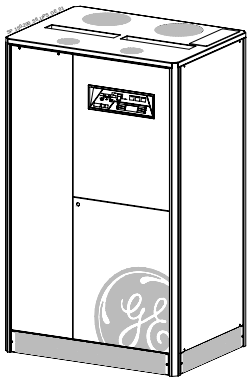
GE Consumer & Industrial
Power Protection

Technical Data Sheets

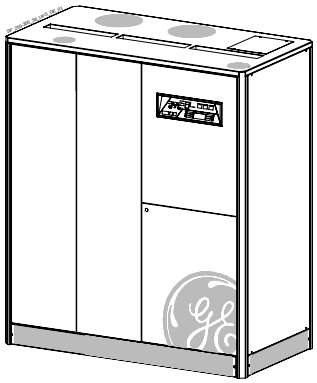
Digital Energy™ Uninterruptible Power Supply

SitePro 150 – 200 – 250 – 300 kVA

400 VAC CE – Series 6



SitePro 150 & 200 kVA



SitePro 250 & 300 kVA

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GE imagination at work

Certified
Quality System
ISO 9001
Reg.No.CSQ 9130.GELE

GENERAL DATA					
Topology	**VFI, double conversion with integrated transformer**				
Nominal output power at PF=0.6 ... 0.9 lag.	**kVA**	**150**	**200**	**250**	**300**
Overall efficiency in VFI mode	**%**	**Up to 92.5**			
Overall efficiency in SEM mode	**%**	**Up to 98.6**			
Heat dissipation at 100% load in VFI mode, PF=0.8 lag. and charged battery	**kW**	**10.86**	**14.67**	**19.30**	**22.58**
Cooling air (25°C ÷ 30°C)	**m³/h**	**3170**	**4280**	**5630**	**6590**
Audible noise level	**dB(A)**	**68**	**68**	**70**	**70**
Battery type	**Valve regulated lead-acid (VRLA)-standard, Vented lead-acid, wet battery and NiCd**				
Operating temperature range	**UPS: 0°C ÷ 40°C** **Battery: 20°C ÷ 25°C recommended**				
Storage temperature range	**-25°C ÷ +55°C** (higher the temperature, shorter the storage time of the battery)				
Storage time of the battery without recharge at 20°C	**Max. 6 months**				
Relative humidity	**Max. 95% (non-condensing)**				
Max. altitude without power derating Power derating (according to IEC 62040-3)	**1000m** **1500m: -5% / 2000m: -9% / 2500m: -14% / 3000m: -18%**				
Protection degree	**IP 20 (IEC 60529)**				
Standards	**EN 50091 / IEC 62040, CE marking**				
EMC	**EN 50091-2 / IEC 62040-2**				
Electrostatic discharge immunity	**4kV contact / 8kV air discharge**				
Internal protection	**All live parts shrouded**				
Transport	**Cabinet suitable for handling by forklift**				
Colour	**RAL 9003 (white)**				
Installation	**Cabinet can be floor fixed**				
Access	**Access required at front and rear side of the cabinet**				
External cable connections	**Bottom and top (rear)**				
Cooling	**Forced bottom to top by internal blowers**				
Paralleling (RPA version)	**Up to 8 units parallelable for redundancy or capacity in RPA configuration (optional)**				

RECTIFIER						
Rectifier bridge	**Three phase, 6 thyristors, overtemperature protection (250 - 300 kVA: 12 pulse ready)**					
Standard input voltage	**Nominal: 3 x 380V / 400V / 415V + N** **Rectifier accepted ph-ph voltage range: 320V ÷ 460V** **(320V only for 405 VDC battery floating)**					
Other input voltages	**On request**					
Input frequency	**50/60 Hz +/-10% (45 ÷ 66 Hz)**					
Power factor	**>0.8 lag.**					
Inrush current	**Limited by soft-start circuit**					
Power walk-in	**>30 seconds**					
Output voltage tolerance	**+/- 1%**					
DC voltage ripple	**<1%**					
DC current ripple	**Max. 5% of the battery capacity [Ah], expressed in A**					
Battery charging characteristic	**IU (DIN 41773), T° compensated floating voltage**					
Battery charging current limit	**Programmable**					
Input power data		**kVA**	**150**	**200**	**250**	**300**
Input power at inverter nominal load and charged battery	at PF=0.8 lag. at PF=0.9 lag.	**kW**	**130.9** **147.2**	**174.7** **196.5**	**219.3** **246.7**	**262.6** **295.4**
Max. input power at inverter nominal load and max. battery recharge current (programmable)		**kW**	**162.5**	**216.6**	**271.8**	**325.9**
Max. battery charging current (programmable) at the beginning of battery recharge at nominal load	at PF=0.8 lag. at PF=0.9 lag.	**A**	**80** **39**	**106** **51**	**133** **65**	**160** **78**

BATTERY					
Battery type	**Valve regulated lead-acid (VRLA)-standard, Vented lead-acid, wet battery and NiCd**				
Number of cells	**180 to 192, placed in external cabinet**				
Float voltage at 20°C	**405 ÷ 436V (dependent on the number of blocks)**				
Min. discharge voltage (programmable)	**1.65V / cell**				
Recharge time	**<5 hours up to 90% of battery capacity**				
"Battery to earth" fault detection	**Standard**				
Automatic and manual battery test	**Standard**				
Battery switch	**Standard**				
Battery power data	**kVA**	**150**	**200**	**250**	**300**
DC power at full load and PF=0.8 lag.	**kW**	**129.0**	**172.1**	**215.1**	**258.1**
DC power at full load and PF=0.9 lag.	**kW**	**145.2**	**193.6**	**241.9**	**290.3**
DC power at full typical computer load (PF=0.66 lag.)	**kW**	**106.5**	**141.9**	**177.4**	**212.9**
Matching battery cabinets	**See optional features on page 3**				

INVERTER	
Nominal output power at PF=0.6 ... 0.9 lag.	**150 – 200 – 250– 300 kVA**
Nominal output voltage (on site programmable)	**3 x 380V / 400V / 415V + N**
Inverter bridge	**SVM (Space Vector Modulation) and IGBT technology**
Output transform (for galvanic separation)	**Standard**
Output waveform	**Sine wave**
Output voltage tolerance: - static - dynamic (at load step 0 – 100 – 0%) - dynamic (at load step 0 – 50 – 0%) - recovery time to +/-1% - output voltage THD for 100% linear load - output voltage THD for 100% non-linear load (EN 50091)	 **+/- 1%** **+/- 3%** **+/- 2%** **20 ms** **<1%** **<2%**
Output voltage tolerance at 100% unbalanced load (Ph-N)	**+/- 3%**
Output frequency	**50/60 Hz (selectable)**
Output frequency tolerance: - free-running - with mains synchronisation adjustable to	 **+/- 0.1%** **+/- 4%**
Phase displacement: - at 100% balanced load - at 100% unbalanced load	 **120°: +/- 1%** **120°: +/- 2%**
Overload capability (at PF=0.8)	**125% - 10 minutes, 150% - 1 minute**
Short-circuit characteristic	**Electronic short-circuit protection, current limit to 2.2 times In for 200 ms**
Protection clearance capability (selectivity)	**20% In within 5-10 ms (with MTCB class C or magnetic trip at max. 10 In)**
Crest factor	**>3:1**

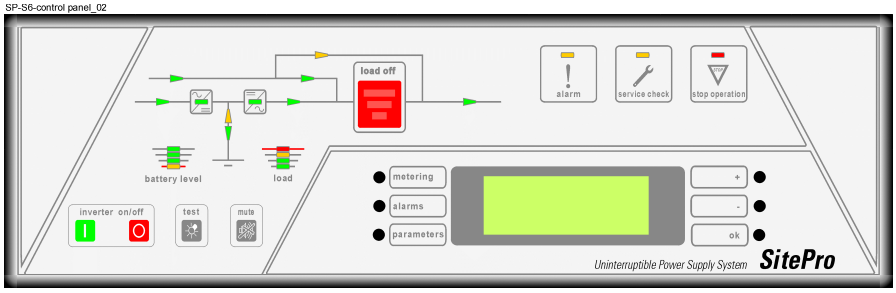
BYPASS	
Input connection	**Separate (dual input-recommended) or common to the rectifier input**
Primary components	**- Static switch (SCR) on bypass** **- Electromechanic contactors (backfeed protection)** **- 2 manual switches for maintenance bypass**
Voltage limits for inverter/bypass load transfers	**+/- 10% (adjustable)**
Overload on bypass	**200% for 5 minutes (1 minute for 200 kVA) and 1000% for 10 ms, non repetitive**

INTERFACING	
6 programmable signalling voltage-free contacts (available on Delta and block terminals)	**- Standard information for easy integration and signalling** **- 27 user settable signals**
Serial channel RS232 (on Delta 9 pin connector)	**Standard**
Input signals	- **EPO - Emergency Power Off** (n/c contact, customer supplied) - **GEN ON** (emergency power supply ON, n/o contact, customer supplied) - **2 auxiliary signals with settable functionality**
Auxiliary power supply	- **230 VAC single phase outlet (EU type)** - **24 VDC auxiliary power supply (optional)**

Note: all indicated values are typical. Variations may be found from one unit to another.

FRONT PANEL CONTROLS, SIGNALS AND ALARMS

SP-S6-control panel_02



- Synoptic diagram of the UPS: represents the operational status with integrated LEDs and power flow indicators.
- SERVICE CHECK (LED): turns on when maintenance is due or the manual bypass is active.
- COMMON ALARM: visual (LED) and audible signal (buzzer), active when an alarm condition is present.
- STOP OPERATION: visual (LED) and audible signal (buzzer) active approx. 3 minutes before complete and automatic load disconnection (due to an overtemperature condition or fully discharged battery).
- LOAD LEVEL, BATTERY AUTONOMY: status indicator bar graphs.
- MONITORING SYSTEM with multi language LCD display and control keys.
- Push-buttons:
  - INVERTER ON
  - INVERTER OFF
  - MUTE
  - LAMP TEST
  - LOAD OFF (key with protective cover): to be pressed for emergency load disconnection.

OPTIONS

BUILT-IN UPS OPTIONS:

1. RPA kit
2. 24 VDC Auxiliary Power Supply

COMMUNICATION:

1. Advanced SNMP Card
2. JUMP software suite
3. IRIS service
4. Modbus RTU Interface
5. RMS - Remote Monitoring System (Cable for connection to UPS not included)
6. RSB - Remote Signalling Box (Cable for connection to UPS not included)

OPTIONS IN ADDITIONAL CABINETS:

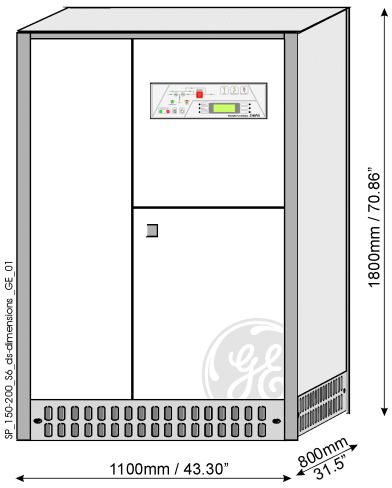
Dimensions (WxDxH):	❶ 680x800x1800 mm	❷ 1100x800x1800 mm	❸ 1550x800x1800 mm
1. Rectifier and/or bypass transformer		❶ (150 – 200 kVA)	❷ (250 – 300 kVA)
2. 5th harmonic filter		❶	
3. 12 pulse rectifier without galvanic separation		❶	
4. 12 pulse rectifier with galvanic separation		❶ (150 – 200 kVA)	❷ (250 – 300 kVA)
5. Distortion Control Unit (DCU) with dynamic filtering of 5th, 7th, 11th, 13th harmonics		❶	
6. Distortion Control Unit (DCU) "Light" with filtering of 11th and 13th harmonics (Only in combination with 12 pulse rectifier)		❶	
7. Special voltages: input and/or output		On request	
8. Centralized maintenance bypass for RPA configuration		On request	
9. Empty battery cabinets		❶	❷ ❸

External accessories:

1. External battery fuses box — On request

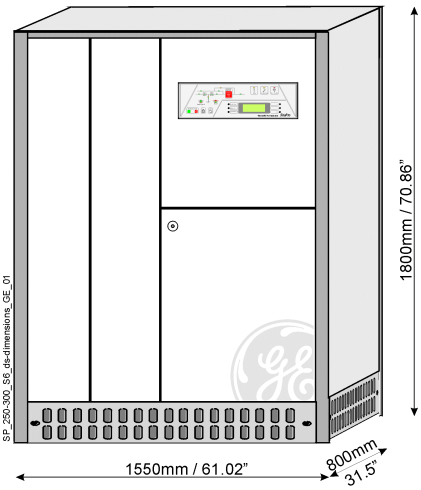
TECHNICAL DATA

SitePro 150 & 200 kVA



UPS weight		Floor loading
150 kVA	925 Kg	1050 Kg/m²
200 kVA	995 Kg	1130 Kg/m²
250 kVA	1450 Kg	1170 Kg/m²
300 kVA	1550 Kg	1250 Kg/m²

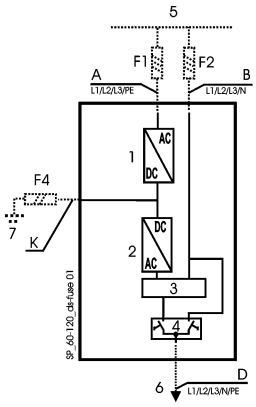
SitePro 250 & 300 kVA



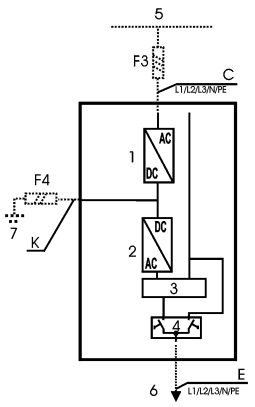
UPS BLOCK DIAGRAM, PROTECTIONS AND CABLE SECTIONS

1	Rectifier
2	Inverter
3	Electronic Bypass
4	Manual Bypass
5	Mains
6	Load
7	External Battery
F4	External Battery Fuses

Separated input Rectifier & Bypass (recommended)



Common input Rectifier & Bypass



Protections and cable sections

Protections for mains voltages 3x380/220V, 3x400/230V, 3x415/240V Fuses AgL or equivalent MTCB					Cable sections A, B, C, D, E, K Recommended by European Standards Alternatively, local standards to be respected Cable sections (mm²)				
kVA	**F1**	**F2**	**F3**	**F4** (battery)	**A**	**B**	**C / E**	**D**	**K**
150	3 x 315 A	3 x 250 A	3 x 315 A	2 x 400 A	3 x 150 + 95	4 x 120	4 x 150 + 70	4 x 120 + 70	2 x 240 + 120
200	3 x 400 A	3 x 315 A	3 x 400 A	2 x 500 A	3 x 240 + 120	4 x 150	4 x 240 + 120	4 x 150 + 95	2 (2x120) + 120
250	3 x 500 A	3 x 400 A	3 x 500 A	2 x 630 A	3 (2x120) + 120	4 x 240	4 (2x120) + 120	4 x 240 + 120	2 (2x150) + 150
300	3 x 630 A	3 x 500 A	3 x 630 A	2 x 800 A	3 (2x150) + 150	4 (2 x 120)	4 (2x150) + 150	4 (2x120) + 120	2 (2x240) + 240

F1, F2, F3, A, B, C, D, E: supplied by customer.

F4: can be supplied by *GE*.

SEV/ASE cable sections recommended in Switzerland (mm²)					
kVA	**A**	**B**	**C / E**	**D**	**K**
150	3 x 185 + 95	4 x 150	4 x 185 + 95	4 x 150 + 95	2 (2x95) + 95
200	3 (2x95) + 95	4 x 185	4 (2x95) + 95	4 x 185 + 95	2 (2x150) + 150
250	3 (2x150) + 150	4 (2x95)	4 (2x150) + 150	4 (2x95) + 95	2 (2x185) + 185
300	3 (2x185) + 185	4 (2 x 150)	4 (2x185) + 185	4 (2x150) + 150	2 (3x185) + 2x150