

INNOBIZ



**Sun** Series  
High Efficiency CableUPS

# SUN series

[Cable/Broadband Uninterruptible Power Supply]

vol.4



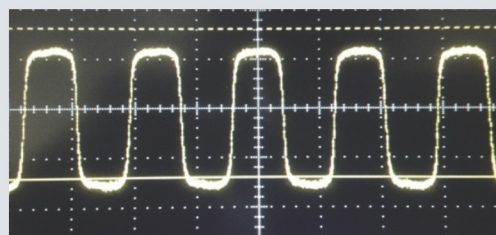
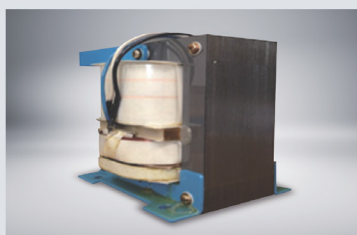
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# Stabilizing Power Supply



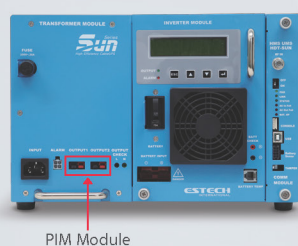
## Balanced Output Voltage

- A customized Ferro-Resonant Transformer is featured with superior output power stability in AC operation mode.
- Enhanced output power helps stability of connected devices by minimizing influence of lightning surge, overvoltage, impulse noise, etc.

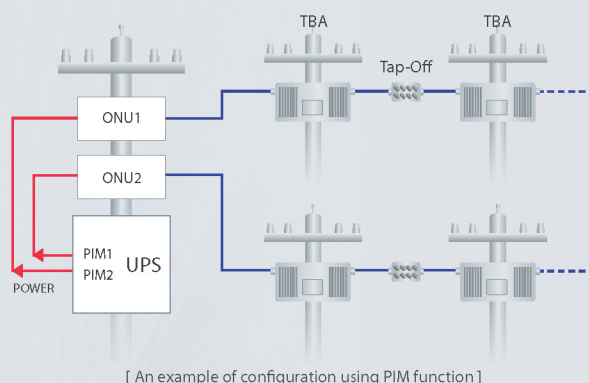


## Protective Interface Mode(PIM)

- Selectable and adjustable output power for various user's applications
- Programmable output power featured by PIM function without compromising any voltage loss.
- Provides 2 power sources to 2 separate communication devices.



PIM Module



## Superb Power Efficiency

- Low-power transformer design contributes to low power consumption achieving energy efficiency by 90%.
- Advanced power factor circuit secures high efficiency.



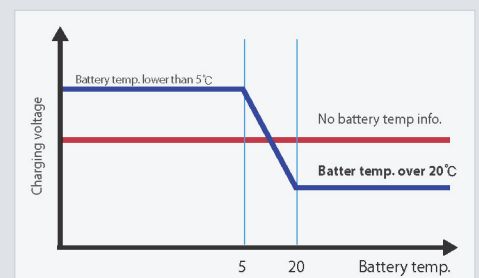
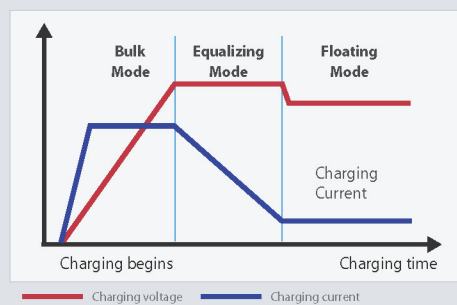


# Efficient Battery Management



## Enhanced Battery Efficiency with an Optimized charging Process

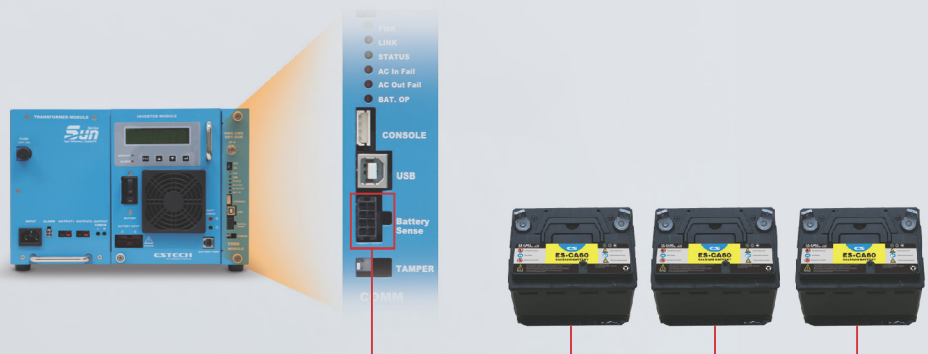
- Various charging mode (Bulk, Accept, Float)
- Optimized high efficient charging with an active battery temperature analyzing to secure the best charging voltage.



\* Note.: ES Battery requires  $\sim 3\text{mV}/^\circ\text{C}$ /cell in charging.

## Battery Cell Monitoring

- Monitor charging voltage and status of each battery
- Provides battery lifetime info by cyclical charging and discharging tests.
- NMS Module provides battery monitoring for max. 4 units of batteries.

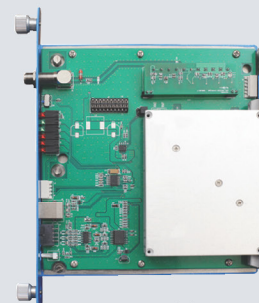


# DOCSIS Platform

## Network Monitoring based on DOCSIS technology

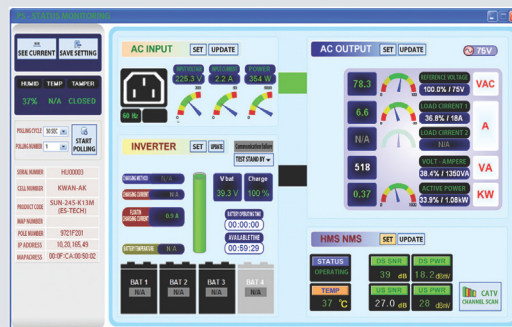
- SUN UPS is featured with network monitoring and controlling through an optional DOCSIS transponder.

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[ NMS Module ]

## Monitoring software

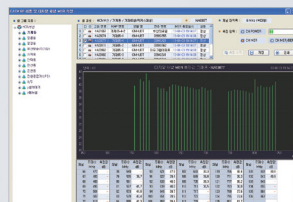


- UPS operation monitoring
- UPS output voltage
- Battery voltage and charge unit output voltage
- General Alarm status check
- UPS door open/close check
- Inverter output alarm status check
- UPS output current check
- Test/Reset command function
- Input voltage check
- Input current check
- Cable modem status check
- Collected information sending by Polling signal
- Collected information sending by trap signal
- UPS control by user
- System temperature monitoring
- Power condition and surge protection function

## Example of data analyzing



Ingress noise remote control



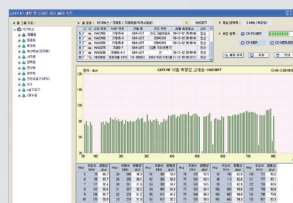
Digital Remote MER measurement



Pilot, TILT remote level measurement



Real-time alarm, and minimize Disability recovery



All channels digital remote level measurement



Internet quality measurement



# System Stability



## ES-TECH use a certified components for the product quality.

### Surge Test

A purpose of the surge test is to check that appliance is properly designed to protect electrical devices from voltage spikes and a surge protector attempts to limit the voltage supplied to an electric device by either blocking or by shorting to ground any unwanted voltages above a safe threshold.

### Environment Test

A Chamber testing is to test the effects of specified environmental conditions on industrial products, operating condition and endurance in a certain circumstance can be evaluated with this test.

### Real load Test

Amplifier Load testing is performed to determine a system's behavior under both normal and anticipated peak load conditions. It helps to identify the maximum operating capacity of an application as well as any bottlenecks and determine which element is causing degradation.

### Input voltage variation Test

Input voltage variation testing evaluates that input voltage variations may affect output voltage, and its stability under variation of supplying input power conditions.

### Output load capacity

Output load capacity testing is a form of deliberately intense or thorough testing used to determine the stability of a given system or entity. It involves testing beyond normal operational capacity, often to a breaking point, in order to observe the results.

All ES-TECH's products are strictly tested before released to ensure stability and durability of products under harsh environmental conductions.



## Part Numbering System

**SUN – 245 – K12M** (Ordering Information Number)All products follow the part numbering system  
The specification can be customized by customer requirements

<b>SUN</b>		<b>24</b>	<b>5</b>	<b>K12</b>		<b>M</b>
Quasi-square wave Cable/Broadband UPS (Standby Power Supply)		22 = 220V 23 = 230V 24 = 240V	5 = 50 6 = 60	<b>Output Power (VA)</b> H40 = 400VA K12 = 1,200VA H60 = 600VA K13 = 1,350VA H90 = 900VA K20 = 2,000VA		M = 36 H = 48
Model	Maximum Output Power (VA)	Input Voltage (VAC)	Input Frequency (Hz)	Output Voltage (VAC)	Output Current (A)	Battery Voltage (VDC)
SUN-XXX-H40M	400	220/230/240	50/60	63/75/90	6.3/5.3/4.4	36
SUN-XXX-H40H	400	220/230/240	50/60	63/75/90	6.3/5.3/4.4	48
SUN-XXX-H60M	600	220/230/240	50/60	63/75/90	9.5/8/6.66	36
SUN-XXX-H60H	600	220/230/240	50/60	63/75/90	9.5/8/6.66	48
SUN-XXX-H90M	900	220/230/240	50/60	63/75/90	14.2/12/10	36
SUN-XXX-H90H	900	220/230/240	50/60	63/75/90	14.2/12/10	48
SUN-XXX-K12M	1,200	220/230/240	50/60	63/75/90	19/16/13.3	36
SUN-XXX-K12H	1,200	220/230/240	50/60	63/75/90	19/16/13.3	48
SUN-XXX-K13M	1,350	220/230/240	50/60	63/75/90	21.4/18/15	36
SUN-XXX-K13H	1,350	220/230/240	50/60	63/75/90	21.4/18/15	48
SUN-XXX-K20M	2,000	220/230/240	50/60	63/75/90	31.7/26.6/22.2	36
SUN-XXX-K20H	2,000	220/230/240	50/60	63/75/90	31.7/26.6/22.2	48
SUN-XXX-H60M	600	220/230/240	50/60	63/75/90	9.5/8/6.66	36
SUN-XXX-H60H	600	220/230/240	50/60	63/75/90	9.5/8/6.66	48
⋮	⋮	⋮	⋮	⋮	⋮	⋮

## General Specification

Input	Phase	Single (2P + GND)	
	Power Factor	>0.90 at full load	
	Voltage	± 15%	
	Frequency	± 3%	
Output	Phase	Single (2P + GND)	
	Voltage	63 / 75 / 90 Vac	Selectable
	Output Waveform	Quasi-square wave	
	Voltage Regulation	± 5%	
	Frequency Stability	± 0.05% inverter mode 50/60Hz normal mode	
	Short Circuit Current	150% of maximum current rating	
	Transfer Characteristics	Uninterrupted output	
	Efficiency	Over 90% Line mode Over 85% Inverter mode	After charge
Connection	Input	SEIZURE CONNECTOR	
	Output	SEIZURE CONNECTOR?	
Dimension	Dimension	600/900/1,200VA : 320 (W)× 220 (H) × 320 (D) mm 1,350/2,000VA : 350 (W)× 250 (H) × 350 (D) mm	This product are divided into two sizes, depending on the capacity
	Weight	Max.75 Kg(Include Battery & Enclosure)	
Environment	Temperature	-20℃ - 60℃ ( Operation )	
	Relative humidity	0 - 95% (Non-condensing)	
	Noise	Within 43 dB	
Option 1		NMS module and management software	
Option 2		PIM/N+1 module provides two programmable outputs or dual outputs from a single SUN power supply for redundancy in critical application.	

\*This specification is subject to change without notice.