OPERATION MANUAL



SOLAR TOWER

Revision #1 (20/05/26)

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

INTRODUCTION

This manual provides information and procedures to safely operate and maintain the SOLAR TOWER. For your own safety and protection from physical injury, carefully read, understand, and observe the safety instructions described in this manual. The information contained in this manual was based on machines in production at the time of publication.

DO NOT MODIFY or use this equipment for any application other than which it was designed for.

Keep a copy of this manual with the unit at all times. Operators manual for solar controller, inverter, battery charger and backup generator were also supplied with the unit at the time of shipment from the factory. The manual provides detailed operation and maintenance procedures.

Unit Model Number:_____

Unit Serial Number: _____

TABLE OF CONTENTS

1.SAFETY 1

1.1 SAFETY NOTES 1

1.2 OPERATING SAFETY 1

1.3 SERVICE SAFETY 2

1.4 TRANSPORTING SAFETY 2

1.41 LIFTING WITH FORKLIFT 2

1.42 LIFTING WITH CRANE 2

2.UNIT GENERAL INFORMATION 3

2.1 LOCATION OF UNIT NAMEPLATE 3

2.2 DIMENSIONS 4

2.3 SAFETY SYMBOL SUMMARY 5

3.OPERATING INSTRUCTION 6

3.1 SOLAR TOWER PLACEMENT 6

3.2 SOLAR TOWER OPERATION 7

3.3 SOLAR TOWER STOP WORKING 8

4.MAINTENANCE 9

4.1 PRECAUTIONS 9

4.2 DAILY INSPECTION 9

4.3 REGULAR MAINTENANCE 9

4.4 ORDERING SPARE PARTS 9

5.DIAGRAM 10

5.1 Circuit diagram 10

5.2 Terminal 11

1.SAFETY

1.1 SAFETY NOTES



This is the safety alert symbol.It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains **DANGERS**, **WARNINGS**, **CAUTIONS**, **NOTICES** and **NOTES** which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury or death. The following formatting options will apply when calling the readers attention to the **DANGERS**, **WARNINGS**, **CAUTIONS**, **NOTICES** and **NOTES**.

⚠ DANGER

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

⚠ WARNING

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

CAUTION

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates a hazardous situation which, if not avoided,
may result in property or equipment damage.

Note: Notes contain additional information important to a procedure and will be found within the regular text body of this manual.

1.2 OPERATING SAFETY



Before using the SOLAR TOWER, be sure you read and understand all of the instructions! This equipment was designed for specific applications; DO NOT modify or use this equipment for any application other than which it was designed for. Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions and familiarize yourself with the location and proper use of all instruments and controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate or set up the SOLAR TOWER. The following points should be practiced at all times:

- The area immediately surrounding the SOLAR TOWER should be dry, clean, and free of debris.
- Position and operate the SOLAR TOWER on a firm, level surface.
- NEVER operate a unit in need of repair.
- Lower tower when not in use, or if high winds or electrical storms are expected in the area.
- Make certain tower is well grounded and securely fastened to a good earthen ground.
- When the mast is raising, make sure area above camera is open and clear of overhead wires and obstructions.
- Keep area beside tower clear of people while raising and lowering mast!
- Tower must be leveled and outriggers extended before raising tower. Outriggers must remain ex- tended while tower is up.
- If for any reason any part of mast hangs up or winch cable develops worn while raising or lowering tower,STOP immediately and replace it.

- NEVER remove safety pin or pull mast locking pin while tower is up!
- NEVER use tower if insulation on electrical cord is cut or worn through.
- If used in dense crowds, please set up guards 5 meters away from the unit.
- NEVER take power directly from the batteries.
- If not being used for a long time, please turn off the breaker for the batteries.
- During mast extending, once the hole for locking pin aligns, stop operating the manual/electric winch.
- During solar charge process, do not unplug each panels and the connectors for solar input on the tower. It will lead to severe personal injury and equipment damage.
- NEVER put conductive metal objects on the batteries.
- Do not forget to insert the safety locking pin when cranking up the outrigger.

1.3 SERVICE SAFETY



This unit includes solar modules and batteries which are with high voltage circuits capable of causing serious injury or death. Only a qualified electrician should troubleshoot or repair electrical problems occurring in this equipment.

- Before servicing SOLAR TOWER, make sure the breakers for solar modules, batteries and camera are turned OFF. Disconnect the solar panels and batteries.
- NEVER allow water to accumulate around the base of the tower.
- NEVER wash the unit with a power washer or high pressure hose.
- Please wear goggles and insulating gloves, using insulation wrench to replace the batteries.
- NEVER disassemble and repair the mast in uneven place. The mast must be hung and installed with equipment.
- NEVER replace the tyres and outriggers or adjust and fix the brake system in uneven place.
- NEVER replace the manual (electric/hydraulic cylinder) winch when the mast is extending.
- Make sure slings, chains, hooks, jacks, and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or hold the equipment safely. Always remain aware of the position of other people around you when lifting the equipment.

1.4 TRANSPORTING SAFETY



Make sure the mast is in TRANSPORT MODE (fully lowered, and the solar panel is locked and packed in a vertical position) before transport. Follow the following steps to prepare the unit for transport.

1.41 LIFTING WITH FORKLIFT

The unit can be lifted in transport mode using the fork pockets on each side of the tower.
For approximate weights, refer to the spec plate on the mast. Always remain aware of people and objects when moving or lifting the uni

1.42 LIFTING WITH CRANE



Only qualified rigger and crane operator should lift the machine. Be sure the lifting point, lift capacity, loading surfaces and straps are sufficient.of overhead wires and obstructions.

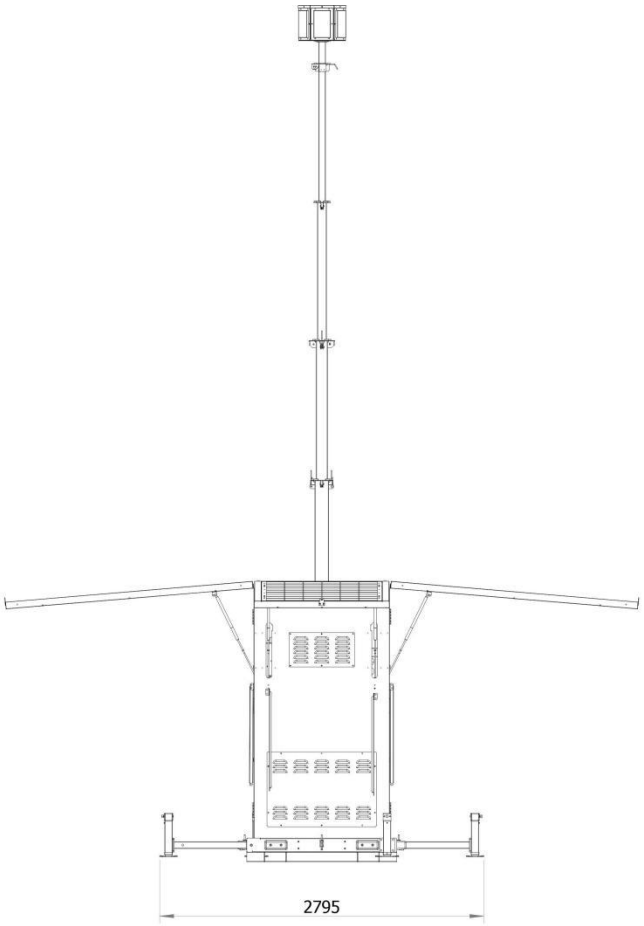
- The lift points are connected to the lift structure of the unit. Attach a long flex sling directly to the lift point in each tower corner.
- Approach the unit perpendicular to avoid any damage to the unit.
- Check the bubble level.

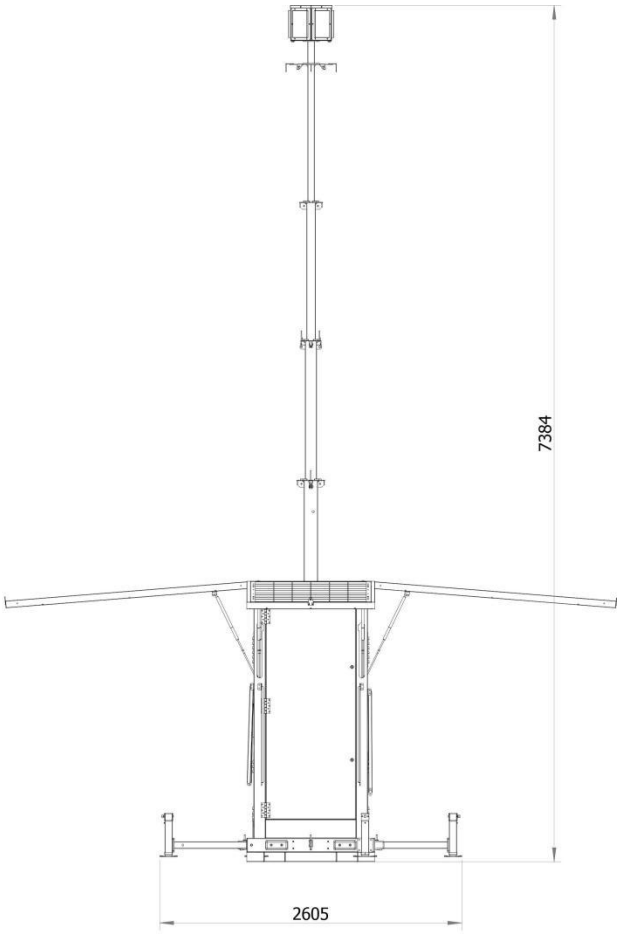
2.UNIT GENERAL INFORMATION

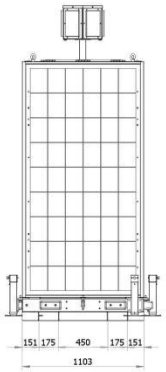
2.1 LOCATION OF UNIT NAMEPLATE

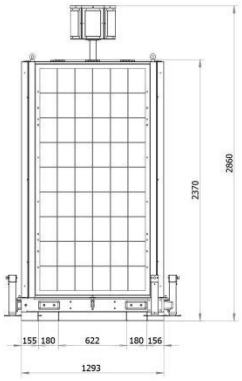
Refer to the locations illustrated below to find the unit ID plate. Important information, such as the unit serial number, GVWR and GAWR for your tower are found on the plate. Record the information from the plate, so it is available if it is lost or damaged. When ordering parts or requesting technical service information, you may be asked to specify this information.

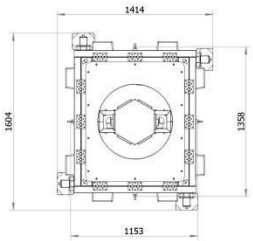
2.2 DIMENSIONS

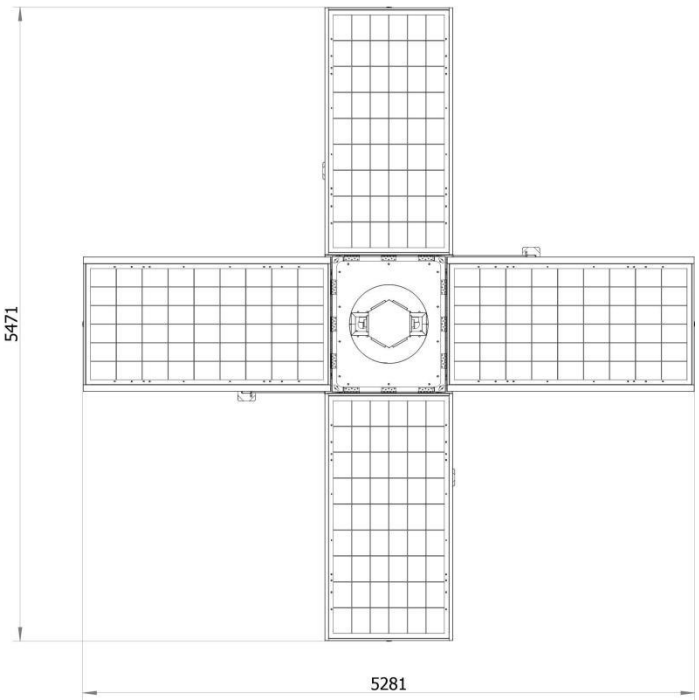












2.3 SAFETY SYMBOL SUMMARY

This equipment has been supplied with numerous safety and operating decals. These decals provide important operating instructions and warn of dangers and hazards.

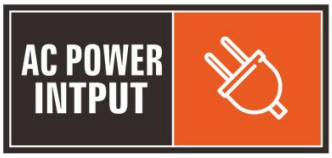






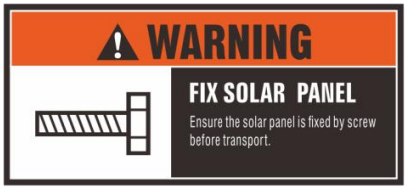


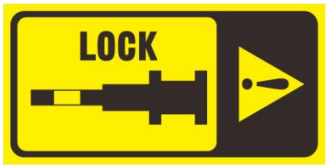








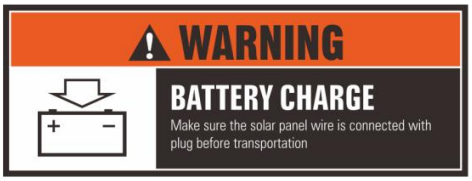




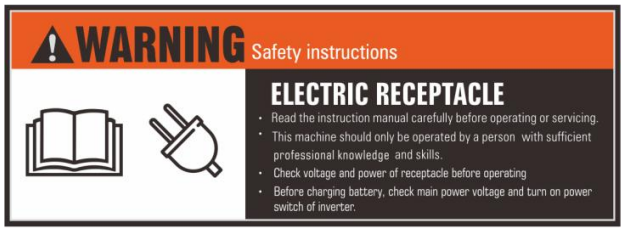




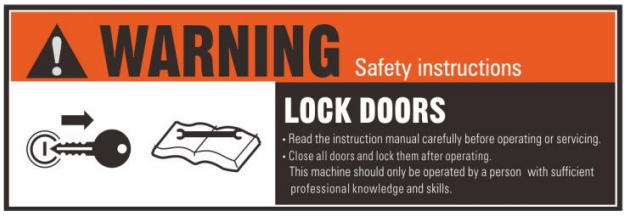












3.OPERATING INSTRUCTION

3.1 SOLAR TOWER PLACEMENT

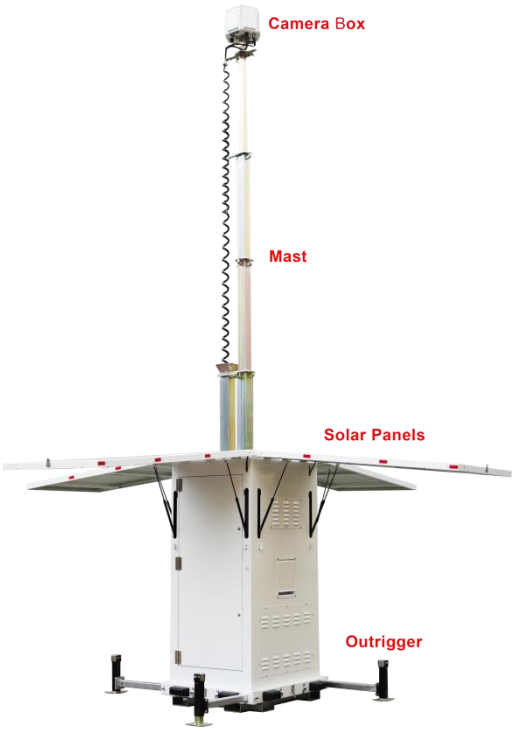


Figure 3.11

1. Ensure the area immediately surrounding the solar tower should be dry, clean, and free of debris.

> **⚠ WARNING**
>
> The tower extends up to 7.38m. Make sure the area above the tower is open and clear

2. Transport the solar tower by forklift and place and operate the solar tower on a firm, level surface.
3. Adjust the locking pin of the outriggers from State A to State B; after partially extending the outriggers, return the locking pin to State A, then forcefully pull the support leg to fully extend it to its limit position.
4. Retrieve the crank handle from the accessories box, attach it to the outriggers, and turn it clockwise to lower the outriggers.
5. Pull the solar panel locking pin to transition from State C to State D. The solar panel is equipped with pneumatic struts, allowing it to be deployed with just a gentle push.

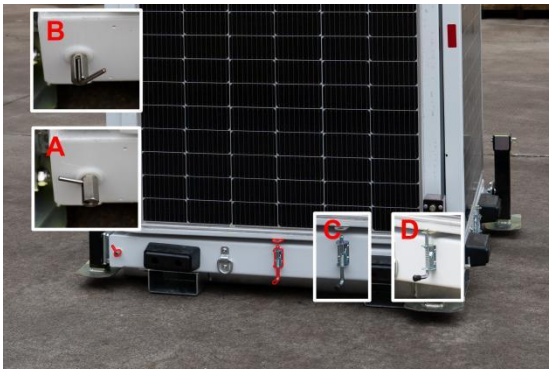


Figure Figure 3.12

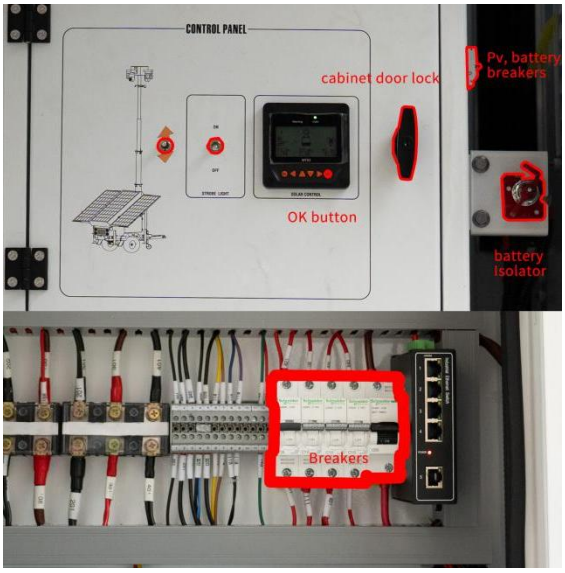
3.2 SOLAR TOWER OPERATION

1. Set up and level the SOLAR TRAILER as described on page 7.

2. Before raising the tower it is be necessary to install the top devices and adjust them to the required condition.

3. Check the mast electrical cord for damage.

4. Turn on the battery isolator, PV and battery breaks. Open the control cabinet through the cabinet door lock and turn on the circuit breaker (refer to the circuit diagram for the function of the circuit breaker). Press the OK button and wait for the voltage to be displayed on the screen. The machine will start to work normally.
5. .Check if the surveillance cameras are functioning properly.



6. Toggle the buttons on the control panel up and lift the mast to the required height. Extend the mast slowly, making sure that the electrical cord is extending at the top sections of the mast. If, for any reason, the cable begins to develop slack or any of the tower sections get stuck, STOP IMMEDIATELY and contact an authorized service center.

⚠ WARNING

The tower must be leveled with the outriggers extended before raising the tower.The outriggers must remain extended while the tower is up.Failure to level the tower or extend the outriggers will severely reduce the stability of the unit and could allow the tower to tip and fall.

⚠ WARNING

Do not operate the unit if the insulation on the electrical cord is cut or worn through.Bare wires in contact with the mast or frame may energize the tower and cause electrocution. Repair or replace cord.

3.3 SOLAR TOWER STOP WORKING

1. Check mast ropes for excessive wear or damage. Make sure the ropes are properly centered in each pulley.
2. Check the mast electrical cord for damage.

⚠ WARNING

Do not operate the unit if the insulation on the electrical cord is cut or worn through.Bare wires in contact with the mast or frame may energize the tower and cause electrocution. Repair or replace cord.

3. Press the lower button on the control panel, lower the mast to its original static height and make sure the steel rope is orderly.
4. Turn off the circuit breaker in the control cabinet, the PV, battery circuit breaker and battery isolator.
5. Retract the deployed solar panels and secure them with pins.
6. Retract the outriggers.
7. Ensure that the solar tower finishes working before transporting the solar tower.

CAUTION

On SOLAR TOWER equipped with the electric winch option, a limit switch on the main mast section will disconnect power to the electric winch to prevent it from overextending.

CAUTION

When the mast is extended, do not operate the neutral gear bolt on the winch. It will lead to sudden falling of the mast and cause equipment damage and personal injury or death.

4.MAINTENANCE

4.1 PRECAUTIONS

Do not carry out any change or modification to any part of the solar tower or its electric system.
Do not carry out any maintenance when the battery is running.

4.2 DAILY INSPECTION

When the solar tower is in regular use, the following items should be checked daily:

– Check that the solar panels are clean and unobstructed. If necessary, clean the solar panels with a soft cloth or sponge and a cleaning solution of mild detergent and warm water.

– Make sure that the photocell is clean.

– Check the battery charge:

• Do not allow batteries to fully discharge. If the red battery-charge LED on the control panel is lit, charge the batteries immediately. See also “Battery charging”.

• Ensure batteries are fully charged before using the solar tower.

– Inspect all exposed wiring for damage, worn insulation and cuts.

– Inspect the winch cable for wear and damage.

– If the solar tower is vertical, verify the vertical-lock pin is engaged and secure

– Repair or replace worn and damaged components immediately. Never use any equipment that is damaged or in need of repair.

4.3 REGULAR MAINTENANCE

The following items should be checked regularly:

– Battery voltage should be checked once a week, to ensure the charging system is keeping the batteries charged. During winter, where sunlight is less intense, battery voltage should be checked more often.

– At least once a year, visually inspect battery terminals and cables for signs of corrosion,especially in hot temperatures.

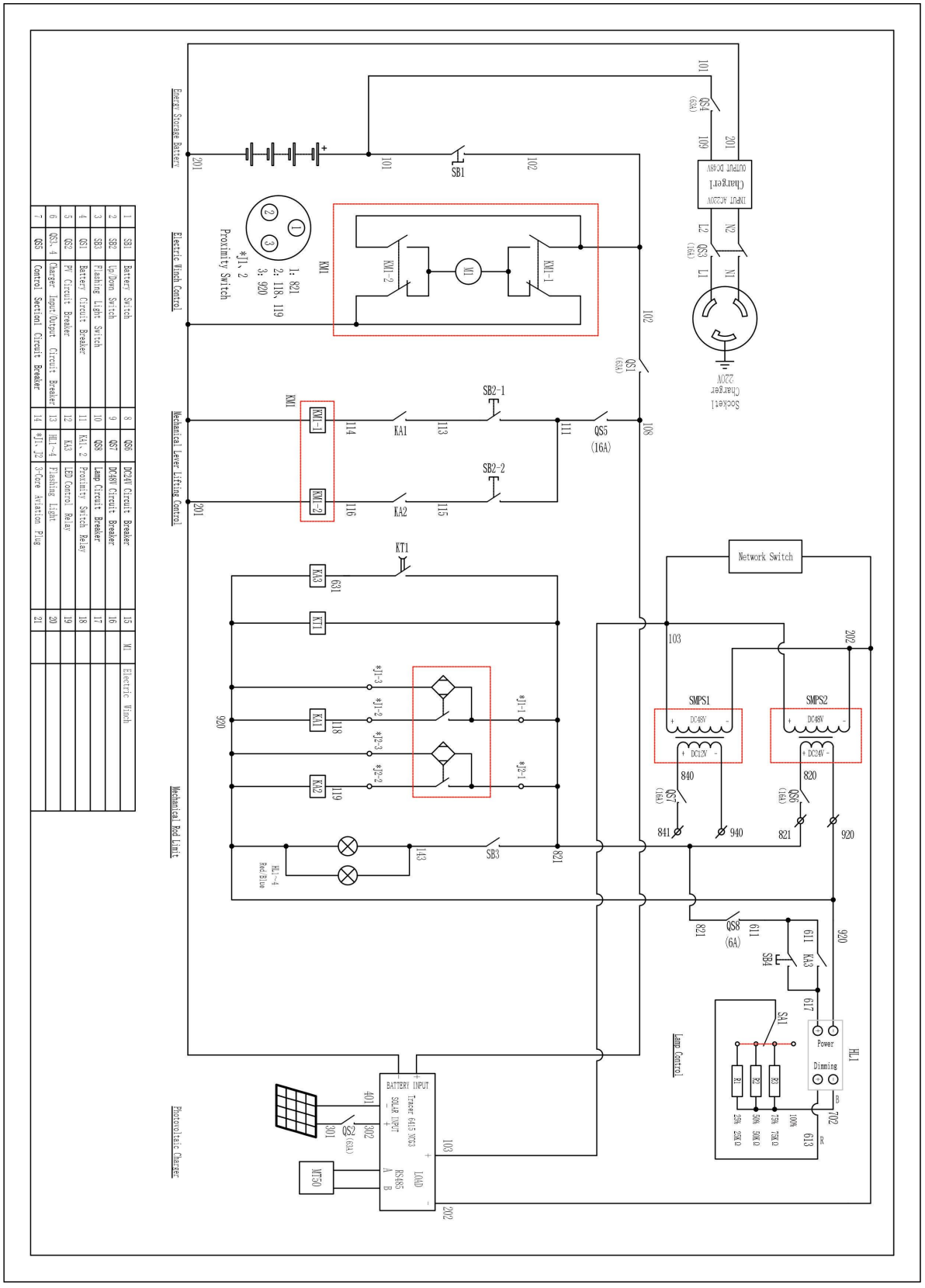
4.4 ORDERING SPARE PARTS

It is possible to order spare parts for the solar tower by making reference to the parts as mentioned in the enclosed Parts List manual.

Always quote the part number, the designation and the quantity of the parts required, as well as the typeand the serial number of the machine.

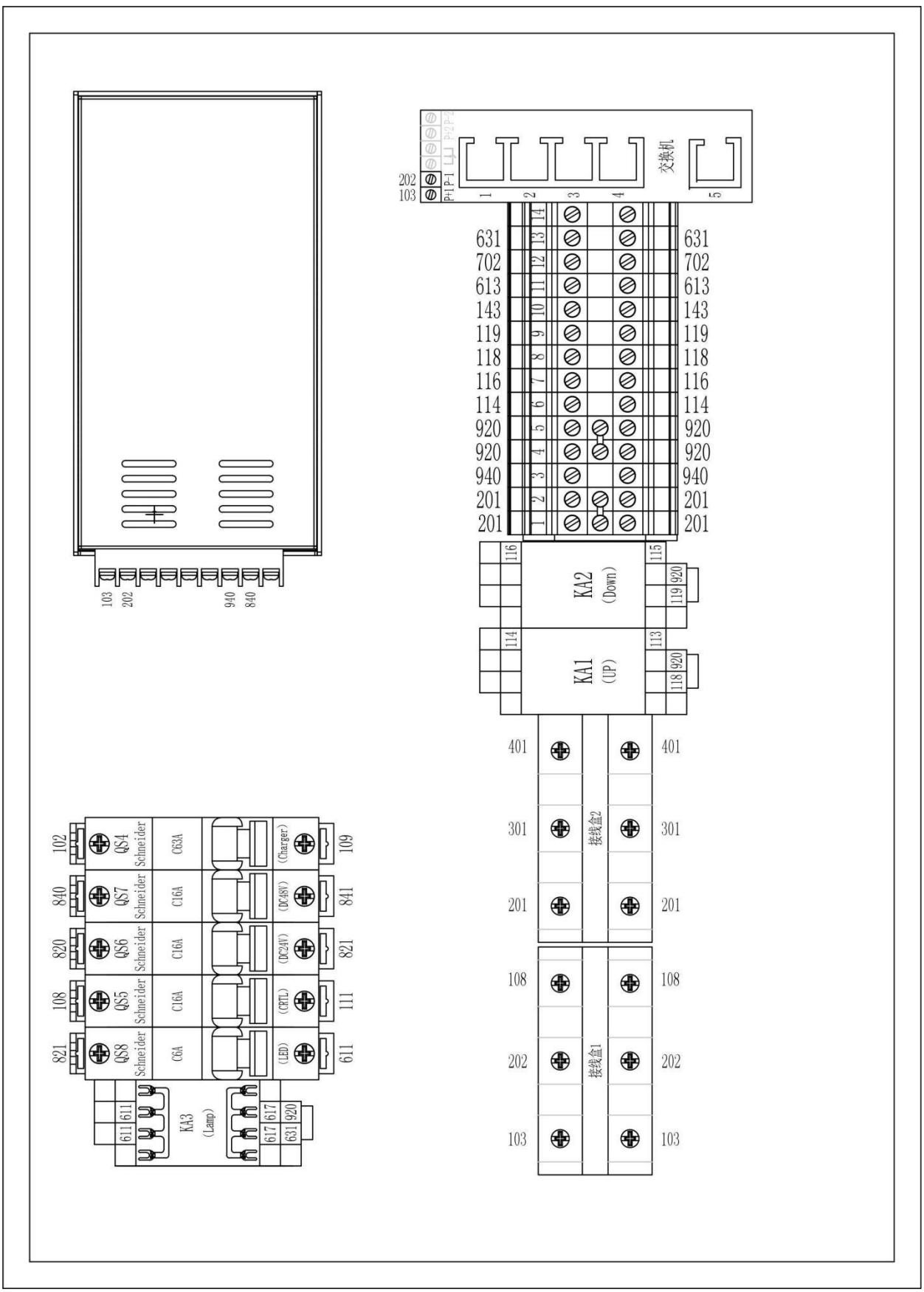
5.DIAGRAM

5.1 Circuit diagram



1					8	QS6	DC24V Circuit Breaker
2	SB1	Battery Switch			9	QS7	DC48V Circuit Breaker
3	SB2	Up/Down Switch			10	QS8	Lamp Circuit Breaker
4	SB3	Flashing Light Switch			11	KA1、2	Proximity Switch Relay
5	QS1	Battery Circuit Breaker			12	KA3	LED Control Relay
6	QS2	PV Circuit Breaker			13	HL1~4	Flashing Light
7	QS3、4	Charger Input/Output Circuit Breaker			14	*J1、J2	3-Core Aviation Plug
	QS5	Control Section Circuit Breaker			15	M1	Electric Winch
					16		
					17		
					18		
					19		
					20		
					21		

5.2 Terminal


交换机
KA2 (Down)
KA1 (UP)
KA3 (Lamp)
接线盒2
接线盒1
(Charger)
(LED)
(CRTL)
(DC24V)
(DC48V)
Schneider
C63A
C16A
C6A