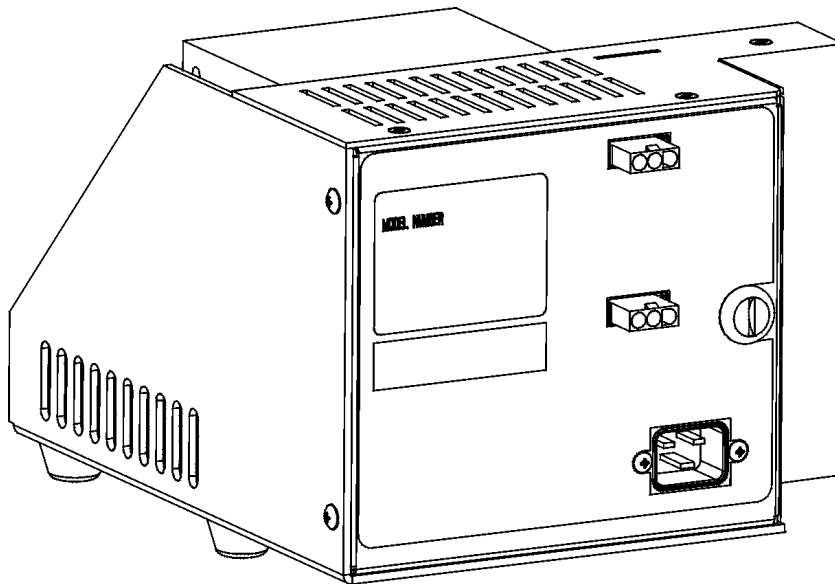




Broadband CTSP-TM Series Transformers

Total System Power Transformer Module 15/22 A

User Manual



Chapter 1 General Information

The CTSP Transformer Module (CTSP-TM), can be used as a stand-alone, nonstandby power supply or combined with the CTSP Electronics Module (CTSP-EM), and batteries to form an uninterruptible power supply.

U.S. Patent No. 6,400,043

Important Safety Instructions – Save These Instructions

This Safety Guide contains important instructions that should be followed during installation and maintenance of the APC equipment and batteries. It is intended for APC customers who setup, install, relocate, or maintain APC equipment.

Changes and modifications to this unit not expressly approved by APC could void the warranty.

Failure to observe these warnings may result in serious injury, death or damage to the equipment.

Electrical Warnings

- Do not work alone under hazardous conditions.
- Do not handle any metallic connector before the power has been disconnected.
- Servicing this equipment may require working with protective covers removed and utility power connected. Use extreme caution during these procedures.
- High current through conductive materials could cause severe burns.
- When grounding cannot be verified, disconnect the equipment from the utility power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.
- Check that the power cord(s), plug(s), and sockets are in good condition.
- Replacement of fuses or other parts must be with identical types and ratings. Substitution of nonidentical parts may cause safety and fire hazards.

Overhead Warnings

Never stand below anything while it is hoisted. Always wear a hard hat.

Lifting Warnings

Transformer modules are heavy. Use proper lifting techniques and equipment to avoid injury.

Specifications

Environmental Specifications

Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Humidity	5% to 95% noncondensing within enclosure

Physical Specifications

Characteristic	Specification
Height	8.6" (21.8 cm)
Width	10.2" (26 cm)
Depth 15 A 22 A 15 A CTSPTM90156240-1 15 A CTSPTM90156120-1	11" (28 cm) 12.5" (32 cm) 12.5" (32 cm) 12.5" (32 cm)
Weight 15 A 22 A	57 lbs (25.9 kg) 82 lbs (40.8 kg)

Electrical Specifications

Input Characteristic	Input Specification	
Input Utility Inrush Current 15 A 22 A	120 VAC <180 A peak @ 120 VAC	230 VAC/240 VAC <90 A peak @ 240 VAC <150 A peak @ 240 VAC
Input Voltage Range 15 A 22 A	95 VAC – 134 VAC	190 VAC - 254 VAC 216 VAC - 254 VAC
Maximum Input Operating Current 15 A 22 A	16 A	13 A 13 A

Output Characteristic	Output Specification
Output Voltage (nominal) 15/22 A 60 Hz 15 A 50 Hz 15 A-1 60 Hz	60 /75 /87 VAC 60 VAC 89 VAC
Output Voltage Regulation 15 A 22 A 15 A-1	±3% @ 77°F (25°C): ±5% @ full temperature range ±4% @ 77°F (25°C) ±5% @ full temperature range ±2% @ 77°F (25°C): ±5% @ full temperature range
Short Circuit Current Max 15 A 22 A	30 A rms 50 A rms

Chapter 2 Installation and Maintenance

Unpacking

Inspect the module upon receipt. Notify the carrier if there is damage.

The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents. The package contains the transformer module, a line cord, an input voltage range selector where applicable, and product documentation.

Models Supported

CTSPTM90156240	TSP Xfmr Mod 240 V, 60 Hz, 60/75/87 VAC, 15 A
CTSPTM90156120	TSP Xfmr Mod 120 V, 60 Hz, 60/75/87 VAC, 15 A
CTSPTM90226240	TSP Xfmr Mod 240 V, 60 Hz, 87 VAC, 22 A
CTSPTM60155230	TSP Xfmr Mod 230 V, 50 Hz, 60 VAC, 15 A
CTSPTM90156240-1	TSP Xfmr Mod 240 V, 60 Hz, 89 VAC, 15 A
CTSPTM90156120-1	TSP Xfmr Mod 120 V, 60 Hz, 89 VAC, 15 A
CTSPTM90156120-2	TSP Xfmr Mod 120 V, 60 Hz, 60/75/87 VAC, 15 A
CTSPTM90156240-2	TSP Xfmr Mod 120 V, 60 Hz, 60/75/87 VAC, 15 A
CTSPTM90226240-2	TSP Xfmr Mod 120 V, 60 Hz, 60/75/87 VAC, 22 A
CTSPTM90156240-3	TSP Xfmr Mod 240 V, 60 Hz, 60/75/87 VAC, 15 A
CTSPTM90156120-3	TSP Xfmr Mod 120 V, 60 Hz, 60/75/87 VAC, 15 A

Installing the CTSP-TM

Caution: Only trained service personnel should install and maintain the CTSP-TM.

Prior to installing the CTSP-TM, an enclosure must be installed and utility line voltage must be routed to the enclosure. Local, state, federal and/or National Electric Code (NEC) regulations regarding location, permits and electrical wiring must be adhered to.

Danger: Before placing the CTSP-TM on the enclosure shelf, ensure that the input utility circuit breaker is OFF.

Failure to adhere to this warning may result in death, serious injury or equipment damage.

Caution: When placing the CTSP-TM on the shelf ensure adequate space for proper airflow. APC recommends that there be at least 3 inches of clearance on all sides and above the module.

Failure to adhere to this warning may result in equipment damage.

Do not operate the CTSP-TM where the temperature and humidity are outside the specified limits. See *Specifications* in this manual.

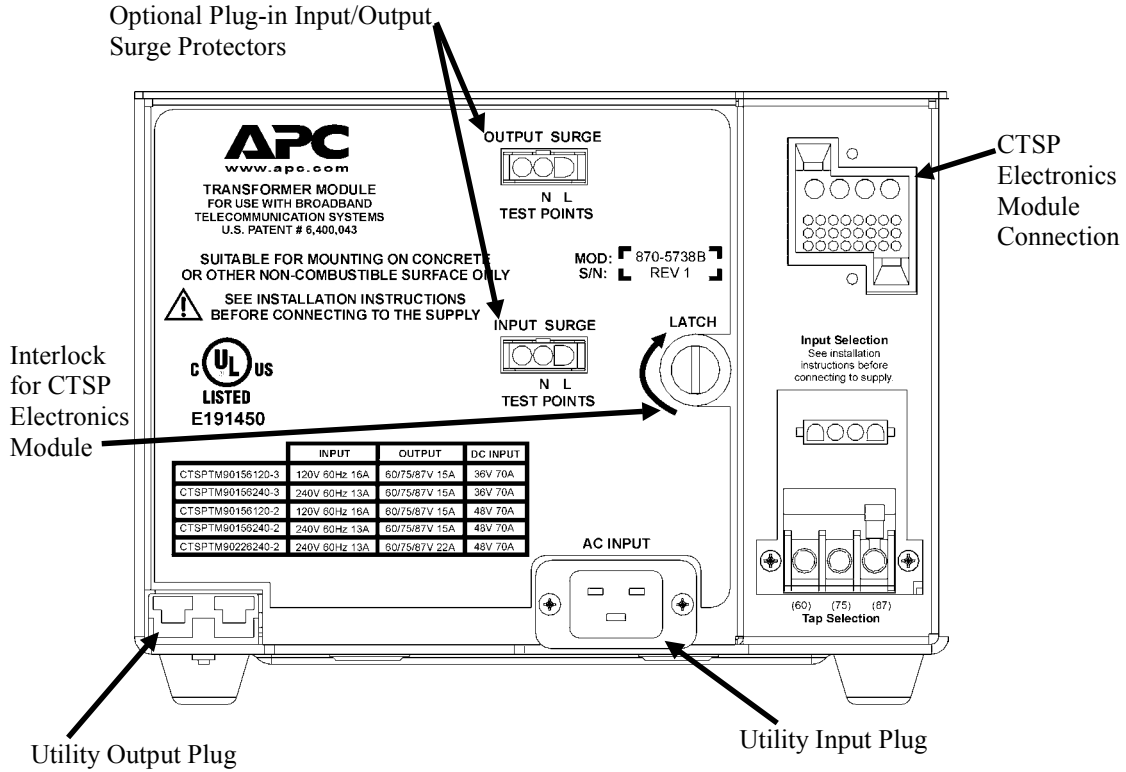
Always transport the CTSP-TM and CTSP-EM modules individually.

The latch is not designed to support the weight of the modules.

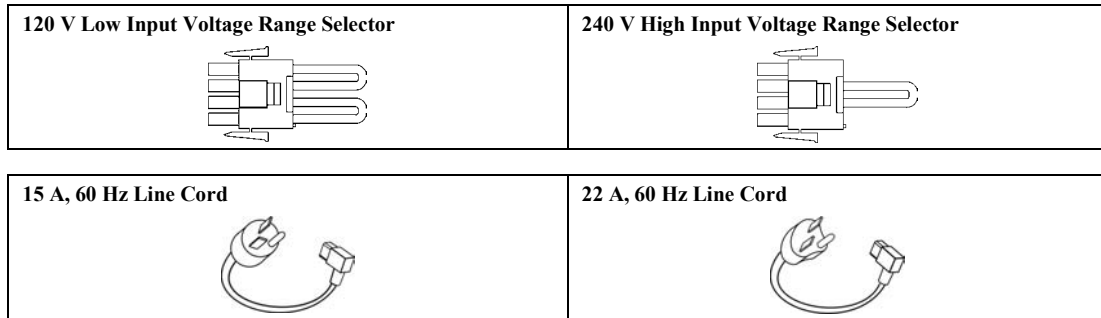
Failure to adhere to this warning may result in damage to equipment.

120V, 60Hz, 15A Transformer Module

240V, 60Hz, 15A Transformer Module



1. **NOTE:** Verify that the voltage selector (if applicable), and line cord supplied are correct for your system configuration.
2. Plug the voltage selector into the Input Selection receptacle located on the front of the unit.



3. If installing this CTSP-TM into an APC enclosure, the appropriate plug is available on the utility output line cord. If installing the unit into some other enclosure, it may be necessary to obtain the proper adapter plug. Refer to the APC Web site, www.apc.com.

Where applicable, output voltage selectors are located on the front panel of the CTSP-TM.

Select the desired output voltage by plugging the output selection connector into Tap 1 (60 VAC), Tap 2 (75 VAC), or Tap 3 (87 VAC).

NOTE: If the user selects a 60 VAC or 75 VAC output, the output VA rating will be limited.

CTSPTM90156240-1

CTSPTM90156120-1: Input voltage selector is connected to the transformer.

CTSPTM90226240

CTSPTM60155230: Input/Output voltage selection is not an option on these units.

4. Using the line cord supplied, connect the module to the utility line voltage at the input/output receptacle in the enclosure.
5. Apply power to the module by turning the input utility circuit breaker ON. Using an rms voltmeter, verify correct output for your system configuration.

If output voltage is incorrect, immediately turn the input circuit breaker OFF and review the installation procedures to verify correct configuration.

6. Install the CTSP-EM, if it is being utilized. Refer to the CTSP Electronics Module User Manual for instructions.
7. *CTSPTM90156120-3*
CTSPTM90156240-3
CTSPTM90226240-2: Install the transponder mounting plate, where applicable. Refer to the APC Web site, www.apc.com or contact your dealer for specific transponder compatibility.
8. Close and secure the enclosure.

Chapter 3 Service, Contact and Warranty Information

Service

APC makes every effort to ensure parts and equipment arrive in working condition. Occasionally, it may be necessary to return parts or equipment that are not in working condition.

If the unit requires service follow these steps:

1. Contact APC Customer Support through the APC Web site, www.apc.com.
 - Note the product model number, the serial number, and the date purchased. If you call APC Customer Support, a technician will ask you to describe the problem and try to solve it over the phone. If this is not possible the technician will issue a Returned Material Authorization Number (RMA#).
 - If the product is under warranty, repairs are free. If not, there is a repair charge.
 - Procedures for servicing or returning products may vary internationally. Refer to the APC Web site for country specific instructions.
2. Pack the product in its original packaging.
 - Pack the unit 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 unit by insured, prepaid carrier to the address given to you by Customer Support.

How to Contact APC

Refer to the APC Web site, www.apc.com.

Regulatory Approvals



Limited Warranty

American Power Conversion (APC) warrants its products to be free from defects in materials and workmanship for a period of five years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. 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. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

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