

SmartOnline SVX Series 90kVA Modular, Scalable 3-Phase, On-line Double-Conversion 400/230V 50/60Hz UPS System

MODEL NUMBER: **SVX90KL**



Highlights

- 90kVA / 90kW modular, scalable, 3-phase, Large-Frame tower UPS
- Supports 3 phase 220/380, 230/400 or 240/415V AC, 50/60Hz, Wye; Scalable to 210kVA with N+1 redundancy
- High efficiency on-line UPS with DSP/IGBT technology and 1% output voltage regulation
- Pre-installed WEBCARDLX with latest version of PADM20 for enhanced remote management
- Batteries not included, External battery cabinets sold separate; Tested to CE for worldwide applications

Package Includes

- SVX90KL UPS System
- Instruction manual
- Warranty information

Description

Tripp Lite's SVX90KL 90kVA / 90kW SmartOnline large-chassis UPS includes installed Input, Bypass and Output breakers, a Static Transfer Switch (STS) and 3 included 30kVA SVX30PM power modules. The system includes space for up to 5 additional user installable SVX30PM power modules to accommodate increased capacity up to 210kW with N+1 fault-tolerance.

Featuring modular, scalable design with high efficiency voltage and frequency independent / VFI operation, Tripp Lite's SVX Series SmartOnline UPS systems are ideal for the protection of a wide variety of critical IT systems. Scalable, modular configuration enables UPS capacity upgrades and hot-swap power supply maintenance without costly downtime. Over 95% efficient in standard online-mode and over 99% efficient in optional economy-mode enables reduced operating and cooling costs. Unity power factor configuration provides equal kVA and kW output ratings for up to 25% more wattage capacity than common 0.8 - 0.9 power factor competing designs. Network-grade sine-wave AC output with 1% output voltage regulation and less than 1.5% output total harmonic distortion. 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. Dual input hardwire design enables operation from one or two input power sources for enhanced system availability. N+1 fault-tolerance is supported anytime there is an "extra" SVX30PM 30kW power module installed beyond the minimum required quantity. Automatic and manual bypass options keep connected equipment operational during routine maintenance or critical power module failure. UPS batteries are not included, External ± 240 VDC battery cabinets sold separate.

Features

- Tripp Lite's SVX90KL 90kVA / 90kW SmartOnline UPS offers network-grade power protection in a highly-configurable large-chassis modular, scalable form factor
- Supports 220/380, 230/400 or 240/415V AC, 3-Phase Wye 4-Wire plus Earth Hardwire input and output wiring
- Tested to CE for worldwide applications
- Open slots for up to 5 additional SVX30PM 30kW power modules enables scalable capacity configurations up to 210kW with enhanced N+1 reliability
- Pre-installed WEBCARDLX with the latest version of PowerAlert Device Manager firmware (PADM20) provides enhanced remote management capabilities
- PADM20 and PowerAlert Element Manager (PAEM) form a powerful tool for expanding maintenance functions in large installations, including firmware update checks and backup and restoration of device configurations

- Serial port enables unattended shutdown and UPS monitoring ability
- Modular configuration with hot-swappable power modules enables easy and fast maintenance with zero downtime
- Wide input voltage operating range enables full continuous online operation during brownouts as low as 120V (Ph-N) and overvoltages up to 276 (Ph-N)
- Narrow output voltage operating range regulates output voltage within 1% of the selected 220/230/240 nominal output voltage in online, double-conversion mode
- Over 95% efficient in online, double-conversion mode and over 99% efficient in optional economy-mode enables reduced operating and cooling costs
- Less than 3% input Total Harmonic Distortion (THDi) prevents the need to oversize generator systems relative to UPS capacity
- Dual hardwire input design enables operation from one or two input power sources
- N+1 fault tolerance is supported anytime there is an “extra” SVX30PM 30kW power module installed beyond the minimum required quantity (For example, this UPS provides N+1 fault-tolerance when loaded to 60kVA or less; Loads of 60-90kVA are fully supported, but without N+1 fault tolerance)
- Front panel combination LCD/LED display offers full UPS condition and status reporting plus additional configuration options

Specifications

| OVERVIEW | |
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| UPC Code | 037332278685 |
| UPS Type | On-Line |
| INPUT | |
| Input Phase | 3-Phase |
| Rated input current (Maximum Load) | SVX90KL 90kVA Configuration: 165A; Maximum 210kVA Large Chassis Configuration: 385A; 40A maximum inrush current |
| Nominal Input Voltage(s) Supported | 220/380V 3-PH Wye; 230/400V 3-PH Wye; 240/415V 3-PH Wye |
| Nominal Input Voltage Description | Set of two hardwire input connections enables 3-Phase Wye, 4 wire (3P, N, G) inputs from two separate power sources |
| UPS Input Connection Type | Hardwire |
| Input Circuit Breakers | MAIN and ALTERNATE AC inputs are each protected by 400A 3 pole magnetic breakers |
| 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 Capacity (VA) | 90000 |
| Output Capacity (kVA) | 90 |
| Output Capacity (Watts) | 90000 |
| Output Capacity (kW) | 90 |

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| 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 | 1.0 |
| Crest Factor | 3:1 |
| Nominal Voltage Details | Output THD full resistive load: <1.5%; Output THD non-linear load: <4%; Max DC offset: $\pm 50\text{mV}$; 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 Circuit Breakers | 400A 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 | 220/380V 3-PH Wye; 230/400V 3-PH Wye; 240/415V 3-PH Wye |
| Output Receptacles | Hardwire |
| Output Voltage Regulation | ONLINE, FREQUENCY CONVERSION, BATTERY MODE: 220/230/240V $\pm 1\%$ typical (balanced load); $\pm 2\%$ typical (unbalanced load); ECONOMY MODE: 220/230/240V $\pm 15\%$; 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 $\pm 0.05\text{Hz}$ of input frequency when input is within $\pm 4\text{Hz}^*$ of the configured 50/60Hz output setting; Output frequency is $\pm 0.05\text{Hz}$ the configured 50/60Hz output setting when input is outside $\pm 4\text{Hz}^*$ of the configured 50/60Hz output setting; BATTERY MODE: Output frequency is $\pm 0.1\text{Hz}$ of the configured 50/60Hz output setting; FREQUENCY CONVERTER MODE: Output frequency is $\pm 0.1\text{Hz}$ of the configured 50/60Hz output setting; ECONOMY MODE: Output frequency equals input frequency up to $\pm 4\text{Hz}^*$ 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 $\pm 4\text{Hz}^*$ 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 $\pm 4\text{Hz}$ and is user adjustable to $\pm 1\text{Hz}$, $\pm 2\text{Hz}$ or $\pm 4\text{Hz}$; The selected TRACKING RANGE setting controls frequency output tolerances as described above in Online, Economy and Bypass modes |
| Output Amp Capacity | 137A (220/380V); 130A (230/400V); 125A (240/415V) |
| Individually Controllable Load Banks | No |
| Modular Upgrade Options | Includes 3 SVX30PM 30kVA power modules. Up to 5 additional SVX30PM 30kVA power modules can be added for additional capacity or N+1 availability; Add 1 SVX30PM for 120kVA capacity (or 90kVA with N+1 redundancy); Add 2 SVX30PM for 150kVA capacity (or 120kVA with N+1 redundancy); Add 3 SVX30PM for 180kVA capacity (or 150kVA with N+1 redundancy); Add 4 SVX30PM for 210kVA capacity (or 180kVA with N+1 redundancy); Add 5 SVX30PM for 210kVA total capacity with N+1 redundancy |
| BATTERY | |
| Expandable Runtime | Yes |
| Expandable Runtime Description | External battery pack wiring is contractor supplied. Supports extended runtime with optional external battery packs; 100A 3 pole 250VDC breaker recommended for external battery. |
| DC System Voltage (VDC) | $\pm 240\text{VDC}$ |
| Battery Recharge Rate (Included Batteries) | User selectable charging current of 1A to 8A (2A factory setting); Recharge rate is dependent on number of external battery packs connected and the selected charge current setting |
| Battery Replacement Description | Hot-swappable, replaceable batteries |
| VOLTAGE REGULATION | |
| Voltage Regulation Description | Online, double-conversion power conditioning |

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| Overvoltage Correction | Maintains continuous output in online mode, without using battery power, during overvoltages to 478V (Ph-Ph), reducing output to within 1% of selected 380/220V, 400/230V, 415/240V nominal output voltage |
| Undervoltage Correction | Maintains continuous output in online mode, without using battery power, during brownout/undervoltage conditions to 305V (Ph-Ph) at full load and to 208V (Ph-Ph) at 70% output load or less, increasing output to within 1% of selected 380/220V, 400/230V, 415/240V 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) | 2,010 |
| Primary UPS Width (mm) | 600 |
| Shipping Dimensions (hwd / in.) | 75.00 x 29.00 x 48.00 |
| Shipping Dimensions (hwd / cm) | 190.50 x 73.66 x 121.92 |
| Shipping Weight (lbs.) | 1055.00 |
| Shipping Weight (kg) | 478.54 |
| UPS Housing Material | Steel |
| UPS Power Module Dimensions (hwd, cm) | 200.99 x 59.99 x 109.98 |
| UPS Power Module Dimensions (hwd, in.) | 79.13 x 23.62 x 43.3 |

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| Green Energy-Saving Features | Greater than 95% efficiency - GREEN UPS; High efficiency economy mode operation; Schedulable daily hours of economy mode operation |
| IP68 Rated | Yes |
| IP20 Rated | No |
| STANDARDS & COMPLIANCE | |
| Protection Rating | IP68 |
| Product Certifications | IEC/EN 62040 |
| Product Compliance | RoHS; CE (Europe); REACH |
| WARRANTY & SUPPORT | |
| Product Warranty Period (Worldwide) | See 3-Phase UPS Warranty Statement |
| Product Warranty Period (International) | 2-year limited warranty |
| 3-Phase Warranty Statement | Tripp Lite 3-Phase UPS Factory Warranty |