

## ■ Features

- Supporting connection to fuel generators
- Ultra-wide input voltage range: 110V to 300Vac
- Input power factor  $\geq 0.99$
- Input current harmonic distortion  $\leq 5\%$
- Output power factor of 1
- 50Hz/60Hz frequency conversion mode
- Emergency power-off function (EPO)
- USB/RS-232 communication interfaces
- LCD display panel
- Intelligent charging mode, adjustable charging current
- 3-year warranty

## ■ Applications

- Data center
- Financial institution
- Smart Buildings
- Industrial automation

## ■ Global Trade Item Identifier

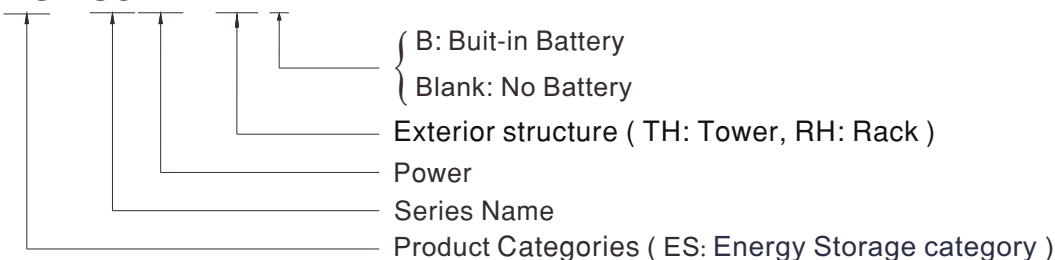
- MW Search: <http://www.meanwell.com.cn/serviceGTIN.aspx>

## ■ Description

ES-SU1K is a 1KVA online UPS power supply, providing rack type and tower type two appearance structures, using advanced digital control technology, combined with high integrated circuits and optimized design, enhance anti-interference ability, and ensure stable performance. The product has a full load efficiency of up to 92%, an input power factor of over 0.99, and a current harmonic of less than or equal to 5%, which can effectively prevent additional energy loss and reduce grid pollution. Its ultra-wide voltage input range is compatible with unstable power grids and fuel generators, which can easily cope with harsh power environments, reduce the need for frequent switching to battery power, and accurately match the needs of highly sensitive loads such as servers and medical equipment. In addition, the product has built-in EPO emergency power-off function and USB/RS-232 dual communication interfaces, which further strengthens the system security and remote control capabilities. It provides efficient, stable and flexible power protection solutions for key scenarios such as data centers, intelligent manufacturing, and communication base stations.

## ■ Drive Model Encoding

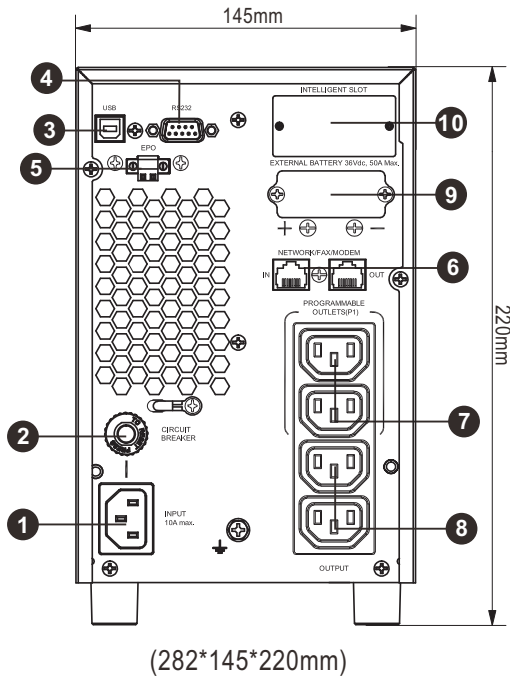
**ES - SU1K - TH B**



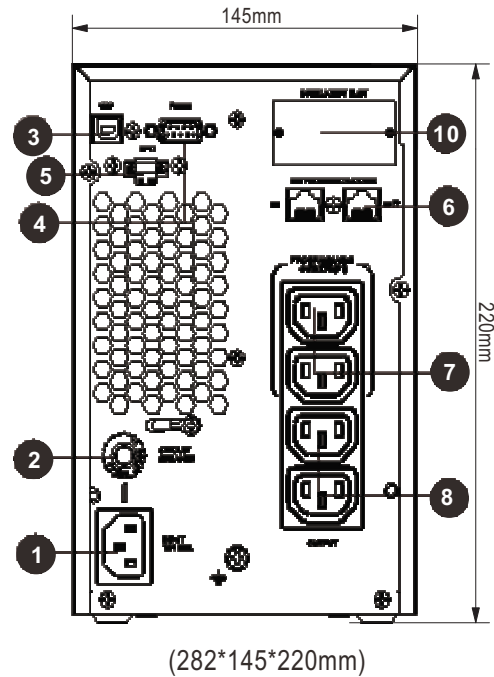
Specification	ES-SU1K-TH	ES-SU1K-THB	ES-SU1K-RH	ES-SU1K-RHB
<b>INPUT</b>				
Nominal Voltage	110~300Vac(Based on load at 50%); 160~300Vac(Based on load at 100%)			
Frequency Range	40~70Hz			
Power Factor	≥0.99@nominal voltage(100%load)			
THDi	≤5%@100% resistive load			
<b>Battery</b>				
Connection Type	external	built-in(12V/9AH*2)	external	built-in(12V/9AH*2)
Charging Voltage (FV)	24V			
Low-Voltage Protection Point	21V			
High-Voltage Protection Point	30V			
Charing Voltage	27.4V			
Charing Current (CC)	8A(1/2/4/6/8A adjustable through LCD)			
<b>OUTPUT</b>				
Power	1KVA/1KW			
Output Voltage(Note 1)	200/208/220/230/240Vac			
AC Voltage Regulation	±1%			
Frequency	AC Mode	47~53Hz/57~63Hz		
	Battery Mode	50/60±0.1Hz		
Waveform	Battery Mode	Pure Sinewave		
Harmonic Distortion	≤2%THD(Linear Load); ≤5%THD(Non-linear Load)			
Transfer Time	AC to Battery	0		
	Online to Bypass	4ms(Typical)		
	ECO to Battery	8ms(Typical),10ms(max)		
Efficiency	ECO Mode@full charged battery	96%		
	AC Mode @full charged battery	92%		
	Battery Mode	86%		
<b>SAFETY &amp; EMC</b>				
SAFETY STANDARDS	EN IEC 62040-1:2019/A11:2021,YD/T1095-2018			
EMC EMISSION	Parameter	Standard	Test Level / Note	
	Conducted emission	EN IEC 62040-2:2018	C2	
	Radiated emission	EN IEC 62040-2:2018	C2	
	Harmonic current	EN IEC 61000-3-12:2011	Class A	
	Voltage flicker	EN IEC 61000-3-11:2019	Clause 5	
EMC IMMUNITY	Parameter	Standard	Test Level / Note	
	ESD	EN 61000-4-2:2008	Level 3, 4KV air ; Level 2: 4KV contact	
	RS	EN 61000-4-3:2006	Level 3	
	EFT	EN 61000-4-4:2012	Level 4, 1KV	
	Surge	EN 61000-4-5:2014	Level 4, 1KV/Line-Line 2KV/Line-Earth	
	Conducted	EN 61000-4-6:2013	Level 3	
	Magnetic Field	EN 61000-4-8:2009	Level 4	
Voltage Dips and Interruptions	EN IEC 61000-4-11:2020	100% residual voltage for 0.5cycle; 100% residual voltage for 1cycle; 100% residual voltage for 250cycle; 30% residual voltage for 25cycle		
<b>OTHER</b>				
Communication interface	RS232/USB			
Phase	single phase with ground			
Display	LCD			
Operating temperature	0~40°C			
Humidity	20-90% relative humidity(non-condensing)			
Elevation(Note 2)	1000m			
Struture	Tower		Rack	
Weight	4.1kg	9.8kg	5.2kg	11kg
Size	282*145*220mm		310*438*88mm	
<b>NOTE</b>				
1. Derate capacity to 80% when the output voltage is adjusted to 200VAC/208VAC 2. if the UPS is installed or used in a place where the altitude is above than 1000m. the outout power must be derated one percent per 100m. ※ Product Liability Disclaimer : For detailed information ,please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>				

■ Mechanism Dimension

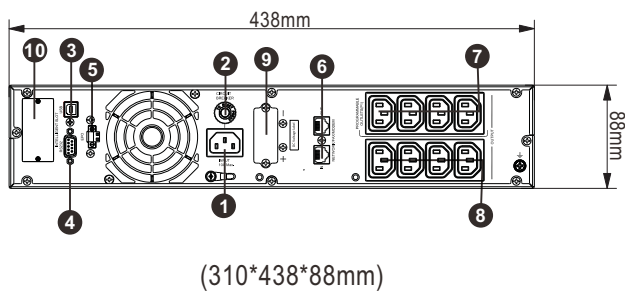
■ ES-SU1K-TH



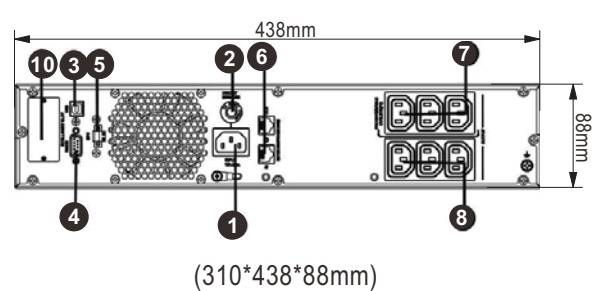
■ ES-SU1K-THB



■ ES-SU1K-RH



■ ES-SU1K-RHB

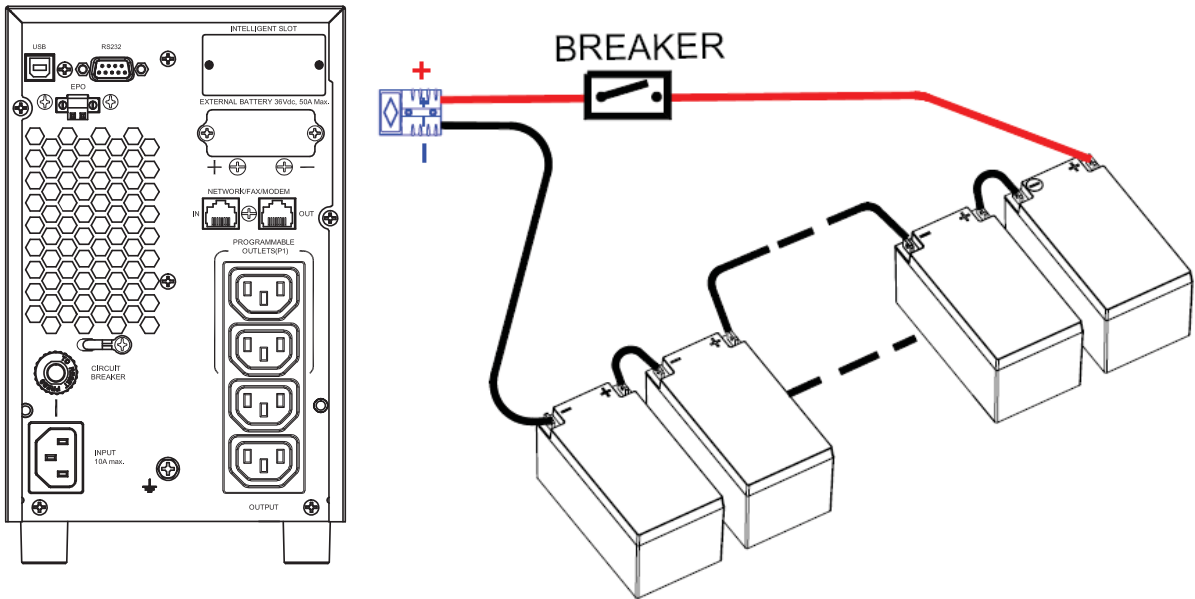


1. AC input
2. Input circuit breaker
3. USB communication port
4. RS-232 communication port
5. EPO port
6. Modem/Phone/Network surge protection
7. Programmable outlets: connect to non-critical loads
8. Output receptacles
9. External battery interface(battery-free model)
10. Control Card Slot

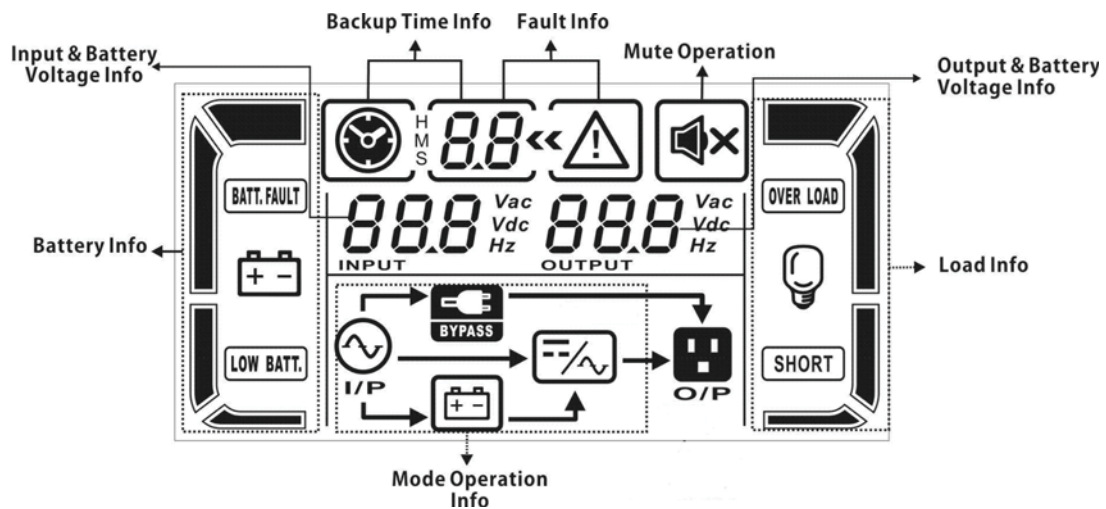
■ External Battery

Connecting the battery: When connecting the battery box, be sure to confirm that the polarity of the battery is correctly connected.

Required specifications of circuit breaker: voltage  $\geq 1.25 \times$  battery voltage / number of groups, current  $\geq 50A$   
 Please select the appropriate battery specifications and number of connections based on the discharge time requirements and UPS specifications..



■ LCD Panel



Diaplay	Function
Backup time information	
	Indicates battery discharge time in number H:hours, M: mintes, S: seconds
Fault information	
	Indicates that the warning and fault occurs
	Indicates the fault codes
Mute operation	
	Indicates that the UPS alarm is disabled
Output & Battery voltage information	
	Indicates the output voltage, frequency or battery voltage Vac: output voltage, Vdc: battery voltage, Hz: frequency
Load information	
	Indicates the load level by 0-25%、 26-50%、 51-75%、 and 76-100%。
	Indicates overload
	Indicates the load or the output is short
Load information	
	Indicates that programmable management outlets are working
Mode operation information	
	Indicates the UPS connected to the mains
	Indicates the battery is working
	Indicates the bypass circuit is working
	Indicates the ECO mode is enabled
	Indicates the Inverter circuit is working
	Indicates the output is working
Battery information	
	Indicates the battery capacity by 0-25%、 26-50%、 51-75%、 and 76-100%。
	Indicates the battery is not connected
	Indicates low battery level and low battery voltage
Input & Battery voltage information	
	Indicates the input voltage or frequency or battery voltage Vac: Input voltage, Vdc: battery voltage, Hz: input frequency

■ Audible Alarm

Description	Buzzer status
Battery Mode	Sounding every 4 seconds
Low Battery	Sounding every second
Overload	Sounding twice every second
Fault	Continuously sounding
Bypass Mode	Sounding every 10 seconds





■ LCD display wording index

Abbreviation	Display content	Meaning
ENA	ENA	Enable
DIS	DIS	Disable
ESC	ESC	Escape
HLS	HLS	High loss
LLS	LLS	Low loss
BAT	BAT	battery
CF	CF	Converter
TP	TP	Temperature
CH	CH	Charger
FU	FU	Bypass frequency untable
EE	EE	EEPROM error
EP	EP	EPO

■ Accessories List

	Object	Number
1	User Manual	1
2	Monitoring software CD-ROMs	1
3	USB cable	1
4	Computer cables	1
5	Battery cable(battery-free model)	1
6	Vertical tripod (only Rack)	2
7	Cabinet mounting brackets (only Rack)	2

■ **Optional accessories(Need to be ordered separately)**

Model	Item	Description	Funcation
PSWG-ES-SU-SNMP		SNMP Communication Card	<ul style="list-style-type: none"> <li>• Multiple UPS systems can be controlled and monitored via the RJ-45 interface.</li> <li>• UPS data (voltage, frequency, load level, battery capacity) is displayed in a real-time and dynamic graphical interface.</li> <li>• Warning notifications can be sent via audible and visual alarms, broadcasts, mobile messengers, SNMP traps, and emails.</li> <li>• Historical data can be stored in the database of the terminal computer.</li> <li>• Simple firmware update.</li> <li>• It has the functions of password security protection and remote access management.</li> </ul>
PSWG-ES-SU-MOD		Modbus Card	<ul style="list-style-type: none"> <li>• Multiple UPS systems can be controlled and monitored via the RS-485 interface.</li> <li>• It supports the MODBUS RTU communication protocol.</li> <li>• Data reading and writing operations can be performed via registers.</li> <li>• It provides surge protection.</li> </ul>
PSWG-ES-SU-AS9P		Relay Card(9-Pin wire-locking terminal)	<ul style="list-style-type: none"> <li>• It provides contact signals to enable remote monitoring of the UPS.</li> <li>• To meet different environmental requirements, the signal status (open circuit or closed circuit) of the dry contacts can be set via jumpers.</li> </ul>
PSWG-ES-SU-ASDB9		Relay Card(DB9 connector)	