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## Model #: SU20KRTHW

### SmartOnline 20kVA On-Line Double-Conversion UPS, N+1, 12U Rack/Tower, 200-240V Hardwire output



#### Highlights

- 20kVA / 20,000VA / 18,000W on-line double-conversion UPS; 0.9 power factor
- 200/208/220/230/240V 50/60Hz output; Economy mode option
- Hot-swap power and battery modules, N+1 fault tolerance at loads up to 10kVA
- USB, RS232 & EPO ports; support for SNMP/WEB and contact-closure card options
- Front panel LEDs with detailed LCD monitoring and control screen
- Expandable runtime with optional external battery packs
- Hardwire input (3 wire); Hardwire output

#### Description

Tripp Lite SU20KRTHW 20,000VA / 20kVA / 18,000 watt online, double-conversion UPS system offers complete power protection for critical server, network and telecommunications equipment in a 12U rack/tower configuration. This system delivers complete N+1 redundancy when used at loads up to 10kVA, and non-redundant operation at loads between 10 and 20kVA. 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.

#### Package Includes

- Two SU10000RT3UPM UPS power modules
- Two BP240V10RT3U battery packs
- SUPDMB20KHW PDU with Bypass switch
- 4-post rackmount installation rails
- PowerAlert software and cabling

#### Features

- Tripp Lite SU20KRTHW 20kVA, 20,000VA / 18,000 watt on-line, double-conversion UPS system in 12U total rack/tower configuration
- 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 10kVA and lower
- Included Parallel PDU with manual bypass switching enables hot-swappable replacement of either 10kVA power module at any supported load level, with no interruption to connected equipment
- Hardwire input and output connections
- Maximum installed rack depth of only 32.5 in. / 82.6cm
- 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
- 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 selectable 200/208/220/230/240V nominal during brownouts as low 100V and overvoltages as high as 300V
- Supports 50/60Hz operation for worldwide frequency compatibility
- 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 12 total rack spaces (12U) with a maximum installed depth of only 32.5 in. / 82.6 cm
- 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
- Optional SNMPWEBCARD offers communications and control via secure remote web and network interfaces
- Optional RELAYIOCARD supports six configurable hard contact closure outputs for custom event notification
- Optional RELAYIOMINI interface module offers three configurable hard contact closure outputs for custom event notification (requires removal of USB interface module)
- Supports Emergency Power Off (EPO) via built-in interface
- Included rail kit supports 12U 19 inch rackmount installation in 4 post racks
- Optional 2POSTRMKITHD supports installation in 2 post 19 inch racks (4 required for SU20KRTHW)
- Optional 2-9USTAND supports upright tower placement (2 required for SU20KRTHW)
- 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
- Frequency conversion mode enables conversion of 60Hz to 50Hz or 50Hz to 60Hz (no de-rating)
- External battery packs are field replaceable and hot swappable
- \$250,000 connected equipment insurance;

## Specifications

OUTPUT	
Output Volt Amp Capacity (VA)	20000
Output kVA capacity (kVA)	20
Output Watt Capacity (watts)	18000
Output kW capacity	18
Output power factor	0.9
Output Capacity Details	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
Nominal Output Voltage(s) Supported	200V; 208V; 220V; 230V; 240V
Nominal Voltage details	Voltage selection via front panel LCD interface
Frequency compatibility	50/60 Hz (auto-selectable)

<b>Frequency compatibility details</b>	Output frequency matches input nominal on startup; Frequency conversion mode enables conversion of 60Hz to 50Hz or 50Hz to 60Hz (no de-rating)
<b>Output voltage regulation (line mode)</b>	+/- 2%
<b>Output voltage regulation (Economy line mode)</b>	+/- 10%
<b>Output voltage regulation (Battery mode)</b>	+/- 2%
<b>Built-in UPS output receptacles</b>	Hardwire
<b>Output AC waveform (AC mode)</b>	Sine wave
<b>Output AC waveform (battery mode)</b>	Pure Sine wave
<b>INPUT</b>	
<b>Rated input current (at maximum load)</b>	112.2A (200V), 108A (208V), 102A (220V), 97.6A (230V), 93.6A (240V)
<b>Nominal Input Voltage(s) Supported</b>	200V AC; 208V AC; 220V AC; 230V AC; 240V AC
<b>UPS input connection type</b>	Hardwire
<b>UPS input connection description</b>	3 wire single phase input (L1, L2, G)
<b>Recommended Electrical Service</b>	120A @ 200V-240V (L, N, PE), or 125A @ 200V, 208V, or 240V (L1, L2, G)
<b>BATTERY</b>	
<b>Full load runtime (minutes)</b>	4.3 minutes (18,000 watts)
<b>Half load runtime (minutes)</b>	12.5 minutes (9000 watts)
<b>Expandable battery runtime</b>	Runtime is expandable with external battery packs
<b>External battery pack compatibility</b>	<a href="#">BP240V10RT3U</a> ; <a href="#">BP240V557C-1PH</a> ; <a href="#">BP240V787C-1PH</a> ; <a href="#">BP240V1037C-1PH</a> ; <a href="#">BP240V1407C-1PH</a>
<b>Expandable runtime description</b>	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
<b>DC system voltage (VDC)</b>	240
<b>Battery recharge rate (included batteries)</b>	Less than 8 hours from 10% to 90%
<b>Battery replacement description</b>	Hot-swappable, user replaceable external battery packs
<b>VOLTAGE REGULATION</b>	
<b>Voltage regulation description</b>	2% output voltage regulation in standard online, double-conversion mode

<b>Overvoltage correction</b>	Corrects overvoltages up to 300V
<b>Undervoltage correction</b>	Corrects undervoltages as low as 100V
<b>LEDS ALARMS &amp; SWITCHES</b>	
<b>LED Indicators</b>	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>Front panel LCD display</b>	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)
<b>Alarms</b>	Unique audible alarms for all major UPS, environmental and power conditions (see manual)
<b>Alarm cancel operation</b>	Alarm cancel switch
<b>Switches</b>	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
<b>SURGE / NOISE SUPPRESSION</b>	
<b>UPS AC suppression response time</b>	Instantaneous
<b>EMI / RFI AC noise suppression</b>	Yes
<b>PHYSICAL</b>	
<b>Installation form factors supported with included accessories</b>	4 post 19 inch rackmount (mounting rail kit included)
<b>Included mounting accessory description</b>	4 sets of adjustable 4 post rack rails included (one for each included 3U module)
<b>Installation form factors supported with optional accessories</b>	2 post rackmount (2POSTRMKITHD); Tower (2-9USTAND)
<b>Optional mounting accessory notes</b>	Qty 4 <a href="#">2POSTRMKITHD</a> required; Qty 2 <a href="#">2-9USTAND</a> required
<b>Primary form factor</b>	Rackmount
<b>UPS / Power Module dimensions in primary form factor (height x width x depth / inches)</b>	5.14 x 17.5 x 25.82
<b>UPS / Power Module dimensions in primary form factor (height x width x depth / cm)</b>	13.1 x 44.5 x 65.6
<b>Installed whole system maximum rack depth (inches)</b>	32.5
<b>Installed whole system maximum rack depth (cm)</b>	82.6

<b>Rack Height</b>	12U
<b>Secondary form factor</b>	Tower
<b>UPS / Power Module weight (lbs)</b>	44.1
<b>UPS / Power Module weight (kg)</b>	20
<b>UPS dimensions details</b>	Includes 2 SU1000RT3UPM 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
<b>Included battery pack dimensions (height x width x depth / inches)</b>	5.25 x 17.5 x 25
<b>Included battery pack dimensions (height x width x depth / cm)</b>	13.3 x 44.5 x 63.5
<b>Included battery pack weight (lbs)</b>	158.7
<b>Included battery pack weight (kg)</b>	72
<b>UPS Shipping dimensions (height x width x depth / inches)</b>	36 x 40.25 x 51
<b>UPS Shipping dimensions (height x width x depth / cm)</b>	91.4 x 102.2 x 129.5
<b>Shipping weight (lbs)</b>	600
<b>Shipping weight (kg)</b>	272.4
<b>Cooling method</b>	Fans
<b>UPS housing material</b>	Steel
<b>ENVIRONMENTAL</b>	
<b>Operating Temperature Range</b>	+32 to +104 degrees Fahrenheit / 0 to +40 degrees Celsius
<b>Storage Temperature Range</b>	+5 to +122 degrees Fahrenheit / -15 to +50 degrees Celsius
<b>Relative Humidity</b>	0 to 95%, non-condensing
<b>AC mode BTU / hr. (full load)</b>	6830
<b>AC economy mode BTU / hr. (full load)</b>	2550
<b>AC economy mode efficiency rating (100% load)</b>	96%
<b>Operating Elevation (ft.)</b>	0-3000m (0 to 10,000 ft.)

<b>Audible Noise</b>	60 dBA at front side 1 meter
<b>Operating Elevation (m)</b>	0-3000 m
<b>COMMUNICATIONS</b>	
<b>Communications interface</b>	USB (HID enabled); DB9 Serial; EPO (emergency power off); Slot for SNMP/Web interface
<b>Network monitoring port description</b>	Additional contact closure support with optional RELAYIOCARD and RELAYIOMINI interface cards. RELAYIOMINI installation requires removal of panel containing USB ports
<b>PowerAlert software</b>	Included
<b>Communications cable</b>	USB, DB9 serial and EPO cables included
<b>WatchDog compatibility</b>	Supports Watchdog application, OS and hard-reboot restart options for remote applications
<b>LINE / BATTERY TRANSFER</b>	
<b>Transfer time</b>	No transfer time (0 ms.) in online, double-conversion mode
<b>Transfer time (economy mode)</b>	8 milliseconds typical power failure response in optional economy mode
<b>Low voltage transfer to battery power (setpoint)</b>	100V
<b>High voltage transfer to battery power (setpoint)</b>	300V
<b>SPECIAL FEATURES</b>	
<b>Cold Start (startup in battery mode during a power failure)</b>	Cold-start operation supported
<b>Economy mode operation</b>	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
<b>High availability UPS features</b>	Automatic inverter bypass; Manual bypass switch; Detachable hot-swap PDU; Hot swappable UPS power module; Hot swappable batteries
<b>Green &amp; high efficiency features</b>	High efficiency economy mode operation; Support for daily startup and shutoff; Schedulable daily hours of economy mode operation
<b>CERTIFICATIONS</b>	
<b>UPS Certifications</b>	Tested to UL1778 (USA); Tested to CSA (Canada); CE; Meets FCC Part 15 Category A (EMI); ROHS (Restriction of Hazardous Substances)
<b>UPS Certification details</b>	IEC 61000-4-5 1995 B Surge Immunity
<b>WARRANTY</b>	
<b>Product Warranty Period (Worldwide)</b>	2-year limited warranty

## Related Items

### Optional Products

Related Model	Description	Qty.
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WEXT3-SU16-20K	3-Year Warranty (1-Year Extension) - For SU16K through SU20K Single-Phase UPS Models	1
WEXT5-SU16-20K	5-Year Warranty (3-Year Extension) - For SU16K through SU20K Single-Phase UPS Models	1
SNMPWEBCARD	For remote monitoring and control via SNMP, Web, or Telnet.	1
RELAYIOCARD	Programmable Relay I/O Card	1
RELAYIOMINI	3 Relay I/O Mini-module	1
MODBUSCARD	For remote monitoring and control via MODBUS protocol	1
2-9U STAND	Enables Tower Placement of Rackmount UPS Systems	1
2POSTRMKITHD	Enables 2-Post Rackmount Installation of 3U and Larger UPS, Transformer and Battery Pack Components	1
BP240V10RT3U	External Battery Pack and Cable. 3U, Expandable, Black 3-Point Connector	1
BP240V557C-1PH	External battery pack for use with select Tripp Lite UPS Systems	1
BP240V787C-1PH	External battery pack for use with select Tripp Lite UPS Systems	1
BP240V1037C-1PH	External battery pack for use with select Tripp Lite UPS Systems	1
BP240V1407C-1PH	External battery pack for use with select Tripp Lite UPS Systems	1

More information, including related products, owner's manuals, and additional technical specifications, can be found online at [www.tripplite.com/en/products/model.cfm?txtModelID=4681](http://www.tripplite.com/en/products/model.cfm?txtModelID=4681).

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