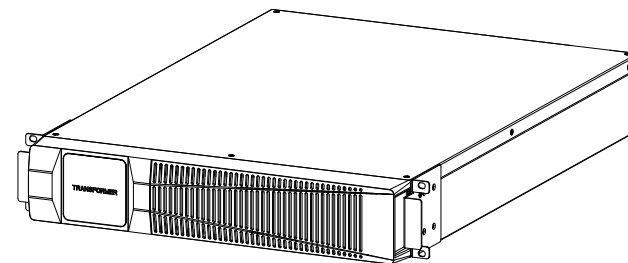




4257-0994 B



## Transformer Module for 5K~10KVA UPS



## Operation Manual

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## Chapter 1: Introduction

Thank you for purchasing this power protection product. Please read this manual before installing your LK-Series step down transformer.

**IMPORTANT SAFETY INSTRUCTIONS  
SAVE THESE INSTRUCTIONS !**

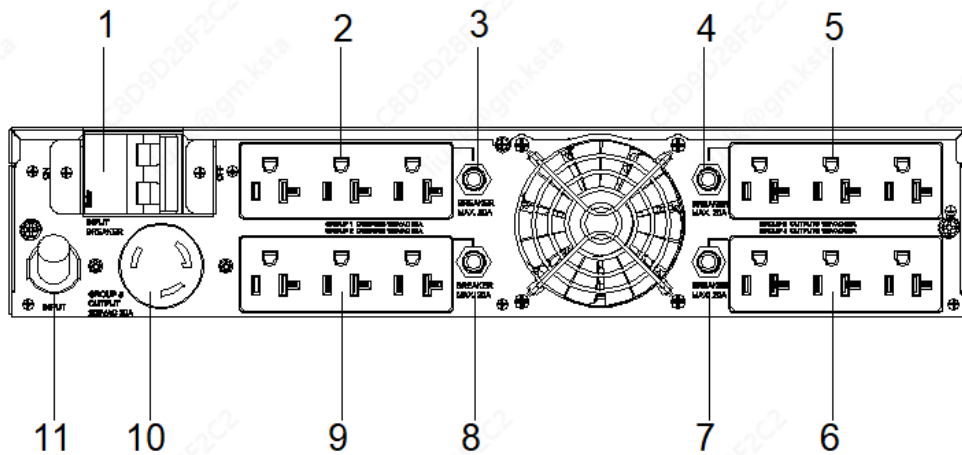
**CAUTION!** The transformer can only be used with single-phase UPS output at 208V level. Do not use the UPS's 220/230/240V output settings to supply the transformer.

**WARNING:** There are high temperatures and pressures inside the transformer box. During equipment installation, operation, and maintenance, it is necessary to comply with the local safety regulations and relevant operating procedures, otherwise it may cause personal injury or equipment damage. The safety precautions mentioned in the manual are only a supplement to local safety regulations. Our company does not assume any responsibility for violating general safety operation requirements or safety standards for design, production, and use of equipment.

**WARNING:** This transformer contains potentially hazardous voltages. Do not attempt to disassemble the unit. This unit contains no user serviceable parts. Repairs must be performed by **QUALIFIED SERVICE PERSONNEL ONLY.**

**CAUTION!** To reduce the risk of electrical shock with the installation of this unit and the connected equipment, the user must ensure that the transformer is properly grounded due to a possible risk of AC current leakage.

## Chapter 2: Rear Panels



1. The input circuit breaker will trip in the event the load exceeds the transformer 's power rating.
2. GROUP 1: 120V output receptacles (5-/20R).
3. The GROUP 1 circuit breaker will trip in the event the load exceeds the power rating.
4. The GROUP 3 circuit breaker will trip in the event the load exceeds the power rating.
5. GROUP 3: 120V output receptacles (5-/20R).
6. GROUP 4: 120V output receptacles (5-/20R).
7. The GROUP 4 circuit breaker will trip in the event the load exceeds the power rating.
8. The GROUP 2 circuit breaker will trip in the event the load exceeds the power rating.
9. GROUP 2: 120V output receptacles (5-/20R).
10. Load 3: 208V output receptacle (L6-30R).
11. The input power cord is for connecting to the output of the UPS.

## Chapter 3: Installation

### **INSTALLATION PLACEMENT**

This transformer is **ONLY** intended to be installed in an indoor temperature controlled environment that is free of conductive contaminants. DO NOT operate the unit in: extremely dusty and/or unclean areas, locations near heating devices, water or excessive humidity, or where the unit is exposed to direct sunlight. Select a location that provides good air circulation for the unit at all times. Route power cords so they cannot be walked on or damaged. The AC input of these step-down transformer needs to be connected to the output of the UPS. This transformer is not intended for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment ANSI/NFPA 75.

Operating Temperature (Maximum): 0 to 40°C (+32 to +104°F)

Operating Elevation: 0 to 2,000m (0 to +6,562 ft)

Operating and Storage Relative Humidity: 95%, non-condensing

Storage Temperature: -15 to +50°C (+5 to +122°F)

Storage Elevation: 0 to 15,000m (0 to +49,213 ft)

### **CAUTION!**

- The external vents, fans and openings on the unit are provided for ventilation.  
To ensure reliable operation of the unit and to protect the unit from over-heating, these vents and openings must not be blocked or covered. Do not insert any object into any of the vents or openings that may hinder the ventilation.
- Install the unit in a well ventilated area, away from excess moisture, heat, dust, flammable gas or explosives.
- Leave adequate space (at least 15cm) around all sides of the unit for proper ventilation.
- Do not mount the unit with its front or rear panel facing down at any angle.
- Before usage, you must allow the unit to adjust to room temperature (20°C~25°C or 68°F~77° F) for at least one hour to avoid moisture condensing inside the unit.

### **INSTALLATION**

Be sure to read the installation placement and all the cautions before installing the transformer. Place the unit in the final desired location and complete the rest of the installation procedure. See the "Rackmount Configuration" to install the unit into the rack.

**CAUTION! DO NOT USE THE MOUNTING BRACKETS TO LIFT THE STEP DOWN TRANSFORMER.** The mounting brackets are **ONLY** for securing the unit to the rack.

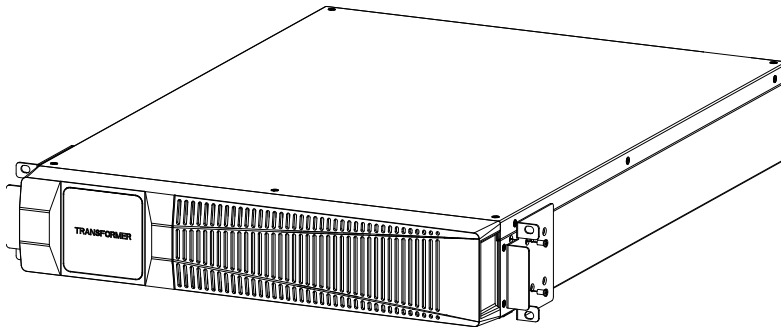
**NOTE:** The Transformer, UPS and Battery Pack are extremely heavy. Use the following placement when rack mounting:

1. The Battery Pack(s) should be installed close to the bottom of the rack.
2. Then install the Transformer right above the Battery Pack(s).
3. Then install the UPS right above the Transformer.

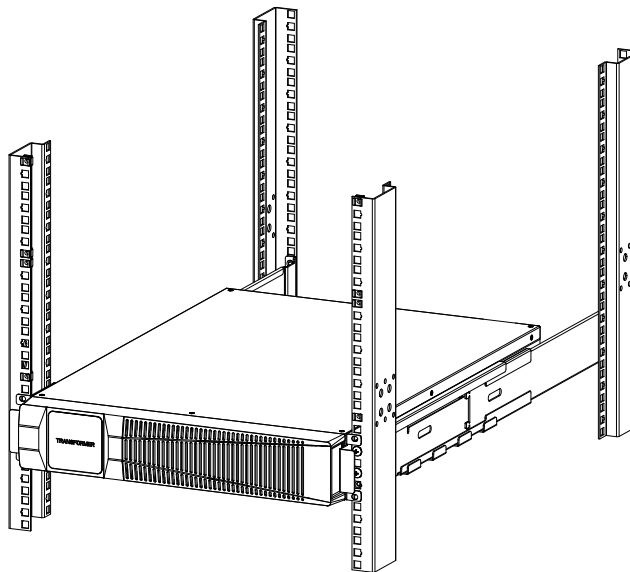
### **RACKMOUNT CONFIGURATION**

Use the included rackmount brackets and screws to mount the transformer in a rack by following the steps below.

1. Attach the rackmount brackets to the mounting holes on the side panel of the transformer as shown below.



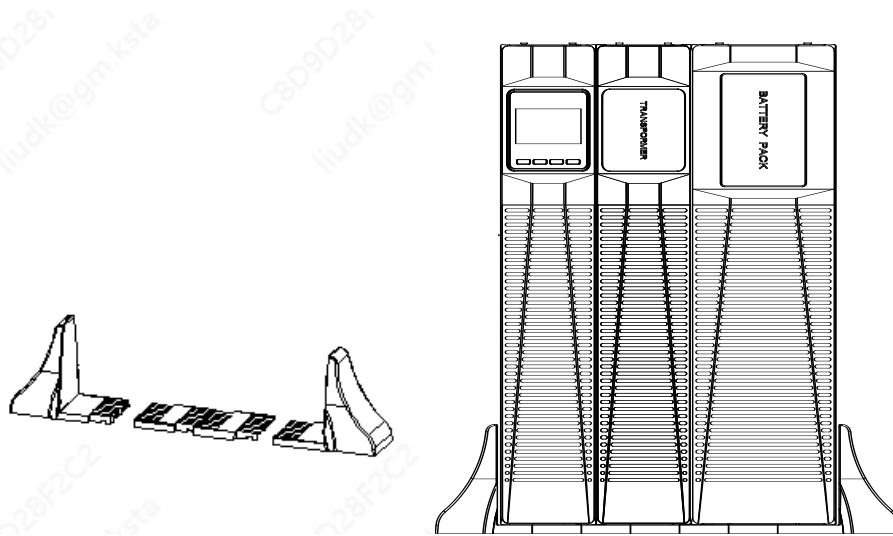
2. Install the transformer into the Rail kit. See the figure below.



## **TOWER CONFIGURATION**

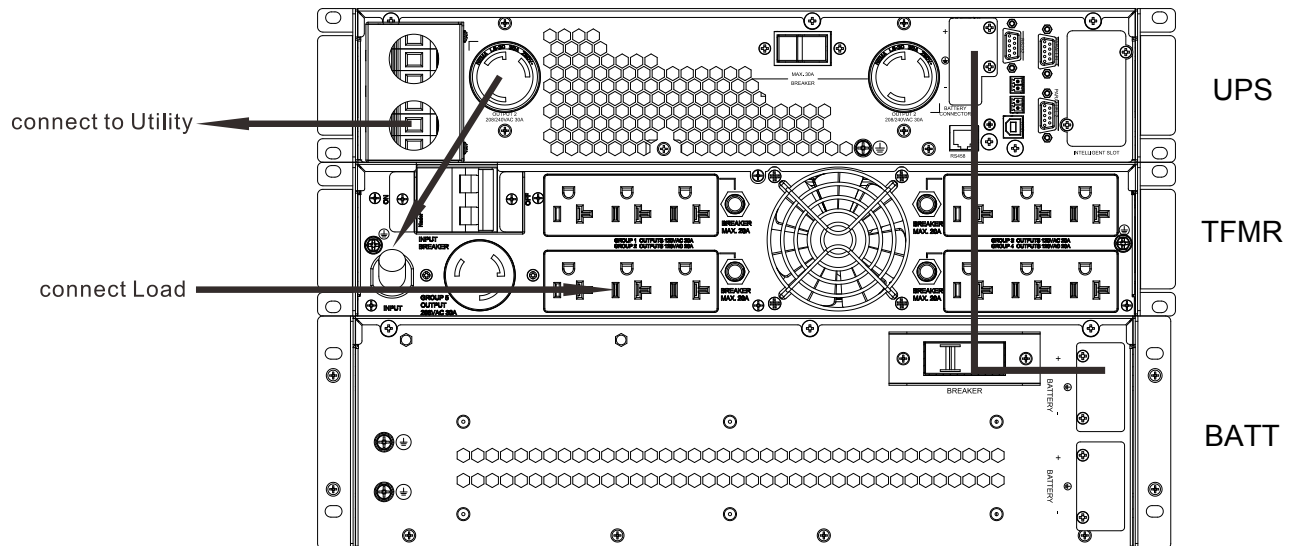
Schematic diagram of tower installation configuration is as follows.

The UPS, Transformer, and battery pack are all equipped with tower bracket.



## **CONNECTING THE STEP DOWN TRANSFORMER TO THE UPS**

1. Before connecting to the input / output terminals read all of the Cautions and Warning, then observe the following:
  - a) Ensure that the UPS is turned off and not connected to the AC source or the battery source before any connections are made.
  - b) Calculate the power consumption of the load to ensure that an overload condition does not occur.
  - c) Ensure that all plugs and UPS terminal block screws are secured after connecting the input / output wires. The terminal block screws should be torque to  $18 \pm 2 \text{Kgf.cm}$  (requires a 3/16" flat-head screwdriver).
  - d) Ensure that the transformer and the UPS are properly grounded.
2. The input power for the transformer must be single-phase in accordance with its rating label and the specifications in this manual.



### **INPUT / OUTPUT CONNECTIONS:**

1. Remove the terminal block cover box from the rear panel of the UPS.
2. Input / Output cable selection:

|              |             |
|--------------|-------------|
| 5kVA & 6kVA  | 10KVA       |
| #10 AWG (Cu) | #8 AWG (Cu) |

*Temperature Rating: 60°C / 75°C*

(In accordance with National Electrical Code (NEC), install suitable conduit and bushing.)

**NOTE:** Use copper wire only.

3. The AC input of these step-down transformer needs to be connected to the output of the UPS.

**NOTE:** The transformer can only be used with single-phase UPS output at 208V output.

### **NOTE:**

See the UPS users manual for UPS input and output connections. Connect the attached #10 AWG input power cord on the transformer to a L6-30R outlet on the UPS. Plug load equipment into the output receptacles on the rear panel of the transformer.



## Chapter 4: Operation

### **START-UP IN THE NORMAL AC MODE:**

The UPS must be connected to utility power and there must be an acceptable AC voltage present. The Battery Pack(s) must be connected to the UPS and the DC breaker(s) on the rear panel of the Battery Pack(s) must be in the On position. The input of the transformer must be connected to the output of the UPS. The equipment is plugged into the output receptacles on the transformer.

1. Turn on the input breaker on the rear panel of the UPS. The UPS will start automatically and the LCD display of the UPS will be lit on. You may view the data and set parameters on the LCD display as well as the LED display showing the status of the UPS. Verify the UPS is in the Online mode.

**NOTE:** If there is a power interruption while the UPS is in the Bypass mode the load will not be backed up. See the UPS user's manual for more information.

2. Turn on the input breaker on the rear panel of the transformer to power the load.

### **START-UP IN THE BATTERY MODE:**

The Battery Pack(s) must be connected to the UPS and the DC breaker(s) on the rear panel of the Battery Pack(s) must be in the On position. The input of the transformer must be connected to the output of the UPS. The equipment must be plugged into the output receptacles on the transformer.

1. Turn on the DC breaker on the rear panel of the Battery pack.
2. Press "ENTER/ON" on the front panel to start the UPS and in the meantime, the LCD display will light up. You may view the data and set parameters on the LCD display and the LED display of the UPS will show the latest status of the UPS. The UPS is now in the Battery mode. See the UPS user's manual for more information.
3. Turn on the input breaker on the rear panel of the transformer to power the load.

**TURNING OFF THE STEP DOWN TRANSFORMER IN THE NORMAL AC MODE:**

1. Turn off all of the connected equipment.
2. Turn off the input breaker on the rear panel of the transformer.
3. Press and release the Off Button on the front panel of the UPS after the first beep to transfer the UPS to the Bypass mode.
4. Turn off the input breaker on the rear panel of the UPS (if present) or unplug the UPS or turn off the utility circuit breaker feeding the UPS.
5. Turn off the DC breaker(s) on the rear panel of the Battery Pack(s).

**TURNING OFF THE STEP DOWN TRANSFORMER IN THE BATTERY MODE:**

1. Turn off all of the connected equipment.
2. Turn off the input breaker on the rear panel of the transformer.
3. Press and release the Off Button on the front panel of the UPS after the first beep to turn the UPS off.
4. Turn off the input breaker on the rear panel of the UPS (if present) or unplug the UPS or turn off the utility circuit breaker feeding the UPS.
5. Turn off the DC breaker(s) on the rear panel of the Battery Pack(s).

## Chapter 5: Specifications

| SYSTEM SPECIFICATIONS        |  |
|------------------------------|--|
| Model Name                   | N1C.LK5TXR                                     |
| Topology                     | Isolation, Step Down Transformer, Sine Wave    |
| INPUT                        |  |
| Number of Phase              | Single (1 $\phi$ 2W +G)                        |
| Voltage                      | 208VAC   |
| Frequency                    | 50 / 60Hz                                      |
| Current (Max)                | 24Amps   |
| Protection                   | Resettable Circuit Breaker                     |
| Connection                   | NEMA L6-30P                                    |
| OUTPUT                       |  |
| Voltage                      | 208 & 120VAC (Nominal +/-2% )                  |
| Outlet Types                 | (1) L6-30R + (8) 5-20R                         |
| Frequency                    | 50 / 60Hz                                      |
| Power (Max)                  | 5KVA / 5K Watts                                |
| Harmonic Distortion          | $\leq 3\%$ (Full Linear Load)                  |
| Efficiency                   | $\geq 95\%$ (Full Load)                        |
| Waveform Type                | True Sine Wave                                 |
| Protection                   | Resettable Circuit Breaker                     |
| ENVIRONMENTAL                |  |
| Operating Temperature (max)  | 0 to 40°C (+32 to +104°F)                      |
| Storage Temperature          | -15 to +50°C (+5 to +122°F)                    |
| Operating/Storage Humidity   | 0 ~ 95% Non-Condensing                         |
| Operating Elevation          | 0 to 2,000m (0 to +6,562 ft)                   |
| Storage Elevation            | 0 to 15,000m (0 to +49,213 ft)                 |
| Audible Noise at 1 m (3 ft.) | $\leq 50$ dBA                                  |
| PHYSICAL                     |  |
| Dimension W x D x H          | 440 * 621.5 * 86.5 mm(2U) / 17.3*24.5*3.4 inch |
| Net Weight                   | 44 Kg / 97 lbs                                 |