

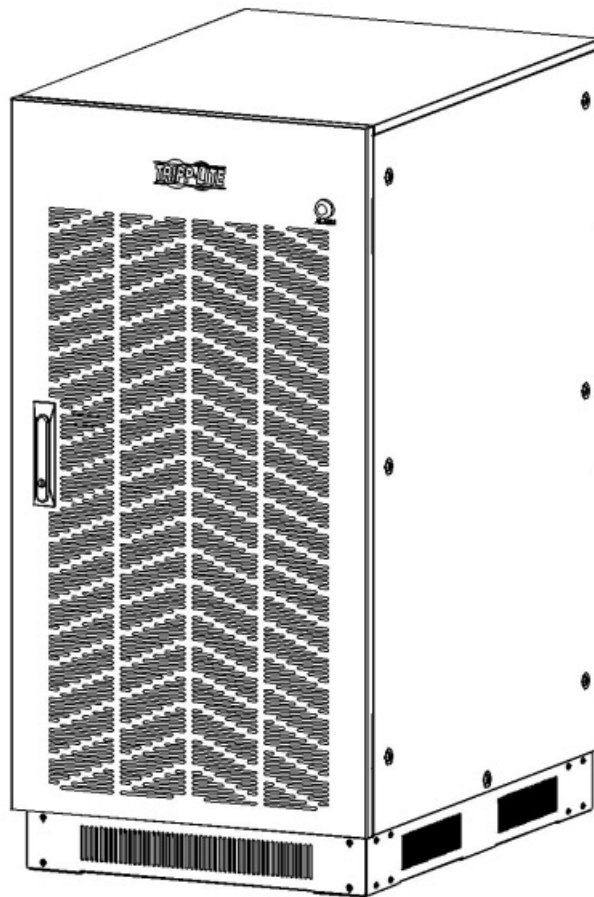


TRIPP-LITE S3MT-Series 3-Phase Input Isolation Transformers Owner's Manual

[Home](#) » [Tripp Lite](#) » TRIPP-LITE S3MT-Series 3-Phase Input Isolation Transformers Owner's Manual 



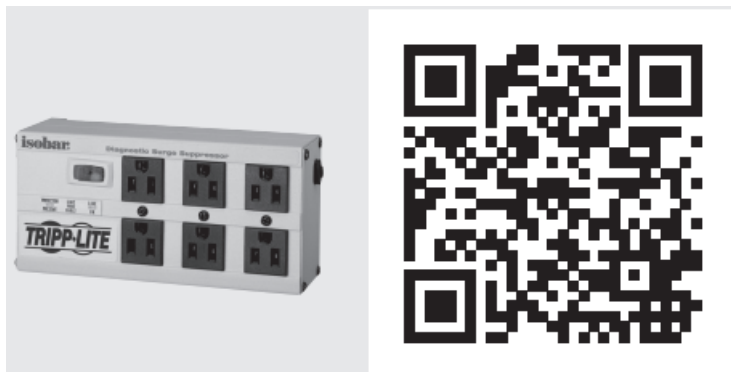
Owner's Manual
S3MT-Series 3-Phase
Input Transformers:
480V-208V and 600V-208V
Models:
S3MT-60K480V, S3MT-100K480V, S3MT-60K600V, S3MT-100K600V



WARRANTY REGISTRATION

Register your product today and be automatically entered to win an ISOBAR® surge protector in our monthly drawing!

tripplite.com/warranty



<http://www.tripplite.com/warranty>

Contents

- [1 Introduction](#)
- [2 Key Features](#)
- [3 Typical Configurations](#)
- [4 Important Safety Warnings](#)
- [5 Installation](#)
- [6 Operation](#)
- [7 Specifications](#)
- [8 Storage](#)
- [9 Warranty and Regulatory Compliance](#)
- [10 Documents / Resources](#)
 - [10.1 References](#)
- [11 Related Posts](#)

Introduction

Tripp Lite's S3MT-60K480V and S3MT-100K480V input isolation transformers provide 480V (Delta) to 208V (Wye) stepdown and Isolation protection to the connected UPS and its load. The S3MT-60K600V and S3MT-100K600V Input isolation transformers provide 600V (Delta) to 208V (Wye) step-down and isolation protection to the connected PS and its load.

The transformer has input isolation to mitigate utility line surges and spikes, while protecting the UPS. The transformer includes a built-in breaker at the transformer output side for protection. The ball-bearing fans maintain quiet operation (four fans for 60K models, three large fans for 100K models). An overheat-sensing relay and switch combine with a warning light to provide over-temperature warning and overheating protection. The UPS system's small footprint and quiet acoustic profile enable installations with minimal space and noise impact. All transformer models feature rugged stainless steel housings with front panels similar to the S3M-Series 208V 3-Phase UPS line.

UPS Model	Series Number	Capacity	Description
S3MT-60K480V	AG-050D	60kW	480V to 208V Input Isolation Transformer
S3MT-100K480V	AG-0510	100kW	480V to 208V Input Isolation Transformer
S3MT-60K600V	AG-050F	60kW	600V to 208V Input Isolation Transformer
S3MT-100K600V	AG-050E	100kW	600V to 208V Input Isolation Transformer

Typical applications

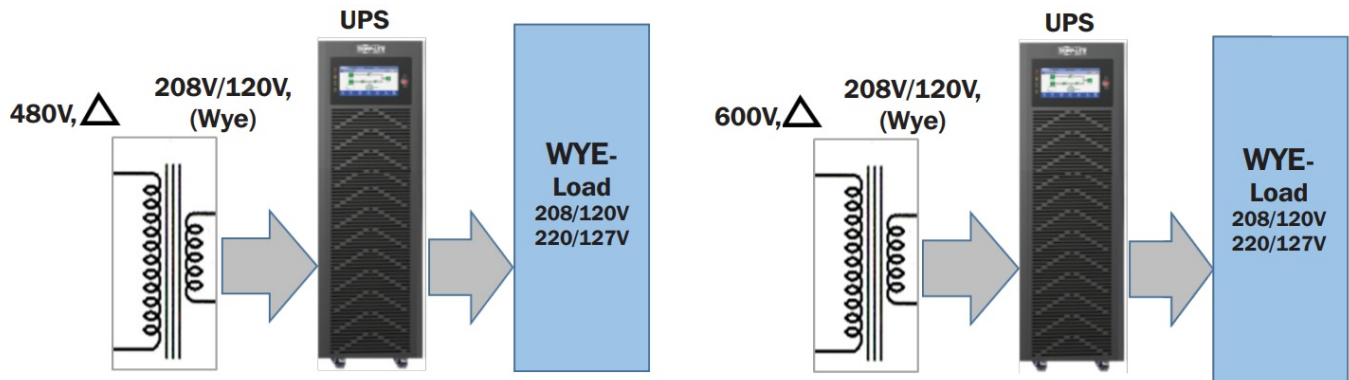
4-Wire (3Ph+N+PE) IT equipment loads in government, manufacturing, hospitals, industrial settings, and corporate settings that have 480V or 600V electrical mains and 208V/120V or 220V/127V IT Loads.

Key Features

- Isolation protection to the UPS input, with stepped-down input from 480V (Delta) to 208V/120V (Wye) or 600V (Delta) to 208V/120V (Wye)
- Circuit breaker and overheating protection

- 96.5% to 97.5% efficiency
- Wide input voltage and frequency operating range: Voltage: -20% to +25% @ 100% load and 40-70 Hz
- Insulation class: 180°C material
- Reliability-tested according to ISTA-3B for vibration, shock, drop (tip test)
- UL and CSA TUV certifications
- Rugged stainless steel housing shipped ready for installation
- 2-year warranty

Typical Configurations



These 480V Input Transformers may be purchased separately or as part of kit model with a Tripp Lite S3M Series 3-Phase UPS:

Input Transformer Models		Maximum Constant Load	Compatible with 208V 3Ph UPS	Kit Models: UPS + Transformer	
				Kit Models	Kit Models Include
480V	S3MT-60K480V	60kW	50-60kW UPS	S3M50K-60K4T	S3M50K UPS + S3MT-60K480V
				S3M60K-60K4T	S3M60K UPS + S3MT-60K480V
	S3MT-100K480V	100kW	80-100kW UPS	S3M80K-100K4T	S3M80K UPS + S3MT-100K480V
				S3M100K-100K4T	S3M100K UPS + S3MT-100K480V
600V	S3MT-60K600V	60kW	50-60kW UPS	S3M50K-60K6T	S3M50K UPS + S3MT-60K600V
				S3M60K-60K6T	S3M60K UPS + S3MT-60K600V
	S3MT-100K600V	100kW	80-100kW UPS	S3M80K-100K6T	S3M80K UPS + S3MT-100K600V
				S3M100K-100K6T	S3M100K UPS + S3MT-100K600V

Important Safety Warnings

SAVE THESE INSTRUCTIONS

This manual contains important instructions for models S3MT-60K480V / S3MT-100K480V / S3MT-60K600V / S3MT-100K600V that should be followed during the installation and maintenance of the transformer and UPS.



CAUTION! Risk of electrical shock! Hazardous live parts inside this unit are energized from the transformer even when the breaker is turned off.



WARNING! The unit is intended for installation in a controlled environment.



CAUTION! A transformer can present a risk of electric shock and a high short circuit current. The following precaution should be observed when working on the transformer:

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.

To reduce the risk of electric shock, disconnect the transformer and UPS from the main supply before performing maintenance or service.

Servicing of the 3-phase transformer and UPS should be performed by Tripp Lite certified personnel with knowledge of the 3-phase transformer and UPS and all required precautions.

The transformer is extremely heavy. Caution should be taken in moving and positioning equipment. The instructions contained within this manual are important and should be closely followed at all times during installation and follow-up maintenance of the 3-phase transformer and UPS.



CAUTION!

The transformer has a dangerous level of heat. If the transformer's front-panel red LED indicator is on, the unit's outlets may have a dangerous level of heat.

All servicing on this equipment must be carried out by Tripp Lite-certified service personnel. Before conducting any maintenance, repair, or shipment, first, ensure everything is turned off completely and disconnected.

Special Symbols – The following symbols are used on the transformer to warn you of precautions:



RISK OF ELECTRIC SHOCK – Observe the warning that risk of electric shock is present.



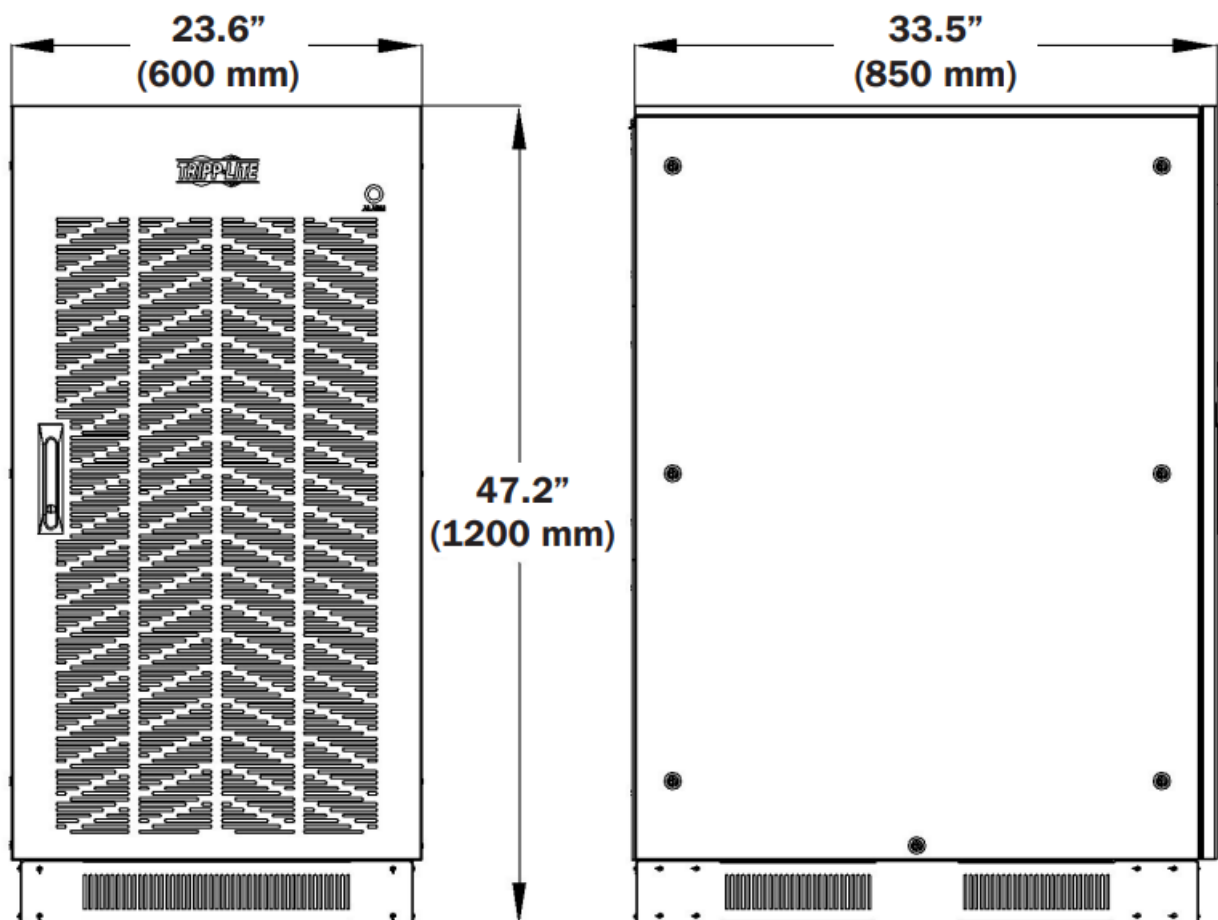
CAUTION – REFER TO THE OWNER'S MANUAL for information regarding important operating and maintenance instructions.



SAFE GROUNDING TERMINAL – Indicates THE primary safe ground.

Installation

3.1 Mechanical Data



Physical Requirements

Leave space around the cabinet for operation and ventilation (Figure 3-1):

1. Leave at least 23.6 in. (600 mm) space in the front for ventilation
2. Leave at least 20 in. (500 mm) space at the right and left for operation

3. Leave at least 20 in. (500 mm) space at the back for ventilation

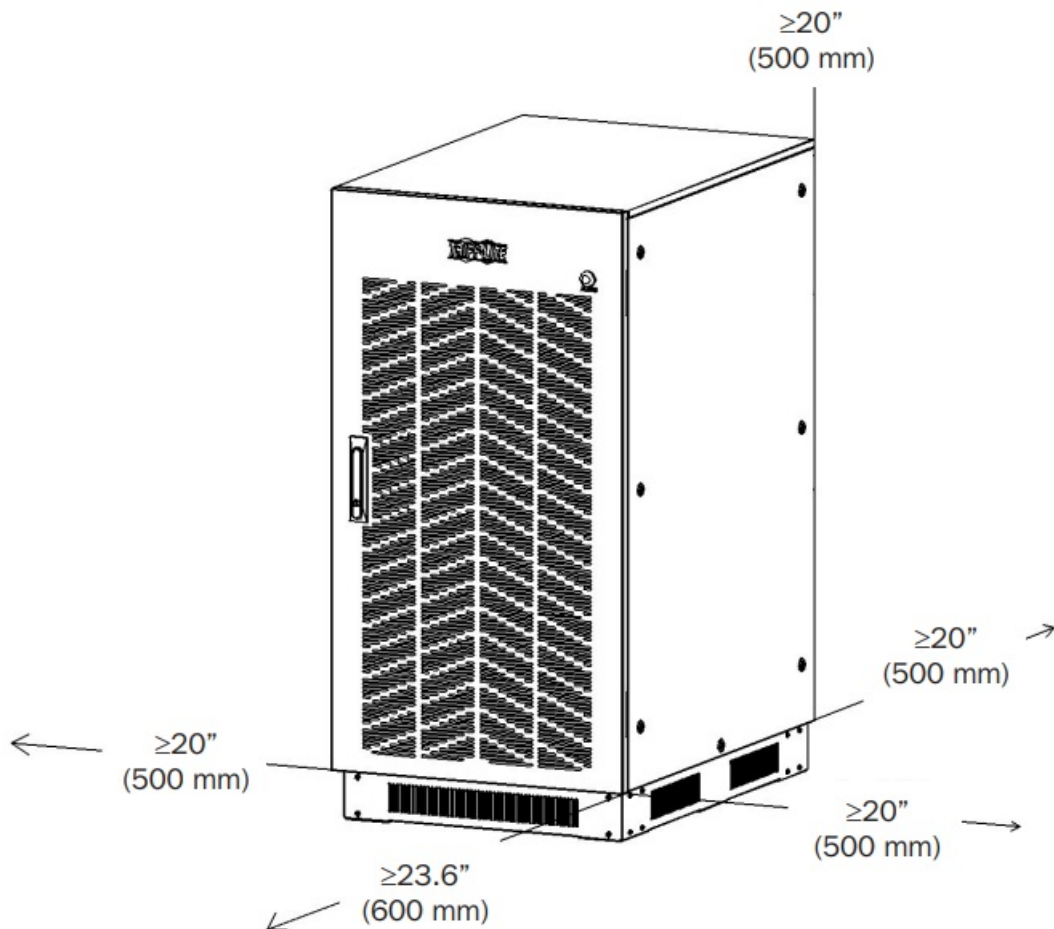


Figure 3-1

3.2 Package Inspection

1. Don't lean the transformer cabinet when removing it from the packaging.
2. Check the appearance to see if the transformer cabinet was damaged during transport. Do not power on the transformer cabinet if any damage is found. Contact the dealer immediately.
3. Check the accessories against the packing list and contact the dealer in case of missing parts.

3.3 Unpacking the UPS

1. Hold the sliding plate steady. Cut and remove the binding straps (Figure 3-2).
2. Remove the plastic bag and the outer carton (Figure 3-3).

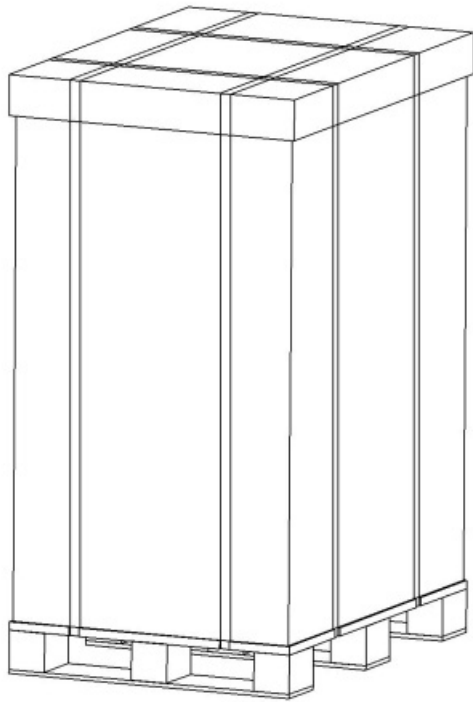


Figure 3-2

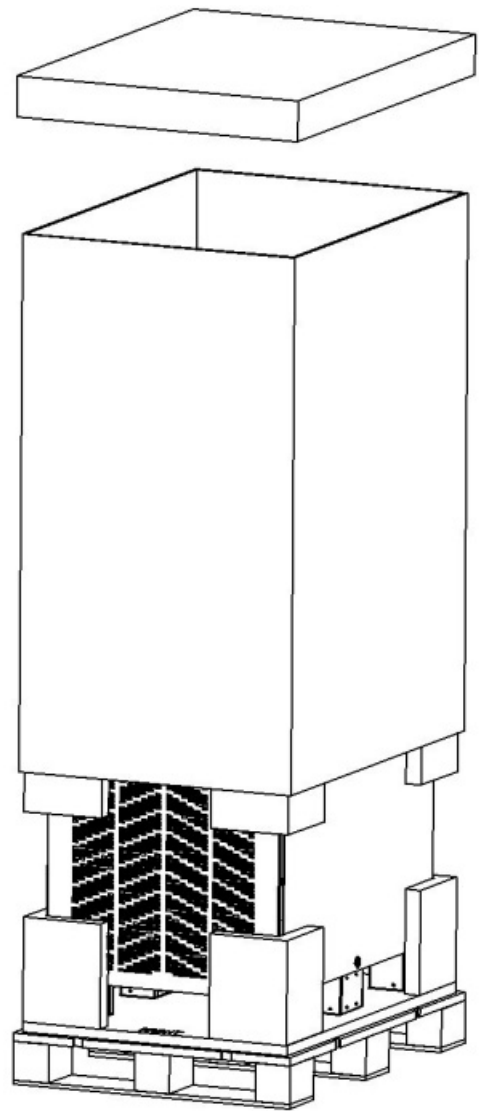


Figure 3-3

3. Remove the foam packing material and the beveled pallet (Figure 3-4).

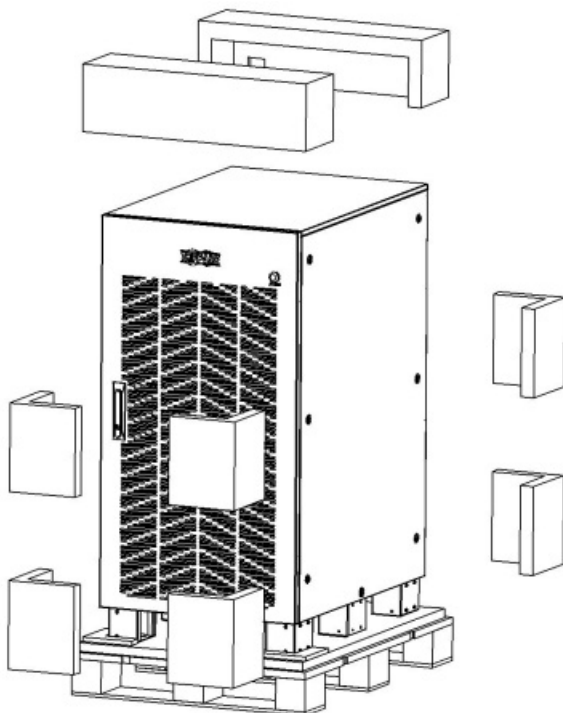


Figure 3-4

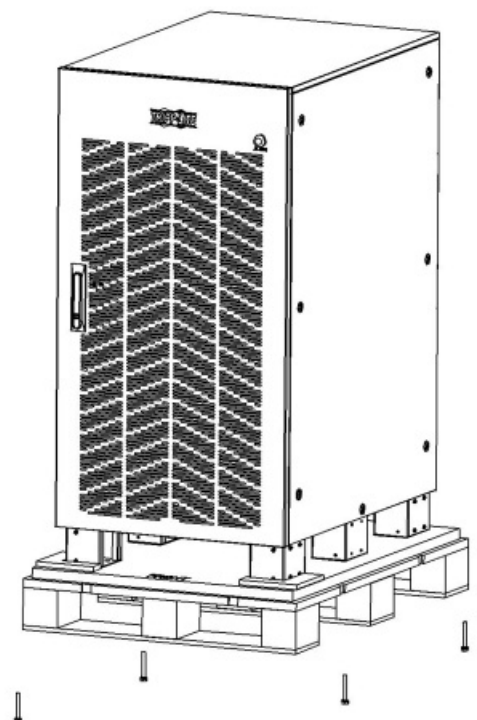


Figure 3-5

4. Remove the screws securing the cabinet to the pallet (Figure 3-5).

5. Lift the cabinet with a forklift and remove the packing pallets (Figure 3-6).

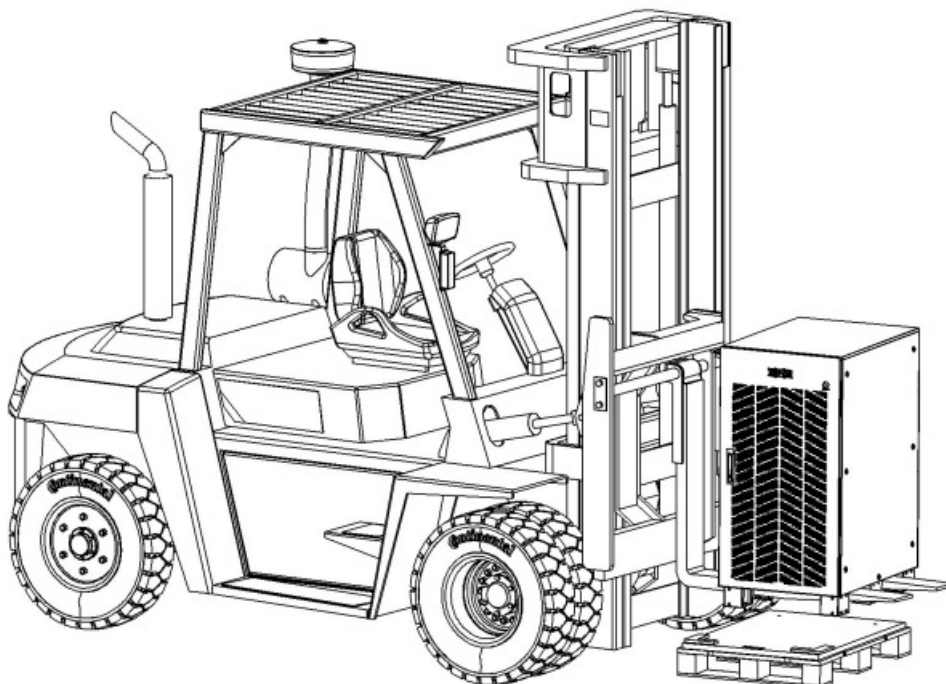


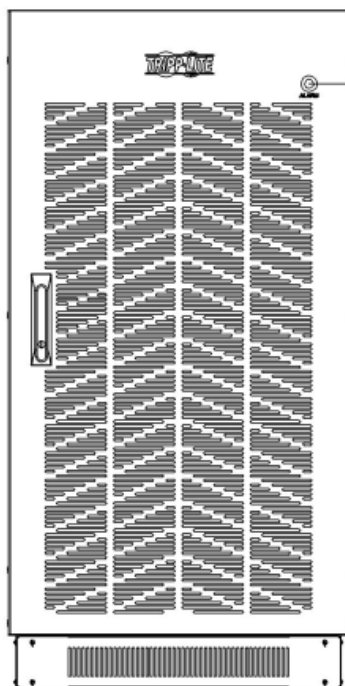
Figure 3-6

3.4 Package Contents

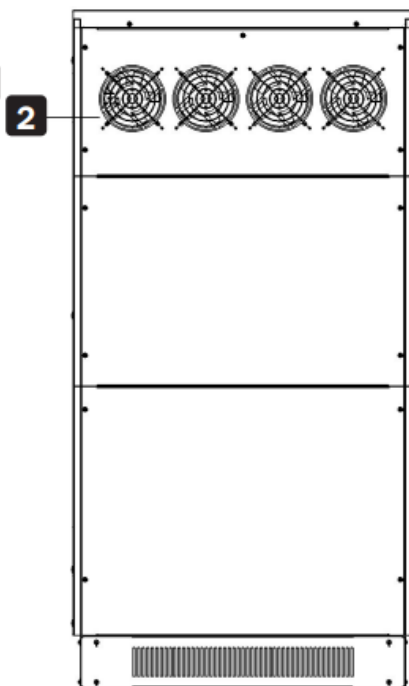
Contents	TL P/N	S3MT-60K480V	S3MT-60K600V	S3MT-100K480V	S3MT-100K600V
Input Transformer		1	1	1	1
Owner's Manual	933D05	1	1	1	1
Bottom Skirts	103922A	2	2	2	2
Bottom Skirts	103923A	2	2	2	2
Screws for Skirts	3011C3	24	24	24	24

3.5 Cabinet Overview

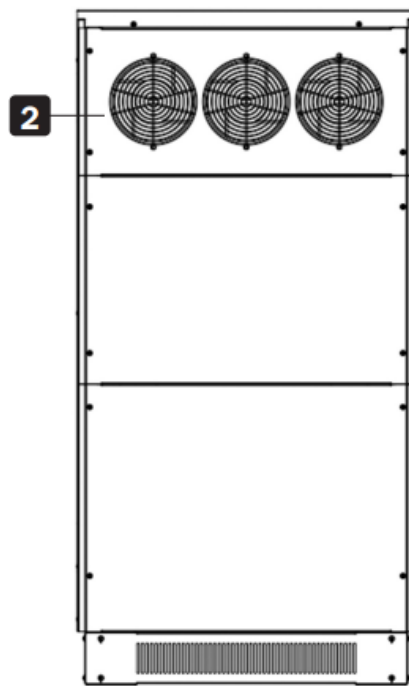
1. Over-Temperature Alarm LED
2. Cooling Fans
3. Breaker with Trip
4. Cabling Terminals
5. Bottom Entry Knockouts (for Power Cable Entry and Exit)



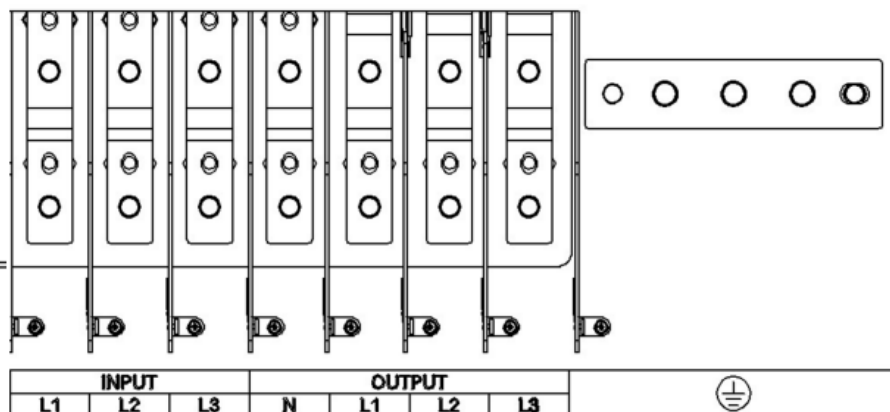
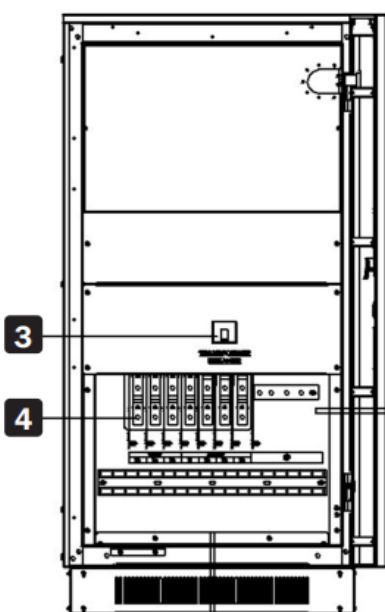
Front View



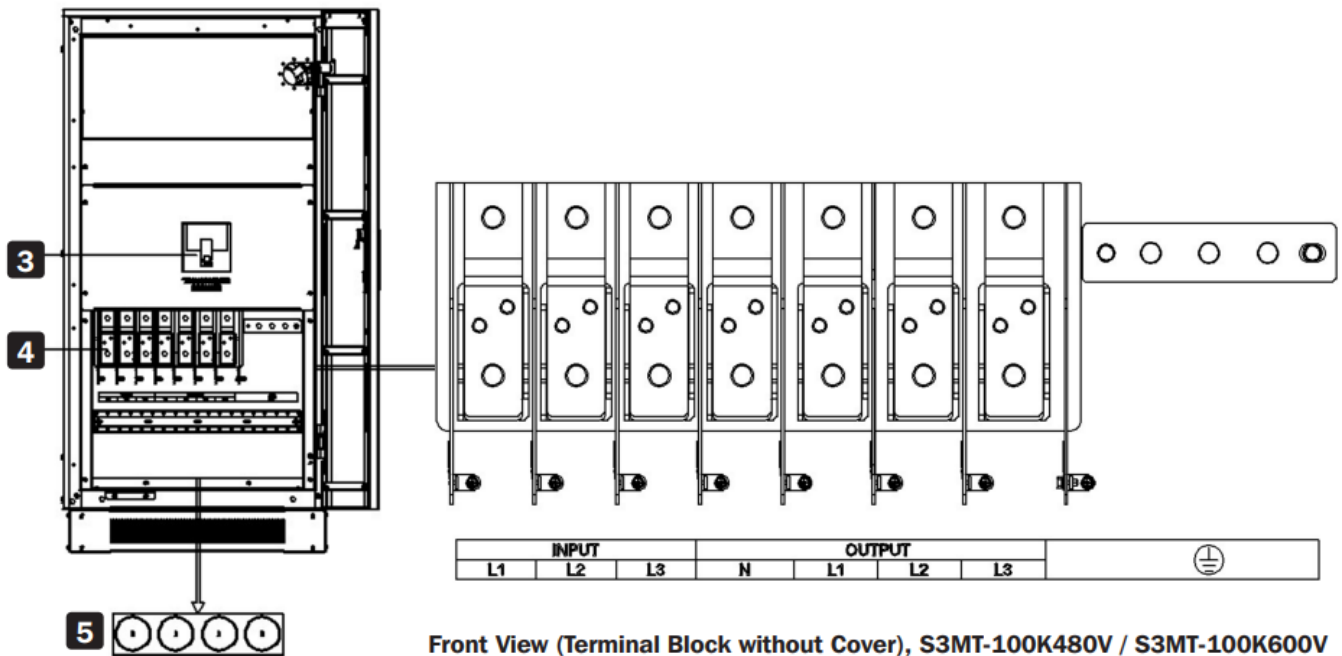
Rear View,
S3MT-60K480V / S3MT-60K600V



Rear View,
S3MT-100K480V / S3MT-100V600V



Front View (Terminal Block without Cover), S3MT-60K480V / S3MT-60K600V



3.6 Power Cables

The cable design shall comply with the voltages and currents provided in this section, and in accordance with local electrical codes.



WARNING!

UPON STARTUP, ENSURE YOU ARE AWARE OF THE LOCATION AND OPERATION OF THE EXTERNAL ISOLATORS ARE CONNECTED TO THE UPS INPUT/BYPASS SUPPLY OF THE UTILITY DISTRIBUTION PANEL. ENSURE THESE SUPPLIES ARE ELECTRICALLY ISOLATED AND POST ANY NECESSARY WARNING SIGNS TO PREVENT INADVERTENT OPERATION.

Cable Sizes

UPS Model	Cable Sizes (THHW wiring at 75°C)									
	AC Input		AC Output		Neutral		Grounding		Lug	
	Gauge	Torque	Gauge	Torque	Gauge	Torque	Gauge	Torque		
S3MT- 60 K480V	50mm ² Max.		50mm ² Max.		70mm ² x2 Max.		50mm ² Max.			
	50mm ² x2	25N•m	50mm ² x2	25N•m	70mm ² x2	25N•m	50mm ² x2	25N•m	M8	
S3MT- 60 K600V	35mm ² Max.		50mm ² Max.		70mm ² x2 Max.		50mm ² Max.			
	50mm ² x2	25N•m	50mm ² x2	25N•m	70mm ² x2	25N•m	50mm ² x2	25N•m	M8	
S3MT- 100 K480V	70mm ² x2 Max.		70mm ² x2 Max.		120mm ² x2 Max.		95mm ² Max. 120mm ²			
	120mm ² x2	50N•m	95mm ² x2	50N•m	120mm ² x2	50N•m		50N•m	M10	
S3MT- 100 K600V	50mm ² Max.		70mm ² x2 Max.		120mm ² x2 Max.		95mm ² Max. 120mm ²			
	70mm ² x2	50N•m	95mm ² x2	50N•m	120mm ² x2	50N•m		50N•m	M10	

3.7 Transformer-to-UPS Connection Line Diagram

Connections are shown below for the cabinet with a built-in input isolator transformer, breakers and the red over-temperature LED.

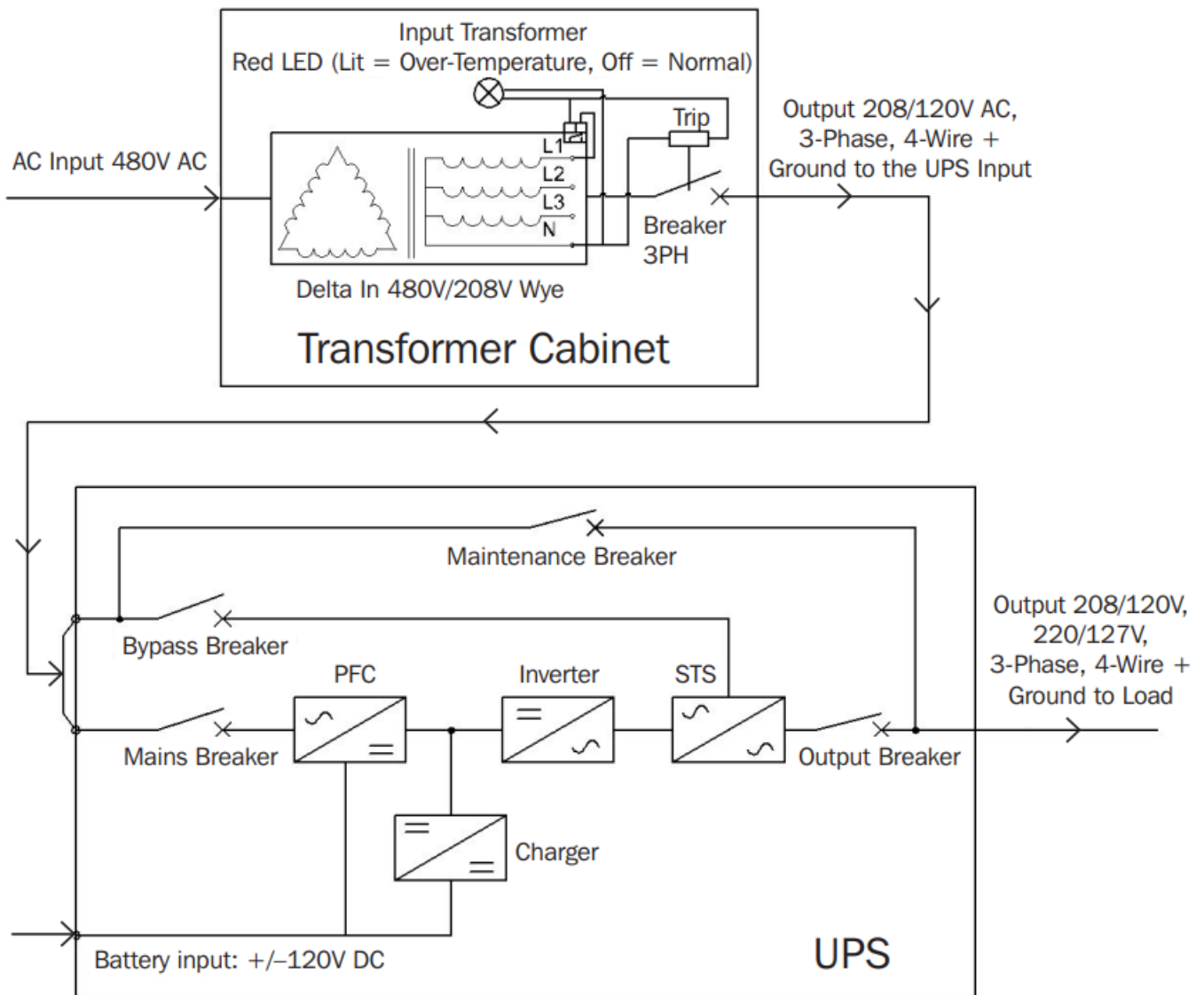


Figure 3-7: Connection Line Diagram for S3MT-60K480V / S3MT-100K480V

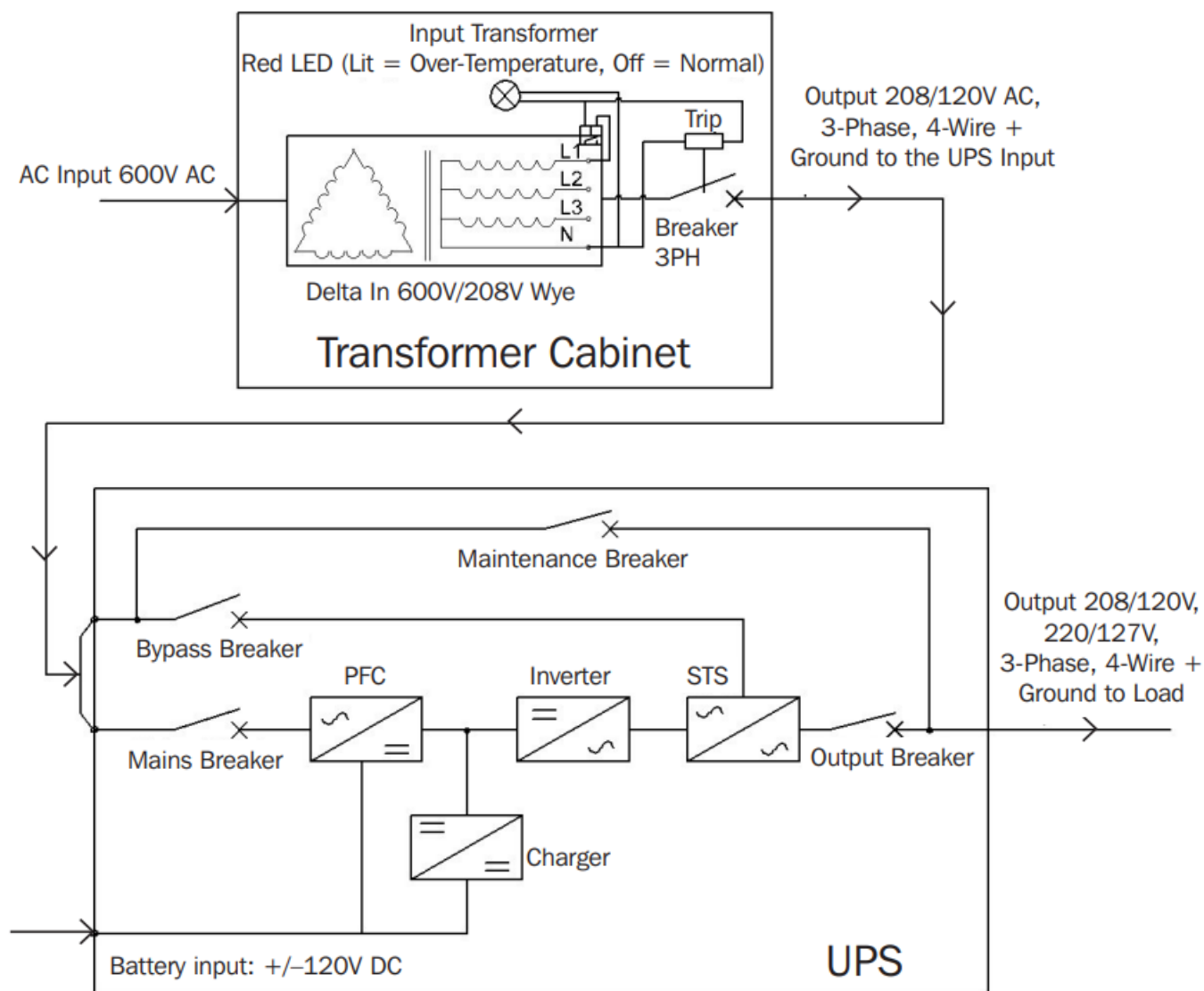


Figure 3-8: Connection Line Diagram for S3MT-60K600V/ S3MT-100K600V

3.8 Multiple Transformer Connections



WARNING: The transformer output neutral is not bonded to chassis ground. Please provide a means to connect the transformer chassis ground to the transformer output neutral.

Note: The transformer chassis ground must be connected to earth ground.



IMPORTANT: You may view and/or download this manual from the tripplite.com website to view the cable connections in colors.

3.8.1 Connections for S3MT-60K480V/S3MT-60K600V to S3M50K or S3M60K UPS

Transformer input is Delta 3-Wire (3Ph + Ground) And transformer output is Wye 4-Wire (3Ph + N + Ground).

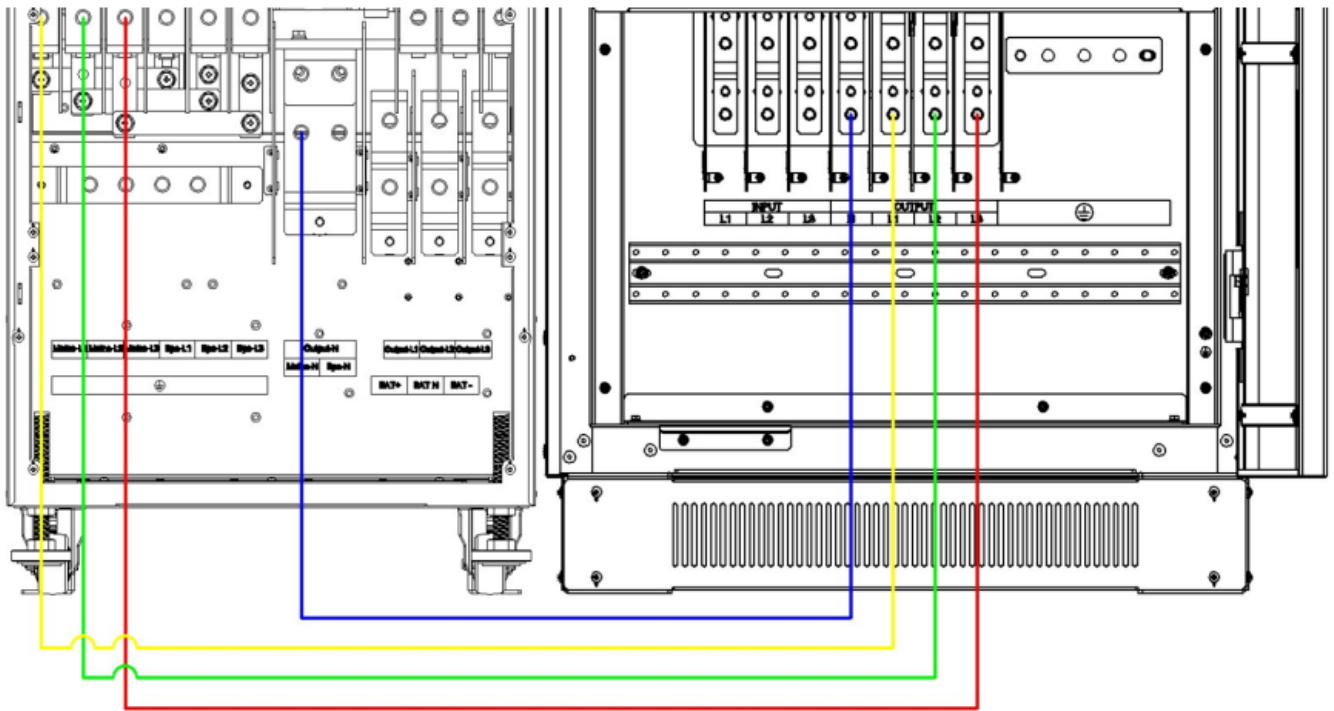


Figure 3-8: UPS (Rear View)

Transformer Cabinet (Front View)

3.8.2 Connections for S3MT-100K480V/S3MT-100K600V to S3M80K or S3M100K UPS

Transformer input is Delta 3-Wire (3Ph + Ground) And transformer output is Wye 4-Wire (3Ph + N + Ground).

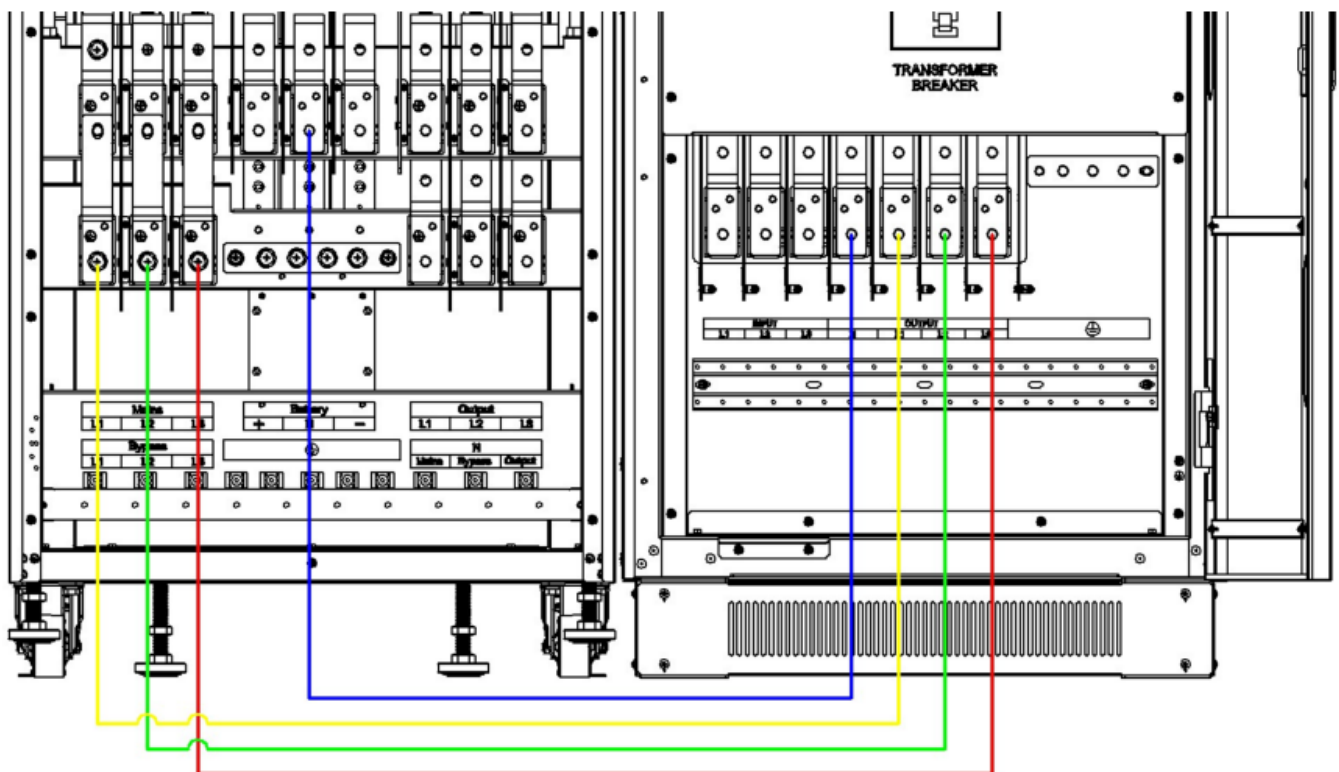


Figure 3-9: UPS (Rear View)

Transformer Cabinet (Front View)

Operation



WARNING: It is not advised to connect two UPS in parallel when using individual transformers for

each UPS.

4.1 Over-Temperature Protection

4.1.1 Over-Temperature Red Warning LED Light

The transformer includes a warning LED light on the top portion of the front panel. The light turns ON when the transformer reaches a temperature of $160^{\circ}\text{C} \pm 5^{\circ}\text{C}$, i.e. a range of 155°C to 165°C (311°F to 329°F). The light turns OFF when the transformer cools to a temperature of $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$, i.e. a range of 120°C to 130°C (248°F to 266°F).

4.1.2 Over-Temperature Protection Relay and Thermal Switch

The transformer includes an over-temperature protection relay and thermal switch to protect the transformer from overheating. At temperatures of $160^{\circ}\text{C} \pm 5^{\circ}\text{C}$, i.e. a range of 155°C to 165°C (311°F to 329°F), an over-temperature protection relay and the thermal switch will activate and will open the output breaker of the transformer. Once the transformer temperature has cooled down and the warning LED light has turned OFF, you may manually re-activate (close) the output breaker to restart normal operation.

Specifications

Models	S3MT-60K480V	S3MT-60K600V	S3MT-100K480V	S3MT-100K600V
Description	3-Phase 60k Input Isolation Transformer, Delta 480V/208V Wye	3-Phase 60k Input Isolation Transformer, Delta 600V/208V Wye	3-Phase 100k Input Isolation Transformer, Delta 480V/208V Wye	3-Phase 100k Input Isolation Transformer, Delta 600V/208V Wye
Transformer Type	Dry-Type			
Input				
Input Voltage	480V	600V	480V	600V
Input Voltage Operational Range and De-Rating	-45%, +25% at 40 % Load -20%, +25% at 100 % Load			
Input Amps	101A	81A	168A	134A
Input Connections	3-Wire (L1, L2, L3, +PE)			
Input Configuration	Delta			
Input Connection Type	Copper Bar			

Rated AC Input Frequency	50/60 Hz			
Frequency Range and Derating	40~70 Hz			
Voltage Selection	No			
Voltage Drop: Ratio Output, No Load to Full Load	≤ 3%			
Inrush Current	≤900A (10 ms)	≤710A (10 ms)	≤3330A (10 ms)	≤1160A (10 ms)
Input Isolation	Yes			
Output				
VA Rating	60kVA	60kVA	100kVA	100kVA
Transformer Output Voltage	208/120V, (3-Phase, 4-Wire)			
Output Amps	225A		374A	
Transformer Output Breaker Rating	250A	250A	400A	400A
Output Watts Detailed	60,000W	60,000W	100,000W	100,000W
Output Connections	4-Wire (L1, L2, L3, +PE, +N)			
Output Connection Type	Copper Bar			
Output Configuration	Wye			

Input Transformer Output Isolation	Yes	
Operation		
Over-Temperature Warning LED (Red)	Turns ON at 160°C ±5°C, i.e. a range of 155°C to 165°C (311°F to 329°F) Turns OFF at 125°C ±5°C, i.e. a range of 120°C to 130°C (248°F to 266°F)	
Over-Temperature Protection Reset Device	Transformer output turns OFF at temperatures of 160°C ±5°C, i.e. a range of 155°C to 165°C (311°F to 329°F). The transformer output breaker can be turned ON manually when the warning light turns OFF.	
Insulation Class	180°C	
Temperature Rise	125°C	
Full Load Efficiency	96.50%	96.70%

Models	S3MT-60K480V	S3MT-60K600V	S3MT-100K480V	S3MT-100K600V
Half Load Efficiency	97.50%		97.70%	
Physical Info				
Unit Height	47.2 in. (1200 mm)			
Unit Width	23.6 in. (600 mm)			
Unit Depth	33.5 in. (850 mm)			
Unit Weight	789 lb. (358 kg)	789 lb. (358 kg)	1078 lb. (489 kg)	1049 lb. (476 kg)

Floor Loading	702 (kg/m²)	702 (kg/m²)	959 (kg/m²)	933 (kg/m²)
Unit Carton Height	55.4 in. (1407 mm)			
Unit Carton Width	29.9 in. (760 mm)			
Unit Carton Depth	38.8 in. (985 mm)			
Unit Carton Weight	855 lb. (388 kg)	899 lb. (408 kg)	1202 lb. (545 kg)	1102 lb. (500 kg)
Tip-n-Tell Label Included on Overpack Box	Yes			
Environment				
Audible Noise at 1 m	65 dB max.			
RH Humidity, Non-Condensing	95%			
Online Thermal Dissipation, Full Load (BTU/hr)	7167	7167	11263	11263
Storage Temperature	5°F to 140°F (-15°C to 60°C)			
Operating Temperature	32°F to 104°F (0°C to 40°C)			
Operating Elevation	<1000 m for nominal power (over 1000 m, the power de-rating is 1% per 100 m)			
Mechanical				
Transformer Windings	Aluminum			

Cabinet Material	Cold Rolled Galvanized Steel (SGCC)
Cabinet Color	RAL 9011
Fan (Type/Quantity)	60K Models: 4x Ball Bearing, 120 mm (576 total CFM) 100K Models: 3x Ball Bearing, 172 x 152 mm (723 total CFM)
Reliability	
Vibration	ISTA – 3B
Shock	ISTA – 3B
Drop	ISTA – 3B (Tip Test)
Agency Approvals	
Approving Agency	cTUVs
Agency Standard Tested	UL 1778 5th Edition
Canadian Approvals	CSA 22.2-107.3-14
CE Approvals	N/A
EMI Approvals	N/A
RoHS/REACH	Yes

Storage

Before storing the isolation transformer, ensure all connections have been disconnected and all breakers are turned OFF. Replace all input or output access covers to avoid damaging any contacts. The transformer must be stored in a clean, secure environment with temperatures between 5°F to 140°F (-15°C to 60°C) and relative humidity less than 90% (non-condensing).

Store the transformer in its original shipping container, if possible.



WARNING: The transformer(s) is/are very heavy. Before storing the transformer, make sure to take into account the floor loading (kg/m²) requirements listed in section 5. Specifications under “Physical Info” to store safely.

Warranty and Regulatory Compliance

Limited Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship for a period of 2 years from the date of initial purchase. If the product should prove defective in material or workmanship within that period, Seller will repair or replace the product, in its sole discretion. Service under this Warranty includes parts only. International customers should contact Tripp Lite support at intlservice@tripplite.com. Continental USA customers should contact Tripp Lite Customer Service at 773-869-1234 or visit tripplite.com/support/help

THIS WARRANTY DOES NOT APPLY TO NORMAL WEAR OR TO DAMAGE RESULTING FROM ACCIDENT, MISUSE, ABUSE, OR NEGLIGENCE. SELLER MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY EXPRESSLY SET FORTH HEREIN. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ALL IMPLIED WARRANTIES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY OR FITNESS, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE; AND THIS WARRANTY EXPRESSLY EXCLUDES ALL INCIDENTAL AND CONSEQUENTIAL DAMAGES. (Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights, and you may have other rights, which vary from jurisdiction to jurisdiction.) Tripp Lite; 1111 W. 35th Street; Chicago IL 60609; USA

WARNING: The individual user should take care to determine prior to use whether this device is suitable, adequate, or safe for the use intended. Since individual applications are subject to great variation, the manufacturer makes no representation or warranty as to the suitability or fitness of these devices for any specific application.

Product Registration

Visit tripplite.com/warranty today to register your new Tripp Lite product. You will be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!*

* No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

WEEE Compliance Information for Tripp Lite Customers and Recyclers (European Union)



Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.


Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice. Photos and illustrations may differ slightly from actual products.



Manufacturing
Excellence.

1111 W. 35th Street, Chicago, IL 60609 USA • tripplite.com/support
20-08-282 93-3D05_RevA

Documents / Resources

	<p>TRIPP-LITE S3MT-Series 3-Phase Input Isolation Transformers [pdf] Owner's Manual S3MT-60K480V, S3MT-100K480V, S3MT-60K600V, S3MT-100K600V, S3MT-Series 3-Phase Input Isolation Transformers, S3MT-Series, 3-Phase Input Isolation Transformers</p>
---	---

References

- [Eaton - Power and Connectivity Solutions](#)
- [Help Center | Eaton](#)
- [Help Center | Eaton](#)
- [Product Registration | Eaton](#)