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Safety first, service oriented  
安全为先·服务为本

# 光伏新能源变电设备系列

• PHOTOVOLTAIC NEW ENERGY TRANSFORMATION EQUIPMENT SERIES

## 选型手册

伊发控股集团有限公司  
YIFA HOLDING GROUP CO.,LTD.

总部地址：浙江省乐清市总部经济园7幢2层  
江西新能源基地：江西省崇仁县工业园C区  
网址：www.inter-yifa.com

合作热线(Tel): 0577-62608111  
0577-62618888  
0577-61750085



伊发控股集团有限公司  
YIFA HOLDING GROUP CO.,LTD.



伊发大型现代化生产基地 (建筑面积: 180000m<sup>2</sup>)



## 集团简介

Brief introduction of YIFA Holding Group

**伊发控股集团**是一家以智能化、环保化工业电气为主，涵盖金融、电商、贸易投资等多个产业的国家高新技术企业集团。中国企业500强，中国机械500强，国家星火计划企业，江西省名牌产品，江西省著名商标。国家电网、南方电网、轨道交通、石油石化、国家水利系统优质供应商。旗下江西伊发电力科技股份有限公司已于2016年挂牌上市，股票代码：870154。

集团主要开发、生产、销售光伏电站、风能变电站、环保气体绝缘环网柜、成套电气设备、高压及超高压变电设备、矿用高低压开关柜、矿用变压器、玻璃钢电表箱、不锈钢及透明型箱体、高低压元器件、电线电缆、防爆电器、建筑电器、仪器仪表等等低碳、节能、环保产品以及电力安装工程。其中变压器制造最大容量达到63000KVA，电压等级达220KV。

集团积极导入卓越绩效管理，推行精益生产，实施两化融合、智能制造，打造数字工厂，逐步沉淀形成了富有伊发特色的管理模式。公司在业内较早通过了ISO9001、ISO14001、ISO45001等管理体系认证，在持续增强产品既有技术优势的同时，积极推动产业高质量发展，在智能制造取得丰硕成果。公司长期开展信息化管理能力和智能制造能力的迭代升级，近几年实施应用ERP、PLM、OA、MES、WMS等系统，并大力投入检测设备、生产设备的改造，拥有功能完善的产品试验中心，研发能力、产品质量及可靠性不断提升，通过多系统信息集成以及信息管理系统互联互通，实现设计、制造、物流、质量、服务等制造过程的数字化和信息化管理。并取得了上百个发明专利及实用新型专利，填补了国内空白。

集团公司注重品牌战略，坚持营销创新，以迅速、健康、持续的发展趋势跻身于电气行业前列。在激烈的市场竞争中，伊发在国网、南网屡屡中标，并先后中标北京亚运村、奥运会配套工程等国际知名招标项目，在国际舞台上赢得了广泛的知名度和影响力，引领“中国制造”走向“中国创造”。伊发产品广泛应用于国网、南网、高铁、城市化建设、油田、火电、水电、机场、钢铁公司、供气供暖等重点工程。产品远销日本、美国、俄罗斯、东南亚、中东、非洲等多个国家和地区。遵循一切服务于客户的思想理念，集团公司在国际国内均取得了良好的市场信誉。

科技缔造品质，实干成就梦想。展望未来，伊发将坚持专业化的发展战略，求真务实，开拓创新，以“缔造全球领先的变电企业，成就伊发百年的世界品牌”为目标，我们期望国内外同仁和广大客户一如既往地合作与支持，为“中国梦”贡献更多的力量。

——电气全产业链集成供应商



2017年1月12日，伊发电力正式挂牌上市（股票代码：870154），标志着伊发进入资本运作元年！  
On January 12, 2017, YIFA group was officially listed (stock code :870154), It marks the first year of YIFA capital operation!

伊发智慧智造基地  
YIFA Intelligent Manufacturing base



伊发数字化创新科技中心  
YIFA Digital Innovation Technology Center



伊发5G智慧数字化工业园·乐清湾港区一期  
YIFA 5G Intelligent Digital Industrial Park Phase I of Yueqing Bay Port Area



乐清市经济开发区·伊发工业园区  
Yueqing Economic Development Zone · YIFA Industrial Park



### Brief of introduction

Yifa Holding Group is a national high-tech enterprise group mainly engaged in intelligent and environmental protection chemical industrial electric, covering finance, e-commerce, trade and investment and other industries. China's top 500 enterprises, China's top 500 machinery, National Spark plan enterprises, Jiangxi province famous brand products, Jiangxi province famous trademark. State Grid, China Southern Power Grid, rail transit, petroleum and petrochemical, national water conservancy system quality suppliers. Its subsidiary, Jiangxi Yifa Electric Power Technology Co., LTD., was listed in 2016 with stock code: 870154.

The group main development, production and sales of pv substation, wind power substation, environmental protection gas insulated ring network cabinet, complete sets of electrical equipment, high pressure and ultrahigh pressure, mine high and low voltage switchgear, mine transformer substation equipment, glass fiber reinforced plastic meter box, stainless steel type and transparent box, high and low voltage components, wire and cable, explosion-proof electric appliance, building electrical appliances, instruments and meters, and so on low carbon, energy saving, environmental protection Products and electrical installation works. The maximum capacity of transformer manufacturing reaches 63000KVA and the voltage grade reaches 220KV.

The group actively introduces performance excellence management, promotes lean production, implements the integration of the two industries, intelligent manufacturing, and builds a digital factory, gradually forming a management mode rich in Ifa characteristics. The company has passed ISO9001, ISO14001, ISO45001 and other management system certification earlier in the industry. While continuously enhancing the existing technical advantages of products, it actively promotes the high-quality development of the industry and has achieved fruitful results in intelligent manufacturing. In recent years, the company has implemented the application of ERP, PLM, OA, MES, WMS and other systems, and invested heavily in the transformation of testing equipment and production equipment. It has a product test center with perfect functions, and its RESEARCH and development capabilities, product quality and reliability have been continuously improved. Through the multi-system information integration and the interconnection of information management system, the digital and information management of design, manufacturing, logistics, quality, service and other manufacturing processes can be realized. And obtained hundreds of invention patents and utility model patents, to fill the gap in China.

The group pays attention to brand strategy, insists on marketing innovation, and ranks in the forefront of electric industry with rapid, healthy and sustainable development trend. In the fierce market competition, Yifa won the bidding of The State Grid, the South net, and won the bidding of the Beijing Asian Games Village, Olympic Games supporting projects and other well-known international bidding projects. Yifa has won extensive popularity and influence on the international stage, leading the "Made in China" to "created in China". Yifa products are widely used in state grid, south grid, high-speed railway, urbanization construction, oil field, thermal power, hydropower, airport, steel company, gas supply and heating and other key projects. Products are exported to Japan, the United States, Russia, Southeast Asia, the Middle East, Africa and other countries and regions. Adhering to the philosophy of serving customers, the group has gained good market reputation both at home and abroad.

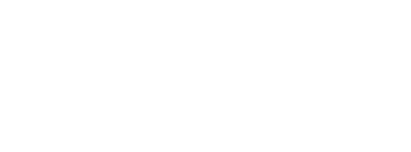
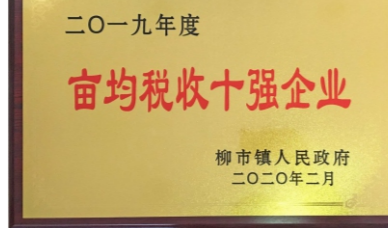
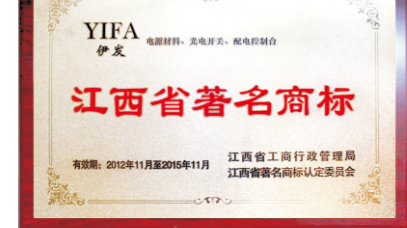
Science and technology to create quality, hard work to achieve dreams. Looking forward to the future, Yifa will adhere to the professional development strategy, realistic and pragmatic, pioneering and innovative, with the goal of "creating the world's leading substation enterprise and achieving Yifa's world brand for one hundred years". We look forward to the cooperation and support of colleagues and customers at home and abroad as always, and contribute more to the "Chinese dream".

—— A full industry chain electric integration provider

荣誉&资质  
Honors and Qualifications

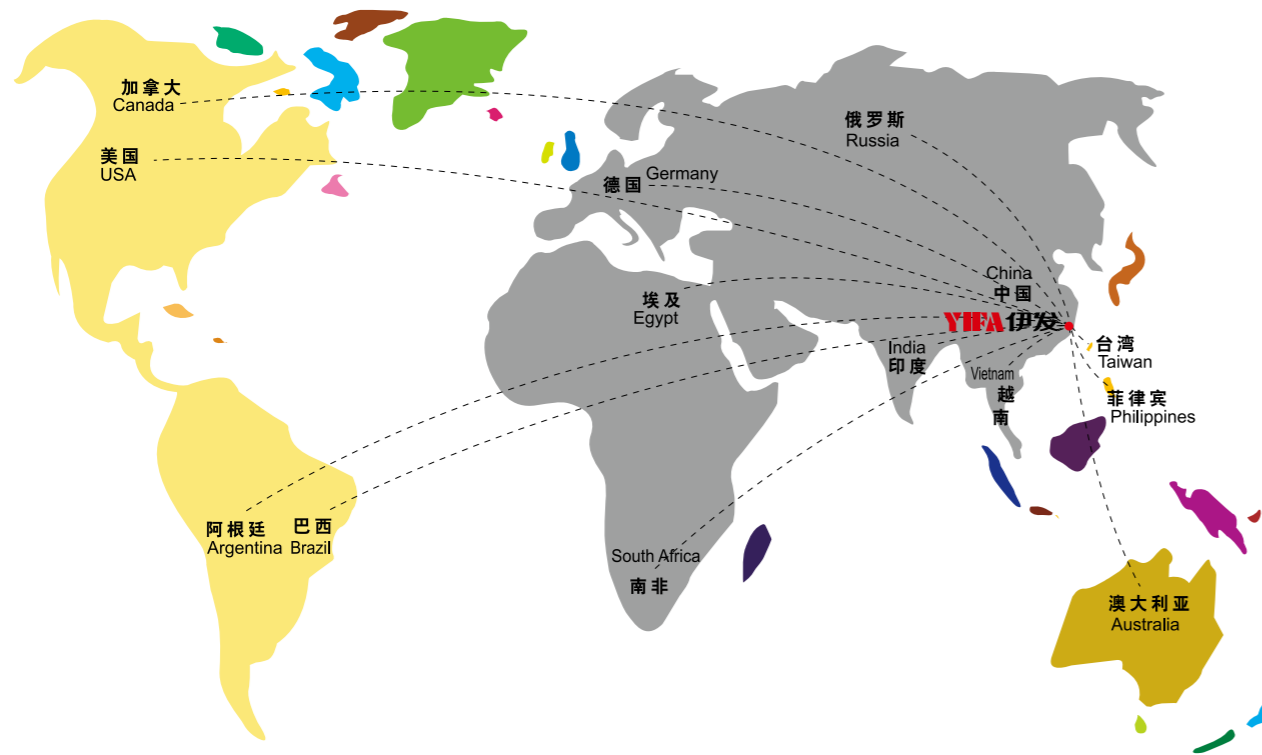
- 国家电网/南方电网、水利交通优质供应商
- 中国民营500强企业
- 中国机械500强企业
- 国家高新技术企业
- 国家星火计划企业
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- 浙江省科技型企业
- 重合同守信用企业
- 江西省名牌产品
- 江西省著名商标
- 江西省瞪羚企业

- State Grid/China Southern Power Grid, water conservancy and transportation quality supplier
- China's Top 500 private enterprises
- China's top 500 machinery companies
- National high-tech enterprise
- National Spark Plan enterprise
- National special new "Little Giant" enterprise
- Zhejiang Province science and technology enterprise
- Honor contracts and keep promises
- Jiangxi Province famous brand products
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★伊发部分资质证书展示

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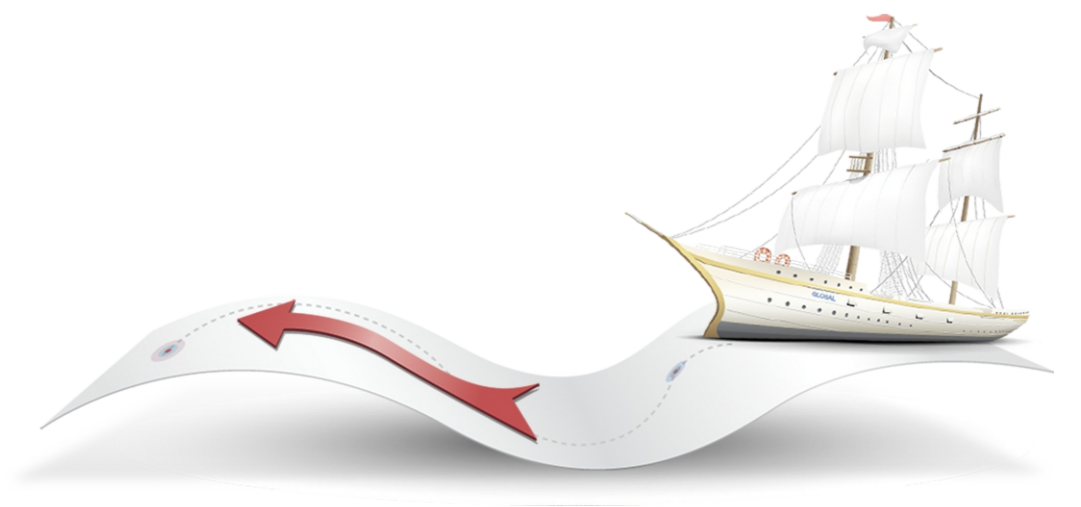
中国国际电气文化节 越南电力暨自动化技术展览会  
东盟（曼谷）中国进出口商品博览会 中国（印度）贸易博览会  
China International Electrical Culture Festival  
Vietnam Electric Power and Automation Technology Exhibition  
Asean (Bangkok) China Import and Export Commodity Fair China (India) Trade Fair



产品远销日本、美国、俄罗斯、哈萨克斯坦、埃塞俄比亚、尼泊尔、越南、东南亚、中东、非洲等多个国家和地区  
Products are exported to Japan, the United States, Russia, Kazakhstan, Ethiopia, Nepal, Vietnam, Southeast Asia, the Middle East, Africa and other countries and regions.

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## 光伏储能集装箱式预制舱 (可根据要求定制)

Photovoltaic energy storage container prefabricated cabin (Customized according to requirements)

光伏储能集装箱式预制舱是用于放置电池的舱体，使用化学储能的方式，发挥着提高电能质量、充当备用电源、调节频率的作用。其内部选用磷酸铁锂电池作为主要储能材料，具有充放电效率高、使用寿命长、安全性能好的优势，能够很好的进行电能的储存。

随着智能电网建设的深入发展，储能集装箱预制舱被越来越多的使用，未来可能成为电站搭配的刚需，实现电站建设的“分散式布置，集中式控制”方案，成为缓解供电压力，解决电力紧张局面的有力保障。储能集装箱预制舱可以适应多种环境，能够在高海拔严寒地区安装，舱体具有良好的保温隔热，有效保障内部设备的稳定运行。

Photovoltaic energy storage container prefabricated cabin is used to place batteries, the use of chemical energy storage, play a role in improving power quality, acting as a backup power source, frequency regulation. Its internal selection of lithium iron phosphate battery as the main energy storage material, has the advantages of high charge and discharge efficiency, long service life, good safety performance, can be very good energy storage.

With the further development of smart grid construction, prefabricated containers of energy storage are used more and more, which may become the rigid needs of power station collocation in the future. The "distributed layout and centralized control" scheme of power station construction will become a powerful guarantee to relieve power supply pressure and solve the power shortage situation. Energy storage container prefabricated cabin can adapt to a variety of environments, can be installed in high altitude cold areas, the cabin body has good heat insulation, effectively guarantee the stable operation of internal equipment.

## 光伏储能集装箱式预制舱产品配置 Product configuration

| 光伏储能集装箱式预制舱产品配置<br>Photovoltaic energy storage container prefabricated cabin product configuration |                             |                                  |                         |
|----------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------|-------------------------|
| 电池<br>The battery                                                                                  | 电池架<br>Battery holder       | 通信设备<br>Communication equipment  | 照明系统<br>Lighting system |
| 控制柜<br>Control cabinet                                                                             | 火警报警系统<br>Fire alarm system | 灭火器<br>Fire extinguisher         | 风机<br>fan               |
| 防静电地胶<br>Anti-static ground glue                                                                   | 应急照明<br>Emergency lighting  | 安全指示标志<br>Safety indication mark | ●●●                     |

## 光伏储能集装箱式预制舱产品特点 Product features

- 有效防水，免地基，可拆卸，快速组建，吊装方便。
  - 外形美观，根据客户需求定制颜色样式，成本低，安全可靠。
  - 使用钢板外壁，具有耐腐蚀，耐酸性，高耐候的特点，使用年限可达20年以上。
  - 安装防静电地胶及高阻燃复合地板，有效的防火、防风、防尘。
  - 内部无人值守，具有系统断电的自动启动复位功能，温湿度传感器等配套设施。
  - 配套室内外通信设备，完成信号传输。
- Effective waterproof, no foundation, disassembly, rapid construction, easy lifting.
  - Beautiful appearance, customized color style according to customer needs, low cost, safe and reliable.
  - The use of steel plate wall, with corrosion resistance, acid resistance, high weather resistance, the service life can reach more than 20 years.
  - The installation of anti-static glue and high flame retardant composite floor, effective fire, wind, dust.
  - Internal unattended, with the system power automatically start reset function, temperature and humidity sensor and other supporting facilities.
  - Supporting indoor and outdoor communication equipment, complete signal transmission.

## 应用场景 Application scenarios

- 适用于火力、风能、太阳能发电站的电能储存，在海岛、小区、学校、科研机构、工厂、大型购物中心等也有应用，能够适用多种环境。
- It is suitable for power storage of thermal power, wind power and solar power stations, and is also applied in islands, communities, schools, scientific research institutions, factories and large shopping centers, etc. It can be applied in a variety of environments.



海岛 Island



居民小区 Residential area



工厂 The factory



### 智能数字化电力集装箱式预制舱 (可根据要求定制)

Intelligent digital electric container prefabricated cabin (can be customized according to requirements)

伊发控股集团自主研发的5G智能数字化电力集装箱式预制舱是智能变电站应用的新技术、新材料、新设备的一个重要体现,是高质量、高可靠性、高适用性的定制化电气设备集成产品,也是变电站建设的未来趋势。

5G智能数字化电力集装箱式预制舱是由预制舱体、二次设备屏柜(或机架)、舱体辅助设施等组成,在工厂内完成制作、组装、配线、调试等工作,并作为一个整体运输至工程现场,就位于安装基础上。预制舱及其内部的二次设备实现整套二次设备由厂家集成,实现工厂化加工,减少现场二次接线,减少设计、施工、调试、工作量,简化检修维护工作,缩短建设周期,有效支撑了电网快速建设。

The 5G intelligent digital power containerized prefabricated cabin independently developed by Yifa Holding Group is an important embodiment of new technologies, new materials and new equipment applied in smart substation. It is a customized integrated product of electrical equipment with high quality, high reliability and high applicability, and it is also the future trend of substation construction.

5G intelligent digital power containerized prefabricated cabin is composed of prefabricated cabin, secondary equipment screen cabinet (or rack), auxiliary facilities of cabin body, etc. It completes production, assembly, wiring, debugging and other work in the factory, and is transported to the project site as a whole, located on the installation basis. The prefabricated cabin and its internal secondary equipment realize the integration of the whole set of secondary equipment by the manufacturer, realize factory processing, reduce secondary wiring on site, reduce design, construction, debugging, workload, simplify maintenance work, shorten the construction cycle, and effectively support the rapid construction of power grid.

### 变电站一次设备预制舱产品配置 Product configuration

| 一次设备预制舱产品配置<br>Primary equipment prefabricated cabin product configuration |                                         |                            |                  |
|----------------------------------------------------------------------------|-----------------------------------------|----------------------------|------------------|
| 照明电气系统<br>Lighting electrical system                                       | 烟感探头<br>The smoke detector              | 配电箱<br>Distribution box    | 风机<br>fan        |
| 温湿控制系统<br>Temperature and humidity control system                          | 外墙油漆<br>Exterior wall paint             | 应急照明<br>Emergency lighting | 监控<br>Monitoring |
| 安全逃生指示<br>Safe escape instructions                                         | 内墙装饰板<br>Interior wall decorative board | 灭火器<br>Fire extinguisher   | 插座<br>The socket |

### 变电站一次设备预制舱产品特点 Product features

- 满足户外运行要求,具有较强的抗冲击能力以及防盗、防破坏能力;
  - 舱体密封性强,能够有效抵御沙尘、潮气进入舱内,防止凝露的产生;
  - 外形美观大方,外部墙体颜色样式简洁,空调、通风口、进线口位置安排合理;
  - 一次设备预制舱舱体喷涂防腐涂料,具有较好的防腐防锈能力,使用寿命可达25年;
  - 具有双重防水功能,以及完善的安全逃生系统,符合电力要求,可满足IP54防护等级。
- Meet the requirements of outdoor operation, with strong impact resistance and anti-theft, anti-damage ability.
  - The cabin body sealing is strong, can effectively resist sand, moisture into the cabin, prevent condensation.
  - Beautiful appearance, simple style, air conditioning, vent, inlet position reasonable arrangement;
  - The cabin body is sprayed with anti-corrosion coating, with good anti-corrosion ability, the service life can reach 25 years;
  - With double waterproof function, and perfect safety escape system, meet the power requirements, can meet the IP54 protection level.

### 变电站二次设备预制舱产品配置 Product configuration

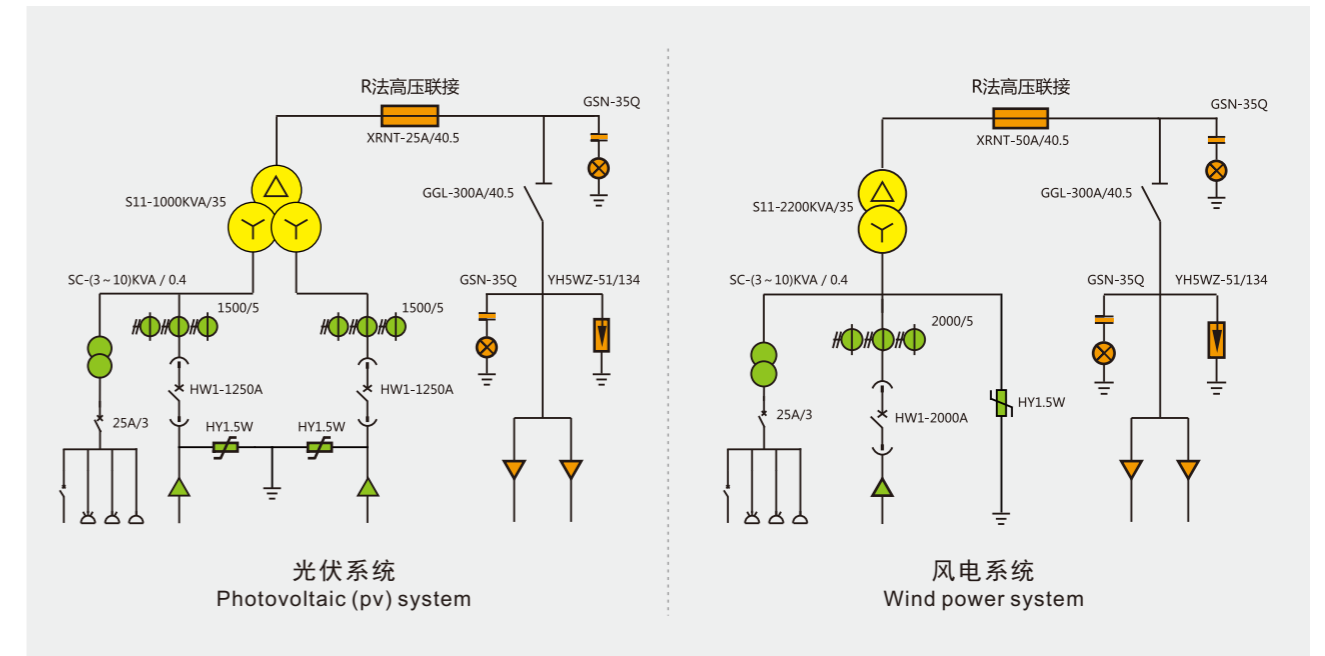
| 二次设备预制舱产品配置<br>Product configuration of prefabricated cabin of secondary equipment |                                                   |                             |                                                |
|------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------|------------------------------------------------|
| 线路保护测控柜<br>Line protection measurement and control cabinet                         | 电能质量检测柜<br>Power quality detection cabinet        | 光端机<br>Optical transceiver  | 智能照明控制<br>Intelligent lighting control         |
| 电能计量屏<br>Electric energy metering screen                                           | 电压无功控制装置<br>Voltage reactive power control device | 水浸传感器<br>Water sensor       | 综合配电柜<br>Integrated power distribution cabinet |
| 二次安防设备<br>Secondary security equipment                                             | 通信接口柜<br>Communication interface cabinet          | 火灾报警系统<br>Fire alarm system | ●●●                                            |

### 变电站二次设备预制舱产品特点 Product features

- 建筑面积与占地面积相对减少,省去了土建的诸多环节,节约建筑材料,减少环境污染;
  - 使用环保集成材料用于布置配电间隔,节省了光缆和电缆的长度,降低了造价成本;
  - 能够满足防火保温、密封防尘、通风防腐等技术规范要求;
  - 在工厂集成安装并完成接线,节约设备减少现场工作量,使设备集成度更高;
  - 二次设备预制舱舱体由高强度金属合金作为舱体设备外壳,具有较高的抗压能力以及结构强度。
- The building area and floor area are relatively reduced, saving building materials and reducing environmental pollution.
  - the use of environmental protection integrated materials for layout distribution interval, save the length of optical cables and cables, reduce the cost of the cost.
  - It can meet the requirements of fire insulation, sealing and dustproof, ventilation and anti-corrosion.
  - Integrate installation and complete wiring in the factory, save equipment, reduce on-site workload, and make equipment integration higher.
  - The cabin body is made of high-strength metal alloy as the shell of the cabin body equipment, which has high compressive capacity and structural strength.



### 光伏华式变电站电气系统 Photovoltaic Chinese type substation electrical system



### 光伏华式变电站 (可根据要求定制) Photovoltaic Chinese substation (Customized according to requirements)

光伏华式变电站即不同于美式箱变也不同于欧式箱变，扬其之长避其之短。独特的R法高压联结，业界首创，拥有中国自主知识产权，充分展示华式变电站的不用凡响：安全、可靠、方便、环保。目前已大量用于光伏、风电等35kV变配电领域。

华式变电站是一种高压开关设备、配电变压器和低压配电装置，按一定接线方案排成一体的工厂预制户内、户外紧凑型配电设备，即将、变压器、低压配电等功能有机地组合在一起，安装在一个防潮、防锈、防尘、防鼠、防火、防盗、隔热、全封闭、可移动的钢结构箱内。华式变电站特别适用于城网建设与改造，是继土建变电站之后崛起的一种崭新的变电站。

Photovoltaic Chinese substation is different from the American box transformer is different from the European box transformer, its long avoid its short. The unique R method high voltage connection is the first of its kind in the industry, and has China's independent intellectual property rights, which fully demonstrates the non-extraordinary characteristics of Chinese substation: safety, reliability, convenience and environmental protection. At present, it has been widely used in photovoltaic, wind power and other 35kV transformer and distribution fields.

China type transformer substation is a kind of high voltage switch equipment, distribution transformers and low voltage power distribution equipment, according to the wiring scheme must be arranged in one of the factory distribution equipment, indoor, outdoor compact type is, transformers, low voltage power distribution functions such as organically combined together, installed in a moisture, rust, dust, rat, fire prevention, guard against theft, heat insulation, fully enclosed, movable steel structure in the box. Chinese substation is especially suitable for urban network construction and transformation, which is a new kind of substation rising after civil construction substation.

### 技术参数 Technical parameters

| 产品型号<br>Product model                          | ECS-1000/35                                     | ECS-1500/35                    | ECS-2000/35                    |
|------------------------------------------------|-------------------------------------------------|--------------------------------|--------------------------------|
| 总功率 (KW)<br>Total power (KW)                   | 1000                                            | 1500                           | 2000                           |
| 交流输入 (AC)<br>Alternating Current Input (AC)    | (270V+270V) 光伏<br>(270V+270V) Photovoltaic (pv) | 690V (风电)<br>690V (wind power) | 690V (风电)<br>690V (wind power) |
| 交流升压 (AC)<br>Alternating current boost (AC)    | 35kV-38.5kV                                     | 35kV-38.5kV                    | 35kV-38.5kV                    |
| 高压开关柜<br>High voltage switchgear               | GGR-25A/40.5                                    | GGR-35A/40.5                   | GGR-50A/40.5                   |
| 节能变压器<br>Energy saving transformer             | S11-1000kVA/35                                  | S11-1600kVA/35                 | S11-2200kVA/35                 |
| 箱变测控<br>Change control box                     | RS485                                           | RS485                          | RS485                          |
| 外形尺寸 (长×宽×高)<br>Overall dimensions (L × W × H) | 3600×2430×2900                                  | 4300×3000×2900                 | 4300×3000×2900                 |
| 重量 (KG)<br>Weight (KG)                         | 6000                                            | 7000                           | 8000                           |

注：35kV光伏华式变电站技术参数

### 光伏华式变电站产品特点 Product features

- 不用放油加油 免除美变烦恼
- 系统无需停电 发电不受影响
- 变压器免爆喷 发电效率更高
- 油质不受污染 二十年有保障
- 运维方便安全 恶劣天气无妨
- 全面隔热防护 自然通风散热

- Do not put oil refueling to avoid the United States change trouble
- The system does not need to outage power generation is not affected
- The transformer is more efficient to achieve non-explosive power generation
- The quality of oil is not polluted for twenty years
- Operation and maintenance is convenient and safe. Bad weather is OK
- Comprehensive heat insulation protection natural ventilation heat dissipation



## 光伏并网配电柜 (可根据要求定制)

Photovoltaic grid-connected power distribution cabinet (can be customized according to requirements)

伊发光伏交流配电柜是承接集中式逆变器与升压变压器或交流汇流箱与升压变压器的重要组成部分,此光伏配电柜的进线采用断路器输入或直接输入,输出采用断路器或负荷隔离开关,母线采用电镀或纯化后的母线连接,并提供二级防雷保护,系统额定电压最高为AC690V,防护等级室内为IP40、室外为IP65;二次测量及控制的电缆,电流为大于2.5mm<sup>2</sup>的电缆,电压为大于1.5mm<sup>2</sup>的电缆,控制为大于1.0mm<sup>2</sup>的电缆,测量电流互感器为0.5级的电流互感器,计量互感器为0.2S级的电流互感器。还可根据客户要求增加相关的功能等。

此产品采用专业的电气设计、元件选型,使柜体内部结构安全、简洁、美观、方便现场接线及维护并保证设备长时间的稳定工作。

Photovoltaic ac distribution cabinets, hair is to undertake the centralized inverter communication with step-up transformer or junction box and an important component of the step-up transformer, the photovoltaic (pv) power distribution ark into line with the breaker input or direct input, output using open circuit or load isolation switch, bus using electroplating or purified busbar connection, and provides the second lightning protection, The maximum rated voltage of the system is AC690V. The protection level is IP40 indoors and IP65 outdoors. For the cables for secondary measurement and control, the current is greater than 2.5mm<sup>2</sup>, the voltage is greater than 1.5mm<sup>2</sup>, and the control is greater than 1.0mm<sup>2</sup>. The measuring current transformer is a 0.5 level current transformer, and the measuring current transformer is a 0.2s level current transformer. We can also add relevant functions according to customer requirements.

This product adopts professional electrical design and component selection, so that the internal structure of the cabinet is safe, simple, beautiful, convenient for on-site wiring and maintenance and to ensure the long-term stable work of the equipment.

## 技术参数 Technical parameters

| 产品型号/Product model                       | GGD                                                                                                                                            |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 最高输入电压/Maximum input voltage             | 690V AC                                                                                                                                        |
| 额定频率/Rated frequency                     | 50Hz                                                                                                                                           |
| 最大额定电流/Maximum rated current             | 3150A                                                                                                                                          |
| 测量数据/metrical data                       | 三相电流、三相电压、有功功率、视在功率、功率因数、频率、电度<br>Three phase current, three phase voltage, active power, apparent power, power factor, frequency, electricity |
| 通信方式/协议<br>Communication method/protocol | RS485总线/标准的MODBUS-RTU协议<br>RS485 bus/standard ModBUS-RTU protocol                                                                              |
| 温湿度/Temperature and humidity             | 工作温度:-40~+85℃,湿度95%,无凝露、无腐蚀性气体场所<br>Working temperature: -40~+85℃, humidity 95%, no condensation, no corrosive gas place                       |
| 海拔/Elevation                             | ≤4000m                                                                                                                                         |
| 柜体材质/Cabinet material                    | 热镀锌钢板/不锈钢/冷轧钢板<br>Hot dip galvanized steel/stainless steel/cold rolled steel                                                                   |
| 防护等级/Protection grade                    | IP40                                                                                                                                           |
| 体积(宽×高×深)/Volume (W×H×D)                 | 2260mm×800mm×600mm                                                                                                                             |
| 安装方式/Installation                        | 落地式/floor                                                                                                                                      |

## 功能特点 Functional features

- 既可采用固定安装式设计、也可采用插入式设计。
- 采用本公司或国内外知名品牌断路器和元件组合成功能单元,具有优良的技术性能,安全可靠。
- 可分别组成各种标准单元模块,供客户任意选用组装。
- 采用区域之间的隔离以及功能单元进线和出线之间的相互隔离,有效的加强安全防护性能。
- 组合装配式结构,框架的全部结构件均用螺丝固定连接,框架及门、面板均经磷化处理静电喷塑处理,不喷塑部件全部镀锌并经钝化处理。能满足各种元件的要求并能符合不同工作环境,达到相应的防护等级。骨架采用优质钢板,骨架上可带有模数为25mm的孔,可供各种用途扩展,进线方式有上、下侧进线两种方式。
- 分断能力高、动热稳定性好,电气方案组合灵活方便、实用性强,主要参数达到国际先进水平。
- 重量轻,机械强度和装配精度高,外形美观。

- It can be fixed mounting design, also can be inserted design.
- Adopt our company or domestic and foreign famous brand circuit breaker and component combination successful energy unit, with excellent technical performance, safe and reliable.
- Can be composed of various standard unit modules, for customers to choose any assembly.
- The isolation between areas and the isolation between the incoming and outgoing lines of functional units can effectively strengthen the safety protection performance.
- Combined assembly structure, all structural parts of the frame are firmly connected with screws, the frame, door and panel are treated by phosphating electrostatic spray treatment, non-spray parts are galvanized and passivated treatment. Can meet the requirements of various components and can meet different working environments, to achieve the corresponding protection level. The frame is made of high quality steel plate. The frame can be equipped with holes with a modulus of 25mm, which can be extended for various purposes. There are two ways of entering the wire: upper and lower side.
- High breaking capacity, good dynamic and thermal stability, flexible and convenient electrical scheme combination, strong practicability, the main parameters reach the international advanced level.
- Light weight, high mechanical strength and assembly precision, beautiful appearance.



## 光伏专用并网配电箱 (可根据要求定制)

Special grid-connected distribution box for photovoltaic (can be customized according to requirements)

光伏并网配电箱适用于小型太阳能光伏并网发电系统，主要解决分布式屋顶光伏电站接入配电网，作为光伏逆变器与电网之间的电能转换、分配、控制与保护平台，保证系统的安全稳定工作，同时具有自动过欠压防护、防雷、防水、防尘、防腐等功能，刀闸与空开双重防护，确保操作安全。

双开门系列并网箱提供智能电表接线，单相、三相等参数可由客户需求选择。

Photovoltaic (pv) grid distribution box is suitable for small solar photovoltaic (pv) grid power generation system, mainly to solve distributed rooftop photovoltaic power station connected to the power distribution network, as between grid and pv inverter power transformation and distribution, control and protection platform, ensure the system security and stability work, at the same time with automatic under-voltage protection, lightning protection, waterproof, dustproof and anti-corrosion, and other functions, Double protection of knife brake and air opening ensures safe operation.

Double door series mesh cage provides intelligent meter wiring, single phase, three equal parameters can be selected by customer requirements.

## 技术参数 Technical parameters

| 产品型号/Product model                                                                    | YF-B40B4-63A                                                                         |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 标称工作电压Un<br>Nominal operating voltage Un                                              | 380V AC                                                                              |
| 最大持续工作电压Uc<br>Maximum continuous operating voltage Uc                                 | 385V AC                                                                              |
| 标称放电电流 (8/20μs) In<br>Nominal discharge current (8/20μs) In                           | 20kA                                                                                 |
| 最大通流容量 (8/20μs) I <sub>max</sub><br>Maximum stream capacity (8/20μs) I <sub>max</sub> | 40kA                                                                                 |
| 保护水平 (8/20 μ s) U <sub>p</sub><br>Protection level (8/20μs) U <sub>p</sub>            | 1.5kV                                                                                |
| 推荐安装导线截面积<br>Cross-sectional area of the cable is recommended                         | L、N线 ≥6mm <sup>2</sup> , PE线 ≥10mm <sup>2</sup>                                      |
| 外形尺寸/Overall dimensions                                                               | 双开门(Double door)560 × 800 × 200mm<br>单开门(Single door)500 × 350 × 170mm               |
| 工作环境/The work environment                                                             | 温度-40~+85℃, 相对湿度 ≤95% (25℃)<br>Temperature -40 ~ +85℃, relative humidity ≤ 95% (25℃) |

## 功能特点 Functional features

- 配有大通流防雷器，防护能力极佳，并有窗口劣化指示及自动脱扣功能；
- 配有自复式过欠压保护器，具有自动过、欠压保护及常压自动合闸功能；
- 核心元器件全部采用国际知名品牌，性能稳定，安全可靠；
- 布线合理，美观大方、操作简单、维护方便；
- 外形尺寸、箱体材料、接入电流、核心器件等均可按客户要求定制。

- Equipped with chase flow lightning arrester, excellent protection ability, and has window deterioration indication and automatic tripping function;
- Equipped with self-compound over and under voltage protector, with automatic over and under voltage protection and atmospheric pressure automatic closing function;
- The core components are all international famous brands, stable performance, safe and reliable;
- Wiring is reasonable, beautiful and generous, simple operation, easy maintenance;
- Dimensions, box material, access current, core components can be customized according to customer requirements.

## 应用场景 Application scenarios

- 配适用于小型光伏并网发电系统；
- 逆变器与市电网之间的连接；
- 壁挂式安装，防水、防尘、防腐等级高，室内户外均可应用。
- Suitable for small photovoltaic grid-connected power generation system;
- The connection between the inverter and the municipal power grid;
- Wall-mounted, waterproof, dustproof, anticorrosion grade is high, indoor and outdoor can be used.



## 光伏逆变器集装箱 (可根据要求定制)

Container for photovoltaic inverter (Customized according to requirements)

光伏逆变器集装箱内主要配备逆变器, 可根据用户需求在内部集成直流配电柜等其他设备, 通过这些设备, 能够组成一个独立的光伏并网发电单元。这种光伏逆变器集装箱的制作和安装较为简单, 很好的满足了用户对于项目的施工周期和工程成本的要求, 并且能够有效的降低施工难度和现场风险, 被人们越来越多的应用。

光伏逆变器集装箱的产生对于各种室内外通讯设备、基站及其他配套设施防护、安置、运输包装起着十分重要的作用, 在沙漠、沿海地区等水泥房不易建设的地区更是广泛应用, 解决了光伏产品放置及保护问题。

The container is mainly equipped with inverters, which can integrate other devices such as DC power distribution cabinets according to user requirements. Through these devices, an independent grid-connected photovoltaic power generation unit can be formed. The production and installation of this kind of photovoltaic inverter container is relatively simple, which well meets the requirements of users for the construction cycle and engineering cost of the project, and can effectively reduce the difficulty of construction and site risk, which is more and more used by people.

The generation of photovoltaic inverter container plays a very important role in the protection, placement, transportation and packaging of various indoor and outdoor communication equipment, base station and other supporting facilities. It is widely used in the desert, coastal areas and other areas where cement houses are not easy to build, and solves the problem of photovoltaic product placement and protection.

## 光伏逆变器集装箱产品配置 Product configuration

| 光伏逆变器集装箱产品配置<br>PV Inverter Container Product Configuration |                                        |                                     |                            |
|-------------------------------------------------------------|----------------------------------------|-------------------------------------|----------------------------|
| 逆变器<br>Inverter                                             | 直流断路器<br>DC circuit breaker            | 配电箱<br>Distribution box             | 变压器<br>Transformer         |
| 监控设备<br>Monitoring equipment                                | 送排风系统<br>Air supply and exhaust system | 防静电地胶<br>Anti-static ground glue    | 应急照明<br>Emergency lighting |
| 火灾报警系统<br>Fire alarm system                                 | 灭火器<br>Fire extinguisher               | 工业空调<br>Industrial air conditioning | ●●●                        |

## 光伏逆变器集装箱产品特点 Product features

- 制作及安装方便, 可移动, 不需要地基, 施工工期短, 成本低。
  - 整体采用钢结构, 具有防风、防震的效果, 整体抗压、抗震能力强。
  - 可根据用户需求选择样式及颜色, 外形美观大方, 能够有效融入周围环境。
  - 具有耐腐蚀、耐酸碱性的特点, 箱体使用年限能够达到20年以上。
  - 底部采用防静电地胶, 保障内部通讯设备的正常运行。
  - 整体强度高, 采用钢板外壁, 整体防护等级可达IP54。
- Easy to make and install, mobile, no need for foundation, short construction period, low cost.
  - The overall use of steel structure, with windproof, shockproof effect, the overall pressure resistance, seismic ability is strong.
  - Can choose style and color according to user needs, beautiful appearance and generous, can effectively blend into the surrounding environment.
  - With the characteristics of corrosion resistance, acid and alkaline resistance, the service life of the box can reach more than 20 years.
  - The bottom adopts anti-static glue to ensure the normal operation of internal communication equipment.
  - High overall strength, using steel plate outer wall, the overall protection level can reach Ip54.

## 常用集装箱参数表 Table of common container parameters

符合现行国际标准的集装箱有很多种, 但宽度均为 (2438mm)、常用集装箱为:  
There are many kinds of containers in line with the current international standards, but the width is (2438mm), commonly used containers are:

| 箱型<br>Type of box         | 外部长度<br>The external length | 外部宽度<br>External width | 外部高度<br>External height | 面积<br>Area        |
|---------------------------|-----------------------------|------------------------|-------------------------|-------------------|
| 20尺标箱<br>Standard 20 foot | 6m                          | 2.4m                   | 2.6m                    | ≈14m <sup>2</sup> |
| 40尺标箱<br>Standard 40 foot | 12m                         | 2.4m                   | 2.6m                    | ≈28m <sup>2</sup> |
| 40尺高箱<br>40 feet high box | 12m                         | 2.4m                   | 2.9m                    | ≈28m <sup>2</sup> |



## 产品配置 PRODUCT CONFIGURATION

### 精湛设计 尖端集成 破解储能“不可能三角”

Exquisite design, cutting-edge integration, crack the "impossible triangle" of energy storage

#### 高稳定PCS Highly stable PCS

支持100%不平衡负载，复杂工况下稳定性更高  
Support 100% unbalanced load, higher stability under complex conditions

#### 安全性更强 Stronger security

无并联容量损失，实际可用容量提升5%，  
规避簇间环流与直流拉弧，安全性强  
There is no parallel capacity loss, the actual available capacity is increased by 5%, avoiding the intercluster circulation and DC arc, and the safety is strong

#### 双冗余设计 Dual redundancy design

IO关联硬件脱扣保护与软硬件双重保险策略  
保护装置100%快速反应，无误触、无不触  
IO associated hardware trip protection and dual hardware and software insurance policy protection device 100% fast response, error-free contact

#### 优质电芯 High quality cell

精选优质电芯，有效延缓系统衰减  
Select high-quality batteries, effectively delay system attenuation

#### 总断路器控制 Total break switch control

动力与控制回路同事断开，实现电气完全隔离  
The power is disconnected from the control loop colleagues to achieve complete electrical isolation

系统最高效率 > 91%  
Maximum system efficiency > 91%

## 光伏储能柜 (可根据要求定制)

PV Energy Storage Cabinet (Customized according to requirements)

伊发智慧系列新能源储能产品，是全球首款搭载PSS系统的储能产品，支持工业园区、商业建筑、城市综合体等多场景应用，为用户储存、输出优质电能，创造多种绿色能源收益，软硬结合、云边一体，打造安全可靠、智能美观的零碳城市风景线。

YIFA smart series of new energy storage products, is the world's first energy storage products equipped with PSS system, support industrial parks, commercial buildings, urban complexes and other multi-scene applications, for users to store and output high-quality electric energy, create a variety of green energy benefits, soft and hard combination, cloud edge one, to create a safe, reliable, intelligent and beautiful zero-carbon urban landscape.

## 智能高效 建立坚固防线 守卫用户安全

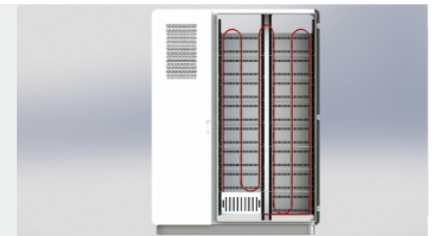
Intelligent and efficient to establish a solid defense line to guard user safety

### 智能预消防系统

Intelligent pre-fire system

降温更快，应急状态下更可靠，无源式全氟己氟、柜体填充与线缆全阻燃选型

Faster cooling, more reliable under emergency conditions, passive perchlorinated hexyl fluoride, cabinet filling and cable flame retardant selection

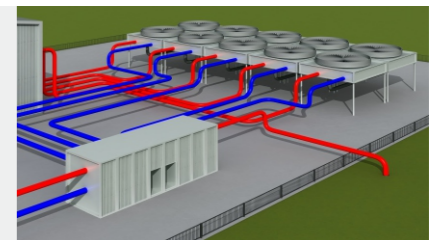


### 高效热管理系统

Efficient thermal management system

冷热分区，低能耗，智能恒温隔离风道、空调策略，PACK级温控

Hot and cold partition, low energy consumption, intelligent constant temperature isolation duct, air conditioning strategy, pack-level temperature control



## 产品功能 PRODUCT FUNCTION

### 削峰填谷 Cut peaks and fill valleys

- 峰谷套利，绿能创收  
Peak valley arbitrage, green can make money

### 需求侧响应 Demand side response

- 智能响应，平衡供需  
Intelligent response to balance supply and demand

### 需量管理 Demand management

- 降低电费，节省成本  
Lower electricity bills and save costs

### 电能治理 Electric energy management

- 调峰调频，优质供电  
Peak modulation, high quality power supply

### 提升消纳 Increase consumption

- 光伏配储，提质增效  
PV storage, improve quality and efficiency

### 备用电源 Standby power supply

- 应急备电，保障安全  
Emergency power supply to ensure safety

### 动态扩容 Dynamic capacity increase

- 峰谷套利，绿能创收  
Convenient expansion, cost reduction and efficiency

### 电力辅助 Electric assist

- 新兴市场，开源增收  
Emerging markets, open source to increase revenue

## PSS电池预诊断系统 PSS BATTERY PRE-DIAGNOSIS SYSTEM

PSS作为电池安全领域的标杆系统，为每节电池提供全生命周期服务、“血液级”检测与电站-电芯多层精准运维，提前15天预警潜在风险，将预防做到消防前，抵达储能安全的“绝对领域”。

As a benchmark system in the field of battery safety, PSS provides full life cycle services for each battery, "blood level" detection and multi-layer accurate operation and maintenance of power station and battery cell, warning potential risks 15 days in advance, and reaching the "absolute field" of energy storage safety before fire prevention.



### 电芯检测-更安全 Battery detection - Safer

全年云端在线，电化学算法精确监测电站-电芯多层级状态，提前15天预警潜在风险，15s内定位故障电芯

Throughout the year, the cloud is online, and the electrochemical algorithm accurately monitors the multi-level status of the power-cell, warns potential risks 15 days in advance, and locate the faulty cell within 15s

### 站点运维-更可靠 Site operation - More reliable

自动生成诊断报告，支持主动运维，减少30%故障频次，提供运维策略，高效运维减少故障影响时长

Automatically generates diagnostic reports, supports active operation and maintenance, reduces fault frequency by 30%, provides operation and maintenance policies, and reduces the impact time of faults

### 绿能运营-更经济 Green operation - More economical

主动/被动均衡策略，减弱木桶效应，保持电池系统高一致性，充放电深度提升3%

The active/passive balancing strategy weakens the wooden barrel effect, maintains high consistency of the battery system, and increases the charge and discharge depth by 3%

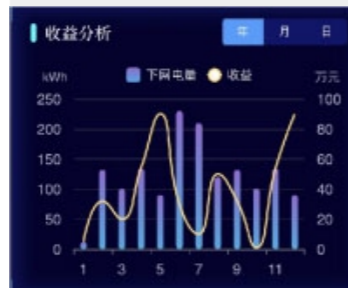
3大  
核心价值

3 CORE VALUES

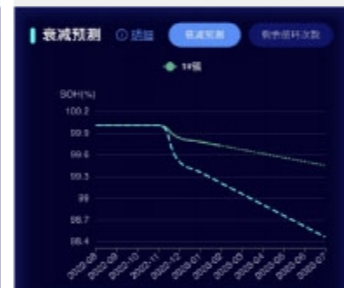
SOC误差 < 5%



站点营收 +20%



电池寿命 +20%



Safety first, service oriented  
安全为先·服务为本

## 性能参数 PERFORMANCE PARAMETER

| 型号 Model number                           | YFGES-100/215-400-A1               |
|-------------------------------------------|------------------------------------|
| 直流侧参数 DC side parameter                   |                                    |
| 电芯规格 Cell specification                   | LFP 3.2V/280Ah                     |
| 电池PACK配置 Battery PACK configuration       | 1P16S                              |
| 电池系统配置 Battery system configuration       | 10P240S                            |
| 电池系统工作电压 Battery system operating voltage | 600~876V                           |
| 标称容量 Nominal capacity                     | 215kWh                             |
| 交流侧参数 AC side parameter                   |                                    |
| 额定功率 Rated power                          | 100kW                              |
| 最大功率 Maximum power                        | 110kW                              |
| 额定电压 Rated voltage                        | 400VAC                             |
| 额定频率 Rated frequency                      | 50/60Hz                            |
| 功率因数 Power factor                         | -1.0~+1.0                          |
| 电压谐波 Voltage harmonics                    | <3% (额定功率)                         |
| 直流分量 DC component                         | <0.5%I <sub>pn</sub>               |
| 输出方式 Output mode                          | 3P3W                               |
| 系统参数 System parameter                     |                                    |
| 额定充放电倍率 Rated charge and discharge rate   | 0.5C                               |
| 充放电深度 Depth of charge and discharge       | 90%DOD                             |
| 最大系统效率 Maximum system efficiency          | >91%                               |
| 循环次数 Cycle number                         | >8000                              |
| 充放电切换时间 Charge and discharge switch time  | <100ms                             |
| 工作温度 Operating temperature                | -25~55°C                           |
| 工作湿度 Working humidity                     | 5~95%RH,无凝露                        |
| 防护等级 Class of protection                  | IP55                               |
| 冷却方式 Cooling mode                         | 空调风冷 Air cooling                   |
| 通讯方式 Communication mode                   | LAN,4G,RS485                       |
| 消防方式 Fire fighting mode                   | 全氟已酮 Perfluorinated already ketone |
| 外形尺寸 Overall dimension                    | 1754(L)*1100(W)*2338(H)mm          |
| 重量 weight                                 | 2300kg                             |



## WELCOME TO JOIN US 诚邀加盟

### 加盟条件：

- 具备一定经济实力的企业法人或自然人，具备独立承担民事责任的能力，依法注册具有合法的经营资格。
- 加盟商自觉维护“伊发”的品牌形象、价格体系、市场体系，不做有损伊发集团利益的事情。
- 加盟商的一切相关自有和租赁手续证件齐全、完备、合法、符合经营有关要求条件。
- 认同“伊发”特许经营体系的营销理念，有培育市场和开拓市场的经营意识，遵循其市场规划布局及终端建设要求。
- 事业心强、市场洞察力敏锐、视投资为长期发展的事业。重合同、守信誉，积极维护公司品牌、商标、专利等无形资产。
- 愿意接受公司的监督和管理，并保证产品的质量、服务符合“伊发”的标准和规范。

### 加盟程序：

- 与公司加盟咨询处洽谈意向；
- 公司向申请人传真或邮寄《伊发集团招商》、《加盟意向表格》等资料；
- 申请人将填妥的《加盟意向表格》传真邮寄或通过公司网站发至公司总部；
- 公司指导加盟准备工作；
- 公司进行回明资格综合评估；
- 签署加盟协议；
- 持续的支持与督导。

✔ 品牌支持    ✔ 技术支持    ✔ 质量支持    ✔ 价格支持

## 质量保证及服务承诺

COMMITMENT TO QUALITY AND SERVICE

“以客为尊，快速反应”是伊发人的服务宗旨。集团本着对用户高度的责任感，为用户所想，为用户所急，质量第一，服务第一，切切实实做好服务工作。我集团所有产品全部通过CCC国家强制性产品认证，12KV、35KV箱式变电站及高压柜、环网柜均顺利取得国家高压检测中心型式试验报告。而且我集团在确保产品质量方面有着一套完整的质量保证体系，其中包括对产品售前、售中、售后服务和对客户的技术咨询及技术培训，我们完全同意和满足贵方设备招标的服务要求，为此本集团向顾客做出如下承诺：

### 售前服务承诺

为了让贵方进一步了解我集团产品性能，我们愿意向贵方义务提供产品性能及使用知识介绍，解答贵方对产品疑问等售前服务工作。

### 售中服务承诺

在合同签订以后，我们有义务免费向贵方提供一套系统的设计方案或配合贵方共同设计。在生产过程中我们积极配合贵方对设备监造工作。

### 售后服务承诺

设备运达交货地点后，我集团将按时派员到现场，与贵方共同进行验收接货工作，对设备的数量、规格型号和外观质量进行验收。验收标准为有关国家、部颁标准及双方签署的《技术协议书》。验收完毕后双方共同签署开箱记录。我集团对出厂的产品，定期进行质量跟踪服务，随时了解设备的运行情况，随时提供设备所需的备品、备件。根据需要派员跟进和技术支持。如贵方对我集团提供的产品因质量问题提出疑问，在接到贵方的通知后，我集团将在24小时内派技术人员到达设备使用现场进行处理。我集团产品质保期为12个月，在质保期内，保证兑现“三包”（包退、包换、包修理）。

若因设备缺陷达不到《技术协议书》所要求的条件，我方免费为贵方提供所需更换的部件和采取必要的改进措施，直至达到技术协议书所要求的条件。

伊发控股集团有限公司  
YIFA HOLDING GROUP CO.,LTD.