



日燭科技有限公司  
JD Auspice Co., Ltd.

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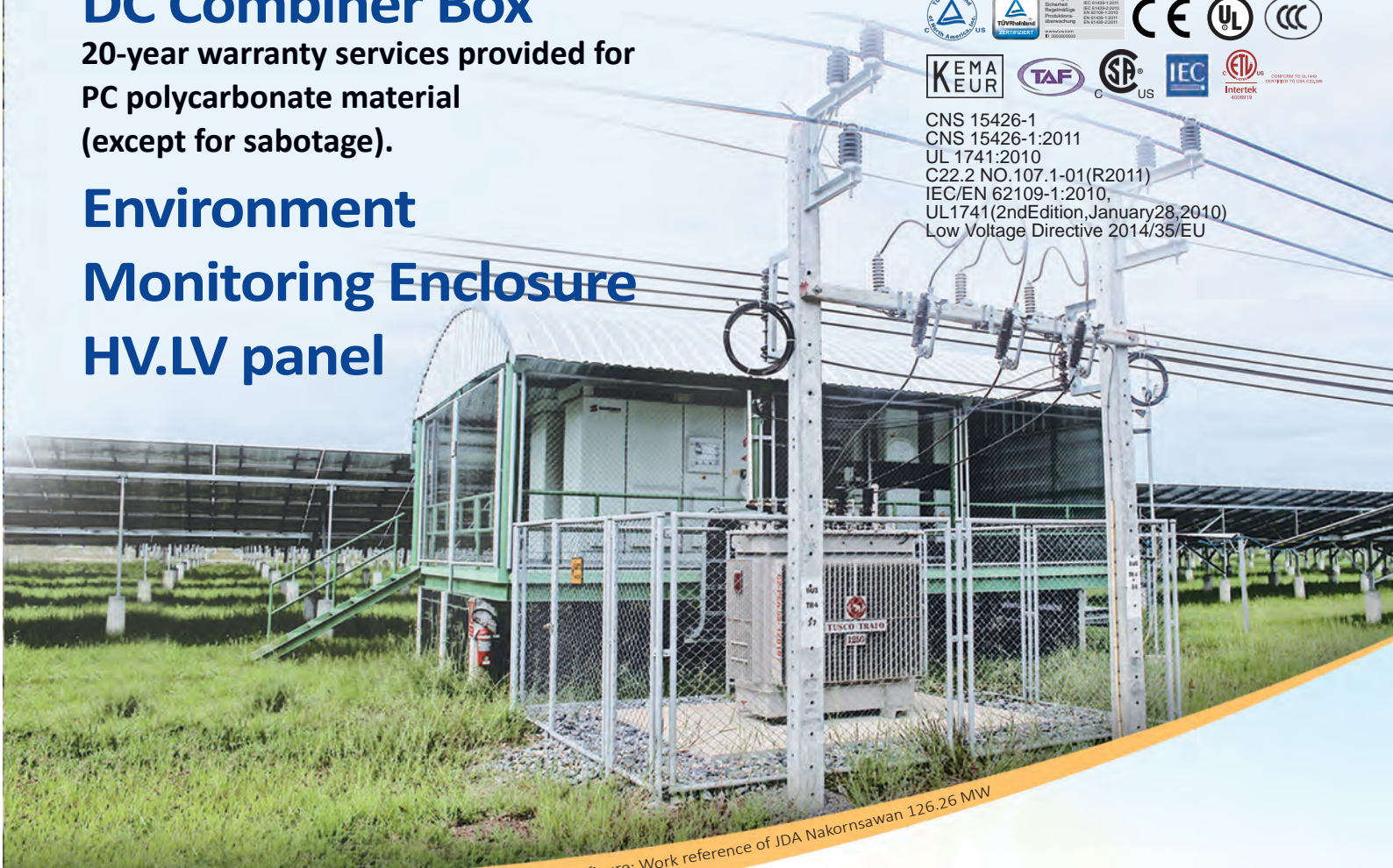
# DC Combiner Box

20-year warranty services provided for  
PC polycarbonate material  
(except for sabotage).

Environment  
Monitoring Enclosure  
HV.LV panel



CNS 15426-1  
CNS 15426-1:2011  
UL 1741:2010  
C22.2 NO.107.1-01(R2011)  
IEC/EN 62109-1:2010,  
UL1741 (2nd Edition, January 28, 2010)  
Low Voltage Directive 2014/35/EU



Upper figure: Work reference of JDA Nakornsawan 126.26 MW

Lower figure: Work reference of JDA Lampang 128.396 MW





Certified with the following 4 international laboratory, **cTUVus**, **TUV**, **TAF** **CNS** and **CE**.

(Referring to CNS 15426-1, CNS 15426-1:2011, UL 1741:2010, C22.2 NO.107.1-01(R2011), IEC/EN 62109-1:2010, UL1741 (2ndEdition, January28,2010), and Low Voltage Directive 2014/35/EU).

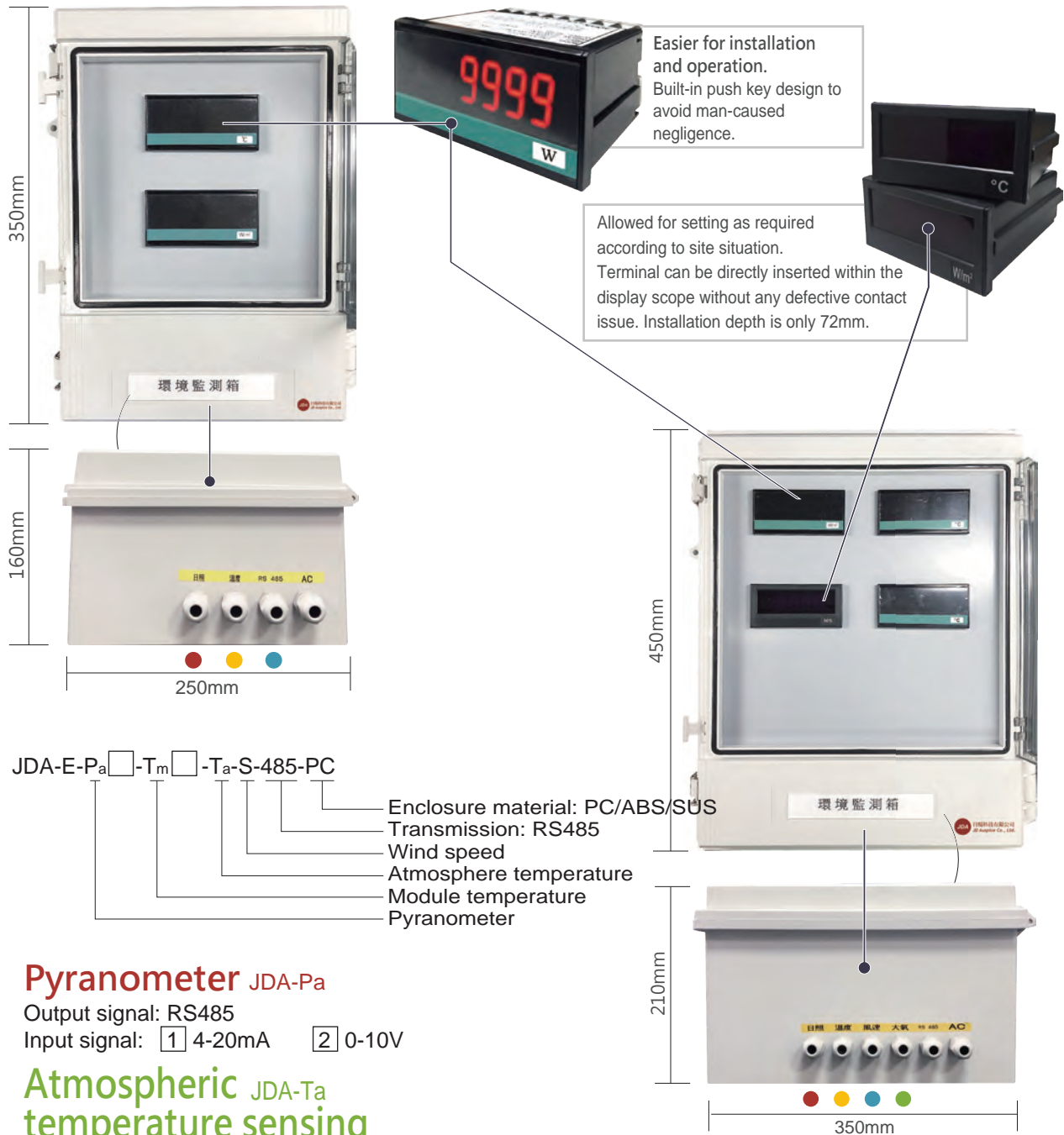
(Complete Set Product type tested, including power, monitoring, loaded server, type certification, capacity 27 circuit 202.5kW/box) **pvBos®**.

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Figure below: 133.92MW reference for JDA in Phisanulok, Thailand



Based on pyranometer, temperature and wind speed data collected by the Environment Monitoring Box, it allows the operator to determine the PR value of the Solar Power Plant and the power generation efficiency of the module. In addition to controlling over the power plant operation status, it can also be used as the reference for the O&M operation of the power plant.



**Pyranometer JDA-Pa**

Output signal: RS485  
Input signal: [1] 4-20mA [2] 0-10V

**Atmospheric temperature sensing JDA-Ta**

Output signal: RS485  
Input signal: 4-20mA

**Temperature Sensor JDA-Tm**

Output signal: RS485  
Input signal: [1] 4-20mA [2] PT100

**Anemometer JDA-S**

Output signal: RS485  
Input signal: 4-20mA  
Power supply: AC115-230V

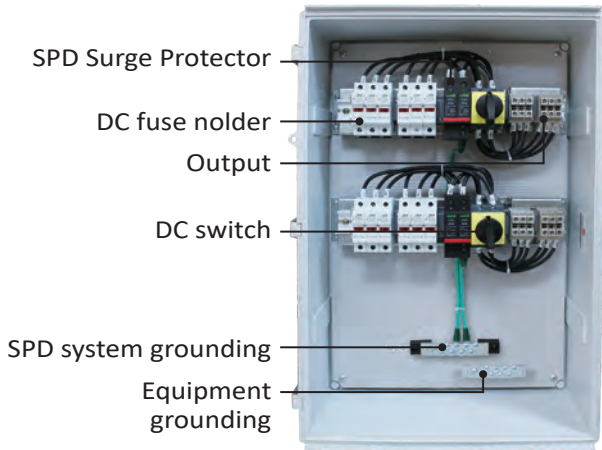
Part Name	Environment Monitoring Box	
Spec.	4-20mA	PT100 or 0-10V
Pyrheliometer	PYRA 03AC	PYRA 03
Pyranometer	JDA-W/JDA-MD	JDA-W/JDA-PW
Temperature meter	JDA-T/JDA-TD4	JDA-T/JDA-TD
Anemometer	JDA-S	

Note: Additional order allowed for RS485 output PYRA 03S model of Sunshine sensors.



TUV ammonia test  
Ammonia tested cert.  
CNS 15426-1: 2011  
TUV Salt mist tested certificate  
Salty mist tested cert.

CNS 15426-1  
CNS 15426-1:2011  
UL 1741:2010  
C22.2 NO.107.1-01(R2011)  
IEC/EN 62109-1:2010,  
UL1741(2ndEdition,January28,2010)  
Low Voltage Directive 2014/35/EU

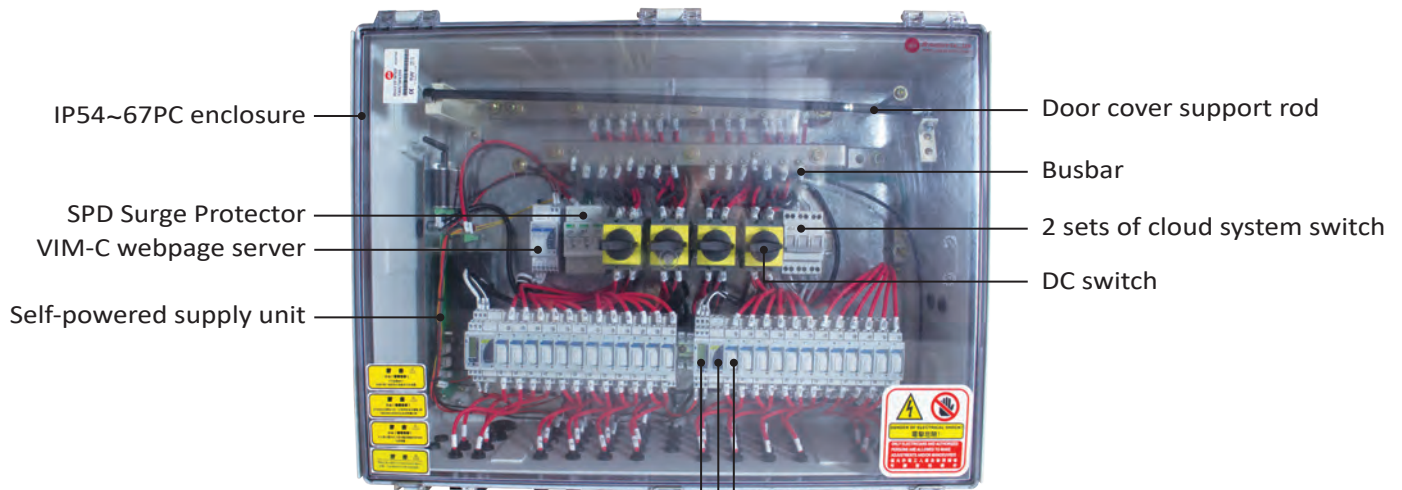


6-circuit-in/6-circuit-out **pvBos®**



4-circuit-in/4-circuit-out **pvBos®**

Lead-in and lead-out wires shall be deployed separately for the respective MPPT.



Photos: Smart combiner box (24-way), string monitoring, self-supply power, built-in wireless webpage server **pvBos®**

- VIM-S string unit 1000Vdc,1.5KV optional
- Serial measuring unit
- VIM-1 Isolation unit
- VIM-M master unit RS 485 data transmission unit

\* Extra unit allowed.  
VIM-P measuring unit  
Temperature, pyranometer,  
wind speed measuring unit.

**Cabinet features:**

Certified with the following 4 international laboratory, **cTUVus**, **TUV**, **TAF** **CNS** and **CE**. (Complete Set Product Type Test, including power supply, monitoring, web server, type certification, capacity 27 circuit 202.5kW/box).

Resist against UV, acid, alkali, salt corrosion and water, IP67, is suitable for the following installation locations such as salt marsh, floating system, and outdoor rooftop, etc. **pvBos®** 20-year warranty services provided for PC cabinet material (except for sabotage).

**Design features:**

Each or more string is suitable for installing one unit of MPPT or one unit of inverter. Shortest distance is designed for the wiring purpose to reduce the temperature rise and the loss of wires. Allowed for single or max. 6. Power generation of normal string set will not be affected if shutdown for maintenance or repair is required. Excellent heat-radiating design.



8-circuit-in/8-circuit-out **pvBos®**

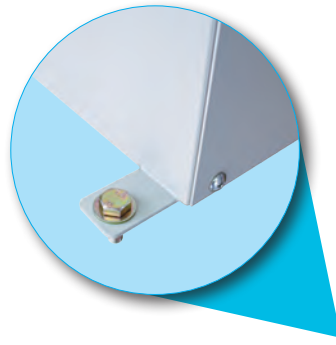


IP54 middle door

**IP54 cabinet**

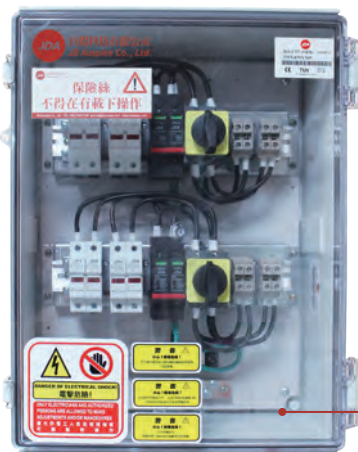


8-circuit-in/8-circuit-out **pvBos®**

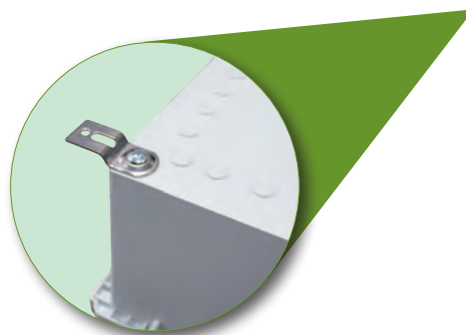


IP65 middle door

**IP65 cabinet**



**IP67 cabinet**



6-circuit-in/6-circuit-out **pvBos®**

4-circuit-in/4-circuit-out **pvBos®**



Article No: 1001602-2-PC-67

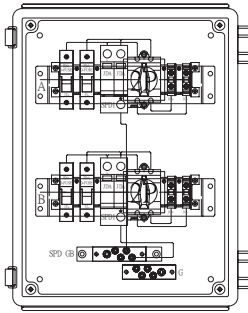
- Water resistana class: IP67/IP65/IP54
- Cabinet material: PC/GRP/SUS
- Number of MPPT
- No. of circuit: 2/4/5/6/8/9/12/18/20/24/28/custom-made.
- Current: 16/25/32/40/50/250/500
- Voltage: 600/750/850/1000/1500

pvBos®		1001602-2-PC-67	1001604-2-PC-67	1001604-1-PC-67 1001606-1-PC-67	1001606-2-PC-67	1001608-2-PC-67
Material No.		1001602-2-SUS-54/65	1001604-2-SUS-54/65	1001604-1-SUS-54/65 1001606-1-SUS-54/65	1001606-2-SUS-54/65	1001608-2-SUS-54/65
Number of MPPT		2 (1×2)	2 (2×2)	2 (2+3)	2 (3×2)	2 (4×2)
No. of input circuit		2	4	5	6	8
No. of output circuit		2	4	5	6	8
gPV fuse / switch		1,2,4,6,8,12,16,20,25,25,30, on request Up to 630A				
PV Voc		600/750/850/1000/1500				
Wire cross section		4/6/10/16~240mm <sup>2</sup>				
PC/GRP Material (*ABS/GRP. Dimensions to be ordered.)	Waterproof class	IP67				
	Cabinet dimensions (mm)	300×400×150	350×450×200	400×500×200	400×500×200	530×630×255
	Wire incoming method (Optional)	MC4 8*Ø12 Cable gland: 2*Ø25.4 Cable gland: 6*Ø25.4	MC4 16*Ø12 Cable gland: 2*Ø25.4 Cable gland: 10*Ø25.4	MC4 20*Ø12 Cable gland: 2*Ø25.4 Cable gland: 12*Ø25.4	MC4 24*Ø12 Cable gland: 2*Ø25.4 Cable gland: 14*Ø25.4	MC4 32*Ø12 Cable gland: 2*Ø25.4 Cable gland: 18*Ø25.4
Material: SUS304	Waterproof class	IP54/IP65				
	Cabinet dimensions (mm)	350×500×200	400×500×200	450×500×200	450×500×200	500×500×200
	Wire lead-in method (Optional)	MC4 8*Ø12 Cable gland: 2*Ø25.4 Cable gland: 6*Ø25.4	MC4 16*Ø12 Cable gland: 2*Ø25.4 Cable gland: 10*Ø25.4	MC4 20*Ø12 Cable gland: 2*Ø25.4 Cable gland: 12*Ø25.4	MC4 24*Ø12 Cable gland: 2*Ø25.4 Cable gland: 14*Ø25.4	MC4 32*Ø12 Cable gland: 2*Ø25.4 Cable gland: 18*Ø25.4
	Bottom plate	Moveable input/output plate(Note 1: Lower IP class allowed if using moveable input/output plate. )				
certificate		cTUVus,CNS TAF,IAC MRA,TUV,CE				

Material No.		1001612-2-PC-67	1001606-6-PC-67	1001608-6-SUS-54/65	1001621-1-PC-67	1001628-1-PC-67
Material No.		1001612-2-SUS-54/65	1001606-6-SUS-54/65		1001621-1-SUS-54/65	1001628-1-SUS-54/65
Number of MPPT		2 (6×2)	6 (3×6)	6 (4×6)	1	1
No. of input circuit		12	18	24	21	28
No. of output circuit		12	18	24	21	28
gPV fuse / switch		1,2,4,6,8,12,16,20,25,25,30, on request Up to 630A				
PV Voc		600/750/850/1000/1500				
Wire cross section		4/6/10/16~240mm <sup>2</sup>				
PC/GRP Material (*ABS/GRP. Dimensions to be ordered.)	Waterproof class	IP67				
	Cabinet dimensions (mm)	630×530×255	830×630×285		630×830×285	630×830×285
	Wire incoming method (Optional)	MC4 48*Ø12 Cable gland: 2*Ø25.4 Cable gland: 26*Ø25.4	MC4 72*Ø12 Cable gland: 2*Ø25.4 Cable gland: 38*Ø25.4		MC4 80*Ø12 Cable gland: 2*Ø25.4 Cable gland: 42*Ø25.4	MC4 108*Ø12 Cable gland: 2*Ø25.4 Cable gland: 56*Ø25.4
Material: SUS304	Waterproof class	IP54/IP65				
	Cabinet dimensions (mm)	600×500×250	800×700×200	950×700×200	650×850×250	650×850×250
	Wire lead-in method (Optional)	MC4 48*Ø12 Cable gland: 2*Ø25.4 Cable gland: 26*Ø25.4	MC4 72*Ø12 Cable gland: 2*Ø25.4 Cable gland: 38*Ø25.4	MC4 96*Ø12 Cable gland: 2*Ø25.4 Cable gland: 50*Ø25.4	MC4 80*Ø12 Cable gland: 2*Ø25.4 Cable gland: 42*Ø25.4	MC4 108*Ø12 Cable gland: 2*Ø25.4 Cable gland: 56*Ø25.4
	Bottom plate	Moveable input/output plate(Note 1: Lower IP class allowed if using moveable input/output plate. )				
certificate		cTUVus,CNS TAF,IAC MRA,TUV,CE				

### 2-circuit DC Combiner Box

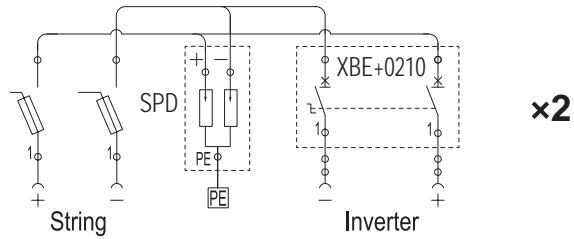
Material No.: 1001602-2-PC/SUS-67/54/65



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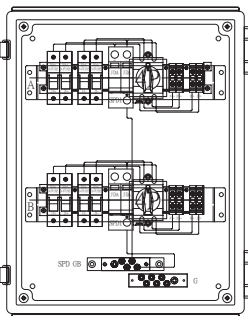
Name	Spec.	Model No.	
Enclosure Material	PC	300×400×150mm	JDA-CGP304015
	SUS304	350×500×200mm	JDA-SUS-355020
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV,1.5KV optional 2P	PV40-1000-MVCR	
DC switch	2P 16A 1KV, 1.5KV optional	XBE+0210	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,4P		

Diagram Code No. Single Line Diagram for 2-circuit DC combiner box



### 4-circuit DC Combiner Box

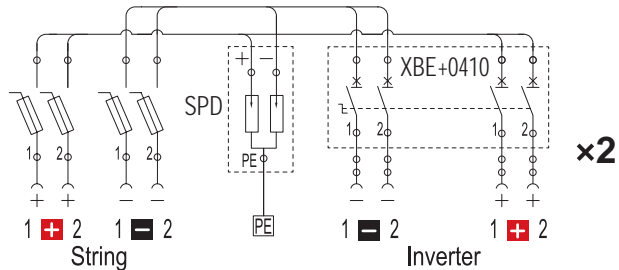
Material No.: 1001604-2-PC/SUS-67/54/65



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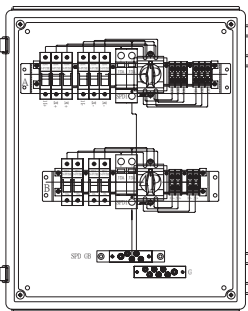
Name	Spec.	Model No.	
Enclosure Material	PC	350×450×200mm	JDA-CGP354520
	SUS304	400×500×200mm	JDA-SUS-405020
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV,1.5KV optional 2P	PV40-1000-MVCR	
DC switch	4P 16A 1KV, 1.5KV optional	XBE+0410	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,6P		

Diagram Code No. Single Line Diagram for 4-circuit DC combiner box



### 5-circuit DC Combiner Box

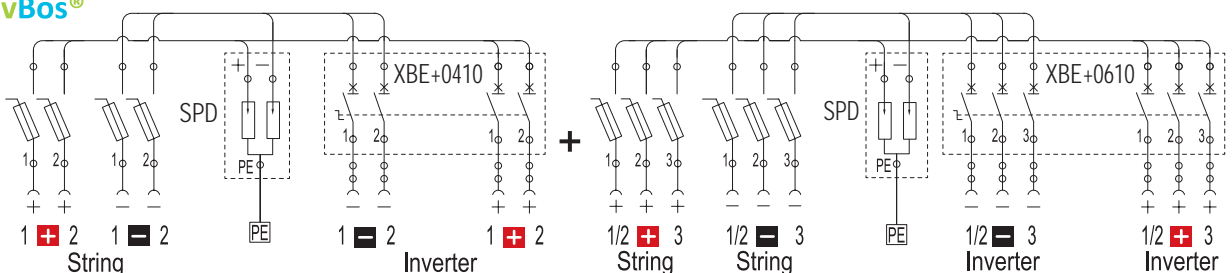
Material No.: 1001604-1-PC/SUS-67/54/65 1001606-1-PC/SUS-67/54/65



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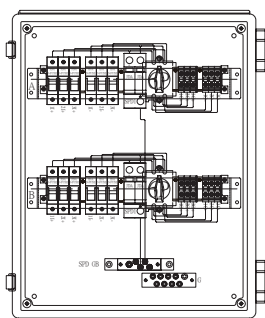
Name	Spec.	Model No.	
Enclosure Material	PC	400×500×200mm	JDA-CGP405020
	SUS304	450×500×200mm	JDA-SUS-455020
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV,1.5KV optional 2P	PV40-1000-MVCR	
DC switch	6P/4P 16A 1KV, 1.5KV optional	XBE+0610/XBE+0410	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,6P		

Diagram Code No. Single Line Diagram for 5-circuit DC combiner box



### 6-circuit DC Combiner Box

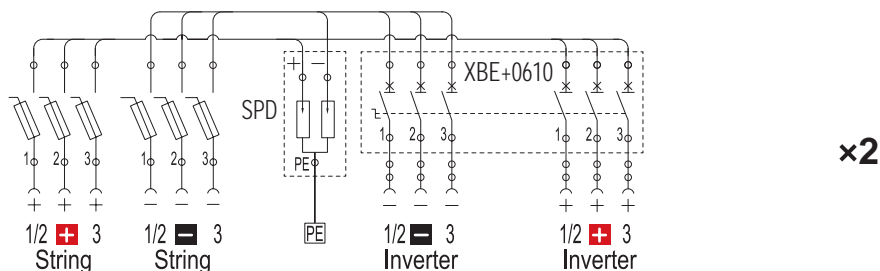
Material No.: 1001606-2-PC/SUS-67/54/65



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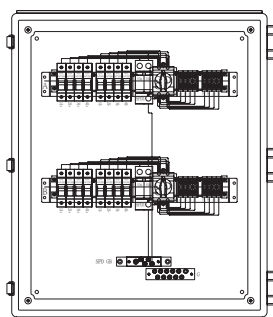
Name	Spec.	Model No.	
Enclosure Material	PC	400×500×200mm	JDA-CGP405020
	SUS304	450×500×200mm	JDA-SUS-455020
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV, 1.5KV optional 2P	PV40-1000-MVCR	
DC switch	6P 16A 1KV, 1.5KV optional	XBE+0610	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,8P		

Diagram Code No. Single Line Diagram for 6-circuit DC combiner box



### 8-circuit DC Combiner Box

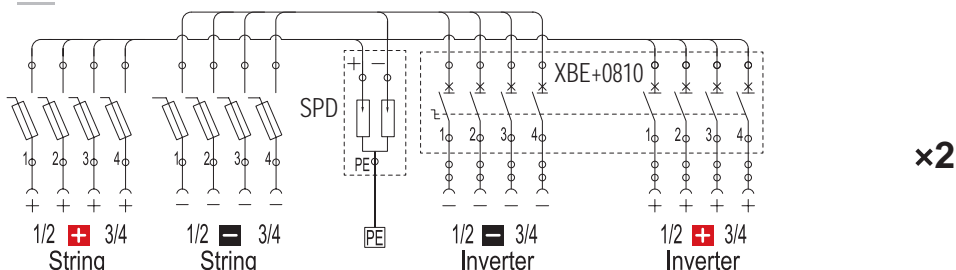
Material No.: 1001608-2-PC/SUS-67/54/65



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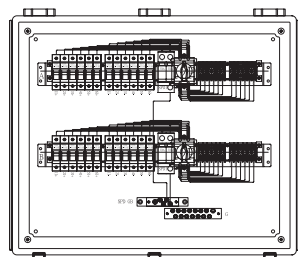
Name	Spec.	Model No.	
Enclosure Material	PC	530×630×255mm	JDA-CGP506025
	SUS304	500×500×200mm	JDA-SUS-505020
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV, 1.5KV optional 2P	PV40-1000-MVCR	
DC switch	8P 16A 1KV, 1.5KV optional	XBE+0810	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,10P		

Diagram Code No. Single Line Diagram for 8-circuit DC combiner box



### 12-circuit DC Combiner Box

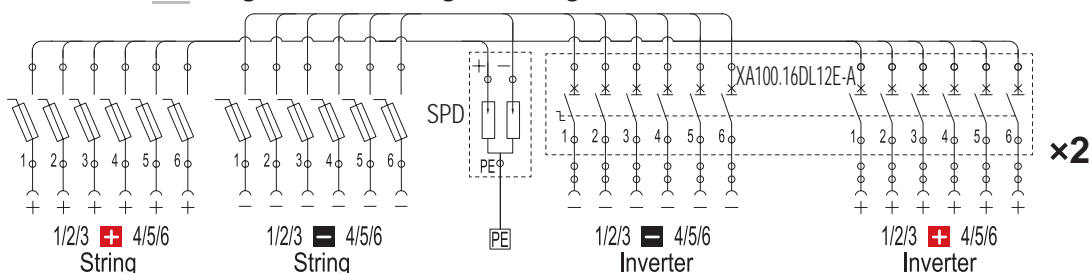
Material No.: 1001612-2-PC/SUS-67/54/65



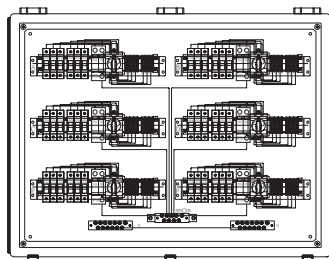
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Name	Spec.	Model No.	
Enclosure Material	PC	630×530×255mm	JDA-CGP506025
	SUS304	600×500×250mm	JDA-SUS-605025
Surge Protector	20KA I <sub>max</sub> 40KA DC1KV, 1.5KV optional 2P	PV40-1000-MVCR	
DC switch	12P 16A 1KV, 1.5KV optional	XA100.16DL12E-A	
Fuse holder	30A 1KV, 1.5KV optional	FH-01L/FH-01	
Fuse	16A 10KA/30KA	CH10X38,optionl	
Grounding bus	4P,14P		

Diagram Code No. Single Line Diagram for 12-circuit DC combiner box







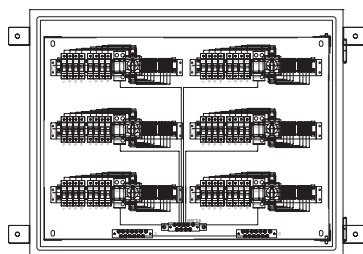
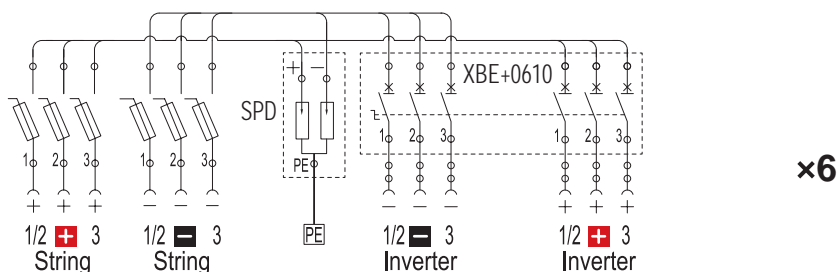
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### 18-circuit DC Combiner Box

Material No.: 1001606-6-PC/SUS-67/54/65

Name		Spec.	Model No.
Enclosure Material	PC	830×630×285mm	JDA-CGP608028
	SUS304	800×700×200mm	JDA-SUS-807020
Surge Protector		20KA I <sub>max</sub> 40KA DC1KV, 1.5KV optional 2P	PV40-1000-MVCR
DC switch		6P 16A 1KV, 1.5KV optional	XBE+0610
Fuse holder		30A 1KV, 1.5KV optional	FH-01L/FH-01
Fuse		16A 10KA/30KA	CH10X38, optional
Grounding bus		8P, 12P	

Diagram Code No. Single Line Diagram for 18-circuit DC combiner box



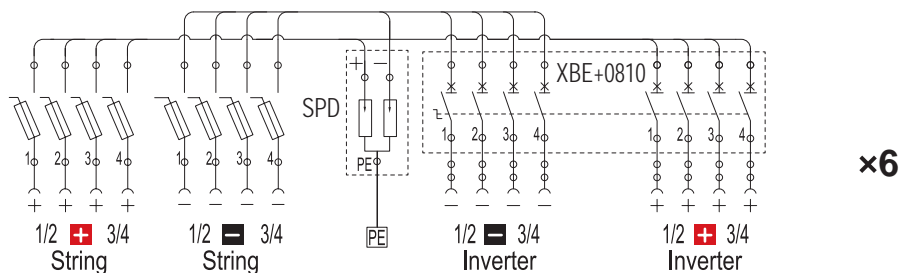
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### 24-circuit DC Combiner Box

Material No.: 1001608-6-SUS-67/54/65

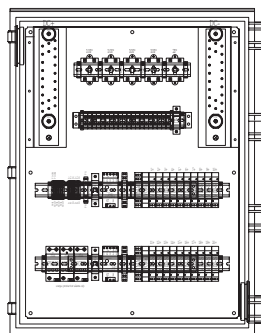
Name		Spec.	Model No.
Enclosure Material	SUS304	950×700×200mm	JDA-SUS-957020
Surge Protector		20KA I <sub>max</sub> 40KA DC1KV, 1.5KV optional 2P	PV40-1000-MVCR
DC switch		8P 16A 1KV, 1.5KV optional	XBE+0810
Fuse holder		30A 1KV, 1.5KV optional	FH-01L/FH-01
Fuse		16A 10KA/30KA	CH10X38, optional
Grounding bus		8P, 12P	

Diagram Code No. Single Line Diagram for 24-circuit DC combiner box



### 20-circuit DC Combiner Box

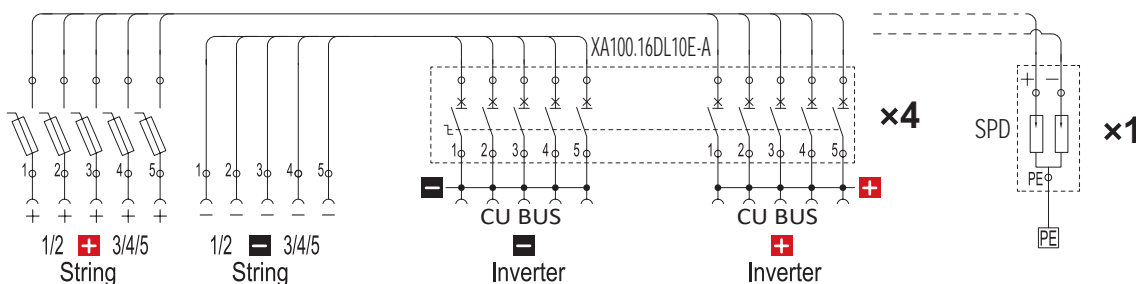
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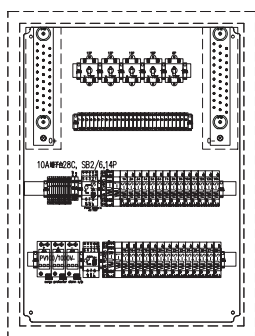
Name		Spec.	Model No.
Enclosure Material	PC	630×830×285mm	JDA-CGP608028
	SUS304	650×850×250mm	JDA-SUS-658525
Surge Protector		20KA I <sub>max</sub> 40KA DC1KV,1.5KV optional 2P	PV40-1000-MVCR
DC switch		10P 16A 1KV, 1.5KV optional	XA100.16DL10E-A
Fuse holder		30A 1KV, 1.5KV optional	FH-01L/FH-01
Fuse		16A 10KA/30KA	CH10X38,optionl
Grounding bus		22P	

Diagram Code No. Single Line Diagram for 20-circuit DC combiner box



### 28-circuit DC Combiner Box

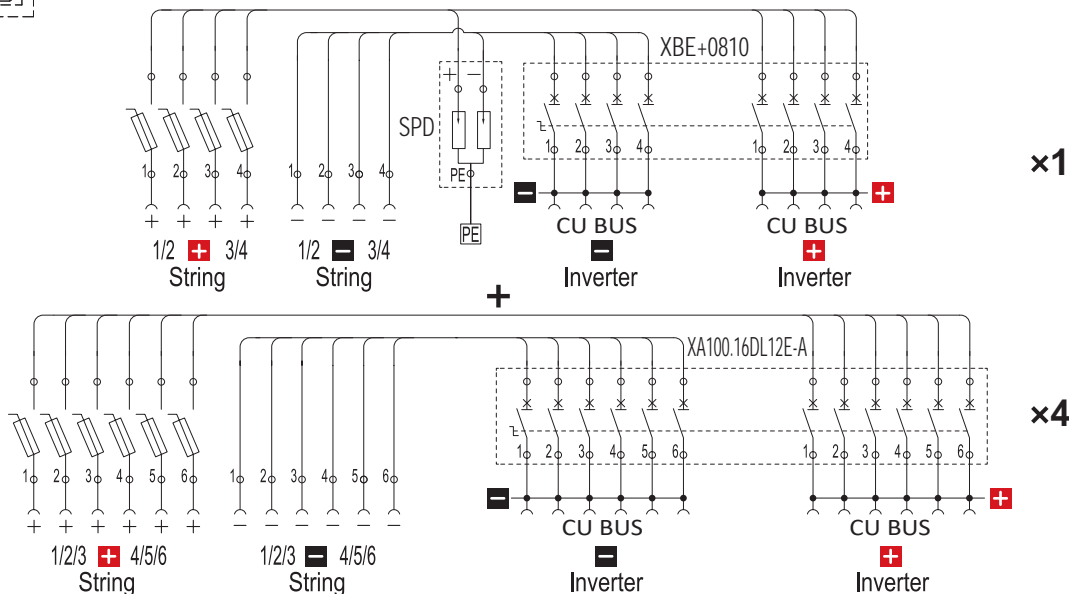
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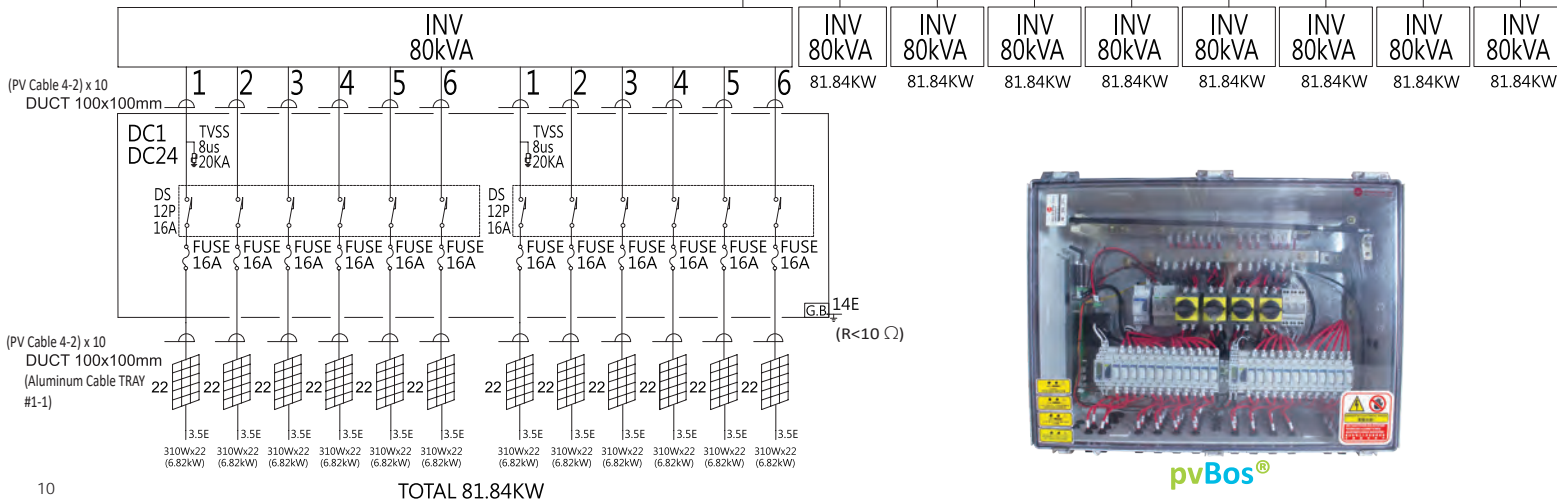
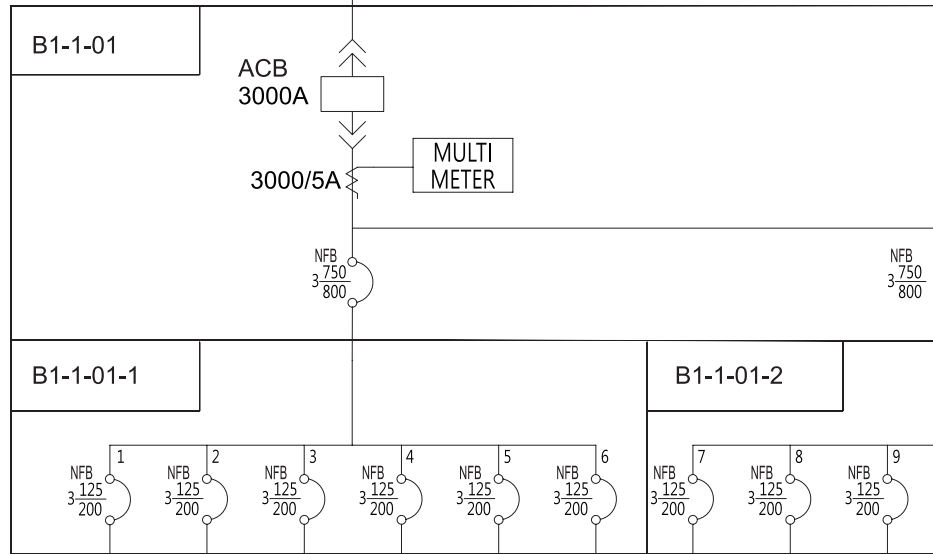
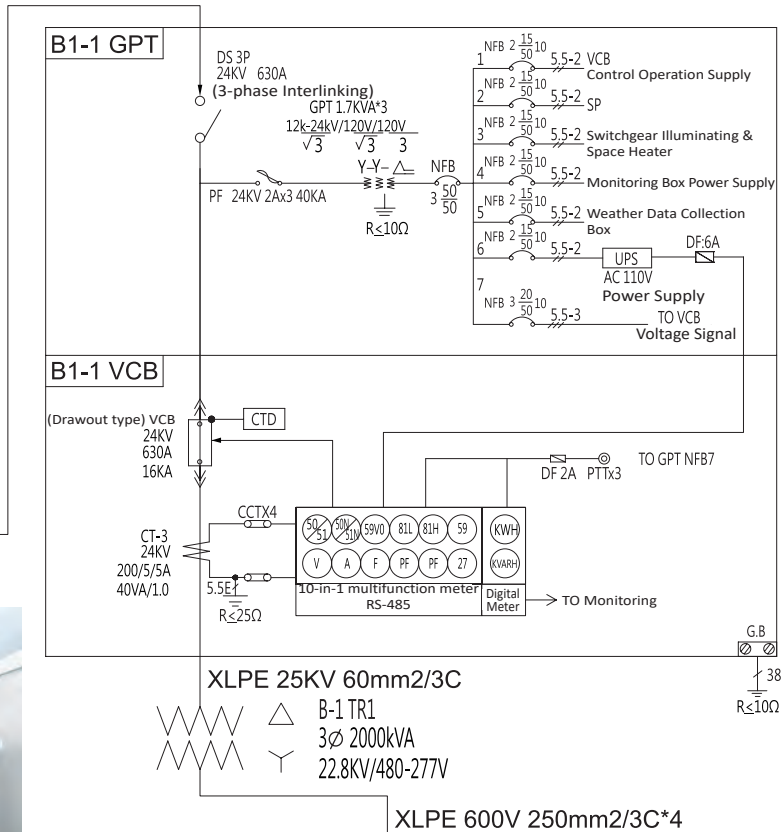
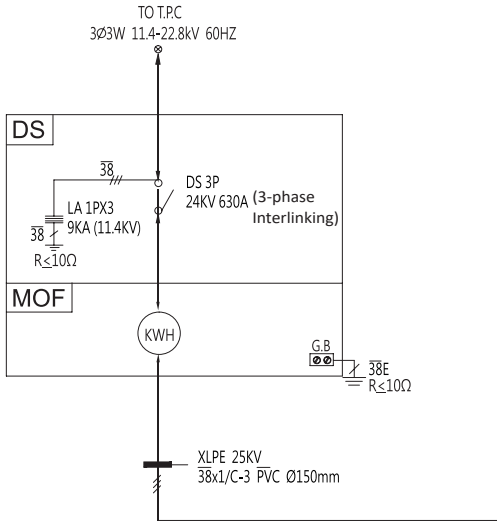


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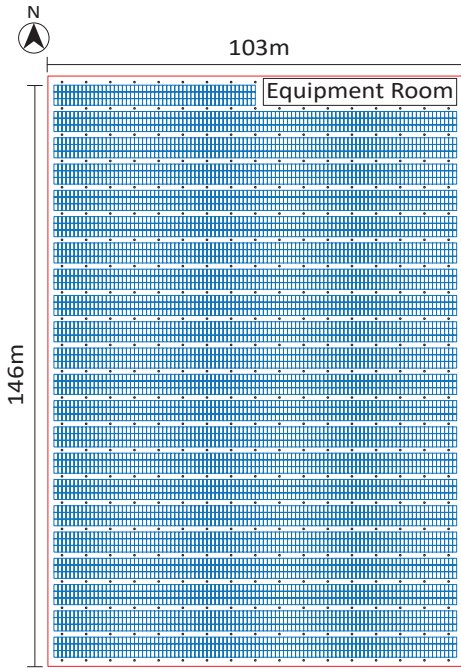
Name		Spec.	Model No.
Enclosure Material	PC	630×830×285mm	JDA-CGP608028
	SUS304	650×850×250mm	JDA-SUS-658525
Surge Protector		20KA I <sub>max</sub> 40KA DC1KV,1.5KV optional 2P	PV40-1000-MVCR
DC switch		8P/12P 16A 1KV, 1.5KV optional	XBE+0810/XA100.16DL12E-A
Fuse holder		30A 1KV, 1.5KV optional	FH-01L/FH-01
Fuse		16A 10KA/30KA	CH10X38,optionl
Grounding bus		30P	

Diagram Code No. Single Line Diagram for 28-circuit DC combiner box





pvBos®



Installed capacity: 2000kW  
 Max. generation capacity: 1964.16kW (310W × 6336)  
 Number of Battery: 6336 cells  
 Inclination angle: 12°  
 Installed area: 15097m²



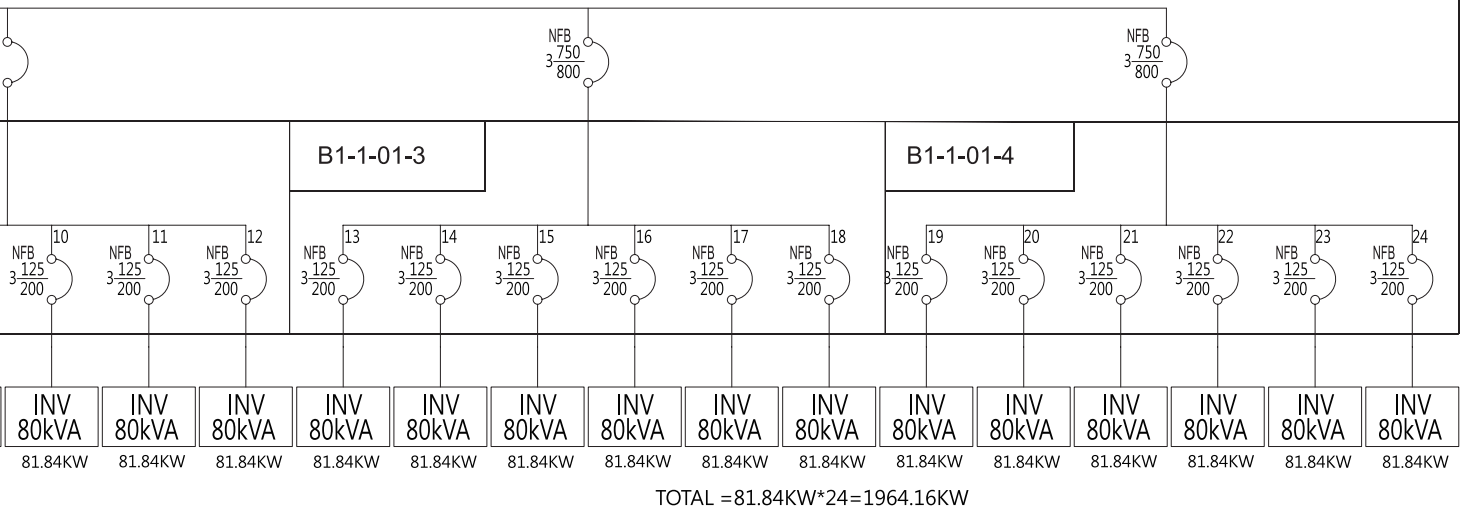
DS MOF GPT VCB TR MP



12-loop DC Box



Inverter  
 Growatt MAX 80KTL3 MV  
 in case using 1500Vdc inverter  
 MAX 250KTL3-X HV,  
 Sub-array shall be re-arranged.



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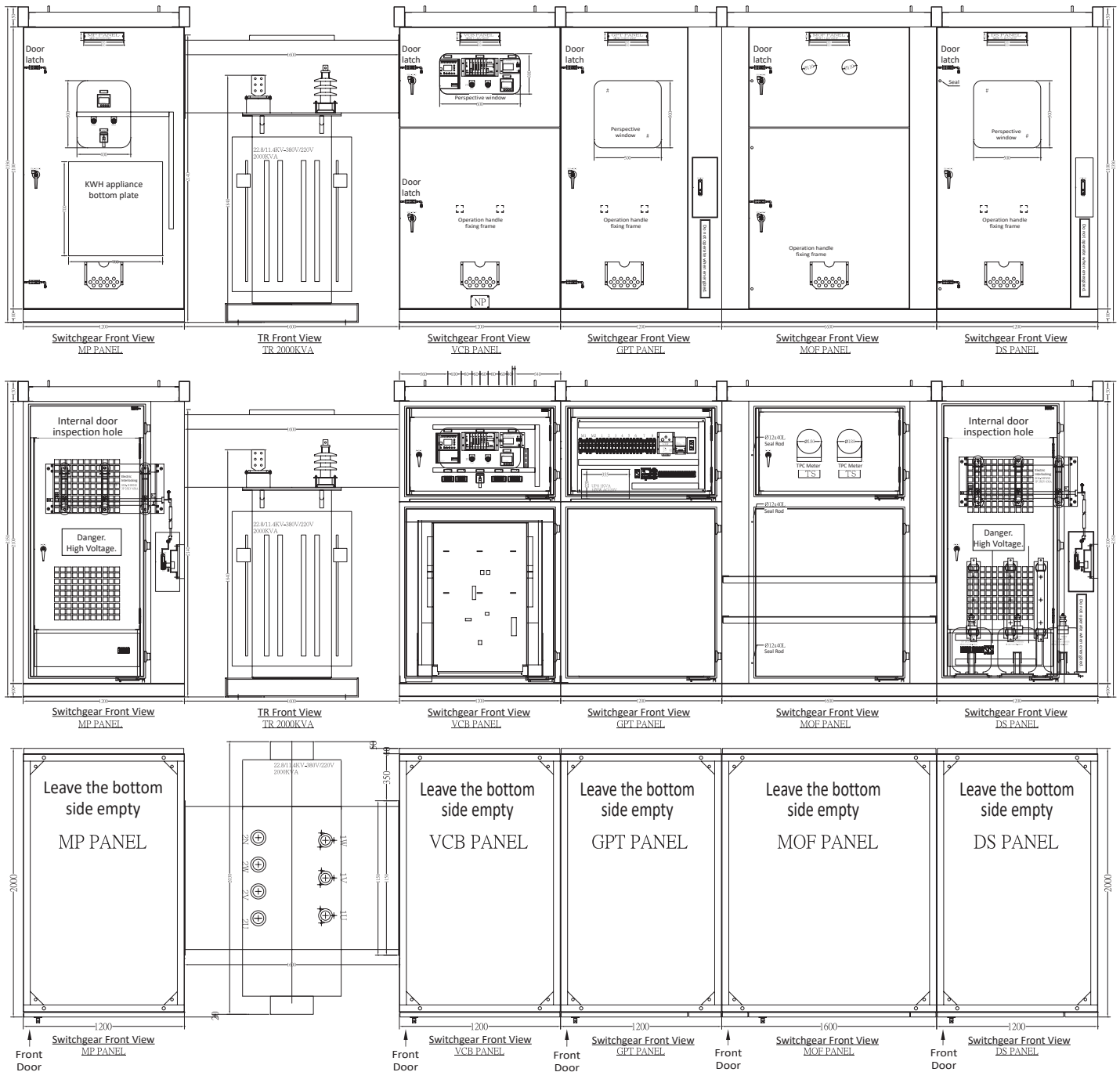
pvBos®



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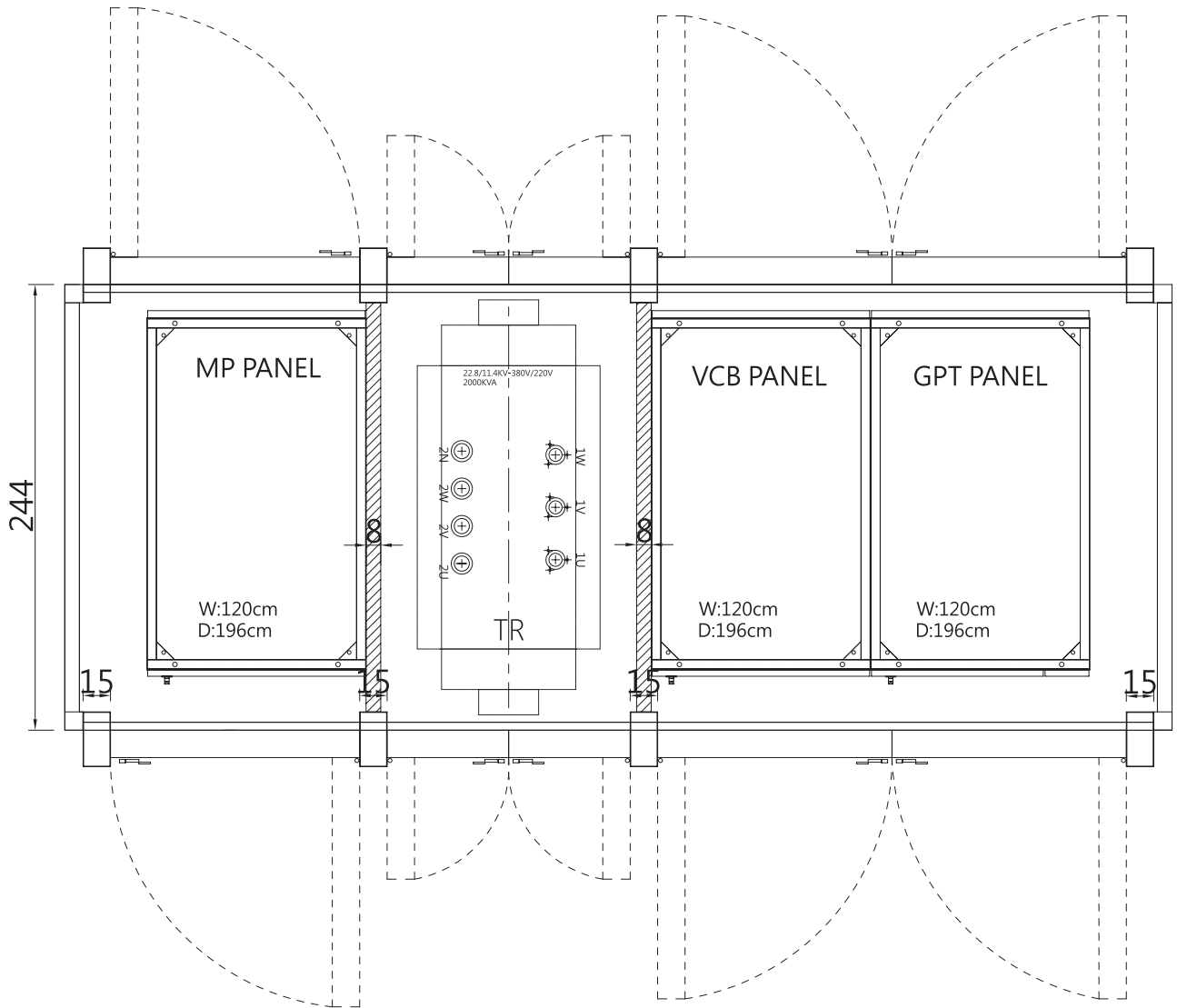


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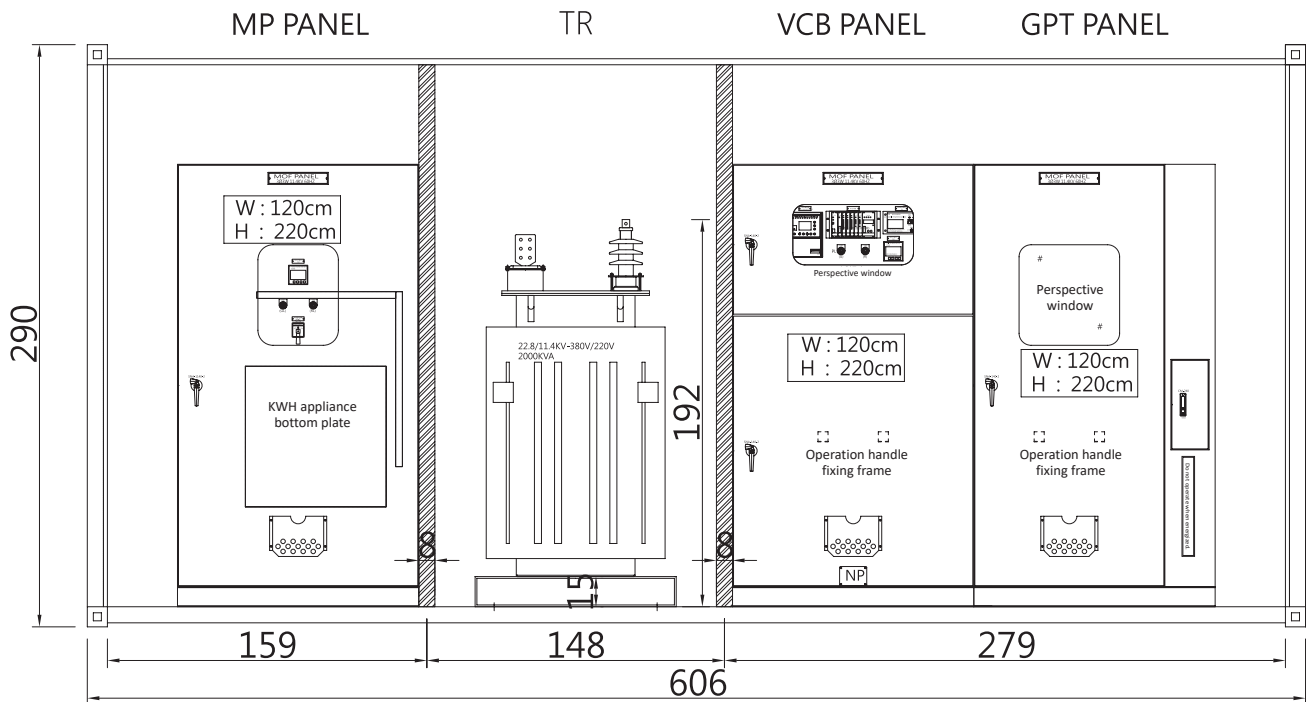


**Switchgear Front Door Hook-up Diagram and Plan Layout**



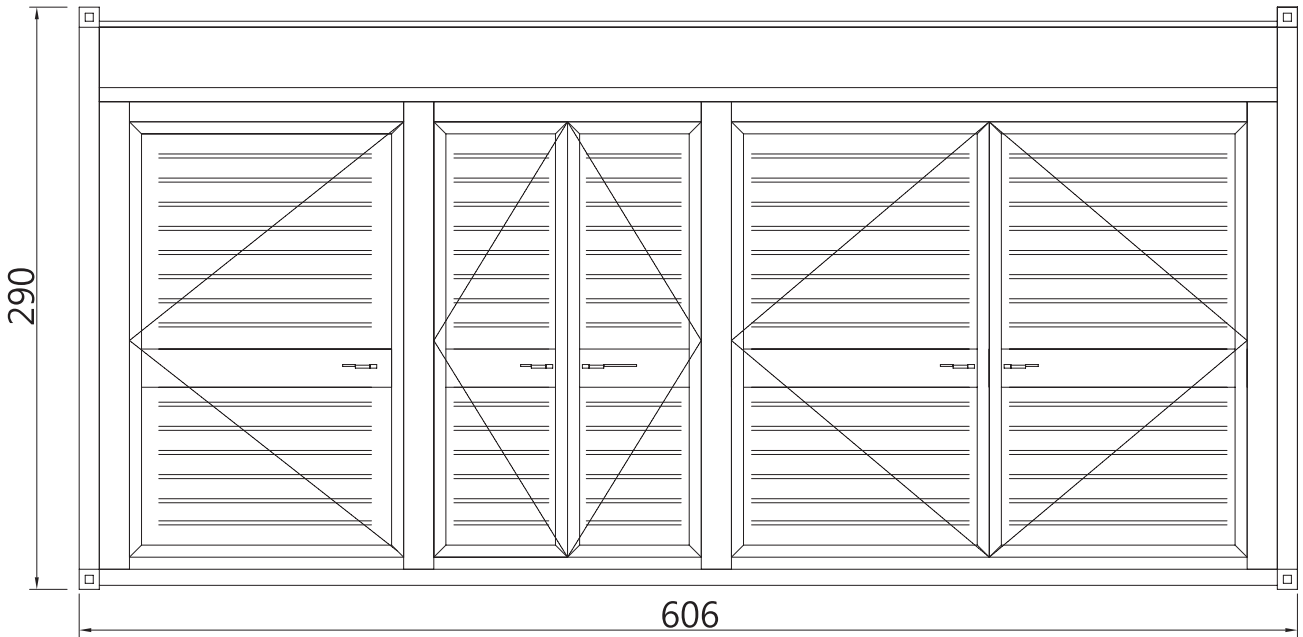


Top View

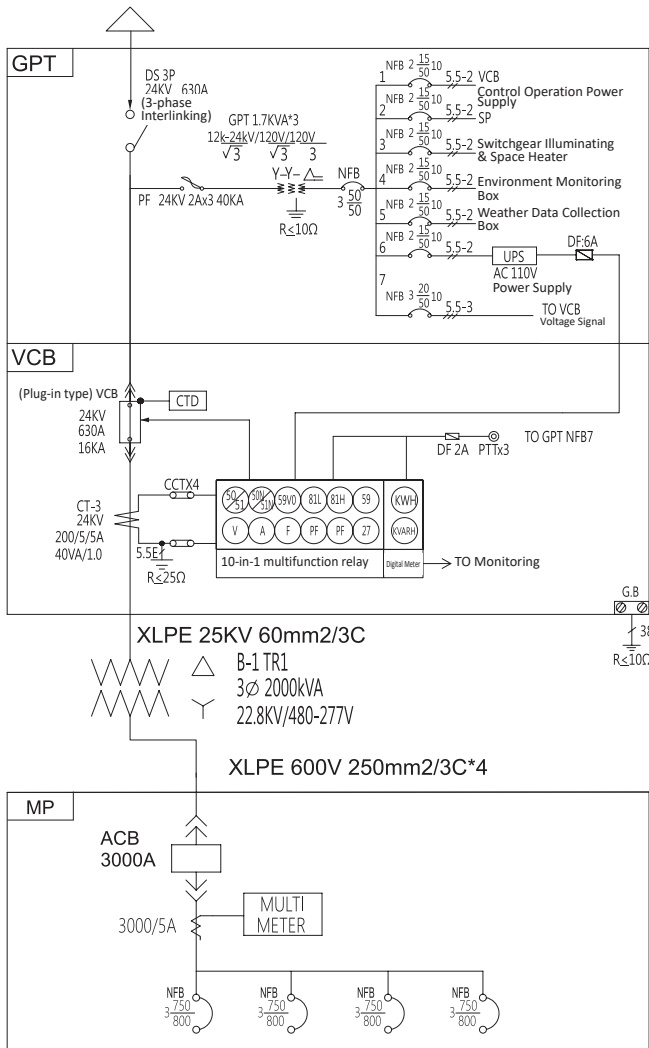


Front View (internal)

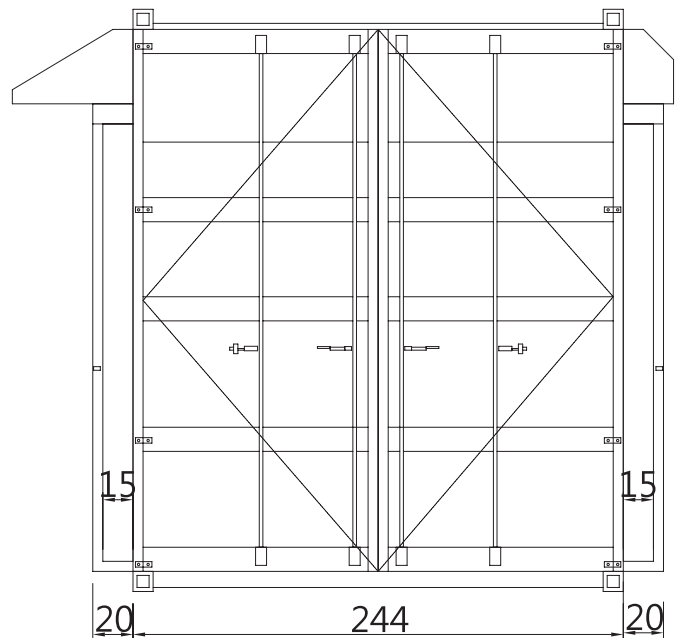
Unit: cm



Front View (Vent Door Flap Appearance)



Power System Single Line Drawing



Side View (Appearance)

Unit: cm



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JD Auspice Co., Ltd.



Upper figure: Work reference of JDA Loppburi 9.6MW



Lower figure: Work reference of JDA Lampang 128.396 MW