

EC 1000 UPS ONLINE

1 kVA - 20 kVA



- True double-conversion online UPS
- Wide input voltage range (110-300 VAC)
- Input power factor correction 0.99
- Output power factor 0.9
- 50/60 Hz Frequency Converter Mode
- Programmable power management outlets
- Emergency power off function (EPO)
- ECO mode operation for energy saving
- Generator compatible
- High overload capability and enhanced short circuit protection
- SNMP/USB/RS-232 multiple communications
- 3-stage smart charging design
- Laser printer and ultrasound system load acceptable

Compact and Reliable Power Protection for:

- Servers, IT and network equipment
- Office telecommunication and security systems
- Medical, diagnostic and test devices
- Bank and Finance applications
- Chemical and Manufacturing process
- Auxiliary and Emergency care systems

Smart Charger and Intelligent Battery Care

EC1000 Series has a smart battery charger to optimize the battery performance and to extend useful service life:

- 1-3kVA UPS are equipped with **2-stage charger** design to guarantee battery discharge time. Besides, it will adjust charging voltage according to outside temperature.
- 6-20kVA UPS are equipped with **3-stage extendable charger**. The extendable charger design can be stacked in numbers for large-capacity battery charging.

A deep battery discharge feature prevents the batteries damage. EC1000 6kVA and above have adjustable battery number to work in normal operation even with 18 batteries.



Scalable runtime with battery pack

Advanced Technology and Optimal Power Performances

A true double conversion UPS will provide clean, high level quality power to fully protect mission-critical devices. The DSP controller provides an improved and cost-effective solution with highest performance. Output power factor up to 0,9 offers more active power to modern IT equipment. **The wide input voltage range (110V-300V)** assures power supply to connected devices under extremely unstable network, protecting the batteries life. EC1000 is input low impact with almost unitary power factor and negligible harmonic distortion, fully generator compatible without power oversizing. All models have the back-feed protection and **Emergency Power Off (EPO)** input to secure the personnel and equipment in case of emergency cases. EC1000 from 6kVA and above are equipped with **maintenance rotary switch** to assure continuous power to critical devices during UPS maintenance. With **programmable power management outlets**, users can easily and independently control loads segments. During power failure, this feature enables users to extend battery time to mission-critical devices shutting down the non-critical loads. EC1000 1-3kVA is fit out with various outlets types (IEC, Schuko, NEMA, etc.). EC1000 is as standard **with internal battery and DC connector for additional battery packs** for scalable runtime; the version EC1000SC without battery and integrated super charger for long back time.

EC1000 with Built-in Isolation Transformer (Option)

With built-in isolation transformer, the UPS will assure full isolation and complete common mode noise rejection for connected precious equipment. It becomes an ideal power source with 100% protection against unexpected AC power problems.



LCD Display Panel

All EC1000 are CE certified and comply with standards: IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC62040-1, IEC61040-2 and IEC60950-1.

Flexible and Reliable Configurations for all needs

EC1000 Series has selectable operation modes: **Single, N+X Parallel Redundant for 6kVA and up models, Hot Standby, Ecomode, 50/60 Hz Frequency Converter.**

For genuinely redundant power protection, EC1000 6-20kVA can either be used in parallel operation up to 3 units or hot standby mode. Slave UPS will back up the load in the event of critical component failure. It increase power safety and availability only adding a auxiliary cable. Setting the output frequency 50 or 60Hz as different the input will feed equipments as frequency converter. ECO mode operation offers efficiency as high as 97% to cut energy usage & cost. UPS power application via static bypass, timely returning to online double conversion when the need arises.

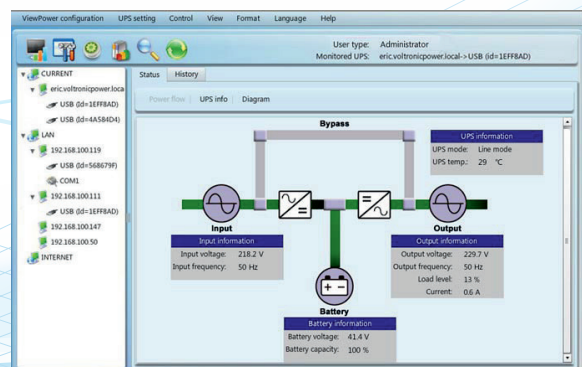


Parallel operation up to 3 UPS

Monitoring Software ViewPower - UPS Management

All EC1000 units are endowed with CD ViewPower Software and communication cable.

- Allows control and monitoring of multiple UPSs via local PC, LAN or Internet
- User-friendly power analysis graphs
- Real-time dynamic graphs of UPS data
- Safely OS shutdown and protection from data loss during power failure
- Warning notifications via audible alarm, broadcast, mobile messenger and email
- Scheduled UPS on/off, battery test, programmable outlet control and audible alarm
- Password security
- Supports multiple OS and local languages



EC1000 1 kVA / 2kVA / 3kVA Technical Guide

Model	EC1101 (SC)	EC1102 (SC)	EC1103 (SC)
PHASE	Single phase with ground		
CAPACITY	1000 VA/900 W	2000 VA/1800 W	3000 VA/2700 W
INPUT			
Nominal Voltage	100/110/115/120/127 VAC or 200/208/220/230/240 VAC		
Voltage Range	55 - 150 VAC ± 5 % or 110 - 300 VAC ± 5 % at 50% load 80 - 150 VAC ± 5 % or 160 - 300 VAC ± 5 % at 100% load		
Frequency Range	40 Hz ~ 70 Hz		
Power Factor	0.99 @ Nominal Voltage (100% Load)		
THDi	5% @100~130VAC or 205-245VAC		
THDU	< 1.6% @ input and full linear load condition with battery fully charged		
OUTPUT			
Output Voltage	100/110/115/120/127 VAC or 200/208/220/230/240 VAC		
AC Voltage Regulation (Batt. Mode)	± 1%		
Frequency Range (Synchronized Range)	47~53 Hz or 57~63 Hz		
Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60Hz ± 0.1 Hz		
Current Crest Ratio	3:1		
Harmonic Distortion	2 % THD (Linear Load) 4 % THD (Non-linear Load)		
Transfer Time	AC Mode to Batt. Mode Zero		
Inverter to Bypass	4 ms (Typical)		
Waveform (Batt. Mode)	Pure Sinewave		
EFFICIENCY			
AC Mode	90%	91%	
ECO Mode	97%		
Battery Mode	89%	89%	90%
BATTERY			
Battery Type	12 V / 7 Ah	12 V / 7 Ah	12 V / 9 Ah
Numbers	3	6	6
Typical Recharge Time	4 hours recover to 90% capacity		
Charging Current (Max.)	1.5 A		
Charging Voltage	41.0 VDC ± 1%	82.1 VDC ±1%	82.1 VDC ±1%
SC MODEL			
Battery Type	Depending on the capacity of external batteries		
Numbers	3	6	6
Charging Current (Max.)	1A/2A/4A/6A/8A (Selectable via LCD setting)		
Charging Voltage	41.0 VDC ± 1%	82.1 VDC ±1%	82.1 VDC ±1%
INDICATORS			
LCD Display	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions		
ALARM			
Battery Mode	Sounding every 5 seconds		
Low Battery	Sounding every 2 seconds		
Overload	Sounding every second		
Fault	Continuously sounding		
PHYSICAL			
Dimension, DxWxH (mm)	397 x 145 x 220	421 x 190 x 318	
Net Weight (kgs)	12,5	25,8	27
SC MODEL			
Dimension, DxWxH (mm)	397 x 145 x 220	421 x 190 x 318	
Net Weight (kgs)	5,8	12	13,8
ENVIRONMENT			
Humidity	20-95 % RH @ 0- 40°C (Non-condensing)		
Noise Level	Less than 50dB@1Meter		
MANAGEMENT			
Smart RS-232/USB	Supports Windows 2000/2003/XP/Vista/2008, Windows 7/8, Linux, Unix, and MAC		
Optional SNMP	Power management from SNMP manager and web browser		

*Derate to 80% of capacity in Frequency converter mode and to 80% when the output voltage is adjusted to 100VAC, 200VAC or 208 VAC.

** L means long-run model Product specifications are subject to change without further notice



EC1000 6 kVA / 10 kVA Technical Guide

MODEL	EC1106	EC1106SC	EC1110	EC1110SC
CAPACITY [VA/W]	6000/5400		10000/9000	
	INPUT			
Nominal Voltage	200/208/220/230/240 Vac			
Voltage Range	110–300 Vac @ 50% load or 176–300 Vac @ 100% load			
Frequency Range	46 ÷ 64 Hz			
Power Factor	≥ 0,99 @ Nominal Voltage (100% load)			
	OUTPUT			
Selectable Voltage	200/208/220/230/240 Vac			
AC Voltage Reg. (Batt. Mode)	± 1%			
Freq. Range (Synch. Mode)	46÷54 Hz or 56÷64 Hz			
Freq. Range (Batt. Mode)	50/60 ± 0.1 Hz			
Current Crest Ratio	3:1 (max.)			
Harmonic Distortion	≤ 3% THD (linear load); ≤ 6% (non-linear load)			
Transfer Time AC to Batt. Mode	0 ms			
Inverter to Bypass	0 ms			
	EFFICIENCY			
AC Mode	89%			
Battery Mode	88%			
	BATTERY			
VRLA Type	12V / 7Ah	External	12V / 9Ah	External
Numbers	20 (selectable 18-20)			
Charging Current (max.)	1A	4A	1A	4A
Charging Voltage	273 Vdc ± 1%			
	GENERAL			
Dimensions (WxDxH)	250 x 592 x 576			
Weight (kgs)	81	25	83	27
Noise level	< 55dB @ 1m		< 58dB @ 1m	



EC1000 10 kVA / 20 kVA Technical Guide

MODEL	EC1310	EC1310SC	EC1320	EC1320SC
CAPACITY [VA/W]	10000/9000		20000/18000	
Nominal Voltage Voltage Range Frequency Range Power Factor THDI%	INPUT			
	3 x 380/400/415 Vac (3ph + N)			
	190-520 (3ph) Vac @ 50% load or 305-478 (3ph) Vac @ 100% load			
	46 ÷ 64 Hz			
	≥ 0,99 @ Nominal Voltage (100% load)			
	< 6% @ 100% load			
	OUTPUT			
Selectable Voltage	200/208/220/230/240 Vac			
AC Voltage Reg. (Batt. Mode)	± 1%			
Freq. Range (Synch. Mode)	46÷54 Hz or 56÷64 Hz			
Freq. Range (Batt. Mode)	50/60 ± 0.1 Hz			
Current Crest Ratio	3:1 (max.)			
Harmonic Distortion	≤ 2% THD (linear load); ≤ 5% (non-linear load)			
Transfer Time AC to Batt. Mode	0 ms			
	0 ms			
Inverter to Bypass	EFFICIENCY			
	89%	89%	89%	89%
AC Mode	89%	89%	89%	89%
Battery Mode	89%	89%	89%	89%
VRLA Type Numbers Charging Current (max.) Charging Voltage	BATTERY			
	12V / 9Ah	External	12V / 9Ah	External
	20 (sel. 18–20)		2x20 (sel. 18–20)	
	1 A	4 A	2 A	4 A
	273 Vdc ± 1%			
	GENERAL			
	Dimensions (WxDxH)	250 x 592 x 576		250 x 815 x 826
Weight (kgs)	83	28	164	40
Noise level	< 60dB @ 1m		< 65dB @ 1m	
Environment	Temperature 0÷40°C ; Humidity <90%			
Interface port	USB and RS232; Intellislot for optional SNMP, AS400, ModBus cards			

EC1000 Battery Box

UPS Power [VA]	Part Number	N. Batt.	Type	Dimensions LxDxH [mm]	Weight [kgs]
1 kVA	BEC2030000	0	-	472 x 230 x 325	5
2 kVA / 3 kVA	BEC3060000	0	-	674 x 320 x 450	14
6 kVA / 10 kVA	BEC3200000	0	-	250 x 830 x 576	34
20 kVA	BEC4200000	0	-	250 x 815 x 826	46

Note: Further battery pack configuration are available. Contact: info@lever.it

* Derate capacity to 60% of capacity in Frequency converter mode and to 80% when the output voltage is adjusted to 100VAC, 200VAC or 208VAC.

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