



# SmartOnline<sup>®</sup> SUT 3-Phase UPS System

## 20/30/40/60 kVA

208/220V (Ph-Ph) 3-Phase, 4-Wire

- Voltage and Frequency Independent
- Unity (1.0) Output Power Factor
- High Efficiency
- Parallel Architecture
- Intelligent LCD Interface



Today's constantly connected, heavily digitized and power-hungry commercial environments demand an ever-increasing supply of clean, stable and reliable electricity to maintain 24x7x365 operations.

Tripp Lite's SmartOnline SUT Series UPS systems provide the highest level of power protection and conditioning to mission-critical systems. The SUT Series features voltage and frequency independent (VFI) true on-line, double-conversion 3-phase operation, meeting the standards of VFI-SS-111, the highest classification.

The SUT UPS systems deliver pure sine wave output to all connected loads, correcting power fluctuations and keeping loads running during blackouts, power sags and surges. Incoming utility power is also conditioned, ensuring that harmonics, frequency fluctuations and other power abnormalities do not damage connected hardware or cause system downtime.

In the event of a power outage, SUT Series UPS systems immediately transfer to battery power with zero transfer time, supporting critical equipment until generator power starts up and stabilizes. SUT UPS systems also offer graceful, automatic shutdown of the load to prevent data loss or corruption.

The SUT Series features four rated power levels and paralleling capability for up to four units to meet the most demanding load requirements. Plus, 93% efficiency during normal operation and 98% efficiency in economy mode reduce energy losses and cooling expenses for cost-saving operation.

### Common Applications

IT Networks | Electromedical | Telecom  
Industrial | Process Control | Emergency Systems  
Any Critical Application

## SmartOnline SUT Features

Tripp Lite's SUT UPS provides the highest level of power protection to mission-critical systems.

### MAXIMUM RELIABILITY

#### Voltage & Frequency Independent (VFI)

True on-line double-conversion technology provides the highest level of UPS protection available.

#### Wide Input Voltage Window

Regulates voltage without using battery to maximize battery life and prolong system lifetime.

#### Parallel Capability

Combine up to four UPS systems for redundancy or to increase power capacity.

### HIGH PERFORMANCE

#### Zero Transfer Time

Seamless transfer from utility to battery ensures no impact on load behavior following a power loss.

#### Internal Batteries

Space-saving batteries provide ample time to perform a graceful shutdown of the connected load following a prolonged power failure.

#### High Charging Capacity

Minimizes recharge time, allowing the UPS to ride through multiple power failures in rapid succession.

#### Battery Self-Test

Ensures no surprises.

### OPTIMUM EFFICIENCY

#### Unity Output Power Factor

A 1.0 power factor provides more actual power to the load so that more equipment may be protected with a single UPS.

#### ECO Mode Operation

Offers 98% efficiency to reduce operation costs. More than 93% efficiency in line mode means fewer power losses, reducing cooling costs and environmental impact.

#### Low Input Total Harmonic Distortion (THDi)

No interference with connected equipment and eliminates the need for oversized generators.

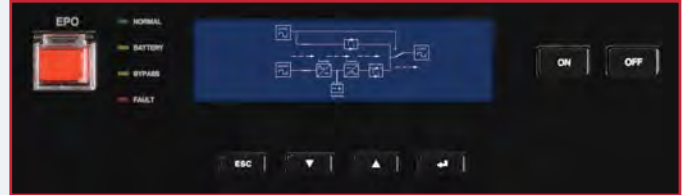
#### High Input Power Factor

Minimizes installation costs.

### HIGH CONFIGURABILITY

#### Intelligent LCD Control Panel

Provides immediate UPS status and allows for enhanced custom user configuration.



*Intelligent LCD Control Panel*

#### Connectivity

Connect simple local or remote management accessories using Tripp Lite's free PowerAlert® Power Management Software download. Also provides volt-free contacts.

#### Accessory Card Slots

Slots support a variety of remote management cards (sold separately) for comprehensive monitoring and control over a network. Compatible with SNMP and MODBUS protocols.

#### Emergency Power Off (EPO)

Executes immediate power shutoff for maximum site safety.



*SUT30K Front and Rear Panel*

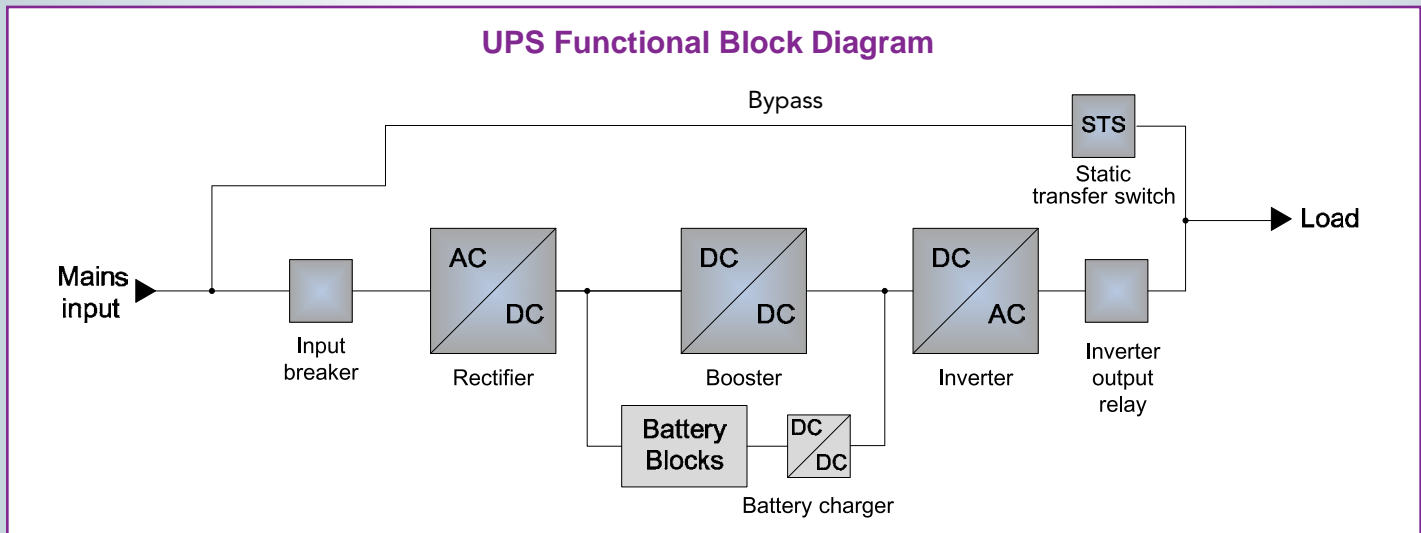
## SmartOnline SUT Technical Specifications

OVERVIEW				
MODEL	SUT20K	SUT30K	SUT40K	SUT60K
CAPACITY	20kVA / 20kW	30kVA / 30kW	40kVA / 40kW	60kVA / 60kW
TOPOLOGY	Voltage and Frequency Independent (VFI) True On-Line Double Conversion			
INPUT				
Voltage	208/220V (Ph-Ph); 120/127V (Ph-N)			
Voltage Range	125 – 253V (Ph-Ph)			
Phase	3-phase, neutral and ground			
Operating Frequency	50/60 Hz (selectable)			
Frequency Range	40 – 70 Hz			
Power Factor	>0.99			
THDi	<4%			<3%
Inverter Bridge	IGBT technology			
OUTPUT				
Voltage	208/220V (Ph-Ph); 3-ph, 4-wire, neutral reference to bypass neutral			
AC Voltage Regulation	+/- 1%			
Frequency	50/60 Hz (selectable)			
Frequency Range	+/- 0.05 Hz			
Overload (AC & Battery Mode)	105%: continuous			
	106% - 125%: 10 min.			
	126% - 150%: 1 min.			
	>150%: 0.5 sec.			
Crest Factor	3:1			
Harmonic Distortion	<2%	<2%	<2%	<3%
Transfer Time (Line to/from Battery)	0 ms			
Transfer Time (Inverter to/from Bypass)	0 ms			
Output Waveform	Pure sine wave			
BYPASS				
Automatic Bypass	Standard			
Transfer Time	<1 ms			
Default Bypass Voltage Tolerance	+/- 15%			
Overload	105%: continuous			
	106% - 125%: 10 min.			
	126% - 150%: 1 min.			
	>150%: 0.5 sec.			
BATTERY				
Battery Type	Maintenance-free sealed valve-regulated lead acid (VRLA)			
Battery Capacity	12V 9Ah			
Quantity	48	72	72	96
Battery Charging Capacity	1-10A (default 5A)	1-10A (default 7.5A)	1-20A (default 7.5A)	1-20A (default 10A)
Float Voltage	163.2 VDC +/- 2V			
Boost Voltage	168 VDC +/- 2V			
End of Discharge Voltage	120 VDC +/- 2V			
Battery Storage Time	6 months (without recharge, 77°F/25°C)			
BATTERY RUNTIME				
50% / 75% / 100% Load	15 / 9 / 5 min.	15 / 9 / 6 min.	11 / 6 / 3.5 min.	9.5 / 5 / 3 min.
ENVIRONMENT				
Efficiency (Line Mode)	>93%			
Efficiency (ECO Mode)	98%			
Operating Temperature	32° to 104°F (for optimal battery life, 62° to 77°F); 0° to 40°C (for optimal battery life, 17° to 25°C)			
Operating Humidity	0 to 95% (non-condensing)			
Operating Altitude	<3280 ft. (1% deration per 328 ft. above 3280 ft.); <1000 m (1% deration per 100 m above 1000 m)			
Audible Noise @ 3 ft. / 1 m	<65 dBA		<70 dBA	
Protection Degree	IP20			

## SmartOnline SUT Technical Specifications (continued)

MODEL	SUT20K	SUT30K	SUT40K	SUT60K
<b>MANAGEMENT</b>				
Multifunctional LCD			Standard	
RS-232 (DB9 Serial)			Standard	
Relay Interface			Standard	
SNMP			Option	
MODBUS			Option	
Frequency Converter Mode			Programmable	
Paralleling Capability			Up to 4	
EPO (Emergency Power Off)			Standard	
<b>STANDARDS</b>				
Safety	UL 1778; CSA C22.2 No. 107.3-14			
EMC	FCC Part 15 Class A; IEC/EN62040-2; IEC/EN61000-4-2; IEC/EN61000-4-3			
Surge	IEC/EN61000-4-5 level 4			
Conduction Immunity	IEC/EN61000-4-6			
Approvals	UL/cUL			
<b>PHYSICAL</b>				
Unit Dimensions (H x W x D)	54.3 x 20.5 x 31.5 in. (1380 x 521 x 800 mm)		69.3 x 20.5 x 31.5 in. (1760 x 521 x 800 mm)	
Unit Weight	767 lb. (348 kg)	926 lb. (420 kg)	1076 lb. (488 kg)	1244 lb. (564 kg)
Shipping Dimensions (H x W x D)	62 x 28 x 39 in. (1570 x 720 x 1000 mm)		76 x 28 x 39 in. (1920 x 720 x 1000 mm)	
Shipping Weight	855 lb. (388 kg)	1014 lb. (460 kg)	1186 lb. (538 kg)	1355 lb. (615 kg)
Color	RAL 9005 (Jet Black)			
<b>WIRING SPECIFICATIONS</b>				
AC Input Cable*	2 AWG (25 mm <sup>2</sup> )	1/0 AWG (50 mm <sup>2</sup> )	3/0 AWG (95 mm <sup>2</sup> )	250 kcmil (120 mm <sup>2</sup> )
Output Cable*	2 AWG (25 mm <sup>2</sup> )	1/0 AWG (50 mm <sup>2</sup> )	3/0 AWG (95 mm <sup>2</sup> )	250 kcmil (120 mm <sup>2</sup> )
Battery Input Cable*	1 AWG (35 mm <sup>2</sup> )	1/0 AWG (50 mm <sup>2</sup> )	3/0 AWG (95 mm <sup>2</sup> )	250 kcmil (120 mm <sup>2</sup> )
Tightening Torque	130 in. lb. (14.7 N·m)	130 in. lb. (14.7 N·m)	130 in. lb. (14.7 N·m)	130 in. lb. (14.7 N·m)
Input Breaker	75A (3-pole x 1)	125A (3-pole x 1)	150A (3-pole x 1)	225A (3-pole x 1)

### UPS Functional Block Diagram



#### ABOUT TRIPP LITE

Since 1922, Tripp Lite has established a global reputation for quality manufacturing, superior value and excellent service. Tripp Lite makes over 4,000 products to power, protect and connect electronic equipment, including UPS systems, replacement batteries, power distribution units, rack systems, cooling solutions, surge protectors, KVM switches, cables, display solutions, power strips and inverters.



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