

## SmartOnline 240/120V 20kVA 18kW On-Line Double-Conversion UPS, Extended Run, SNMP, Webcard, USB, DB9 Serial, Hardwire

MODEL NUMBER: **SU20KRTHWTFASSM**



### Description

Tripp Lite SU20KRTHWTFASSM 20,000VA / 20kVA / 18,000 watt online, double-conversion UPS system offers complete power protection for critical server, network and telecommunications equipment in a 16U rack/tower configuration pre-assembled into a Tripp Lite 25U rack enclosure. This system delivers complete N+1 redundancy when used at loads up to 50%, and non-redundant operation at loads between 50 and 100%. Fault-tolerant auto-bypass prevents unexpected service interruptions during UPS overload or internal fault conditions. Included parallel PDU with manual bypass switching enables hot-swappable replacement of all major UPS system components in both N+1 and combined operating modes. Enhanced availability, fault tolerance and simple hot-swap replacement options make this UPS ideal for advanced networking applications in data centers, computer rooms, network closets and rugged industrial locations.

### Features

- Tripp Lite SU20KRTHWTFASSM 20kVA, 20,000VA / 18,000 watt on-line, double-conversion UPS system in a 16U total rack/tower configuration (max output de-rates to 18kVA / 16kW when operated at 208V nominal input voltage)
- Pre-built into a 25U SmartRack enclosure with 6U of open rack space able to accommodate two optional additional BP240V10RT3U external battery packs
- Offers enhanced fault-tolerance and reliability with N+1 configuration support and hot-swappable whole UPS replacement options
- Unique configuration ties input, output and data connections of two standard 10kVA UPS systems via detachable parallel PDU to offer 20kVA non-redundant operation and automatic N+1 redundancy at load levels of 50% and lower
- Included Parallel PDU with manual bypass switching enables hot-swappable replacement of either power module at any supported load level, with no interruption to connected equipment
- Hardwire input and output connections
- Fault tolerant electronic bypass maintains utility output during a variety of UPS fault conditions
- Full-time active power conditioning provides clean, continuous dual-conversion AC output free of voltage fluctuations, power interruptions and line noise

### Highlights

- 20kVA / 20,000VA / 18,000W on-line double-conversion UPS
- 240/120V 60Hz output; Economy mode option
- Hot-swap power and battery modules, N+1 fault tolerance at loads up to 50%
- USB, RS232 & EPO ports; pre-installed SNMPWEBCARD network interfaces
- Front panel LEDs with detailed LCD monitoring and control screen
- Expandable runtime with optional external battery packs
- Pre-assembled 16U configuration built into a 25U rack enclosure
- Hardwire input and output

### Package Includes

- Two SU10000RT3UPM UPS power modules
- Two BP240V10RT3U battery packs
- One SU20KXFMRT4U 120V transformer
- SUPDMB20KHW parallel PDU with Bypass switch
- Pre-installed in a Tripp Lite 25U rack enclosure
- PowerAlert software and complete cabling



- Double-conversion operation converts raw input from AC to DC, then resynthesizes output power back to perfect sine wave AC with enhanced protection from harmonic distortion, fast electrical impulses and other hard-to-solve power problems not addressed by other UPS types
- Maintains full-time sine wave output within 2% of 240/120V nominal at 60Hz during brownouts as low 100V and overvoltages as high as 300V
- Expandable runtime is supported with optional BP240V10RT3U; BP240V557C-1PH; BP240V787C-1PH; BP240V1037C-1PH; BP240V1407C-1PH external battery packs
- Some external battery configurations require the use of Tripp Lite's External Battery Configuration Software (see manual)
- Highly efficient operation in optional economy mode significantly reduces BTU heat output and operating energy costs
- Battery independent restart ensures automatic UPS power-up without user interaction after lengthy power outages, even when batteries are expired and require replacement
- Rack / tower configuration installs in 16 total rack spaces (16U)
- PowerAlert monitoring software offers detailed site power and UPS updates with support for safe auto-shutdown of connected systems as UPS batteries become depleted
- Includes Free PowerAlert monitoring software packages; PowerAlert LOCAL for desktops and small business networks, PowerAlert NSA (Network Shutdown Agent) for larger networks and PowerAlert NMS (Network Management System) for monitoring up to 250 SNMP-enabled UPS, PDU and other networking devices
- Supports detailed monitoring of equipment load levels, self-test data and utility power conditions via built-in RS-232 and USB interfaces
- HID-compliant USB interface enables integration with built-in power management and auto shutdown features of Windows and Mac OS X
- Pre-installed SNMPWEBCARD (one per 10kVA power module) offers communications and control via secure remote web and network interfaces
- Supports Emergency Power Off (EPO) via built-in interface
- Front panel LEDs and LCD readout with scroll controls and password option supports visual monitoring of all major UPS functions and advanced UPS settings for charge level, nominal voltage selection, frequency conversion and other operational parameters
- LED / LCD display panel rotates for viewing in rackmount or tower configurations
- Network-grade AC surge and noise suppression
- Industrial mode option (factory preset) enables supports high current startup loads by momentarily switching to bypass mode in response to short duration overload conditions
- External battery packs are field replaceable and hot swappable
- \$250,000 Ultimate Lifetime Insurance (U.S., Canada, and Puerto Rico only)

## Specifications

OUTPUT	
Output Capacity Details	Output de-rates to 18kVA / 16kW with 208V nominal input voltage; Supports up to 105% load continuously in double conversion mode, 106 to 125% for 1 minute, 126% to 150% for 30 seconds; Loads over 150% trigger immediate bypass mode operation to support loads directly from mains power; Double conversion mode is automatically restored as load levels are reduced to 95% or less
Output Volt Amp Capacity (VA)	20000
Output kVA Capacity (kVA)	20
Output Watt Capacity (Watts)	18000
Output kW Capacity (kW)	18
Power Factor	0.9
Crest Factor	3:1
Nominal Output Voltage(s) Supported	120V; 240V



Nominal Voltage Details	Included step-down transformer supports 120V output
Frequency Compatibility	60 Hz
Frequency Compatibility Details	Output frequency regulation +/- 0.05Hz (free running)
Output Voltage Regulation (Line Mode)	+/- 2%
Output Voltage Regulation (Economy Line Mode)	+/- 10%
Output Voltage Regulation (Battery Mode)	+/- 2%
Output Receptacles	Hardwire
Output AC Waveform (AC Mode)	Sine wave
Output AC Waveform (Battery Mode)	Pure Sine wave
<b>INPUT</b>	
Rated input current (Maximum Load)	98A
Nominal Input Voltage(s) Supported	208V AC; 240V AC
UPS Input Connection Type	Hardwire
UPS Input Connection Description	3 wire single phase input (L1, L2, G)
Recommended Electrical Service	120A @ 200V-240V (L, N, PE), or 125A @ 200V, 208V, or 240V (L1, L2, G)
Input Phase	Single-Phase
<b>BATTERY</b>	
Full Load Runtime (min.)	4.3 minutes (18,000 watts)
Half Load Runtime (min.)	12.5 minutes (9000 watts)
Expandable Battery Runtime	Runtime is expandable with external battery packs
External Battery Pack Compatibility	<a href="#">BP240V10RT3U</a> ; <a href="#">BP240V557C-1PH</a> ; <a href="#">BP240V787C-1PH</a> ; <a href="#">BP240V1037C-1PH</a> ; <a href="#">BP240V1407C-1PH</a>
Expandable Runtime Description	For best results, add external batteries in multiples of two so that both included 10kVA power modules have an equal number and type of connected battery packs
DC System Voltage (VDC)	240
Battery Recharge Rate (Included Batteries)	6 hours from 10% to 90% (typical, full load discharge)
Battery Replacement Description	Hot-swappable, user replaceable external battery packs
<b>VOLTAGE REGULATION</b>	
Voltage Regulation Description	2% output voltage regulation in standard online, double-conversion mode
Overvoltage Correction	Corrects overvoltages up to 300V
Undervoltage Correction	Corrects undervoltages as low as 100V
<b>USER INTERFACE, ALERTS &amp; CONTROLS</b>	



Front Panel LCD Display	Selectable LCD display with scroll and selection buttons enables UPS control and detailed monitoring options; LED/LCD panel rotates for viewing in rack/tower formats; LCD Display supports ENGLISH, FRENCH, GERMAN, ITALIAN, SPANISH and PORTUGUESE (see manual)
Switches	2 Switches control off/on power status and alarm-cancel/self-test operation; 2 additional switches support set and execute scrolling LCD functions; bundled PDU includes bypass switch to enable hot-swap UPS power module replacement
Alarm Cancel Operation	Alarm cancel switch
Audible Alarm	Unique audible alarms for all major UPS, environmental and power conditions (see manual)
LED Indicators	6 LEDs indicate line power, online mode, economy/bypass mode, on-battery, charger and AC output status; LCD screen offers additional information and control options
<b>SURGE / NOISE SUPPRESSION</b>	
UPS AC Suppression Response Time	Instantaneous
EMI / RFI AC Noise Suppression	Yes
<b>PHYSICAL</b>	
Primary Form Factor	Rackmount
UPS Power Module Dimensions (hwd, in.)	5.14 x 17.5 x 25.82
UPS Power Module Dimensions (hwd, cm)	13.1 x 44.5 x 65.6
Installed Whole System Maximum Rack Depth (in.)	32.5
Installed Whole System Maximum Rack Depth (cm)	82.6
Rack Height (U Spaces)	14
UPS Power Module Weight (lbs.)	44.1
UPS Power Module Weight (kg)	20
UPS Dimensions Details	Includes 2 SU10000RT3UPM UPS/Power modules and 2 BP240V10RT3U Battery packs; Listed weights and dimensions for UPS/Power module and Included battery pack each refer to a single unit
Stepdown Transformer Dimensions (hwd / in.)	7 x 17.5 x 29.3
Stepdown Transformer Dimensions (hwd / cm)	17.78 x 44.45 x 74.4
Stepdown Transformer Weight (lbs.)	281.1
Stepdown Transformer Weight (kg)	127.6
Included Battery Pack Dimensions (hwd / in.)	5.25 x 17.5 x 25
Included Battery Pack Dimensions (hwd / cm)	13.3 x 44.5 x 63.5
Included Battery Pack Weight (lbs.)	158.7
Included Battery Pack Weight (kg)	72



UPS Shipping Dimensions (hwd / in.)	53 x 27 x 45
UPS Shipping Dimensions (hwd / cm)	134.62 x 68.58 x 114.3
Shipping Weight (lbs.)	918
Shipping Weight (kg)	416.8
Cooling Method	Fans
UPS Housing Material	Steel
<b>ENVIRONMENTAL</b>	
Operating Temperature Range	+32 to +104 degrees Fahrenheit / 0 to +40 degrees Celsius
Storage Temperature Range	+5 to +122 degrees Fahrenheit / -15 to +50 degrees Celsius
Relative Humidity	0 to 95%, non-condensing
AC Mode BTU / Hr. (Full Load)	6830
AC Economy Mode BTU / Hr. (Full Load)	2550
AC Mode Efficiency Rating (100% Load)	87%
AC Economy Mode Efficiency Rating (100% Load)	96%
Operating Elevation (ft.)	0-3000m (0 to 10,000 ft.)
Audible Noise	60 dBA at front side 1 meter
Operating Elevation (m)	0-3000 m
<b>COMMUNICATIONS</b>	
Communications Interface	USB (HID enabled); DB9 Serial; EPO (emergency power off); Slot for SNMP/Web interface
Network Monitoring Port Description	Additional contact closure support with optional RELAYIOMINI interface cards; RELAYIOMINI installation requires removal of panel containing USB ports
PowerAlert Software	Included
Communications Cable	USB, DB9 serial and EPO cables included
WatchDog Compatibility	Supports Watchdog application, OS and hard-reboot restart options for remote applications
<b>LINE / BATTERY TRANSFER</b>	
Transfer Time	No transfer time (0 ms.) in online, double-conversion mode
Transfer Time (Economy Mode)	8 milliseconds typical power failure response in optional economy mode
Low Voltage Transfer to Battery Power (Setpoint)	100V
High Voltage Transfer to Battery Power (Setpoint)	300V
<b>SPECIAL FEATURES</b>	





**Tripp Lite**  
1111 W. 35th Street  
Chicago, IL 60609 USA  
Telephone: 773.869.1234  
www.tripplite.com

Cold Start (Startup in Battery Mode During a Power Failure)	Cold-start operation supported
Economy Mode Operation	Optional economy mode enables high efficiency bypass operation with a maximum output voltage variation of +/-10%. Double conversion mode is automatically restored as mains voltage varies beyond +/-10% with less than 1 millisecond transfer time between modes.
High Availability UPS Features	Automatic inverter bypass; Manual bypass switch; Detachable hot-swap PDU; Hot swappable UPS power module; Hot swappable batteries
Green Energy-Saving Features	High efficiency economy mode operation; Support for daily startup and shutoff; Schedulable daily hours of economy mode operation
<b>CERTIFICATIONS</b>	
UPS Certifications	Tested to UL1778 (USA); Tested to CSA (Canada); Meets FCC Part 15 Category A (EMI); ROHS (Restriction of Hazardous Substances)
UPS Certification Details	IEC 61000-4-5 1995 B Surge Immunity
<b>WARRANTY</b>	
Product Warranty Period (Worldwide)	2-year limited warranty
Connected Equipment Insurance (U.S., Canada & Puerto Rico)	\$250,000 <a href="#">Ultimate Lifetime Insurance</a>

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