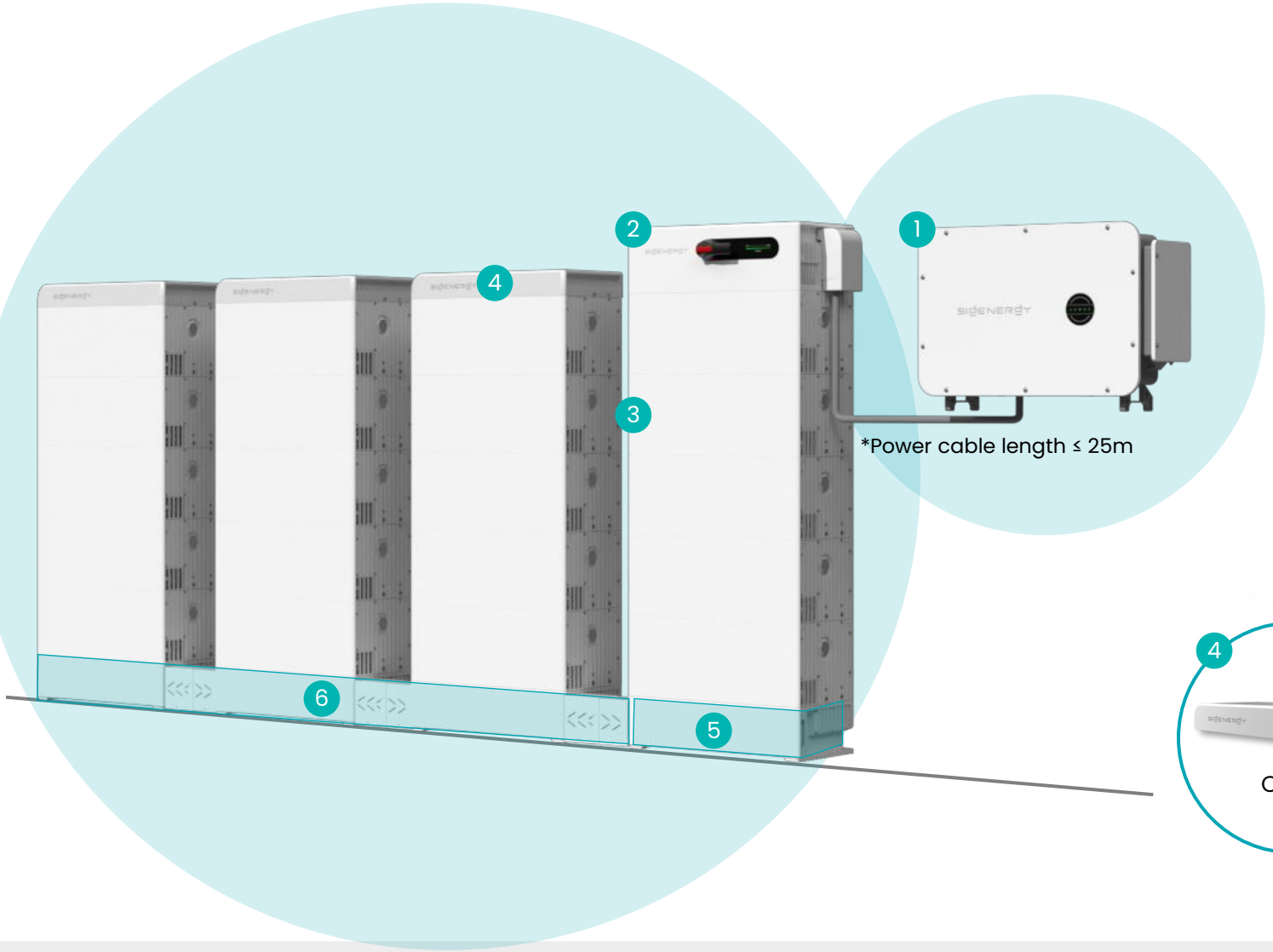
SigenStack Configuration Guidance

2025/04/03

SIGENERGY

SigenStack, Innovative Modular BESS Energy Solution



1 Sigen Hybrid Inverter

50/60/80/100/110/125 kW

2 Battery Controller

180 A Max. output current

3 Battery Module

Model: SigenStack BAT 12.0

12.06 kWh energy capacity per module

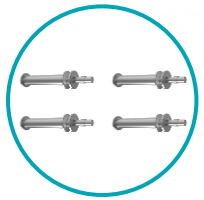
4 ~ 21 modules connected per inverter

4 Cover

5 Base MAIN
0.5C/1C

6 Base SUB
0.5C/1C

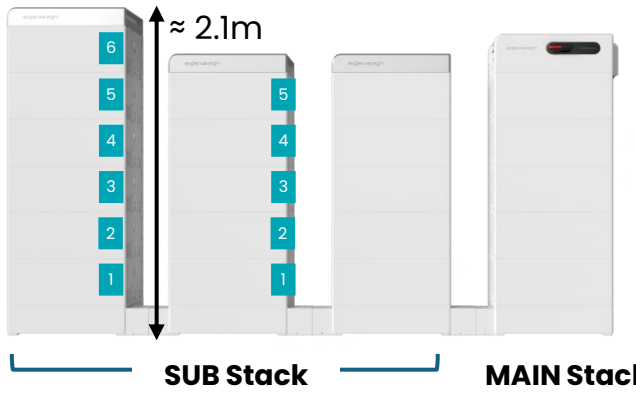
Handles
1 inverter with 1 set
(Included in Base-Main Package)



Basic Principles of Configuration

Limitation of module number and height

4~21 modules per system



≤5 modules

For security and ease of O&M

6 modules

For countries prone to earthquakes and with special installation requirements, additional fixing installations are necessary.

What is Battery Controller ?

Model	Compatible number of modules per system
SigenStack BC M2-0.5C	20~21
SigenStack BC M2-1C-BST	4~19
SigenStack BC M2-0.5C-BST	4~19

M2：Support 1250V input Voltage

can connect more batteries when M2 inverter is configured

BST：With DC-DC Boost Module

Use it when number of battery module < 20

Use it for PV + ESS (DC coupling) projects

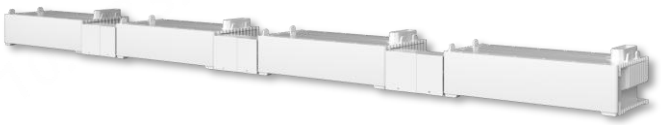
Type of SigenStack Base

SigenStack Base SUB-0.5C

SigenStack Base SUB-1C

SigenStack Base MAIN-0.5C

SigenStack Base MAIN-1C



SigenStack Base 4S-0.5C

Advanced Principles of Configuration

Battery Controller Selection Guide

BAT capacity(kWh)	Pack Quantity(Pcs)	BC Selection Guide	
		ESS-only Scenario	PV+ESS Scenario
253.21	21	BC M2-0.5C	BC M2-0.5C-BST; BC M2-1C-BST*
241.15	20		
229.09	19	BC M2-0.5C-BST; BC M2-1C-BST*	
217.04	18		
204.98	17		
192.92	16		
180.86	15		
168.81	14		
156.75	13		
144.69	12		
132.63	11		
120.58	10		
108.52	9		
96.46	8		
84.40	7		
72.35	6		
60.29	5		
48.23	4		

*Note: The selection of BC is based on the inverter type and the charging and discharging rate requirements.

Advanced Principle:

PV+ESS: Voc Recommendation

Pack units	Recommended PV string Min. Open-circuit Voltage
21	935
20	870
19	805
4-18	No requirement

Example:

1. With the open-circuit voltage (Voc @ STC) of the photovoltaic panels at 25℃ being 52.21V,
2. When equipping 21 battery packs, it is recommended to equip 935/52.21 = 18 units or more photovoltaic panels.

0.5C Scenario, System Scale - (96kWh ~ 145kWh)

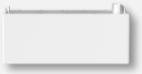
0.5C Scenario 1 | 96kWh ~ 145kWh

1

× **1** pcs

SigenStack BC M2-0.5C-BST

2



× **8~12** pcs

SigenStack BAT 12.0

3

× **1** pcs

SigenStack Cover

4

× **1** pcs

SigenStack Base MAIN-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

4

× **1** pcs

SigenStack Base SUB-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

SUB Stack MAIN Stack

Recommended System Configuration

Capacity (kWh)	Packs	Packs of SUB Stack	Packs of MAIN Stack	Cover	Recommended inverters
96	8	4	4	1	Sigen PV 50M1-HYA
109	9	5	4	1	Sigen PV 50M1-HYA
121	10	5	5	1	Sigen PV 60M1-HYA
133	11	6	5	1	Sigen PV 80M1-HYA
145	12	6	6	1	Sigen PV 80M1-HYA

0.5C Scenario, System Scale - (157kWh ~ 217kWh)

0.5C Scenario 2 | 157kWh ~ 217kWh

1 × 1 pcs
SigenStack BC M2-0.5C-BST

4 × 1 pcs
SigenStack Base MAIN-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

4 × 2 pcs
SigenStack Base SUB-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

2 ×13~18 pcs
SigenStack BAT 12.0

3 × 2 pcs
SigenStack Cover

Recommended System Configuration

Capacity (kWh)	Packs	Packs of SUB Stack 2	Packs of SUB Stack 1	Packs of MAIN Stack	Cover	Recommended inverters
157	13	5	4	4	2	Sigen PV 80M1-HYA
169	14	5	5	4	2	Sigen PV 80M1-HYA
181	15	5	5	5	2	Sigen PV 100M1-HYA
193	16	6	5	5	2	Sigen PV 100M1-HYA
205	17	6	6	5	2	Sigen PV 100M1-HYA
217	18	6	6	6	2	Sigen PV 110M1-HYA

0.5C Scenario, System Scale - (229kWh)

0.5C Scenario 3 | 229kWh

1

× 1 pcs

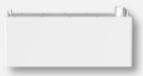
SigenStack BC M2-0.5C-BST*

4-1*

× 1 pcs

SigenStack Base 4S-0.5C
(the cables, cable protection covers and terminal plugs are **pre-installed**)

2



× 19 pcs

SigenStack BAT 12.0

4-2*

× 1 pcs

SigenStack Base MAIN-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

4-2*

× 3 pcs

SigenStack Base SUB-0.5C
(the cables, cable protection covers and terminal plugs are **included**)

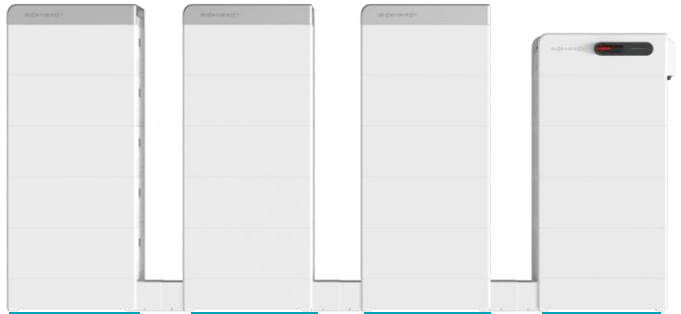
3

× 3 pcs

SigenStack Cover

Recommended System Configuration

Capacity (kWh)	Packs	Packs of SUB Stack 3	Packs of SUB Stack 2	Packs of SUB Stack 1	Packs of MAIN Stack	Cover	Recommended inverters
229	19	5	5	5	4	3	Sigen PV 110M1-HYA



*Note: In the case of PV + ESS (DC coupling) projects, please refer to advanced principle of the recommended minimum Voc of PV strings.
**Note: Please choose either Option 4-1 or 4-2. Option 4-1 is more suitable for the standard design of large-scale projects, while Option 4-2 is more appropriate for stockpiling in small-scale C&I businesses

0.5C Scenario, System Scale - (241kWh ~ 253kWh)

0.5C Scenario 3 — 229kWh

1 — × **1** pcs
SigenStack BC M2-0.5C*

4-1** — × **1** pcs
SigenStack Base 4S-0.5C
(the cables, cable protection cover and terminal plugs are **pre-installed**)

2 — × **20/21** pcs
SigenStack BAT 12.0

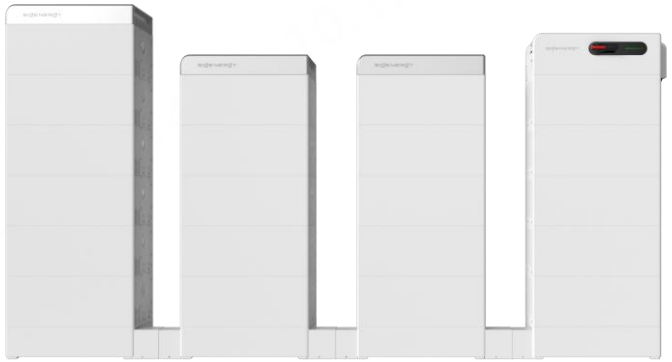
4-2** — × **1** pcs
SigenStack Base MAIN-0.5C
(the cables, cable protection cover and terminal plugs are **included**)

4-2** — × **3** pcs
SigenStack Base SUB-0.5C
(the cables, cable protection cover and terminal plugs are **included**)

3 — × **3** pcs
SigenStack Cover

Recommended System Configuration

Capacity (kWh)	Packs	Packs of SUB Stack 3	Packs of SUB Stack 2	Packs of SUB Stack 1	Packs of MAIN Stack	Cover	Recommended inverters
241	20	5	5	5	5	3	Sigen PV 125M1-HYA
253	21	6	5	5	5	3	Sigen PV 125M1-HYA



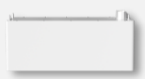
*Note: In the case of PV + ESS (DC coupling) projects, please refer to advanced principle of the recommended minimum Voc of PV strings.

**Note: Please choose either Option 4-1 or 4-2. Option 4-1 is more suitable for the standard design of large-scale projects, while Option 4-2 is more appropriate for stockpiling in small-scale C&I businesses

1C Scenario, System Scale - (48kWh ~ 72kWh)

1C Scenario 1 | 48kWh ~ 72kWh

1  × 1 pcs
SigenStack BC M2-1C-BST

2  × 4~6 pcs
SigenStack BAT 12.0

3  × 1 pcs
SigenStack Base MAIN-1C
(the cables, cable protection covers and terminal plugs are **included**)


MAIN Stack

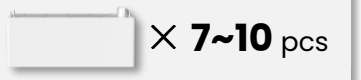
Recommended System Configuration

Capacity (kWh)	Packs	Packs of MAIN Stack	Cover	Recommended inverters
48	4	4	/	Sigen PV 50M1-HYA
60	5	5	/	Sigen PV 60M1-HYA
72	6	6	/	Sigen PV 80M1-HYA

1C Scenario, System Scale - (84kWh ~ 121kWh)

1C Scenario 2 | 84kWh ~ 121kWh

1  × 1 pcs
SigenStack BC M2-1C-BST

2  × 7~10 pcs
SigenStack BAT 12.0

3  × 1 pcs
SigenStack Cover

4  × 1 pcs
SigenStack Base MAIN-1C
(the cables, cable protection covers and terminal plugs are **included**)

4  × 1 pcs
SigenStack Base SUB-1C
(the cables, cable protection covers and terminal plugs are **included**)


SUB Stack | MAIN Stack

Recommended System Configuration

Capacity (kWh)	Packs	Packs of SUB Stack	Packs of MAIN Stack	Cover	Recommended inverters
84	7	4	3	1	Sigen PV 80M1-HYA
96	8	4	4	1	Sigen PV 100M1-HYA
109	9	5	4	1	Sigen PV 110M1-HYA
121	10	5	5	1	Sigen PV 125M1-HYA

Thank you.

Enjoy Green Energy