

SR20 Plus

SR20T Plus

SR60 Plus

Working in Power

SR Plus^{series}

on-line UPS

10, 15, 20, 30, 40, 60, 90, 120 kVA three phase/three phase

- LOCAL AREA NETWORKS (LAN)
- SERVERS
- DATA CENTERS

- CASH REGISTERS
- TELECOMMUNICATION DEVICES
- E-BUSINESS (SERVERS FARMS, ISP/ASP/POP)

- INDUSTRIAL PLCS
- ELECTRO-MEDICAL DEVICES
- EMERGENCY DEVICES (LIGHTS/ALARMS)

SR PLUS series

SR Plus UPS series is an ideal powerful solution for protecting your critical equipment; such as computers, blade servers, industrial automation systems, telecommunication networks and many other applications, that ensures business continuation and cannot run the risk of being disrupted from poor quality electricity supply or momentary power problems.

The SR Plus is a three phase UPS available in 10-15-20-30-40-60-90-120 kVA, with double conversion on-line technology according to the VFI-SS-111 classification, as defined by the IEC EN62040-3 standard.

SR Plus UPS is designed and manufactured with State of the Art Technology to protect the critical equipment, and maintaining cleaned source; with unity output power factor 1 for SR10-15-60-90-120 Plus model; maximum output power at 0.9 power factor for SR20-30-40 Plus and high efficiency close to 96%.

ZERO UTILITY IMPACT

SR Plus provides excellent performance at its input stage; which includes:

- Input power factor 0.99
- Input total current distortion THDi <3%
- Wide input voltage range from 304V to 478V line to line at full load
- Wide input frequency range 40Hz to 70Hz

Thus SR Plus can be compatible and installed in areas when electricity is insufficient, also it is compatible with diesel generator during emergency condition.

INTELLIGENT BATTERY CARE

With flexible battery configuration, battery quantity can be adjusted from 32; 34; 36; 38; 40; 42; 44 of 12V blocks to suit different design.

Intelligent battery health check can be set to auto or manual mode to ensure battery availability and performance.

Optional temperature compensation battery charging for stringent environment



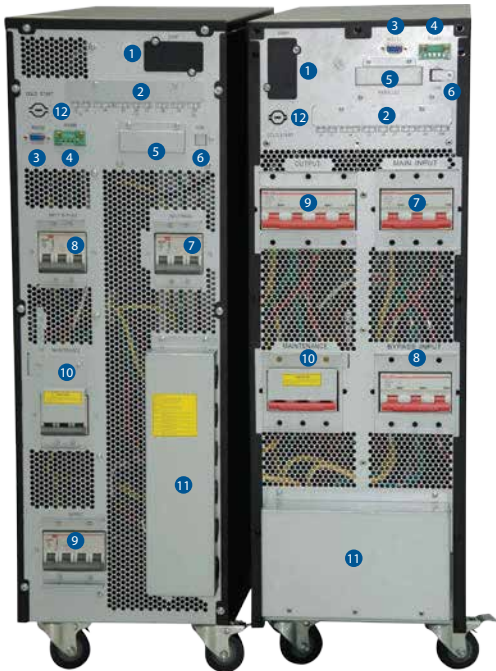
Advanced digital signal processor (DSP) and digital control technology ensure high performance stability and system reliability.

Main Features:

- Reliable, filtered, stabilised and regulated sine wave output (double on-line conversion technology VFI according to EN50091-3 standard) with filters for atmospheric disturbance suppression
- High reliability: IGBT Technology in rectifier and inverter, high frequency PWM, transformerless, fully digital control with microprocessor, no break static and manual transferring
- Wide input voltage and frequency range compatible with different utility power source
- Cleaned source: power factor correction close to unity power factor (pf 0.99) and low THDi (3%)
- 3 steps PWM IGBT Inverter ensures the best performance and efficiency up to 95% in normal mode
- Low noise levels: the high frequency PWM for rectifier and inverter allows very low audible noise
- High battery charging power up to 20% of UPS capacity
- Optional Temperature voltage compensation
- Optional Battery cold start allows UPS to switch on without utility power
- Standard dual input breaker, output breaker & build-in maintenance bypass to ease service and maintenance
- Maximum reliability: SR Plus can work in parallel up to 4 units. The UPS continues to operate in parallel even if one of the communication cables is disconnected
- Battery care system: SR Plus is suitable for use with sealed VRLA, AGM, GEL or open-vented lead acid batteries, Ni-Cd batteries
- Deep discharging controlled by microprocessor with load and main levels (sharing power mode suitable within -40% Vin)
- High power availability: the output factor at 0.9 provides up to 12.5% more active power than a traditional UPS and more load expansion
- Low management cost: the transformer less technology allows the lowest footprint in this category. The SR Plus design allows front, top, and sides access
- Fully DSP control ensures highest reliability

SR PLUS series 10-40 kVA UPS

SR Plus 10/15/20/30/40 kVA are available with 10T/15T/20T/30T/40T for internal battery and SR10/15/20/30/40 for external battery version. SR Plus series 10, 15, 20, 30, 40kVA UPS have built-in protection and remote interfacing, upon request internal output isolation transformer can be provided. SR60, 90, 120 Plus UPS are adopted with modular UPS technique. They consist of multiple 30kVA power modules, which allow modules to be hot-swappable and hence MTTR is <10mins for UPS modules.



SR20/30 Plus

SR40 Plus

Item	Description
1	SNMP (optional)
2	Dry Contact (optional)
3	RS232
4	RS485
5	Parallel Port (optional)
6	USB (optional)
7	Main Input Breaker
8	Bypass Main Input Breaker
9	Output Breaker
10	Maintenance Bypass Breaker
11	Terminal Block
12	Cold Start (optional)
13	Battery Breaker (for 20T & 30T Plus)



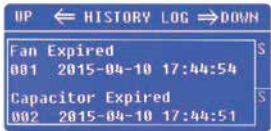
SR20T Plus/ 30T Plus

Comprehensive UPS Mimic Panel

SR Plus series 10kVA to 40kVA UPS designed with large LCD screen displays precise UPS status; alarms & measurements. Also provide early warning when component is reaching its service life cycle.

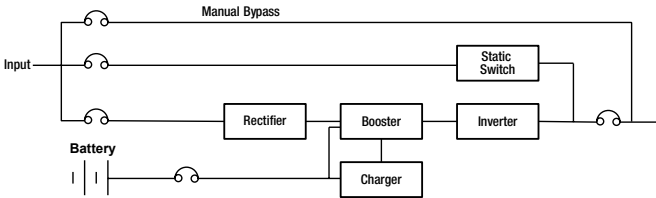


Component operating hours



Component aging

SR20 Plus to SR40 Plus Configuration



SR Plus series 20kVA to 40kVA UPS Front Panel



Menu

User friendly large LCD screen displays precise UPS status, alarms and measurements.

- REC - Rectifier ON/OFF Status
- BAT - Battery Charge/Discharge/Failure/Abnormal Status
- INV - Inverter ON/OFF Status
- BYP - Bypass On Load Status
- OUT - Load On-Line/Abnormal Status
- STATUS - UPS General Status
- EPO - Emergency Power OFF Button
- ENTER - Confirm Button
- HOME - Back to Home Page
- - Scroll to Next Menu
- - Scroll to Previous Menu

SR PLUS series 60,90,120 kVA UPS

SR60, 90, 120 Plus UPS

The 60, 90, 120 kVA SR Plus UPS is now upgraded to unity power factor (PF1) which means higher power output. It has higher true power; ie, 11% extra power than traditional UPS designed with PF0.9 or 25% extra power for UPS designed with PF0.8 output power factor. SR60, 90, 120 Plus UPS is designed as standalone fully front accessible and adopting scalable modular UPS concept to ease operation, service and maintenance, thereby offering higher power availability.

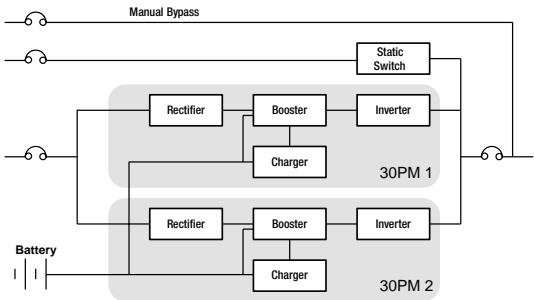
It is a highly efficient transformerless UPS with overall efficiency of 95%, thus providing long term savings in operating cost. It consist of Power Modules, Static Bypass, large touch screen LCD, Protection Breakers. Each power module is rated 30kVA. As such, regulated power supply to mission critical load could be maintained even if one power module is out of service.



Item	Description
1	SNMP (optional)
2	Dry Contact
3	RS232
4	RS485
5	Parallel Port
6	USB
7	Input Breaker
8	Bypass Breaker
9	Output Breaker
10	Maintenance Bypass Breaker
11	Terminal Block
12	Battery Cold Start (optional)
13	Intelligent Slot for External Dry Contact



SR60 Plus Configuration



SR60 Plus Front Panel UPS Front Panel



- REC - Rectifier ON/OFF Status
- BAT - Battery Charge/Discharge/Failure/Abnormal Status
- INV - Inverter ON/OFF Status
- BYP - Bypass On Load Status
- OUT - Load On-Line/Abnormal Status
- STATUS - UPS General Status
- - Buzz
- EPO - Emergency Power OFF Button
- TAP - Switching Between Menu Button
- ENTER - Confirm Button
- ESC - Exit Button

SR10/15/20/30/40 Plus UPS provide with the following communication:

- RS232, RS485 and USB port for engineer servicing; communication network
- Optional SNMP and dry contact card for Remote Web based Management by SNMP Protocol and optional dry contact card for remote alarm reporting

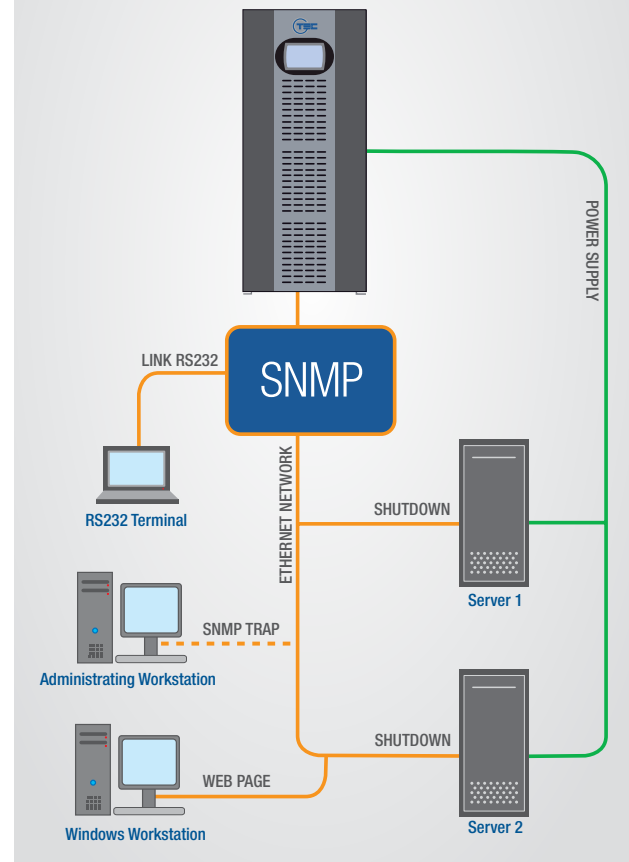
SR60/90/120 Plus UPS design with standard communications as follows:

- Standard RS232 & RS485 with ModBus Interface Protocol
- External input signal to interface with UPS for battery & environment temperature
- REPO (Remote Emergency Power Off) for power down UPS from external signal
- Interface with generator for operating status, as well as driving signal for holding coil for battery circuit breaker
- Interface with Battery Circuit Breaker (BCB) for ON/OFF status
- Standard three alarm contacts for alarm reporting. There are: Battery Low, General Alarm and Mains Failure

Other optional remote monitoring and control features:

- SNMP card allows UPS management across a LAN using any network communication protocol such as TCP/IP, HTTP, SMTP, DHCP, Telnet, BOOTP, DNS, DDNS, PPPoE, Wap, PDA Browser, SNMP RFC 1628 MIB, PPC MIB and Ethernet Up
- External Load Bus Synchronizer (LBS) port to interact with external Static Transfer Switch (STS) for highest system reliability
- Extended dry contact slot

Direct Connection with Ethernet Network



SR Plus series UPS allows quick glance of UPS status and event records from the dedicated software.

Customization of UPS can be configured by factory trained engineer to suit different application.

TECHNICAL **ASSISTANCE** SERVICE

UPService, our technical assistance facility uses highly trained engineers to provide a reliable and competent technical support and after-sales service.

UPService can provide customers with:

- A dedicated CALL CENTRE for connection to the UPService organisation. UPService personnel are always available and ready to provide advice and assistance regarding UPS installation, maintenance, fault finding and repair.
- FAST & READY A fast repair on site is guaranteed through the use of state-of-the-art UPS technology and the professionalism of the UPService personnel and Authorised Assistance Centres. UPService guarantees that failed parts are replaced with original ones, tested and updated in order to maintain the safety, reliability and operating characteristics of the UPS.
- COMMISSIONING AND START-UP UPService can provide assistance during commissioning and startup of the UPS equipment on-site with additional training during handover to site personnel. UPService engineers can also verify site suitability, analyse and advise on potential problems, and disconnect and relocate equipment. UPService recommend that all hardwired installations are commissioned by UPService engineers.
- MAINTENANCE CONTRACTS can be provided by UPService to minimise response times and repair costs. Contracts range from periodic inspections to comprehensive cover including labour and materials.
- UPService organises regular TECHNICAL TRAINING COURSES for UPS operators and installers.



TECHNICAL
ASSISTANCE SERVICE

SR PLUS series

	Technical Specification							
Models with Long Back-Up Time	SR10 Plus	SR15 Plus	SR20 Plus	SR30 Plus	SR40 Plus	SR60 Plus	SR90 Plus	SR120 Plus
Models with Built-In Battery	SR10T Plus	SR15T Plus	SR20T Plus	SR30T Plus	SR40T Plus	N.A		
INPUT								
Rated Input Voltage	380V / 400V/ 415V, 3 phase + N							
Input Voltage Windows	304V – 478V (line to line); output power derated if input voltage is 228V – 304V							
Rated Input Frequency	50Hz / 60Hz							
Frequency Windows	40Hz – 70Hz							
Input THDi / pf	<4% (linear load) / >0.99		<3% (linear load) / >0.99					
BY PASS								
Rated Bypass Voltage	380V / 400V/ 415V, 3 phase + N							
Bypass Voltage Windows	Default: -20%~+15%; Upper threshold: +10%, +15%, +20%, +25% / Lower threshold: -10%, -15%, -20%, -30%, -40%							
Rated Bypass Frequency	50Hz / 60Hz							
Bypass Frequency Windows	Selectable: ±1Hz; ±3Hz; ±5Hz							
Bypass Overload Capability	Up to 125% continuous / 125%-130% for 10mins / 130%-150% for 1min / 150% <200ms						Up to 110% continuous / 110%-125% for 5mins / 125%-150% for 1min / 150%-400% for 1 sec/ >400% less than 200ms	
BATTERY								
Design to Compatible with	VRLA AGM/ GEL; NiCad; Wet type battery (32 to 44 of 12V block)							
Charger DC Stability	±1% Vdc							
OUTPUT								
Rated Power (kVA/ kW) (PF 0.9)			20 / 18	30 / 27	40 / 36			
Rated Power (kVA/ kW) (PF 1)	10 / 10	15 / 15	N.A			60 / 60	90 / 90	120 / 120
Rated voltage	380V / 400V/ 415V, 3 phase + N							
Output Power Factor	1		0.9			1		
Voltage Stability	±1% at linear load							
Voltage Distortion (THDv)	<1% linear load (0% to 100%) <5.5% full non-linear load according to IEC/EN62040-3		<1% linear load (0% to 100%) <5.5% full non-linear load					
Rated Frequency & Range	50Hz / 60Hz; default ±3Hz; selectable from ±0.5Hz to ±5Hz							
Frequency Stability at Battery Mode	50Hz / 60Hz ±0.1%							
Crest Factor	3 : 1							
Overload Capability (PF 0.9)	110% for 60mins / 125% for 10mins / 150% for 1min / >150% for 200ms							
Overload Capability (PF 1)	N.A					<110% for 10min / 110%~125% for 1min / 125%~150% for 5s / >150% for 200ms		
SYSTEM								
System Efficiency	95% online mode							
Display Interface	Push button; LCD & LED					Push button; LED; 7" LED Touch Screen		
External Interface	Standard in-built: RS232; RS485 Option: SNMP; dry contact; dual input kit; parallel kit; battery cold start					Standard in-built: RS232; RS485; USB, dry contact Option: SNMP; parallel kit, battery cold start, Extended AS400 Card		
Operating & Storage Temperature	0°C to 40°C / -40°C to 70°C							
Relative Humidity	Up to 95% non-condensing							
Sound Pressure @ 1m	58dBA @100% load, 52dBA@50%load		<60dBA					
Applicable Standards	EN50091-1-1/IEC62040-1-1/AS 62040-1-1 for General safety requirement in operator access area EN50091-2/IEC62040-2/AS 62040-2 (C3) for Electromagnetic compatibility (EMC) requirements for UPS EN50091-3/IEC62040-3/AS 62040-3 (VFI SS 111) for Method of specifying the performance & test requirement of UPS							
PHYSICAL DATA								
Size (L x D x H), mm	250 x 660 x 530		250 x 680 x 770		250 x 833 x 750	600 x 980 x 950	600 x 980 x 1400	
Size (L x D x H), mm for 10T, 15T, 20T, 30T & 40T	250 x 840 x 715		350 x 738 x 1335		500 x 840 x 1400	N.A		
Weight, kg	31 (standard) / 51.5 (optional in-built battery)		50 (standard) / 88 (optional in-built battery)		61	170	231	266
Mechanical Protection	IP20							
Colour	Front RAL 7012 / Side panels RAL7021							

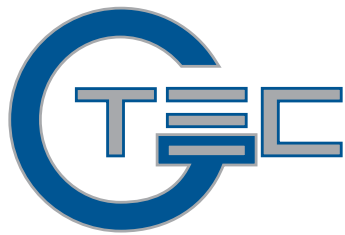
NOTE:

UPS specification and data may be subjected to change for improvement without prior notice

UPS model SR10T Plus/ 15T/ 20T/ 30T Plus UPS can contain 40 x 12V12Ah Battery. Backup time for 12Ah is about 8mins at 70% load of 20kVA.

SR40T Plus can contain 4 strings 40blks of 7/9 Ah battery.

G-Tec Asia Pacific Pte Ltd



Working in Power



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