

Battery Energy Storage System Container

INSTALLATION MANUAL (40ft container)

1 Safety Precautions

1.1 Symbols

Symbol	Explanation
 DANGER	Indicates a dangerous situation that, if not avoided, will result in death or serious injury
 WARNING	Indicates a dangerous situation that, if not avoided, will result in death or serious injury
 CAUTION	Indicates a dangerous situation that, if not avoided, may result in minor or moderate injury
 NOTICE	Indicates that if property damage is not avoided
 NOTE	Draw attention to important information, best practices and tips NOTE is used to address information that is not related to personal injury, equipment damage, and environmental degradation.

1.2 Important Safety instructions

This user's manual is about installation of TROES 40ft container.

Before installation, please read this user's manual carefully.

The TROES BESS must be commissioned and maintained by the engineers designated by the manufacturer or the authorized service partner. Otherwise, it might endanger personal safety and result in device fault. Any damage against the device caused thereby shall not be within the warranty scope.

The TROES BESS must be installed followed the local fire code, building code and electrical code requirements.

Please make sure there will be enough room for system installation especially spare place at the entry door and HVAC outer for at least 1m.

DANGER

Any contact with copper bar, contactor and terminal inside the device or connected with the loop of utility grid might result in burning or fatal electric shock.

Don't touch any terminal and conductor connected with the loop of utility grid.

Pay attention to any instruction and safety documents about power on-grid.

WARNING

There might be an electric shock risk inside the device!

Any operation related to this device will be conducted by professionals.
Pay attention to the safety precautions listed in safety instruction and installation documents.
Pay attention to the safety precautions listed in operating and installation manual and other documents.



WARNING

Large leakage current

Before connecting input power supply, please ensure that the grounding is reliable.

The device must be grounded complying with the local electric codes.



WARNING

When storage battery is connected to PCS, there may be DC voltage at input port. Please pay attention to it during operation or check the battery system user manual



WARNING

Don't touch electric parts within 15 minutes after power outage!

There is dangerous energy in capacitance storage. Don't touch device terminal, contactor and cooper bar and other electric parts within 15 minutes after disconnecting all device power supplies.



NOTICE

All maintenance and preservation inside the device require using tools and shall be conducted by trained person. The components behind the protective cover plate and dam board which are opened by tools cannot be maintained by users.

Please read this user's manual before operation.

1.3 Additional Information

Links to additional information can be found at <http://www.troescorp.com/>.

2 Installation

More detailed shipping and installation information can be found in the installation manual.

2.1 Safety during Installation



WARNING

Local standards and regulations on the container transport and loading and unloading, Especially those safety instructions should be always observed.

All the accessory appliances used during transport should be maintained beforehand.

The transport the station must be done by qualified personnel. Qualified means the operators must have relevant training experience, especially those safety-related ones.



WARNING

Ensure that the following requirements are met:

All the doors are locked.

Choose appropriate crane or hoist to transport the container. The crane or must be sufficient to bear the weight of the station.

An additional traction vehicle may be needed when the road has a gradient.

Anything, which may hinder the transport, like trees, cables (or similar), should be removed.

If possible, choose fine weather days to transport the station.

Warning signs or barriers must be posted near the transport areas to avoid accidental injuries.



DANGER

Risk of electric shock caused by live voltage

There is a high voltage in the live components of the product. Touching field components can result in death or seriousness electric shock damage.

Wear appropriate personal protective equipment for all work on the product.

Do not touch any live components.

Observe all warning messages in products and documents.

Obey all safety information from the battery manufacturer.



DANGER

Electric shock hazard caused by DC cable

The DC cable connected to the battery is live. Contact with live cables can cause electrocuted death or serious injury shock.

Before connecting the DC cable, make sure that the DC cable has no voltage.

Wear appropriate personal protective equipment for all work on the product.



WARNING

Danger to life due to electric shock when entering the storage system

Damage to the insulation in the storage system can result in fatal ground currents. May cause a fatal electric shock. Ensure that the insulation resistance of the storage system exceeds the minimum.

Minimum value : The insulation resistance is: 14kΩ.

The Container must be installed in a suitable electrical operating area.



WARNING

Fire due to failure to observe torque specifications at real-time bolt connections

Failure to comply with the specified torque reduces the current carrying capacity of the live bolt connection, thereby reducing the contact resistance increase.

This can cause the components to overheat and catch fire.

Be sure to always tighten the live bolt connection using the exact torque specified in this document.

Use only the right tools when working on the device.

Avoid repeatedly tightening the live bolt connection as this may result in unacceptably high torque.

2.2 Mechanical Installation

Drilling Mounting Holes is required in the Foundation. The overall dimension of the Container is shown in figure below.

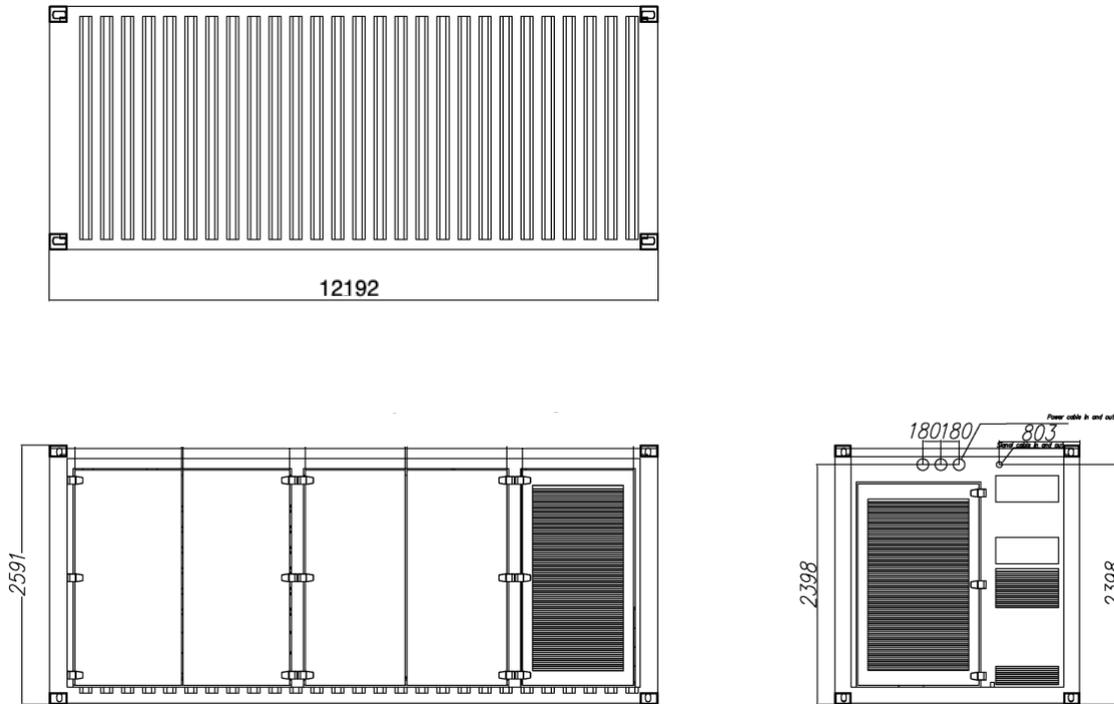


Fig. 21 Overall dimensions of Container

The empty space reserved on the side of the container should be greater than the width of the container door

The shortest distance from the container inlet to the PCS is 5500mm. The recommended power cable size is 3 * 85mm² (3/0) UL1015 cable.

Container must be lifted using all lifting points

Weight of 40 ft. container is 6,400 kg

Before the lifting ,please check the A1 A2 B1 B2 four supporting point in foundation.

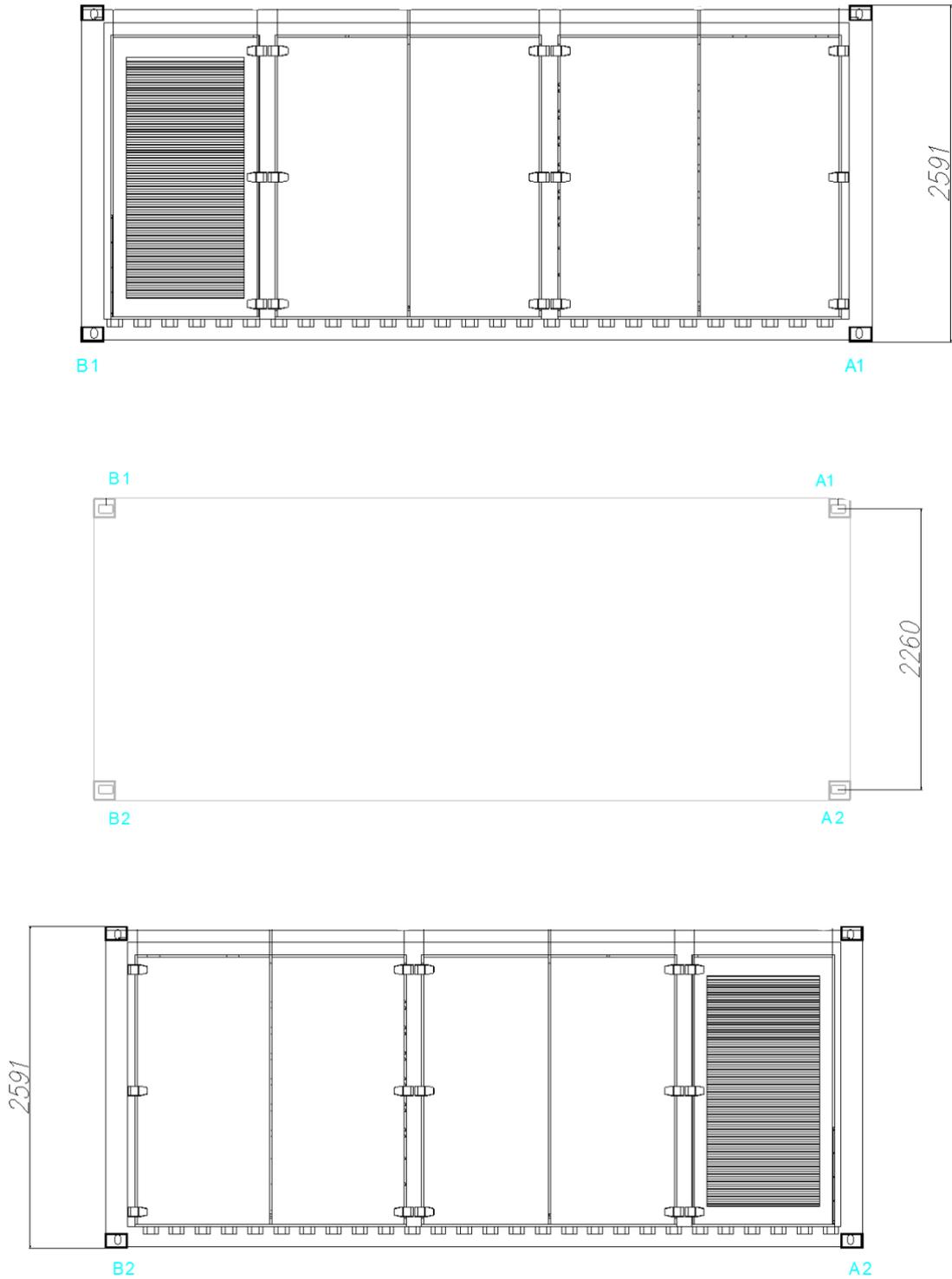


Fig. 22 A1 A2 B1 B2 four supporting point in foundation

When fastening the connectors of container, use slings with hooks or U-hooks to hoist the container. The lifting device should be connected correctly to the container.

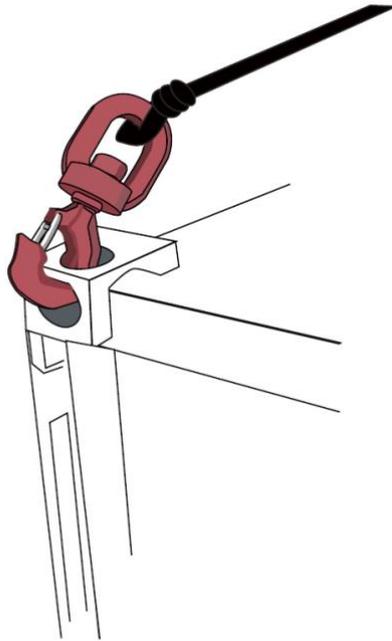


Fig. 23 Hook (Insert the hook from inside to outside)

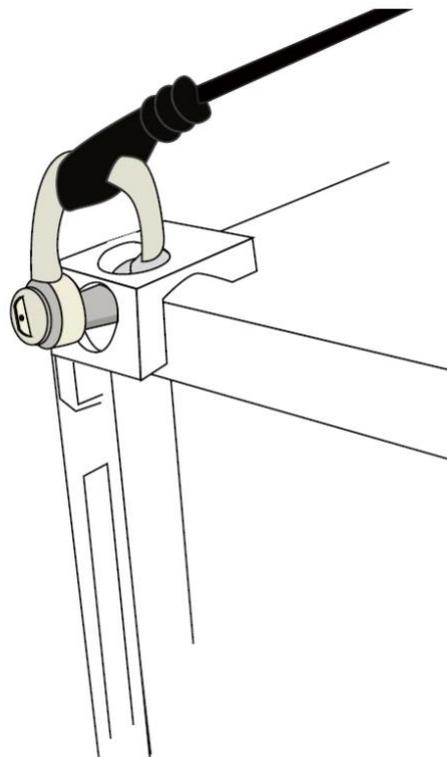


Fig. 24 U-hook (Lateral pin of the U-hook should be tightened)

In the whole hoisting process, please observe following rules:

Hoist the container in a vertical manner. Do not drag or drop the station on any surface.

When the container has been hoisted far about 300mm from the ground, stop to check if all the connections are still firm. After confirmation, continue hoisting the container.

When transported to the final location, the container should be put down slowly and steadily.

The final location should be firm, level, and well-drained. The station is supported by four bottom fittings the ground.

Single container set up procedure:

1. Inspect container upon delivery for damage during transportation.
2. Refer offload notes before lifting of container
3. After container is set in final position, container shall be secured to foundation. Site civil engineer is responsible for attachment means.
4. Inspect all shipped loose accessories
5. Clean interior and complete any touchup painting as required
6. Inspect container after completing setup procedure for cosmetics and function.

The container should be hoisted by four top corner fittings as shown in the following figure.

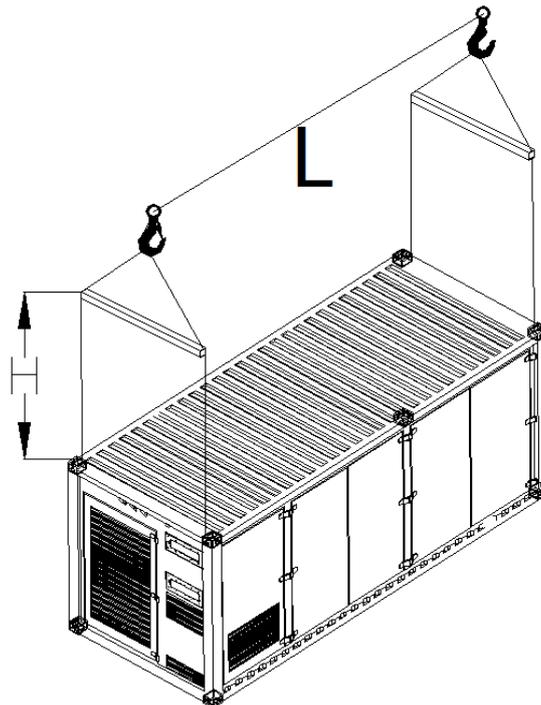


Fig. 25 Lifting the Container

NOTES:

1. SPREADER BAR "L" SHOULD BE LONGER THAN 5800 mm
2. "H" SHOULD BE LONGER THAN 122mm

Offload notes:

1. Container shall be offload level.

2. All cables, shacking, spreader bars, etc. shall be designed and supplied by owner's contractor.
3. All lifting points shall be used.
4. Offload skid with cables in vertical position. Straight pick recommended angled-position cables more than 30° along wall and 5° from wall (from vertical axis) are not acceptable.
4. Inspect all shipped loose accessories
5. Clean interior and complete any touchup painting as required
6. Inspect container after completing setup procedure for cosmetics and function

The container includes internal grounding and external grounding.

The internal grounding device of the container has been completed before delivery.

Two external grounding points on the container need to be grounded. Locations of the external grounding points are shown in the following figure.

Fig. 26 Container Grounding Point

Grounding point 1 on the outside of the container, M12 nuts crimped on the inside, M12 screws can be used to install the ground wire or directly welded to the ground bar. The external grounding point 2 of the container is at the opposite corner of the grounding point 1

