



Working in Power

SD10200 series

on-line UPS

10 - 15 - 20 kVA single/single phase and three/single-phase
10, 15, 20, 30, 40, 60, 80, 100, 120 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 3/3; 3/1; 1/1 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; 60, 80, 100, 120 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 ≤ 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

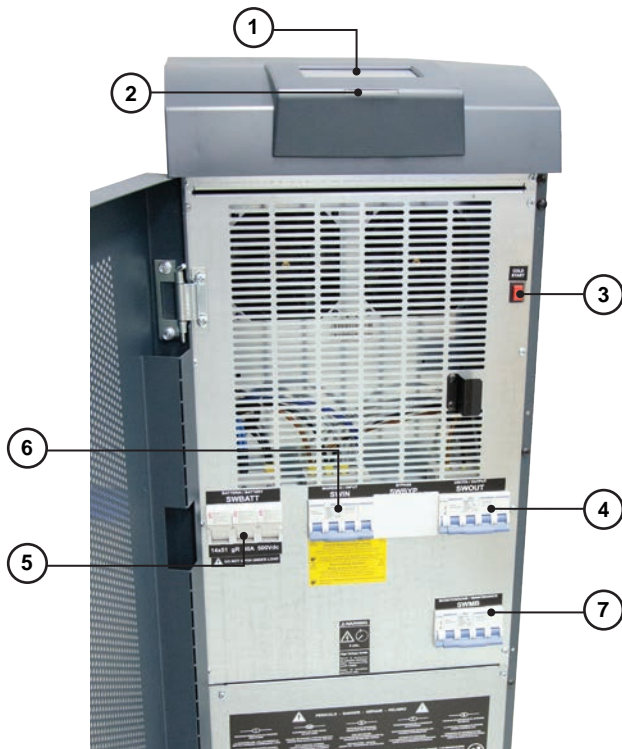
IEC 61000-6-4: EMC for emission standard for industrial environments

SD10200 series main features:

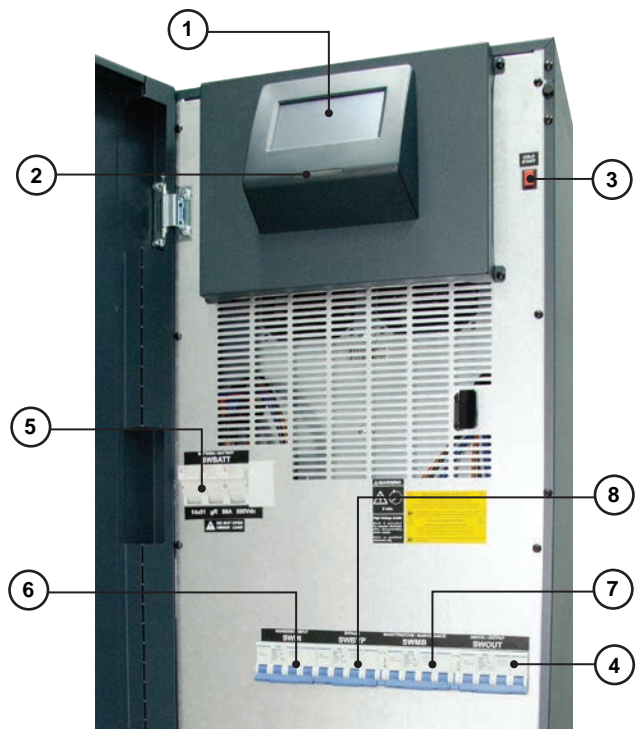
- Highest classification VFI-SS-111 true on-line double conversion as defined by IEC/EN 62050-3 standards
- Flexible self-contained power systems with SDxxM/T- S for in-built 2 battery banks (strings) and SDxxM/T- L for in-built 3 battery banks (strings)
- High overall efficiency up to 96.6% for superior 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
- Wide battery variety includes: sealed VRLA; Ni-Cad & Lithium-Ion battery types
- With special consultation and selection, it could support wide output voltage (L-N) selectivity: 200V / 208V / 220V / 230V / 240V
- User friendly graphical colour 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 parallelable or (N+1) configuration for wide applications
- Common or separate battery configuration selectable for paralleled UPS

SD10200^{series}

SD10200 series internal detail



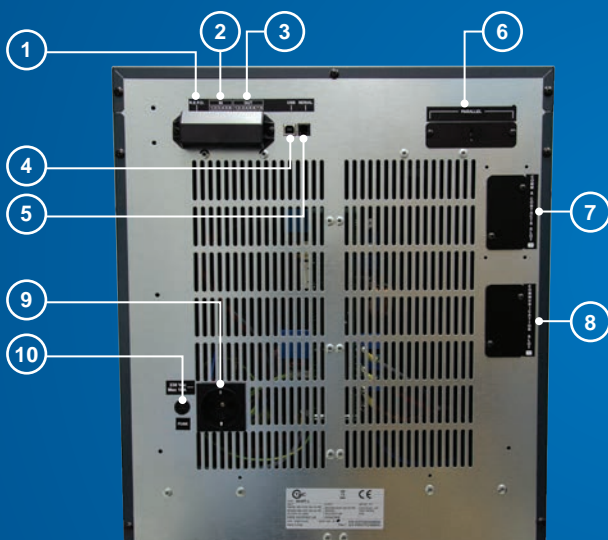
SDxxM/T – S internal view



SDxxM/T – L internal view

- | | |
|--|--|
| <ol style="list-style-type: none"> 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) | <ol style="list-style-type: none"> 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

The SD10200 series has a compact design and a unique layout to focus on different applications

	SDXXT(M)-S	SDXXT(M)-L	SD80T-120T
Graphical touch screen LCD display	✓	✓	✓
LED with ambient lighting for status (light blue / dark blue / orange / blinking red)	✓	✓	✓
Caster wheel	✓	✓	✓
Battery fuse switch disconnecter	✓	✓	N.A.
Isolating switches	SWIN, SWOUT, SWMB (SWBY optional)	SWIN, SWOUT, SWMB, SWBY	SWIN, SWOUT, SWMB (SWBY optional)
Battery compartment (12V, 7/9Ah battery)	10 to 20kVA – 1 to 2 strings x 40 blks 30 to 40kVA – 2 strings x 40 blks 60kVA – N.A.	10 to 20kVA – 1 to 3 strings x 40 blks 30 to 40kVA – 2 to 3 strings x 40 blks 60kVA – 3 strings x 40 blks	N.A.
Schuko receptacle (powered before SWOUT)	N.A.	✓ (60kVA – N.A.)	N.A.

SD10200 series flexible adaptability with following options upon request

- In-built isolation transformer for SDxxM/T – L version guarantee galvanic isolation both during Inverter and Static Bypass operation
- Upgrading to IP21/ 31 for SDxxM/T – L version & SD80T to 120T
- Dual input kit for SDxxM/T – S version & SD80T to 120T
- Extended battery charger for 10 to 100kVA
- Front door air filter for SDxxM/T – L version & SD80T to 120T
- Supercapacitors for SDxxM/T – L version
- External battery temperature sensor kit
- External maintenance bypass
- External synchronization kit
- Remote monitoring panel

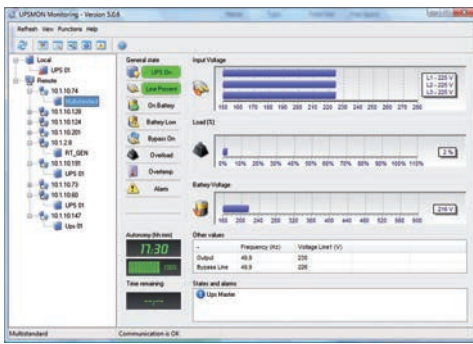
TECHNICAL ASSISTANCE SERVICE

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:

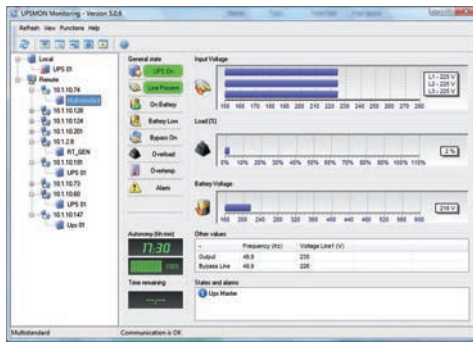
- **A dedicated CALL CENTRE** for connection to the UPService organisation. UPService personnel are always available and ready to provide advice and assistance regarding UPS installation, maintenance, fault finding and repair.
- **FAST & READY** A fast repair on site is guaranteed through the use of 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.





DETAILED UPS PARAMETER DISPLAY

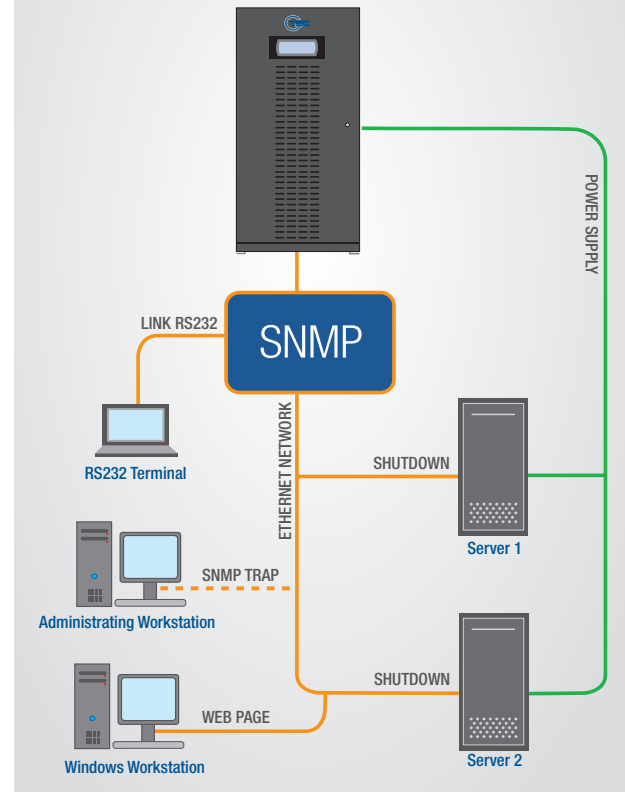
UPS Monitoring Software provides all the information required for first level diagnostics



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

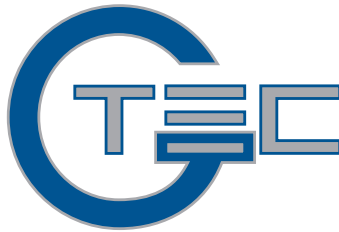
SD10200 Series provides comprehensive software and communication tools for real time remote management .

- **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 208** – Web-based Network card allows UPS directly connected over LAN 10/100/1000 Mbps 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 Specification					
Model (1/1 or 3/1)	SD10M-S / SD10M-L	SD10T-S/ SD10T-L	SD15M-S / SD15M-L	SD15T-S/ SD15T-L	SD20M-S / SD20M-L	SD20T-S/ SD20T-L
INPUT		INPUT				
Rated Input Voltage	380 – 400 - 415Vac, 3 phase + N(For 3 phase input) 220 – 230 – 240Vac, 1 phase + N(For 1 phase input)					
Voltage range	(320V ~ 480V @ 100 load / 240V ~ 480V @ 50% load)(For 3 phase input) (184V ~ 276V @ 100 load / 140V ~ 276V @ 50% load)(For 1 phase input)					
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)	380V / 400V / 415V, 3 phase + N 220V / 230V / 240V single phase + N					
Acceptable voltage range	From 312V to 460V (adjustable by 4Vac Ph-Ph) volt 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	2 x internal battery space SDXXM/T – S / 3 x internal battery space SDXXM/T – L					
Battery block range	15+15 to 22+22 (for 12V VRLA battery per string/ bank)					
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)	380V / 400V / 415V ±0.5%, 3 phase + N (For 3 phase SDXXT) 220V / 230V / 240V ±0.5%, single phase + N (For 1 phase SDXXM)					
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			
Dimension L x D x H (mm)	380 x 850 x 1025 (SDXX-S) / 440 x 840 x 1320 (SDXX-L)					
Weight (kg)	72(-S) / 103(-L)		74(-S) / 105(-L)		76(-S) / 10(-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					

Technical Specification						
Model (3/3)	SD30T-S / SD30T-L	SD40T-S / SD40T-L	SD60T-S / SD60T-L	SD80T	SD100T	SD120T
INPUT						
Rated Input Voltage	380 – 400 - 415Vac, 3 phase + N					
Voltage range	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	63A	80A	120	155	195	230
Max load allowable with 1 phase / 2 phases missing	66% (1 phase missing) / 33% (2 phases missing)					
BY PASS						
Nominal power	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
Rated Voltage (V)	380 – 400 - 415Vac, 3 phase + N					
Acceptable voltage range	From 312V to 460 (adjustable in step of 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	2 x internal battery space SDXXM/T – S / 3 x internal battery space SDXXM/T – L					
Battery block range	15+15 to 22+22 (for 12V VRLA battery per string/ bank)					
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	30kVA/ 30kW	40kVA/ 40kW	60kVA/ 60kW	80kVA/ 80kW	100kVA/ 100kW	120kVA/ 120kW
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±0.1% 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 battery and 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)	55dBA 50% load/ 60dBA 100% load	57dBA 50% load/ 62dBA 100% load	50dBA 50% load/ 68dBA 100% load	54dBA 50% load/ 62dBA 100% load	54dBA 50% load/ 63dBA 100% load	54dBA 50% load/ 68dBA 100% load
Dimension L x D x H (mm)	380 x 850 x 1025 (SDXX-S) / 440 x 840 x 1320 (SDXX-L)			500(L) x 830(D) x 1600(H)		
Weight	78(-S) / 112(-L)	82(-S) / 116(-L)	87(-S) / 130(-L)	172	180	198
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					

G-Tec Asia Pacific Pte Ltd



Working in Power

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