

# SmartOnline 208/240 & 120V 20kVA 18kW, Double-Conversion UPS, N+1, 14U Rack/Tower, Extended Run, SNMPWEBCARD Option, USB, DB9 Serial, Bypass Switch

MODEL NUMBER: **SU20KRT-1TF**



## 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.

## 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
- Intelligent battery management system extends battery life
- Highly efficient economy mode option

## Highlights

- 20kVA / 20,000VA / 18,000W on-line double-conversion UPS; 0.9 power factor
- 208/120V or 240/120V 60Hz output; 96% Efficient 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

## 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



- Optional [SNMPWEBCARD](#), [RELAYIOCARD](#) and [RELAYIOMINI](#) interface modules available([RELAYIOMINI](#) requires removal of USB interface module)
- Applications utilizing the optional network communications card require two [SNMPWEBCARD](#) accessories(install one per included power 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 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 |
| 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; 208V; 240V                                                                                                                                                                                                                                                                                                       |
| Nominal Voltage Details                       | This configuration requires the Power Module be set to 208 or 240V output voltage; included step-down transformer supports 120V output (when the voltage-selection switch on the transformer module is set to match the 208 or 240V power module 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%                                                                                                                                                                                                                                                                                                                 |
| Output Receptacles                            | (4) 5-15R; (8) 5-15/20R; (2) L6-30R; (8) C19                                                                                                                                                                                                                                                                           |
| 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 by adding a second SU6000XFMR2U step-down transformer.                                                                                                                                  |
| Output Circuit Breakers                       | 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                                                                   |



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|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output AC Waveform (AC Mode)                 | Pure Sine wave                                                                                                                                                                                                                                                    |
| Output AC Waveform (Battery Mode)            | Pure Sine wave                                                                                                                                                                                                                                                    |
| <b>INPUT</b>                                 |                                                                                                                                                                                                                                                                   |
| Rated input current (Maximum Load)           | 108A (208V), 93.6A (240V)                                                                                                                                                                                                                                         |
| 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               | 125A @ 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)   | Less than 6 hours from 10% to 90% (typical, full load discharge)                                                                                                                                                                                                  |
| Battery Replacement Description              | Hot-swappable, user replaceable external battery packs                                                                                                                                                                                                            |
| Expandable Runtime                           | Yes                                                                                                                                                                                                                                                               |
| <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                                                                                              |



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| SURGE / NOISE SUPPRESSION                                     |                                                                                                                                                                                       |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPS AC Suppression Response Time                              | Instantaneous                                                                                                                                                                         |
| EMI / RFI AC Noise Suppression                                | Yes                                                                                                                                                                                   |
| PHYSICAL                                                      |                                                                                                                                                                                       |
| Included Mounting Accessory Description                       | 5 sets of adjustable 4 post rack rails included (one for each included 2U/3U module)                                                                                                  |
| Installation Form Factors Supported with Optional Accessories | 2 post rackmount(2POSTRMKITHD); Tower(2-9USTAND)                                                                                                                                      |
| Optional Mounting Accessory Notes                             | Qty 5 2POSTRMKITHD required; Qty 2 2-9USTAND required                                                                                                                                 |
| 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.)                   | 3.5 x 17.5 x 21.8                                                                                                                                                                     |
| Stepdown Transformer Dimensions (hwd / cm)                    | 8.89 x 44.4 x 55.4                                                                                                                                                                    |
| Stepdown Transformer Weight (lbs.)                            | 72.6                                                                                                                                                                                  |
| Stepdown Transformer Weight (kg)                              | 33                                                                                                                                                                                    |
| 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.)                           | 37.5 x 40.25 x 51                                                                                                                                                                     |
| UPS Shipping Dimensions (hwd / cm)                            | 95.3 x 102.2 x 129.5                                                                                                                                                                  |
| Shipping Weight (lbs.)                                        | 781                                                                                                                                                                                   |



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|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shipping Weight (kg)                                        | 354.6                                                                                                                                                                                                                                                                                                              |
| 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)                               | 6820                                                                                                                                                                                                                                                                                                               |
| AC Economy Mode BTU / Hr. (Full Load)                       | 2558                                                                                                                                                                                                                                                                                                               |
| AC Mode Efficiency Rating (100% Load)                       | 90%                                                                                                                                                                                                                                                                                                                |
| 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                         | Applications utilizing the optional network communications card require two SNMPWEBCARD accessories (install one per included power module); 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                                                                                                                                                                                                                                                                                     |



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|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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; Hot swappable batteries; Hot swappable UPS power module; Manual bypass switch                                                                                                                                                           |
| 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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<http://www.tripplite.com/products/product-certification-agencies>