

Working in Power

SD10200 series

on-line UPS

10 - 15 - 20 kVA single/single phase and three/single-phase
10, 15, 20, 30, 40 kVA three/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)

SD10200 series

G-TEC in responding to rapid IT technologies evolution; critical application complexity and demanding for higher flexibility and energy efficient, GTEC offers the new three-phase UPS solutions to meet with these requirements, whilst provide highest secured power protection, the new SD10200 series is developed to meet these expectations.

SD10200 Series UPS excellent performance and specification allow it to support mission critical loads, such as:



- Electro-medical equipment;
- Data centres;
- Transportation equipment;
- Controls and instrumentation
- Security systems;
- Light manufacturing industry;
- Emergency lightings
- Laboratory equipment etc.

SD10200 series is available in 1/1 & 3/1 (input / output) voltage for 10; 15; 20 kVA/kW models, and 3/3 (input/ output) voltage for 10; 15; 20; 30 40 kVA/kW models. It is designed and built using the modern State-of-the-art techniques and technology; such as dual-core microprocessor; digital signal processor (DSP); three-level Inverter circuits and resonant control to provide maximum performance & reliability.

Furthermore, the product is designed and built in compliance to the International Standards

IEC/ EN 62040-1: General and safety provisions
IEC/ EN 62040-2: Electromagnetic compatibility (EMC)
IEC/ EN 62040-3: Performances and test provision

European Directives
LVD directive 2014/35/EU
EMC directive 2014/30/EU
RoHS directive 2011/65/EU

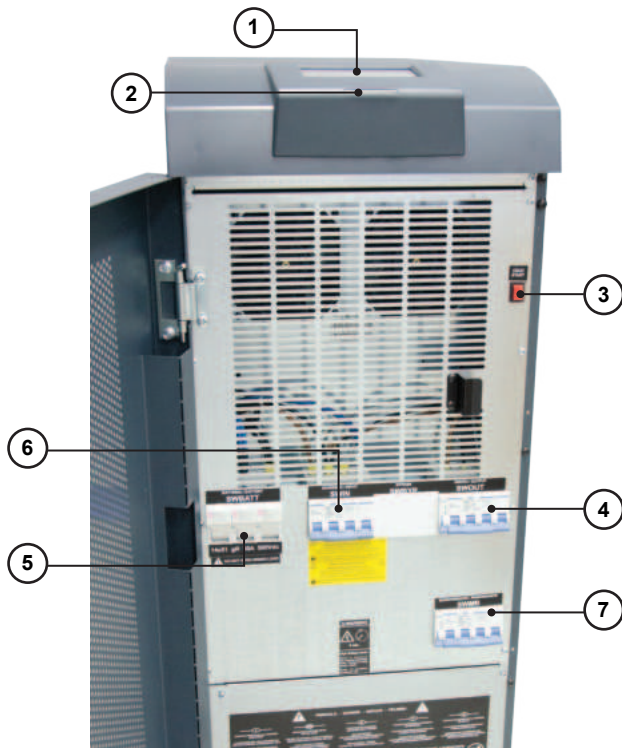
IEC 60529: Degree of protection provided by enclosures
IEC 60664: Insulation for equipment within low-voltage supply systems
IEC 60755: General safety requirements for residual current operated protective devices
IEC 62477-1: Safety requirements for power electronic converter systems & equipment
IEC 61000-2-2: EMC for low-frequency conducted disturbances and signaling in public low-voltage power supply systems
IEC 61000-3-12: EMC for harmonic currents produced by equipment ($16A < X \leq 75A$ per phase)
IEC 61000-4-2: Test standard for electrostatic discharge (ESD) immunity
IEC 61000-4-3: EMC testing and measurement, radiated, radio-frequency, electromagnetic field immunity test.
IEC 61000-4-4: EMC testing and measurement for electrical fast transient/ burst immunity test
IEC 61000-4-5: EMC testing and measurement for surge immunity test
IEC 61000-4-6: EMC testing and measurement for immunity to conducted disturbances induced by radio-frequency fields
IEC 61000-4-8: EMC testing and measurement for power frequency magnetic field immunity test
IEC 61000-6-4: EMC for emission standard for industrial environments

SD10200 series main features:

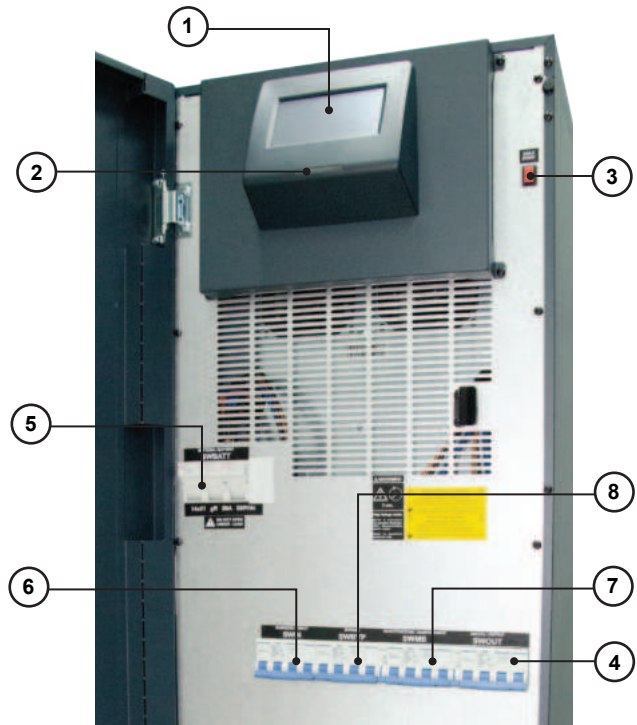
- Highest classification VFI-SS-111 true on-line double conversion as defined by IEC/EN 62050-3 standards
- Flexible self-contained power systems with SDxxM/T- S for in-built 2 battery banks (strings) and SDxxM/T- L for in-built 3 battery banks (strings)
- High overall efficiency up to 96.6% for superior performance
- Higher power availability, could deliver full rated power at operating temperature up to 40°C without derating regardless of power factor of the load
- Equipped with 5 in1 operating modes: On-line / ECO / Frequency Converter / SMART Active / Standby Off
- Smart Battery Management, could pro-long battery life span and optimized battery performance through series of selected health test
- With special consultation and selection, it could support wide output voltage (L-N) selectivity: 200V / 208V / 220V / 230V / 240V
- User friendly graphical touch screen provides comprehensive UPS information, such as: command; measurements; status; configurations; alarms & history logs
- Standard REPO & dry contacts for remote interfacing & monitoring by control center
- Up to 8 units identical units paralleable

SD10200 series

SD10200 series internal detail



SDxxM/T - S internal view

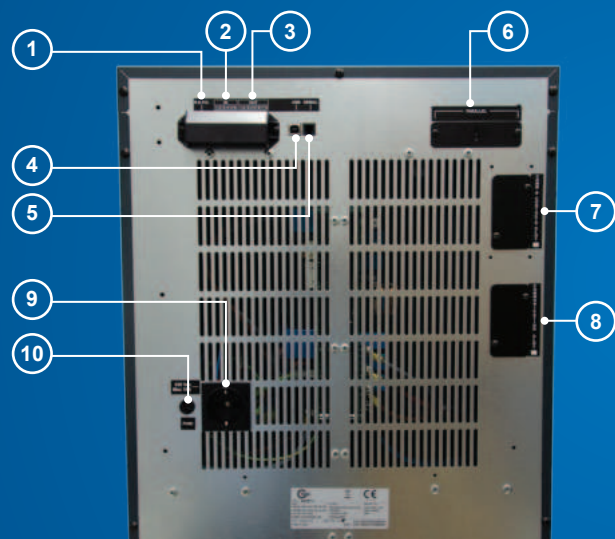


SDxxM/T - L internal view

1. Graphical touch screen LCD display
2. UPS status LED with ambient lighting for status
(light blue / dark blue / orange / blinking red)
3. Battery cold start button
4. UPS output switch (SWOUT)

5. Fuse holder for internal battery (SWBATT)
6. UPS input switch (SWIN)
7. UPS internal manual bypass switch (SWMB)
8. UPS static bypass switch (SWBY – only available for SDxxM/T-L)

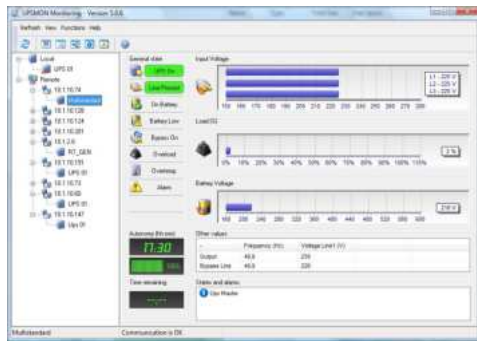
SD10200 series rear detail:



1. Remote Emergency Power Off (REPO) normally closed
2. External input command
(external maintenance bypass / external output breaker /
Battery CB off / Bypass On/System On)
3. Output alarm dry contacts
(Load on bypass / Battery working / Battery low /
General fault or lock)
4. USB-B
5. Serial / RS232 Connector
6. Slot for optional parallel card
7. Communication slot 2
(second dry contact card & other accessory card)
8. Communication slot 1 for other accessory card
9. Schuko socket outlet (10A max)
- only available for SDxxM/T-L model
10. Protection fuse
- only available for SDxxM/T-L model

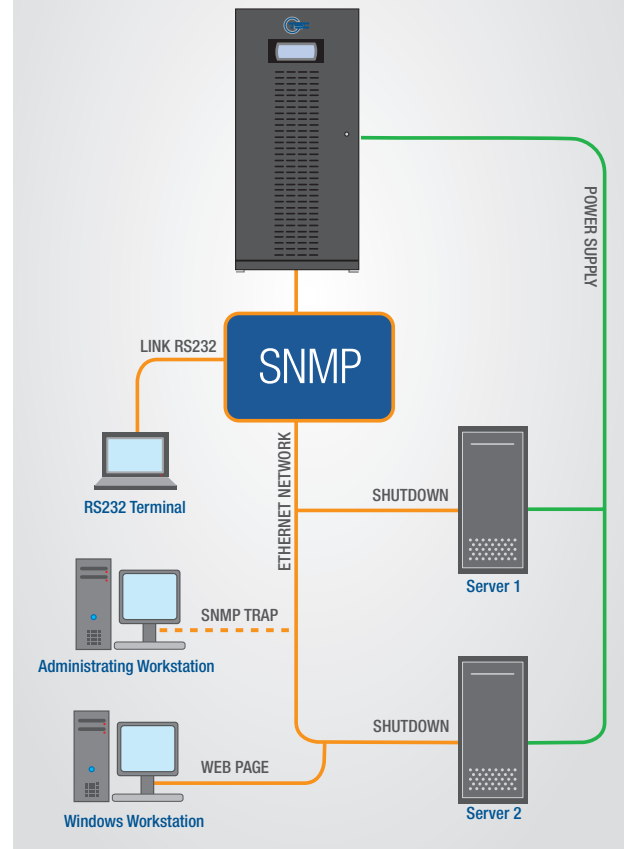


DETAILED UPS PARAMETER DISPLAY
 UPS Monitoring Software provides all the information required for first level diagnostics



BLOCK AND FUNCTIONAL DIAGRAMS
 UPS Monitoring Software also displays the UPS in block format providing the user with information regarding operating status

Direct Connection with Ethernet Network



COMMUNICATION AND POWER MANAGEMENT SOLUTIONS

SD10200 Series provides comprehensive software and communication tools for real time remote management .

- **PowerShield³** - provides graphical monitoring of UPS and environmental sensors status in real time for immediate diagnostics. Full version supports up to maximum 32 UPS's for all operating systems (OS) for unattended progressive shutdown. OS includes:
 - Windows 2008; 2012; 2016; 2019; 2022 Server; XP; Vista; 7; 8; 10; 11 ON X86; X86_64 & IA64 processors;
 - Microsoft Hyper-V;
 - Microsoft SCVMM™;
 - Linux on X86; X86_64 & IA64 processors;
 - Novell Netware 3.x; 4.; 5.x; 6;
 - Mac OS X;
 - Citrix® XenServer;
 - Xen® open source platforms;
 - The most common UNIX OS such as: IBM AIX; HP; SUN Solaris; INTEL & SPARC; SCO Unixware & Open Server; Silicon Graphics IRIX; Compaq Tru64 UNIX & DEC UNIX; Open BSD UNIX & FreeBSD UNIX; NCR UNIX;
 - HP OPEN VMS
- **NetMan 204** – Web-based Network card allows UPS directly connected over LAN 10/100MB connections to be managed using the main network communication protocols (TCP/IP; HTTP & SNMP) in real time for remote monitoring. It is ideal solution for the integration of UPS over Ethernet networks with ModBus/ TCP or BACNET/IP protocols for integrating UPS into medium-size & larger networks to support high level interfacing.
- **MultiCom 302** – protocol converter card allows UPS monitoring using ModBus/ JBUS protocol over RS232 or RS485 series lines.
- **MultiCom 352** –interface duplexer card allows two devices to be connected to a single communication serial port on the UPS.
- **MultiCom 384** – provides a set of relay contacts for managing UPS alarm notifications and operating states.
- **MultiCom 411** – provides interfacing of UPS with ProfiBus DP Network.
- **MultiCom 421** – provides interfacing to PROFINET-IO network.
- **Multi I/O** – provides integration of UPS with fully configurable input and output relay signals.
- **MultiPanel** – provides interfacing with remote monitoring device that can duplicate detail UPS status overview in real time.

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

SD10200 series

Technical Specification			
Model (1/1 or 3/1)	SD10M-S / SD10M-L	SD15M-S / SD15M-L	SD20M-S / SD20M-L
INPUT			
Rated Input Voltage	380 – 400 - 415Vac, 3 phase + N 220 – 230 – 240Vac, 1 phase + N		
Voltage range	3 phase (320V ~ 480V @ 100 load / 240V ~ 480V @ 50% load) 1 phase (184V ~ 276V @ 100 load / 140V ~ 276V @ 50% load)		
Frequency & Range	50Hz/ 60Hz auto sensing, 40Hz to 72Hz		
Input power factor & THDi	≥0.99 & ≤3% (3 phase input; source THDv<1%) ≥0.99 & ≤2.5% (1 phase input; source THDv<1%)		
Rectifier technology	3 level IGBT technique digital PFC		
Max input I @ lowest input Vac & battery at boost charge	21A – 3 phase 63A – 1 phase	31.5A – 3 phase 94.5A – 1 phase	40A – 3 phase 120A – 1 phase
Max load allowable with 1 phase / 2 phases missing	66% (1 phase missing) / 33% (2 phases missing)		
BY PASS			
Nominal power	10kVA	15kVA	20kVA
Rated Voltage (V)	220V / 230V / 240V single phase + N		
Acceptable voltage range	From 180V (adjustable 180-200Vac) to 264 (adjustable 250-264Vac) Ph-N volt		
Rated frequency	50Hz / 60Hz (selectable)		
Frequency tolerance	±5% (selectable)		
Overload	110% continuous / 125% - 60mins / 150% - 10mins / 200% - 60s / >200% - 20s		
BATTERY			
Type	VRLA (AGM & GEL) / NiCad / Li-ion / Super Caps		
Battery	2X internal battery space SDXXM/T – S / 3X internal battery space SDXXM/T – L		
Charging Method	Two level & Cyclic charging selectable according to EN 50272-2		
Ripple voltage	Approximately ≤2% C10		
INVERTER OUTPUT			
Rated Power at load PF 0.8 lag to 0.8 lead up to 40°C	10kVA / 10kW	15kVA / 15kW	20kVA / 20kW
Rated Voltage & Stability (V)	220V / 230V / 240V ±0.5%, single phase + N;		
THDv linear & non-linear load	<1% linear load / ≤1.5% at non-linear load (EN 62040-3)		
Power derate @ lower O/P voltage	220V -2% / 208V -8% / 200V -11%		
Frequency & Stability (Hz)	50/ 60 (Hz)±0.01% at battery mode; ±5% at synchronized mode (adjustable ±1% to ±10%)		
Dynamic Stability (V)	±1% within 20ms to standard EN62040-3, class 1		
Overload	103% - continuous / 110% - 60mins / 125% - 10mins / 150% - 60s / 200% - 0.5s / >200% - 0.2s		
ENVIRONMENTAL DATA			
Operating Temperature	0° to 40° / recommended 20-25°C for optimum system performance		
Relative Humidity	<95% non-condensing		
Colour	RAL 7016Anthracite grey		
Efficiency	Up to 99% at ECO mode / >96% at Online mode		
Compliance Standard	European Directive LV2014//35/EU, EMC 2044/30/EU, electromagnetic compatibility ; Directive StandardsSafety: IEC EN62040-1; EMC: IEC EN62040-2; RoHS complant. Performance & Test: IEC EN62040-3 VFI-SS-111		
Noise level @ 1m (dBA)	51dBA 50% load/ 55dBA 100% load	55dBA 50% load/ 60dBA 100% load	
Weight (kg)	≤ 48		≤ 52
Dimension L x D x H (mm)	380 x 850 x 1025 (SDXX-S) / 440 x 840 x 1320 (SDXX-L)		
Communication	5" touch screen; 5x optical input command; 4 x dry contacts; REPO; USB; RS232 (RJ10); 2 x intelligent slots		
Auxiliary Interface	1 x temperature sensor input; 1 x external synchronization input		

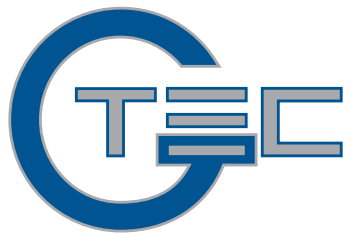
NOTE: UPS specification and data may be subjected to change for improvement without prior notice

SD10200 series

Technical Specification					
Model (3/3)	SD10T-S / SD10T-L	SD15T-S / SD15T-L	SD20T-S / SD20T-L	SD30T-S / SD30T-L	SD40T-S / SD40T-L
INPUT					
Rated Input Voltage	380 – 400 - 415Vac, 3 phase + N				
Voltage range	3 phase (320V ~ 480V @ 100 load / 240V ~ 480V @ 50% load)				
Frequency & Range	50Hz/ 60Hz auto sensing, 40Hz to 72Hz				
Input power factor & THDi	≥0.99 & ≤3% (3 phase input; source THDv<1%)				
Rectifier technology	3 level IGBT technique digital PFC				
Max input I @ lowest input Vac& battery at boost charge	21A	31.5A	40A	63A	80A
Max load allowable with 1 phase / 2 phases missing	66% (1 phase missing) / 33% (2 phases missing)				
BY PASS					
Nominal power	10kVA	15kVA	20kVA	30kVA	40kVA
Rated Voltage (V)	380 – 400 - 415Vac, 3 phase + N				
Acceptable voltage range	From 312V to 460 (adjustable by 4Vac) Ph-Ph volt				
Rated frequency	50Hz / 60Hz (selectable)				
Frequency tolerance	±5% (selectable)				
Overload	110% continuous / 125% - 60mins / 150% - 10mins / 200% - 60s / >200% - 20s				
BATTERY					
Type	VRLA (AGM & GEL) / NiCad / Li-ion / Super Caps				
Battery	2X internal battery space SDXXM/T – S / 3X internal battery space SDXXM/T – L				
Charging Method	Two level & Cyclic charging selectable according to EN 50272-2				
Ripple voltage	Approximately ≤2% C10				
INVERTER OUTPUT					
Rated Power at load PF 0.8 lag to 0.8 lead up to 40°C	10kVA / 10kW	15kVA / 15kW	20kVA / 20kW	30kVA / 30kW	40kVA / 40kW
Rated Voltage & Stability (V)	380V / 400V / 415V ±0.5%, 3 phase + N;				
THDv linear & non-linear load	<1% linear load / ≤1.5% at non-linear load (EN 62040-3)				
Power derate @ lower O/P voltage	220V -2% / 208V -8% / 200V -11%				
Frequency & Stability (Hz)	50/ 60 (Hz) ±0.01% at battery mode; ±5% at synchronized mode (adjustable ±1% to ±10%)				
Dynamic Stability (V)	±1% within 20ms to standard EN62040-3, class 1				
Overload	103% - continuous / 110% - 60mins / 125% - 10mins / 150% - 60s / 200% - 0.5s / >200% - 0.2s				
ENVIRONMENTAL DATA					
Operating Temperature	0° to 40° / recommended 20-25°C for optimum system performance				
Relative Humidity	<95% non-condensing				
Colour	RAL 7016 Anthracite grey				
Efficiency	Up to 99% at ECO mode / >96% at Online mode				
Compliance Standard	European Directive LV2014//35/EU, EMC 2044/30/EU, electromagnetic compatibility ; Directive StandardsSafety: IEC EN62040-1; EMC: IEC EN62040-2; RoHS complant. Performance & Test: IEC EN62040-3 VFI-SS-111				
Noise level @ 1m (dBA)	51dBA 50% load/ 55dBA 100% load	55dBA 50% load/ 60dBA 100% load		57dBA 50% load/ 62dBA 100% load	
Dimension L x D x H (mm)	380 x 850 x 1025 (SDXX-S) / 440 x 840 x 1320 (SDXX-L)				
Weight	72(-S) / 103(-L)	74(-S) / 105(-L)	76(-S) / 107(-L)	78(-S) / 112(-L)	82(-S) / 116(-L)
Communication	5" touch screen; 5x optical input command; 4 x dry contacts; REPO; USB; RS232 (RJ10); 2 x intelligent slots				
Auxiliary Interface	1 x temperature sensor input; 1 x external synchronization input				

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

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