

All-in-one ESS Solution

# Raython Q33



For Backup Power, Mini-grid, and C&amp;I ESS Applications

## Raython Q33

33kW 60kWh~75kWh (90% DoD)  
For indoor use

- Supports AC coupled PV system
- Built-in fire suppression system
- Modular design, expandable up to 330kW, 1.5MWh (10 units)
- All-in-one design for easy installation and low maintenance
- Factory assembled and tested system enables you get free from complicated groundwork
- 24/7 local monitoring and control on E7 LCD Monitoring
- System remote monitoring on NOVA App & Web

**Note:** 1. Raython Q33 supports one additional cabinet of Energy Cube EX5 batteries (each cabinet up to 75kWh).

2. When two or more Raython Q33 are to be connected in parallel, an additional AC distribution cabinet is required for parallel operation.

## RAYTHON

RAYTHON Q33

### Qoma 33H-R

- ✓ PCS
- ✓ 33kW

### E7 LCD Monitor

### E-Hub

- ✓ Energy Management System



### PDP-Q2

- ✓ AC Distribution Box
- ✓ Communication Transfer Board

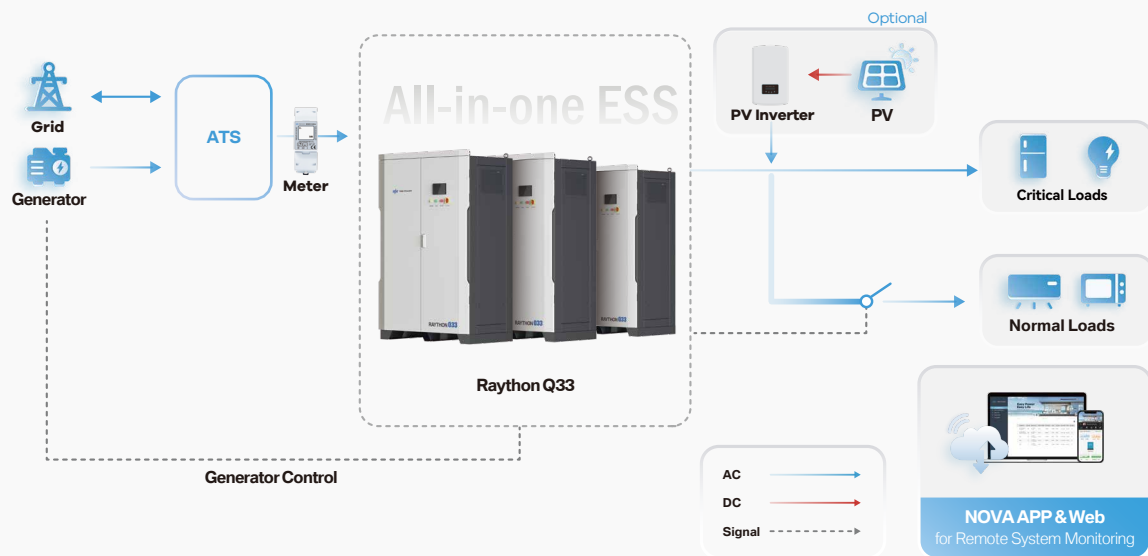
### BCU-EX5

- ✓ EX5 Battery Controller

### EX5 High Voltage Lithium Battery Module

- ✓ 5.04kWh each
- ✓ Support 12~15 units EX5 connected in series

## For backup power application

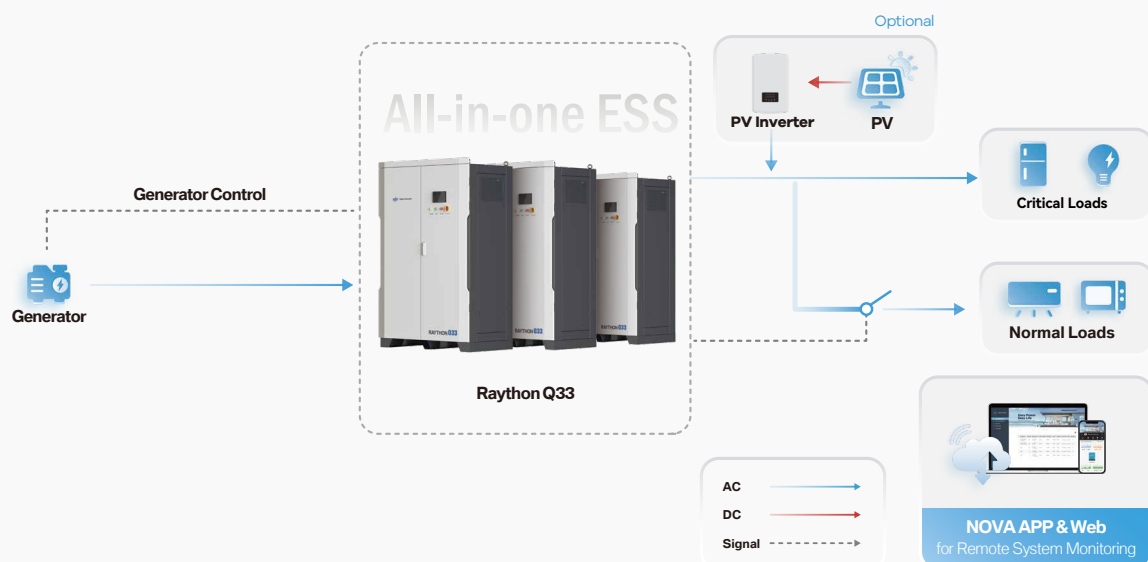


Typical for scenarios with dual AC power supplies (grid and diesel generator) serving as a backup power system. In such cases, employing an Automatic Transfer Switch (ATS) is recommended, with the grid as the main input and the diesel generator as the backup. The ATS ensures continuous output availability when either AC input is active. When the grid is normal, it powers the loads; during a grid failure, the system seamlessly switches to the battery for power supply. Once generator startup conditions are met, it activates to supply power.

In the presence of AC coupling, solar self-consumption is attainable. PV energy takes precedence, powering loads initially, and any surplus energy is directed to battery charging.

Under any working conditions, if connected to the grid, the system will feed back excess energy into the grid.

## For mini-grid application



Deployed in remote locations like border posts or small villages, the Raython Q33 ensures self-sufficient electricity, elevating living standards. The battery modules take the lead in powering loads. If the battery reaches a preset low SoC, the generator automatically starts to power loads and charge the battery.

If there exist AC coupling, PV energy will take the lead in powering loads, storing surplus energy in the battery. In case of insufficient solar energy, the storage system takes over.

## For ESS application



Designed for scenarios with accessible and stable grid, usually with a PV inverter involved to form an AC-coupled PV system. The primary objective is self-consumption, effectively reducing AC input instant power and long-term grid consumption to zero. Utilizing an energy meter connected to the grid side, users can real-time adjust the system's charging and discharging power. This ensures prioritized use of solar power to either energize loads or charge the battery. Any surplus energy permitted to be fed back to the grid is exported accordingly.

In the absence of AC coupling, the main goal is peak shaving. The grid charges the battery during off-peak hours, and the battery takes precedence in powering loads, effectively reducing electricity bills.

Model NO.	Raython Q33
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## System Specification

Nominal Output Power	33kW
Maximum AC Input Power	33kW
Battery Capacity Range	60kWh~75kWh (90% DoD)
Battery Chemistry	LiFePO4
IP Protection	IP20
Cabinet Dimension(W *D* H)	1300*700*2000
Warranty	5 years product warranty,10 years performance warranty

## Inverter Technical Specification

Model	Qoma33H-R
Battery Voltage Range	400~850V
Max. Charging/ Discharging Current	62A

## AC Side (Grid)

Nominal Output Power	33kVA@45°C, 30kVA@50°C
Nominal AC input Current	50A
Nominal AC Voltage/ AC Voltage Range	400V/230V, -20%~15%
Nominal Grid Frequency/Frequency Range	50Hz: 47Hz~52Hz; 60Hz: 57Hz~62Hz
AC Current THD	< 3 % (at nominal power)
Adjustable Reactive Power	-100%~100%

## AC Side (Micro-Grid)

Nominal AC Voltage	400V/230V, -20%~15%
AC Voltage THD	< 1 % (Resistance Load)
Unbalance Load Capacity	100%
AC Output Power	45kW/30s

## General

Maximum Charge Efficiency	0.98
Reverse Polarity Protection	Yes
Overvoltage Protection	DC Type II / AC Type III
Grid Monitoring /Ground Fault Monitoring	Yes/ Yes
Insulation Monitoring	Yes
Overheat Protection	Yes
Degree of Protection	IP65
Operating Ambient Temperature Range	-25 to 60 ° (> 45 ° de-rating)
Allowable Relative Humidity Range (non- condensing)	0 –100 %
Cooling Method	Temperature controlled forced air cooling
Max. Operating Altitude	4000 m (> 3000 m de-rating)
Safety	IEC/EN62477-1 , IEC/EN62040-1
EMC	EN61000-6-1/-2/-3/-4;
Grid Regulation	IEC62116, IEC61727, NRS097-2-1
Grid Support	LVRT, Active & Reactive Power control and power ramp rate control

## Lithium Battery Technical Specification

Module Model	EX5
Module Capacity	5.04kWh
Module Nominal Voltage	48VDC
Operating Temperature Range	+15 C ~+30 C
Maximum Charging /Discharging Current	52.5A/105A
Safety	* IEC62619 / UN38.3
EMC	* EN61000-6--2/-4
Battery Modules	12~15 EX5 in series

\* Coming soon