLinkIN 3Φ Shutdown Instructions

Step 1 — Stop the System

- On the **Overview** tab, select **"Tap to Stop."**
- The system should cease power production, and the batteries will shut down.

Step 2 — Verify Utility Status

- Confirm that **no utility/grid power** is present before proceeding.

Step 3 — Turn Off the Main Switch

- On the front of the unit, toggle the main power switch to the **"OFF"** position.

MAINTENANCE

10. Maintenance

Note:

- Personnel performing maintenance on the RPSLinkIN 3Φ must be trained and familiar with the operation and configuration of RPSLinkIN 3Φ components.
- The BESS must be completely disconnected (external power source in a de-energized state with proper Lock Out – Tag Out [LOTO] devices installed) for all external connections and interfaces prior to any type of maintenance operation.
- Clearing and Cleaning - After installation and commissioning, regularly clean, check ventilation and air exhaust devices. Periodic cleaning is recommended, to start (based on environmental characteristics) a three-month schedule is recommended. After installation and commissioning, regular fan, filters and inspection time and systems checks may be extended at customer discretion.
- If torquing of fitting and/or connections are required, verify the torque wrench has a current calibration sticker.
- If any maintenance is performed that involves disturbing electrical connections, ensure that connections are re-torqued to specification afterwards.

10.1 Periodic Scheduled Maintenance

The following is a recommended scheduled maintenance check/verification for the internal/external components of the RPSLinkIN 3Φ.

Task List *(see 10.2 thru 10.6.2 below for item locations and detail)*	**Commissioning**	**Monthly**	**Quarterly**	**Semi-Annually**	**Annually**	**As Indicated**
10.2 Sinexcel Inverters - Vacuum all dust and debris from the unit			X			
10.2 Sinexcel Inverters - Using low pressure dry compressed air source, blow air through the mesh and fans			X			
10.3 PCS Cabinet - General inspection inside of the enclosure for contaminants and/or dust	X			X		
10.3 PCS Cabinet – preventative maintenance check for intake/exhaust filter and exhaust fan					X	
10.4 General Electrical and Bolt Interface Connections - Check for oil, dust, oxidation, and contaminant accumulation	X				X	
10.5 Energy Management System (EMS) Cabinet(s) *(optional accessory external to RPSLinkIN 3Φ)* **-** Check for oil, dust, oxidation, and contaminants accumulating inside of the cabinet	X					X
10.6.1 &10.6.2 Torque Check – Perform thermal check OR torque value check	X				X	

10.2 Sinexcel Inverter

General inspection of the Sinexcel inverters, mounting and electrical connections in accordance with the Sinexcel Operations manual (P/N: PWS2-30P-NA). General maintenance shall include but not be limited to:

- Vacuum all dust and debris from the unit
- Using a low pressure compressed air source, blow air through the mesh and fans

Note that the Sinexcel manual suggests quarterly general maintenance but based on the container being sealed and well-ventilated these can be reduced to annual checks, so long as the container doors are not left open for extended periods of time.

10.3 PCS Cabinet

General inspection inside of the enclosure for contaminants and/or dust. Intake filter and exhaust fan cleaned by specification sheet. General maintenance shall include but not be limited to:

- Exhaust Fan (Viridi P/N: 2410-00029, MFG P/N: 11632804055)
- Exhaust Filter (P/N: 1000-00151, MFG P/N: 18611600035)
- Clean inside of cabinet with low pressure compressed air, visually inspect fan blades.

10.4 General Electrical and Bolt Interface Connections

Check for oil, dust, oxidation, and contaminants accumulating on or around electrical components

- If oil, dust or contaminants are found on or around electrical components, use low pressure air and a clean microfiber cloth to clean connections
- If oxidation is found on or around electrical components, contact Viridi customer service for oxidation removal procedure.

10.5 Energy Management System (EMS) Cabinet(s)

Energy Management System (EMS) is an optional cabinet or cabinets external to the RPSLinkIN 3Φ components

Check for oil, dust, and contaminants accumulating inside of the cabinet

- If oil, dust or contaminants are found on or around electrical components, use low pressure air and a clean microfiber cloth to clean connections
- If oxidation is found on or around electrical components, contact Viridi customer service for oxidation removal procedure.

10.6 Working Spaces

Access and working space shall be provided and maintained all electrical equipment to permit ready safe operation and maintenance of such equipment. Working space for equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized shall comply with the dimensions as follows:

Nominal Voltage	Minimum Clear Distance		
To Gound	Condition 1	Condition 2	Condition 3
0-150	900mm (3ft)	900mm (3ft)	900mm (3ft)
151-600	900mm (3ft)	1.0m (3ft 6in)	1.2m (4ft)
601-1000	900mm (3ft)	1.2m (4ft)	1.5m (5ft)

The conditions are as follows:

Condition 1 - Exposed live parts on one side of the working space and no live or grounded parts on the other side of the working space, or exposed live parts on both sides of the working space that are effectively guarded by insulating materials.

Condition 2 - Exposed live parts on one side of the working space and grounded parts on the other side of the working space. Concrete, brick, or tile walls shall be considered as grounded.

Condition 3 - Exposed live parts on both sides of the working space.

10.7 Torque Check

Check proper torque for all identified electrical connections. Torque checks can be performed by thermal imaging OR torque mark visual OR torque value checks.

- **Thermal Imaging Check** – perform thermal imaging procedure with unit in operation. Compare with the thermal imaging control provided by Viridi to determine hot spots. If hot spots are located, check torque with proper torque wrench after following disconnect and LOTO procedures. Note: Thermal imaging procedure and control may not be available initially. Viridi to provide information once procedure and control are established.
- **Torque Mark Visual Check** – Any fasteners that have a clear torque mark indicator (paint pen running across fastener head onto electrical component) can be visually inspected to ensure there is no break in the torque mark indicator between the fastener and component. Note: not all fasteners will have torque mark indicators and will need to be checked with thermal imaging or torque value checks.
- **Torque Value Check** – Use a calibrated torque wrench to manually check each electrical connection's torque value in accordance with the torque values provided in the table below and the corresponding figures/locations

10.7.1 Torque Check Table

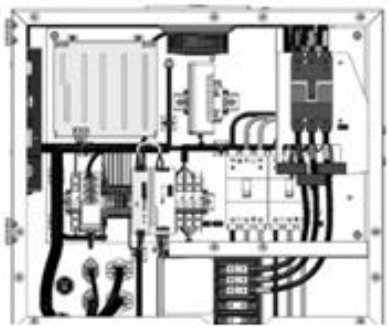
Component	Location(s)	Torque Value [Nm]	Frequency
100A Main Breaker	[A]	9Nm+/- 0.9	Annually
50A Inverter Breakers (1 or 2)	[A]	9Nm+/- 0.9	Annually
3 Pole Distribution block	[B]	12.5Nm+/- 0.6	Annually
1 Pole Distribution block GND	[B]	12.5Nm+/- 0.6	Annually
Inverter 3phase connection (1 or 2)	[B]	5.1Nm+/- 0.3	Annually
PWD-100M Intelligent Switch Module (Optional)	[C]	20Nm+/- 1.0	Annually

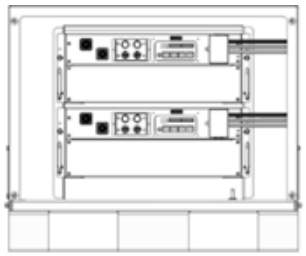
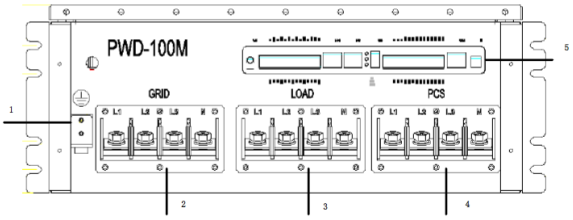
Warning

Verify All External Power Is OFF and Switches Are in the OFF Position

10.7.1 Torque Reference Images

The following identifies the specific location and image description of the components requiring torque checks

Location (description)	Image
Location A – Electronics Box. **1 –** 100Amp Breaker **2** – 50Amp Breaker	

Location (description)	Image
Location B – Power Skid **3** – 3 Pole distribution block **4** – 1 Pole distribution block **5** – Inverter 3 phase connection	
Location C – Intelligent Switch module location (Optional)	

10.8 Decommissioning

- Contact Viridi first
  - Perform one final physical inspection.
  - Lower SOC to 30% SOC.
  - Go through a shutdown procedure (Reference Section 9 Shut Down Instructions)
  - Disconnect all exterior/customer connections (Utility connection, ethernet, CANBUS, Fiber connection, etc..).
  - Plug / Seal any holes left in the customer connection panel
  - Open all Breakers in the Electronics Box
  - Visually Validate everything in the unit is powered off
  - The local AHJ shall be notified prior to decommissioning
- To decommission or uninstall the RPSLinkIN 3Φ, contact your Viridi service team for further instruction. This must be completed by Qualified Personnel, and any disposal of components requires compliance with local laws, rules, and regulations. Viridi encourages recycling of all materials where possible and works with American Battery Technology Company to recover lithium-ion battery components
- Required equipment, tools, and other items depend on the final consumer and installation location. Consult your service engineer and local installer for further instruction.

10.9 Cleaning

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- DO NOT power-wash of any part of the unit
- DO NOT spray any part of the unit (with a hose or other instrument)
- DO NOT touch the battery caps or high-voltage electrical connections
- Hand wash user and electrical interface panels with an all-purpose cleaner and rag
- Hand wash roof, side panels, skid, and trailer with soapy water and sponge
- On vinyl-wrapped units, clean/shine outside with 90% rubbing alcohol. For damaged areas, repair with new vinyl.

10.10 ViSTA® Alarm Definition Glossary

Severity	Description	High Level Definition
Critical	High Impact to Functionality	Anything that can cause the unit, or the "Grid" to shut down Ex. E-stop pressed
	Requires Immediate Attention	
Major	High Impact to Functionality	Anything that can cause a skid to go down or a major component to go down. Ex. Inverter alarms or battery DTC alarms
	May not require attention right away	
Warning	Does not impact functionality but if this continues it could cause an alarm	Does not impact on the overall functionality but if this state continues, it will lead to an alarm either minor, and/or major.

10.11 ViSTA® Alarms

Here are some of the common ViSTA® alarms, their severity, and a brief explanation along with the action needed to resolve them.

Alarm Name	Severity	Triggered By	Description / Take Action
E-STOP Activated	CRITICAL	E-STOP	Emergency Stop pressed. Disengage E-Stop and Power Cycle BESS.
EMS Communication Lost (Optional)	MAJOR	HMI	RPSLINK to Viridi Energy Management System lost. Contact Viridi Customer Service.
ViSTA® Connection Lost to Asset	MAJOR	ViSTA® Cloud	Communications failure between VCom and ViSTA® Cloud. Check wired internet connection (if applicable) and LTE coverage. If an error persists, call Viridi Customer Service.
String "X" BMS Temperature Warning	MAJOR	String "X" BMS	BMS on String X senses battery cell temperature too high. Ensure fan filters are clear and BESS is ventilating properly.
String "X" BMS Temperature High Error	MAJOR	String "X" BMS	BMS on String X senses battery cell temperature too high. Ensure fan filters are clear, and BESS is ventilating properly.
String "X" Inverter AC Bus Over Voltage	MAJOR	String "X" Inverter	Inverter on String X senses AC voltage is too high. Check source voltage (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter Ac Bus Under Voltage	MAJOR	String "X" Inverter	Inverter on String X senses AC voltage is too low. Check source voltage (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter Ac Bus Over Frequency	MAJOR	String "X" Inverter	Inverter on String X senses AC frequency is above conformance. Check frequency (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter AC Bus Under Frequency	MAJOR	String "X" Inverter	Inverter on String X senses AC frequency is below conformance. Check frequency (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter AC Bus Phase Reversed	MAJOR	String "X" Inverter	Inverter on String X senses AC phase (L1, L2, L3) are incorrect orientation. Check AC wiring to BESS.
String "X" Inverter AC Bus Voltage Asymmetric	MAJOR	String "X" Inverter	Inverter on String X senses AC voltage asymmetry. Check source voltage (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter AC Bus Voltage Abnormal	MAJOR	String "X" Inverter	The inverter on String X senses AC voltage that is too high or too low for operation. Check source voltage (can be done through the Deif HMI or ViSTA®). If an error persists, call customer service.
String "X" Inverter AC Bus Phase Lost	MAJOR	String "X" Inverter	The inverter on String X does not sense AC power. Ensure BESS is in the correct operational mode and that String level and system level breakers and contactors are closed. If an error persists, call customer service.
String "X" Inverter AC Overload Timeout	MAJOR	String "X" Inverter	Inverter on String X overload timeout. Load exceeded rated value; code will clear once load is under limit for 5 minutes. If an error persists, call customer service.
String "X" Inverter High Temperature Warning	MAJOR	String "X" Inverter	Inverter on String X senses internal temperature at AC or DC radiator too high. Ensure fan filters are clear, and BESS is ventilating properly.
String "X" Inverter High Temperature Error	MAJOR	String "X" Inverter	Inverter on String X senses internal temperature at AC or DC radiator too high. String offline. Ensure fan filters are clear, and BESS is ventilating properly. String will not function until inverter temperature drops to a safe threshold.
String "X" Inverter High Ambient	MAJOR	String "X" Inverter	Inverter on String X senses ambient temperature too high. Ensure fan filters are clear, and BESS is ventilating properly.

Alarm Name	Severity	Triggered By	Description / Take Action
Temperature Warning			
String “X” Inverter High Ambient Temperature Error	MAJOR	String “X” Inverter	Inverter on String X senses ambient temperature too high. String offline. Ensure fan filters are clear, and BESS is ventilating properly. String will not function until inverter temperature drops to a safe threshold.
String “X” Discharge Limit Enforcement Fault	MAJOR	String “X” PLC	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Charger Safety Relay Fault	MAJOR	String “X” PLC	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Internal Hardware Fault	MAJOR	String “X” PLC	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Internal Heatsink Thermistor Fault	MAJOR	String “X” PLC	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X “Internal Software Fault	MAJOR	String “X” PLC	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X “Highest Cell Voltage Too High Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Lowest Cell Voltage Too Low Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Pack Too Hot Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” High Voltage Interlock Signal Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Pre-charge Circuit Malfunction	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Abnormal State of Charge Behavior	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Internal Communication Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Cell Balancing Stuck Off Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Weak Cell Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Low Cell Voltage Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting

Alarm Name	Severity	Triggered By	Description / Take Action
String “X” Open Wiring Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Current Sensor Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Highest Cell Voltage Over 5V Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Cell ASIC Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Weak Pack Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Fan Monitor Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Thermistor Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” External Communication Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Redundant Power Supply Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” High Voltage Isolation Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Input Power Supply Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Charge Limit Enforcement Fault	MAJOR	String “X” BMS	Error code generated by rps50 Battery Management System [Orion BMS2]. Call Viridi Customer Service. For error code definitions visit https://www.orionbms.com/troubleshooting
String “X” Max Charge Reached	Warning	HMI	Notification that Strings “x” hit the max charge. No action is needed.
String “X" Max Discharge Reached	Warning	HMI	Notification that Strings “x” hit the max discharge. No action is needed.

Additional Alarms with Optional Intelligent Switching Device

Alarm Name	Severity	Triggered By	Description / Take Action
ATS Fault System Fault (Optional)	CRITICAL	HMI	ATS system fault. Please Contact Customer Service.
ATS Fault System Failure (Optional)	CRITICAL	HMI	ATS system failure. Please Contact Customer Service.
ATS Load Overload Timeout (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Load Overload Alarm (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Load Neutral Overcurrent (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Load Voltage Abnormal (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Load Phase Reversed (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Force Bypass (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Galvanic Break Short (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Galvanic Break Open (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Synchronization Failed (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Frequent Switching Fault (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Overload Timeout (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Overload Alarm (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Neutral Overcurrent (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Connection Forbidden (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Power Down (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Neutral Lost (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Phase Lost (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Voltage Abnormal (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Voltage Asymmetric (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Phase Reversed (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Under Frequency (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Over Frequency (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.
ATS Grid Under Voltage (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.

Alarm Name	Severity	Triggered By	Description / Take Action
ATS Grid Over Voltage (Optional)	MAJOR	HMI	ATS has an alarm. Please contact customer service.

10.12 Trouble Shooting

If the Link system does not function, perform the following checks:

- Verify that the 24 V battery disconnect is in the ON position.
- Verify that the main circuit breaker is in the ON position.
- If the display does not power on, check the two series-connected 12 V batteries.
- If the issue persists, contact service@viridiparente.com.

10.13 Contact Viridi Customer Service

If an issue is identified with the RPSLinkIN 3Φ, please contact Viridi Customer Service at 1-866-984-7434

The following information will be requested:

Company Name	
Contact Name and Call Back #:	
Serial Number:	
Set Up Details:	
Fault Details, including history relevant to the fault:	