


Raython Model 0/1

3-5kW | 5.04kWh-20.16kWh


Raython Model 2

8kW | 10.08kWh-20.16kWh

Raython Model 0/1/2

All-in-One Integrated System

For Off-grid & Residential ESS Applications

Raython Model 0/1 & Model 2

For Off-grid & Residential ESS Applications

The Raython Model 0/1 and Model 2 systems are all-in-one stand-alone solar power systems. They are ideal solutions designed for holiday houses or single-family houses that have no access to the grid power and have to use generators as their power supply. Raython Model 0/1 can be also used in residential ESS applications for areas with a stable grid but high electricity prices and need to maximize self-consumption with solar to save electricity bills.

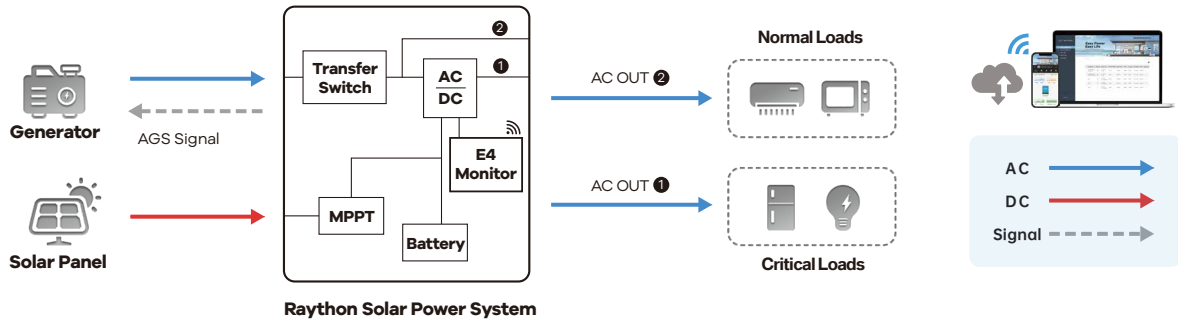
The Raython Model 0/1 and Model 2 systems are expertly assembled, tested and shipped as a complete system respectively, integrating a solar hybrid inverter (Model 0/1) or an inverter charger with an MPPT solar charge controller (Model 2), lithium battery modules, E4 LCD Monitor, and AC, DC and PV power distribution into one system. On arrival, the Raython system is ready and easy to install and the all-in-one design saves you precious time.

Our Raython Model 0/1 and Model 2 Solar Systems are designed for applications with a daily power use from 5.04kWh-20.16kWh, to meet your different power need.

Highlights

- All-in-one design for easy and quicker installation (<30 minutes)
- IP54 protection index for outdoor use;
- ECO-friendly: lower pollution, less noise and lower fuel consumption
- Factory assembled and tested system to ensure trouble-free installation
- Strong surge capability and powerful overload capability to power heavy loads like air-conditioner, water pump, fridge, washing machine, etc.
- Automatically start and stop the generator according to the load level, battery level or time period to ensure continuous power supply
- Leakage protect function on its AC output to ensure safety
- Its power assist function enables limited AC source to power heavy loads with the assist of battery power
- Boasts ESS capability to maximize self-consumption and save electricity bills (Model 0/1)
- NOVA Web & App for system remote monitoring and control
E4 LCD Monitor for system local monitoring and control

System Schematic:



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MODEL 0/1



AC+DC+PV Distribution

E4 LCD Monitor

- ✓ For system local monitoring and control

Solar Hybrid Inverter Apollo Matrix 3.0S/5.0S

- ✓ AC charger+Inverter+MPPT charger+ AC transfer switch (Model 0: 30A; Model 1: 50A)
- ✓ Max output power: 3000W (Model 0) / 5000W (Model 1)

Lithium Battery Module

- ✓ Model 0: 48V | 105Ah-210Ah | 5.04kWh-10.08kWh
- ✓ Model 1: 48V | 210Ah-420Ah | 10.08kWh-20.16kWh

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MODEL 2

E4 LCD Monitor

- ✓ For system local monitoring and control



AC+DC+PV Distribution

MPPT Charge Controller Solar Mate

- ✓ 150V 120A / 250V 100A

Inverter Charger Kinergier Pro 8.0S

- ✓ AC charger+Inverter+AC transfer switch (50A)
- ✓ Max output power 8000W

Lithium Battery Module

- ✓ 48V 210Ah-420Ah
- ✓ 10.08kWh-20.16kWh

Model	Raython Model 0	Raython Model 1	Raython Model 2
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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)	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	6500
Max output power at 25°C (W)	3000	5000	8000
Peak power(W)	9000	15000	16000
Surge	300%		
Maximum efficiency	96%		
Zero load power (W)	17	21	26
Max AC charge current (A)	40	70	110
Main output (AC Out1) Current (A)	32	50	50
Transfer time	<2ms (<15ms in Weak AC source Mode)		

PV in

Max output current(A)	60	90	120
Maximum PV power(W)	4000	6000	9000
PV open circuit voltage (V)	150		
Maximum PV short circuit current(A)	35	54	80
MPPT voltage range(V)	65~145		
MPPT charger maximum efficiency	98%		
MPPT efficiency	>99.5%		>99.9%

Battery

Battery type	LiFePO4 Li-ion battery		
Nominal energy capacity	5.04kWh-10.08kWh	10.08kWh-20.16kWh	

General data

General purpose com. port	Wi-Fi optional 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	
Net Weight (kg) (without battery)	100	135	150
Cooling	Forced fan		
Protection index	IP54		

Standards

Safety	EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2	EN-IEC 60950-1, EN-IEC 62109-2
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-12	
Grid Code	NRS 097-2-1:2017, NTS 2.1 (A)*, RD 1699*	/

* Coming soon

All-in-One Integrated System

Raython System



Raython Model 0

Raython Model 1

Raython Model 2

Raython Parallel Kit

Raython series of the same model support parallel connection up to 3 cabinets to compose a single-phase or a three-phase system for power expansion. The table below lists the necessary parallel kits for parallel connection.

Model	Parallel Configurations	AC Distribution BOX	DC Parallel Kit
Raython Model 1	Parallel connection of 2 cabinets in a single-phase system	1*PDU-M2-3S	KIT-M1-2P
	Parallel connection of 3 cabinets in a single-phase system	1*PDU-M2-3S	KIT-M1-3P
	Parallel connection of 3 cabinets in a three-phase system	1*PDU-M2-3T	KIT-M1-3P
Raython Model 2	Parallel connection of 2 cabinets in a single-phase system	1*PDU-M2-3S	KIT-M2-2P
	Parallel connection of 3 cabinets in a single-phase system	1*PDU-M2-3S	KIT-M2-3P
	Parallel connection of 3 cabinets in a three-phase system	1*PDU-M2-3T	KIT-M2-3P



AC Distribution BOX

PDU-M2-3T 400V/63A

PDU-M2-3S 230V/125A



PDU-M2-3T AC Distribution BOX

- For Raython Model 1 & 2 parallel connection in a three-phase system
- 400V/63A
- IP54
- Wall-mounted



PDU-M2-3S AC Distribution BOX

- For Raython Model 1 & 2 parallel connection in a single-phase system
- 230V/125A
- IP54
- Wall-mounted

Model No.	PDU-M2-3T	PDU-M2-3S
Rated voltage (VAC)/ Frequency (Hz)	400VAC (50/60Hz)	230VAC (50/60Hz)
Rated current (A)	63	125
Inverter input circuit breaker	3xC Type, 2P, 50A	3xC Type, 2P, 50A
Inverter output circuit breaker	3xC Type, 2P, 50A	3xC Type, 2P, 50A
System input circuit breaker	C Type, 3P, 63A	C Type, 2P, 125A
Maintain Bypass Switch	C Type, 4P, 63A	C Type, 2P, 125A
System output circuit breaker	C Type, 3P, 63A	C Type, 2P, 125A
Surge protection device	In: 20kA (8/20μs), I _{max} : 40kA (8/20μs)	
AC input terminal	100A, 5AWG, M4 screw	135A, 2AWG, M6 screw
Wiring terminals for inverter input and output, PV inverter output	76A, 7AWG, M4 screw	
System output wiring terminal	100A, 5AWG, M4 screw	135A, 2AWG, M6 screw
Ground copper bar	2*30*106mm, 8 holes (M6)	2*30*106mm, 8 holes (M6)
Temperature, altitude	-25°C ~ +60°C, 2000m (>2000m derating)	
General data	Galvanized sheet, spray painted surface RAL9003, P54, Wall-mounted	
Dimensions/ weight	550*600*120mm, 15kg	

DC Parallel Kit

KIT-M1-2P / KIT-M1-3P / KIT-M2-2P / KIT-M2-3P

/ Key Components of DC Parallel Kit



DC MCB



Copper terminal strip



M8 screw



System communication cable



BVR multi-core cable

KIT-M1-2P

For parallel connection of 2 cabinets of Raython Model 1

No	Item	Quantity	Unit
1	DC MCB, NDB6Z-125C125/2, 2P, type C	2	PCS
2	Copper terminal strip used for extending the phase line output of DC MCB	4	PCS
3	Screw, M8*15mm	8	PCS
4	System communication cable, PMBTC, UTP 4PR	2	PCS
5	Self-made power cable, BVR multi-core cable, 25mm ² , red, 330mm	2	PCS
6	Self-made power cable, BVR multi-core cable, 25mm ² , black, 240mm	2	PCS
7	Self-made power cable, BVR multi-core cable, 25mm ² , black, 3m	1	PCS
8	Self-made power cable, BVR multi-core cable, 25mm ² , red, 3m	1	PCS

Note: The above list is subject to change without prior notice, based on actual parallel configurations.

KIT-M1-3P

For parallel connection of 3 cabinets of Raython Model 1

No	Item	Quantity	Unit
1	DC MCB, NDB6Z-125C125/2, 2P, type C	3	PCS
2	Copper terminal strip used for extending the phase line output of DC MCB	6	PCS
3	Screw, M8*15mm	12	PCS
4	System communication cable, PMBTC, UTP 4PR	4	PCS
5	Self-made power cable, BVR multi-core cable, 25mm ² , red, 330mm	3	PCS
6	Self-made power cable, BVR multi-core cable, 25mm ² , black, 240mm	3	PCS
7	Self-made power cable, BVR multi-core cable, 25mm ² , black, 3m	2	PCS
8	Self-made power cable, BVR multi-core cable, 25mm ² , red, 3m	2	PCS

Note: The above list is subject to change without prior notice, based on actual parallel configurations.

KIT-M2-2P

For parallel connection of 2 cabinets of Raython Model 2

No	Item	Quantity	Unit
1	DC MCB, NDB6Z-125C125/4, 4P, type C	2	PCS
2	Copper terminal strip used for extending the phase line output of DC MCB	8	PCS
3	Screw, M8*15mm	16	PCS
4	System communication cable, PMBTC, UTP 4PR	2	PCS
5	Communication cable, UTP 2PR	1	PCS
6	Self-made power cable, BVR multi-core cable, 25mm ² , black, 450mm	4	PCS
7	Self-made power cable, BVR multi-core cable, 25mm ² , red, 450mm	4	PCS
8	Self-made power cable, BVR multi-core cable, 50mm ² , black, 3m	1	PCS
9	Self-made power cable, BVR multi-core cable, 50mm ² , red, 3m	1	PCS

Note: The above list is subject to change without prior notice, based on actual parallel configurations.

KIT-M2-3P

For parallel connection of 3 cabinets of Raython Model 2

No	Item	Quantity	Unit
1	DC MCB, NDB6Z-125C125/4, 4P, type C	3	PCS
2	Copper terminal strip used for extending the phase line output of DC MCB	12	PCS
3	Screw, M8*15mm	24	PCS
4	System communication cable, PMBTC, UTP 4PR	4	PCS
5	Communication cable, UTP 2PR	2	PCS
6	Self-made power cable, BVR multi-core cable, 25mm ² , black, 450mm	6	PCS
7	Self-made power cable, BVR multi-core cable, 25mm ² , red, 450mm	6	PCS
8	Self-made power cable, BVR multi-core cable, 50mm ² , black, 3m	2	PCS
9	Self-made power cable, BVR multi-core cable, 50mm ² , red, 3m	2	PCS

Note: The above list is subject to change without prior notice, based on actual parallel configurations.