

模块化数据中心1MW-BOX说明

Modular data center 1MW-BOX--Deployment Specification





模块化数据中心1MW-BOX--箱体外观

Modular data center 1MW-BOX--Container appearance





模块化数据中心1MW-BOX--箱体外观

Modular data center 1MW-BOX--Container appearance





模块化数据中心1MW-BOX--箱体外观

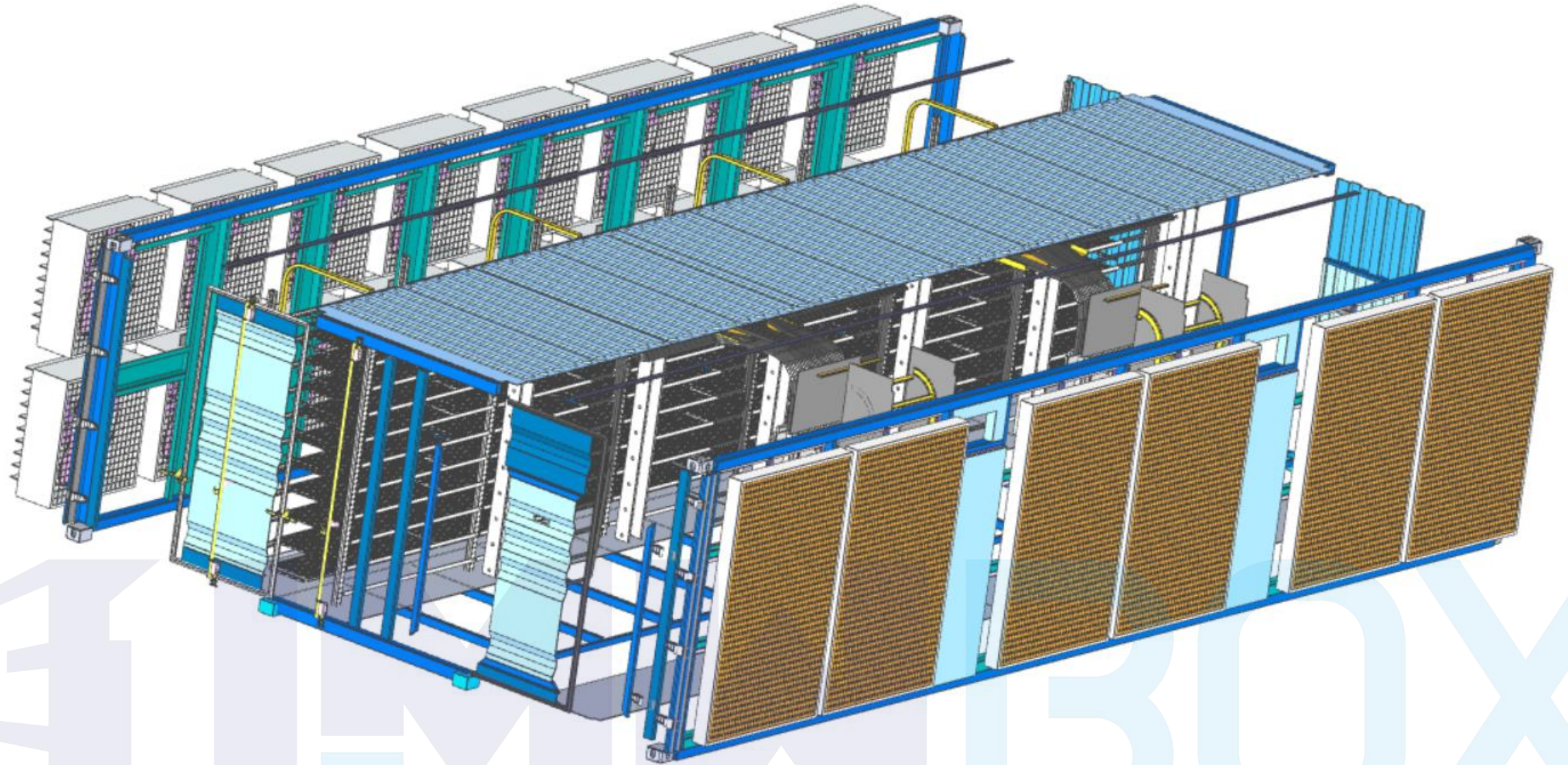
Modular data center 1MW-BOX--Container appearance





模块化数据中心1MW-BOX--箱体爆炸图

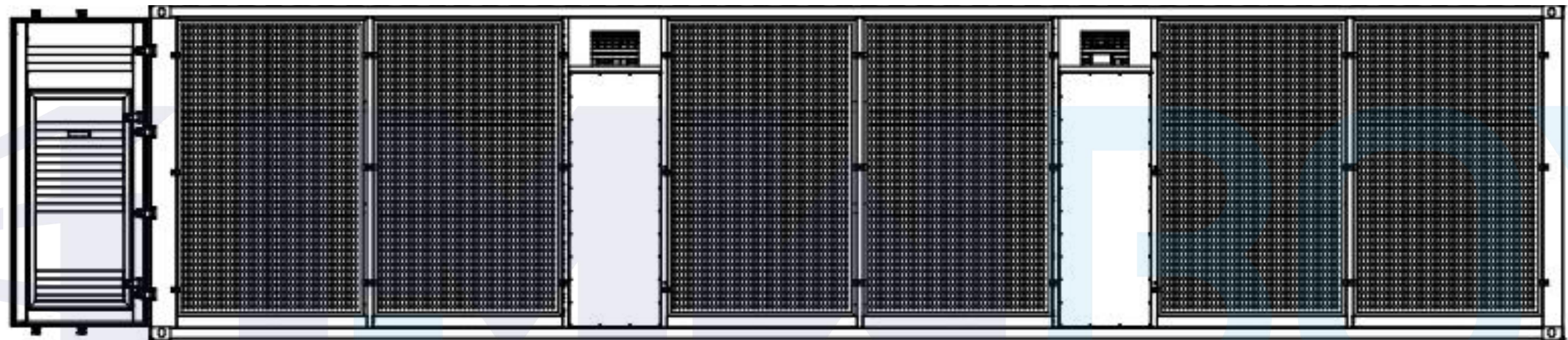
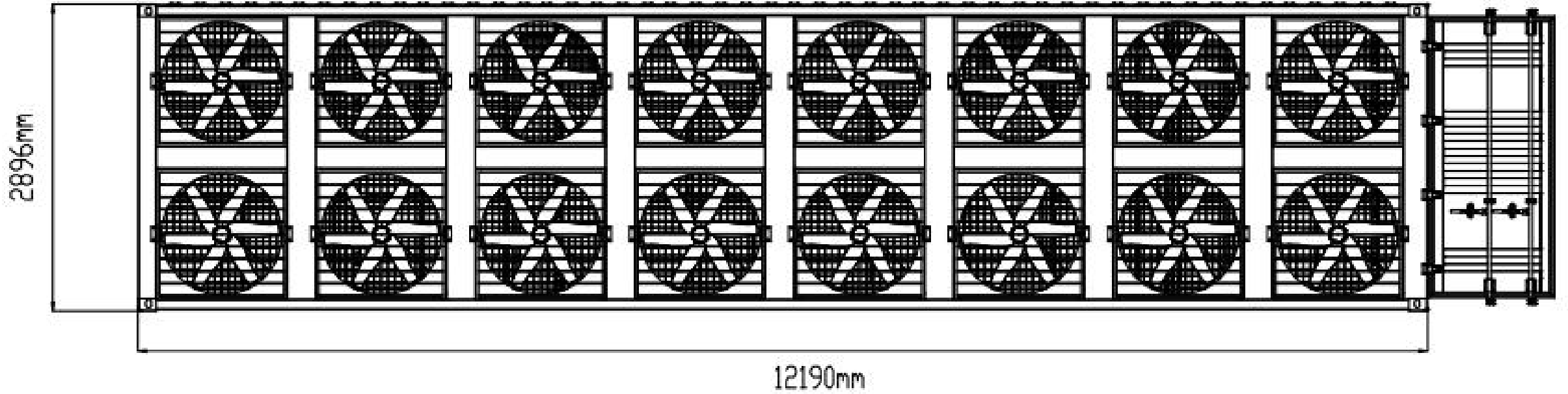
Modular data center 1MW-BOX--Exploded view of box





模块化数据中心1MW-BOX--箱体正视图

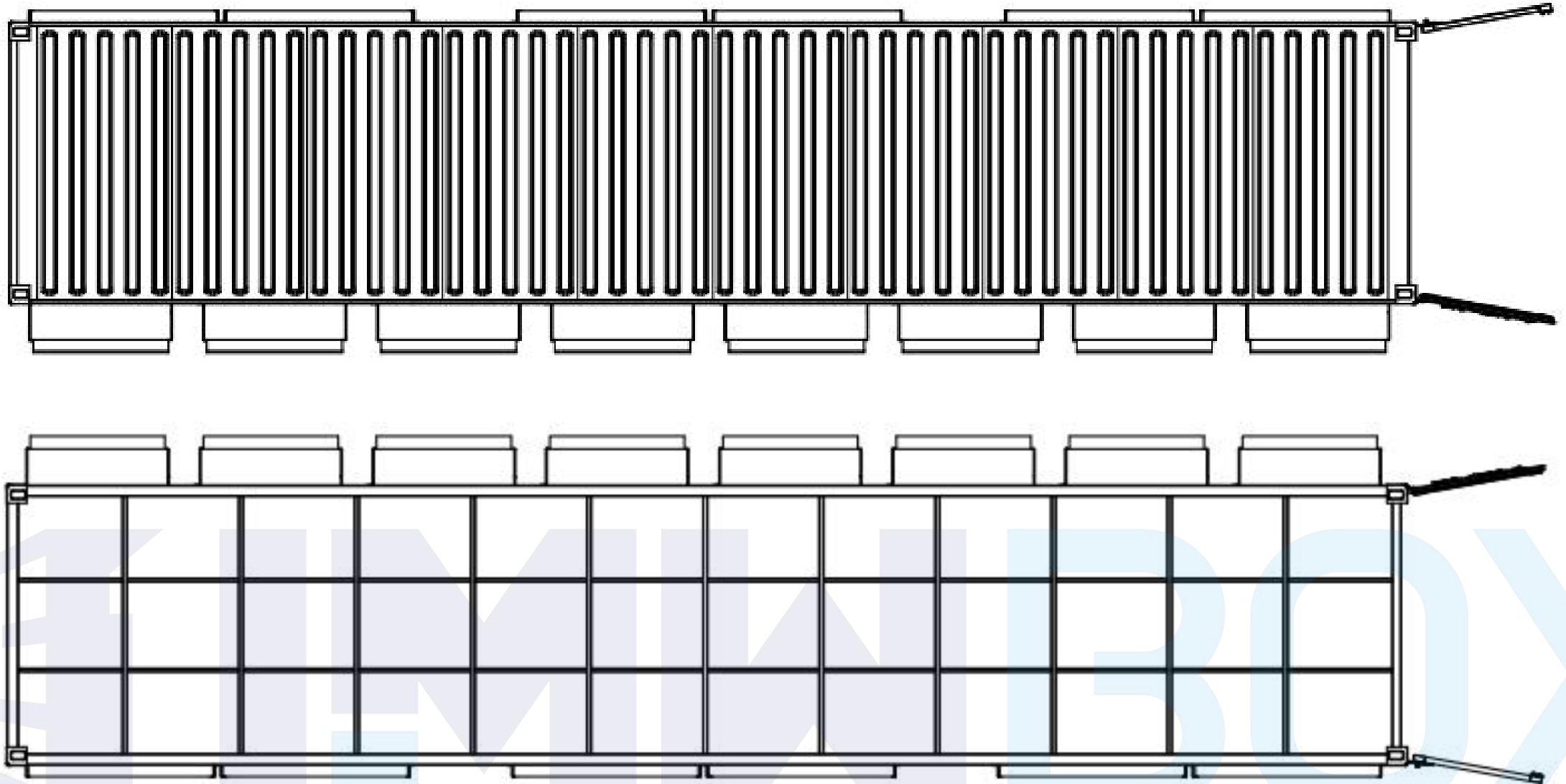
Modular data center 1MW-BOX--Front view





模块化数据中心1MW-BOX--箱体俯视图

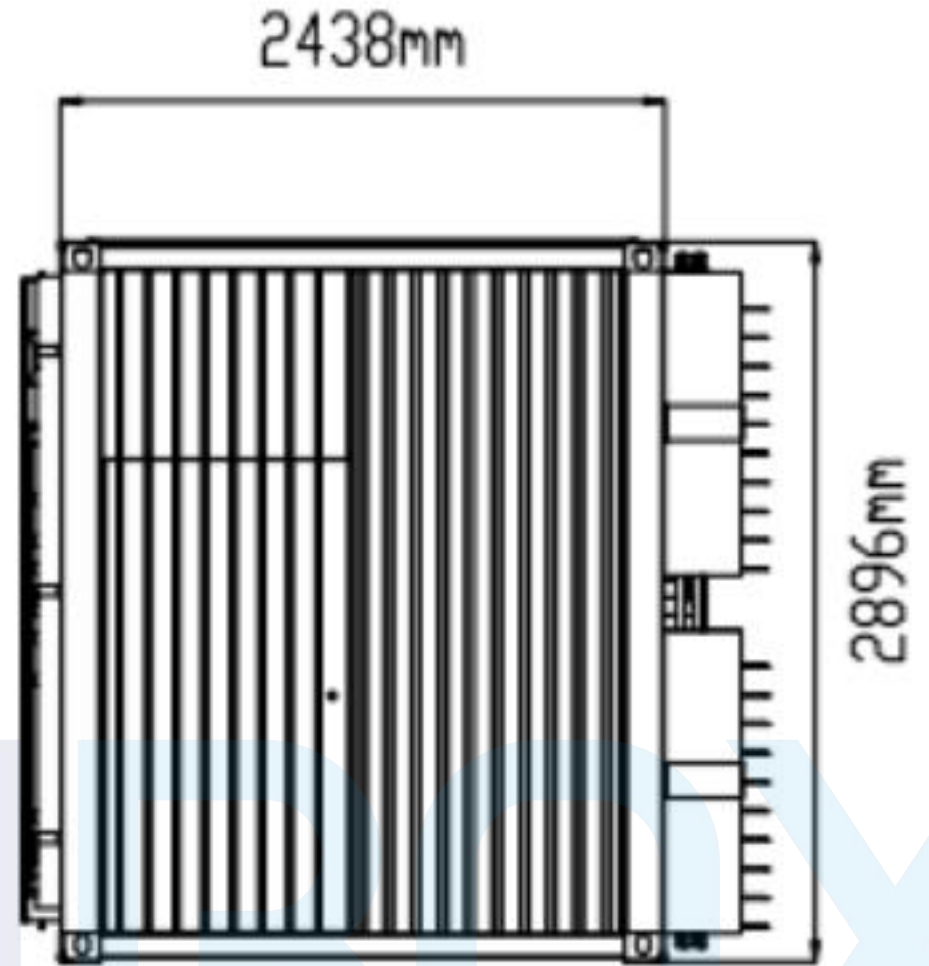
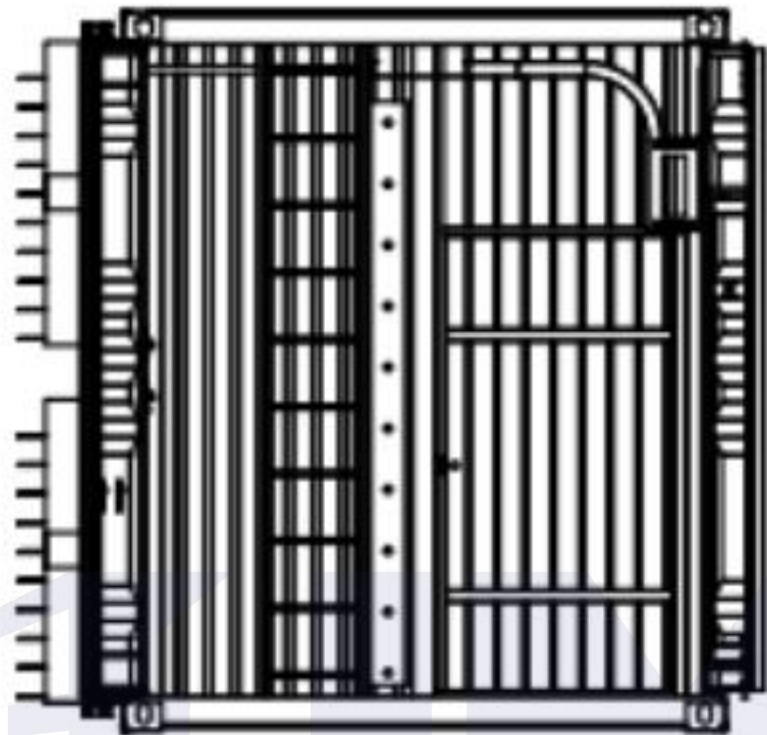
Modular data center 1MW-BOX--Top and bottom view





模块化数据中心1MW-BOX--箱体侧视图

Modular data center 1MW-BOX--Side view



模块化数据中心1MW-BOX--箱体结构介绍



Modular data center 1MW-BOX--Introduction to box structure

数据中心机柜:

长12.20m * 宽2.43m * 高 2.9m

Data center cabinet is 12.20m long, 2.43m wide and 2.9m high.

主体构件包括:

纵向方钢(100 × 100 × 4)、横向方钢(100 × 100 × 3)、角柱(158 × 174 × 4)、底部加强筋(方管)采用(80 × 40)和(60 × 30)两种截面。

The main components include longitudinal square steel (100 × one hundred × 4) Horizontal square steel (100 × one hundred × 3), corner column (158 × one hundred and seventy-four × 4). Bottom stiffener (square tube) adopts (80 × 40) and (60 × 30) Two sections.

其中, 方钢通过集装箱角件相连, 底部加强筋焊接在两侧纵向方钢之间。整体结构设计保持ISO集装箱外形尺寸标准, 可参与ISO标准集装箱运输和起吊形式。

Among them, the square steel is connected through the container corner pieces, and the bottom stiffener is welded between the longitudinal square steel on both sides. The overall structure design maintains the ISO standard for the overall dimensions of containers, and can participate in the ISO standard container transportation and lifting forms.

箱体整体材质使用SPA-H耐候钢板, 它是一种耐大气腐蚀的热轧钢板, 执行标准为。SPA-H钢在大多数环境下的耐大气腐蚀性能明显优于添加或不添加铜的碳钢, 执行标准为JIS G 3125。

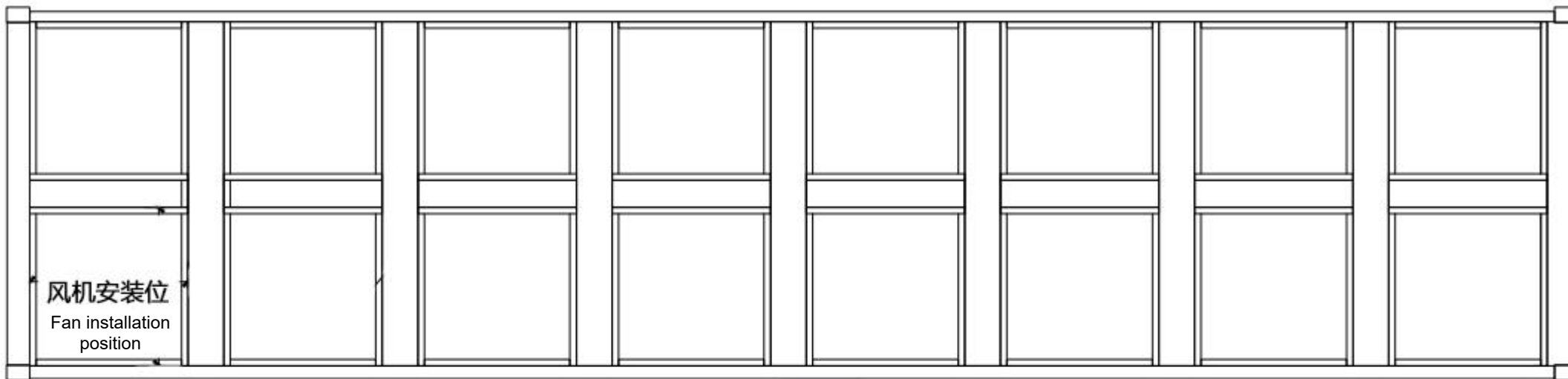
The overall material of the box is SPA-H weathering steel plate, which is a hot-rolled steel plate with atmospheric corrosion resistance, and the executive standard is. The atmospheric corrosion resistance of SPA-H steel is significantly better than that of carbon steel with or without copper in most environments, and the executive standard is JIS G 3125.

SPA-H耐候钢耐腐蚀原理当钢材暴露在阳光和风中时, 它的耐腐蚀性就显得尤为重要了。钢中加入磷、铜、铬、镍等微量元素后, 在铜材的表面会形成致密且附着力强的保护膜, 它可以起到一定的保护作用。

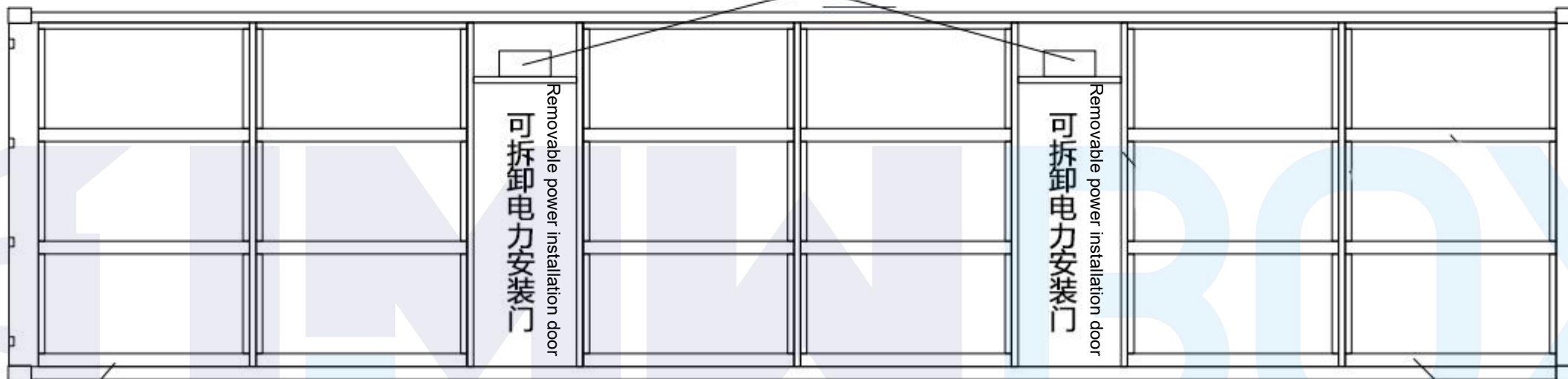
Corrosion resistance principle of SPA-H weathering steel When steel is exposed to sunlight and wind, its corrosion resistance is particularly important. After adding phosphorus, copper, chromium, nickel and other trace elements into steel, a dense and strong adhesive protective film will be formed on the surface of copper, which can play a certain protective role.

模块化数据中心1MW-BOX--箱体示意图及功能位

Modular data center 1MW-BOX--Schematic diagram and function position of box



电缆口 Cable port



模块化数据中心1MW-BOX--陆运运输及海运运输



Modular data center 1MW-BOX--Land and sea transportation



关于海运:

About regard to maritime transport:

在满足海运要求整体箱体完全密封的基础上，对封装板进行了全面密封胶加固处理，防止仓位位于船舷的边舱运输海水侵入的情况发生。

On the basis of meeting the requirements of shipping, the whole box is completely sealed, and the sealing plate is comprehensively reinforced with sealant to prevent seawater intrusion.

关于陆运:

About land transportation:

设备箱体的内部结构及内部承重点的特殊性，采用加固型集装箱底盘，使整体结构更加稳固安全，从而取消了常规集装箱的鹅颈槽装置，**在陆地运输需搭配没有鹅颈槽装置的集装箱拖车进行运输。**

Due to the particularity of the internal structure and internal load-bearing point of the equipment box, the reinforced container chassis is adopted to make the overall structure more stable and safe, thus canceling the gooseneck groove device of the conventional container. In land transportation, **it needs to be matched with the container trailer without gooseneck groove device for transportation.**

模块化数据中心1MW-BOX--安装、部署、运行

Modular data center 1MW-BOX--Installation, deployment and operation

关于吊装:

About hoisting:

通过利用两辆不小于5吨的叉车双侧叉起方式，或利用不小于起吊吨位10吨的吊车通过固定上端四角吊点进行吊装。

Hoisting is carried out by using two forklifts with a lifting capacity of not less than 5 tons on both sides, or by using a crane with a lifting tonnage of not less than 10 tons by fixing the upper four corners of the lifting points.

关于部署:

About deployment:

1MW-BOX应保证放置在已经硬化的地面上，尤其是需要叠摞的场地，平整度为 $\pm 1^\circ$ 。

The 1MW-BOX should be placed on the hardened ground, especially the site that needs to be stacked, with a flatness of $\pm 1^\circ$.

当场地部署需要叠摞两层或以上的情况时，应确保地面硬化已具备支持高达15吨的重量。

When the deployment of the site requires stacking of two or more layers, it should be ensured that the ground has been hardened to support a weight of up to 15 tons.



模块化数据中心1MW-BOX--安装、部署、运行



Modular data center 1MW-BOX--Installation, deployment and operation

关于运行温湿度:

About operating temperature and humidity:

设计安全工作条件: 温度 $-25^{\circ}\text{C}\sim 40^{\circ}\text{C}$

Designed safe working conditions: temperature $-25^{\circ}\text{C}\sim 40^{\circ}\text{C}$

设计安全工作湿度: 10%RH~90NRH。

Designed safe working humidity: 10%RH~90NRH.

当环境温度高于 35°C , 冷却水帘系统或遮雨罩应完全打开。在高温高湿的地区。工作温度不应超过 40°C 。

When the ambient temperature is higher than 35°C , the cooling water curtain system or rain cover should be fully opened. In areas of high temperature and humidity. The working temperature should not exceed 40°C .

在环境温度低于 0°C 的区域运行矿机时, 应关闭冷却水帘系统或遮雨罩; 并在启动矿机前确保内部温度高达 0°C 以上。

When operating the miner in an area where the ambient temperature is lower than 0°C , the cooling water curtain system or rain cover should be closed; and before starting the mining machine, ensure that the internal temperature is above 0°C .

关于运行海拔:

About operating altitude:

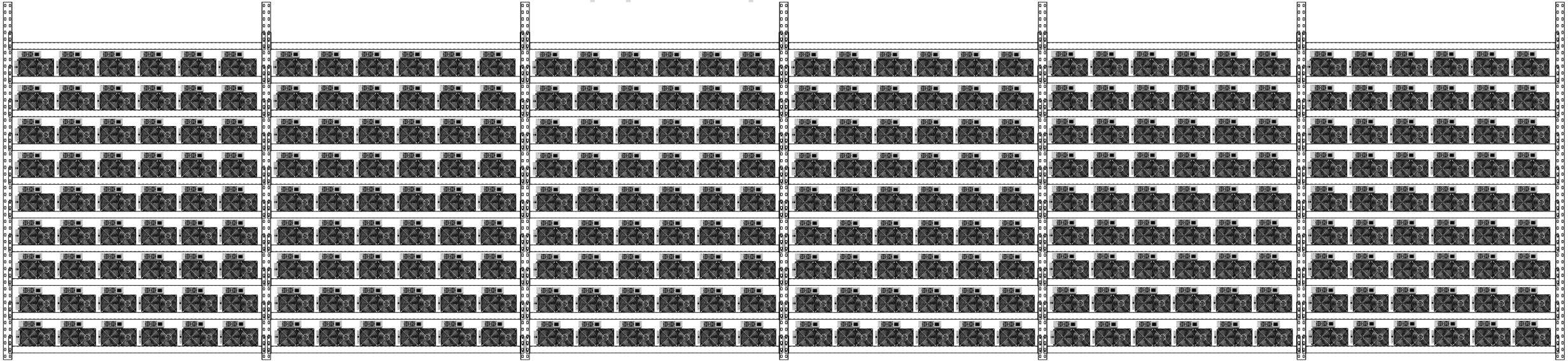
海平面: ≤ 2000 米。应考虑变压器和开关的降额, 每增加100米降额1%

Sea level: ≤ 2000 meters. The derating of transformers and switches should be considered, derating 1% for every additional 100 meters



模块化数据中心1MW-BOX--设备运行

Modular data center 1MW-BOX--Equipment operation



- 1. 将设备放入机架中，确保设备出风风扇前端与机架出风侧前端横梁对齐，有效缩短出风距离；**
Put the equipment in the rack, make sure that the front end of the air outlet fan of the equipment is aligned with the front cross beam of the air outlet side of the rack to effectively shorten the air outlet distance;
- 2. 6台矿机水平放置在机架从1到9层的每一层内；**
6 sets mining machines are placed horizontally in each layer from the 1st to the 9th floor of the rack;
- 3. 连接风机工业插头至工业插座；**
Connect the industrial plug of the fan to the industrial socket;
- 4. 通过利用1米扎带将交换机（客户自备）与机架进行固定，使用c19插头电源线连接至PDU，然后将网线连接到设备；**
Fix the switch (provided by the customer) to the rack by using a 1 meter cable tie, use the C19 plug power cord to connect to the PDU, and then connect the network cable to the device;
- 5. 用交流线连接PDU和设备，S19需要1根一拖二c19插头的16A电源线，神马设备需要1根c19插头的16A电源线；**
Connect the PDU and the device with an AC line. S19 requires a 16A power cord with one-to-two c19 plugs, and Shenma equipment requires a 16A power cord with c19 plugs;
- 6. 主开关合闸至ON位；**
Close the main switch to the ON position;
- 7. 机架分支合闸至ON位；**
Close the rack branch to the ON position;
- 8. 开启矿机（将对应矿机的PDU开关合闸至ON位）。**
Turn on the miner (close the PDU switch of the corresponding miner to the ON position).

模块化数据中心1MW-BOX--电缆安装要求



Modular data center 1MW-BOX--Cable installation requirements

进线要求:

Entry requirements:

单台电柜在415-480v电压下电流量在1000A，需配置能够承载相对电压下的电流安培量来选用对应的电缆型号进行运行。

The electric flow of a single electric cabinet is 1000A under the voltage of 415-480V. It needs to be configured to carry the current ampere under the relative voltage to select the corresponding cable model for operation.

链接方式:

Link method:

1. 打开箱体电力安装扣板;

Open the cabinet to install the gusset;

2. 打开电柜电力安装扣板;

Open the electrical cabinet to install the gusset;

3. 利用电缆桥架（建议）铺设至箱体电缆口;

Use the cable tray (recommended) to lay it to the cable port of the box;

4. 制作铜制电缆接头;

Making copper cable connectors;

5. 按照相序A相、B相、C相、N相、PE相（N相与PE相均位于电柜底部，前排为N相，后排为PE相）连接至电柜对应铜母排端口上，用不锈钢或镀锌螺栓加以固定。

According to the phase sequence A phase, B phase, C phase, N phase, PE phase (N phase and PE phase are located at the bottom of the electric cabinet, the front row is N phase, and the back row is PE phase) connect to the corresponding copper busbar port of the electric cabinet The upper part is fixed with stainless steel or galvanized bolts.

另：位于箱体箱门下横梁处也设有接地设计，亦可以通过整体接地规划进行连接。

In addition: the grounding design is also provided at the lower beam of the box door, and it can also be connected through the overall grounding plan.

(视电缆实际使用铜或铝，建议使用铜缆，如使用铝缆需要使用铜铝制连接器，而铜缆可直接使用铜制连接器)

(Depending on the actual use of copper or aluminum in the cable, it is recommended to use copper cables. For aluminum cables, copper-aluminum connectors are required, and copper cables can be directly used with copper connectors)



模块化数据中心1MW-BOX--电力需求

Modular data center 1MW-BOX--Power demand



1MW-BOX电力需求 (以单台电柜为例, NA40系列为双电柜配置)

1MW-BOX power demand (take a single electric cabinet as an example, NA40 series are configured with double electric cabinets)

额定电流: 在380v电压下1200A, 在415v电压下1100A, 在480v电压下1000A

Rated current: 1200A under 380v voltage, 1100A under 415v voltage, 1000A under 480v voltage

输入电压: 380-480V AC 50/60HZ

Input voltage: 380-480V AC 50/60HZ

工作功率: 1100KW-1200KW

Working power: 1100KW-1200KW

矿机功耗: 预估3350KW±5%

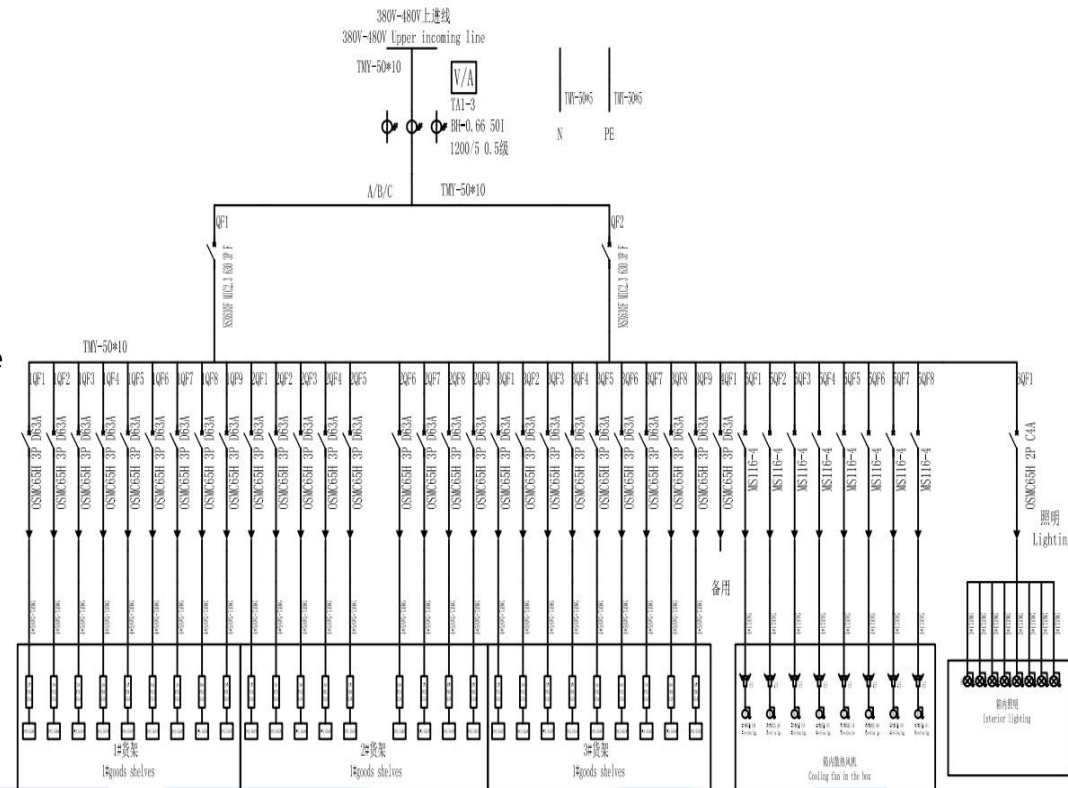
Mining machine power consumption: estimated 3350KW±5%

变压器部署:

Transformer deployment:

2500KVA变压器: 支持2台1MW-BOX NA40系列同时运行)

2500KVA transformer: support two 1MW-BOX NA40 series running simultaneously)



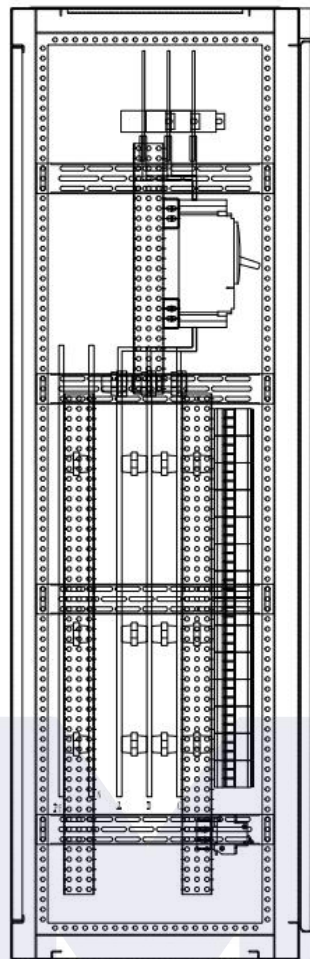
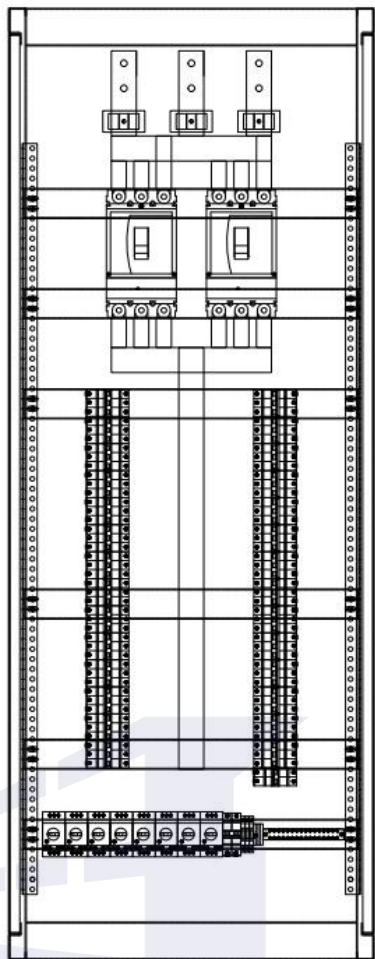
所预估数据均以S19及M30矿机运行状态为例。此处显示的图片仅供参考。图片与您所接受的实际产品有任何不一致之处, 以实际产品为准。

The estimated data is based on the operating status of S19 and M30 mining machines as examples. The pictures shown here are for reference only. If there is any inconsistency between the picture and the actual product you accept, the actual product shall prevail.



模块化数据中心1MW-BOX--电柜操作

Modular data center 1MW-BOX--Electric cabinet operation



柜内采用两台塑壳断路器并联运行来提供电源

Two molded case circuit breakers are used in the cabinet for parallel operation to provide power.

1. 为了达到防护要求（开门断电），两台塑壳断路器柜门安装操作手柄

1. In order to meet the protection requirements (open the door and power off), two MCCB cabinet doors are installed with operating handles.

2. 只有在断路器处于分闸状态下断路器才能分闸

2. The circuit breaker can be opened only when the circuit breaker is in the opening state.

3. 为了增加操作的保险，二次控制方面，塑壳断路器增加分励脱扣器，门内部安装行程开关。

3. In order to increase the safety of operation, in terms of secondary control, a shunt release is added to the molded case circuit breaker, and a travel switch is installed inside the door.

4. 柜门打开行程开关动作，分励脱扣器动作，塑壳断路器分闸

4. The cabinet door opening travel switch acts, the shunt release acts, and the molded case circuit breaker opens

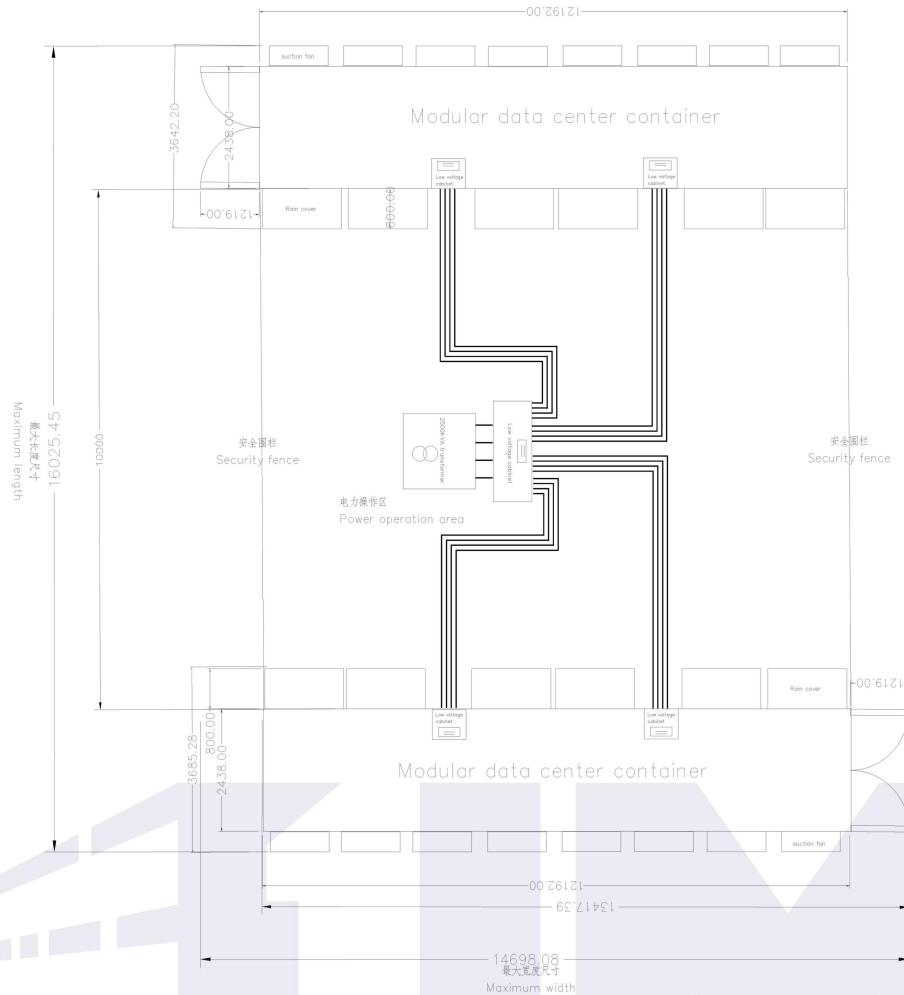
最终在打开电气柜门打开行程开关动作，分励脱扣器动作，塑壳断路器分闸

Finally, when the electric cabinet door is opened, the travel switch acts, the shunt release acts, and the molded case circuit breaker opens.



模块化数据中心1MW-BOX--部署方式

Modular data center 1MW-BOX--Deployment mode



叠摞高度:

Stack height:

不建议超过3层，具体叠摞高度层数以当地地质情况为依据进行承重测量。

It is not recommended to exceed 3 floors. The specific stack height and number of layers shall be measured on the basis of local geological conditions.

箱体部署:

Cabinet deployment:

进出风口应按照那个相对位置进行部署。箱体之间的距离建议大于等于9 米。

The air inlet and outlet should be deployed according to that relative position. The distance between the cabinets is recommended to be greater than or equal to 9 meters.

电力部署:

Power deployment:

变压器及其他电气设施应放置在进线侧进风冷风区域，确保能够更有效的降温。

Transformers and other electrical facilities should be placed in the cold wind area on the inlet side to ensure a more effective cooling.



模块化数据中心1MW-BOX--部署方式

Modular data center 1MW-BOX--Deployment mode



电力区安全:

Power zone safety:

建议以人工动线最大范围为临界点;

It is recommended that the maximum range of the artificial moving line be the critical point;

以变压器为中心点;

Take the transformer as the center point;

箱体与人工过道安全距离变压器保持在5米以上;

Keep the safe distance between the cabinet and the artificial aisle transformer above 5 meters;

并相应对区域外围进行安装有效的防护围栏确保电力区的绝对安全管理。

And correspondingly install effective protective fences on the periphery of the area to ensure the absolute safety management of the power area.

网络主线路:

Network main line:

互联网宽带100M以上。

Internet broadband is above 100M.



模块化数据中心1MW-BOX--网络部署方案

Modular data center 1MW-BOX--Network deployment scheme

场地网络部署方案可向1MW-BOX官方提供相关场地信息进行建议支持指定方案

The site network deployment plan can provide relevant site information to the 1MW-BOX official to make suggestions and support the designated plan



模块化数据中心1MW-BOX--网络设备安装

Modular data center 1MW-BOX--Network equipment installation

通过利用1米扎带将交换机（客户自备）与机架立柱进行垂直固定，使用c19插头电源线连接至PDU，并将机架运行网线进行与交换机连接。

The switch (customer-supplied) is vertically fixed to the rack column by using a 1 meter cable tie, and the C19 plug power cord is used to connect to the PDU, and the rack running network cable is connected to the switch.



模块化数据中心1MW-BOX--配件安装 (负压风机)

Modular data center 1MW-BOX--Fitting installation (suction fan)



第1步:
step 1:

拆卸运输防护板
Remove the transport shield

第2步:
step 2:

安装风机至安装位
Install the fan to the installation position

第3步:
step 3:

安装固定扣件
Install fixing fasteners

第4步:
step 4:

插入工业插头
Insert industrial plug



模块化数据中心1MW-BOX--配件安装 (风罩版-进风展开)

Modular data center 1MW-BOX--Fitting installation (Waterproof version - air inlet deployment)



第1步:
step 1:
拆卸防水进风罩固螺丝
Remove the fixing screws of
the waterproof air inlet cover



第2步:
step 2:
展开支撑侧板
Unfold the support side panel



第3步:
step 3:
安装固定螺栓
Install fixing bolts



第4步:
step 4:
完成
Finish



模块化数据中心1MW-BOX--配件安装 (水帘版-水帘安装)

Modular data center 1MW-BOX--Fitting installation (Water curtain type - water curtain installation)



第4步：
step 4:
安装完成
Finish

第1步：
step 1:

拆卸运输防护板

Remove the transport shield

第2步：
step 2:

安装水帘至安装位

Install the Water curtain to the installation position

第3步：
step 3:

安装固定扣件

Install fixing fasteners

注意：进水口为内置嵌入管口，排水口为外置突出管口

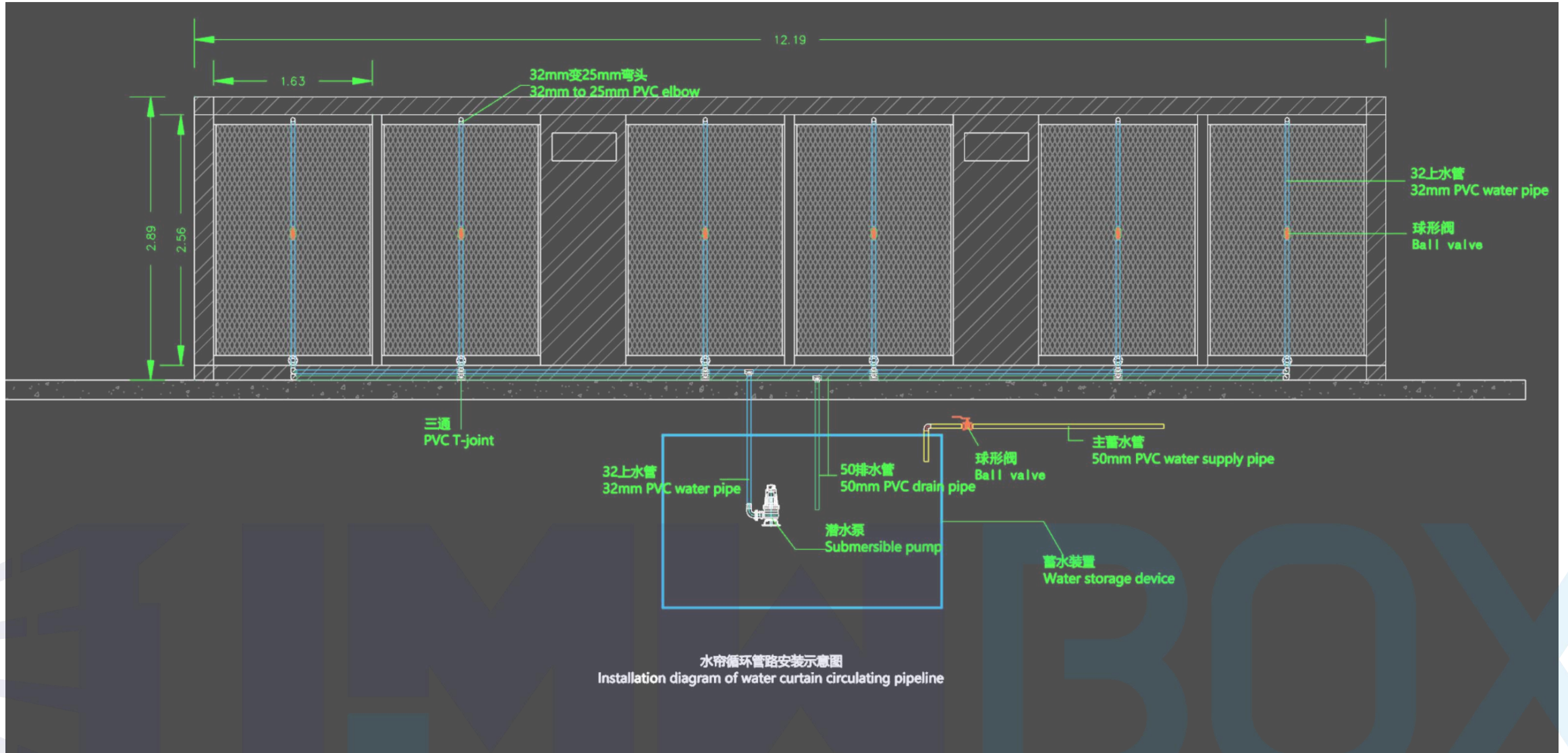
Note: the water inlet is a built-in embedded water inlet, and the water outlet is an external protruding water outlet.





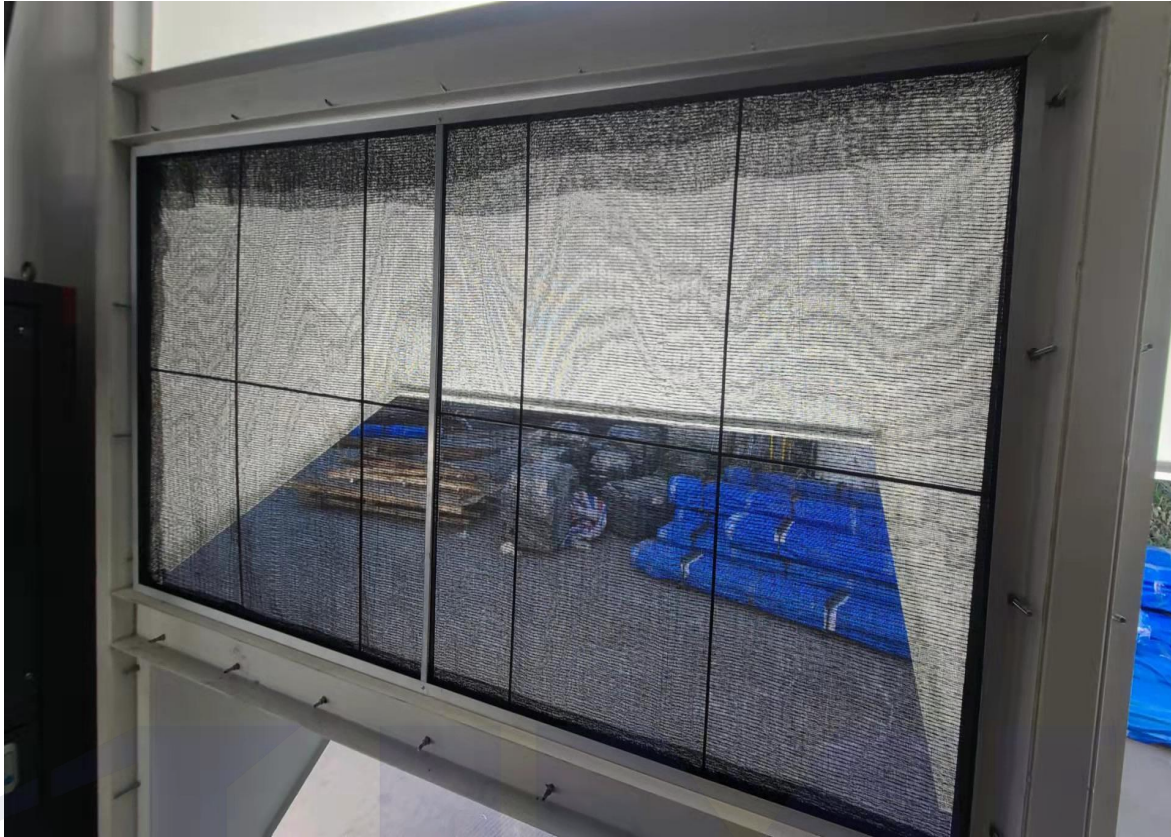
模块化数据中心1MW-BOX--配件安装 (水帘循环管道)

Modular data center 1MW-BOX--Fitting installation (Water curtain circulating pipe)



模块化数据中心1MW-BOX--配件安装 (防尘网)

Modular data center 1MW-BOX--Fitting installation (Dustproof screen)



每台1MW-BOX都附赠提供了18块高密度双层尼龙制防尘防护网。

Each 1MW-BOX comes with 18 high-density double-layer nylon dust-proof nets.

通过安装在进风口位置，有效大幅度减少颗粒物、漂浮物等对箱体内部运营环境及设备有可能损坏的物体。

By installing at the air inlet, it can effectively reduce particles, floating objects and other objects that may damage the internal operating environment and equipment of the cabinet.

该配件可配合折叠防雨雪罩及冷却水帘系统同时使用。

This accessory can be used simultaneously with the folding rain and snow cover and cooling water curtain system.

该配件通过拆卸固定扣件后可在远离箱体和电气区域直接用水进行冲洗，可反复利用，节省了维护成本，提升了箱体运营环境及稳定性。

After removing the fixing fasteners, the accessory can be directly washed with water in areas far away from the cabinet and electrical, and can be reused, saving maintenance costs, and improving the operating environment and stability of the cabinet.



模块化数据中心1MW-BOX--关于送电前的最终检查及准备工作



Modular data center 1MW-BOX--Final inspection and preparation before power transmission

因箱体在海运过程中经历了长时间的颠簸及摇摆，在通电前建议进行一次全方位的检查，确保各个连接点的可靠性和牢固性，而防止因松动所带来的可能会遇到的断路或者烧毁情况。

As the box has experienced long-term bumps and swings during shipping, it is recommended to conduct an all-round inspection before power on to ensure the reliability and firmness of each connection point and prevent possible open circuit or burning caused by looseness.

1. 需打开接线盒保护壳，通过使用螺丝刀来检查电缆的固定螺栓无松动现象。

1. It is necessary to open the protective shell of the junction box and check whether the fixing bolts of the cable are loose by using a screwdriver.

2. 需打开电柜，通过使用工具来检查电缆及铜排各固定螺栓无松动现象。

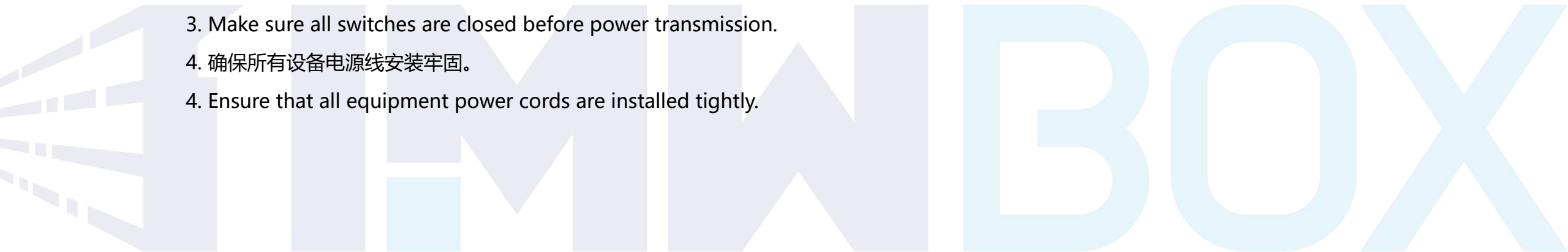
2. Open the electric cabinet and use tools to check whether the fixing bolts of cables and copper bars are loose.

3. 送电前确保所有开关全部在关闭状态。

3. Make sure all switches are closed before power transmission.

4. 确保所有设备电源线安装牢固。

4. Ensure that all equipment power cords are installed tightly.





模块化数据中心1MW-BOX--安全注意警示 (电柜)

Modular data center 1MW-BOX--Safety precautions (Electric cabinet)

警告 Warning

Non-professional authorized personnel are forbidden to open the safety shield of the power distribution cabinet!

禁止非专业授权人员打开配电柜安全屏蔽!

警告 Warning

Il est interdit aux personnes autorisées non professionnelles d'ouvrir le blindage de sécurité de l'armoire de distribution!

警告 Warning

During the operation of the container system, it is forbidden to open the door of the distribution cabinet!

在集装箱系统运行过程中, 严禁打开配电柜的门!

警告 Warning

Il est strictement interdit d'ouvrir la porte de l'armoire de distribution pendant le fonctionnement du système de conteneur!

警告 Warning

Only qualified and authorized personnel are allowed to perform maintenance and other operations on the container electrical system! No items should be left inside the electrical equipment during maintenance work, otherwise the equipment may be damaged!

只有合格和经授权的人员才允许对集装箱电气系统进行维护和其他操作! 在维修工作中, 电气设备内不得留下任何物品, 否则可能会损坏设备!

警告 Warning

Seul le personnel qualifié et autorisé est autorisé à effectuer des opérations de maintenance et autres sur le système électrique du conteneur! Pendant les travaux de réparation, aucun article ne doit être laissé à l'intérieur de l'appareil électrique, sinon il pourrait endommager l'appareil!

警告 Warning

It is strictly forbidden to insert the grounding latch into any charged hole, and it is strictly forbidden to insert a single pole!

严禁将接地锁插入带电孔, 严禁插入单极!

警告 Warning

Il est strictement interdit d'insérer le verrou de terre dans le trou sous tension, il est strictement interdit d'insérer un seul pôle!

警告 Warning

Non-professional authorized persons are prohibited from operating and maintaining power distribution cabinets!

禁止非专业授权人员操作和维护配电柜!

警告 Warning

Il est interdit aux personnes autorisées non professionnelles d'utiliser et d'entretenir les armoires de distribution!

警告 Warning

When the container system is newly installed, moved or removed power lines, the above sealant needs to be refilled in the gaps to avoid rainwater flowing into the distribution cabinet and causing equipment failure or electric shock!

当集装箱系统新安装、移动或拆除电源线时, 需要重新加注上述密封胶, 避免雨水流入配电柜, 造成设备故障或触电!

警告 Warning

Lorsque le système de conteneur est nouvellement installé, déplacé ou retiré du cordon d'alimentation, il est nécessaire de remplir le scellement ci-dessus pour éviter que l'eau de pluie ne coule dans l'armoire de distribution, provoquant une défaillance de l'équipement ou une électrocution!

警告 Warning

If there is any abnormality, please immediately close the corresponding micro-break of the miner.

如有异常, 请立即关闭相应的微断。

警告 Warning

En cas d'anomalie, éteignez immédiatement le disjoncteur microcontrôleur approprié.



模块化数据中心1MW-BOX--安全注意警示 (PDU)

Modular data center 1MW-BOX--Safety precautions (PDU)

⚠ 警告 Warning

Le démontage du PDU par des non-professionnels est interdit, toutes les conséquences résultant du démontage par l'utilisateur lui-même sont à ses propres risques!

⚠ 警告 Warning

Non-professionals are prohibited to disassemble the PDUs, all the consequences caused by the user's private disassembly at their own risk!

禁止非专业人员拆解pdu，由用户自行拆卸造成的所有后果自行承担风险!

⚠ 警告 Warning

Toutes les vis qui fixent le PDU doivent être verrouillées!

⚠ 警告 Warning

All screws securing the PDUs must be locked tight!

固定pdu的所有螺钉必须锁紧!

⚠ 警告 Warning

Le contact avec la prise de courant est strictement interdit lors de son insertion dans la prise!

⚠ 警告 Warning

In the process of inserting the power plug into the socket, it is strictly prohibited to touch the plug!

在将电源插头插入插座的过程中，严禁接触电源插头!



模块化数据中心1MW-BOX--安全注意警示 (负压风机)

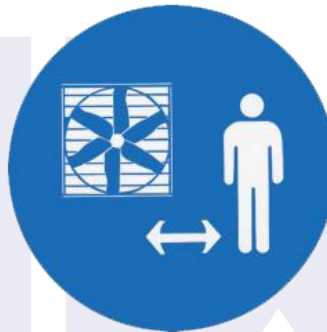
Modular data center 1MW-BOX--Safety precautions (Suction fan)



负压风机通电运行中，请注意安全！
Please pay attention to safety during power-on operation of negative pressure fan!



负压风机通电运行中，请勿触碰！
Please do not touch the negative pressure fan during power-on operation!



负压风机通电运行中，请勿靠近出风口！
Do not approach the air outlet when the negative pressure fan is powered on!

模块化数据中心1MW-BOX--关于其他问题

Modular data center 1MW-BOX--Other matters

关于消防:

About fire protection:

1. 在有效防止箱内外远离火源点禁止堆放易燃物的情况下, 需要客户自备4kg 可扑灭ABC类的干粉灭火器或者4kg 可扑灭BC类及电火的二氧化碳灭火器。

1. In the case of effectively preventing the storage of flammable materials away from the fire source inside and outside the box, the customer needs to prepare a 4kg dry powder fire extinguisher capable of extinguishing ABC type or 4kg carbon dioxide fire extinguisher capable of extinguishing BC type and electric fires.



火灾分类:

Fire classification:

(1) A类火灾: 指含碳固体可燃物, 如木材、棉、毛、麻、纸张等燃烧的火灾;

Class A fire: refers to the fire of burning carbon-containing solid combustible materials, such as wood, cotton, wool, hemp, paper, etc.;

(2) B类火灾: 指甲、乙、丙类液体, 如汽油、煤油、甲醇、乙醚、丙酮等燃烧的火灾;

Class B fire: Refers to fires caused by the burning of Class A, B, and C liquids, such as gasoline, kerosene, methanol, ether, and acetone;

(3) C类火灾: 指可燃气体, 如煤气、天然气、甲烷、乙炔、氢气等燃烧的火灾;

Class C fire: refers to fires that burn combustible gases, such as coal gas, natural gas, methane, acetylene, and hydrogen;

(4) D类火灾: 指可燃金属, 如钾、钠、镁、钛、锆、锂、铝镁合金等燃烧的火灾;

Class D fire: refers to fires involving the burning of combustible metals, such as potassium, sodium, magnesium, titanium, zirconium, lithium, and aluminum-magnesium alloys;



模块化数据中心1MW-BOX--关于其他问题

Modular data center 1MW-BOX--Other matters



(5) 带电火灾：指带电物体燃烧的火灾。

(5) Live fire: refers to the fire caused by the burning of live objects.

2. 客户可自行在箱内顶部任意位置安装使用干电池或锂电并带有鸣音报警的烟雾感应器，提升火灾第一时间相应速度。

2. Customers can install a smoke sensor with dry battery or lithium battery and buzzer alarm at any position on the top of the box to increase the corresponding speed in the first time of the fire.

关于监控：

About monitoring:

建议使用poe监控摄像头设备，以此通过网线即可供电并传输视频监控信号，防止箱体断电情况下的安全监控。

It is recommended to use poe surveillance camera equipment, so that power can be supplied through the network cable and the video surveillance signal can be transmitted to prevent safe surveillance in the case of a power failure of the cabinet.

关于进线：

About incoming line:

进线电缆建议使用电缆桥架，便于安全、快速的固定电缆，同时便于后期维护巡检。

It is recommended to use cable trays for incoming cables, which is convenient for safe and fast fixing of cables, and also for later maintenance and inspection.



模块化数据中心1MW-BOX--电力柜安装使用说明

Modular data center 1MW-BOX--Installation instructions for power box



1MWBOX电力柜安装使用说明书 Installation instructions for power box

一、产品概述

1MWBOX低压动力配电箱广泛地应用在发电厂、变电所、采矿企业、高层建筑等电力用户。在交流380-480V及以下得三相四线或三相五线系统中作为低压动力配电箱使用。配电箱系用户靠墙安装，屏前操作。可根据用户需要，选用不同型号，不同电流等级得断路器，满足不同用户得需求。

二、使用环境条件

- 2.1 周围空气温度不高于 + 40°C，不低于-25°C，24内平均温度不应高于 + 35°C。
- 2.2 使用地点得海拔高度 \leq 2000M。
- 2.3 空气清洁，相对湿度较大时应考虑到由于温度得变化可能会产生凝露得影响。
- 2.4 设备安装时与垂直面得倾斜度不超过5%。
- 2.5 安装场所应无剧烈震动得地方，无有害气体、蒸汽、导电性或爆炸性尘埃场所。
- 2.6 用户有特殊要求或上述使用条件不能满足时，应与制造厂协商解决。

I.Product overview

The 1MWBOX low-voltage power distribution box is widely used in power plants, substations, plants and mining enterprises, high-rise buildings and other electric power supply. Use as a low voltage power distribution box in three-phase or five-line systems with AC 380-480V and below. The distribution box is installed by users against the wall and operated in front of the screen. According to the needs of users, different types of choice, different current grade circuit breaker, to meet the needs of different users.

II.Use environmental conditions

- 2.1 The ambient air temperature is not higher than +40°C and not less than -25°C, The average temperature shall not be higher than + 35°C within 24h.
- 2.2 Use elevation of 2000M.
- 2.3 When the air is clean, the relative humidity should be taken into account of the impact of condensation due to temperature changes.
- 2.4 The inclination of the equipment to the vertical surface shall not exceed 5%.
- 2.5 The installation site shall be free of violent vibration and harmful gas, steam, conductive or explosive dust.
- 2.6 If the user has special requirements or the above use conditions cannot be met, it shall negotiate with the manufacturer.

三. 开关柜主要技术参数

3.1 电气参数

额定绝缘电压：500V ~ 660v

3.2 额定工作电压

主电路工作电压：交流380V ~ 480v

辅助电路工作电压：交流220V ~ 280V

3.3 额定电流：1064A以下

3.4 额定频率：50Hz或60Hz

3.5 外壳防护等级：IP30

3.6 设备得主要结构概述

设备得基本结构：落地式配电柜

安装方式：户内式，固定垂直于地面安装；

接线方式：上进上出线；

操作方式：正面操作；

系统形式：TN系统

适用范围：可作为照明.计量.散热风机.PDU等用途

III.Main technical parameters of the switch cabinet

3.1 Electrical parameters

Rated insulation voltage: 500V to 660V

3.2 Rated operational voltage

Main circuit operating voltage: AC 380V to 480v

Auxiliary circuit operating voltage: AC 220-280v

3.3 Rated current: below 1064A

3.4 Rated frequency: 50Hz or 60Hz

3.5 Housing protection level: IP30

3.6 Overview of the main structure of the equipment

Basic structure of the equipment: Floor-based type power distribution cabinet.

Installation method: indoor type, fixed perpendicular to the ground installation;

Wiring mode: Upper, incoming and outgoing line;

Operation mode: Front operation;

System form: TN system

Scope of application: can be used as lighting, metering, heat fan, PDU, etc.

模块化数据中心1MW-BOX--电力柜安装使用说明



Modular data center 1MW-BOX--Installation instructions for power box

四. 运输及存放

4.1 出厂条件:

确保所有的工作都完成后,按照相关标准及设计要求进行出厂检验,符合要求方可出厂。

4.2 包装:

低压动力配电箱根据运输条件得不同采取不同的包装方法。

4.3 运输与装卸:

选择汽车运输,必须用绳索将设备与车身固定牢.利用设备上得吊环,用起重机.叉车或手动千斤顶进行装卸.勿倒置。

4.4 交货及中间存储:

4.4.1 货到现场后,应进行如下检查:

- 依照装箱单检查就是否缺件或运输损坏,并向发货人或运送者出具证明;
- 检查配电柜就是否完好,就是否受潮。最好对损坏部分进行摄影。

4.4.2 最适宜得中间存储条件:(依照开关柜与元件所要求得最小条件)

- 只需简单包装或不需包装;
- 干燥并且通风良好得储藏室,室内温度不低于-5°C,空气质量依照相关标准规定;
- 没有其它有害条件得影响;
- 竖直摆放开关设备,不能堆放。确保开关柜通气性良好

IV. Transportation and Storage

4.1 Factory conditions:

Ensure that all the work is completed, factory inspection in accordance with relevant standards and design requirements, meet the requirements.

4.2 Pack:

Low-voltage power distribution box adopts different packaging methods according to different transportation conditions.

4.3 Transportation and Handling:

For car transportation, the equipment must be fixed to the body with ropes. Use the lifting ring on the equipment for loading and unloading with a crane, forklift truck or manual jack. Keep upright.

4.4 Delivery and intermediate storage:

4.4.1 Upon site arrival, the following inspection shall be conducted:

- Check for missing parts or transport damage according to the packing list And issue a certificate to the consignor or carrier;
- Check whether the power distribution cabinet is in good condition, and whether it is damp.It is best to photograph the damaged part.

4.4.2 The most suitable intermediate storage conditions(Minimum conditions required for switchgear and components):

- Just simple packaging or no packaging;
- Dry and well-ventilated storage room, indoor temperature is not less than-5°C, air quality in accordance with the relevant standards;
- No other harmful conditions are affected;
- Put the switchgear vertically, not stacked, Ensure that the switchgear is well ventilated.

五. 现场安装

开关柜的现场安装需确保正确得安装顺序及高质量标准.包装由电工打开, 要求在现场有责任人进行检查指导.同时应参照产品安装使用说明书。

5.1现场要求:

安装前需对安装场所检查, 应满足相关标准得规定。

5.2产品安装:

5.2.1开关柜应在直立得情况下进入室内。

5.2.2产品得安装应参照一次系统图及系统布置位置图进行。基础槽钢与螺栓由用户自备。将开关柜在基础上正确得位置排成一行 (垂直方向安装不平度不得超过2mm, 尤其在前面)并用螺栓连接在一起。当开关柜完全装配好时, 可用螺钉或焊接将其与基础框架连接在一起。

-表2-

螺丝	推荐扭矩Nm	螺丝	推荐扭矩Nm	螺丝	推荐扭矩Nm
M6	9.5	M10	45	M16	200
M8	25	M12	80		

V. Installation on site

The field installation of the switchgear shall ensure the correct installation order and high quality standard. The packaging is opened by an electrician and requires someone responsible for inspection and guidance. Reference shall also be made to the product installation and use instructions.

5.1 Site requirements:

the installation site shall be inspected before installation and shall meet the relevant standards.

5.2 Product installation:

5.2.1 Switch gear shall enter the room while standing upright.

5.2.2 Product installation shall be referred to the primary system diagram and the system layout location diagram.Foundation groove steel and bolts shall be provided by the user.Line the switch cabinet in the correct position on the foundation (Vertical installation irregularities shall not exceed 2mm, especially in front) and bolt it together.When the switchgear is fully assembled, it can be attached to the base frame with screws or welding.

-Table 2-

screw	Recommend ed torque Nm	screw	Recommend ed torque Nm	screw	Recommen ded torque Nm
M6	9.5	M10	45	M16	200
M8	25	M12	80		

模块化数据中心1MW-BOX--电力柜安装使用说明

Modular data center 1MW-BOX--Installation instructions for power box



5.2.3 单体柜得安装：用水平尺进行检验，应保证横平竖直。落地型柜得电源管以出地面50 mm为宜。

5.2.4 主母线安装时应将搭接面修理平整.处理干净.涂上中性凡士林或采取其它措施然后用螺栓紧固。用8.8级拉力的螺杆连接母排，其所需扭矩值如上表2。

5.2.5 对一些偏离一般规则的扭矩值(比如接触系统与转换终端)需查阅详细得相关技术文件。

5.2.6 每组柜接地与接地干线连接应不少于两处，且必须与柜上零母线有可靠得联接。柜体安装好后由专业人员根据设计图纸接入一、二次线。

5.3 产品在安装完毕后投入运行前需进行如下项目得检查与试验：

- 检查柜体面漆有无脱落柜内就是否干燥，清除柜内所有杂物；
- 主要电器元件，主、辅回路接点得通断就是否可靠准确.符合图纸要求；
- 母线连接就是否良好，绝缘支撑件安装件及附件就是否安装牢固可靠；
- 仪表指示与互感器得变比及极性就是否正确；
- 用1000V兆欧表测量绝缘电阻值不得低于1MΩ。如果整体绝缘值较低，请使用加热源（加热器等）对柜内进行24H的预热，以清除湿气。

5.2.3 Installation of individual cabinet: check with horizontal ruler to ensure horizontal and vertical. The power pipe of the landing cabinet shall be 50 mm above the ground .

5.2.4 The main bus installation shall be smooth, cleaned, coated with neutral Vaseline or take other measures and then tightened with bolts Connect the nut row with a level 8.8 pull screw. The required torque values are shown in Table 2 above.

5.2.5 Detailed technical documents are consulted for some deviation from general rules (torque value, such as contact system and conversion terminal).

5.2.6 Each group of cabinet shall be connected to no less than two places, and must be reliably connected with the zero busbar on the cabinet. After the cabinet is installed, the professional personnel shall connect the first and secondary lines with the design drawings.

5.3 The following items shall be inspected and tested before the product is put into operation after installation:

- Check whether the cabinet decent paint is shed off the cabinet is dry to remove all debris in the cabinet;
- Main electrical components, main and auxiliary circuit connections are reliable and accurate, and meet the requirements of the drawings;
- Whether the bus connection is good, and whether the installation parts and accessories of the insulation support are firmly installed and reliable;
- Whether the ratio and polarity of the instrument indication and the current transformer are correct;
- The insulation resistance measured with 1000V EU shall not be less than 1MΩ. If the overall insulation value is low, use the heating source (heater, etc.) to warm up the cabinet for 24H to remove the moisture.

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六、操作说明

6.1 送电前的检查工作；

6.1.1 检查柜内一级断路器和二级断路器都处于分闸状态（短路器的状态分别有合闸，分闸及脱扣3种状态）。

6.1.2 检查相间隔板是否全部安装到位。

6.1.3 检查柜内是否有其它异常物品（如螺丝，线扎，工具等）。

6.1.4 检查防护板是否安装到位。

6.1.5 检查接地螺栓是否紧固。

6.1.6 封闭好柜门.侧板.顶板及柜门。

6.2 在6.1的检查项目全部合格后才能在专业电工的指导下送电。

6.2.1 送电后检查面板A.B.C三相电源指示灯及4个电流表是否正常点亮。

6.2.2 观查看总电流表的电压指示是否正常（具体操作步骤见《三相电流电压表说明书》）。

6.2.3 等待10分钟以上观察柜内是否有异响或者拉弧现象，如果存在问题请及时切断电源，排除故障后再次送电等待10分钟以上确保柜内无异常现象。

6.2.4 打开柜门先闭合两台一级断路器在闭合3台二级断路器在无负载的情况下运行10分钟以上无任何异常情况下加入负载。

6.2.5 加入负载后可在数显电流表上观察每台断路器的电流数字以确定负载运行情况。

配电柜在正常运行过程中请安排专业人员看守设备！

VI.Operation notice

6.1 Inspection work before power transmission;

6.1.1 The primary and secondary circuit breaker in the inspection cabinet are in the switch state (the short circuit state is closed, open and tripping state respectively).

6.1.2 Check whether all partipanel are installed in place.

6.1.3 Check the cabinet for other abnormal items (such as screws, wires, tools, etc.).

6.1.4 Check the protective plate in place.

6.1.5 Check the grounding bolts for tightening.

6.1.6 Close the rear, side, roof and cabinet door.

6.2 After all the inspection items of 6 and 1 are qualified, Send power under the guidance of a professional electrician

6.2.1 After power transmission, check whether the three-phase power indicator lights and panels A, B, C and the 4 ammeters are lit normally.

6.2.2 Check whether the voltage indication of the total ammeter is normal (see the Three-phase Current Voltmeter Manual for specific operation steps).

6.2.3 Wait for more than 10 minutes to observe whether there is abnormal sound or arc pulling phenomenon in the cabinet.If there is a problem, Cut off the power supply and trouble clearing . Wait for the Power again transmission for more than 10 minutes to ensure that there is no abnormal phenomenon in the cabinet.

6.2.4 Open the cabinet door First close the two secondary circuit breakers for more than 10 minutes add the load without any exceptions.

6.2.5 After adding the load, observe the current number of each circuit breaker on the digital display ammeter to determine the load operation.

Please arrange professional personnel to guard the equipment during the normal operation process!

模块化数据中心1MW-BOX--电力柜安装使用说明

Modular data center 1MW-BOX--Installation instructions for power box



七. 维护.维修

开关柜的操作与维护.维修等相关工作, 应该由熟悉本开关设备并经过培训得供电部门认可得持电工操作证得专业人员进行。要严格尊重相关安全规则得规定!

7.1 检查与维护:

检查与维护工作应包括下列内容, 但不应局限于下列内容!

7.1.1 对新送电运行的开关柜应在运行一个月内停电检查一次, 对所有母线联接紧固件都需重新紧固一遍。

7.1.2 对有粉尘.纤维的环境应定期检查维护。至少每月对开关柜检查.清理.维护一次。

7.1.3 日常得检查与维护工作应遵循供电部门相关规定。

7.1.4 检查电气联接(如母排)有无过热现象(在可移开部件拉出开关柜得情况下目测), 有条件得可用红外测温仪检测。当系统显示其它损坏或过热时需及时更换部件。

7.1.5 检查所有的开关柜得附件与辅助得设备。

7.1.6 仔细清洁开关柜特别就是绝缘件得表面, 当发现其表面含有油污.粉尘.发霉时, 需用软布清除污染物。

7.1.7 检查回路连接与接地连接得螺钉就是否紧固。

7.2 维修

当发现开关柜得故障时应立即进行维修, 应该由熟悉本设备并持电工操作证得专业人员进行, 要严格尊重相关安全规则得规定, 或聘请供电部门专业人员进行!

VII. Maintenance and maintenance

The operation, maintenance of the switchgear shall be carried out by the professional personnel familiar with the switchgear and after the training recognized by the power supply department. We must strictly respect the provisions of relevant safety rules!

7.1 Inspection and maintenance:

Inspection and maintenance work shall include the following, but shall not be limited to!

7.1.1 The switch cabinet for new power transmission operation shall be Check the power failure once within a month, and all bus connection fasteners shall be retightened again.

7.1.2 The environment with dust and fiber shall be checked and maintained regularly. Check, clean up and maintain the switch cabinet at least once a month.

7.1.3 Daily inspection and maintenance work shall follow the relevant regulations of the power supply department.

7.1.4 Check the electrical connection (such as the mother row) for overheating (visually measured after pulling the removable parts out of the switch cabinet), and conditionally use the infrared thermometer detection. Parts should be replaced promptly when the system shows other damage or overheating.

7.1.5 Check all the accessories and auxiliary equipment for the switchgear.

7.1.6 Carefully clean the switch cabinet, especially the surface of the insulation parts, when its surface is found to contain oil pollution, dust, mold, you need to use a soft cloth to remove pollutants.

7.1.7 Check that the screws tighten the circuit connection to the ground.

7.2 Keep in repair.

When the switch cabinet fault is found, it should be repaired immediately, by the professional personnel familiar with the equipment and with the electrical operation certificate, to strictly respect the relevant safety rules, or hire the professional personnel of the power supply department!

感谢大家对1MW-BOX的支持!

Thank you for your support for 1mw-box!

