

SmartOnline SVX Series 180kVA Modular, Scalable 3-Phase, On-line Double-Conversion 400/230V 50/60Hz UPS System

MODEL NUMBER: **SVX180KL**



Description

Tripp Lite's SVX180KL 180kVA / 180kW SmartOnline large-chassis UPS includes installed Input, Bypass and Output breakers, a Static Transfer Switch (STS) and 6 included 30kVA SVX30PM power modules.

The system includes space for up to 2 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 94% efficient in standard online-mode and over 98% 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 $\pm 240\text{VDC}$ battery cabinets sold separate.

Features

- Tripp Lite's SVX180KL 180kVA / 180kW 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

Highlights

- 180kVA / 180kW 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 network interface; Economy mode option reduces operating and cooling costs
- Batteries not included, External battery cabinets sold separate; Tested to CE for worldwide applications

Package Includes

- SVX180KL UPS System
- Instruction manual
- Warranty information



wiring

- Tested to CE for worldwide applications
- Open slots for up to 2 additional SVX30PM 30kW power modules enables scalable capacity configurations up to 210kW with enhanced N+1 reliability
- Pre-installed WEBCARDLX network interface
- 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 150kVA or less; Loads of 150-180kVA 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 | 037332194367 |
| UPS Type | On-Line |
| INPUT | |
| Rated input current (Maximum Load) | SVX180KL 180kVA Configuration: 330A; 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 Phase | 3-Phase |



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| 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) | 180000 |
| Output kVA Capacity (kVA) | 180 |
| Output Watt Capacity (Watts) | 180000 |
| Output kW Capacity (kW) | 180 |
| 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 | Output Amp Capacity 273A (220/380V); 260A (230/400V); 250A (240/415V) |
| Individually Controllable Load Banks | No |
| Modular Upgrade Options | Includes 6 SVX30PM 30kVA power modules. Up to 2 additional SVX30PM 30kVA power modules can be added for additional capacity or N+1 availability; Add 1 SVX30PM for 210kVA capacity (or 180kVA with N+1 redundancy); Add 2 SVX30PM for 210kVA capacity with N+1 redundancy |
| BATTERY | |
| Full Load Runtime (min.) | Batteries sold separate; Runtime is dependent on battery pack quantity and load level |



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| Expandable Battery Runtime | Supports extended runtime with optional external battery packs; 100A 3 pole 250VDC breaker recommended for external battery |
| Expandable Runtime | Yes |
| Expandable Runtime Description | External battery pack wiring is contractor supplied |
| DC System Voltage (VDC) | ±240VDC |
| 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 |
| 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-E), 2496 joules (Ph-N), 1872 joules (N-E) |
| AC Suppression Response Time | Instantaneous |
| PHYSICAL | |
| Cooling Method | Fans |
| Installation Form Factors Supported with Included Accessories | Tower |
| Primary Form Factor | Tower |
| Primary UPS Depth (mm) | 1,100 |
| Primary UPS Height (mm) | 2,010 |



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| 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 305V (Ph-Ph) Full load or 208V (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 478V (Ph-Ph), reducing output within 1% of nominal; Above this point, output is maintained utilizing reserve battery power |
| SPECIAL FEATURES | |
| Cold Start (Startup in Battery Mode During a Power Failure) | Cold-start operation supported |
| High Availability UPS Features | Automatic inverter bypass; Hot swappable batteries; Hot swappable UPS power module; Auto Probe Monitoring (included); Zero transfer time; On-Line/Double-Conversion |
| Green Energy-Saving Features | Greater than 95% efficiency - GREEN UPS; High efficiency economy mode operation; Schedulable daily hours of economy mode operation |
| STANDARDS & COMPLIANCE | |
| UPS Certifications | CE; ROHS (Restriction of Hazardous Substances) |
| Certification Details | Agency standards IEC 62040-1:2008+A1:2013; EMI Approvals EN62040-2, 2006 (Category C3); Vibration and Shock: SS-EN 60068-2-64 |
| WARRANTY | |
| Product Warranty Period (International) | 2-year limited warranty |
| 3-Phase Warranty Statement | <u>Tripp Lite 3-Phase UPS Factory Warranty</u> |

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