

Power Plant Inverter / DC UPS for Electricity

SPI Series 10KVA~400KVA

- Ruggedness
- Accept Wide Input Range
- Complete Input to Output Galvanic Isolation
- Custom-made Welcome
- Diagnostic Panel with LCD and LED display
- Serial & Parallel Redundant Connection



Application

- Automation
- Big Power Station
- Emergency Lighting
- Large Scale Substation
- Petrochemical & Industrial Plants
- Hydro Power Plant
- Thermal Power Plant
- Railway Field
- Telecommunication
- Civil and Military Aviation / Nautical



Hydro Power Plant



Thermal Power Plant



Emergency Lighting



Railway Field



Large Scale Substation



Petrochemical & Industrial Plants



Civil & Military Aviation



Civil & Military Nautical

SATECH POWER

Industrial Grade Power System

SPI Series DC UPS / Inverter for Electricity

The SPI series Inverter / DC UPS for Electricity is available from 10 to 400 KVA 110V / 220V 348V DC as standard, in single or three-phase output configurations and may be customized to reach up to 2000KVA.

Complete Input to Output Galvanic Isolation

Provides a completely isolated and re-reference output. This isolation protection provides a proven solution to problems created by induced voltages affecting the critical loads. Since the output circuit to the load is completely isolated and no noise induced on the neutral can permeate to the loads, systems operate in a more reliable fashion.

High Efficiency, Optimum Stability, and Superior Heat Dissipation

Thanks to IGBT technology, the SPI series provide up to 95% high efficiency. Combined with PWM, DPS (Digital Signal Processor) and Switching Components, results in the most cost-efficient and reliable power solution in the industry.

Multi-CPU Control and Excellent Compatibility between Hardware and Software

Several CPUs are employed in the control circuit and the excellent compatibility between hardware and software can improve the system stability.

High Output Power Quality and Overload Ability

Short in output will not cause the damage of DC UPS

Cold Start Available

Can be started without AC source. (with battery only) and protected from high inrush current.

$\pm 20\%$ Wide Input Voltage Range (> $\pm 20\%$ is available on request)

Works effectively under any unstable AC source. All of the input components used are specially selected to handle extreme high voltage and high current.

Plug & Play Modular Design

All electronics are built in modular front access and front removable sub-assemblies for easy service and quick maintenance. (MTTR: <25mins)

Double Built-in Static Switches

Even if one fails, the other one can still run normally. The high quality components make the SPI series DC UPS have the ability to handle harsh operating environment.

No Harm if Incorrect Operation

Friendly design. Unlike strict operation procedures of the other brands', our SPI series will not be damaged by any incorrect operation.

Thermo-controlled Fan Speed

Fans are designed to slow down under light load, so that the fan's life expectancy is extended and audible noise is reduced.

Ruggedness

1. Most rugged design under poor conditions
2. Most efficient method to charge the battery
3. Inductor added at the input to avoid fluctuation

Diagnostic Panel with LCD and LED Display

Soft Start on Inverter

Reasonable Heat Evacuation Passage Design

Control circuitry and power circuitry are physically separated. Therefore, the DC UPS can operate under harsh environment.

Extremely Flexible

The SPI series offers tailor-made power protection to comply with individual installation requirements.



Redundant Power Supply

Redundant power supplies have been installed to allow for worry free operation of the system.

OPTION :



- Solid State Transfer Switch Built-in
- Maintenance Bypass Switch Built-in
- Variety of Accessory
Remote Control Panel, 3 Phases PC Monitoring Software, Auto Dialing Module, Battery Monitoring Module, 3 Phases SNMP Card, Passive Filter, 12 Pulse Rectifier, Distribution Panels, Emergency Stop Switch are available.
- Input Harmonic Filter
Reduce T. H. D. (Total Harmonic Distortion) of input current.
- Serial & Parallel Redundant

Technical Specification (DC Input / 3-Phase AC Output)

| Model | | SPI-306-110 | SPI-310-110 | SPI-320-110 | SPI-330-110 | SPI-340-110 | SPI-350-110 |
|--|-----------|--|-------------|-------------|---|-------------|-------------|
| | | SPI-306-220 | SPI-310-220 | SPI-320-220 | SPI-330-220 | SPI-340-220 | SPI-350-220 |
| | | SPI-306-348 | SPI-310-348 | SPI-320-348 | SPI-330-348 | SPI-340-348 | SPI-350-348 |
| Capacity | KVA | 6 | 10 | 20 | 30 | 40 | 50 |
| | KW | 4.8 | 8 | 16 | 24 | 32 | 40 |
| Picture | |  | | |  | | |
| DC INPUT | | | | | | | |
| Input Voltage | | 110VDC (99 ~ 152Vdc) , 220VDC, 348VDC | | | | | |
| BYPASS (RESERVE) INPUT | | | | | | | |
| Output Voltage | | 3phase 3W+G (Δ) : 200V / 220V / 380V / 400V / 460V AC ±20%, 50 / 60Hz ±5% 3phase 3W+N+G (Y) : 208V / 380V / 400V / 415V / 460V AC ±20%, 50 / 60Hz ±5% | | | | | |
| AC OUTPUT | | | | | | | |
| Output Voltage | | 3phase 3W+G (Δ) : 200V / 220V / 380V / 400V / 460V AC 3phase 3W+N+G (Y) : 208V / 380V / 400V / 415V / 460V AC | | | | | |
| Voltage Regulation | | ±1% | | | | | |
| Wave Form | | Sine Wave | | | | | |
| Output Power Factor | | 0.8 | | | | | |
| Frequency Lock Range | | 50 / 60Hz ±3Hz | | | | | |
| Output Frequency | | 50 / 60Hz ±0.1Hz (Free Running) | | | | | |
| Phase Shift | | < 0.5° (100% Unbalance Load) | | | | | |
| Total Harmonic Distortion | | < 2% (Linear Load) | | | | | |
| Overload | <110% | Continuous | | | | | |
| | 110 ~125% | 15 minutes | | | | | |
| | 125 ~150% | 10 minutes | | | | | |
| | > 150% | 1 minute | | | | | |
| Efficiency (100% Load) | | 93.0% | 93.0% | 93.0% | 93.5% | 93.5% | 93.5% |
| STATIC SWITCH (OPTION) | | | | | | | |
| Voltage Range | | 173 ~ 277VAC (L-N) | | | | | |
| Mains ↔ Inverter | | 0ms | | | | | |
| OVERALL CHARACTERISTICS | | | | | | | |
| Overall Efficiency | | 91.0% | 91.0% | 91.0% | 91.5% | 92.0% | 92.0% |
| Size (W*D*H/mm) | | 550*800*1600 | | | 1100*800*1600 | | |
| Audible Noise (at 1m) | | < 65dBA | | | < 67dBA | | |
| Temperature | | 0 ~ 40°C (32 ~ 104°F) | | | | | |
| Humidity | | 0% ~ 90% (Non-Condensing) | | | | | |
| Altitude | | <1500 M Above Sea Level | | | | | |
| Safety | | EN50091-1,-2, EN50091-1,-2, EN50091-1,-2; FCC Part 15 Class A; UL924 & UL1778; NFPA111; CAS107.1; CCMC & BMEC | | | | | |
| Short Circuit Protection | | YES | | | | | |
| Lightning / EMC Filter | | MOV / Input & Output (FCC CLASS A) | | | | | |
| Galvanic Isolation | | Input & Output true Galvanic isolation | | | | | |
| LED, LCD, Buzzer | | YES | | | | | |
| Remote Control / Communication Interface | | Monitoring 1~99 UPS simultaneously / Dry contact, RS232, RS485 | | | | | |



- Remarks: 1. Different specifications required are available
2. All specifications mentioned above are subject to change without prior notice.

Technical Specification (DC Input / 3-Phase AC Output)

| Model | | SPI-360-110 SPI-360-220 SPI-360-348 | SPI-380-110 SPI-380-220 SPI-380-348 | SPI-3100-110 SPI-3100-220 SPI-3100-348 | SPI-3120-110 SPI-3120-220 SPI-3120-348 | SPI-3160-110 SPI-3160-220 SPI-3160-348 |
|---|-----------|--|---|--|---|--|
| Capacity | KVA | 60 | 80 | 100 | 120 | 160 |
| | KW | 48 | 64 | 80 | 96 | 120 |
| Picture | |  | | |  | |
| DC INPUT | | | | | | |
| Input Voltage | | 110VDC (99 ~ 152Vdc) , 220VDC, 348VDC | | | | |
| BYPASS (RESERVE) INPUT | | | | | | |
| Output Voltage | | 3phase 3W+G (Δ) : 200V / 220V / 380V / 400V / 460V AC ±20%, 50 / 60Hz ±5% 3phase 3W+N+G (Y) : 208V / 380V / 400V / 415V / 460V AC ±20%, 50 / 60Hz ±5% | | | | |
| AC OUTPUT | | | | | | |
| Output Voltage | | 3phase 3W+G (Δ) : 200V / 220V / 380V / 400V / 460V AC 3phase 3W+N+G (Y) : 208V / 380V / 400V / 415V / 460V AC | | | | |
| Voltage Regulation | | ±1% | | | | |
| Wave Form | | Sine Wave | | | | |
| Output Power Factor | | 0.8 | | | | |
| Frequency Lock Range | | 50 / 60Hz ±3Hz | | | | |
| Output Frequency | | 50 / 60Hz ±0.1Hz (Free Running) | | | | |
| Phase Shift | | < 0.5° (100% Unbalance Load) | | | | |
| Total Harmonic Distortion | | < 2% (Linear Load) | | | | |
| Overload | <110% | Continuous | | | | |
| | 110 ~125% | 15 minutes | | | | |
| | 125 ~150% | 10 minutes | | | | |
| | > 150% | 1 minute | | | | |
| Efficiency (100% Load) | | 94% | 94.5% | 94.5% | 95% | 95% |
| STATIC SWITCH | | | | | | |
| Voltage Range | | 173 ~ 277VAC (L-N) | | | | |
| Mains ↔ Inverter | | 0ms | | | | |
| OVERALL CHARACTERISTICS | | | | | | |
| Overall Efficiency | | 92% | 92.5% | 92.5% | 93.0% | 93.0% |
| Size (W*D*H/mm) | | 2200*800*1600 | | | 2750*800*1600 | |
| Audible Noise (at 1m) | | < 67 dBA | | | < 75 dBA | |
| Temperature | | 0 ~ 40°C (32 ~ 104°F) | | | | |
| Humidity | | 0% ~ 90% (Non-Condensing) | | | | |
| Altitude | | <1500 M Above Sea Level | | | | |
| Safety | | EN50091-1,-2, EN50091-1,-2, EN50091-1,-2; FCC Part 15 Class A; UL924 & UL1778; NFPA111; CAS107.1; CCMC & BMEC | | | | |
| Short Circuit Protection | | YES | | | | |
| Lightning / EMC Filter | | MOV / Input & Output (FCC CLASS A) | | | | |
| Galvanic Isolation | | Input & Output true Galvanic isolation | | | | |
| LED, LCD, Buzzer | | YES | | | | |
| Remote Control / Communication Interface | | Monitoring 1~99 UPS simultaneously / Dry contact, RS232, RS485 | | | | |

- Remarks:
1. Different specifications required are available
 2. All specifications mentioned above are subject to change without prior notice.

Technical Specification (DC Input / 1-Phase AC Output)

| Model | | SPI-110-110 | SPI-120-110 | SPI-130-110 | SPI-140-110 | SPI-150-110 |
|--|-----------|---|-------------|---|-------------|-------------|
| | | SPI-110-220 | SPI-120-220 | SPI-130-220 | SPI-140-220 | SPI-150-220 |
| | | SPI-110-348 | SPI-120-348 | SPI-130-348 | SPI-140-348 | SPI-150-348 |
| Capacity | KVA | 20 | 20 | 30 | 40 | 50 |
| | KW | 16 | 16 | 24 | 32 | 40 |
| Picture | |  | |  | | |
| DC INPUT | | | | | | |
| Input Voltage | | 110VDC (99 ~ 152Vdc) , 220VDC, 348VDC | | | | |
| BYPASS (RESERVE) INPUT | | | | | | |
| Output Voltage | | 1phase 2W+G : 220V / 230V / 240V ±20%, 50 / 60Hz ±5% 1phase 3W+G : 220V / 110V; 230V / 115V; 240V / 120V ±20%, 50 / 60Hz ±5% | | | | |
| AC OUTPUT | | | | | | |
| Output Voltage | | 1phase 2W+G : 220V / 230V / 240V 1phase 3W+G : 220V / 110V; 230V / 115V; 240V / 120V | | | | |
| Voltage Regulation | | ±1% | | | | |
| Wave Form | | Sine Wave | | | | |
| Output Power Factor | | 0.8 | | | | |
| Frequency Lock Range | | 50 / 60Hz ±3Hz | | | | |
| Output Frequency | | 50 / 60Hz ±0.1Hz (Free Running) | | | | |
| Phase Shift | | < 0.5° (100% Unbalance Load) | | | | |
| Total Harmonic Distortion | | < 2% (Linear Load) | | | | |
| Overload | <110% | Continuous | | | | |
| | 110 ~125% | 15 minutes | | | | |
| | 125 ~150% | 10 minutes | | | | |
| | > 150% | 1 minute | | | | |
| Efficiency (100% Load) | | 93.0% | 93.0% | 93.0% | 93.5% | 93.5% |
| STATIC SWITCH | | | | | | |
| Voltage Range | | 173 ~ 277VAC (L-N) | | | | |
| Mains ↔ Inverter | | 0ms | | | | |
| OVERALL CHARACTERISTICS | | | | | | |
| Overall Efficiency | | 91.0% | 91.0% | 91.0% | 91.5% | 92.0% |
| Size (W*D*H/mm) | | 550*800*1600 | | 1100*800*1600 | | |
| Audible Noise (a t 1m) | | < 65dBA | | < 67dBA | | |
| Temperature | | 0 ~ 40°C (32 ~ 104°F) | | | | |
| Humidity | | 0% ~ 90% (Non-Condensing) | | | | |
| Altitude | | <1500 M Above Sea Level | | | | |
| Safety | | EN50091-1,-2, EN50091-1,-2, EN50091-1,-2; FCC Part 15 Class A; UL924 & UL1778; NFPA111; CAS107.1; CCMC & BMEC | | | | |
| Short Circuit Protection | | YES | | | | |
| Lightning / EMC Filter | | MOV / Input & Output (FCC CLASS A) | | | | |
| Galvanic Isolation | | Input & Output true Galvanic isolation | | | | |
| LED, LCD, Buzzer | | YES | | | | |
| Remote Control / Communication Interface | | Monitoring 1~99 UPS simultaneously / Dry contact, RS232, RS485 | | | | |

- Remarks: 1. Different specifications required are available
2. All specifications mentioned above are subject to change without prior notice.

Peripheral Options

- **UPSCAN™ - Remote Control Panel**

A hand held display module with LCD and LED can monitor 1 – 99 DC UPSs with RS-485 connected in series from distance <1,000M.



- **UPSCALL™ - Auto-dialing Module**

In case of abnormal situation, it will automatically dial to specified service center for help. Multiple phone numbers can be set and no dedicated line is required.



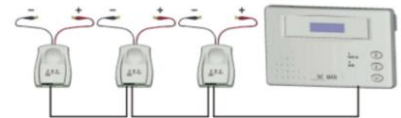
- **UPSCOM™ - 3 Phase PC Monitoring Software**

Can provide real-time three phases information of Inverter connected on the line and monitor 31 DC UPSs max. with one PC. English or Chinese version display Selectable.



- **DCMAN™ - Battery Monitoring Module**

An intelligent module to keep watching each battery in a battery bank connected in series and can distinguish and repair the aged battery before it is seriously worn out.



- **3 Phase SNMP Card**

Can monitor and manage the Inverter through Web browser and Java applet, providing simultaneously three phases data acquisition.



- **Emergency Stop Switch (EPO)**

This feature can be customized to trip off current breakers or perform other inhibits depending customer needs.



Other Options

- **Casters & Levelers**

- **Ruggedizing Option**

This option will add conformal coating and other additional internal structural members to allow the unit to meet many portions of MIL-STD-810 including shock, vibration, and humidity.

- **Drip Shield Options**

This option offers protection against falling or dripping liquids.

- **Cable Entrance Direction**