

# Installation Guide

## APC™ Smart-UPS™ Ultra Isolation and Step-Down Transformer SRTL5KTF

### Important Safety Instructions

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the Smart-UPS Industrial UPS and batteries.



Read the user documentation to become familiar with the equipment before trying to install or operate it.

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol either to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



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.

#### **DANGER**

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

#### **WARNING**

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

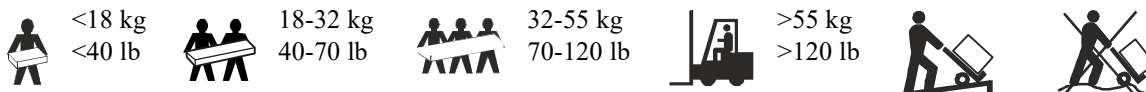
#### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury**.

#### **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

### Product Handling Guidelines



# Safety Information

- Adhere to all national and local electrical codes.
- All wiring must be performed by a qualified electrician.
- Changes and modifications to this unit not expressly approved by Schneider Electric could void the warranty.
- This transformer is intended for indoor use only.
- Do not operate this transformer in direct sunlight, in contact with fluids, or where there is excessive dust or humidity.
- Be sure the air vents on the transformer are not blocked. Allow adequate space for proper ventilation.
- For a transformer with a factory installed power cord, connect the transformer power cable directly to an output receptacle of the UPS. Do not use surge protectors or extension cords.
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.
- For rack mount transformers, always install the transformer directly above the UPS in rack-mount configuration. The UPS must be installed below the transformer.
- Always install peripheral equipment above the transformer in rack-mount configuration.
- Additional safety information can be found in the Safety Guide supplied with this unit.

## Electrical safety

- The protective earth conductor for the transformer carries the leakage current from the load devices (computer equipment). An insulated ground conductor is to be installed as part of the branch circuit that supplies the transformer. The conductor must have the same size and insulation material as the grounded and ungrounded branch circuit supply conductors. The conductor will typically be green and with or without a yellow stripe.
- The UPS input ground conductor must be properly bonded to protective earth at the service panel.
- If the UPS input power is supplied by a separately derived system, the ground conductor must be properly bonded at the supply transformer or motor generator set.
- Be sure that all the covers and panels are installed before operating the transformer.
- Do not insert any metal object through the ventilation openings.
- Be sure to turn off the input to the transformer and check the voltage at the output terminals is zero before attempting to service or maintain the transformer.

## Hardwire safety

- Verify that all branch circuit (mains) and low voltage (control) circuits are deenergized, and locked out before installing cables or making connections, whether in the junction box or to the transformer.
- Wiring by a qualified electrician is required.
- Check national and local codes before wiring.
- All openings that allow access to transformer hardwire terminals must be covered. Failure to do so may result in personal injury or equipment damage.
- Select wire size and connectors according to national and local codes.

## General information

- The model and serial numbers are located on a small, rear panel label.
- Recycle the package materials or save them for reuse.

## FCC Class A Radio Frequency Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are intended to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

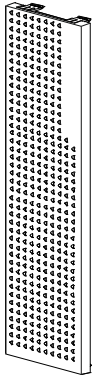
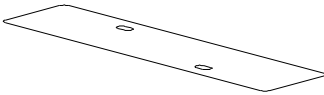

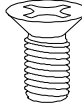

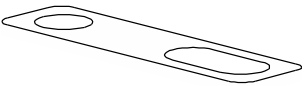
# Product Information

The APC Smart-UPS Ultra transformer is intended for use as a step-down transformer. This transformer can also function as an isolation transformer.

The transformer can be installed as a tower or in a standard 19 inch rack. For rack-mount configuration use rack-mount kit SRTRK2 only, which can be purchased separately.

## Package Contents

**Inspect the contents upon receipt. Notify the carrier and dealer if the unit is damaged.**

<p>Front bezel</p> 	<p>Stabilizer foot 1 pair</p>  <p>Screws for securing the Stabilizer foot to the transformer - 4x</p> 	<p>1 screw for securing transformer tie bracket</p> <p>1 screw for securing on UPS mount of tie bracket</p>  	<p>Tie bracket to secure the UPS to the transformer</p> 
--	--	--	---

## Specifications

For additional specifications refer to our web site, [www.apc.com](http://www.apc.com).

### Environmental

<b>Temperature</b>	<b>Operating</b>	0 to 40 °C (32 to 104 °F)
	<b>Storage</b>	-15 to 45 °C (5 to 113 °F)
<b>Maximum Elevation</b>	<b>Operating</b>	0 - 3,000 m (0 - 10,000 ft)
	<b>Storage</b>	0 - 15,000 m (50,000 ft)
<b>Humidity</b>	0% to 95% relative humidity, non condensing	
<b>International Protection Code</b>	IP20	

### Physical

**NOTE:** The product is heavy. Follow lifting guidelines.

<b>Unit weight, without packaging</b>	51.7 kg (113.979 lbs)
<b>Unit weight, with packaging</b>	56 kg (123.459 lbs)
<b>Unit dimensions without packaging Height x Width x Depth</b>	130 x 432 x 660 mm (5.12 x 17.01 x 25.98 in)
<b>Unit dimensions with packaging Height x Width x Depth</b>	255 x 591 x 785 mm (10.03 x 23.26 x 30.90 in)
The model and serial numbers are on a small label located on the rear panel.	

## Electrical

Nominal Input Voltage	208/ 240 VAC <b>NOTE:</b> Selection switch is provided.
Input Voltage Range	Nominal Voltage $\pm$ 10%
Input Service Maximum Current	24 A
Input Connection	3 ft cord with L6-30P
Input Frequency	50/60 $\pm$ 3 Hz
Nominal Output Voltage**	110/ 120/ 208/ 220/ 240 VAC
Overload protection	Yes
Output Receptacle	L6 - 20R - 2 with 20 A DP MCB L6 - 30R - 1 L14 - 30R - 1 with 30A MCB Group-1 output sockets (5-20R - 4) with 20 A thermal circuit breaker. Group-2 output sockets (5-20R - 4) with 20 A thermal circuit breaker. <b>NOTE:</b> 5-20R sockets accept both 5-15P and 5-20P plugs.
Maximum Output Power*	4800 VA / 4800 W
<b>NOTE:</b>	
<ul style="list-style-type: none"> <li>• Operations at input voltage higher than the maximum specified value may cause equipment damage.</li> <li>• Operations at input voltage lower than the minimum specified value may cause overload and automatic shutdown.</li> <li>• When connecting directly to the branch circuit, be sure that the line voltage is within the specification.</li> <li>• When connecting the transformer to the UPS, be sure that the UPS bypass range voltage is within the operating range of the transformer.</li> </ul>	

\*Derating applies when UPS in bypass-mode and when the input is lower than the nominal voltage.

\*\*Refer "Typical system configuration" table in page 5 for more details.

## Wiring Diagram

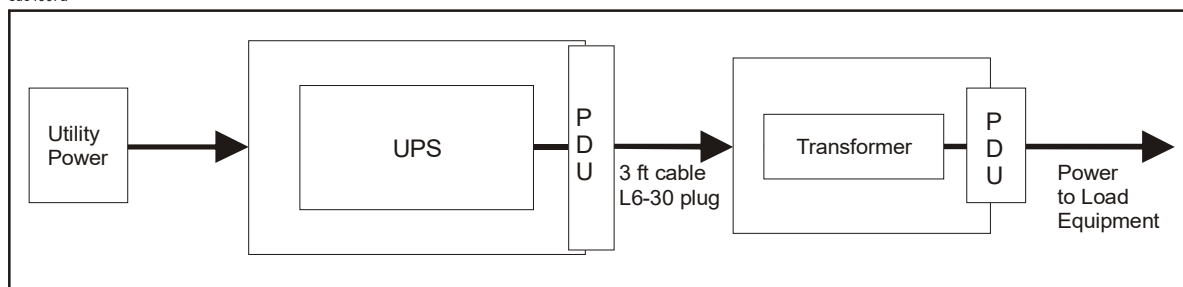
### CAUTION

#### RISK OF DAMAGE TO EQUIPMENT OR PERSONNEL

- Adhere to all national and local electrical codes.
- Wiring should be performed by a qualified electrician.

**Failure to follow these instructions can result in equipment damage and minor or moderate injury**

suo1007a



## Typical system configuration

Utility voltage	UPS output	Input voltage selection switch position	Transformer output voltage
208 V	208 V	208 V	240/ 208/ 120 V
240 V	240 V	240 V	240/ 208/ 120 V
220 V	220 V	240 V	220/ 110 V

## Rack-Mount Installation

**NOTE:** For Rack-Mount Installation use railkit SRTRK2 (not supplied).

### ⚠ CAUTION

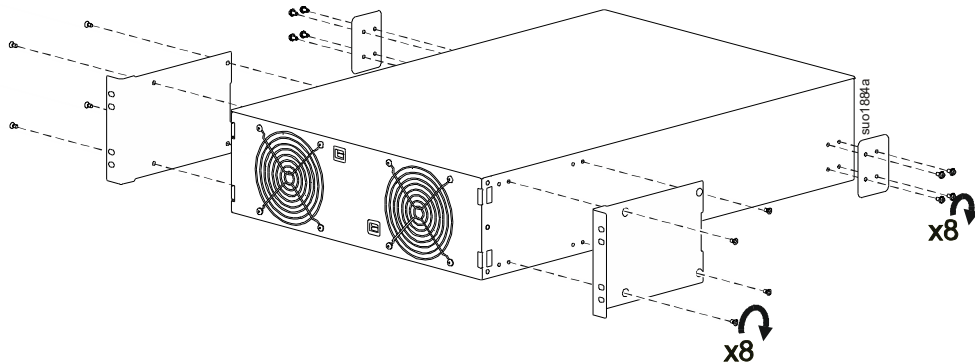
#### RISK OF FALLING EQUIPMENT

- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.
- Always use the recommended number of screws to secure brackets to the transformer.
- Secure the unit to the rack using all the screws supplied for the purpose.

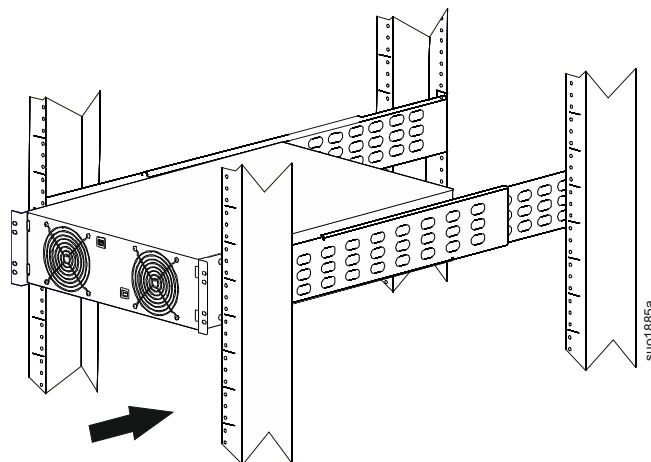
**Failure to follow these instructions can result in minor or moderate injury and equipment damage.**

**NOTE:** The transformer must be installed directly above the UPS in the rack.

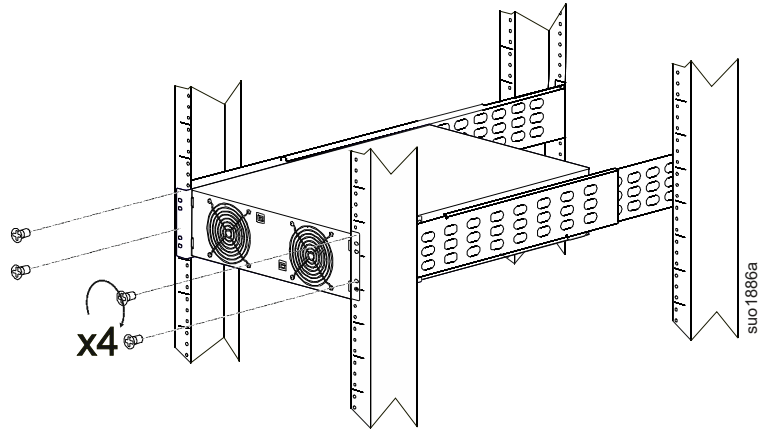
❶ Install the rack-mount brackets.



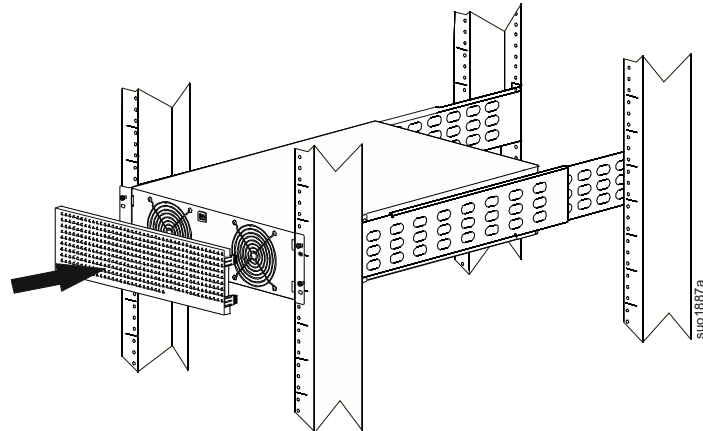
❷ Lift the transformer and slide it into the rack enclosure.



3 Secure the transformer to the rack with screws, nuts and washers.



4 Install the front bezel.



## Tower Installation

### ⚠ CAUTION

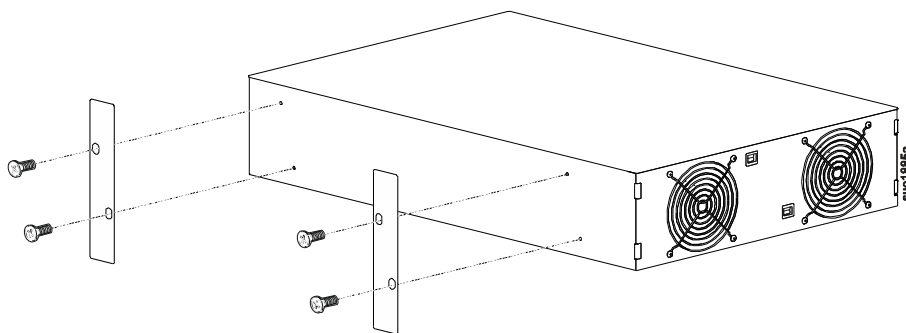
#### RISK OF DAMAGE TO EQUIPMENT OR PERSONNEL

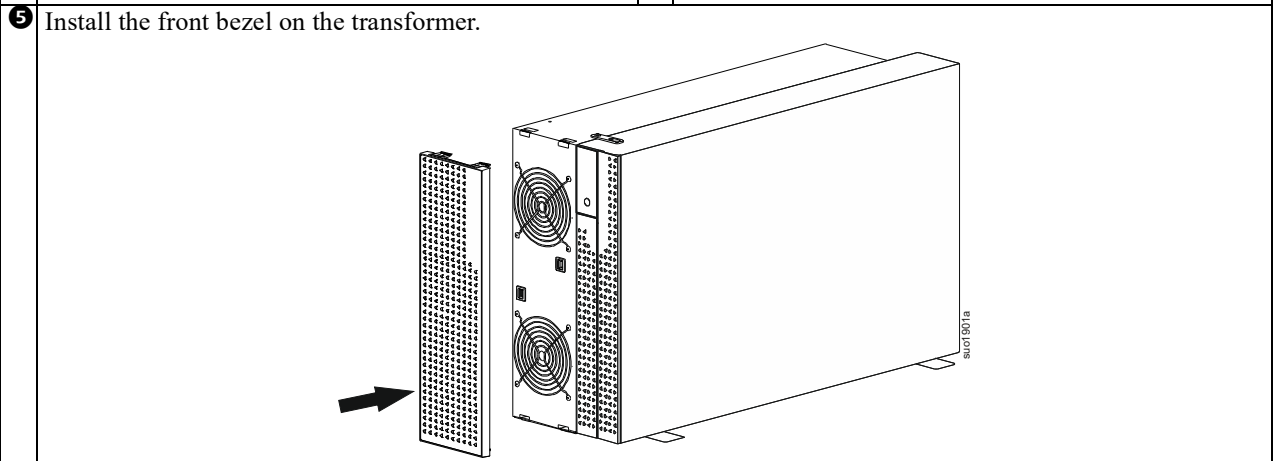
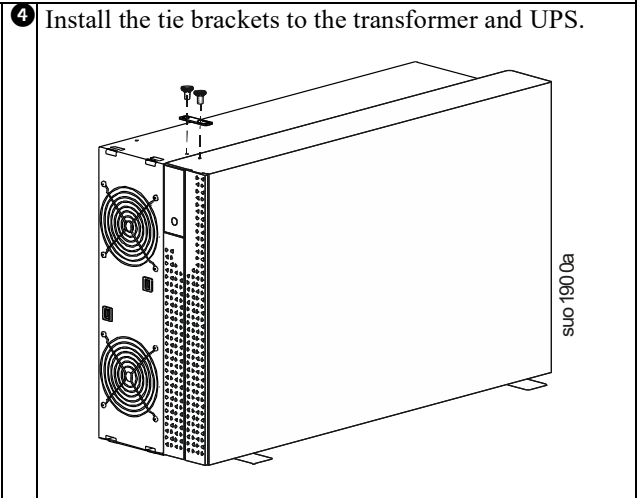
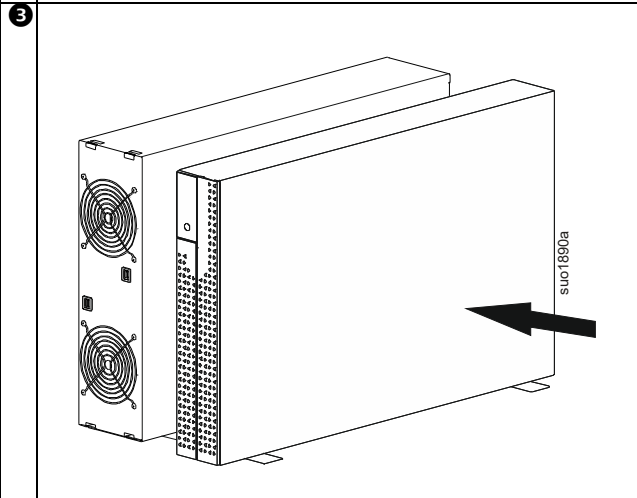
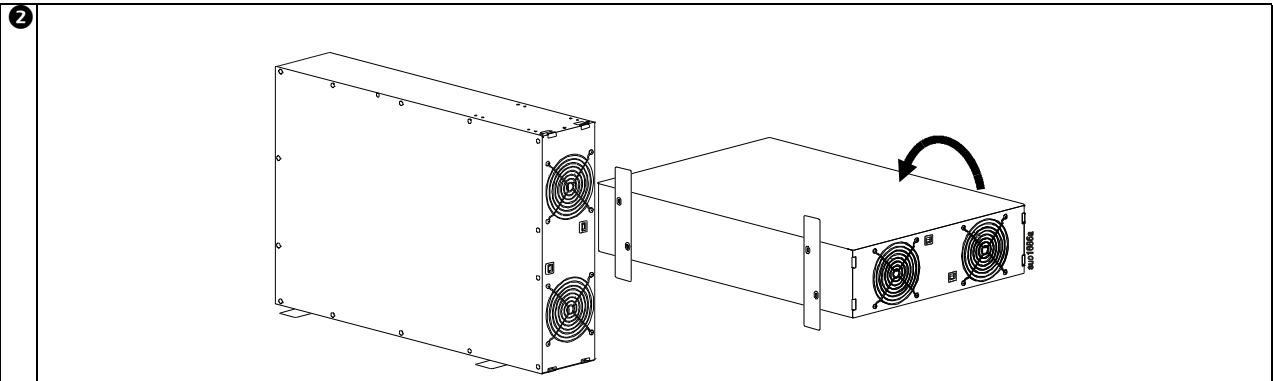
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.
- Always use the recommended number of screws to secure the stabilizer feet to the transformer.
- Always install the transformer to the left of the UPS when facing the front of the units.

**Failure to follow these instructions can result in equipment damage and minor or moderate injury**

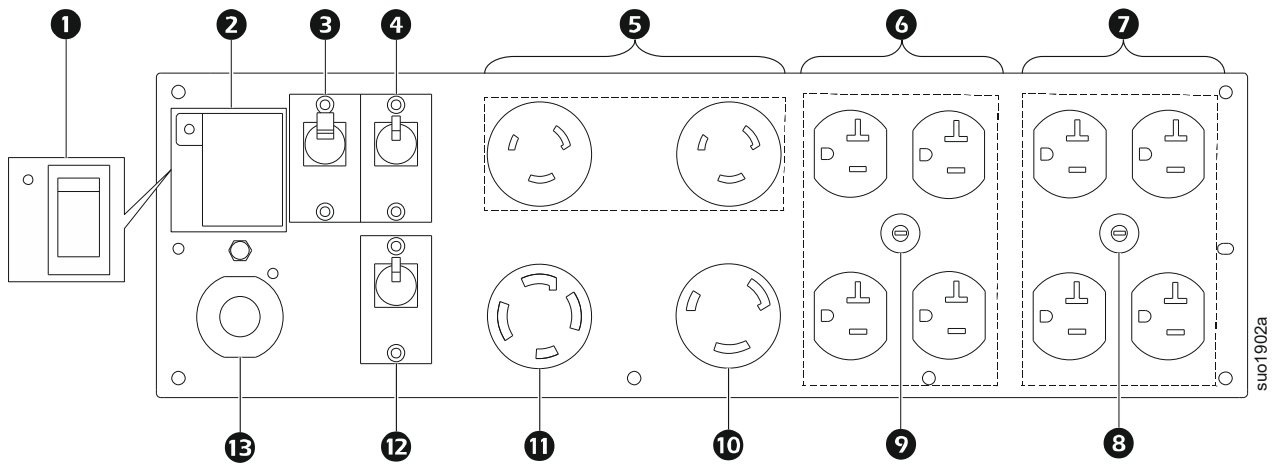
**Note:** The transformer must be installed to the **left** of the UPS when facing the **front** of the units.

1 Install the foot to the transformer.





# Rear Panel Features



1	Voltage Selection Switch
2	Voltage Selection Switch cover
3	Input Circuit Breaker
4	20 A DP MCB for L6-20R output sockets
5	L6-20R output socket
6	Group 1 output sockets (5-20R)
7	Group 2 output sockets (5-20R)
8	20 A thermal circuit breaker for Group 2 output sockets
9	20 A thermal circuit breaker for Group 1 output sockets.
10	L6-30R output socket
11	L14-30R output socket
12	30 A DP MCB for L14-30R output socket
13	Transformer input cord



# Connection of Equipment and Startup instructions

## CAUTION

### RISK OF DAMAGE TO EQUIPMENT OR PERSONNEL

Disconnect the mains input circuit breaker before installing or servicing the UPS or transformer or connected equipment.

**Failure to follow these instructions can result in equipment damage and minor or moderate injury**

### SRTL5KTF

1. Be sure that the UPS output is turned off.
2. Be sure that the transformer input cord is unplugged.
3. Locate the screw securing the voltage selection switch cover and unfasten it to remove the cover.
4. Set the input voltage selection switch to match the utility voltage of 208 or 240 VAC. Default setting is 208 VAC.
5. If the utility voltage is 240 V, configure the UPS output for 240 V. Refer the UPS Operations Manual for details.
6. Install the voltage selection switch cover removed in step 3.
7. Connect the load equipment to the output sockets on the transformer.
8. Connect the transformer input cord into the appropriate L6-30R output socket on the UPS.
9. Turn on the output circuit breakers.
10. Turn on the input circuit breaker.
11. Turn on the UPS output.

## Troubleshooting

Use the table below to solve minor installation and operation problems. Refer to our Web site, [www.apc.com](http://www.apc.com) for assistance with complex problems.

Problem and/or Possible Cause	Solution
<b>No output voltage</b>	
Input circuit breaker has tripped.	Turn off the UPS output and turn it on again. Then turn on the input circuit breaker. If the input breaker trips again, contact Customer Support.
Output MCB is not on.	Turn on the output MCB.
Output MCB or thermal circuit breaker has tripped.	Turn on the output MCB or reset thermal circuit breaker.
<b>Output voltage value is not matching with nominal value.</b>	
Output voltage value is not matching with the nominal value.	Be sure that the voltage selector switch is set to the appropriate input voltage.

# Service

If the transformer requires service do not return it to the dealer. Instead, follow these steps:

1. Contact Customer Service through our web site, [www.apc.com/support](http://www.apc.com/support).
  - a. Note the model number of the transformer, the serial number, and the date purchased. If you call Customer Service, a technician will ask you to describe the problem and try to solve it over the phone, if possible. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
  - b. If the transformer is under warranty, repairs are free. If not, there is a repair charge.
2. Pack the transformer in its original packaging. If the original packing is not available, refer to the our web site, [www.apc.com/support](http://www.apc.com/support), for information about obtaining a new set.
  - a. Pack the transformer properly to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.
3. Mark the RMA# on the outside of the package.
4. Return the transformer by insured, prepaid carrier to the address given to you by Customer Service.

# Limited Warranty

Schneider Electric IT Corporation (SEIT), warrants its products to be free from defects in materials and workmanship for a period of five (5) years from the date of purchase. The SEIT obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. Repair or replacement of a defective product or parts thereof does not extend the original warranty period.

This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase. Products may be registered online at [warranty.apc.com](http://warranty.apc.com).

SEIT shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation, testing, operation or use of the product contrary to SEIT recommendations or specifications. Further, SEIT shall not be liable for defects resulting from: 1) unauthorized attempts to repair or modify the product, 2) incorrect or inadequate electrical voltage or connection, 3) inappropriate on site operation conditions, 4) Acts of God, 5) exposure to the elements, or 6) theft. In no event shall SEIT have any liability under this warranty for any product where the serial number has been altered, defaced, or removed.

**EXCEPT AS SET FORTH ABOVE, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, APPLICABLE TO PRODUCTS SOLD, SERVICED OR FURNISHED UNDER THIS AGREEMENT OR IN CONNECTION HEREWITH.**

**SEIT DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION AND FITNESS FOR A PARTICULAR PURPOSE.**

**SEIT EXPRESS WARRANTIES WILL NOT BE ENLARGED, DIMINISHED, OR AFFECTED BY AND NO OBLIGATION OR LIABILITY WILL ARISE OUT OF, SEIT RENDERING OF TECHNICAL OR OTHER ADVICE OR SERVICE IN CONNECTION WITH THE PRODUCTS.**

**THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES. THE WARRANTIES SET FORTH ABOVE CONSTITUTE SEIT SOLE LIABILITY AND PURCHASER EXCLUSIVE REMEDY FOR ANY BREACH OF SUCH WARRANTIES. SEIT WARRANTIES EXTEND ONLY TO ORIGINAL PURCHASER AND ARE NOT EXTENDED TO ANY THIRD PARTIES.**

**IN NO EVENT SHALL SEIT, ITS OFFICERS, DIRECTORS, AFFILIATES OR EMPLOYEES BE LIABLE FOR ANY FORM OF INDIRECT, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, ARISING OUT OF THE USE, SERVICE OR INSTALLATION OF THE PRODUCTS, WHETHER SUCH DAMAGES ARISE IN CONTRACT OR TORT, IRRESPECTIVE OF FAULT, NEGLIGENCE OR STRICT LIABILITY OR WHETHER SEIT HAS BEEN ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES. SPECIFICALLY, SEIT IS NOT LIABLE FOR ANY COSTS, SUCH AS LOST PROFITS OR REVENUE, WHETHER DIRECT OR INDIRECT, LOSS OF EQUIPMENT, LOSS OF USE OF EQUIPMENT, LOSS OF SOFTWARE, LOSS OF DATA, COSTS OF SUBSTITUANTS, CLAIMS BY THIRD PARTIES, OR OTHERWISE.**

**NOTHING IN THIS LIMITED WARRANTY SHALL SEEK TO EXCLUDE OR LIMIT SEIT LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM ITS NEGLIGENCE OR ITS FRAUDULENT MISREPRESENTATION OF TO THE EXTENT THAT IT CANNOT BE EXCLUDED OR LIMITED BY APPLICABLE LAW.**

To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Customers with warranty claims issues may access the SEIT worldwide customer support network through Web site: [www.apc.com](http://www.apc.com). Select your country from the country selection drop down menu. Open the Support tab at the top of the web page to obtain information for customer support in your region. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase.

# Schneider Electric

## Worldwide Customer Support

Customer support for this or any other Schneider Electric product is available at no charge in any of the following ways:

- Visit our web site, [www.apc.com](http://www.apc.com) to access documents in the APC Knowledge Base and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)  
Connect to localized web site for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**  
Global support searching APC Knowledge Base and using e-support.
- Contact the Customer Support Center by telephone or e-mail.
  - Local, country specific centers: go to **www.apc.com/support/contact** for contact information.
  - For information on how to obtain local customer support, contact the Schneider Electric representative or the distributor from whom you purchased your APC product.

Customer support and warranty information are available on our web site, **www.apc.com**.