



**SPECIALISED
BATTERY SYSTEMS**

A MEMBER OF THE **Hudaco** GROUP

SBS-ESS BACK-UP SOLUTION

SBS 8/10KHB-T/EU



FEATURES

- Maximum efficiency of 98.0% & CEC efficiency of 95%
- Maximum PV power of 15KW
- String current of 30A, compatible with high-power modules
- Advanced parallel up to 9Pcs
- BMS management system to ensure longer battery life
- Compatible with both lead-acid and lithium battery energy storage systems
- Remote configuration and upgrade

Model	SBS 8KHB-180-T/EU		SBS 10KHB-210-T/EU
Efficiency			
Max. Efficiency (PV to AC)	98.0%		
Max. Efficiency (BAT to AC)	95.0%		
Input (PV)			
Max. PV Power	12000W		15000W
Max. Input Voltage	600V		
Max. Input Current (PV-A/PV-B)	30A/22A/22A		
Max. Output Current (input A/input B)(A)	40A/30A/30A		
Start Operating Voltage (V)	90V		
MPPT Operating Voltage Range	70V-540V		
No. of MPPT Trackers	3		
String Per MPP Tracker	2		
Input (BAT)			
Compatible Battery Type	Lithium-ion/Lead-acid		
Nominal Battery Voltage	48V		
Battery Voltage Range	40V-64V		
Max. Charge/discharge Current	210A/180A		210A/210A
Max. Charge/discharge Power	10000W/10000W		10000W/10000W
Lithium Battery Charge Curve	Self-adaptation to BMS		
Input (Grid)			
Nominal AC Input Power	12000W		15000W
Max. AC Input Current	52.5A		65.3A
Rated AC Voltage	230V (Single Phase)		
Output (Grid)			
Nominal AC Output Power			10000W
Max. AC Output Apparent Power	8000W		10000W
Max. AC Output Power (PF=1)	8800VA		11000VA
Max. AC Output Current	8800W		11000W
Rated AC Voltage	40A		50A
Rated Grid Frequency	230V,L+N+PE		
Grid Connection	50Hz/60Hz		
Power Factor	Single Phase		
THDI	>0.99 @rated power (Adjustable 0.8LD - 0.8LG)		
Output (Back up)			
Nominal Output Power	8000W		10000W
Nominal Output Voltage	230V,L+N+PE		
Nominal Output Frequency	50Hz/60Hz		
Nominal Output Current	34.8A		43.5A
Maximum Power (Is)	16000VA		20000VA
Nominal Output Voltage	230V,L+N+PE		
Nominal Output Frequency	50Hz/60Hz		
Transfer Time	10ms (typ)/20ms(max)		
THDV	<3% @100% R Load		
Protection			
Protection Category	Class I		
DC Switch	Support		
Anti-Islanding Protection	Support		
AC Overcurrent Protection	Support		
AC Short Circuit Protection	Support		
DC Reverse Connection	Support		
Surge Arrester	DC Type III, AC Type III		
Insulation Detection	Support		
Leakage Current Protection	Support		
PV Overvoltage Category	II		
Gen	Support		
AFCI	Optional		
RSD	Optional		
General			
Max. Operation Altitude	4000m		
Noise Emission	<45dB		
Ingress Protection Degree	IP65		
Operating Temperature Range	-25°C~60°C (>45°C derating)		
Relative Humidity	0~100%		
Cooling Concept	Fan Cooling		
Mounting	Wall bracket		
Dimensions (W*H*D)	420mm*800mm*240mm		
Weight	37kg		
PV Connection Way	MC4/H4		
Battery Connection Way	DC Special Connector		
HMI & COM			
Display	LED+APP		
Communication Interface	RS485/CAN(for BMS), RS485, USB, DRM/RS485 (for Meter), Optional: WiFi/GPRS/LAN		
Certification			
Grid	NRS 0-97 / IEC61727 / IEC62116		
Safety	IEC62109		
EMC	EN 61000		
Warranty			
5 YEARS/10 YEARS (OPTIONAL)			

Remarks:

- The range of output voltage & frequency may vary of different grid codes
- Specifications are subject to change without advanced noticed

SBR064/096/128/160/ 192/224/256

High Voltage LFP Battery



HIGH-PERFORMANCE

- Up to 30 A continuous charging and discharging current with high efficiency
- Up to 100% usable energy



SAFETY

- Lithium iron phosphate Battery
- Multi-stages protection design and extensive safety certification



FLEXIBILITY

- Extendable during lifetime
- Support 2-8 modules per unit, 6.4–25.6 kWh capacity range



EASY INSTALLATION

- Compact and Light, single person installation
- Plug and Play, no cables needed between battery modules



Type designation	SBR064 *	SBR096	SBR128	SBR160	SBR192	SBR224	SBR256
Technical properties	 2 modules	 3 modules	 4 modules	 5 modules	 6 modules	 7 modules	 8 modules
System data							
Battery type	LiFePO4 Prismatic Cell						
Battery module	3.2 kWh, 33 kg						
Energy (useable) **	6.4 kWh	9.6 kWh	12.8 kWh	16 kWh	19.2 kWh	22.4 kWh	25.6 kWh
Nominal voltage	128 V	192 V	256 V	320 V	384 V	448 V	512 V
Operating voltage	108 V – 146 V	162 V – 219 V	216 V – 292 V	270 V – 365 V	324 V – 438 V	378 V – 511 V	432 V – 584 V
Max. charging/discharging current: continuous ***	30 A						
Depth of discharge	Max. 100 % DOD (settable)						
Short circuit current	3500 A						
Display	SOC indicator, Status indicator						
Communication interface	CAN						
Protection							
Over/under voltage protection	Yes						
Over current protection	Yes						
Over/under temperature protection	Yes						
DC breaker	Yes						
General data							
Dimensions (W*H*D)	625*545*330 mm	625*545*330 mm	625*675*330 mm	625*805*330 mm	625*935*330 mm	625*1065*330 mm	625*1195*330 mm
Weight	89 kg	114 kg	147 kg	180 kg	213 kg	246 kg	279 kg
Installation location	Indoor / Outdoor						
Mounting method	Floor stand						
Operating ambient temperature range	Charge: 0 °C - 50 °C Discharge: -20 °C - 50 °C						
Degree of protection	IP55						
Allowable relative humidity range	0% - 95% non - condensing						
Max. operating altitude	Max. 4000 m						
Cooling method	Natural convection						
Certificates	CE, CEC, IEC 62619, IEC 62040, UN38.3, VDE 2510-50, IEC 62477, IEC 63056, IEC 61000, UKCA						

* SBR064 consists of 2 battery modules and 1 empty module.

** Test conditions: 25 °C, 100 % depth of discharge (DOD), 0.2C charge & discharge.

*** The maximum charging/discharging current of SBR064 is 20A when used with SHRT series inverter.



Tiger Neo N-type 60HL4-(V) 460-480 Watt MONO-FACIAL MODULE

N-Type

Positive power tolerance of 0~+3%

IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018

Occupational health and safety management systems



Key Features



SMBB Technology

Better light trapping and current collection to improve module power output and reliability.



PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.



Hot 2.0 Technology

The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.

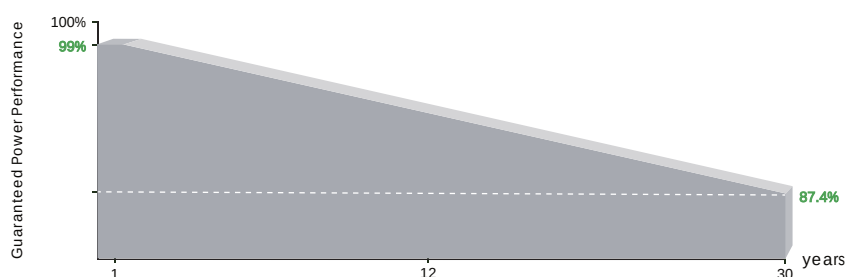


Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



LINEAR PERFORMANCE WARRANTY

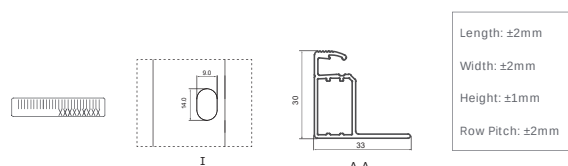
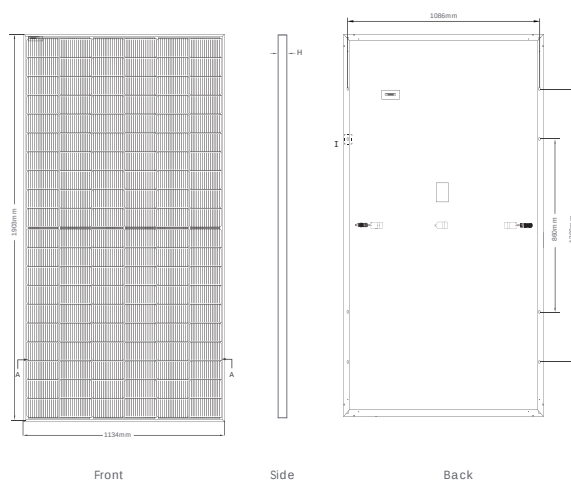


12 Year Product Warranty

30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

Engineering Drawings

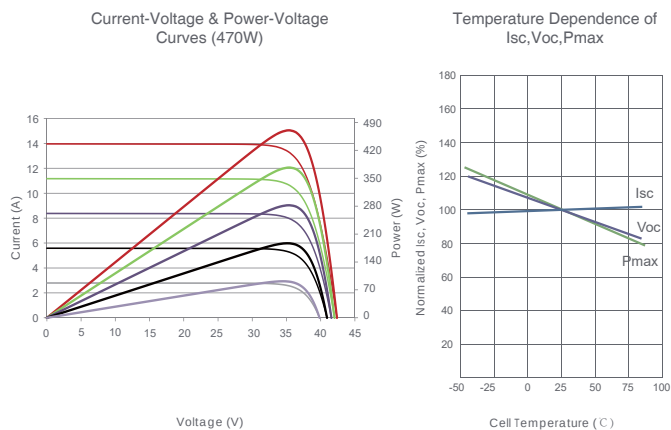


Packaging Configuration

(Two pallets = One stack)

36pcs/pallets, 72pcs/stack, 864pcs/ 40'HQ Container

Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type	N type Mono-crystalline
No. of cells	120 (6×20)
Dimensions	1903×1134×30mm (74.92×44.65×1.18 inch)
Weight	24.2 kg (53.35 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TUV 1×4.0mm ² (+): 400mm, (-): 200mm or Customized Length

SPECIFICATIONS

Module Type	JKM460N-60HL4 JKM460N-60HL4-V		JKM465N-60HL4 JKM465N-60HL4-V		JKM470N-60HL4 JKM470N-60HL4-V		JKM475N-60HL4 JKM475N-60HL4-V		JKM480N-60HL4 JKM480N-60HL4-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	460Wp	346Wp	465Wp	350Wp	470Wp	353Wp	475Wp	357Wp	480Wp	361Wp
Maximum Power Voltage (Vmp)	34.72V	32.60V	34.89V	32.77V	35.05V	32.94V	35.21V	33.10V	35.38V	33.27V
Maximum Power Current (Imp)	13.25A	10.61A	13.33A	10.67A	13.41A	10.73A	13.49A	10.79A	13.57A	10.85A
Open-circuit Voltage (Voc)	42.05V	39.94V	42.22V	40.10V	42.38V	40.25V	42.54V	40.41V	42.71V	40.57V
Short-circuit Current (Isc)	13.99A	11.29A	14.07A	11.36A	14.15A	11.42A	14.23A	11.49A	14.31A	11.55A
Module Efficiency STC (%)	21.32%		21.55%		21.78%		22.01%		22.24%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000/1500VDC (IEC)									
Maximum series fuse rating	25A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.30%/°C									
Temperature coefficients of Voc	-0.25%/°C									
Temperature coefficients of Isc	0.046%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

*STC: Irradiance 1000W/m² Cell Temperature 25°C AM=1.5
NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s