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## Model #: SU20KRT-1TF

### SmartOnline 20kVA On-Line Double-Conversion UPS, N+1, 14U Rack/Tower, 208/120V or 240/120V NEMA & C19 outlets



#### Highlights

- 20kVA / 20,000VA / 18,000W on-line double-conversion UPS; 0.9 power factor
- 208/120V or 240/120V 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); L6-30R, C19, 5-15/20R & 5-15R outlets

#### Description

Tripp Lite SU20KRT-1TF 20,000VA / 20kVA / 18,000 watt online, double-conversion UPS system offers complete power protection for critical server, network and telecommunications equipment in a 14U 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
- One SU6000XFMR2U 208/240V to 120V transformer
- SUPDMB20K parallel PDU with Bypass switch
- 4-post rackmount installation kit
- PowerAlert software and complete cabling

#### Features

- Tripp Lite SU20KRT-1TF 20kVA, 20,000VA / 18,000 watt on-line, double-conversion UPS system in 14U total rack/tower configuration
- Unique configuration offers 20kVA non-redundant operation and automatic N+1 redundancy at load levels of 10kVA and under
- Included Parallel PDU with manual bypass switch enables hot-swap replacement of power modules at any supported load level
- Hardwire input; 2 L6-30R (208/240v), 8 C19 (208/240v), 8 5-15/20R (120v) and 4 5-15R (120v) outlets
- Maintains full-time sine wave output within 2% of selectable 200/208/220/230/240V & 120V nominal
- Expandable runtime with optional external battery packs
- Some external battery configurations require the use of Tripp Lite's External Battery Configuration Software (see manual)
- Battery independent restart
- Highly efficient economy mode option
- Optional SNMPWEBCARD, RELAYIOCARD and RELAYIOMINI interface modules available (RELAYIOMINI requires removal of USB interface module)
- HID-compliant USB interface

- Includes Free PowerAlert monitoring software; PowerAlert LOCAL, PowerAlert NSA and PowerAlert NMS for monitoring up to 250 SNMP-enabled UPS, PDU and other networking devices
- Optional 2POSTRMKITHD supports installation in 2 post 19 inch racks (6 required)
- Optional 2-9USTAND supports upright tower placement (2 required)
- Supports Emergency Power Off (EPO) via built-in interface
- Front panel LEDs and LCD readout with scroll controls
- LED / LCD display panel rotates for viewing in rackmount or tower configurations
- External battery packs are field replaceable and hot swappable

## 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	120V; 208V; 240V
Nominal Voltage details	Power Module supports 208 or 240V nominal in this configuration controlled via front panel LCD interface; included step-down transformer supports 120V output (set rear panel dipswitch on transformer module to appropriate 208 or 240V input setting)
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%
Built-in UPS output receptacles	4 5-15R outlet(s); 8 5-15/20R outlet(s); 2 L6-30R outlet(s); 8 C19 outlet(s)
Output receptacle details	Total 120V output is limited to 4992 watts for 208V input and 5760 watts for 240V input. Additional 120V capacity is available with the addition of one SU6000XFMR2U step-down transformer.
Output circuit breaker	POWER MODULE: Two built-in 30A breakers protect one L6-30R outlet each, Eight built-in 20A breakers protect one C19 outlet each; TRANSFORMER MODULE: Two 15A breakers protect 2 5-15R outlets each, Two 20A breakers protect 4 5-15/20R outlets each
Output AC waveform (AC mode)	Sine wave

<b>Output AC waveform (battery mode)</b>	Pure Sine wave
<b>INPUT</b>	
<b>Rated input current (at maximum load)</b>	108A (208V), 93.6A (240V)
<b>Nominal Input Voltage(s) Supported</b>	208V 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>Phase</b>	Single-Phase
<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>	6 hours from 10% to 90% with two BP240V10RT3U battery packs
<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>Included mounting accessory description</b>	5 sets of adjustable 4 post rack rails included (one for each included 2U/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 5 2POSTRMKITHD required; Qty 2 2-9USTAND 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>	14U
<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 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
<b>Stepdown transformer dimensions (height x width x depth / inches)</b>	3.5 x 17.5 x 21.8

<b>Stepdown transformer dimensions (height x width x depth / cm)</b>	8.89 x 44.4 x 55.4
<b>Stepdown transformer weight (lbs)</b>	72.6
<b>Stepdown transformer weight (kg)</b>	33
<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>	37.5 x 40.25 x 51
<b>UPS Shipping dimensions (height x width x depth / cm)</b>	95.3 x 102.2 x 129.5
<b>Shipping weight (lbs)</b>	781
<b>Shipping weight (kg)</b>	354.6
<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

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 RELAYIOCARD and 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>	
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 & high efficiency 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>

## Related Items

### Optional Products

Related Model	Description	Qty.
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
2-9USTAND	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
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
PDUV20	Safe, reliable power distribution for critical networking equipment	1
PDUV30HV	Basic 0U Vertical Rack PDU - Power Distribution Unit for Network Applications	1
PDUMV20	Metered PDU / Power Distribution Unit - Safe, reliable power distribution with digital current meter	1
PDUMV20HV	Metered 0U Vertical Rack PDU - Metered Power Distribution Unit for Network Applications	1
PDUMV30HV	Metered 0U Vertical Rack PDU - Metered Power Distribution Unit for Network Applications	1
PDUMNV20	Monitored PDU / Power Distribution Unit supports real-time remote monitoring of load level, voltage and frequency with options for remote environmental and security monitoring	1
PDUMNV20HV	Monitored PDU / Power Distribution Unit supports real-time remote monitoring of load level, voltage and frequency with options for remote environmental and security monitoring	1
PDUMNV30HV	Monitored PDU / Power Distribution Unit supports real-time remote monitoring of load level, voltage and frequency with options for remote environmental and security monitoring	1
PDUMH20ATNET	Switched, Metered PDU with ATS - Power Distribution Unit with dual-input Auto Transfer Switching, individual outlet control and SNMP network interface	1
PDUMV20NET	Switched, Metered PDU with Remote Monitoring - 0U Vertical Rackmount Power Distribution Unit for Networks with Individually Switchable Outlets, Current Metering, Remote Monitoring and Control	1
PDUMV20HVNET	Switched, Metered PDU with Remote Monitoring - 0U Vertical Rackmount Power Distribution Unit for Networks with Individually Switchable Outlets, Current Metering, Remote Monitoring and Control	1
PDUMV30HVNET	Switched, Metered PDU with Remote Monitoring - 0U Vertical Rackmount Power Distribution Unit for Networks with Individually Switchable Outlets, Current Metering, Remote Monitoring and Control	1
P032-007	7-ft. 12AWG Heavy Duty Power cord ( IEC-320- C13 to IEC-320-C20)	1
P036-002	2-ft. 12AWG Heavy Duty Power cord (IEC-320-C19 to IEC-320-C20)	1

P036-006	6-ft. 12AWG Heavy Duty Power cord (IEC-320-C19 to IEC-320-C20)	1
P007-006	6-ft. Heavy-Duty 14AWG Power cord (IEC-320-C13 to NEMA 5-15P)	1
P010-012	12-ft. 18AWG Power cord (NEMA 5-15P to IEC-320-C13)	1
P044-061	6-inch 12AWG Heavy Duty Power Adapter cord (NEMA-L5-20R to NEMA-5-20P)	1
P049-010	10-ft. 12AWG Heavy Duty Power cord (IEC-320-C19 to NEMA 5-20P)	1
P041-001-2	1-ft. 10AWG Heavy Duty Power Splitter Cable (NEMA L6-30P to 2x NEMA L6-30R)	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=4679](http://www.tripplite.com/en/products/model.cfm?txtModelID=4679).

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