



FlexCombo-M30 Microgrid System

Resilient, Reliable and Quick Delivery Power Block



Cubenergy FlexCombo-M30 is designed for community microgrid and min Commercial& Industrial application. The solution is an organic combination of renewables and BESS, which unlocks lower-cost energy supply while increasing the use of renewables in rural districts, remote areas and islands. The FlexCombo solution offers reliable microgrid and energy storage tailored to suit the ecological sensitivities of remote site economies.

The solution helps the people harness locally available resources to generate power and gives them the ability to manage and control these distributed energy resources.



Safe and Reliable



Long Life Span



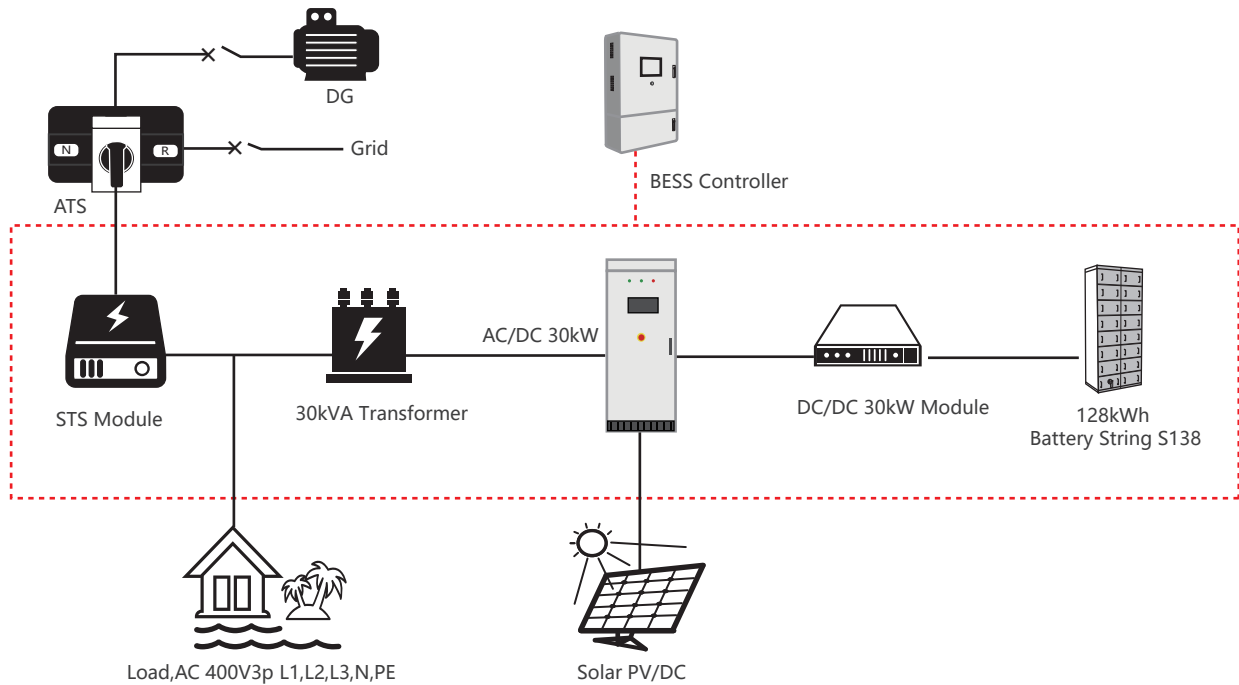
Smart and Friendly

Product Features (30kW/128kWh)

- The 30kW PCS cabinet contains a Hybrid 30kW PCS with 250V~520V DC voltage;
- The 128kWh battery string is converted to 400V AC through the 30kW Hybrid PCS, AC power is transferred to the isolated transformer supporting the load;
- The battery string is charged from the corresponding PV string 30kW DC/DC during day time operation;
- Power supply will be switch to DG by the ATS and STS seamlessly transferred to PCS when BESS and PV are short of supply;

□ System Topology (PV+30kW PCS+64/128kWh Battery String)

Grid AC 400V 3P,A,B,C,N,PE



□ System Configuration



Product Model	S138-7P9	BESS Controller 4	PCS (PWG2-30K-EX)	Enclosure
M30-64	1	1	1	Cabinet
M30-128	2	1	1	Cabinet

□ Key Components



Battery String-S138

- 0.5C Charge/Discharge;
- The power supply can be a single battery string or parallel battery strings;
- Easy configuration and maintenance;

Item	Data
Battery module	R138-7P9
Pack QTY	7
Nominal capacity	64kWh
Discharge cutoff- rated-charge cutoff voltage	314V~358V~398V
Cell	3.2V/90Ah
String measuring voltage range	100~1,000V
String voltage detection accuracy	±0.5%
String voltage sampling period	100ms
String measuring current range	±300A
String current detection accuracy	≤1%
String temperature detection accuracy	±2°C
SOC calculation accuracy	≤7%
Input insulation resistance	≥10MΩ, 1,000V DC
Communication	Ethernet, CAN, RS485
System cycle life	≥5,000 cycles@0.5C, 25°C
Dimension (W*D*H)	400*750*2,050mm
Weight	690kg



BESS Controller

- Data acquisition;
- Multiple protection: overload protection & reverse power protection;
- Intelligent interaction HMI;

Item	Data
Dimension (L*W*H)	480*230*770mm
Weight	35.5kg
Power interface	AC 110/220V, 50/60Hz
PCS communication	TCP/RS485
HVU communication	TCP/IP
HVAC communication	RS485
Grid control application	Time shifting, peak shaving, renewables moving average
Off-grid control application	Backup power, PV/DG/EV/ESS integrated micro-grid control
Battery management system	DC busbar incoming control



Power Conversion System

- Single-stage three-level modularization;
- Multi-branch input to reduce battery series and parallels connection;

Item	Data
DC voltage range	250V~520V
PV voltage range	520V~900V
Maximum DC current	90A
Maximum PV current	116A
Rated output power	30kW
Rated grid voltage	400V
Grid voltage range	±15%
The frequency range of the power grid	50/60Hz±2.5Hz
AC rated current	44A
AC PF	Listed: 0.8~1 leading or lagging (Controllable) Actual: 0.1~1 leading or lagging (Controllable)
Off-grid voltage	400V
Off-grid voltage range	±10%
Off-grid frequency	50/60Hz

□ System Technical Specifications

Item	M30-64	M30-128
DC Data		
Battery chemistry	Lithium Iron Phosphate (LFP)	
Cell life cycle	80% Retention with 5,000 Cycles @ 1C 25°C	
Cell spec	3.2V/90Ah	
String configuration	2P112S	
Number of strings	1	2
Rack rated energy capacity	64kWh	128kWh
DC rated energy capacity	64.5kWh	129kWh
Rated voltage	358.4V	
Voltage range	313.6V~397.6V	
BMS communication interface	RS485, Ethernet	
BMS communication protocol	Modbus RTU, Modbus TCP	
AC Data		
Rated AC power	30kW	
Maximum AC power	33kW	
Rated grid voltage	400V	
Grid voltage range	±15%	
AC rate of current	43A	
Output THDi	≤3%	
Grid-connected power factor	- 1 ~ + 1	
Grid frequency range	50/60±2.5Hz	
Isolation method	3 Phase 4 Line Transformer	
General Data		
Dimension w/o clearances (L*W*H)	1,850*1,300*2,591mm	
Weight of the whole system	<4T	
Degree of protection	IP54	
Operating temperature range	-20~40°C	
Relative humidity	0~95% (non-condensing)	
Max working altitude	3,000m/9,842ft	
Cooling concept of DC hatch	HVAC	
Communication interfaces	RS485, Ethernet, GPRS	
Certifications	IEC62619, UN38.3, CE, UL1973	

NOTES

Product dimensions and physical appearance in this catalog are nominal and are provided for the convenience of our customers. Cubenergy reserves the right to make changes from time to time, without prior notification, which may change the dimensions and physical appearance shown.

We therefore recommend you to consult with a Cubenergy sales representative before its purchase.

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