OFF-GRID & ESS EXPERT

One-Stop Power Solution Provider

With 17 years experience, TBB is specialized in providing backup power, off-grid, mini-grid and ESS solutions. Besides inverters and batteries, TBB now is capable of providing all-in-one integrated systems covering all application scenarios, that is Raython series, aimed to meet diverse energy needs of residential, commercial and industrial users. Thanks to these advanced systems, TBB stands ready to provide an impressive power supply capability of up to 1MW.



Backup Power with ESS →



Off Grid with ESS →



Residential Hybrid ESS →



Mini Grid →



Commercial & Industrial ESS →

01 Backup Power, Off-grid & ESS Applications

Protect residential users or small businesses from unstable power power supply and rising electricity costs, to create reliable solutions for users to maximize self-consumption, secure power safety during an outage, take smart control of power management, and realize energy independence.



Raython R Series

3kVA - 8kVA | 5.04kWh - 20.16kWh | Single-Phase
Max. PV Power: 4.4kW+4.4kW (8.8kW)

- Supports Time of Use & Peak Shaving applications
- 300% Surge Capability
- 2 MPPT Trackers
- Programmable Smart Port
- Parallel or three-phase up to 3 cabinets (24kVA)
- AGS, Power Assist and Power Control
- 4ms UPS transfer time
- IP54



Raython M Series

5kW - 15kW | 5.04kWh - 40.32kWh | Single-Phase
Max. PV Power: 8kW+8kW+8kW+8kW (32kW)

- Supports Time of Use & Peak Shaving applications
- 300% Surge Capability
- Multiple MPPT Trackers
- Two AC Inputs & Two AC Outputs (Raython M10/15)
- Programmable Smart Port (Raython M5/8)
- Parallel or three-phase up to 3 cabinets (45kW)
- Solar Hybrid Inverter with built-in 600V MPPT
- AGS, Power Assist and Power Control
- 0ms UPS transfer time
- IP54

All-in-One Energy Storage System

Raython R Series

For Backup Power, Off-grid & ESS Applications



Raython R3
3kVA | 5.04kWh-10.08kWh

Raython R5
5kVA | 10.08kWh-20.16kWh

Raython R8
8kVA | 10.08kWh-20.16kWh

TBB Raython R series is an all-in-one standalone solar power system, meticulously designed to address the energy challenges faced by family homes and small businesses lacking access to grid power, formerly reliant on generators. Moreover, the Raython system excels in residential ESS applications, particularly in regions with a stable grid but high electricity costs. It empowers you to maximize self-consumption through solar energy, effectively reducing your electricity bills.

Raython R series boasts a highly integrated design, optimizing space utilization and reducing installation time. Additionally, it provides the flexibility of parallel connection for up to 3 units (24kVA, 60.48kWh).

Exceptional Performance

- All-in-one design
- Factory assembled and tested
- Time of Use & peak shaving
- Auto Generator Start/Stop (AGS) functionality
- Power Assist and Power Control functions

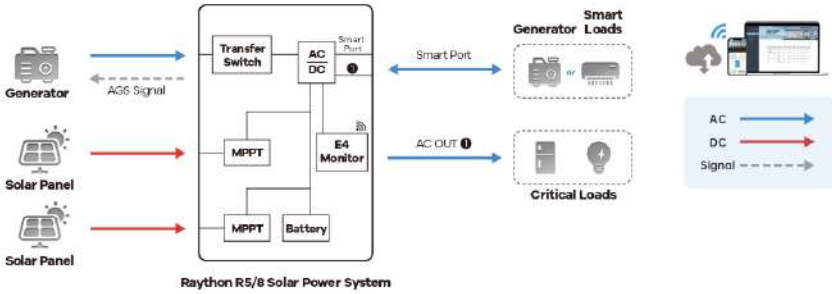
Increased Flexibility

- 2 MPPT trackers (Raython R5 & R8)
- Programmable smart port (Raython R5 & R8)
- Parallel or three-phase up to 3 cabinets (24kVA)
- Local monitoring and control via E4 LCD Monitor
- Remote monitoring and control via NOVA Web & App

Enhanced Reliability

- 4ms UPS transfer time
- 300% surge capability
- Leakage protect function on the AC output
- IP54 protection

System Schematic:



Raython R5/8 Solar Power System

RAYTHON
RAYTHON R3



AC+DC+PV Distribution

E4 LCD Monitor

- For system local monitoring and control

All-in-One Solar Inverter RiiO Sun II 3KVA-S

- AC charger+Inverter+MPPT charger+ AC transfer switch (32A)
- Max output power: 3000W

Lithium Battery Module

- 48V | 105Ah-210Ah
- 5.04kWh-10.08kWh

RAYTHON
RAYTHON R5



E4 LCD Monitor
- For system local monitoring and control

All-in-One Solar Inverter RiiO Sun II 5KVA-S
- AC charger+Inverter+MPPT charger+ AC transfer switch (50A)
- Max output power: 5000W

Lithium Battery Module
- 48V | 210Ah-420Ah
- 10.08kWh-20.16kWh

AC+DC+PV Distribution

RAYTHON
RAYTHON R8



E4 LCD Monitor
- For system local monitoring and control

All-in-One Solar Inverter RiiO Sun II 8KVA-S
- AC charger+Inverter+MPPT charger+ AC transfer switch (50A)
- Max output power: 8000W

Lithium Battery Module
- 48V | 210Ah-420Ah
- 10.08kWh-20.16kWh

AC+DC+PV Distribution

Model	Raython R3	Raython R5	Raython R8
AC Input			
Generator compatible		Yes	
AC input voltage range (VAC)		175~265	
AC input frequency range (Hz)		45~65	
AC input current (transfer switch) (A)	32	50	50
Inverter			
Product Topology		Transformer based	
Nominal battery voltage (VDC)		48	
Input voltage range (VDC)		42~68	
AC output voltage (VAC)		220/230/240 ±2%	
AC output frequency (Hz)		50/60 ± 0.1%	
Harmonic distortion		<2%	
Load power factor		1.0	
Cont.output power at 25°C (VA)	3000	5000	8000
Max output power at 25°C (W)	3000	5000	8000
Peak power (W)	6000	10000	16000
Surge		300%	
Maximum efficiency	93%	94%	95%
Zero load power (W)	17	22	32
Max AC charge current (A)	35	60	90
Main output (AC Out1) Current (A)	32	50	50
Transfer time		<4ms (<15ms in Weak AC source Mode>)	
PV In			
Max output current (A)	60	100 (50 per tracker)	100 (50 per tracker)
Maximum PV power (W)	5200	4400+4400	4400+4400
PV open circuit voltage (V)		250	
Maximum PV short circuit current (A)	40	40+40	40+40
MPPT voltage range (V)		65~245	
MPPT charger maximum efficiency		98%	
MPPT efficiency		>99.5%	
Battery			
Battery type		LiFePO4 Li-ion battery	
Nominal energy capacity	5.04kWh-10.08kWh	10.08kWh-20.16kWh	10.08kWh-20.16kWh
General Data			
General purpose com. Port		Wi-Fi with E4 LCD monitor	
Operating temperature range		Inverter: -20°C to 65°C / Battery: discharge -20°C to 55°C, charge 0-40°C	
Relative humidity in operation		95% without condensation	
Altitude (m)		2000	
Mechanical Data			
Dimension (W*D*H) (mm) (max)	750*482*1130	750*650*1130	750*650*1130
Net Weight (kg) (without battery)	98	132	140
Cooling		Forced fan	
Protection index		IP54	
Standards			
Safety		EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2	
EMC		EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-12	
Grid Code		RD 1699	

TBB POWER

Easy Power, Easy Life

T B B R E N E W A B L E

