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

SmartOnline SV Series 20kVA Small-Frame Modular Scalable 3-Phase On-Line Double-Conversion 208/120V 50/60 Hz UPS System, 2 Battery Modules

MODEL NUMBER: **SV20KS1P2B**





3-phase 20kVA UPS system offers network-grade power protection in a highly configurable, modular and scalable small-chassis rack-width frame. Included battery modules can support a half load up to 22 minutes.

Description

The SV20KS1P2B SmartOnline® SV Series 20kVA Small-Frame 3-Phase On-Line Double-Conversion UPS System delivers true scalability and offers the highest level of secure, uninterrupted power protection. Featuring a modular, scalable design with high-efficiency voltage and frequency independent (VFI) operation, this on-line UPS system with a high 0.9 power factor is ideal for protecting a variety of critical IT systems.

The SV20KS1P2B includes pre-installed input, bypass and output breakers, as well as a static transfer switch (STS), one 20kVA SV20PM power module and two SVBM battery modules. Space is included for up to two additional user-installable SV20PM power modules and one SVBM internal battery module.

The Java-free HTML5-based WEBCARDLX interface enables full remote access for site power and UPS status monitoring, configuration, control and email notifications via secure web browser, SNMP, telnet or SSH. It supports 10/100 Mbps auto-sensing for optimum communication with an Ethernet network.

With up to 92% efficiency in standard mode and up to 98% efficiency in optional economy mode, this 20kVA UPS system helps you reduce operating and cooling costs. Automatic and manual bypass options keep connected equipment operational during routine maintenance or critical power module failure. Front-panel display offers full UPS condition and status reporting.

Features

20kVA 18kW 3-Phase Small-Chassis UPS System Supports 208/120V or 220/127V AC 50/60Hz Wye 4-wire plus Earth hardwire input and output wiringDual hardwire input design enables operation from up to 2 power sourcesNetwork-grade sine-wave AC output with 1% output voltage regulation and less than 2% output total harmonic distortionTested to UL 1778 (U.S.), CSA (Canada) and NOM (Mexico) standardsHigh 0.9 power factor offers higher kW output than lower-rated competing legacy designs

Pre-Installed WEBCARDLX Network Interface Allows full remote access for power monitoring, configuration, control and email notifications via secure web browser, SNMP, telnet or SSHSupports 10/100 Mbps auto-sensing for communication with an Ethernet networkOptional EnviroSense2 sensors (sold separately) enable site monitoring of temperature, humidity and contact-closure statusNo Java required

Highlights

- Scalable capacity up to 60kVA (or 40kVA with N+1 fault tolerance)
- Economy mode option helps reduce operating and cooling costs
- Pre-installed WEBCARDLX network interface for 24/7 remote access
- DSP/IGBT technology and 1% output voltage regulation
- Includes 2 internal battery modules; supports 1 more
- For extended runtimes beyond those provided by internal battery modules, please review the suffix "0B" SV models without internal battery modules, which offer different external battery pack options.

Package Includes

- SV20KS1P2B SmartOnline SV Series 20kVA Small-Frame 3-Phase On-Line Double-Conversion UPS System
- Pre-installed WEBCARDLX network interface
- (1) SV20PM 20kVA power module (shipped separately)
- (2) SVBM battery modules (shipped separately)
- Owner’s manual

Modular, Scalable Design for Maximum Flexibility Modular configuration with hot-swappable power and battery modules enables easy, fast maintenance with zero downtimeOpen slots for up to 2 additional 20kVA SV20PM power modules accommodate increased capacity up to 60kVA (or 40kVA with N+1 fault tolerance)Open slot for 1 additional SVBM internal battery for extended runtime

Optional Economy Mode Up to 98% efficiency in optional economy mode to lower operating and cooling costs

Wide Input/Narrow Output Voltage Operating Range Enables full continuous online operation during brownouts as low as 121V and overvoltages up to 253VRegulates output voltage within 1% of the selected nominal output voltage in on-line double-conversion mode

Advanced IGBT Inverter with Digital Signal Processor (DSP) Technology Provides for less than 3% input total harmonic distortion (THDi) to support 1:1 generator sizing and prevent the need to oversize generator systems relative to UPS capacity

Automatic and Manual Bypass Options Keep connected equipment operational during routine maintenance or critical power module failure

Specifications

OVERVIEW	
UPC Code	037332236654
UPS Type	On-Line
INPUT	
Rated input current (Maximum Load)	SV20KS1P2B 20kVA Configuration: 60A; Maximum 60kVA Configuration: 180A; 132.5A maximum inrush current
Nominal Input Voltage(s) Supported	120/208V 3-PH Wye; 127/220V 3-PH Wye
Nominal Input Voltage Description	Set of two hardwire input connections enables 3-Phase Wye, 4 wire (3P, N, E) inputs from two separate power sources
UPS Input Connection Type	Hardwire
Input Circuit Breakers	MAIN and ALTERNATE AC inputs are each protected by 250A 3 pole magnetic breakers
Input Phase	3-Phase
Input Frequency	40 to 70Hz (online mode); 50/60Hz Auto-selectable
Power Factor (Input)	Greater than 0.99 (full load)
THDi	Less than 3% (full linear load)
OUTPUT	
Output Volt Amp Capacity (VA)	20000
Output Capacity (kVA)	20
Output Watt Capacity (Watts)	18000
Output kW Capacity (kW)	18
Output Capacity Details	OVERLOAD CAPABILITY: Supports 105-110% load for 1 hour, 111-125% load for 10 minutes, 126-150% for 1 minute and Over 150% for 200ms before switching to Bypass; Online operation resumes when load is reduced to 100% or less

Power Factor	0.9
Crest Factor	3:1
Nominal Voltage Details	Output THD full resistive load: <1.5%; Output THD non-linear load: <4%; Max DC offset: ±50mV; Max Phase angle deviation: 2°; Max Voltage unbalance deviation: 1%; Output short-circuit protection included
Frequency Compatibility	50 / 60 Hz; Supports 50 to 60 Hz and 60 to 50 Hz conversion
Frequency Compatibility Details	Auto-selectable, user adjustable
Output Receptacle Details	Output wiring (3P, N, E)
Output Circuit Breakers	250A 3 pole magnetic breaker
Output AC Waveform (AC Mode)	Pure Sine wave
Output AC Waveform (Battery Mode)	Pure Sine wave
Nominal Output Voltage(s) Supported	120/208V 3-PH Wye; 127/220V 3-PH Wye
Output Receptacles	Hardwire
Output Voltage Regulation	ONLINE, FREQUENCY CONVERSION, BATTERY MODE: 208/120, 220/127 ±1% typical (balanced load); ±2% typical (unbalanced load); ECONOMY MODE: 208/120, 220/127 ±15V; BYPASS MODE: +15% (default, adjustable to +10%, +15% or +20%), -20% (default, adjustable to -10%, -20%, -30%)
Output Frequency Regulation	ONLINE MODE: Output frequency is ±0.05Hz of input frequency when input is within ±4Hz* of the configured 50/60Hz output setting; Output frequency is ±0.05Hz the configured 50/60Hz output setting when input is outside ±4Hz* of the configured 50/60Hz output setting; BATTERY MODE: Output frequency is ±0.1Hz of the configured 50/60Hz output setting; FREQUENCY CONVERTER MODE: Output frequency is ±0.1Hz of the configured 50/60Hz output setting; ECONOMY MODE: Output frequency equals input frequency up to ±4Hz* of the configured 50/60Hz output setting (UPS switches to Online mode if frequency goes outside of this range); BYPASS MODE: Output frequency equals input frequency up to ±4Hz* of the configured 50/60Hz output setting (switches to STANDBY mode if frequency goes outside of this range). *The TRACKING RANGE is factory set to ±4Hz and is user adjustable to ±1Hz, ±2Hz or ±4Hz; The selected TRACKING RANGE setting controls frequency output tolerances as described above in Online, Economy and Bypass modes
Output Amp Capacity	Output Amp Capacity 55.5A (208/120V); 52.5A (220/127V)
Individually Controllable Load Banks	No
Modular Upgrade Options	Includes 1 SV20PM 20kVA power module; Up to 2 additional SV20PM 20kVA power modules can be added for increased capacity or enhanced N+1 redundancy; Add 1 SV20PM for 40kVA capacity (or 20kVA with N+1); Add 2 SV20PM for 60kVA capacity (or 40kVA with N+1)
BATTERY	
Full Load Runtime (min.)	10.0 minutes (20kVA)
Half Load Runtime (min.)	22.0 minutes (10kVA)
Expandable Battery Runtime	May add one additional SVBM battery modules.
Expandable Runtime	Yes
Expandable Runtime Description	For extended runtimes beyond those provided by internal battery modules, please review the suffix "0B" SV models without internal battery modules, which offer different external battery pack options.
DC System Voltage (VDC)	±120VDC
Battery Recharge Rate (Included Batteries)	User selectable charging current of 1A to 8A (2A factory setting); Recharge rate for internal batteries is 4.6 hours to 90% capacity (7A charging current)
Battery Replacement Description	Hot-swappable, replaceable batteries

VOLTAGE REGULATION	
Voltage Regulation Description	Online, double-conversion power conditioning
Overvoltage Correction	Maintains continuous output in online mode, without using battery power, during overvoltages to 253V (Ph-Ph), reducing output to within 1% of selected 208/120V, 220/127V nominal output voltage
Undervoltage Correction	Maintains continuous output in online mode, without using battery power, during brownout/undervoltage conditions to 156V (Ph-Ph) at full load and to 121V (Ph-Ph) at 70% output load or less, increasing output to within 1% of selected 208/120V or 220/127V nominal output voltage
USER INTERFACE, ALERTS & CONTROLS	
Front Panel LCD Display	145mm front panel LCD display with directional scroll and select buttons offers complete operating status display, plus setting and selection options for all UPS functions
Switches	Front panel buttons include ESC (menu escape), UP/LEFT (menu up / left), DOWN/RIGHT (menu down / right), ENTER (confirm selection), HOME (return to home screen) and POWER (on/off power control); Also includes Manual Bypass switch
Alarm Cancel Operation	Audible alarms can be muted using on-screen prompts
Audible Alarm	Unique audible alarms for POWER ON / POWER OFF (alarm sounds for 2 seconds), BATTERY MODE (alarm sounds every 2 seconds), LOW BATTERY (alarm sounds every 0.5 seconds), UPS ALARM (alarm sounds every 1 second), UPS FAULT (continuous alarm)
LED Indicators	Front panel LED indicators represent INPUT (green), BYPASS (amber), INVERTER (green), BATTERY (red) and ALARM (red)
SURGE / NOISE SUPPRESSION	
EMI / RFI AC Noise Suppression	Yes
AC Suppression Joule Rating	2496
AC Suppression Joule Rating Details	2496 joules (Ph-Ph), 2496 joules (Ph-N), 1872 joules (N-E)
AC Suppression Response Time	Instantaneous
PHYSICAL	
Primary Form Factor	Tower
Cooling Method	Fans
Installation Form Factors Supported with Included Accessories	Tower
Primary UPS Depth (mm)	1,100
Primary UPS Height (mm)	1,475
Primary UPS Width (mm)	600
Shipping Dimensions (hwd / cm)	138.43 x 72.39 x 107.95
Shipping Dimensions (hwd / in.)	54.50 x 28.50 x 42.50
Shipping Weight (kg)	479.90
Shipping Weight (lbs.)	1058.00
UPS Housing Material	Steel

UPS Power Module Dimensions (hwd, cm)	147.50 x 59.99 x 109.98
UPS Power Module Dimensions (hwd, in.)	58.07 x 23.62 x 43.3
UPS Power Module Weight (kg)	513.01
UPS Power Module Weight (lbs.)	1131
ENVIRONMENTAL	
Operating Temperature Range	0° to +40°C (+32° to +104°F); De-rates to 90% capacity at 35°C / 95°F and 80% capacity at 40°C / 104°F
Storage Temperature Range	-15° to +60°C (+5° to +140°F)
Relative Humidity	0 to 95%, non-condensing
AC Mode BTU / Hr. (Full Load)	6074
AC Economy Mode BTU / Hr. (Full Load)	822
AC Economy Mode Efficiency Rating (100% Load)	98%
Audible Noise	Less than 69 DBA front-side, 1m
Operating Elevation (m)	Up to 1000m (At elevations over 1000m, output de-rates by 1% per 100m)
COMMUNICATIONS	
Network Management Cards	WEBCARDLX ; MODBUSCARDSV ; RELAYCARDSV
Network Monitoring Port Description	Includes pre-installed Tripp Lite WEBCARDLX network interface
PowerAlert Software	For local monitoring via the UPS's built-in communication ports, download PowerAlert Local software at https://www.tripplite.com/poweralert
Communications Cable	DB9 cabling included
SNMP Compatibility	Includes pre-installed WEBCARDLX network interface card
Communications Interface	DB9 Serial; EPO (emergency power off); Pre-installed network card; Slot for SNMP/Web interface
LINE / BATTERY TRANSFER	
Transfer Time	No transfer time (0 ms.) in online, double-conversion mode; Less than 20 ms. transfer time in economy mode
Low Voltage Transfer to Battery Power (Setpoint)	Maintains continuous operation without using battery power during brownout/undervoltage conditions to to 156V (Ph-Ph) Full load or 121V (Ph-Ph) 70% load or less; Below the low transfer voltage point, output is maintained utilizing reserve battery power
High Voltage Transfer to Battery Power (Setpoint)	Maintains continuous operation without using battery power during overvoltages to 253V (Ph-Ph), reducing output within 1% of nominal; Above this point, output is maintained utilizing reserve battery power
FEATURES & SPECIFICATIONS	
Cold Start (Startup in Battery Mode During a Power Failure)	Cold-start operation supported

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

High Availability UPS Features	Automatic inverter bypass; Hot swappable batteries; Auto Probe Monitoring (included); Zero transfer time; On-Line/Double-Conversion
Green Energy-Saving Features	High efficiency economy mode operation; Schedulable daily hours of economy mode operation
STANDARDS & COMPLIANCE	
UPS Certifications	ROHS (Restriction of Hazardous Substances); Tested to CSA (Canada); Tested to NOM (Mexico); Tested to UL1778 (USA)
Certification Details	UL1778: 2014 5th Edition; CSA C22.2 No. 107.3.14; FCC Part 15 Class A
WARRANTY	
Product Warranty Period (U.S. & Canada)	1-year limited warranty
Product Warranty Period (International)	2-year limited warranty
Product Warranty Period (Mexico)	2-year limited warranty
Product Warranty Period (Puerto Rico)	2-year limited warranty
3-Phase Warranty Statement	Tripp Lite 3-Phase UPS Factory Warranty