

全台前三大專業自動化系統整合商  
中壓變頻器廠商全台銷售量第一

**YATEC**  
安華機電



**TECO**  
東元電機

**YASKAWA**  
安川電機

www.yatec.com.tw

**YATEC**

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**COMPREHENSIVE  
SYSTEM ENGINEERING**

以專業與創新賦能百工百業

**TECO**  
東元電機

**YASKAWA**  
安川電機

# ABOUT YATEC

## 關於安華

由東元電機與日本(株)安川電機合資成立安華機電工程股份有限公司，整合馬達驅動、變頻控制、可程式控制器、人機介面等電控產品，於紙業、鋼鐵業、橡塑膠業等各產業製程應用握有關鍵技術。

安華擁有專業的系統整合團隊，可為客戶提供完整的製程自動化、廠辦節能減碳、能源服務管理，包括：諮詢與需求評估、解決方案規劃、設備與系統設計、現場安裝調試、教育訓練到售後服務。我們不僅是設備供應商，更是您智能系統整合的夥伴。

Jointly invested by TECO and Yaskawa, YATEC grasps crucial technologies in the manufacturing application of industries ranging from the paper industry, steel industry, rubber and plastic industry, to other industries through the integration of motor, inverters, PLC, HMI, and other electrical control products.

YATEC boasts a professional system integration team, offering services including needs assessment, solution planning, equipment and system design, on-site installation and commissioning, training, and after-service. We are more than just an equipment supplier. We are your trusted partner in intelligent system integration.

## 安華願景

成為製程自動化、整廠節能減碳、能源服務管理的整合專家。憑藉卓越的專業技術，提供客戶專業、高效的一站式解決方案與技術服務，幫助客戶提升生產效率、實現深度節能，並強化企業競爭力，共同邁向永續經營的目標。

我們將專注於鋼鐵、紙業、橡塑膠、水處理及電力自動化等核心產業，透過累積豐富的產業應用經驗，開發模組化的標準應用軟體，致力於成為自動化系統整合領域的領導者。此外，整合創能、儲能、碳足跡盤查等能源管理解決方案，幫助客戶最佳化能源使用，降低能源成本，並透過精準的碳排放數據分析，提供具體的減碳策略，實現綠色生產與淨零排放。

未來，我們將持續投入研發，專注於提升設備使用效率、降低環境負擔、改善生活品質，為企業創造長遠價值，並邁向永續發展的未來。

YATEC is committed to becoming an integration expert in process automation, whole-plant energy efficiency, and energy management services. Our goal is to help businesses enhance production efficiency, achieve energy savings, and strengthen competitiveness, working together toward sustainable growth.

We focus on steel, paper, rubber & plastics, water treatment, and power automation, leveraging our industry expertise to develop modular automation solutions. By integrating energy generation, storage, and carbon footprint auditing, we help customers optimize energy use, reduce costs, and implement effective carbon reduction strategies for green production and net-zero emissions.

Moving forward, we will continue to invest in research and development, focusing on enhancing equipment efficiency, reducing environmental impact, and improving quality of life. Our mission is to create long-term value for businesses and drive a sustainable future.

# YATEC VISION

# INDUSTRY 產業解決方案 SOLUTIONS

INDUSTRIES 鋼鐵業



## 鋼鐵業

提供鋼鐵廠電機設備，最佳化的控制系統，達成穩定、連續、高可靠度的運轉，具備卓越的能力及豐富的經驗，建置從高爐到連續鑄造設備的綜合控制系統。

Provide electrical machinery and apparatus with optimal control systems for steel plants to achieve stable, continuous, and highly reliable operations. We possess distinguishable capacities and abundant experiences in building comprehensive control systems for blast furnaces and continuous casting machines.

- ▶ 高爐製程監控系統 SCADA system for blast furnace control
- ▶ 冷/熱軋過程控制系統 Cold/Hot rolling process control system
- ▶ 連鑄製程監控系統 SCADA system for continuous-casting facilities
- ▶ 金屬表面處理控制系統 Metal processing line control system
- ▶ 棒鋼壓延系統 Rod/Bar Mill line control system

## 橡塑膠業

不論是新設或升級，我們已累積30年專業實績並獲得客戶信任。提供橡塑膠廣泛行業所需的各種技術，包括橡膠和輪胎、薄膜、押出機、膠布機等。

Regardless of new installation or upgrades, we have accumulated professional performances of three decades and gained customers' trust. We provide various technologies required by rubber and plastic machines, including rubber and tires, films, extruders, and calenders.

- ▶ 輪胎萬馬力機產線控制智能化  
Intelligent control system for banbury & tire manufacturing system making
- ▶ 押出機膠布機直流轉交流系統升級及優化  
Upgrading and optimization of the DC to AC system of the extruder and calendar
- ▶ 橡塑膠產線設備節能控制  
Plastics films energy saving manufacturing control



RUBBER AND 橡塑膠業  
PLASTIC INDUSTRIES

## 紙業

提供工業用紙，民生用紙的驅動系統、高性能及高精度的控制系統，能達到穩定、高速、高可靠度的運轉，具有豐富經驗及能力可建置各種抄紙機、抄漿機、超壓光機、塗佈機到複捲機等設備的控制系統。

Provide drive systems for industrial paper and civilian paper. Our control systems of high-performance and high-precision can achieve operations of stability, high speed, and high reliability. We also possess extensive experience and capacities in building various paper machines, supercalenders, coating machines, and rewinders.

- ▶ 塗佈機驅動升級系統 Coating upgrade system
- ▶ 造紙機驅動控制系統 Paper process control system
- ▶ 超壓光機控制系統 Supercalander line control system
- ▶ 複捲機製程控制系統 Re-winder control system



PULP AND 紙業  
PAPER INDUSTRIES

紙業

## 產業機電

產業在高效低碳潮流下，製程朝向智能及節能減碳發展，提升機電設備能源使用效率，以高效率馬達搭配超節能變頻器，節電率可達20%~60%，專注於石化業、水泥業、化纖業、電機電子業、金屬業及各項公共工程，如電力、水處理、焚化爐等產業之變頻節能應用，實績遍及海內外。

Under the trend of high-efficiency and low carbon-dioxide emission, the development of industries are navigating toward smart manufacturing processes and energy-saving and carbon-dioxide reduction. Therefore, we improved the energy use efficiency of our electromechanical equipment and matched the use of high-efficiency motors with ultra-energy-saving inverters, allowing a power-saving rate reaching 20% to 60%. Our achievements of frequency conversion and energy-saving applications in the petrochemical industry cement industry, chemical fiber industry, electrical industry, metal industry, and public constructions (such as power, water treatment, and incinerators) spread nationwide and worldwide.

- ▶ 銅箔酸洗線、碳纖線、電線電纜等製程控制  
Copper foil pickling line, fiber optics, and power cable manufacturing control
- ▶ 鋼鐵、橡膠、造紙、石化、水泥、電機電子等產業交直流控制系統  
Iron, rubber, papermaking, petrochemical, cement and electrical machinery industry DC and AC control system
- ▶ 公共事業變頻節能系統  
Public facilities energy saving AC drive system

INDUSTRIAL APPLICATIONS  
BUSINESS 產業機電



# PRODUCT 電控產品業務 PRESENTATION

## ● 監控設備 Monitoring equipment

安川YASKAWA / 西門子SIEMENS



人機介面 HMI  
Human machine Interface



維修及操作站  
Maintenance and operation station  
YASKAWA CP-717



控制暨資料處理  
System Control and Data  
Acquisition(SCADA) Software

## ● 控制設備 PLC controller

安川YASKAWA



高性能 PLC  
CP-3550 (Dual CPU)



系統模組型 PLC  
CP-317M/312



整合型 PLC  
CP-316H



伺服型 PLC  
MP-3300

## ● 控制器及驅動器 PLC controller & Drives

西門子SIEMENS



S7-1500/1200



S7-300/400



西門子變頻器  
SINAMICS -G120,S120 SERIES

## ● 直流驅動器、交流變頻器 DCM Drives & ACM Inverters

東元TECO / 安川YASKAWA / 派克PARKER



直流馬達控制盤  
Digital Control Panel  
6500D+Drive SERIES



派克直流驅動器  
DC590+ series



東元變頻器  
A510s SERIES



安川變頻器  
(向量型/回生型)  
GA700, A1000,  
U1000



安川變頻器  
(系統型)  
FSDrive-LV1H  
SERIES

## ● 中高壓變頻器 Medium Voltage AC Drive

安川YASKAWA / 東元TECO



安川超節能型  
FSDrive-MV1000



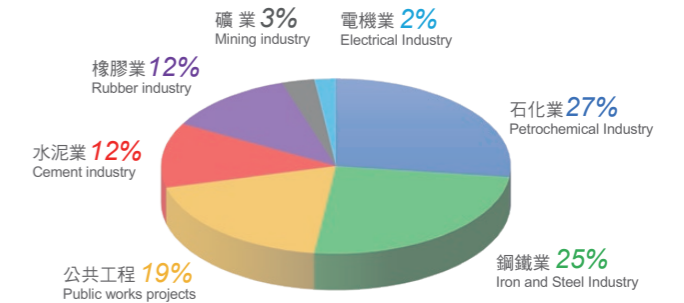
安川矩陣回生型  
FSDrive-MX1S/MX1H



東元泛用節能型  
TECO-MV510 SERIES

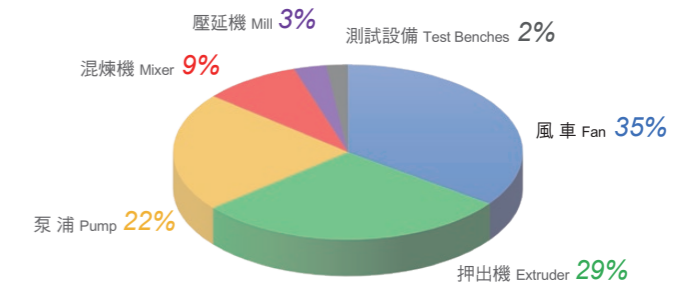
### 行業別分析表 Analysis by Industry

| 行業別 Industry                | 百分比 Percentage |
|-----------------------------|----------------|
| 石化業 Petrochemical Industry  | 27%            |
| 鋼鐵業 Iron and Steel Industry | 25%            |
| 公共工程 Public works projects  | 19%            |
| 水泥業 Cement industry         | 12%            |
| 橡膠業 Rubber industry         | 12%            |
| 礦業 Mining industry          | 3%             |
| 電機業 Electrical Industry     | 2%             |
|                             | 100%           |



### 負載別分析表 Load Gender Analysis

| 應用負載例 Application load cases | 百分比 Percentage |
|------------------------------|----------------|
| 風車 Fan                       | 35%            |
| 押出機 Extruder                 | 29%            |
| 泵浦 Pump                      | 22%            |
| 混煉機 Mixer                    | 9%             |
| 壓延機 Mill                     | 3%             |
| 測試設備 Test Benches            | 2%             |
|                              | 100%           |



## ● 馬達 AC Motor

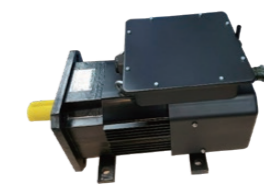
東元TECO / 安川YASKAWA



變頻馬達  
TECO-AEHL,EVEF



高效率馬達  
TECO-IE3/IE4 SERIES  
AEHF-AEUF



永磁馬達  
TECO-DVLF,DVLS,DVEN  
YASKAWA-EST4,SST4



伺服驅動馬達  
YASKAWA Σ-7  
SGM SERIES

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# ENERGY SAVINGS FOR FACTORIES & 工廠&商辦節能減碳 COMMERCIAL BUILDINGS

針對廠房、水資源管理、商辦樓宇、醫院、住宅等場域，安華提供完整的節能減碳方案，幫助企業降低運營成本、提升競爭力，同時邁向更永續的未來。

YATEC provides comprehensive energy efficiency and carbon reduction solutions for factories, commercial buildings, hospitals, and residential facilities, helping businesses reduce operating costs, enhance competitiveness, and move toward a more sustainable future.



金屬沖床節能改造  
Energy Savings for Metal Stamping Press



冷卻水塔節能方案  
Cooling Tower Energy-Saving Solution



油泵冷卻系統  
Pure Water Process High-Pressure Pump



超純水製程高壓泵  
Oil Pump Cooling System

## 安華廠辦節能減碳方案，全面提升效率

- ▶ **馬達與變頻器升級**：更換IE4/IE5高效馬達，可提升設備效率2%-8%，搭配變頻器控制變動負載製程，最高可達50%節能效果。
  - ▶ **永磁直驅系統**：提升傳動系統效率5%-15%，減少機械損失。
  - ▶ **智慧運維管理**：透過設備管理系統，實時監測設備健康度並提前維護與保養，確保長期穩定運行，進一步提升2%的節能成效。
- 高耗電設備如抽水機、水泵、風機、冷卻水塔、壓縮機、真空泵、製程泵、產業機械(沖床)等，節能效益尤其明顯。

## OPTIMIZED ENERGY EFFICIENCY SOLUTIONS

- ▶ **Motor & Inverter Upgrades** - Upgrading to IE4/IE5 high-efficiency motors can improve efficiency by 2%-8%, and pairing them with variable frequency drives (VFDs) for variable-load processes can achieve up to 50% energy savings.
  - ▶ **Permanent Magnet Direct Drive Systems** - Enhances drive system efficiency by 5%-15%, reducing mechanical losses.
  - ▶ **Smart O&M Management** - Implements an intelligent equipment management system to monitor equipment health in real-time, enabling proactive maintenance and improving energy efficiency by an additional 2%.
- These solutions deliver significant energy savings for high-power equipment such as pumps, fans, cooling towers, compressors, vacuum pumps, process pumps, and industrial machinery (e.g., stamping presses).

# SMART 製造業智能化 MANUFACTURING

安華提供一站式解決方案，涵蓋以下服務

1. **智能製程規劃**：分析客戶需求，設計量身訂製的製程優化方案。
2. **自動化設備整合**：整合電控產品與機械設備，打造高效穩定的生產系統。
3. **數據採集與分析**：透過 OT/IT整合，實現生產數據的實時採集與智能分析。
4. **雲端監控與管理**：建置智能化雲端平台，實現遠端監控與數據可視化。
5. **現場安裝與調試**：由專業團隊執行設備的安裝與調適，確保系統高效運行。
6. **教育訓練與技術支援**：提供專業培訓與完善的售後服務。

## ONE-STOP SMART MANUFACTURING SOLUTIONS

1. **Smart Process Planning** - Analyze customer needs and design tailor-made process optimization solutions.
2. **Automation Equipment Integration** - Integrate electrical control products and mechanical equipment to build a high-efficiency and stable production system.
3. **Data Collection & Analysis** - Leverage OT/IT integration for real-time production data collection and intelligent analytics.
4. **Cloud-Based Monitoring & Management** - Implement cloud-based intelligent platforms for remote monitoring and data visualization.
5. **On-Site Installation & Commissioning** - Professional teams handle equipment installation and fine-tuning to ensure optimal system performance.
6. **Training & Technical Support** - Offer professional training and comprehensive after-sales service to support long-term success.

### EMS/CMS管理平台 EMS/CMS Platform

- ▶ 電能統計儀表板 ▶ Power Consumption Dashboard
- ▶ 實時成本取得 ▶ Energy Analysis
- ▶ 能耗分析 ▶ Real-Time Cost Monitoring
- ▶ 碳盤查足跡 ▶ Carbon Footprint Auditing

### OT/IT 整合 OT/IT Integration

- ▶ 伺服器/通訊/資料庫 ▶ Server/IoT/Database
- ▶ 跨平台整合 ▶ Cross-Platform Integration
- ▶ 資訊透明 ▶ Data Transparency

### 製程自動化控制 (製程管理&控制) Process Automation

- ▶ 鋼鐵 ▶ Steel
- ▶ 塑化 ▶ Plastics & Petrochemicals
- ▶ 造紙 ▶ Pulp & Paper
- ▶ 產業電機 ▶ Industrial Machinery

### 設備節能應用 Energy Saving for Machinery and Equipment

- ▶ 空壓機 ▶ Air Compressor
- ▶ MV變頻盤 ▶ MVD Panel
- ▶ 引風機 ▶ Induced Draft Fan
- ▶ 幫浦 ▶ Pump
- ▶ 冰水機 ▶ Chiller

