

華城電機

Since 1969

觀音三廠

Switchgear Division



華城電機股份有限公司
FORTUNE ELECTRIC CO., LTD.



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使命與企業核心價值

Mission and Corporate Core Values

華城電機股份有限公司，自 1969 年成立以來，秉持「品質、參與、福祉、永續」的一貫經營理念。目前有台北、桃園、台中、高雄及北美、加州的營業據點及中壢一廠、觀音二廠、觀音三廠、台中廠及大陸武漢廠生產製造配電及電力變壓器、開關設備、配電盤與相關配電器材，產品之品質及服務深獲國內外客戶的一致肯定。

Fortune Electric Co., Ltd., since its establishment in 1969, has consistently adhered to the philosophy of "quality, participation, welfare, and sustainability". Now, FE have business offices in Taipei, Taoyuan, Taichung, Kaohsiung, North America and California (USA), and factories in Taoyuan, Taichung and Wuhan (China) manufacture distribution and power transformers, switchgear, switchboards and related power distribution equipment. The quality and service of the products have got recognition from customers.



創辦人許憲樑先生 Founder

- ▶ **華城使命** 安員工 | 安顧客 | 安股東 | 安社會
Mission Comforting Employee, Customer, Shareholder, Society
- ▶ **核心價值** 創新 | 研發 | 品質 | 參與 | 福祉 | 永續
Core Value Innovation, R&D, Quality, Participation, Welfare, Sustainability

- ▶ **四大考驗** 我們所想、所說、所做的事應事先捫心自問：
1. 是否一切屬於真實 2. 是否各方得到公平
3. 能否促進信譽友誼 4. 能否兼顧彼此利益

- The 4-Way Test** Of the things we think, say or do:
1. Is it the TRUTH?
2. Is it FAIR to all concerned?
3. Will it build GOODWILL and BETTER FRIENDSHIPS?
4. Will it be BENEFICIAL to all concerned?

Speedy



本公司積極從事管理體制的改善，落實 ISO9001、ISO14001、ISO45001、ISO50001 等系統，推動在產品品質、環境保護、職安衛及能源管理等各方面的最佳管理，公司重視員工福利，強調與供應商共同成長、成立志工委員會參與社會公益活動，善盡企業責任。
在經營成果上，將內需產業帶往國際市場，成功將大型重電產品外銷國外，是國內外知名重電機領導廠商。



We work for the management system, conducting ISO9001, ISO14001, ISO45001, ISO50001 to promote the best management in product quality, environmental protection, occupational safety and health and energy management, etc. We regard employee welfare and growing with our suppliers, set up volunteer committee to participate in charitable activities and fulfill social responsibilities.
In business, FE successfully exports its products to the international market. Become a well-known electrical equipment manufacturer in the world.



華城電機的願景 FE's Vision

華城電機自創立以來以「勤奮、誠懇、務實、追求卓越」的華城精神，正派經營，上下一心，兢兢業業，在重電機事業上，戮力以赴，以博得顧客的信賴與肯定，業績逐年穩定成長。
今後我們將以「設備製造、系統工程、服務事業」三項支柱為主要服務特色。持續開發、創新新產品及技術，從傳統重電業提昇為高科技傳統製造服務業，與時俱進，佈局綠能及智能電網領域，朝系統服務方向發展，達成國內第一大重電廠、國際知名重電機大廠之願景。

Fortune electric has been operating with the spirit of "hardworking, sincere, pragmatic, and pursuing excellence", and has been operating with integrity, dedication in the heavy electricity industry to get the trust of customers and making business growing.
In the future, we will focus on the three pillars of "equipment manufacturing, systems engineering, and service business". Continuously develop and innovate new products and technologies, from traditional heavy electricity industry upgrade to high-tech traditional manufacturing service industry, keep pace with the times, lay out green energy and smart grid fields, develop towards system services, to become a biggest manufacturer of heavy electricity and reach the vision of an internationally renowned heavy electricity manufacturer.

大事紀要 – 開關事業處

Milestones – Switchgear Division

自 1980 年成立配電盤部門以來，我們不斷追求電力專業的成長，生產最佳的電力設備，也承攬電力設備安裝工程，提供顧客完整的服務。

Since switchgear department established in 1980, we continue to improve our profession, produce best equipments and undertake the civil work of installation to provide customers with complete solution.

- 1980 華城電機成立配電盤部門
- 1992 與美國 G&W 公司技術合作，產製 SF6 絕緣亭置式開關。
- 1998 與德國 ABB 公司技術合作，產製 23kV GIS。
- 1999 新建觀音三廠，成立開關事業處。
- 2009 執行金門鵝山變電站新建工程。
自行研發地下四路自動線路開關，通過型式試驗。
- 2010 外銷澳洲礦場用箱櫃式變電站。
- 2013 外銷日本太陽能電廠用 PV BOX。
- 2015 執行海洋風力發電公司離岸風電示範機陸域工程。
- 2016 執行東引發電廠新增 #6 防音貨櫃型柴油緊供發電機組工程。
通過 CNS15156-200 & IEC62271-200 MV 配電盤型式試驗。
- 2017 亭置式四路開關 +ES，通過台電評鑑。
太陽能電廠用 PV BOX 首次內銷國內案場。（水面型、大型地面型）
- 2018 執行協和發電廠馬祖珠山分廠 980kL 油槽及附屬設備新建工程。



- 1980 Fortune Electric established the switchgear department.
- 1992 Technical cooperation with G&W of the United States to produce SF6 insulated switches.
- 1998 Technical cooperation with ABB Germany to produce 23kV GIS.
- 1999 The Guanyin third factory and the switchgear division established.
- 2009 The construction of Kinmen Queshan Substation.
Self-developed pad-mounted four-way automatic line switch, type tested.
- 2010 Export of kiosk substations for Australian mines.
- 2013 Export PV BOX to Japan for solar power plants.
- 2015 Implement the offshore wind power demonstration field, the in-land engineering.
- 2016 Implement the #6 soundproof containerized diesel generator set project in Dong-Yin Power Plant.
Passed the CNS15156-200 & IEC62271-200 MV switchgear type test.
- 2017 Pad-mounted four-way switch + ES, passed the Taipower evaluation.
PV BOX for solar power plants was sold in domestic projects for the first time.
- 2018 Implement the construction of the 980kL oil tank and ancillary equipment of the Mazu Zhushan power plant.

綠能工程 - 彰光 100MWp 太陽能發電 Changguang 100MWp Solar Power Plant

2018 年國內首件發電量達到 100MWp 級的太陽能發電廠，華城電機所提供的 PV BOX 在廠內生產後準時交到工地，與工地工程同步進行，大幅縮短整個建置時程。

In 2018, the first 100MWp solar power plant in Taiwan, the PV BOX provided by Fortune Electric was delivered to the site on time. PV BOX being produced in factory and synchronized with the site work, greatly shortening the entire construction time.



華城 50 週年設計理念 Fortune 50 Years Logo

2019 年華城電機成立 50 週年，是全國第一家綜合性重電機廠，華城電機專注本業，不斷在重電設備創新、研發及服務。

2019 年開關事業處成立 20 週年，依循公司政策，不斷在配電盤及開關產品精益求精，近年更積極參與綠能發電工程，在綠能產業佔有一席之地，為追求潔淨能源做出貢獻。

2019 is the year Fortune Electric found 50 years. FE is the first comprehensive heavy electrical factory in Taiwan. Fortune Electric focuses on its profession and continues to innovate, research, develop and service.

2019 is the year Switchgear division established 20 years. Following the company policy, we continue to excel in the switchgear and switch products.

In recent years, we more actively involved in the green energy power project and hope to have good performance.



FORTUNE ELECTRIC



外部驗證

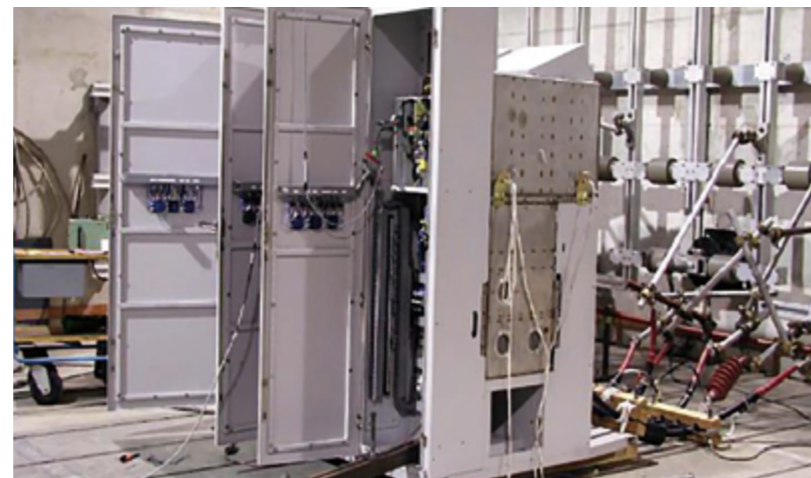
Third Party Verification

國際級試驗室的測試驗證了我們產品的品質。

International laboratory tests prove our products quality.



KEMA CESI
KERI TERTEC
CERTIFIED



品質保證

Certified Quality

台灣大電力研究試驗中心
Taiwan Electric Research & Testing Center

金屬閉鎖型配電箱及控制箱型式試驗

申請單位：華城電機股份有限公司
地址：桃園市中壢區青林路 10 號
製造單位：華城電機股份有限公司第三廠
地址：桃園中壢區中正路 55 號
試驗名稱：金屬閉鎖型配電箱及控制箱型式試驗
試驗型號：FEA3
試驗規格：3Φ、50 Hz、24 kV、1250 A(Main 部)、630 A(Feeder 1 部)、25 kA*3 s、IP4X(箱門前部)/IP2X(箱門內部)、LSC2B PM 系列型、IAC：AFRLR 試驗室：25 kA*0.5 s；斷路器室：25 kA*0.5 s；電機室：25 kA*0.5 s
製造號碼：Main - Feeder 1 - Feeder 2
試驗標準：型式試驗
試驗標準：CNS 15196-200 (100 年)
試驗項目：型式試驗
申請日期：105 年 07 月 22 日
收件日期：105 年 08 月 18 日
收展日期：105 年 09 月 23 日
取樣方式：由申請單位自行送樣
試驗日期：105 年 09 月 28 日~105 年 11 月 18 日
試驗地點：1. 台灣大電力研究試驗中心_高電力實驗室
2. 2XHARI
試驗人員：1. 台灣大電力研究試驗中心_徐志輝、林福安、林福安、周神韻、陳唯豪、洪瑞鈞、羅振聲、潘德華
2. 2XHARI_林福安
試驗結果：型式試驗項目皆合格
附註：1. 本報告共 150 頁。

台灣大電力研究試驗中心
Taiwan Electric Research & Testing Center

高壓金屬閉鎖型配電整特性試驗

申請單位：華城電機股份有限公司
地址：桃園市中壢區青林路 10 號
製造單位：華城電機股份有限公司
地址：桃園中壢區中正路 55 號
試驗名稱：高壓金屬閉鎖型配電整特性試驗
試驗型號：FEA2-LK-15
試驗規格：3Φ、60 Hz、15 kV、3000/1200A、50 kA/2sec、E 系列型、C-Type
製造號碼：13898-2、13898-3
試驗數量：兩組
試驗標準：IEEE Std C37.20.2-1999
試驗項目：1. 滅弧特性
2. 高壓耐電壓試驗
3. 高壓耐電流試驗
4. 操作試驗
5. 斷路器時時電流試驗及穩定電流試驗
申請日期：102 年 04 月 22 日
收件日期：102 年 04 月 25 日
收展日期：102 年 06 月 04 日
取樣方式：由申請單位自行送樣
試驗日期：102 年 06 月 04 日~102 年 09 月 10 日
試驗地點：台灣大電力研究試驗中心_高電力實驗室
試驗人員：台灣大電力研究試驗中心_高電力實驗室 張嘉偉、林福安、羅振聲、潘德華
會試人員：華城電機股份有限公司_高電力實驗室 謝志輝、林福安、羅振聲、潘德華
試驗結果：全試驗項目皆合格，發給合格證書
附註：本報告共 80 頁。

TEST REPORT 2009TC0008 1/29

CLASSIFICATION Performance Test(I)
APPARATUS 24 kV SF6 Gas Insulated Ring Main Unit
DESIGNATION FR3-40
RATINGS 3P 24 kV 630 A 12.5 kA 60 Hz
APPLIED STANDARD IEC 62271-200(2003)
RECEIPT No. TR09C00028 (April 20, 2009)
APPLICANT Fortune Electric Co., Ltd.
No. 55, Zhongsheng Rd., Guanyin Township, Taoyuan County 32843, Taiwan, R.O.C.
Fortune Electric Co., Ltd.
MANUFACTURER Fortune Electric Co., Ltd.
No. 55, Zhongsheng Rd., Guanyin Township, Taoyuan County 32843, Taiwan, R.O.C.
DATE OF TESTS April 22, 2009 - April 27, 2009
DATE OF ISSUE May 29, 2009
The tests have been carried out in accordance with 6.8 of IEC 62271-200(2003), 6.104, 6.106, 6.108 of IEC 62271-100(2008), 6.101.8.1, 6.101.10 of IEC 62269-1(1996), 6.101 of IEC 62271-182(2001), 5.2.2, 5.2.3 of ANSI C37.72(1947).
The test results are presented in the records of tests with the performance of the tested apparatus and the observations made during the tests. The oscillograms are attached hereto.
The obtained values and the general performances are considered to comply with the requirements of the above standard for the performed tests.
The test results apply only to the tested specific samples.
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No. OF PAGES records (29), photographs (2), circuit diagrams (5), oscillograms (224), INCORPORATED drawings & descriptions (2), attachments (0)

TEST REPORT 2009TC00374 1/10

CLASSIFICATION Performance Test(I)
APPARATUS 25.8 kV SF6 Gas Insulated Ring Main Unit
DESIGNATION FR3-40
RATINGS 3P 25.8kV 630 A 12.5 kA 60 Hz
APPLIED STANDARD IEC 62271-200(2003) and Manufacturer's specification
RECEIPT No. TR09C00054 (March 15, 2009)
APPLICANT Fortune Electric Co., Ltd.
No. 55, Zhongsheng Rd., Guanyin Township, Taoyuan County 32843, Taiwan, R.O.C.
Fortune Electric Co., Ltd.
MANUFACTURER Fortune Electric Co., Ltd.
No. 55, Zhongsheng Rd., Guanyin Township, Taoyuan County 32843, Taiwan, R.O.C.
DATE OF TESTS March 03, 2009 - March 06, 2009
DATE OF ISSUE June 15, 2009
The tests have been carried out in accordance with the instructions of the client, based on IEC 62271-200(2003) and Manufacturer's specification.
The test results are presented in the records of tests with the performance of the tested apparatus and the observations made during the tests. The oscillograms are attached hereto.
The test results apply only to the tested specific samples.
This document shall not be reproduced except in full, without a written approval of KERI.

No. OF PAGES records (10), photographs (1), circuit diagrams (2), oscillograms (4), INCORPORATED drawings & descriptions (4), attachments (3)
Test results in this report are within the scopes accredited by Korea Laboratory Accreditation Scheme, which is signed the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement.

產品介紹

Product

華城電機生產各式配電盤已有數十年的經驗，產品通過 IEC、IEEE、CNS 等標準的型式試驗，廣泛使用在全國各工廠、商業大樓、變電所及發電廠。

Fortune Electric has been producing various types of switchgears for decades. The products have been tested by IEC, IEEE and CNS standards. They are widely used in factories, commercial buildings, substations and power plants all over the country.

金屬閉鎖型開關箱 Metal Clad Switchgear



低壓盤 LV Switchgear



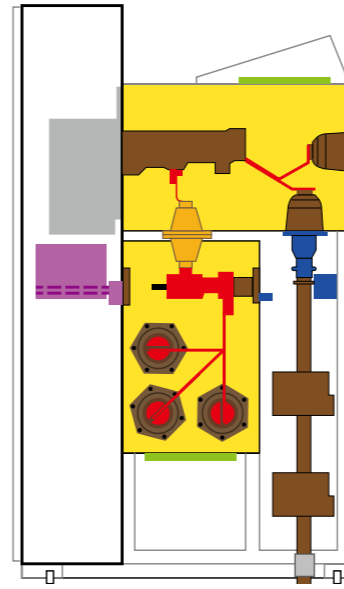
馬達控制中心 Motor Control Center



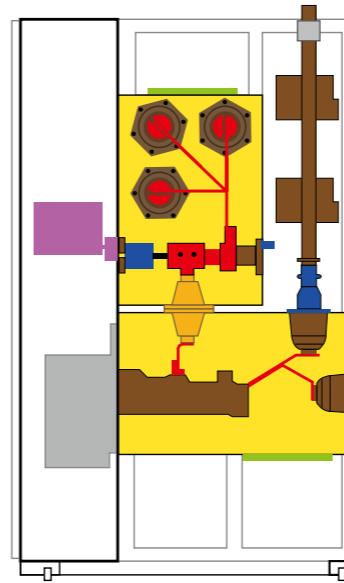
氣體絕緣開關箱 SF6 Insulated Switchgear



● 下部進線 Bottom Entry



● 上部進線 Top Entry





插入式匯流排設計
 在廠內抽真空及充填 SF6，經廠內試驗後出貨，確保產品品質並將工地作業減到最少。

Plug in Bus Bar System
 The vacuum and SF6 filling works are finished in factory to minimize the effect by site environment. Faster and easier site assembling reduces installation time.

安全的工地組裝

Safety of Site Assembly

謹慎的安裝作業，是工程進度的保證。

Careful installation works guarantee the progress of the project.



● 吊裝區防護警戒 Work area security



● 安全母索及防墜器 Rope and fall arrester

變電站更新工程

Substation Renewal Project

1. 更換前 Before



2. 拆除 Remove



3. 整理 Clean



4. 定位 Position



5. 組裝 Connection



6. 試驗送電 Test & Commission ✓



● 更換前 Before



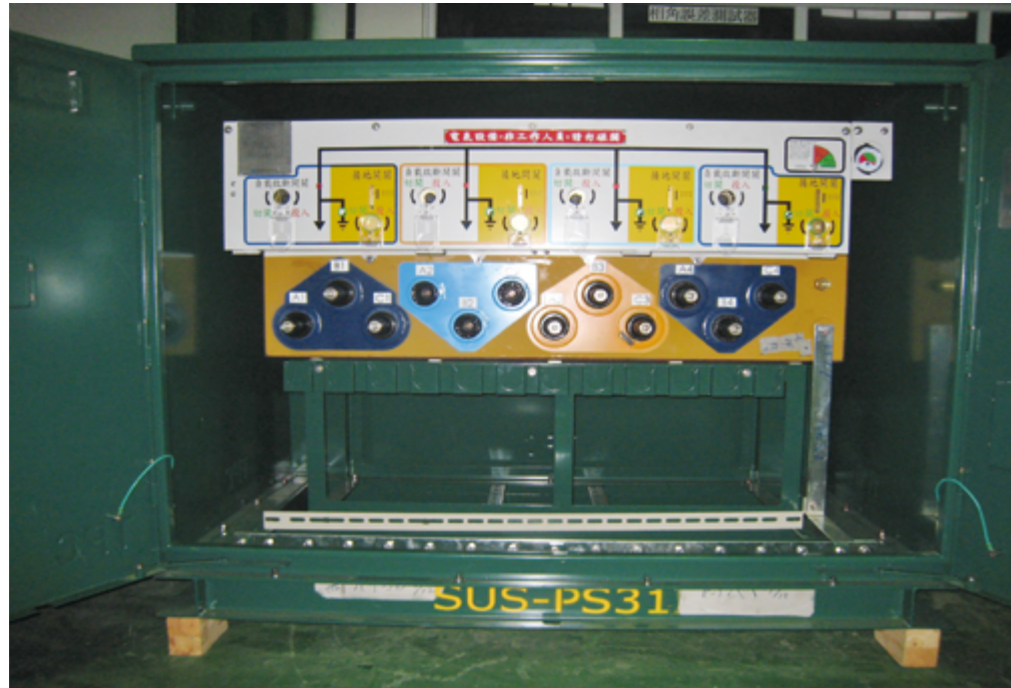
● 更換後 After



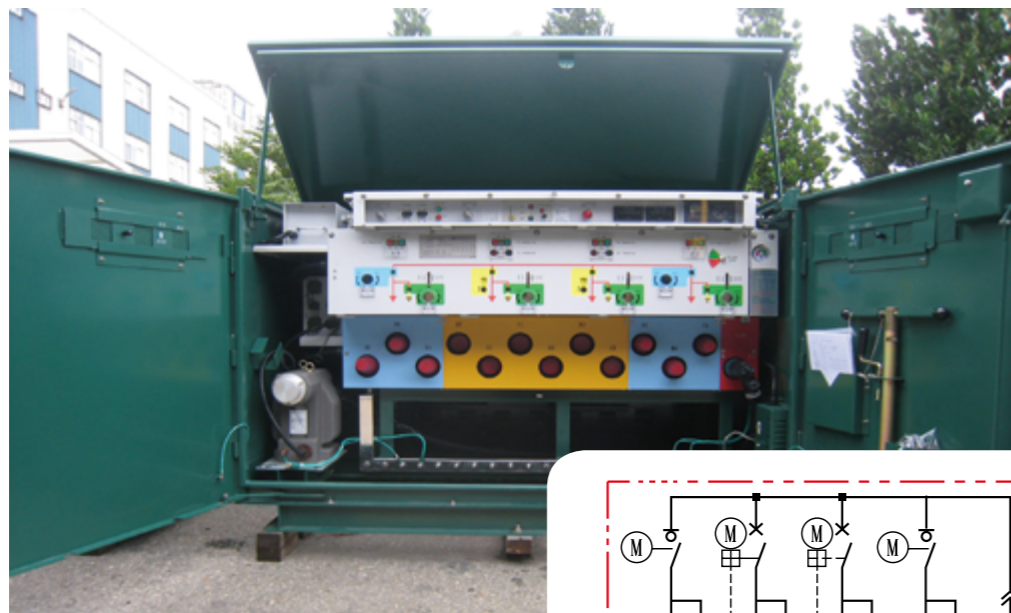
SF6 氣封開關

SF6 Enclosed Switch

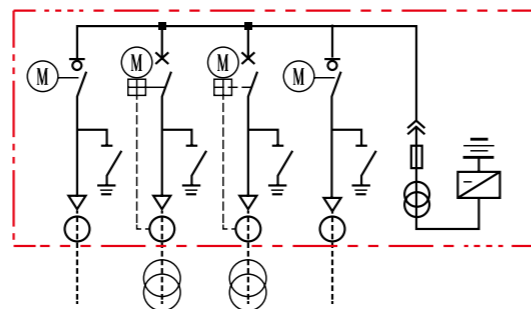
手動操作型 Manual Operation



電動操作型 Electrical Operation



● 內建控制電源
Self-powered for control unit



電動操作 + 饋線資訊末端設備 (Electrical Operation + FTU)



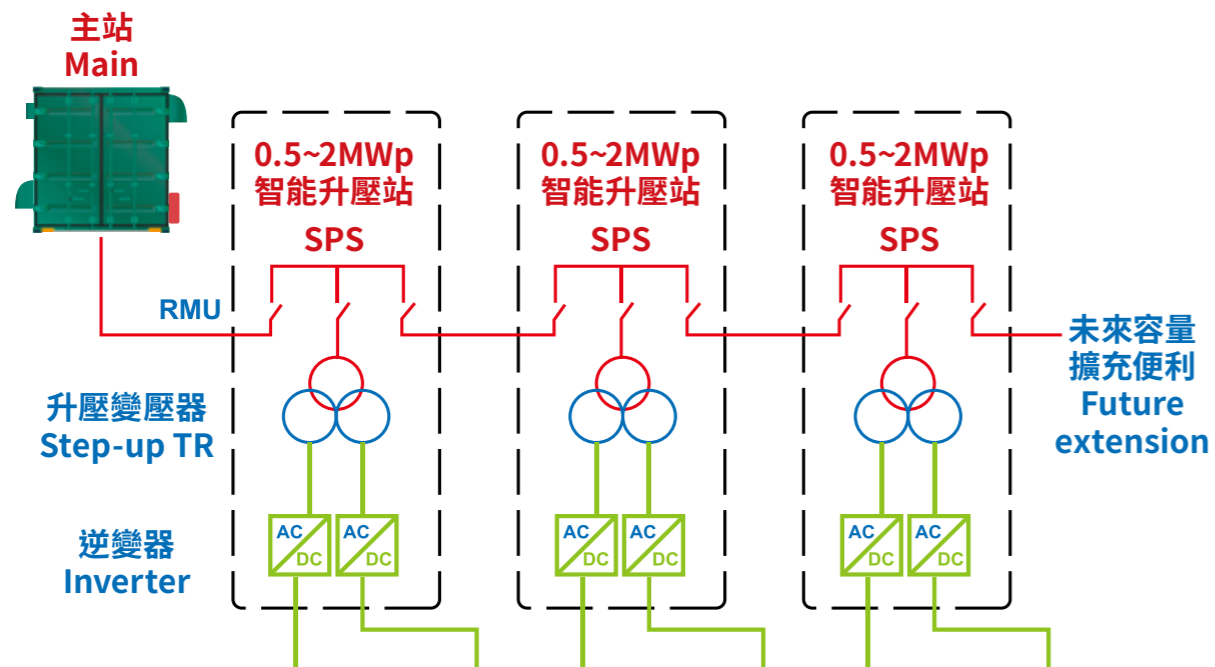
額定電壓 Rated voltage	kV	24
額定低頻耐電壓 Rated power frequency withstand voltage	kV	60
額定衝擊耐電壓 Rated impulse withstand voltage	kV	125
額定頻率 Rated frequency	Hz	50/60
額定匯流排電流 Rated bus-bar current	A	630
額定分路電流 Rated tee-off current	A	200/630
額定峰值耐電流 Rated peak withstand current	kA	32.5
額定短時間耐電流 Rated short-time current (1sec.)	kA	12.5
斷路器額定啟斷電流 VCB rated breaking current	kA	12.5
斷路器額定閉合電流 VCB rated making current	kA	32.5
絕緣氣體 Insulation medium		SF6
充填壓力 Rated filling pressure, 20° C (絕對壓力 Absolute pressure)	kg/cm2	1.6
最小操作壓力 Minimum operating pressure, 20° C (絕對壓力 Absolute pressure)	kg/cm2	1.3
控制電壓 Control voltage	V	24DC
保護等級 Protective degree		
高壓帶電部 HV parts tank		IP67
外箱 Outdoor Enclosure		IP33
周溫 Ambient temperature		
最大值 High	°C	+40
最小值 Low	°C	-10
海平面以上安裝高度 Altitude	m	1000
尺寸 Dimension		
寬度 Width	mm	1800
高度 Height	mm	1200
深度 Depth	mm	1000

智能升壓站

Smart Prefabricated Substation

再生能源的最佳利器，太陽能發電及風力發電的最佳拍檔。

The best choice for renewable energy, the best partner for solar power and wind power



華城產品登上京都府滋賀縣 70家未來之星的企業雜誌

- ✓ 標準型貨櫃設計，耐候性佳，防護性強。
Standard container design with good protection.
- ✓ 工廠內組裝、測試完成後再到工地固定，品質最佳。
Prefabricated and tested in factory, Quality assured.
- ✓ 最少的工地建築工程，最簡單的太陽能發電廠建置。
The least site work, simplest solar farm construction.
- ✓ 以 HV 電纜取代 LV 電纜，電纜佈置最容易。
HV cables substitute LV cables, easy for cable works.
- ✓ 門禁管制佳，有效防止外人進入。
Good access control, intruder prevented effectively.
- ✓ 良好的防雨通風設計，可有效防水並將貨櫃內熱氣導出。
Good water proof with ventilation, inner heat expel effectively.

● 智能升壓站 Smart step-up substation



● 逆變器室 Inverter Room



● 變壓器室 TR room



● 外銷日本安裝實景 Installation in Japan



離島發電機統包工程

Containerized Generator Turnkey Pproject

離島工程的特性，設備不足、缺料缺工、惡劣天候影響海空運，面對挑戰，我們以豐富經驗，周全準備，如質如期完成各案件。

The challenges for island projects are lack of equipment, materials, and bad weather condition affecting sea and air transportation; we have completed these cases on schedule by being fully prepared and with our extensive experience.



華城電機

台灣第一座離岸風力發電廠之陸域工程及升壓站

Step-up Substation of Taiwan First Offshore Wind Turbine System

位於苗栗縣竹南鎮外海的示範風力發電廠，華城電機依時程完成陸域電纜埋設工程及升壓站新建工程，協助本案取得台灣首張離岸風力發電執照。

The demonstration wind power farm located at the outer seas of Zhunan Town, Miaoli County. Fortune Electric has completed the land cable laying and the construction of onshore substation on schedule and assisting to obtain the first offshore wind power generation license in Taiwan.



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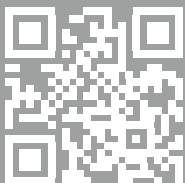
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