Purpose of manual
The purpose of this manual is to familiarize you with the Moxion Power MP75-600 and ensure that the unit can be used safely, effectively and efficiently. This manual is divided into different sections to help you set up, operate, maintain, clean and troubleshoot the unit.

Notice
In this manual, images shown may differ slightly from the delivered product.

Disclaimer
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1 Safety information

This section provides an overview of safety aspects for the protection of people, property, and for safe and uninterrupted unit operation. Other task related safety instructions are included in specific sections detailed in the table of contents.

1.1 Safety notices

The following safety notice formats are used in this manual. Safety notices are used at the start of sections or embedded in operating instructions.

Ensure you fully understand and comply with the notices in this manual.

**DANGER**

Risk of death!

Indicates a hazardous situation which, if not avoided, will almost certainly result in death or serious injury.

**WARNING**

Risk of serious injury or death!

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution**

Risk of injury or damage to property!

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and damage to the unit.

**Notice**

Indicates an important situation which, if not avoided, may seriously impair operations.

**Tip**

Provides useful hints and tips.
## 1.2 Special safety instructions

To draw attention to special hazards, this manual uses the following symbols.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="symbol" alt="Electrical hazards" /></td>
<td>Electrical hazards and electrical shock hazards</td>
</tr>
<tr>
<td><img src="symbol" alt="General warning" /></td>
<td>General warning</td>
</tr>
<tr>
<td><img src="symbol" alt="Fire hazard" /></td>
<td>Fire hazard</td>
</tr>
<tr>
<td><img src="symbol" alt="Explosive materials" /></td>
<td>Explosive materials</td>
</tr>
<tr>
<td><img src="symbol" alt="Heavy objects or equipment" /></td>
<td>Heavy objects or equipment</td>
</tr>
<tr>
<td><img src="symbol" alt="Corrosive substance" /></td>
<td>Corrosive substance</td>
</tr>
<tr>
<td><img src="symbol" alt="Trip hazard" /></td>
<td>Trip hazard</td>
</tr>
<tr>
<td><img src="symbol" alt="Battery damage or leakage" /></td>
<td>Battery damage or leakage</td>
</tr>
<tr>
<td><img src="symbol" alt="Crush or trapping hazard" /></td>
<td>Crush or trapping hazard</td>
</tr>
<tr>
<td><img src="symbol" alt="Designated lift point" /></td>
<td>Designated lift point</td>
</tr>
<tr>
<td><img src="symbol" alt="Not a lifting point" /></td>
<td>Not a lifting point</td>
</tr>
</tbody>
</table>
1.3 Emergency stop button

**Warning**

**Risk of damage!**

The e-stop if for emergencies only, improper use will damage the system.

The unit is halted in a controlled manner by pressing the emergency stop button. After the emergency stop button has been pressed, the unit can only be restarted after the emergency stop button has been released and the system has been reset.

To release the emergency stop button, turn it in the direction of the arrows.

► For more information, see *E-stop* on page 35

![Emergency stop button](image)

Figure 1 - Emergency stop button

1.4 Safety labels

**Warning**

**Risk of injury due to illegible signs!**

Any labels or stickers which are found to be illegible are to be replaced immediately.

Safety labels are fitted to the unit to warn you about potential hazards. These labels must not be defaced or removed.

The following labels are visible when the unit is in a safe working mode or maintenance is being performed.
Figure 2 - Unit labels - top, rear, and side

Figure 3 - Unit labels - front
Figure 4 - Unit labels - inside controls and connections area

Figure 5 - Unit labels - inside of the door to the outlet panel
1.5 PPE requirements

**WARNING**
Use personal protective equipment (PPE) as required. Do not eat, drink or smoke when using the unit. Ensure adequate ventilation at all times.

Moxion Power recommends using high voltage gloves class 00 for operators who have been trained in NFPA70E.

Consider the following when using PPE:

- **Eye and face protection:** Wear safety glasses that meet ANSI Z87.1 requirements. Follow local on-site health and safety guidelines.
- **Safety shoes:** Wear safety shoes that meet ASTM F2413 requirements.
- **Trapped hair or loose clothing:** Use caution to prevent hair from being caught by any moving parts. Secure all loose clothing.

1.6 Safe operating area and clearance

When operating the unit you should allow at least 3 feet (0.9 m) around the unit. This is to provide adequate ventilation and access to the connection panels.

**Caution**
Do not position any high-temperature devices or exhausts, for example diesel generators or air handlers, closer than 12 feet (3.7 m) to the unit.

The air intake vents on the unit must not be blocked during unit operation.

To prevent the unit from rolling backward or forward, secure the unit in place with wheel chocks.

If space is limited around the unit's operating area, make sure there is enough space to allow the unit to be positioned for hitching to a towing vehicle.
1.7 Residual risks

The unit incorporates the latest technology and safety features. Nevertheless, there are some residual risks that require your attention. The following section lists the residual risks and the measures that result from them.

1.7.1 Pinch points

**WARNING**

**Risk of crushing or trapped hands!**

Crushing and pinching hazard from moving parts around the main wheels and when attaching the trailer hitch to a vehicle.

There is also a risk of pinching when operating the rear panels of the unit.

Figure 6 - Safe operating area around the unit
1.7.2 Electrical current

**DANGER**
**Risk of death!**
Do not use the unit if the unit is exposed to any of the following:

- Lightning or a high electrical discharge.
- Flooding.
- High-impact events, for example vehicular accidents or drop events.
- Prolonged exposure to environments outside of the specified operating and storage conditions.

Return the unit to Moxion Power for full checks and servicing.

**WARNING**
**Risk of electrical shock!**
When not connected to earth ground through the ground block, the unit must be isolated from earth ground.

**WARNING**
**Risk of electrical shock!**

- Do not expose the electronics of the unit or the lithium-ion battery.
- When charging the 12 V battery, make sure you use a battery charger with a 12 V lithium setting.
- Do not overcharge the 12 V battery in the unit. The 12 V battery is fully charged at 13.6 V. You can stop charging when this charge level is reached.
- When operating cam-lock and twist-lock cables, make sure the unit is not running.
- Do not touch the sockets when the unit is running.
1.7.3 Operating environment

**Caution**

**Risk of injury!**

- Do not operate the unit in high dust conditions.
- Do not operate or store the unit at temperatures less than 32°F (0°C) or more than 104°F (40°C).
- Always make sure the unit is secure and on level ground before use.
- Use wheel chocks and hitch jack to make sure the trailer is level and secure during operation.
- Do not stand on the trailer or on top of the unit.

1.7.4 Network and data security

**Caution**

**Risk of data loss or misconfiguration**

Do not integrate the unit with any third-party software or other sub-systems unless expressly consented by Moxion Power.

Moxion Power can remotely monitor the unit status and run diagnostics.

1.7.5 Heat and flammable

**WARNING**

**Risk of fire or flammable materials!**

The unit contains materials with a flashpoint at or above 200°F (93.3°C). Thermal runaway is a possible risk when using lithium-ion batteries.

► For more information, see *Battery safety* on page 17.
1.7.6 Trip hazard

**WARNING**

Risk of injury from trips or falls!

There is a risk of tripping on cables. Make sure to safely guide any cables and connectors in the unit operating area.

1.7.7 Heavy loads

**WARNING**

Risk of injury from lifting heavy objects!

Due to the large weight of the unit, exercise caution when hitching and moving the unit.

When lifting and mounting the unit, always use correct equipment with appropriate load capacity. The Gross Vehicle Weight Rating (GVWR) of the MPU with the trailer is approximately 12,500 lbs (5.7 t).

► For more information, see *Lifting the unit* on page 24.

1.7.8 Unsafe driving

**WARNING**

Risk of serious injury or death!

Loss of Control

Loss of control while towing the unit can result in death or serious injury.

The following lists the most common reasons for loss of control. Be aware of these causes and take appropriate actions.

- Driving too fast
- Failure to adjust handling while towing
- The trailer is not properly coupled to the hitch
- Incorrect use of the safety chains
- Incorrect use or configuration of the breakaway brake
- Mismatch of trailer and the hitch type used
1.7.9 Water ingress

**WARNING**

Risk of serious injury or damage!

Do not remove any panels.

If a panel is removed, ingress protection is compromised and poses as an electrical hazard.

Make sure the unit is not operated until the panel has been resealed.

Do not jet-wash directly onto the panel doors at the rear of the unit or onto the air-vents along the top edges of the unit.

Do not wash the unit while the rear doors are open.

Do not wash the unit while it is in use or with connectors attached.

For more information on how to seal the unit, contact Moxion Power.

Call 1-833-669-4661 or support@moxionpower.com.

1.8 Battery safety

**DANGER**

Risk of death!

- Only use the batteries for their designated purpose.
- Never use a damaged battery. A damaged battery can overheat and create a fire hazard.
- Do not expose batteries or the unit to high temperatures or heat-generating sources, for example, fires, or heaters.
- Only charge the 12 V battery with an appropriate 12 V lithium charger.
- Do not attempt to remove, replace, or install batteries without express training and consent from Moxion Power.

**WARNING**

Risk of corrosive substances!

If there are any leaks found around the unit, do not touch the leaking fluid. The battery fluids can be corrosive and harmful to skin.
**WARNING**

**Contact with leaked electrolyte!**

The constituent battery cells are sealed and leakage should not occur during normal use. Contents of an open (broken) constituent battery cell can cause skin irritation and/or chemical burns.

If materials from a ruptured or otherwise damaged cell or battery contacts skin, immediately wash the affected area with soap and water.

If a chemical burn occurs or if irritation persists, seek medical assistance.

For eye contact, flush with significant amounts of cold water for at least 15 minutes, without rubbing, and seek medical assistance immediately.

---

**WARNING**

**Inhalation of electrolyte vapors!**

If inhalation of electrolyte vapors occurs, move the person into fresh air.

If not breathing, give artificial respiration and seek immediate medical assistance.

---

**WARNING**

**Vent gas Inhalation!**

The constituent battery cells are sealed and venting of cells should not occur during normal use.

If inhalation of vent gasses occurs, move the person into fresh air.

If not breathing, give artificial respiration. Seek immediate medical assistance.
1.8.1 Thermal runaway

While lithium-iron phosphate (LFP) is widely accepted as one of the safest battery chemistries, there is still a posed risk of thermal runaway.

**WARNING**

Risk of fire, flammable, and explosive materials!

If the unit is in thermal runaway, the following actions must be taken:

- If possible to do so safely, move the unit to an open area away from flammable material, structures, and people.
- Evacuate the area
- DO NOT attempt to repair.
- Contact local emergency services. Notify them that a lithium-ion battery system may be malfunctioning and is under suspicion of undergoing thermal runaway.

Thermal runaway is a self-reinforcing, uncontrolled increase in temperature within an electronic device, leading to a rapid escalation of heat generation. This phenomenon occurs when the heat produced by the device surpasses its ability to dissipate heat, resulting in a feedback loop where increased temperature further accelerates heat production.

The consequences of thermal runaway can range from reduced device performance and shortened lifespan to severe damage, fire, or explosion.

The MP75-600 has a robust multi-layer protection system that guards against all of these factors, making it a safe and reliable choice for electronic applications.

Several factors can contribute to thermal runaway in electronic devices, including:

- **Over-current or overloading**: When a device is subjected to excessive current or voltage beyond its rated capacity, it can lead to increased heat generation and trigger thermal runaway.
- **Poor heat dissipation**: Inadequate cooling mechanisms or blocked ventilation can prevent effective heat dissipation, causing temperature build-up and potential thermal runaway.
- **Manufacturing defects**: Poorly designed or manufactured components can result in localized hotspots, initiating thermal runaway.
- **Battery malfunctions**: Rechargeable batteries are particularly susceptible to thermal runaway if they are damaged, overcharged, or exposed to extreme temperatures.

For more information about preventing thermal runaway, contact Moxion Power. Call 1-833-669-4661 or support@moxionpower.com.
1.9 Grounding the unit

**WARNING**

**Risk of electrical shock!**

Only qualified electricians should be in charge of unit grounding. Personnel in charge of unit grounding must know and comply with the local electrical and safety code regulations.

1.10 Towing and transportation safety

You can transport the unit between locations by towing it or loading onto a flat-bed or goose-neck trailer.

► For more information, see *Towing the unit* on page 53.

**WARNING**

**Risk of serious injury or death!**

- Before transporting the unit, make sure to secure the unit's trailer to the towing vehicle by using appropriate connections.
- Always use safety chains in addition to the standard pintle hitch and lunette ring connection.
- Make sure the trailer and the towing vehicle are in good operating condition.
- When transporting the unit, abide by local road safety regulations.

**WARNING**

**Risk of serious injury or death!**

Do not lift the unit using the trailer D-rings located on the side of trailer. These D-rings are only to be used for securing the trailer, with the MPU fitted, when it is transported using a flat-bed or goose-neck trailer.
Caution
Risk of injury or damage!
Do not use the tongue jack for supporting the unit when transporting the unit on a flat-bed or goose-neck trailer.
When transporting the unit on a flat-bed or goose-neck trailer, make sure you have fitted the supplemental jack stand.
The supplemental jack stand is not required for units with a manufacture date after 18th August 2023.

Caution
Risk of damage!
- Always switch the unit to OFF and ensure the Main Breaker is in the OFF position before transporting.
- Secure all four panels at the back of the unit before transportation.
- Make sure the unit is secured on ground level before attaching the trailer.
- The unit must be level when towed.
Caution

Risk of injury or damage

Before towing this unit check the following:

- The pintle hitch and lunette ring are the same size.
- The pintle hitch is latched.
- The safety chains are crossed under the trailer tongue and attached to towing vehicle.
- Trailer brakes are properly adjusted and the break-away device is attached to the towing vehicle.
- The tongue jack is retracted.
- The wheel lug nuts are properly tightened.
- The tires are inflated to the correct pressure.
- All gates, ramps, and latches are secure.
- Any under-carriage bolts, nuts and equalizers are tight and not worn.
- The load is within the trailer capacity and distributed properly to maintain proper tongue weight. NEVER OVERLOAD!
- The load is secure.

1.10.1 Trailer registration

Tip

Before towing the unit on public roads, you must obtain the trailer’s title and registration from the Department of Motor Vehicles (DMV).

For each unit’s trailer, Moxion Power provides a Manufacturer’s Statement of Origin (MSO) document and the original invoice for the unit’s trailer that you can use for registration. Before towing your unit, your MSO application must be processed and approved.

For more details on obtaining the MSO and the trailer’s invoice, contact Moxion Power.

If renting a unit directly from Moxion Power, refer to the registration provided in the rear storage pouch or contact Moxion Power customer support for more information.

Call 1-833-669-4661 or support@moxionpower.com.
1.10.2 Modifying the trailer

**WARNING**

Risk of serious injury or death!
Moxion Power recommends that you do not modify your trailer.

However, if you do need to make trailer modifications, contact Moxion Power
Call 1-833-669-4661 or support@moxionpower.com.

1.10.3 Trailer accessories

**WARNING**

Risk of serious injury or death!

It is important to use our trailer accessories as shown.

► For more information, see *Unit identification* on page 36

If your trailer contents or safety decals need to be replaced, contact Moxion Power.

Call 1-833-669-4661 or support@moxionpower.com.
1.11 Lifting the unit

WARNING
Risk of serious injury or death!

- Only use rigging equipment in a way that adheres to the Occupational Safety and Health Administration regulations.
- Use only lifting equipment that can handle the full unit weight.
- Only lift the unit by attaching the rigging to the four hoist rings on top of the unit.
- The minimum horizontal angle for lifting is 50 degrees.

- The recommended way to lift the unit is to use a double A configuration with a spreader bar.
  Alternatively, use a quad A configuration.

WARNING
Risk of serious injury or death!

Do not lift the unit using the trailer D-rings located on the side of trailer.
These D-rings are only to be used for securing the trailer, with the MPU fitted, when it is transported using a flat-bed or goose-neck trailer.

Caution
Risk of damage!

Before lifting the unit, make sure the hoist eyelets are secured correctly to the unit.
Caution

Risk of injury or damage!

If you need to replace or service the tires, and only need to lift the unit slightly off the ground, you must use four jack stands located at each corner of the trailer.

The jack stands must be capable of supporting the full load of the unit. The unit must be lifted using its overhead lift points, and placed on level jacks, located directly on the frame, to ensure that there is no disproportionate loading on the unit's wheels and axles during service that may result in damage or failed operability.
1.12 Personnel

The owner and their representatives must have undergone the appropriate training before operating the unit and related systems.

Only specialist service personnel employed or personnel authorized by Moxion Power can perform service and support work on the unit. Other personnel are not authorized to carry out this work.

1.12.1 Operating staff

Only qualified personnel can operate the MP75-600. All persons operating the unit must be qualified and experienced in the following areas:

- Qualified personnel should be familiar with electrical installation methods, such as electrical codes and standards, electrical interconnections, and power conversion systems.
- All persons operating the unit must have reviewed the User Manual carefully, including all drawing-based instructions. The manual should be kept accessible to personnel at all times.
- Operating staff should be properly trained and qualified on hazard and accident prevention, and safe workplace procedures. Staff should be up-to-date on all safety training required in the applicable jurisdiction.

1.12.2 Maintenance staff

Only qualified service personnel can perform maintenance tasks on this equipment.

1.13 Responsibility of the owner

The owner is the person or entity that operates the unit for commercial or business purposes or that allows a third party to use the unit. The owner is responsible for the unit and the protection of users and other individuals and property in connection with any operation of the unit, whether by the owner or its personnel or any third party the owner permits to access or use the unit.

1.13.1 Owner responsibilities

Owners are solely responsible for ensuring compliance with the applicable environmental, health and safety regulations, transportation, applicable electrical codes, and any environmental regulations in the jurisdiction where they operate the unit.
2 Hardware description

To operate the MP75-600, you must be familiar with the descriptions of the unit parts, main systems, and other mechanical attributes.

WARNING
You must read and be aware of all safety information before using the unit.
► For more information, see Safety information on page 7

Notice
Drawings of the unit towing parts used in this manual may differ slightly from your unit.

2.1 Overview

The Moxion Power MP75-600 (the unit) is a mobile energy storage system that uses lithium-ion batteries to provide on-site power for a range of industries, for example, construction, transportation, events and entertainment, and film production.

The MP75-600 is a zero-emission, quiet energy storage system (ESS) that can be towed on and off road for flexibility on being positioned close to the required demand.

The MP75-600 battery unit, otherwise referred to as the Mobile Power Unit (MPU), is mounted on a twin-axle trailer that is towed using a standard class 5 pintle hitch.

The MP75-600 battery is charged using a standard J1772 CCS Type 1 charging port.

2.2 Dimensions

Figure 7 - Dimensions of unit
2.3 Main external parts

Before operating the unit, you should be familiar with the location and names of all parts of the unit. This will help you understand the operating procedures and assist with troubleshooting if required.

1. Mobile power unit (MPU)  The battery, electrical connections, and controls systems.
2. Lifting eyelet socket  Used to attach lifting gear when lifting the unit.
3. Trailer lunette ring  Used to attach to a towing vehicle.
4. Tongue jack  The tongue jack must only be used when the unit is stationary and not attached to the towing vehicle. Used to raise the trailer-tongue when attaching the trailer to the towing vehicle. The supplemental jack stand must be used when transporting the unit on a flat-bed or goose-neck trailer.
5 Emergency brake cable
Must be attached to the towing vehicle when towing. Used to engage the trailer brakes if the trailer hitch becomes detached during transit.

6 Tie-down D-rings
Four locations. Used to secure the trailer on a truck or trailer.

**WARNING**
Risk of serious injury or death!
Do not lift the unit using the trailer D-rings located on the side of trailer. These D-rings are only to be used for securing the trailer, with the MPU fitted, when it is transported using a flat-bed or goose-neck trailer.

7 Tires
Four locations. Uses tire type 235/80/16.

8 GPS cover
Covers the GPS and cellular antennas used for unit location and data transmission.

9 Air vents (each side of unit)
Used to provide ventilation for the unit.

10 Emergency stop
Used to stop all output connections. Located on the side of the MPU.

11 Main control panel
Used to access the main controls for starting and using the unit.
▶ For more information, see Main control panel on page 32

12 Outlet connector panel
Used to access the outlet connections.
▶ For more information, see Outlet panel on page 33

13 Cam-lock connector panel
Used to access the cam-lock connections.
▶ For more information, see Cam-lock connections on page 30

14 Twist-lock connector panel
Used to access the twist-lock connections.
▶ For more information, see Twist-lock connections on page 31

15 Trailer
Used to transport and position the MPU.

16 Charging port
Used to charge the unit.

Figure 8 - Main parts
### 2.3.1 Cam-lock connections

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>Main cam-lock connectors (400A, female, series 16)</td>
<td>Provide 3-phase power.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>Neutral connector (400A, female, series 16)</td>
<td>Neutral for 3-phase power.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Ground connector (female)</td>
<td>Ground for 3-phase power.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Remote start jack</td>
<td>Used to send signal to start external power generation unit. Used to remote start generator for the hybrid mode.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>5</strong></td>
<td>Ground block</td>
<td>Used to connect earth ground to the unit.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 9 - Cam-lock connections
2.3.2 Twist-lock connections

Twist-lock connectors

Three connections. Used for connecting industrial and commercial-grade devices and connectors up to 240 V/50 A heavy-duty power.

Figure 10 - Twist-lock connections
2.3.3 Main control panel

1. Control knob
   Used to turn the unit on or off.

2. Voltage mode selection knob
   Used to select the voltage output requirements.

3. Panel lights switch
   Used to control the panel lights at the rear of the unit. Switch 1 is used to confirm a voltage change following a shift of the Voltage selection mode knob. Switch 4 and 5 are used for engaging service mode.

4. Main breaker
   Used to turn the main unit power on or off.

5. Twist lock breakers
   Used to turn the twist-lock connections power on or off.

6. USB-A and USB-C connections
   Used for standard USB-A and USB-C connections (3A).

7. Diagnostic port
   Used to connect diagnostic equipment.

8. Control display
   Displays the current status of the unit and available power.

Notice
Only for use by trained service personnel.

Figure 11 - Control panel details
### 2.3.4 Outlet panel

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NEMA 5-20R outlet (8 locations) Weather-resistant GFCI outlet used to provide standard 120 V/20 A outlet with downstream protection. 20A outlet.</td>
</tr>
<tr>
<td>2</td>
<td>Reset button Used to reset the circuit and make the outlet active again.</td>
</tr>
<tr>
<td>3</td>
<td>Test button Used to test the outlet's GFCI functionality DO NOT use an independent GFCI testing device on these outlets.</td>
</tr>
<tr>
<td>4</td>
<td>GFCI outlet status Red - device needs attention Green - power on and working Off - no power as the GFCI has tripped</td>
</tr>
<tr>
<td>5</td>
<td>NEMA 5-20R breaker Used to provide power isolation for the NEMA 5-20R outlets.</td>
</tr>
<tr>
<td>6</td>
<td>NEMA L14-30 outlet Used for connecting industrial and commercial-grade devices and connectors up to 208 V heavy-duty power. 30A outlet.</td>
</tr>
</tbody>
</table>
2.3.5 **Charging connection**

The J1772 CCS Type 1 charging port is located on the side of the unit. The following charge rates are supported:

- Level 2 AC charging up to 19.2kW
- Level 3 DC Fast Charging (DCFC) up to 40kW

**Tip**

DC charging is possible only when the system is in **STANDBY** mode.

---

**Figure 12 - Outlet panel connections**

**Figure 13 - Charging port location**
2.4 Trailer components

![Trailer components diagram]

1. Fender
2. Emergency brake 12 V battery
3. Electrical housing box
4. Emergency brake cable
5. Marker light
6. LED tail light

Figure 14 - Trailer components

2.5 E-stop

The e-stop is located on the side of the unit.

**WARNING**

Risk of electrical shock!

**The e-stop does not isolate the high-voltage systems inside the unit.**

If any maintenance is required, the internal systems need to be isolated.

**Notice**

When the e-stop is used only the AC output of the MPU is disabled. The e-stop, when used, also stops the charging process and clears faults.

Engaging the e-stop button stops all power output from the unit.
2.6 Unit identification

The unit identification plate can be found on the front of the MPU.

The identification plate contains the following information:

- Model number
- Manufacturing date
- Unit serial number
- Range of voltages provided with corresponding output capabilities
- Weight and dimension details

The trailer vehicle identification number (VIN) plate is located on the side of the tongue bar. The VIN plate provides details of the trailer including safety information, tire details and pressures, and maximum loads.
2.7 Control display

1. **Unit system status**: Displays the status of the unit.
2. **Charging state**: Shows information about the unit charging levels during a charging process.
3. **Unit power status**: Displays the current charge levels and available power.
4. **Power levels**: Displays available output power levels.

---

Figure 17 - VIN plate location

Figure 18 - Control display
2.7.1 Control display icons

Table 1 - Control panel icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚡️ green</td>
<td>MPU status</td>
<td>The MPU is in <strong>RUN</strong> mode and providing power.</td>
</tr>
<tr>
<td>⚡️ grey</td>
<td>MPU status</td>
<td>The MPU is in <strong>STANDBY</strong> mode.</td>
</tr>
<tr>
<td>📡 green</td>
<td>Signal</td>
<td>The remote connection to the MPU is working and has a strong signal.</td>
</tr>
<tr>
<td>📡 yellow</td>
<td>Signal</td>
<td>The remote connection to the MPU is inconsistent or not strong.</td>
</tr>
<tr>
<td>⚡️ green</td>
<td>Power wave</td>
<td>The MPU operating normally and displays the set voltage.</td>
</tr>
<tr>
<td>⚡️ white</td>
<td>Power wave</td>
<td>The MPU is in standby. The voltage is set but not outputting.</td>
</tr>
<tr>
<td>⚡️ red</td>
<td>Power wave</td>
<td>There is a voltage mismatch error.</td>
</tr>
<tr>
<td>✂️ green</td>
<td>Plug</td>
<td>The MPU is charging.</td>
</tr>
<tr>
<td>✂️ white</td>
<td>Plug</td>
<td>The MPU is connected to a charging supply but not initialized.</td>
</tr>
<tr>
<td>✂️ grey</td>
<td>Plug</td>
<td>No charging connection established.</td>
</tr>
<tr>
<td>⚠️ red</td>
<td>Warning</td>
<td>There is a system fault.</td>
</tr>
<tr>
<td>⚠️ grey</td>
<td>Warning</td>
<td>No system errors detected.</td>
</tr>
<tr>
<td>📬 blue</td>
<td>Info</td>
<td>There is a voltage mismatch warning.</td>
</tr>
</tbody>
</table>

2.7.2 Voltage mismatch behavior

Voltage mismatch behavior occurs under the following conditions.
• Mismatch occurs when a user changes the voltage mode before confirming using a button press.

• If a voltage mismatch happens while the system is in **STANDBY**, the display shows:
  • Blue info icon is normally where the fault icon would be located.
  • Text indicating that you have confirmed the new voltage by pressing switch one.

• If a voltage mismatch happens while the system is in **RUN**, the display shows:
  • Red fault icon.
  • Red voltage icon (wave next to the voltage value).
  • Text indicating the user cycle to **STANDBY**.
  • You cannot set the voltage in this mode. You must turn to **STANDBY** and then confirm the new voltage if they wish.
  • You can now switch back to **RUN** to activate power output.

2.8 Neutral ground bond

The MP75-600 has a neutral-ground bond design that puts the system in compliance with NFPA 70 Article 250 Section 250.30(A)(1) as a grounded separately derived system. This bond is located internal to the system and is not user accessible or configurable, resulting in a permanently bonded system. While active, the unit monitors isolation through a high precision current sensor at the point of connection between Neutral and Ground to ensure the unit is in accordance with the stringent isolation monitoring and ground fault monitoring thresholds established in FMVSS 305, OSHA guidance, the NIH, and NFPA.

2.8.1 Isolation monitoring parameters

If the resistance or current goes beyond the specified thresholds, the MPU will trigger a fault to ensure unit and user safety and prevent electrical hazards.

The following trip settings monitor the electrical resistance and current in the system.

**HV-DC isolation monitor:**

---

**Notice**

This setting is used while the system is in **Standby** or AC charging
- Pre-check: A fault will be triggered if the electrical resistance between the DC+/- (positive and negative) and the chassis is less than 1 kilohm (kΩ) per Volt of pack voltage (nominally approximately 394 kilohms in total) for a continuous period of 60 seconds.

- **DC ISOLATION WARNING:** This fault will be triggered if the electrical resistance between the DC+/- and the chassis is less than 100 kilohms for a continuous period of 10 minutes. This fault does not prevent operation of the system.

- **DC ISOLATION CRITICAL:** This fault will be triggered if the electrical resistance between the DC+/- and the chassis is less than 60 kilohms for a continuous period of 5 minutes or less than ~39 kilohms (100Ω/Volt) for a period of 10 seconds.

**AC ground fault monitor:**

This fault will be triggered if the current flowing to ground is greater than 30 milliamperes (mA). This detection should occur within 200 milliseconds under all conditions.

► For more information, see *Troubleshooting on page 79*
3 Quick start

The following sections describe what Moxion Power provides with each unit and how you can get the unit operational.

**WARNING**

*Risk of serious injury or death!*

Make sure you have read and understood all the safety information before using this unit.

Only trained personnel are allowed to use and operate this unit.

3.1 Package contents

The following items are included with each unit:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental jack stand</td>
<td>Used to support the existing tongue jack. Required when transporting the unit on a flat-bed or goose-neck trailer. The supplemental jack stand is not required for units with a manufacture date after 18th August 2023.</td>
</tr>
<tr>
<td>Generator auto-start cable harness</td>
<td>Used to enable the auto-start feature of the unit.</td>
</tr>
<tr>
<td>Trailer Manufacturer's Statement of Origin (MSO) document</td>
<td>Used to obtain the Department of Transportation (DOT) registration for the trailer.</td>
</tr>
<tr>
<td>Interface panel door key</td>
<td>Used to lock the rear panel doors.</td>
</tr>
<tr>
<td>Various documentation</td>
<td>This includes:</td>
</tr>
<tr>
<td></td>
<td>• Trailer invoice</td>
</tr>
<tr>
<td></td>
<td>• Factory acceptance test report</td>
</tr>
<tr>
<td></td>
<td>• Warranty documents</td>
</tr>
<tr>
<td>User manual</td>
<td>Read the manual! You must read this manual before starting work and operating this unit.</td>
</tr>
</tbody>
</table>
3.2 Positioning the unit

When you transport the unit to the desired location, make sure to position and set up the unit correctly before operation.

To position the unit correctly, follow these steps:
1. Make sure the operating area is level, dry, clean, and free of debris.
2. Position the unit in a location that provides good access to necessary connections.
3. Use wheel chocks to secure the unit trailer in place.
4. Deploy the tongue jack and unhitch the unit from the tow vehicle.
5. Level the unit by adjusting the tongue jack height.

Caution
Risk of damage!
Do not move the unit with the tongue jack deployed.

3.3 Turning on the unit

Before you start operating the unit, turn the unit on and set the desired output voltage to match your requirements.

To turn on the unit, follow these steps:
1. At the back of the unit, locate the top right panel door.
2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.
3. On the top right panel, switch the Main Breaker switch to the OFF position.

Figure 19 - Location of main breaker

4. Switch all Twist Lock breakers to the OFF position.
5. Make all intended electrical connections to the cam-locks or twist-locks.
   ► For more information, see Connecting cam-lock cables on page 44
   ► For more information, see Connecting twist-lock cables on page 45

6. Turn the Control dial to the STANDBY position.
   When the system starts, the screen displays available energy information. The unit is now ready to begin outputting power.

7. Turn the Voltage Mode knob to one of the desired voltage outputs:

<table>
<thead>
<tr>
<th>Voltage output</th>
<th>Powered connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>240V/120V-1P</td>
<td>• All cam-lock connections.</td>
</tr>
<tr>
<td></td>
<td>• Cam-lock connections 1 and 2 or 1 and 3 for 240 V.</td>
</tr>
<tr>
<td></td>
<td>• Twist-lock connections 1 and 2.</td>
</tr>
<tr>
<td>208V/120V-3P</td>
<td>• All cam-lock connections.</td>
</tr>
<tr>
<td></td>
<td>• All three twist-lock connections.</td>
</tr>
<tr>
<td>480V/277V-3P</td>
<td>• All cam-lock connections.</td>
</tr>
</tbody>
</table>

Notice
The unit cannot be enabled if there is a mismatch between the voltage mode knob position and previously set voltage.
To confirm a new selection, press Switch 1, otherwise revert the knob to match the voltage on the display.

The screen displays the selected voltage.

Figure 20 - MP75-600 in standby mode.


### 3.4 Testing the GFCI outlets

You can determine the current status of a GFCI outlet by observing the status light indicator for the outlet. In addition, you can also test and reset individual GFCI outlets.

**Notice**

Routine operational checks of standard GFCI outlet circuits sometimes include a process, in which a qualified person checks the circuit with a standard plug-in GFCI tester. These stand-alone testers conflict with the built-in AC isolation monitoring of MP75-600, which causes the GFCI outlet to trip. However, such a result does not indicate that there is an issue with the unit.

To test the GFCI outlets, follow these steps:

1. At the back of the unit, locate the top left panel door.
2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.
3. On the outlet panel, identify the GFCI outlets.  
   - For more information, see Outlet panel on page 33
4. On the GFCI outlet, note the status light indicator:
   - Red — device needs attention
   - Green — power on and working
   - Off — no power as the GFCI has tripped
5. To test a GFCI outlet, press the test button.  
   The unit shuts off the power to the connected device.
6. To reset a GFCI outlet, press the reset button.  
   The unit resets the circuit and makes the outlet active again.

### 3.5 Connecting cam-lock cables

Enable a secure and efficient electrical power transfer by connecting your load to the unit with cam-lock cables.

To connect cam-lock cables, follow these steps:

1. Connect your ground.
2. At the back of the unit, locate the bottom right panel door.  
   - For more information, see Cam-lock connections on page 30
3. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.

4. Open the caps of the cam-lock receptacles.

5. Insert your cam-lock plugs, and rotate your cam-lock plugs 180° clockwise to fully secure them.

Make sure you have identified the cables and fitted the correct **NEUTRAL** and **GROUND** cables.

Your cam-lock connections are now in place and ready to receive power from the unit.

### 3.6 Connecting twist-lock cables

Enable a secure and efficient electrical power transfer by connecting your load to the unit with twist-lock cables.

**To connect twist-lock cables, follow these steps:**

1. At the back of the unit, locate the bottom left panel door.
   - For more information, see *Twist-lock connections* on page 31

2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.

3. Open the cap of the twist-lock outlet.

    **Notice**
    The powering of the twist-lock connection depends on the voltage output that you set for the unit.
    - For more information, see *Turning on the unit* on page 42.

4. Insert your twist-lock cable, and rotate your twist-lock plug clockwise until it stops to fully secure it.

Your twist-lock connections are now in place and ready to receive power from the unit.
3.7 Running the unit

With the unit in **STANDBY** mode and cam-lock/twist-lock connections in place, you can now set the unit to **RUN** mode to begin powering your load.

To run the unit, follow these steps:

1. At the back of the unit, locate the top right panel door.
   - For more information, see *Control display* on page 37
2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.
3. On the top right panel, switch the **Main Breaker** to the **ON** position.
4. Switch the **Twist Lock** breakers for the connected twist-lock cables to the **ON** position.
5. Turn the **Control** knob to the **RUN** position.

When the system starts running, the screen displays output power information, for example, amperage, voltage, and power.

![Control Display](image)

**Figure 21 - MP75-600 running**

The unit is now operating and outputting power.

**Notice**

Ensure all doors are secured and locked to prevent access by untrained personnel.
3.8 Setting the unit to standby

To set the unit to standby, follow these steps:

1. At the back of the unit, locate the top right panel door.
   ► For more information, see Control display on page 37
2. If required, unlock the panel door with the supplied keys, and then pull the latch to open the door.
3. On the top right panel, turn the Control knob to STANDBY.
   When the line voltages on the panel display are at 0, the unit output power is disabled.
4. Switch all Twist Lock breakers to OFF.
5. Switch the Main Breaker to OFF.

3.9 Shutting down the unit

After you confirm that the load is off, you can safely shut down the unit.

To shut down the unit, follow these steps:

1. At the back of the unit, locate the top right panel door.
   ► For more information, see Control display on page 37
2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.
3. On the top right panel, turn the Control knob to STANDBY.
   When the line voltages on the panel display are at 0, the unit output power is disabled.
4. Switch all Twist Lock breakers to OFF.
5. Switch the Main Breaker to OFF.

   Confirm that the Main Breaker is set to OFF on the Control display.
6. Open the top left panel door.
7. On the top left panel, make sure all indicator lights are off.

![Tip]

A green indicator light means that a ground fault circuit interrupter (GFCI) outlet has not tripped.

8. Switch all breakers to **OFF**.
9. Turn the **Control** knob to **OFF**.

If required, cables can be adjusted in **OFF** or **STANDBY**.

### 3.10 Using auto start and stop

MP75-600 has an auto start and stop functionality that automatically engages a supplemental diesel generator to charge the unit battery.

If the unit battery charge is below 30 % when plugged in or recovered from a fault, the generator will need to be manually turned on.

If the unit battery charge is at 30 %, the unit signals the connected generator to start charging. When the unit battery charge reaches 90 %, the unit signals the connected generator to stop charging.
Notice

To be able to charge the unit with a supplemental generator, make sure you connect the charger from the generator to the unit’s charge port.

► For more information, see Charging connection on page 34

To use the auto start and stop functionality, follow these steps:

1. At the back of the unit, locate the bottom right panel door.

2. If needed, unlock the panel door with the supplied keys, and then pull the latch to open the door.

3. On the bottom right panel, connect the supplied control cable (PN P0002044-01) to the GENERATOR AUTO START port.

   ► For more information, see Cam-lock connections on page 30

4. Connect the other end of the control cable to the auto start and stop terminal block of a supplemental diesel generator.

   Make sure the wiring is correct.

   ![Control cable diagram]

<table>
<thead>
<tr>
<th>J1</th>
<th>J2</th>
<th>J3</th>
<th>J4</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW_IN, RS1 or RS2</td>
<td>SW_OUT, RS1 or RS2</td>
<td>REMOTE_FEEDBACK_(STG_OUTPUT), N/C</td>
<td>STG_OUTPUT_REFERENCE, Common</td>
</tr>
</tbody>
</table>

Figure 22 - Control cable for auto start

The auto start and stop functionality is now active.
This page is intentionally left blank
4 Operations

This section describes common tasks required for the operation of the MP75-600.

**WARNING**

Risk of serious injury or death!

Make sure you have read and understood all the safety information before using this unit.

Only trained personnel are allowed to use and operate this unit.

4.1 Charging the unit

The unit can be charged using a standard electric vehicle supply equipment (EVSE) with either a SAE J1772 plug or Combined Charging System (CCS) Type 1 plug.

**Tip**

The unit will not output high voltage when it reaches 3%.

To recharge the unit, follow these steps:

1. Open the charge port door located on the left-hand side of the unit.
2. Plug in the charging connector.
   - Level 2 SAE J1772 (80A Limit)
   - Level 3 DC Fast Charging CCS Type 1 (100A Limit)

**Tip**

DC charging is possible only when the system is in **STANDBY** mode.

**Notice**

A Level 1 (120 V) SAE J1772 charging connector is not compatible with the unit.

3. After a plug is detected, the display shows **Not Charging** before proceeding to **Unit Charging** and finally **Charging**.
4. The unit begins charging.
5. To confirm the unit is charging the charging icon is shown on the control display.
6. Make sure that the charge is stopped on the EVSE (Electric Vehicle Supply Equipment) charger before disconnecting the charger from the charge port.

7. After you have charged the unit, disconnect the charger by pressing and holding the release button on your charging connector.
   a. Wait until the interlock pin is released and then remove the charging connector.
   b. You will feel the interlock pin release when the release button depresses.

4.2 Attaching the hitch

The unit can be towed using a vehicle fitted with the correct pintle hitch and lunette ring connections.

Before attaching the pintle hitch, check the following:

- The towing vehicle has direct and straight access to the unit so that it can reverse straight onto the unit hitch.
- The tongue jack is extended so that the lunette ring is slightly higher than the pintle hitch on the towing vehicle. You may not be able to adjust the height of the tongue jack until the pintle hitch is near the trailer.
- Have a person guide the towing vehicle driver when they are reversing towards the trailer.
- Make sure the pintle hitch and lunette ring are lightly greased. This prevents noise during towing and extends the life of towing parts.
To attach the unit to a towing vehicle, follow these steps:

1. Remove the locking pin and lift the pintle hitch latch.
2. Position the pintle hitch directly under the lunette ring.
3. Using the tongue jack, lower the trailer and lunette ring coupler onto the pintle hitch hook.

**WARNING**

**Risk of crushing or trapped hands!**

Stay clear of the pintle hitch and lunette ring as the tongue jack is lowered.

4. Close and lock the pintle hitch latch and insert the latch pin.
5. Fully retract the tongue jack so that the full load of the trailer is taken by the pintle hitch and towing vehicle.
6. Attach the trailer towing chains to the towing vehicle.
   Cross over the chains and twist if there is any slack and may drag on the ground.
7. Attach the trailer 7-pin connector to the towing vehicle.
   The 7-pin trailer cable contains both the trailer lights and trailer electric brakes.
8. Attach the emergency brake cable.
9. Start the towing vehicle engine and test the trailer brake and running lights.
10. Remove and stow the wheel chocks.

You are now ready to start towing the unit.

### 4.3 Towing the unit

The unit is a large and heavy load. You should use an appropriate towing vehicle and be familiar with towing loads of this type.

▶ For more information, see *Specifications* on page 91.

**Notice**

If the unit sustains any visual damage, such as cracks, dents, and so on, do not turn on or use the unit.

Contact Moxion Power immediately for assistance.

Call 1-833-669-4661 or support@moxionpower.com.
To tow the unit on public roads and highways you should check the following:

- **Check the trailer:**
  - The trailer has been attached to the towing vehicle correctly and safely.
    - For more information, see *Attaching the hitch* on page 52
  - The trailer running-lights and indicators are working correctly and have been tested.
  - The trailer tires are fully inflated to the correct pressures.
  - The trailer wheels lugs are torqued to the correct values.
  - The trailer tires are not worn.
  - The correct license plate, vehicle identification, and all unit warning labels can be seen.
  - You have correctly registered the trailer and have a valid DOT certificate.

- **Check the unit:**
  - There are no loose panels, screws, or cables.
  - The rear doors are closed and locked.
  - The unit is turned off.
  - Do not operate the unit while it is attached to a towing vehicle.

- **Check the towing vehicle:**
  - The vehicle is in good condition and properly equipped to tow the unit.
  - The vehicle is legally documented to use public roads and highways.

- **General safety guidelines:**

  ![Caution]

  **Risk of injury and damage!**

  The unit is a heavy load. Do not exceed 55 mph when towing on public roads and highways.

  To minimize damage and guarantee safe towing, do not exceed 10 mph when driving off paved roads.

  - Slow down and avoid sudden movements when driving over uneven surfaces.
  - Slow down and take turns carefully when driving on roads with banked turns. Maintain a safe and steady speed across the turn to prevent the unit from tipping or swaying.
  - Check the torque on the wheel lugs:
Caution
Risk of injury or damage!
It is important that you check the torques of the wheel lug nuts.

- Re-torque each wheel’s lug nuts in a star pattern every 10 miles, 25 miles, and 50 miles from the beginning of each use.
  Re-torque at these intervals is not required on units with a manufacture date after 11th July 2023.
- For long-term use, re-torque each wheel’s lug nuts in a star pattern every 12,000 miles or 12 months, whichever occurs first.

4.4 Department of transportation requirements

Moxion Power units can have either of two UN Class 9 markings, UN3480 or UN3536, depending on the unit’s date of manufacture. Both markings are valid and represent equivalent requirements for the unit’s owner/operator/transporter.

The prototype/low product run regulations apply (49 CFR 173.185(e)). The units can be transported as is with battery modules secured against movement inside of the metal outer case.

These units must be labeled on at least two opposing sides (see excerpt from 172.406 (e)) with the UN3480 Class 9 Hazardous Materials lithium battery label shown below. The size of the label must be at least 100x100 mm. Further, the shipper must complete a regulated shipping paper (Bill of Lading) for each movement of these units (see the example Bill of Lading below). Drivers must have hazmat training but do NOT need a HazMat Endorsement on their Commercial Driver’s License.

Note that if these units are shipped for the purposes of testing, no upper production limit applies. If shipped for non-testing purposes, the limit is 100 batteries produced per year.

Figure 24 - UN3480 lithium ion battery label

(e) Duplicate labeling. Generally, only one of each different required label must be displayed on a package. However, duplicate labels must be displayed on at least two sides or two ends (other than the bottom) of—

1. Each package or overpack having a volume of 1.8 m³ (64 cubic feet) or more;
2. Each non-bulk package containing a radioactive material;
3. Each DOT 106 or 110 multi-unit tank car tank. Labels must be displayed on each end;
4. Each portable tank of less than 3,785 L (1000 gallons) capacity;
5. Each freight container or aircraft unit load device having a volume of 1.8 m³ (64 cubic feet) or more, but less than 18 m³ (640 cubic feet). One of each required label must be displayed on or near the closure; and
6. An IBC having a volume of 1.8 m³ (64 cubic feet) or more.

The Moxion Power unit is also classified as UN3536, lithium battery installed in cargo transport unit, Class 9. The unit requires this class of placards on two opposing sides. When you check this entry on the hazardous materials table in 49 CFR 172.101, you see that Special Provision 389 applies.

**Table 2 - Extract from 172.101 Hazardous Materials Table**

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Hazardous materials descriptions and proper shipping names</th>
<th>Hazard class or Division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special provisions (§ 172.100)</th>
<th>(R)</th>
<th>(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium batteries installed in cargo transport unit</td>
<td>Lithium iron disulfide batteries or lithium metal batteries</td>
<td>9</td>
<td>UN3536</td>
<td>389</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The UN Number 3536 must be displayed on both sides of the Class 9 placard. Additionally, the shipper is responsible for filling out a regulated shipping paper (Bill of Lading) for every transport of these units (see the example Bill of Lading below). Although drivers are required to have hazmat training, they do not need a HazMat Endorsement on their Commercial Driver’s License.

![UN3536](image)

*Figure 25 - UN3536, Lithium battery installed in cargo transport unit, Class 9 label*

This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries must meet the requirements of § 173.185(a) and contain the necessary systems to prevent overcharge and over discharge between the batteries. The batteries must be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings, and vibrations normally incident to transport. Hazardous materials necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), must be properly secured to or installed in the cargo transport unit and are not otherwise subject to this subchapter. Hazardous materials not necessary for the safe and proper operation of the cargo transport unit must not be transported within the cargo transport unit. The batteries inside the cargo transport unit are not subject to marking or labelling requirements of part 172 subparts D and E of this subchapter. The cargo transport unit shall display the UN number in a manner in accordance with § 172.332 of this subchapter and be placarded on two opposing sides. For transportation by aircraft, cargo transport units may only be offered for transportation and transported under conditions approved by the Associate Administrator.

![Bill of Lading]

**Figure 26 - Bill of Lading**
4.5 Transporting the unit

The unit can be transported using a flat-bed or goose-neck trailer.

**Notice**

Before shipping the unit, make sure the unit has passed inspection and all necessary repairs and maintenance tasks have been completed.

**DANGER**

Risk of injury or death!

Lifting and loading a trailer with one or more units must only be done by trained and qualified personnel.

In order to transport the unit using a flat-bed or goose-neck trailer, follow these guidelines:

- Make sure the trailer and unit are fit for purpose and loaded correctly.
  - Place the unit level to the flat-bed and evenly distribute the weight across each axle.
  - Support the tongue of the unit with the supplemental jack stand provided with the unit. To prevent damage during transit, do not support the tongue with just the tongue jack.
  
  **Notice**
  
  The supplemental jack is not include with units manufactured after 18th August 2023.

- Choose the proper securing method.
  - Securely tie down the unit with straps or chains to prevent shifting or movement during transportation. Position the straps to support the weight of the unit and prevent undercarriage damage.
  - The chain or strap tension must not load each axle more than 7,000 lbs (including unit weight); vertical tie down force shall not exceed 2,000 lbs per axle.
  - Use a wheel chock on both sides of each wheel to prevent movement during transportation.
  - To secure the trailer tongue, use the supplemental jack stand provided with the unit.
  - The load restraint system needs to secure the unit to the vehicle chassis and prevent movement in any direction.
- Choose a securing system that stops the unit moving without creating other risks.
- Any chains or webbing must be attached to the D-rings on the trailer.

**WARNING**
*Risk of crushing from moving parts!*
Do not drive or move the transport vehicle without securing the unit.

- Use adequate load restraint.
- Dynamic forces are much higher than static forces. For example, more force is required to secure a load when it is moving (dynamic) than when it is stationary (static).

- Load restraint system.
- The combined strength of the load restraint system must be sufficient to withstand a forward force not less than the total weight of the load to prevent the load moving under severe braking, and half the weight of the load moving backwards and sideways.

- Load and unload the unit properly.
- Initially, visually inspect the unit to make sure that no damage occurred during transportation. If damage has occurred, contact Moxion Power immediately.
  
  ▶ For more information, see *Towing the unit* on page 53
- Make sure that both unit axles remain in contact with the rolling surface during transportation. Avoid lifting the wheels from the ground and overloading a single axle.
- Roll the unit instead of lifting.
  
  To prevent putting undesired lateral load on the wheels and creating a damaging camber, make sure the operator maintains a turning radius of 20 ft (6 m) when pulling or tugging the unit.

**WARNING**
*Risk of damage!*
Do not use forks under the trailer frame.

- Unload the unit properly.
- To prevent damage to the undercarriage and both axles, both axles must remain loaded when unloading the unit off a flat- bed or gooseneck trailer. In other words, do not lift an axle off the trailer/ground. Doing so,
will overload the remaining axles.

- To prevent damage to the unit, unload carefully and without sudden shifts or movements.

**Notice**

Loading and unloading of the unit is the responsibility of the truck driver or operator. When loading and unloading the unit, the person responsible for doing so must adhere to any federal and state regulations and guidelines regarding the maximum total loading weight.

### 4.6 How to set up an earth connection

**WARNING**

Risk of electrical shock!

CONNECTING THE GROUND.

Only qualified and trained electricians that know local electrical and safety code guidelines must connect the required ground connections.

Consult with local Electrical and Safety Codes for proper connection based on condition of use.

The Occupational Safety and Health Administration (OSHA) and the National Electrical Code (NEC) recommend that if the unit is providing electrical power to a structure, for example, home, office shop, trailer or similar, it must be connected to a grounding electrode system, such as a driven ground rod.

For more information about ground connections, contact Moxion Power.

Call 1-833-669-4661 or support@moxionpower.com.
4.7 How to set up a ground rod

WARNING
Risk of electrical shock!

BEFORE OPERATING THE MPU

Refer to Article 250 (Grounding and Bonding) of National Electrical Code (NEC) for guidance on generator grounding, including the Conductor Grounding Table for appropriate ground conductor sizing.

Check with all relevant governing bodies on electrical grounding requirements for generators.

If conditions of use require a grounding rod, make sure the ground rod installation is done in accordance to the above guidelines and requirements.

The unit bring-up and ground rod installation activities must only be done by qualified personnel.

For more information about ground connections and examples of appropriate installations contact Moxion Power.

Call 1-833-669-4661 or support@moxionpower.com.

Figure 27 - Example of ground rod installation

1. Unit ground block
2. Ground cable
3. Ground rod
4.8 Restarting the unit after low-voltage battery depletion

The control system and electronics on the unit relies on a 12 V battery system. If this 12 V battery has been drained, for example, the unit was left on during transit or has been idle for extended periods, you may need to charge the battery before you can use the unit.

To charge the 12 V battery, follow these steps:

1. Turn the control dial to OFF.
2. Make sure all the switches on the rear of the unit are OFF.
3. Confirm that the 12 V battery is dead.
   - Take a digital voltmeter and check the diagnostic port for voltage.
   - The control screen does not turn on if the 12 V battery is dead or below 9 V.
4. Connect a lithium-ion charger to the diagnostic port.
   You must use a lithium-ion charger.

   **Caution**
   **Risk of damage!**
   You must use a specified Moxion Power-approved cable.
   The 12 V power in the SAE J1939 diagnostic port is only intended to power diagnostic scan tools. The 12 V has a 10 A fuse.
   Contact Moxion Power for more details.

5. Set the charger to the 12 V lithium setting.
6. Connect the charger to the diagnostic port on the unit.
7. Charge the battery until your charger states that it is fully charged.
   Use a voltmeter to check the level of battery voltage, if applicable. The 12 V battery is fully charged at 13.6 V.

   **Caution**
   **Risk of damage!**
   Do not exceed 5 amps.

8. When the battery is fully charged, turn the **Control** knob to **STANDBY**, and wait for the system to restart.
9. If the system restarts, disconnect the charger.

The unit maintains the 12 V battery charge by recharging it during use.
4.9 Neutral ground bond site and application engineering considerations

To safely and reliably operate the unit in compliance with electrical codes and best practices, please refer to the site configurations listed below.

**Notice**

The latest edition of NFPA 70/NEC and all local codes must be referenced for proper installation and shall take precedence over any guidance provided herein.

4.9.1 Site configuration 1

The MPU is connected to a standard 3-phase load.

- No special considerations needed.
- Connect L1, L2, L3, N, and Ground as normal.

Figure 28 - Standard set up with 3-phase load described in Site Configuration 1
4.9.2 Site configuration 2a

**Notice**

The following definition of terms is leveraged by NFPA in NFPA 70 and by Moxion Power in reference to that standard. Please refer to these definitions used in this section.

**Grounded Electrical Conductor**
- The grounded conductor is a neutral conductor.
- The Grounded Electrical Conductor (GEC) is also referred to as "grounded conductor."

**Equipment Ground Conductor (EGC)**
- The EGC is a ground conductor with a direct ground connection.

The MPU is connected to an external distribution unit or out-building with GEC and EGC not bonded.
- No special considerations needed.
- Connect L1, L2, L3, N, and Ground as normal.

![Recommended Usage Diagram](image)

Figure 29 - Recommended usage described in Site Configuration 2a
4.9.3 Site configuration 2b

The MPU is connected to an external distribution unit or out-building with the GEC and EGC bonded with a ground fault monitor.

- MPU Equipment Ground Conductor (EGC) should not be connected to the distribution unit or out-building, assuming that the MPU & distribution unit or out-building are both solidly grounded through unique grounding rods meeting the minimum NEC separation distance of 6 feet or greater. For more information, see the figure titled *Non-recommended but permitted usage described in Site Configuration 2b*.

- The site configuration is permitted to operate in this configuration under NFPA 70 Article 250 Section 250.32(B) Exception 1.

- This site configuration, regardless of source, is no longer permitted under NFPA 70/NEC for new installations.

- Moxion units may be used to power installations designed in compliance to previous editions of NFPA 70/NEC if the following recommendations are adhered to.

- This site configuration is an implementation of 250.6(B)(3).

The site configuration must still meet 250.4(A)(5) or 250.4(B)(4).

Please refer to the General Requirements for Grounding and Bonding in Section 250.32(B)(1) in the National Electrical Code.

**Tip**

If it is possible and practicable to remove the bonding jumper from the distribution equipment and connect the grounding circuit of the MPU, it is recommended that this be done.

Figure 30 - Non-recommended but permitted usage described in Site Configuration 2b
4.9.4 Site configuration 3a

The MPU is connected to an external switchgear, 3-phase 4-wire 3-pole with a generator on the opposing side. The generator has a bonded EGC and GEC with the switchgear unbonded.

Figure 31 - Non-recommended but permitted usage described in Site Configuration 3a
4.9.5 Site configuration 3b

The MPU is connected to an external switchgear, 3-phase 4-wire 3-pole with a generator on the opposing side. The generator and the switchgear both have EGC and GEC bonded as described in Site Configuration 2b.

Figure 32 - Non-recommended but permitted usage with separately derived sources described in Site Configuration 3b.
4.9.6 **Site configuration 3c**

The MPU is connected to an external switchgear, 3-phase 4-wire 3-pole with a generator on the opposing side. With the GEC and EGC bonding plate in the generator removed, the EGC and GEC of of the generator should be disconnected if permitted explicitly in the operating manual of the generator. If unbonding the GEC and EGC of the generator is not permitted, please refer to **Site Configuration 3a**.

![Diagram of Site configuration 3c](image_url)

*Figure 33 - Example of acceptable usage if permitted explicitly in the generator manual described in Site Configuration 3c*
4.9.7 Site configuration 4

The MPU is connected to an external switchgear, 3-phase 4-wire 3-pole with a generator on the opposing side.

- No special considerations needed.
- Connect L1, L2, L3, N, & Ground as normal.

Figure 34 - Example of recommended usage using separately derived sources described in Site Configuration 5.
4.9.8 Site configuration 5

The MPU is connected to a 3-phase 4-wire 4-pole external transfer switch. The generator is on the opposing side and the output of switchgear or distribution equipment is connected to the output of the switchgear as in Site Configuration 2b.

- Confirm that this connection case is permitted using the generator’s manual.
- This site configuration permitted to operate in this configuration under NFPA 70 Article 250 Section 250.32(B) Exception 1.
- This site configuration, regardless of source, is not recommended by NFPA since the 2005 revision of NFPA70/NEC.
- Moxion units may be used to power these legacy installations if the following recommendations are adhered to.
- This site configuration is an implementation of 250.6(B)(3).
- This site configuration must meet 250.4(A)(5) or 250.4(B)(4).

Tip

If it is possible and practicable to remove the bonding jumper from the distribution equipment and connect the grounding circuit of the MPU, it is recommended that this be done.

Figure 35 - Example of non-recommended but permitted usage as described in Site Configuration 5
Service and maintenance

It is important that you regularly service and maintain your unit.

**WARNING**

*Risk of electrical shock!*

Maintenance of internal electrical parts must be performed by professionals or trained electricians.

5.1 Daily checks

Moxion Power recommends the following tasks are done for the following situations:

- Check in or check out inspection
- New commissioning inspection
- Rent - Ready check-list inspection
- 14-day inspection
- Rental return inspection

**Table 3 - Unit check tasks**

<table>
<thead>
<tr>
<th>Task</th>
<th>Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>No excessive dirt on the unit.</td>
<td></td>
</tr>
<tr>
<td>No visible and external damages.</td>
<td></td>
</tr>
<tr>
<td>All switches are functioning.</td>
<td></td>
</tr>
<tr>
<td>The tow chains are not damaged.</td>
<td></td>
</tr>
<tr>
<td>The emergency parking brake cable is intact.</td>
<td></td>
</tr>
<tr>
<td>The tow connector is not damaged and is present.</td>
<td></td>
</tr>
<tr>
<td>Packaged components are collected.</td>
<td></td>
</tr>
<tr>
<td>The unit can turn on.</td>
<td></td>
</tr>
<tr>
<td>The unit is at least 20% charged.</td>
<td></td>
</tr>
<tr>
<td>The unit is able to charge.</td>
<td></td>
</tr>
<tr>
<td>The tongue jack raises and lowers.</td>
<td></td>
</tr>
<tr>
<td>The trailer brakes are functioning.</td>
<td></td>
</tr>
</tbody>
</table>
Task | Check
--- | ---
The brake lights are functioning and are not damaged or cracked. | 
The license plate light is functioning, visible, and clear of debris. | 
Turn signals are functioning and are not damaged or cracked. | 
Wheel lug nuts are torqued in a star pattern, after a wheel has been removed or replaced (every 10 miles, 25 miles, and 50 miles). Re-torque at these intervals is not required on units with a manufacture date after 11th July 2023. For more information, see *Torquing wheel lug nuts* on page 74 
Wheel lug nuts are torqued in a star pattern 50 miles from the beginning of each use. | 
Wheel lug nuts are torqued in a star pattern if applicable for long-term use, every 12,000 miles or 12 months, whichever occurs first. | 
The trailer tire pressures are set properly. | 
Cold tire pressure is at 80 psi. |

| Notice |
---|
Always keep the trailer tires inflated to the maximum psi indicated on the tires. Confirm the tire pressure by looking at your tire sidewall. Tires that are at the right air pressure ensures the following:
- Extended life of the tires
- Improved load-carrying capacity
- Improved ability to dissipate heat efficiently |

The breakaway box on the trailer is fully charged. |
There is no damage to the pintle hitch and lunette ring connections. |
There is no damage to the safety tow chains and hooks. |
There is no damage to the shoes and drums of the trailer brakes. |
There is no excessive tire tread wear. The recommended minimum tire tread depth is 10/32".
## 5.2 Routine maintenance checks

Regular maintenance of your unit is mandatory for safe and reliable operation. The following recommendations must be followed:

<table>
<thead>
<tr>
<th>Task</th>
<th>Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-torque each wheel's lug nuts in a star pattern every 10 miles, 25 miles, and 50 miles from the factory or any time after a wheel is removed or replaced. Recommended torque is 110 lb-ft, do not exceed 120 lb-ft. Re-torque at these intervals is not required on units with a manufacture date after 11th July 2023.</td>
<td></td>
</tr>
<tr>
<td>Re-torque each wheel's lug nuts for long-term use in a star pattern every 12,000 miles or 12 months, whichever occurs first.</td>
<td></td>
</tr>
<tr>
<td>Check the trailer brake lights after the first 200 miles of operation after the brake shoes and drums have seated.</td>
<td></td>
</tr>
<tr>
<td>Check trailer brake lights every 3000 miles.</td>
<td></td>
</tr>
<tr>
<td>Conduct a brake inspection once a year from the purchase date.</td>
<td></td>
</tr>
</tbody>
</table>

**WARNING**

Risk of serious injury or death!

The correct and safe torquing of the wheel lug nuts is important and must be regularly monitored.
5.2.1 Torquing wheel lug nuts

Caution
Risk of injury or damage!
It is important that you check the torques of the wheel lug nuts.

To correctly torque the wheel lug nuts on the trailer, follow these steps:

1. Make sure the wheel is seated correctly on the axle.
2. Using a calibrated torque wrench set to 23 lb-ft (31 Nm), tighten each wheel lug nut following a star pattern.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Torque value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31 Nm</td>
</tr>
<tr>
<td>2</td>
<td>75 Nm</td>
</tr>
<tr>
<td>3</td>
<td>149 Nm</td>
</tr>
</tbody>
</table>

Figure 36 - Torque star pattern

Tip
Mark each lug nut during the process to help you keep track of the torquing sequence.

3. Using torque set to 55 lb-ft (75 Nm), repeat the tightening process following the star pattern.
4. Using torque set to 110 lb-ft (149 Nm), complete the tightening of the wheel lug nuts in a star pattern.
5.3 Long-term storage checks

To store the unit for extended periods of time of 3 months or longer, follow these guidelines:

- Place wheel chocks on both sides of each tire.
- Lock all interface panel doors.
- Store the unit in a level and dry location protected from direct sunlight.
- Moxion Power recommends you store the unit indoors, in a cool and dry location.
- Use the trailer tongue jack to level the unit.
- Use tire covers to protect tires from early wear and sun damage.
- Keep caps on the tire air valve stems, to keep debris and moisture out.
- Store away from ozone sources, such as electric motors, to avoid damaging tires.
- Fit the supplemental jack stand for additional support.
- The State of Charge (SoC), shown on the Control display, should be between 40 % and 50 % to preserve battery health and maximizing battery life expectancy.

Notice

It is acceptable to keep the unit at up to 100 % SoC for periods less than three months.

5.4 Cleaning the unit

To extend the life of the unit it should be cleaned regularly.

Caution

Risk of damage!

Do not jet-wash directly onto the panel doors at the rear of the unit or onto the air-vents along the top edges of the unit.

5.5 Remote access to the unit

The unit's status can be monitored remotely.

Moxion Power can access and monitor the following data of your unit:
5.6 Isolating the high voltage system for internal maintenance

**WARNING**
Risk of serious injury or death!
The high voltage system must not be disconnected by any personnel unless they have Moxion Power Training Certification.

The internal systems, battery, and electrical connections are high voltage. Before doing any maintenance on any of the internal components of the unit, the high voltage systems need to be isolated.

**WARNING**
Risk of electrical shock!
Engaging the e-stop does NOT isolate the internal high voltage systems.

To isolate the system from high voltage, the system needs to be in **SERVICE MODE**.

To isolate the high voltage, follow these steps:

1. Set the unit status to **STANDBY**.
2. Make sure all switches are turned **OFF**.
3. Turn **ON** switch 4.
4. Turn **ON** switch 5.
5. Turn **OFF** switch 5.
6. Turn **OFF** switch 4.
7. Turn **ON** switch 5 for 3 seconds.
8. Turn **OFF** switch 5.
9. Confirm **SERVICE MODE** is shown on control display.
Notice

After **SERVICE MODE** is activated, immediately contact Moxion Power.

The system must not remain in **SERVICE MODE** for a prolonged period of time (no more than 4 hours), otherwise the unit could be damaged and the long-term functionality of the system could be compromised.

When the system is in **SERVICE MODE**, the configuration of the high voltage isolation persists through the unit’s power cycle.

**WARNING**

Risk of electrical shock!

You must follow LOTO (lock out, tag out) procedures before accessing the high voltage systems.

1. Turn the unit OFF.
2. Engage the e-stop.
3. Lock all the rear doors.
6 Troubleshooting

This section provides troubleshooting information and a list of common fault codes for the unit.

Table 4 - Troubleshooting issues

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The unit turns on but will not transition to <strong>RUN</strong>.</td>
<td>The emergency stop button is depressed.</td>
<td>Release the emergency stop button and cycle the control knob from <strong>STANDBY</strong> to <strong>RUN</strong>.</td>
</tr>
<tr>
<td></td>
<td>The unit’s SoC is 3% or lower.</td>
<td>Plug in and charge the unit.</td>
</tr>
<tr>
<td>The twist-lock outlets do not work in the 240 V mode.</td>
<td>The incorrect twist-lock outlet is being used. Twist-lock outlet 3 is not available in the 240 V mode.</td>
<td>Disconnect the twist-lock plug from the twist-lock outlet 3 and connect the twist-lock plug to the twist-lock outlet 1 or 2.</td>
</tr>
<tr>
<td></td>
<td>Main circuit breaker and/or twist-lock circuit breaker are in the <strong>OFF</strong> position.</td>
<td>Set the main circuit breaker and/or the twist-lock circuit breaker to the <strong>ON</strong> position.</td>
</tr>
<tr>
<td>The twist-lock outlets do not work in the 480 V mode.</td>
<td>In the 480 V mode, twist-lock outlets are disabled to prevent unintended over-voltage of lower voltage loads.</td>
<td>N/A</td>
</tr>
<tr>
<td>The outlets in the Outlet Panel are powered but the main circuit breaker is <strong>OFF</strong>.</td>
<td>The outlets in the Outlet Panel are powered by a separate inverter and are only turned off through the Outlet Panel circuit breakers.</td>
<td>N/A</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| The unit does not output power.              | The emergency stop button is depressed. | 1. Turn the control knob to **STANDBY**.  
|                                              |                                         | 2. Twist and release the emergency stop button.  
|                                              |                                         | 3. Turn the control knob to **RUN**. |
| Control panel Circuit Breaker has tripped or is **OFF**. |                                         | 1. Unplug the load from the tripped Control panel outlets.  
|                                              |                                         | 2. Set the tripped circuit breaker to **ON**. |
| Twist-lock Circuit Breaker has tripped or is **OFF**. |                                         | 1. Unplug the load from the tripped twist-lock outlet.  
|                                              |                                         | 2. Set the tripped twist-lock circuit breaker to **ON**. |
| Main Circuit Breakers and/or twist-lock circuit breakers are in the **OFF** position. |                                         | Set the main circuit breaker and/or the twist-lock circuit breaker to the **ON** position. |
Table 5 - Fault codes

<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC ISOLATION CRITICAL</td>
<td>The HV Battery isolation has decreased to a safety critical level. Unit is NOT safe to operate in this condition and will cease functionality. ▶ For more information, see Isolation monitoring parameters on page 39</td>
<td>Turn the control knob to OFF. Contact Moxion Power immediately.</td>
</tr>
<tr>
<td>SERVICE MODE</td>
<td>Unit is safe for maintenance. Primary functions disabled. ▶ For more information, see Isolating the high voltage system for internal maintenance on page 76</td>
<td>Contact Moxion Power for details of any maintenance requests.</td>
</tr>
</tbody>
</table>
| BIM STALE        | There is an isolation monitoring device communication error Primary functions disabled. | 1. Turn the control knob to OFF.  
2. Ensure the HMI screen is blank.  
3. Turn the control knob to STANDBY. Contact Moxion Power if the fault persists. |
| ICDA STALE       | There is an isolation monitoring device communication error. Power output capability is disabled. | 1. Turn the control knob to OFF.  
2. Ensure the HMI screen is blank.  
3. Turn the control knob to STANDBY. Contact Moxion Power if the fault persists. |
<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV CRITICAL</td>
<td>Internal fault preventing high voltage (HV) activation. Primary functions disabled.</td>
<td>Press and release the emergency stop button. If this action does not clear the fault, contact Moxion Power.</td>
</tr>
<tr>
<td>BMS CRITICAL</td>
<td>Internal fault preventing high voltage (HV) activation. Primary functions disabled.</td>
<td>Press and release the emergency stop button. If this action does not clear the fault, contact Moxion Power.</td>
</tr>
<tr>
<td>HVIL INTER</td>
<td>Internal fault is preventing high voltage (HV) activation. Primary functions disabled.</td>
<td>Turn the control knob to <strong>OFF</strong> Contact Moxion Power immediately.</td>
</tr>
<tr>
<td>HVIL MAIN</td>
<td>Internal fault preventing high voltage (HV) activation. Primary functions disabled.</td>
<td>Turn the control knob to <strong>OFF</strong> Contact Moxion Power immediately.</td>
</tr>
<tr>
<td>BMS STALE</td>
<td>Battery management device communication error. Primary functions disabled.</td>
<td>Restart the unit by toggling the control knob to <strong>OFF</strong> and then <strong>STANDBY</strong>. Contact Moxion Power if the fault persists.</td>
</tr>
</tbody>
</table>
| BMS OVERTEMP SHUTDOWN | High voltage (HV) activation disabled due to battery temperature reaching critical levels. Primary functions disabled. | 1. Turn the control knob to **STANDBY**.  
2. Wait for the unit to cool down. Contact Moxion Power if the fault persists. |
<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACK ABOVE MAX V</td>
<td>High voltage (HV) activation disabled due to battery voltage exceeding the expected limit. Primary functions disabled.</td>
<td>If the unit is charging, disconnect the charging plug. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CELL ABOVE MAX V</td>
<td>High voltage (HV) activation disabled due to battery voltage exceeding the expected limit. Primary functions disabled.</td>
<td>If the unit is charging, disconnect the charging plug. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td>PACK BELOW MIN V</td>
<td>High voltage (HV) activation disabled due to battery voltage falling below the expected limit. Primary functions disabled.</td>
<td>If the unit is discharging, set the control knob to <strong>STANDBY</strong> and disconnect any load. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CELL ABOVE MIN V</td>
<td>High voltage (HV) activation disabled due to battery voltage falling below the expected limit. Primary functions disabled.</td>
<td>If the unit is discharging, set the control knob to <strong>STANDBY</strong> and disconnect any load. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td>DCDC FAILURE</td>
<td>Internal fault preventing the low voltage system from charging the 12 V battery. Primary functions disabled.</td>
<td>Contact Moxion Power.</td>
</tr>
<tr>
<td>ESTOP</td>
<td>The emergency stop button is depressed. Charging and power output capability is disabled.</td>
<td>Twist and release the emergency stop button to deactivate the emergency stop fault.</td>
</tr>
<tr>
<td>Fault code</td>
<td>Description</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AC ISOLATION CRITICAL</td>
<td>Outlet voltage isolation is compromised. Power output capability is disabled.</td>
<td>Please ensure the unit on site is configured properly per instructions in Section 4.9 Neutral ground bond site and application engineering considerations on page 63.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Set the twist-lock circuit breakers to <strong>OFF</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Set the main circuit breaker to <strong>OFF</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Turn the Control knob to <strong>STANDBY</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Inspect configuration and remove any ground faults, for example, a short from line to chassis or conductors with damaged insulation.</td>
</tr>
<tr>
<td>BMS OVERTEMP CRITICAL</td>
<td>Internal fault is preventing high voltage (HV) activation due to battery temperature reaching critical level. Power output capability is disabled.</td>
<td>1. Turn the control knob to <strong>STANDBY</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Wait for the unit to cool down. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td>Fault code</td>
<td>Description</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| PCS OVERCURRENT         | Output current has reached critical level. Power output capability is disabled.| 1. Turn the control knob to **STANDBY**.  
2. Inspect the connected load for any issues before reactivating the power output. |
| PCS OVERTEMP            | The PCS (Power Conversion System) temperature is at a critical level. Power output capability is disabled. | 1. Turn the control knob to **STANDBY**.  
2. Remove any connected load.  
3. Allow the unit to cool down before reactivating the power output. |
| AFE FAULT               | Internal fault is preventing the PCS from activating.                        | 1. Turn the control knob to **STANDBY**.  
2. Press and release the emergency stop button. |
<p>| PCS INPUT               | Internal fault indicating an issue with the HV connection to the PCS. Power output capability is disabled. | Contact Moxion Power. |</p>
<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
</table>
| PCS FAULT    | Internal fault preventing the PCS from activating.                         | 1. Turn the control knob to **STANDBY**.  
|              |                                                                             | 2. Press and release the emergency stop button.  
|              |                                                                             | Contact Moxion Power if the fault persists.                                                       |
| EVCC FAILURE | Internal fault in the charging control system.                                | Contact Moxion Power                                                                               |
|              | Charging functionality is disabled.                                          |                                                                                                   |
| CCS OVERTEMP | The plug connector’s temperature has reached a critical level. Charging  | 1. Turn the control knob to **STANDBY**.  
|              | functionality is disabled.                                                  | 2. Wait for the unit to cool down. Contact Moxion Power if the fault persists.                   |
| AC CHARGE OVERPOWER | An external fault associated with the Level 2 charger. Level 2  | 1. Unplug the EVSE from the unit.  
|              | charging is disabled.                                                       | 2. Shut down the unit for 30 seconds.  
<p>|              |                                                                             | 3. Re-insert the charging connection. Contact Moxion Power if the fault persists.                 |</p>
<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
</table>
| OBC TOTAL FAILURE          | An internal fault preventing Level 2 charging.                             | 1. Unplug the EVSE from the unit.  
                               | Level 2 charging is disabled.                                                  | 2. Shut down the unit for 30 seconds.  
                               |                                                                              | 3. Re-insert the charging connection.                                            |
|                            |                                                                           | Contact Moxion Power if the fault persists.                                                        |
| HV SENSE FAILURE           | An internal fault preventing high voltage (HV) activation.                 | Shut down the unit for 30 seconds and power it back on.                                          |
|                            | Level 3 charging is disabled.                                              | Contact Moxion Power if the fault persists.                                                        |
| OBC 1 FAILURE              | Internal fault reducing the capability of Level 2 charging.               | Contact Moxion Power if the fault persists.                                                        |
|                            | Level 2 charging is still enabled.                                         |                                                                                                   |
| OBC 2 FAILURE              | Internal fault reducing the capability of Level 2 charging.               | Contact Moxion Power if the fault persists.                                                        |
|                            | Level 2 charging is still enabled.                                         |                                                                                                   |
| OBC 3 FAILURE              | Internal fault reducing the capability of Level 2 charging.               | Contact Moxion Power if the fault persists.                                                        |
|                            | Level 2 charging is still enabled.                                         |                                                                                                   |
| SOC TOO LOW                | Battery SoC has decreased below a usable level.                            | Charge the unit to at least 5%.  
<pre><code>                           | Power output capability is disabled.                                                      | Contact Moxion Power if the fault persists.                                        |
</code></pre>
<p>| BMS UNDERTEMP WARNING      | Battery temperature has decreased to a warning level.                     | Contact Moxion Power if the fault persists.                                                        |
|                            | Power output capability is disabled.                                       |                                                                                                   |</p>
<table>
<thead>
<tr>
<th>Fault code</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS OVERTEMP</td>
<td>Battery temperature has increased to a warning level. Primary functions are</td>
<td>1. Turn the control knob to <strong>STANDBY</strong>.</td>
</tr>
<tr>
<td>WARNING</td>
<td>still enabled.</td>
<td>2. Remove any connected load.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Wait for unit to cool down. Contact Moxion Power if the fault persists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMS DTC</td>
<td>An internal fault preventing high voltage (HV) activation. Primary functions</td>
<td>1. Turn the control knob to <strong>STANDBY</strong>.</td>
</tr>
<tr>
<td></td>
<td>are disabled.</td>
<td>2. Press and release the emergency stop button. Contact Moxion Power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>if the fault persists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC ISOLATION</td>
<td>HV Battery isolation has decreased below the warning threshold. Unit is</td>
<td>Ensure all circuit breakers are in the <strong>OFF</strong> position. Contact Moxion</td>
</tr>
<tr>
<td>WARNING</td>
<td>still safe to operate in this condition.</td>
<td>Power if the fault persists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For more information, see <em>Isolation monitoring parameters</em> on page 39</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HV INITIALIZING</td>
<td>HV (high voltage) activation is in progress. Primary functions are not</td>
<td>The activation process is expected to take 1 minute. Contact Moxion</td>
</tr>
<tr>
<td>.....</td>
<td>available yet.</td>
<td>Power if the fault persists.</td>
</tr>
</tbody>
</table>
7 End of life and disposal

WARNING
Risk of serious injury or death!

Batteries and electronics must be recycled in accordance with local, state, and federal regulations.

Metal can be recycled according to local, state, and federal regulations.

For more information about battery and electronic recycling, contact Moxion Power.

Call 1-833-669-4661 or support@moxionpower.com.
8 Specifications

This section details the specifications of the Moxion Power MP75-600.

8.1 Power specifications

Table 6 - Power specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Output voltage types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>480 Vac/3P 208 Vac/3P 240 Vac/1P</td>
</tr>
<tr>
<td>Voltage Tolerance (up to 5%)</td>
<td>456-504 Vac 197.6-218.4 Vac 228-252 Vac</td>
</tr>
<tr>
<td>Continuous rated power output</td>
<td>40 kW 35 kW 24 kW</td>
</tr>
<tr>
<td>Maximum rated power (for 1 hour)</td>
<td>75 kW 35 kW 24 kW</td>
</tr>
<tr>
<td>Maximum phase current</td>
<td>100 A 100 A 100 A</td>
</tr>
<tr>
<td>Maximum neutral current</td>
<td>100 A 100 A 100 A</td>
</tr>
<tr>
<td>Power factor</td>
<td>1.0 1.0 1.0</td>
</tr>
</tbody>
</table>

Notice

The AC voltage is a 4-wire Wye configuration.
8.2 Electrical and battery specifications

Table 7 - Electrical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum power input</td>
<td>AC power input:</td>
</tr>
<tr>
<td></td>
<td>- 19.2 kW via Level II EVSE Charger (SAE J1772)</td>
</tr>
<tr>
<td></td>
<td>DC power input:</td>
</tr>
<tr>
<td></td>
<td>- 40 kW via Level III EVSE Charger (SAE J1772 CCS Type 1)</td>
</tr>
<tr>
<td>Power Interfaces</td>
<td>• Cam-locks (female, 1 set): 480 Vac/3P, 208 Vac/3P, 240 Vac/1P</td>
</tr>
<tr>
<td></td>
<td>• CS6369 twist-locks (female, 3 sets): 208 Vac/3P, 240 Vac/1P 50 A</td>
</tr>
<tr>
<td></td>
<td>• Edison duplex outlet (type B, NEMA 5-20R): 120 V</td>
</tr>
<tr>
<td>Operating modes</td>
<td>Standalone, serial hybrid configuration</td>
</tr>
<tr>
<td>Response time</td>
<td>&lt;50 ms</td>
</tr>
<tr>
<td>Overload capabilities</td>
<td>120 % overload for 100 ms</td>
</tr>
<tr>
<td>Round trip efficiency</td>
<td>Up to 95 % (typical 88-95 %)</td>
</tr>
<tr>
<td>Operating AC voltages</td>
<td>480 Vac/3P, 208 Vac/3P, 240 Vac/1P, 120 Vac/1P</td>
</tr>
<tr>
<td>Operating AC frequencies</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Controls compatibility</td>
<td>Generator Stop/Start</td>
</tr>
</tbody>
</table>

Table 8 - Battery specifications

<table>
<thead>
<tr>
<th>Battery type</th>
<th>Lithium-ion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nameplate energy capacity</td>
<td>600 kWh</td>
</tr>
<tr>
<td>Nameplate usable energy capacity</td>
<td>530 kWh</td>
</tr>
</tbody>
</table>
8.3 User interface specifications

Table 9 - User interface specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>• Sunlight-readable digital display</td>
</tr>
<tr>
<td></td>
<td>• Operating mode control knob</td>
</tr>
<tr>
<td></td>
<td>• Voltage selection knob</td>
</tr>
<tr>
<td></td>
<td>• E-stop</td>
</tr>
<tr>
<td>Local communications</td>
<td>• Moxion Power Telematics Portal</td>
</tr>
<tr>
<td>Remote</td>
<td>• Remote monitoring available</td>
</tr>
</tbody>
</table>

8.4 Environmental specifications

Table 10 - Environmental specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range</td>
<td>Minimum: 32°F (0°C)</td>
</tr>
<tr>
<td></td>
<td>Maximum: 104°F (40°C)</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>Minimum: 14°F (-10°C)</td>
</tr>
<tr>
<td></td>
<td>Maximum: 122°F (50°C)</td>
</tr>
<tr>
<td>Noise level</td>
<td>&lt;40 dB from 3.3 ft (1 m)</td>
</tr>
<tr>
<td>IP rating</td>
<td>• IP55 when all doors are closed and unit is not in use.</td>
</tr>
<tr>
<td></td>
<td>• IP54 when unit is in use.</td>
</tr>
</tbody>
</table>
8.5 Mechanical specifications

Table 11 - Mechanical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>MPU (L x W x H)</td>
</tr>
<tr>
<td></td>
<td>• 103” x 38” x 62” approx.</td>
</tr>
<tr>
<td></td>
<td>(262 cm by 96.5 cm by 157.48 cm)</td>
</tr>
<tr>
<td></td>
<td>MPU with trailer (L x W x H)</td>
</tr>
<tr>
<td></td>
<td>• 162.9” x 69.1” x 78.0”</td>
</tr>
<tr>
<td></td>
<td>(414 cm by 176 cm by 198 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>MPU with trailer (unit)</td>
</tr>
<tr>
<td></td>
<td>• 12500 lbs approx.</td>
</tr>
<tr>
<td>Tire size (front and rear)</td>
<td>ST235/80 R16. Speed rating &quot;L&quot;.</td>
</tr>
<tr>
<td>Tire pressure (front and rear - cold)</td>
<td>522 KPA (80 PSI)</td>
</tr>
<tr>
<td>Maximum tire load per tire</td>
<td>3520 lbs at 80 psi (cold)</td>
</tr>
</tbody>
</table>

8.6 Transportation specifications

Table 12 - Transportation specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Towing</td>
<td>Class 5 pintle hitch and lunette ring for the trailer.</td>
</tr>
<tr>
<td>Lifting</td>
<td>Four roof-mounted lifting eyelet sockets for overhead lift for the MPU and the system.</td>
</tr>
<tr>
<td>Cargo</td>
<td>Flat-deck trailer (road or rail).</td>
</tr>
<tr>
<td>Maximum towing speed</td>
<td>Paved road: 55 mph</td>
</tr>
<tr>
<td></td>
<td>Off-road: 10 mph</td>
</tr>
</tbody>
</table>
9  Spare parts

Notice
For a full list of replacement parts and spares, contact Moxion Power.
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<p>| | |</p>
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<thead>
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<th></th>
<th></th>
</tr>
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<td>14-day inspection 71</td>
</tr>
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</tr>
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