

SmartOnline SVX Series 60kVA 400/230V 50/60Hz Modular Scalable 3-Phase On-Line Double- Conversion Medium-Frame UPS System, 5 Battery Modules

MODEL NUMBER: **SVX60KM2P5B**



Description

Tripp Lite's SVX60KM2P5B 60kVA/60kW SmartOnline® Medium-Frame UPS includes installed input, bypass and output breakers, a static transfer switch (STS) and 2 included 30kVA SVX30PM power modules. This system supports the addition of up to 2 additional user-installable SVX30PM power modules to accommodate increased capacity up to 90kW with N+1 fault-tolerance. Five internal battery modules are included to fully load internal battery compartments. Additional runtime is available using any number of compatible ± 240 VDC external battery packs (sold separately).

Featuring a 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 configurable 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.

Features

- Tripp Lite's SVX60KM2P5B 60kVA/60kW SmartOnline UPS offers network-grade power protection in a highly configurable medium-frame modular, scalable form factor
- Includes 2 SVX30PM 30kW power modules for 60kW total capacity; Open slots for up to 2 additional SVX30PM 30kW power modules enable scalable capacity configurations up to 90kW with enhanced N+1 redundancy
- Included batteries support a full load of 60kW for 7 minutes and half load of 30kW for 17 minutes; Extended runtime is available with the addition of any number of supported external battery packs (sold separately)
- Supports 220/380, 230/400 or 240/415V AC, 3-Phase Wye 4-Wire plus Earth Hardwire input and output

Highlights

- 60kVA/60kW Modular, Scalable, 3-Phase Medium-Frame Tower UPS
- Supports 3-Phase 220/380V, 230/400V or 240/415V AC, 50/60Hz, Wye; Scalable to 90kVA 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
- Includes 5 internal battery modules, Additional battery options available; Tested to CE for worldwide applications

Package Includes

- SVX60KM2P5B Medium-Frame Modular UPS System
- (2) SVX30PM 30kVA power modules
- (5) SVXBM battery modules
- Pre-installed WEBCARDLX network interface
- Owner's manual

wiring

- Tested to CE for worldwide applications
- 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
- 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 | 037332278715 |
| UPS Type | On-Line |
| INPUT | |
| Input Phase | 3-Phase |
| Rated input current (Maximum Load) | 60kVA Configuration: 110A; Maximum 90kVA N+1 Medium Chassis Configuration: 165A; 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, E) 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) | 60000 |
| Output Capacity (kVA) | 60 |

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| Output Capacity (Watts) | 60000 |
| Output Capacity (kW) | 60 |
| 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 Receptacle Details | Output wiring: 3P, N, E |
| 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 $\pm 4\text{Hz}^*$ 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 | 91A (220/380V); 87A (230/400V); 83A (240/415V) |
| Individually Controllable Load Banks | No |
| Modular Upgrade Options | Includes 2 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 90kVA capacity (or 60kVA with N+1 redundancy); Add 2 SVX30PM for 90kVA capacity with N+1 redundancy |
| BATTERY | |
| Runtime Full Load (min.) | 7 min. (60kW) |
| Runtime Half Load (min.) | 17 min. (30kW) |
| Expandable Runtime | Yes |
| Expandable Runtime Description | External battery pack wiring is contractor supplied; All external battery configurations require the disconnection of internal battery modules. Supports extended runtime with optional external battery packs; 100A 3 pole 250VDC breaker recommended for external battery. |
| External Battery Pack Compatibility | BP480V200; BP480V300; BP480V400; BP480V500 ; BP480V370 |

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| 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-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.) | 54.50 x 28.50 x 42.50 |
| Shipping Dimensions (hwd / cm) | 138.43 x 72.39 x 107.95 |

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| Shipping Weight (lbs.) | 1058.00 |
| Shipping Weight (kg) | 479.90 |
| 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 |
| UPS Power Module Weight (kg) | 863.19 |
| UPS Power Module Weight (lbs.) | 1903 |
| ENVIRONMENTAL | |
| Operating Temperature Range | 32° to 104°F (0° to 40°C); De-rates to 90% capacity at 95°F / 35°C and 80% capacity at 104°F / 40°C |
| Storage Temperature Range | 5° to 140°F (-15° to 60°C) |
| Relative Humidity | 0 to 95%, non-condensing |
| AC Mode BTU / Hr. (Full Load) | 11458 |
| AC Economy Mode BTU / Hr. (Full Load) | 890 |
| AC Mode Efficiency Rating (100% Load) | 95% |
| AC Economy Mode Efficiency Rating (100% Load) | 99% |
| Audible Noise | Less than 73 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 software at https://tripplite.eaton.com/products/power-alert |
| 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 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 |

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| 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 |
| FEATURES & SPECIFICATIONS | |
| Cold Start (Startup in Battery Mode During a Power Failure) | Cold-start operation supported |
| 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 | 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 60068; IEC/EN 62040 |
| Product Compliance | RoHS; CE (Europe); FCC (USA) |
| 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 |