

## 8.1 Extra Smart Series (Tower) 650VA~4000VA

### General Features:

- Smart Estimation of Backup Time (EBT system)
- Adjustable voltage sensitivity, voltage-transfer points, & charging voltage.
- Adjustable multiple outlets with required different backup time.
- Generator compatible
- Automatic restart of load after UPS shutdown
- Smart AVR function (Two buck / boost modes)
- Cold-start capable
- Audible alarm
- Hot-swappable batteries (optional for 3K & 4K models)
- Network manageable (SNMP optional)
- Full function of LCD display (LED display optional)
- Smart battery management
- Intelligent double stages of charging control



### Output

	115V Models	230V Models
Power Levels crated at nominal inputs	650VA / 390W, 1000VA / 600W, 1500VA / 900W, 2200VA / 1350W, 3300VA / 2000W, 4000VA / 2600W	
Output Voltage	100V/110V/115V/120V Selectable	200V/220V/230V/240V Selectable
Voltage Waveform	Sine wave	
Crest Factor	3 : 1	
Output Frequency (Synchronized to Mains)	Auto Select for 50/60Hz 47Hz ~ 55Hz for 50Hz nominal; 56Hz ~ 65Hz for 60Hz nominal	
Regulation (Nominal)	±5% typical of nominal voltage (optional at ±8% AVR for wide I/P up to ±35%)	
Regulation (Batt. mode)	±3% of selected output voltage (adjustable with the remote set-up software)	
Transfer time	Blackout 3ms typical; Brownout 1ms; Battery mode to Normal mode : 1ms typical	
Over current protection	Over load alarm level 100% ~ 120%, Over load shutdown level 120% ~ 190% (Adjustable with the remote set-up software)	

### Input

	115V Models	230V Models
Nominal Voltage	100V/110V/115V/120V Selectable	200V/220V/230V/240V Selectable
Input Frequency	47Hz ~ 65Hz, 50/60Hz auto-sensing	
Efficiency	97% (Normal mode)	
Noise Filtering	Full time EMI/RFI filtering	

Over current protection	650VA~1000VA : by AC fuse 1500VA ~ 3300VA : by re-settable over current protector	650VA ~ 2200VA : by AC fuse 3300VA ~ 4000VA : by re-settable over current protector
Voltage Range	-20% ~ +24% for selected nominal voltage. -29% ~ +33% adjustable with the remote set-up software	
AVR Range (2 Bucks, 2 Boosts)	Enhanced Buck: +15% of selected nominal voltage Buck mode: +5% of selected nominal voltage Boost mode: -5% of selected nominal voltage Enhanced Boost: -12.5% of selected nominal voltage	
Surge Protection	650VA ~ 1500VA : 216 Joules 2200VA ~ 3300VA : 324 Joules	650VA ~ 1500VA : 220 Joules 2200VA ~ 3300VA : 440 Joules 4000VA : 660 Joules

## Battery

Battery type / number	Maintenance-free sealed, valve-regulated, Lead-Acid 1000VA ~ 3300VA : 12V, 7Ah, 650VA / 4000VA : 12V, 9Ah 650VA : 1 pc, 1000VA : 2 pcs, 1500VA : 3 pcs, 2200VA : 4 pcs, 3300VA / 4000VA : 6 pcs	
Voltage	650VA : 12Vdc, 1000VA : 24Vdc, 1500VA : 36Vdc 2200VA : 48Vdc (optional 24Vdc), 3300VA/4000VA : 72Vdc (optional 36Vdc)	
Typical backup time at half-load	650VA : 11 minutes	1000VA ~ 3300VA : 14 minutes 4000VA : 12 minutes
Typical backup time at full load	650VA : 3.5 minutes	1000VA ~ 3300VA : 4.5 minutes 4000VA : 4 minutes
Charging method	Smart pulse charging with two charging modes : Quick charging when battery is not fully charged, trickle charging when battery is 90% fully charged.	
Charging time	Less than 3 hours to 90% at normal line and normal temperature.	
Charging current	2.5A (Average)	
Average charging voltage for each battery	Quick charging mode : 14V maximum. Trickle charging mode : 13.2V ~13.9V adjustable with the remote set-up software.	
Protection	Over current protection & Over charging voltage protection (SCR control) Thermal protection (CPU control) : When temperature inside UPS is over 45°C, charger will stop charging for 2.5 minutes followed by an 1.5 minutes charging. The cycle will be repeated until the temperature is lower than 44°C.	
Monitoring	Smart monitoring & warning for failed battery or open-circuit battery. Auto-detection each time when power on or every 6 days.	

## ☐ Communications & Management

Standard Interface port	UPSilon2000 compatible. 650VA ~ 1500VA : RS232, optional for RJ45, USB. 2200VA : RS232 + USB, optional for RJ45. 3300VA ~ 4000VA : RS232 + USB +RJ45 (Surge Protection)
Optional Interface port	DB9, SNMP (external type)
Control panel	LCD or LED Selectable
Audible alarm	Alarm on battery : Low battery & Battery over voltage Alarm on abnormal operation : Over load, Short-circuit, & Over heat
EBT (Estimation of Backup Time) system	Support for LCD display
Green mode function (Auto-shutdown during blackout)	1% to 14% of full load (adjustable with the remote set-up software) The default setting is OFF.

## ☐ Environmental and Safety

Operating Temp.	Up to 1500 meters : 0°C to 40°C (32°F to 104°F)
Transit/storage Temp.	-15°C to 55°C (5°F to 131°F)
Relative Humidity	5 - 95% non condensing
Operating Altitude	0 ~ 3000 meters
Audible noise	≤ 40 dBA (at 1M from surface of unit)
Safety Markings	BSMI   CE
EMC	Class B, EN50091-2, FCC part15, IEC1000-2-2
Quality control system	ISO 9001

## ☐ Physical

Dimensions: (DxHxW) Unit / Shipping	650VA ~ 1000VA : 38 x 20 x 18 (cm) / 48 x 33 x 30 (cm) 1500VA ~ 2200VA : 45 x 20 x 18 (cm) / 54 x 33 x 30 (cm) 3300VA ~ 4000VA : 51 x 20 x 18 (cm) / 61 x 33 x 30 (cm)
Weight: Net / Gross (kg)	650VA : 11 / 12 (kg), 1000VA : 14 / 15 (kg), 1500VA : 21 / 22 (kg), 2200VA : 25 / 26 (kg), 3300VA : 36 / 37 (kg), 4000VA : 36 / 37 (kg)
Packing	Export carton for each unit, 16 - 30 units per pallet