

# SmartCube ESS Series

RTHY(20~50)KWP3-RTLB(70~107)kwh

## Versatile Application

- ▶ Ideal for factories, hotels, and farms with DC / AC-coupled solar-storage
- ▶ No external switching device is required, on/off-grid switching time about 10ms, support direct output backup load

## Safe & Reliable

- ▶ 280ah large capacity cell, higher energy density
- ▶ Carbon monoxide detection, Sound and light alarm, Exhaust fan, Explosion vent window, Inlet valve, Fire water injection port

## Smart Energy

- ▶ Supports self-consumption, peak shifting, time-of-use, and battery backup
- ▶ Integrated self-developed BMS / EMS for flexibility

## High Performance

- ▶ Small size, small footprint
- ▶ Long-lasting battery cycle life

## Easy Operation

- ▶ Compact design saves space
- ▶ Cloud control with 24 / 7 monitoring



## Outdoor Battery Cabinet Parameters

Technical Parameters	RTLB70kwh	RTLB89kwh	RTLB107kwh
Battery Type	LFP		
Battery Module Capacity	17.92 kWh		
Cell Type	280 Ah		
Number of Modules	4	5	6
Total Battery Capacity	71.68 kWh	89.6 kWh	107.52 kWh
Nominal Voltage	256 V	320 V	384 V
Operating Voltage Range	228 ~ 288 V	285 ~ 360 V	342 ~ 432 V
Charge / Discharge Rate	Max. 0.5 C		
DoD	90%		
<b>General Parameters</b>			
Dimensions (W x H x D)	1050 x 2085 x 1371 mm		
Weight	< 1.2 T	< 1.35 T	< 1.5 T
Installation Site	Outdoor		
IP Protection	IP54		
Anti Corrosion Level	C4		
Operation Humidity	5% ~ 95% (No Condensing)		
Operation Temperature	-30°C ~ +50°C		
Max. Operation Altitude	≤ 3000 m		
Communication Port	Ethernet; CAN		
Communication Protocol	CAN; MODBUS TCP / IP		
Cooling Method	Air Conditioner		
Certification	UN38.3; MSDS; IEC 62040; IEC 62477; IEC 62619; IEC 63056; IEC 61000-6-2/4		

## Hybrid Inverter Parameters

Product Specifications	RTHY20KWP3	RTHY25KWP3	RTHY29KWP3	RTHY30KWP3	RTHY40KWP3	RTHY49KWP3	RTHY50KWP3
<b>PV Side</b>							
MPPT Voltage Range	250 ~ 950 Vdc (Max. 1000 Vdc)						
MPPT Rated Voltage	720 Vdc						
MPPT Rated Voltage (Full Load)	300 ~ 800 V	350 ~ 800 V	400 ~ 800 V	400 ~ 800 V	500 ~ 800 V	550 ~ 800 V	550 ~ 800 V
Max. PV Power	40 kWp	50 kWp	60 kWp	60 kWp	80 kWp	100 kWp	100 kWp
Number of MPPT / Strings per MPPT	4 / 2						
Max. Current per MPPT	45 A						
<b>Battery Side</b>							
Battery Voltage Range	200 ~ 950 Vdc						
Battery Rated Voltage Range	250 ~ 800 Vdc						
Max. DC Current	40 Adc x 2	50 Adc x 2	60 Adc x 2	60 Adc x 2	80 Adc x 2	80 Adc x 2	80 Adc x 2
Max. DC Power	22 kW	27.5 kW	33 kW	33 kW	44 kW	55 kW	55 kW
Number of DC Inputs	2						
<b>AC Side (On Grid)</b>							
Nominal AC Output Power	20 kW	25 kW	29.9 kW	30 kW	40 kW	49.9 kW	50 kW
Max. AC Output Power	27.5 kVA	27.5 kVA	29.9 kVA	33 kVA	44 kVA	49.9 kVA	55 kVA
Max. AC Input Power (Single-phase)	20 kW	25 kW	25 kW	25 kW	27.5 kW	37.5 kW	37.5 kW
Rated AC Current	28.9 A	36 A	43 A	43 A	58 A	72 A	72 A
Max. AC Current	87 A	110 A	110 A	110 A	120 A	163 A	163 A
AC Rated Voltage / Voltage Range	230 / 400 Vac; 220 / 380 Vac; 3L+PE+N; -15% ~ +10%						
Nominal Grid Frequency / Frequency Range	50 Hz / 60 Hz (±5 Hz)						
THDi	< 3% (100% Load)						
Adjustable PF Range	-0.8 (Lagging) ~ 0.8 (Leading)						
<b>Backup Output</b>							
Nominal AC Voltage	230 / 400 V; 220 / 380 Vac; 3L+PE+N						
THDv	< 3% (Rated Power)						
Nominal Grid Frequency / Frequency Range	50 Hz / 60 Hz						
Nominal AC Output Power	20 kW	25 kW	29.9 kW	30 kW	40 kW	49.9 kW	50 kW
Max. AC Output Power (Single-phase)	20 kW	25 kW	25 kW	25 kW	25 kW	25 kW	25 kW
Max. Output Current	87 A	110 A	110 A	110 A	110 A	110 A	110 A
<b>Genset Input</b>							
Max. Input Current	87 A	110 A	110 A	110 A	110 A	110 A	110 A
<b>Efficiency</b>							
Max. Efficiency	97.5%						
<b>Protection</b>							
Reverse DC Connection Protection	Yes						
Anti-Islanding Protection	Yes						
Over-Temperature Protection	Yes						
Grid Monitoring / Earthing Fault Detection	Yes						
Insulation Monitoring	Yes						
DC / AC Surge Protection	DC Type II; AC Type II						
AFCI	Optional						
<b>General Parameters</b>							
Dimensions(W x H x D)	635 x 950 x 315 mm						
Weight	> 80 kg						
Topology	Transformerless						
IP Protection	IP65						
Operation Temperature Range	-25 ~ 60°C (> 45°C Derating)						
Operation Humidity Range	0 ~ 100% (No Condensing)						
Cooling Method	Intelligent Air Cooling						
Max. Operation Altitude	4000 m (> 3000 m Derating)						
Communication Port	RS-485 / CAN						