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YEU LIAN
ELECTRONICS CO.,LTD.

自動化控制設備—研發、客製、設計、生產
Automation Control – R&D, Customize, Design, Manufacture



YEU LIAN
ELECTRONICS CO.,LTD.

宇聯電子

YEU-LIAN ELECTRONICS CO., LTD.

工具機及機械設備的客製化整合商
Customized Integrator of Industrial Machine and Machine Tools.

公司簡介 Company Profile

創辦人葉火生董事長的話

1989年開始踏入工業自動化領域，迄今已超過三十個年頭。從懵懂到專業，草創時期的3人公司發展至今40人的團隊，三十年以上的堅持實來不易。宇聯能如此蓬勃的發展，最重要是感恩客戶的包容與支持，才能持續發展。我們會深耕在台灣，並積極面對未來各式各樣挑戰，以永續經營的思維強化公司體質，迎接下一個三十年。

Hou-Sheng Yeh, Founder of YEU-LIAN Electronics Co., Ltd.

We start up on industrial automation since 1989. We only had 3 employees at the beginning, and now our team has grown to 40 colleagues. It's not easy to keep the company over 30 years. We appreciate the long-term partnership and support from our customers and our team members. We will face new challenges positively in the future, and increase competitiveness and welcome to the next 30 years.



誠信 Honesty

絕對的誠信是根基，是做人做事的信條，沒有誠信，多好的產品，多強的技術，多繁複的詞藻都是枉然。
The most basic is absolute honesty. It is worthless without integrity even have good products.

服務 Service

熱忱的服務是我們的習慣，我們能提供給客戶的不只是買賣，而是解決方案；從客戶的角度出發，為客戶著想，互信互利培養長期合作的夥伴關係。
We have the enthusiasm for service, and we provide customers not only products, but also solutions. We start from the customer's point of view and create a mutually beneficial with customer in long-term partnership.

負責 Responsibility

負責的態度，宇聯的產品是在工業領域，產品都需要經過長時間的設計與驗證，對客戶負責最重要的就是產品品質，為了提升品質控管以及能力，宇聯自2020年申請並且通過ISO 9001:2015。
Responsible attitude. In order to provide customers with better service and better products, we introduced the ISO 9001:2015 quality management system in 2020 and successfully obtained the certification.

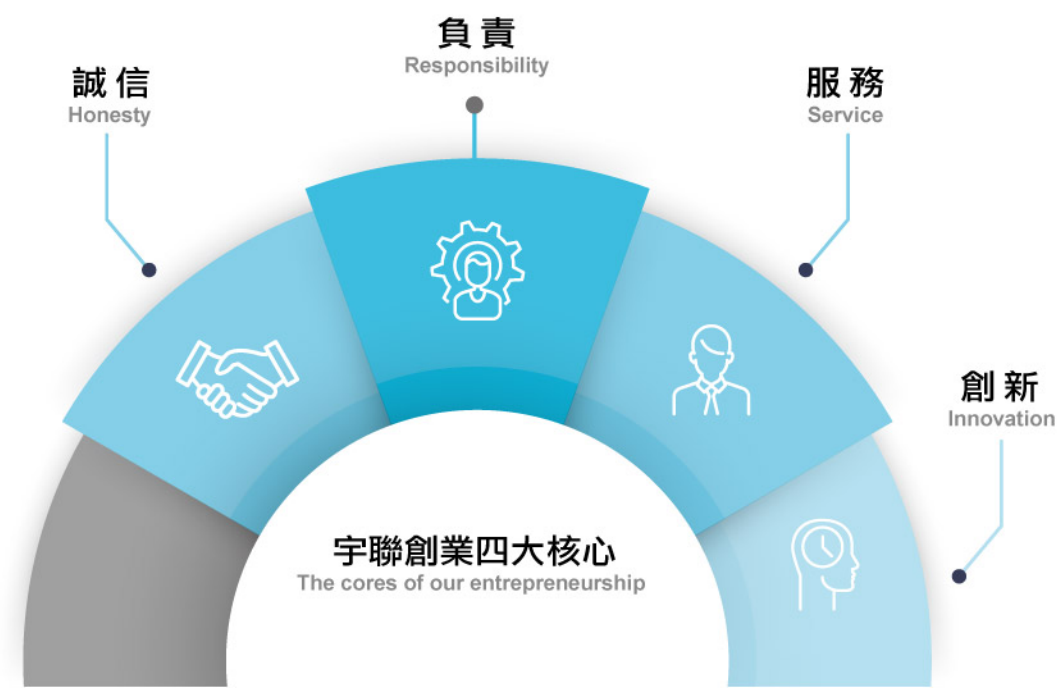
創新 Innovation

唯有不斷的創新，擁抱科技與技術整合，才能夠陪伴客戶成長並且茁壯，創造永續被利用的價值。
We are constantly learning and integrating new technologies. We can apply and integrate technologies into customers' products or applications. Accompanying customers' growth and enhancing value.

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Product Photos



品質政策/組織圖

Quality Policy (ISO 9001)/Organigram

品質政策 Quality Policy (ISO 9001)



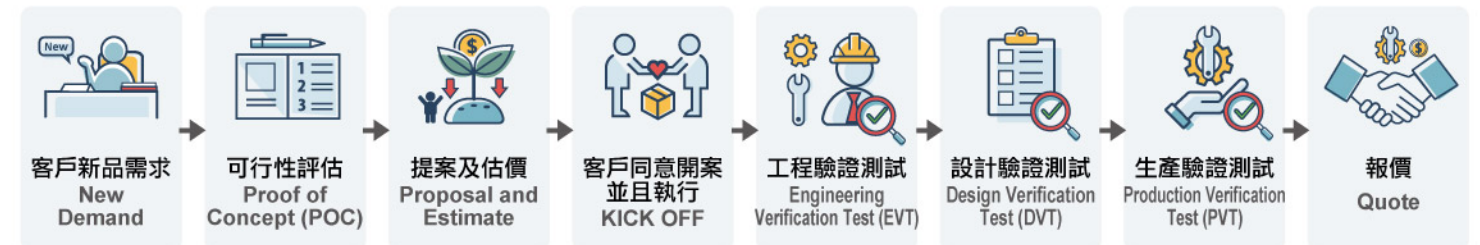
組織圖 Organigram



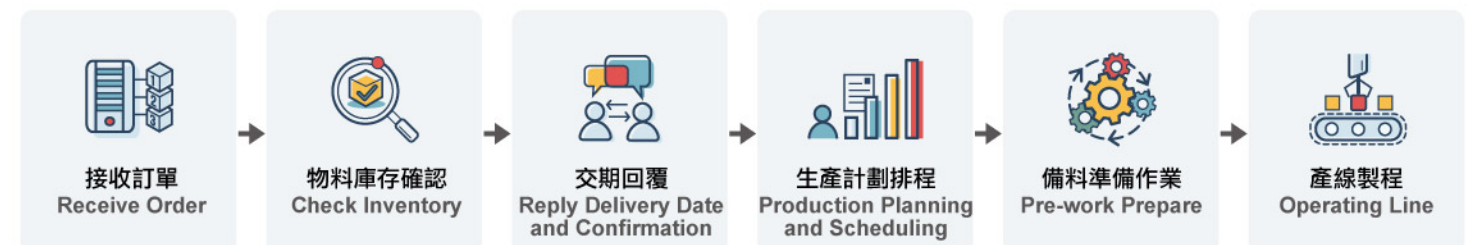
製程說明

Production Process

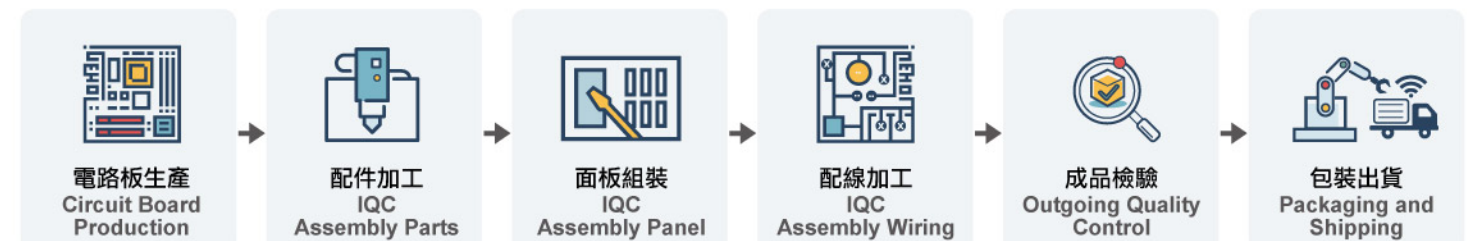
客製化開案流程說明 Customized Project Process Introduction



訂單處理流程 Order Processing

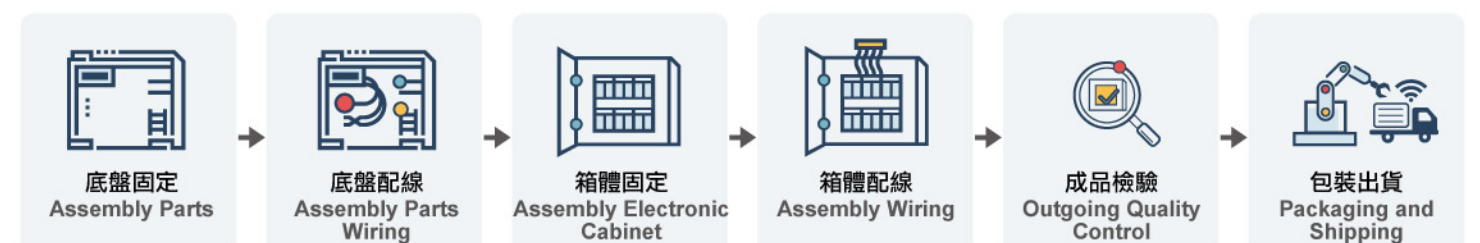


面板生產作業流程 Control Panel Production Process



插件→焊錫→清洗→電路板檢驗
Components placement→Soldering→Cleaning→Testing

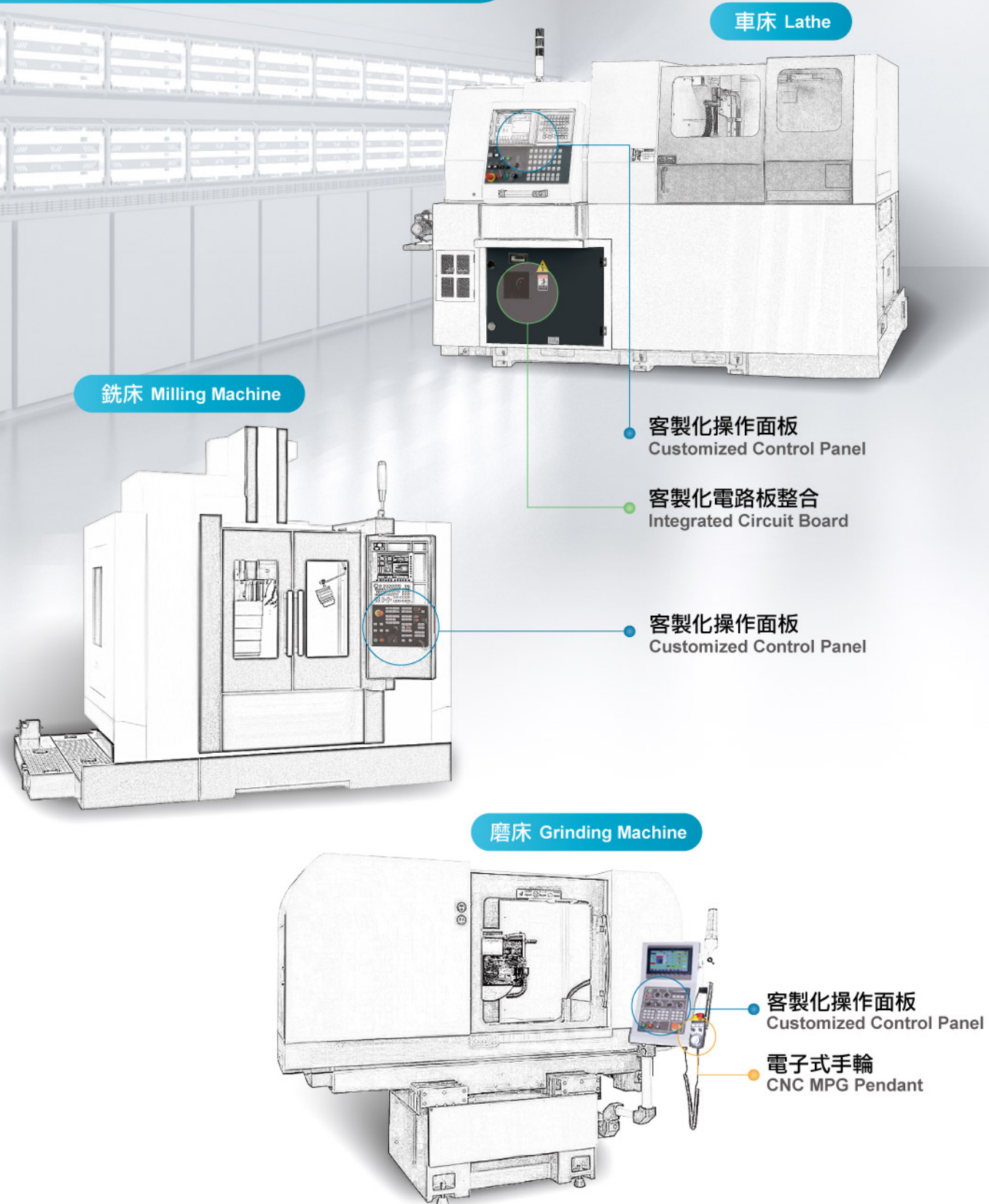
電控箱代工組裝作業流程 Control Cabinets Assembly Process



應用場合

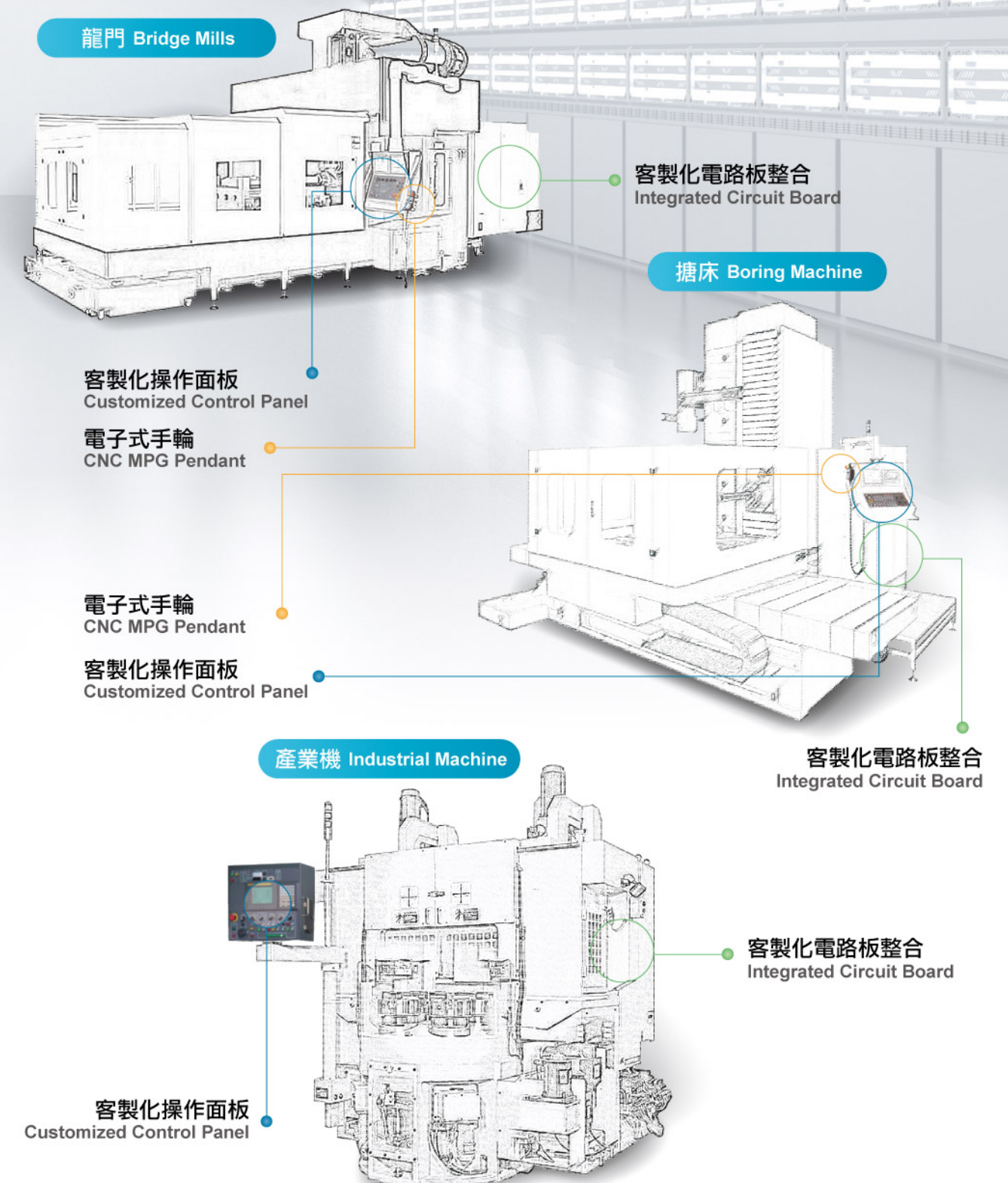
Applications

產品在設備上的應用 Applications on CNC Machines



應用場合

Applications



客製化優劣比較

Comparison Between Customized and Standard Products

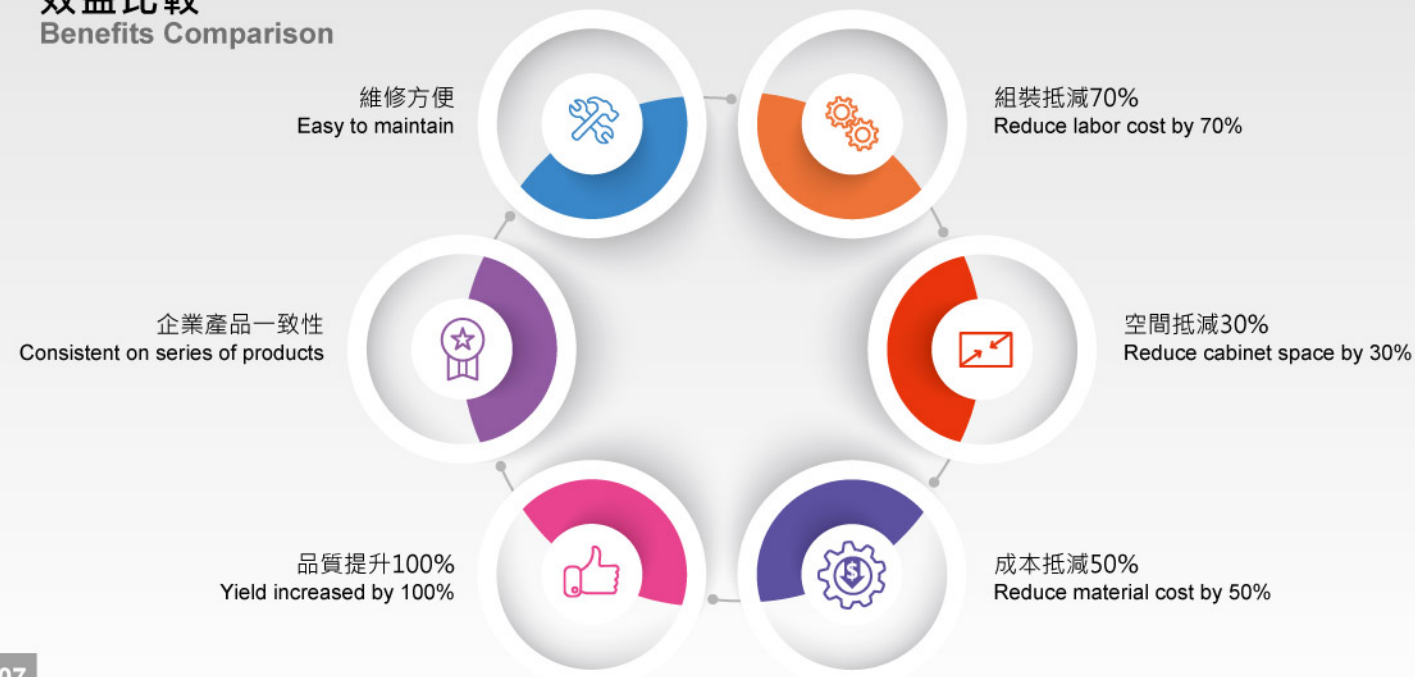
宇聯在客製化面板提供的解決方案

The solutions provided by YEU-LIAN in the customized panel

- 配合機台的機構設計提升客戶操作設備的體驗
- 保有彈性及擴充性，滿足市場的高度客製化需求
- 差異化及獨特性，定位公司品牌價值，保有系列產品的一致性
- 減少重複的組裝以及焊接工作，有效減少人力成本70%
- 客製化面板上機前已經測試，不必整機組裝完成才確認品質
- 多樣整合設計：RFID權限管理、指紋辨識、人臉辨識、觸控顯示器方案、感測器整合、無線傳輸...等
- 停產後，保證10年整合式電路板及面板材料供應
- MOQ≥1
- Improve customer experience on operating equipment.
- Flexible and expandable to meet highly customized demands.
- Making different and unique designs to enhance brand value, and the consistency of the products.
- Reduce labor and material costs.
- Customers do not have to confirm the assembly quality after every work.
- Customized operation panels have already full test before shipping.
- Various integrated designs: RFID rights management, fingerprint recognition, face recognition, touch display solutions, sensor integration, wireless transmission...etc.
- Customized circuit boards supply 10 years after last order.
- MOQ≥1.

效益比較

Benefits Comparison



客製化面板的好處

The Benefits of Customized Control Panel



1 標準品 Standard Products

- 無法滿足客戶操作的便利性
- 無法滿足機台設備的獨創性
- 客製化按鍵需求功能需要額外購買設備
- Cannot provide convenience of operating the machine.
- Cannot enhance the originality of machine equipment.
- Customized icon on button requires additional equipment.



2 現有產品 Existing Operation Panel

- 傳統開關組成，每個開關獨立組裝
- 傳統開關增加圖示需要重新組裝與對圖面，組裝費功外管理圖面也困難
- 傳統開關需要將點位焊接後配線到轉接板再連結到PLC，需要大量的線材加工及人力，且焊接品質需要熟練的員工錯誤才降低
- 需要上機通電才能確認所有按鍵的正確性
- 拼湊凌亂，沒有系列產品的一致性
- Panel composed of traditional switches which assembled independently.
- The switches require various labels which not easy assembling.
- Each switch needs to be soldered and wired on the adapter circuit board to PLC. Requiring lots of costs on cable and labor.
- Assembly quality has to be granted after finishing entered marching.
- Series of products have no consistency.



3 客製化產品 Customized Control Panel

- 客製化設計可以滿足傳統面板擴充性不足
- 配合客戶的機械設備，並符合人體工學設計
- 按鍵可雷射雕刻或印刷，正面更換式模組有效提升共用性
- 部份常用元件使用傳統開關，高使用頻率耗損後容易更換
- 整合所有開關以及電路，大量減少轉接線材及人工成本
- 每一式客製化面板都是模擬設備環境通電測試後才交付客戶，確保品質
- 停產後，保證10年以上整合式電路板及面板料供應
- MOQ≥1
- Expansion performance of customized design is better than traditional way.
- Integrate and design products with the customer's equipment and ergonomic.
- Front replacement design.
- Conventional switches which often used can be separately on the panel.
- Integrated circuit boards reduce assembly time. Reducing labor and material costs.
- Full function test before shipping.
- Customized circuit boards supply 10 years after last order.
- MOQ≥1.



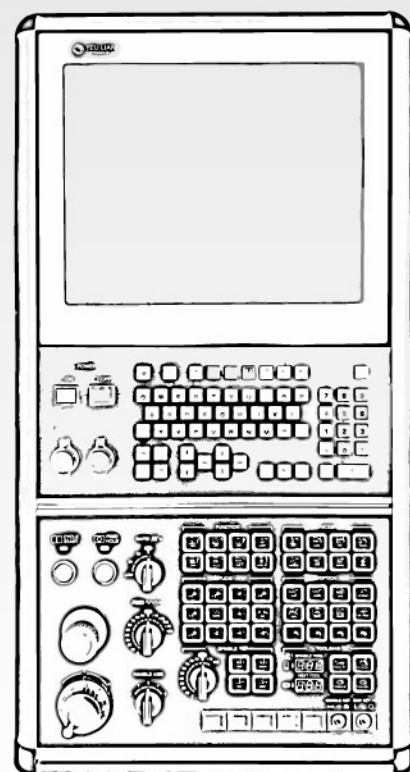
客製化CNC機械操作面板 Customized CNC Machine Control Panel



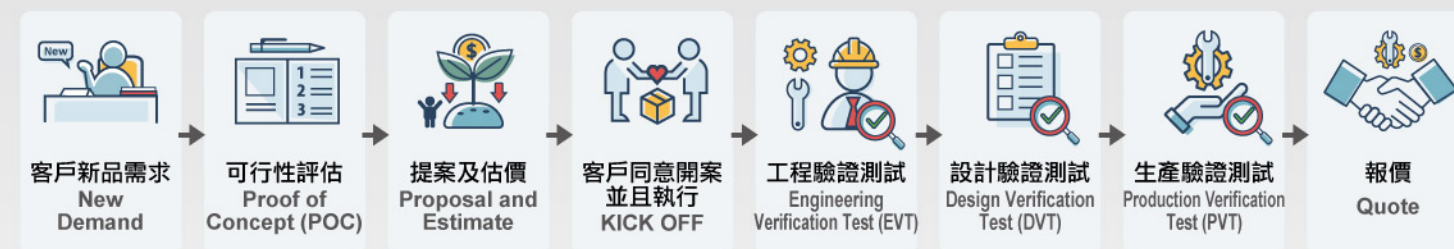
SCAN&GO

特色 FEATURES

- 適用數控、車床、銑床、磨床及加工機台專用CNC控制面板
- 雷射雕刻/全彩印刷圖形，精細、耐刮
- 正面拆換設計
- 電路整合最佳化(搭配客製複合式電路板服務)
- 符合人體工學設計，回饋感及按鍵行程可以客製
- 防水防塵IP65以上(須配合客戶操作箱環境)
- 日本製輕觸開關，壽命達十萬次以上。
- CE/RoHS
- Applicable on CNC machine tools like lathes, milling machines, drilling machines, grinding machines, and multitasking machines.
- Laser engraving graphics, refine and clear, scratch-resistant, oil-resistant.
- Front replacement design.
- Circuit integration optimization.
- Ergonomic design.
- Protection is more than class IP65 (design with operating cabinet).
- Original Japanese tact switches having more than 100,000 cycles.
- CE/RoHS



客製化開案流程說明 Customized Project Process Introduction



標準按鍵模組型號說明 Button Module Information

按鍵 Button Module	框 Frame Type	顏色 Color	LED
5 雷射雕刻按鍵 Lazard Engraving	B 標準 Standard	GR 灰 Gray	L 背光 Backlight
6 壓克力按鍵 Transparent Button	C 保護蓋 Cap	BL 藍 Blue	N 不裝燈 No light
	AT 防觸框 Anti-touch	RE 紅 Red	
	S 防水罩 Shield	GN 綠 Green	
	ATS 防觸防水罩 Shield with anti-touch	DG 深灰 Dark gray	
	N 封蓋 Cover	BK 黑 Black	

標準按鍵模組型號說明 Button Module Information



- 工業鍵盤(Industrial keyboard)
- 雷射雕刻(Laser engraving)
- ABS



- 薄膜按鍵(Membrane buttons)
- 全彩印刷(Full-color printing)
- PET



- 5代按鍵(5th generation buttons)
- 雷射雕刻(Laser engraving)
- ABS



- 6代按鍵(6th generation buttons)
- 全彩印刷(Full-color printing)
- PC

客製化整合式電路板 Integrated Machine Circuit Board



SCAN&GO

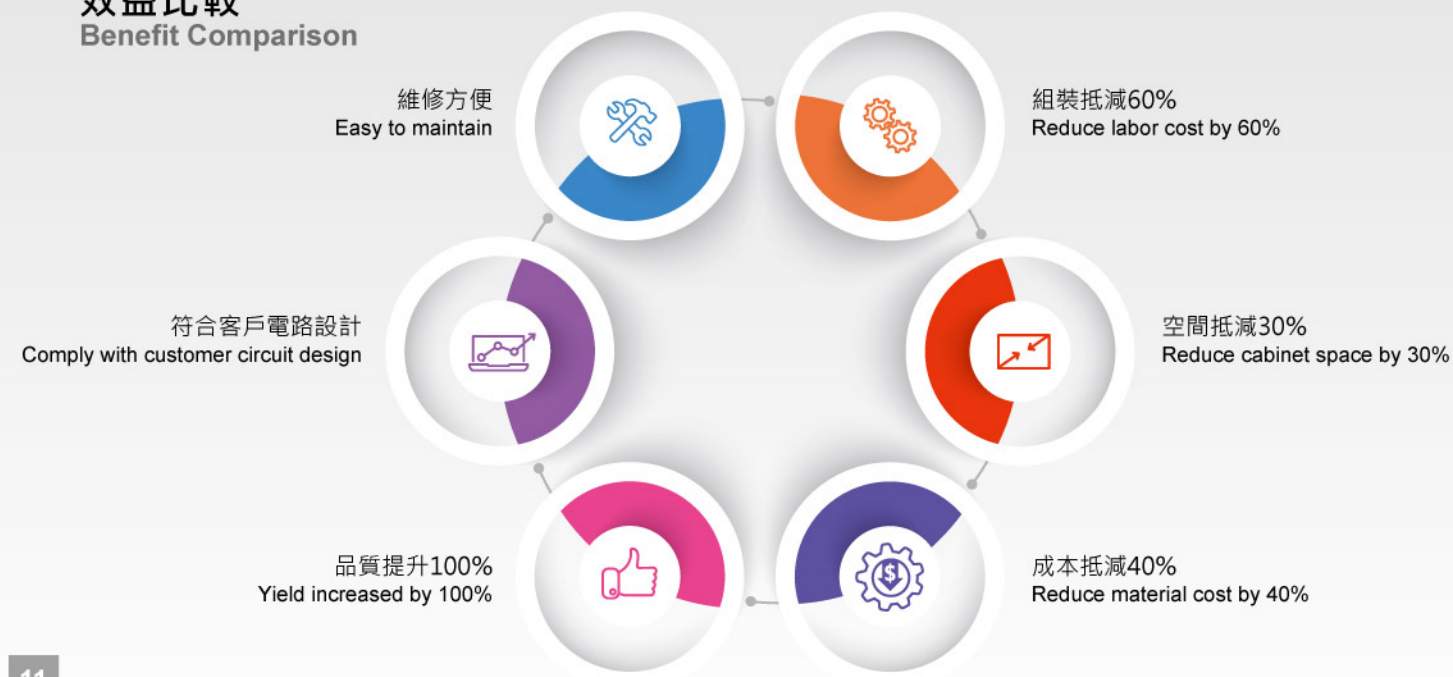
宇聯在客製化電路板提供的解決方案

The solutions provided by YEU-LIAN in the customized circuit board

- 固定的低壓控制迴路整合
- 低壓元件設計電路保護，增加使用壽命
- 需擴充的點位已經共點整合，減少轉接用端子台
- 直插式端子設計，免用工具且組裝品質易確保
- 可視化；功能及點位標示在客製化電路板上，人員容易組裝
- 面對不同介面的連接器都可以整合，並且保有擴充彈性
- 客製化電路板配合電路圖進行版次管理，減少維修人員的負擔
- Low voltage control circuit integrated.
- Low-voltage components such as relays are designed with surge protection and increasing service life.
- The points that need to be expanded or wiring are integrated in PCB, reducing terminal blocks.
- Reducing wires and cables.
- Push-in terminal design which is easy to assure quality.
- Functions and points are marked on the customized circuit board.
- Supporting different interfaces of connectors.
- Products are tested before leaving the factory.
- Effectively reduce labor, material and management costs.
- Customized circuit boards supply 10 years after last order.
- MOQ≥1
- 客製化電路板都經過PLC檢測，模擬客戶環境以及電路測試
- 有效減少人工及材料費用
- 停產後，保證10年以上整式電路板料供應
- MOQ≥1

效益比較

Benefit Comparison



客製化電路板好處

The Benefits of Customization



1 傳統配電盤 Traditional Electronic Cabinet

- 低壓控制元件獨立組裝，佔地面積大，增加電氣箱體空間成本
- 擴充的PLC點位需要使用很多轉接端子台
- 標準的低壓控制迴路，每一台都要人工重複組裝
- 繼電器加裝的保護元件成本高而且不好安裝
- 需要加工控制線材及不同種類的手工具，配合元件模組的鎖固
- 低壓控制元件分散，如有異常需要不斷逐步查修
- Components are assembled independently. Occupying large space and increasing the cost of electrical cabinets.
- Expanded points from PLC need to use lots terminal blocks to wiring.
- Standard control circuits on every machine have to wiring process has to repeat.
- The circuit protection components of relay are expensive and difficult to install.
- The wiring process of different components requires different hand tools to assembly.
- Each circuit needs to be checked and repaired one by one.



2 模組式電路板用於配電盤 Using Modules in Electronic Cabinet

- 擴充模組獨立組裝
- 轉接需要端子及線材連接
- 固定的迴路須要重複人工配線
- 元件分散需要查修的點位多且正確性都需要人員的確保
- 標示及定義都相同，組裝人員需要重複核對電路圖及線材定義才能組裝，節省的時間有限
- Modules are assembled independently.
- Need terminal blocks to transfer.
- Repeat manual wiring.
- The components are scattered, and there are many points that need to be checked and repaired.
- Standard Modules saving limited labor cost.



3 客製化電路板用於配電盤 Customized Circuit Board

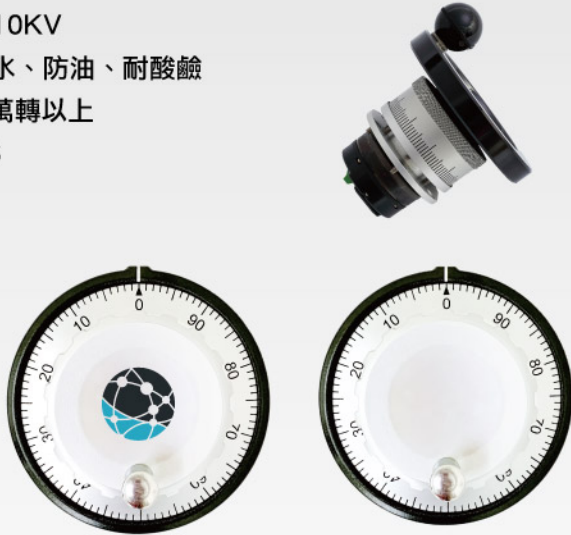
- 固定迴路整合以及元件電路保護處理
- 減少轉接用端子台
- 固定的迴路已經整合，免去使用線材
- 直插式端子設計，品質易確保
- 出廠檢驗模擬PLC環境確保迴路正確，減少需要點檢項目
- 客製化最有效減少材料、人工及電氣箱體成本
- 停產後，保證10年以上整合式電路板料供應
- MOQ≥1
- Fixed circuit integration and protection.
- Reduction of terminal blocks.
- Fixed circuit integration.
- Push-in terminal design which is easy to assure quality.
- Products are full function tested before shipping.
- Fully customized circuit boards significantly reducing cost.
- Customized circuit boards supply 10 years after last order.
- MOQ≥1.

電子手輪
Manual Pulse Generator



特色
FEATURES

- 外徑尺寸：58、72、125、140 mm
- 質量輕且耐衝擊
- 寬電壓輸入電壓 (DC5V-DC24V)
- 逆向電源保護
- 抗靜電±10KV
- 防塵、防水、防油、耐酸鹼
- 壽命300萬轉以上
- CE/RoHS
- Scale-dial outer diameter: 58, 72, 125, 140 mm.
- The weight is light and impact resistant.
- Wide voltage input (DC5V to DC24V).
- Reverse power polarity protection.
- Anti-static interference ±10KV.
- Dust-proof, water-proof, oil-proof, acid-alkali resistance.
- Over 3 million cycles.
- CE/RoHS



MPG產品編號
MPG Ordering Information

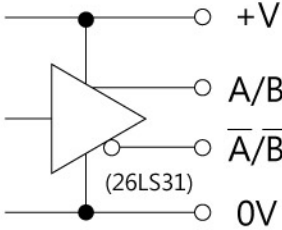
手輪PPR PPR	迴路形式 Circuit	輸出形式 Output	材質款式 Material	用途別 Application	外徑尺寸 Diameter
1 100PPR 2 25PPR	R 電阻式 Pull-up D 差動式 Line Driver	5 5V 1 開迴路 Open Circuit	M 金屬 Metal B 大型手輪 Big Type	S 操作面板 Control Panel H 手持單元 Handy MPG	7 72mm 5 58mm 4 140mm 2 125mm

技術參數 Major Parameters

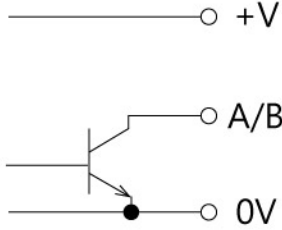
輸入電壓 Input Voltage	電壓輸出 Out Voltage	最大頻率回應 Max Freq. Resp.	最大輸出電流 Max Output Current	上升/下降時間 Tr/Tf Time	工作溫度 Working Temp.	儲存溫度 Storing Temp.
DC5V ~ DC24V	High: $\geq V_{CC}-0.5V$ (Line Driver $\geq 3.5V$) Low: $\leq 0.1V$	5KHz	20mA MAX	$\leq 1\mu s$	-10°C ~ +60°C	-20°C ~ +70°C
最大功率電流 Max Power Current	啟動轉矩 Start Torque	軸荷重 Axis Load	最大高轉速 Max Speed	迴轉壽命 Rotate	重量 Weight	保護機制 Protection
80mA MAX	$1.6 \times 10^{-2} N \cdot m$ ~ $6.0 \times 10^{-2} N \cdot m$	Axial: 9.8N Radial: 16.6N	Inst.: 600RPM Cont.: 200RPM	Over 3 million cycles. (300RPM)	$\leq 50g$ (Not include dial)	ESD±10KV IP65/CE

MPG信號迴路
MPG Electric Circuits

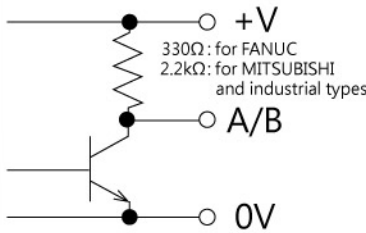
差動式 Line Driver



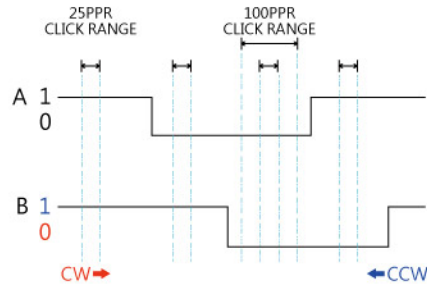
開迴路式 Open Circuit



電阻式 Pull-up



相位圖 Phase Diagram



標準規格 Standard Specification

項次 NO.	型號 Model	使用對象 Application	規格 Specifications
1	1R5	發那科 FANUC	100PPR / in 5-24V / out 5V / 電阻式輸出 Pull-up (330Ω)
2	2R5	三菱 MITSUBISHI	25PPR / in 5-24V / out 5V / 電阻式輸出 Pull-up (2.2KΩ)
3	1D5	西門子 SIEMENS	100PPR / in 5-24V / out 5V / 差動式輸出 Line Driver
4	141	產業型 Industrial Type	100PPR / in 5-24V / out 5-24V / Open Circuit
5	1R1	產業型 Industrial Type	100PPR / in 5-24V / out 5-24V / Open Circuit (2.2KΩ)
6	241	產業型 Industrial Type	25PPR / in 5-24V / out 5-24V / Open Circuit
7	2D5	產業型 Industrial Type	25PPR / in 5V / out 5V / 差動式輸出 Line Driver
8	161	產業型(特殊品) Industrial Type	100PPR / in 5-24V / out 5-24V / 差動式輸出 Line Driver

產品組合

Product Portfolio

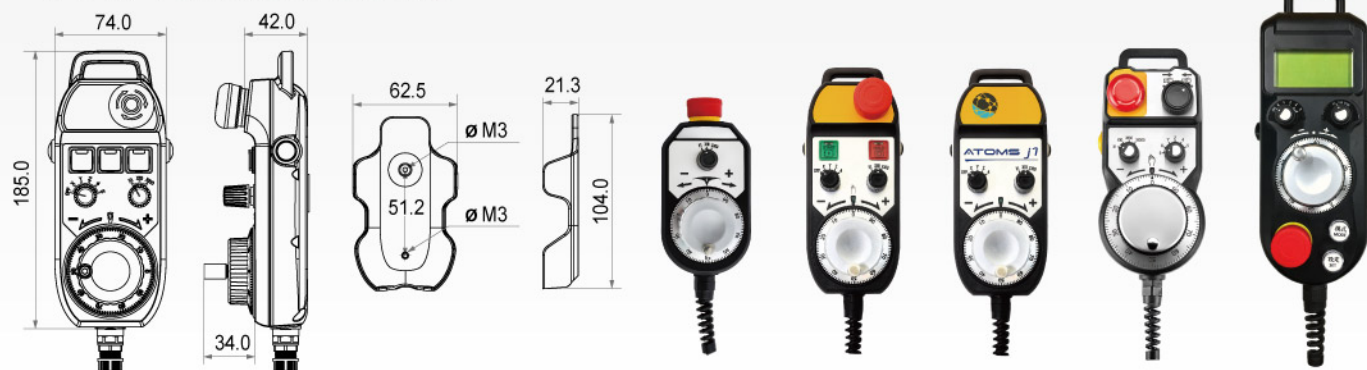
外置式手輪 Handy Manual Pulse Generator



特色 FEATURES

- 通過CE/IP67，手持單元種類多樣：單軸、多軸、數位顯示、無線連接...等供客戶選擇。
- 可擴充模組化設計：功能按鍵、選擇開關、捲線長1.5/3/5公尺、電源指示燈、工作燈、緊急停止開關、始能開關。
- 外置式手輪附有專用掛架及永久磁鐵，可固定或者磁吸於設備外罩上。
- 選擇開關支援多種編碼方式：點對點、二進制、格雷碼。
- 支援控制器：FANUC、SIEMENS、MITSUBISHI、FAGOR、FX5U、BECKHOFF、DELTA、Raspberry Pi...等。
- 提供ODM服務：依照客戶需求設計專用的外置式電子手輪。
- CE/IP67
- Extensible modular design: function button, selector switch, coding type, cable length (1.5/3/5 m), indicator light, work light, emergency stop, enable.
- The back case embedded with a permanent magnet and holder bracket.
- Supports multiple coding: point-to-point, binary, and gray code.
- Based on the functions of FANUC, SIEMENS, MITSUBISHI, FAGOR, BECKHOFF, DELTA, Raspberry Pi and other controllers, it has high compatibility.
- ODM.

尺寸圖 Dimension Drawing



ATOMS J1 產品編號 ATOMS J1 Handy MPG Ordering Information

軸向規格 Axis Coding	倍率規格 Multiplication	軸數 Axis	MPG形式 MPG Specification	急停開關 EMG stop	始能開關 Enable	選配按鍵 Function Button	專利工作燈 Work Light	線長 Cable Length
P 點對點 Point to point	P 點對點 Point to point	2 OFF-X-Y	1 100PPR Pull-up (FANUC)	0 不安裝 (標準) None (Standard)	0 不安裝 (標準) None (Standard)	0 不安裝 (標準) None (Standard)	0 不安裝 (標準) None (Standard)	S 1.5m
B 二進制 Binary	B 二進制 Binary	3 OFF-X-Y-Z	2 25PPR Pull-up (MITSUBISHI)	E 加裝2A (客製化) with EMG (2A) (Customize)	L 左側 (客製化) Left (Customize)	1 ■■■ (客製化) (Customize)	L 加裝 (客製化) With Light (Customize)	M 3m
G 格雷碼 Gray code	G 格雷碼 Gray code	4 OFF-X-Y-Z-4	3 100PPR Line Driver (SIEMENS)		A 左右 (客製化) Both (Customize)	2 ■■■ (客製化) (Customize)		L 5m
		5 OFF-X-Y-Z-4-5	4 100PPR Open circuit +2.2kΩ					
		6 客製Customize	5 100PPR Open Circuit					

產品組合

Product Portfolio

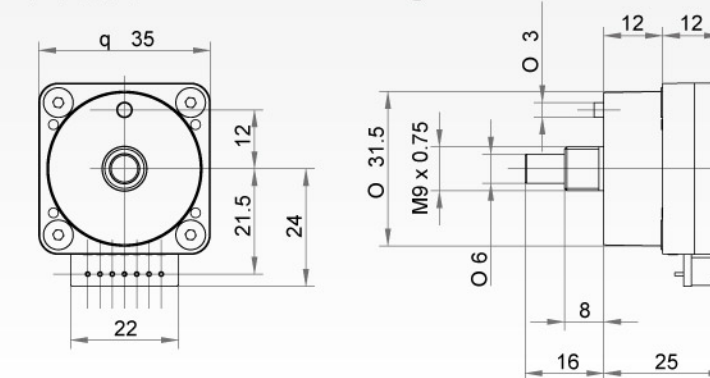
波段開關及旋鈕頭 Code Switch and Knob



特色 FEATURES

- 三種角度段數：H-13.85°(0-25)，J-15°(0-23)，N-30°(0-11)
- 五種編碼：點對點/二進制/反二進制/格雷碼/反格雷碼
- 密封式設計，減少鐵屑及粉塵進入且耐衝擊性強
- 支援連接器、旋鈕頭
- Three types angle: H-13.85°(0-25), J-15°(0-23), N-30°(0-11).
- Five output coding: Point to point, Binary, Anti-Binary, Gray Code and Anti-Gray Code.
- Hermetically sealed design, isolating iron pockets and dust and stronger impact resistance.
- Support connector (2.54 pitch) and knob.
- Back setting design, do not need to remove parts to adjust.
- Over 200,000 times rotations, 4 times longer cycle life than others.
- CE/RoHS
- 背面段位設定，更改段數不需要拆卸組件
- 適用於有唯一性的功能，如倍率、進給率、模式
- 壽命200,000轉以上，相較同規格品4倍耐用
- CE/RoHS

尺寸圖 Dimension Drawing

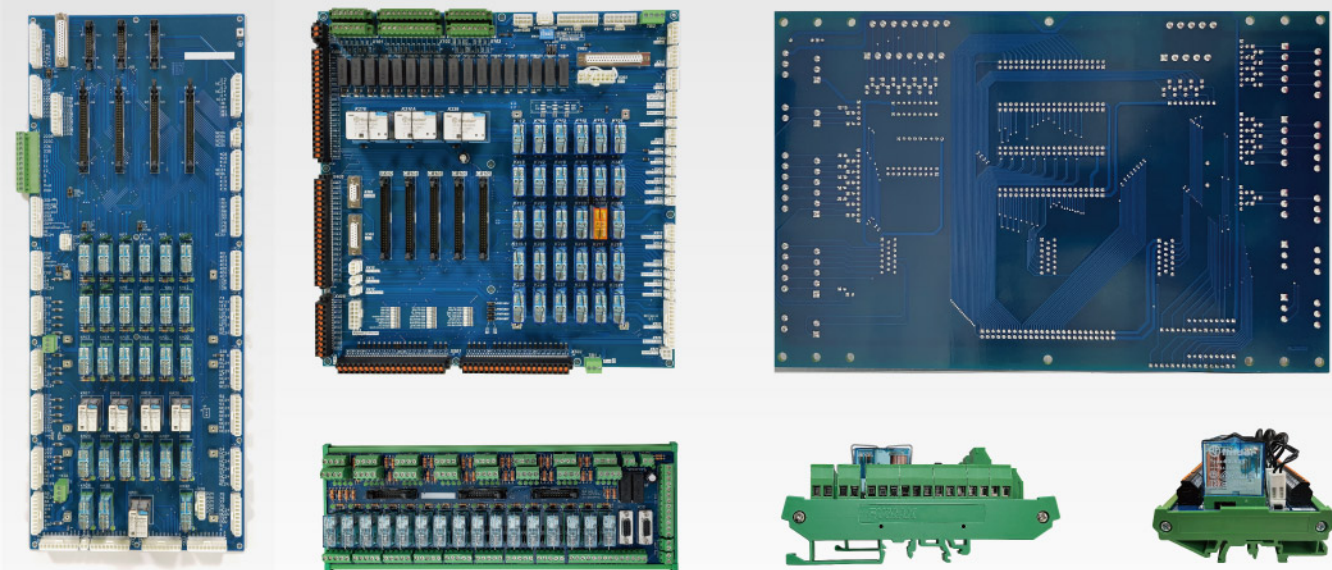


產品編號 Ordering Information

波段開關類型 Series	輸出碼 Output Code	旋轉角度 Angle	段數範圍 Position	接線方式 Wiring Method	旋鈕頭 Knob
YLDP 標準型 Standard	00 點對點 Point to Point	H 13.85°	0-25段	CB 180度水平入線連接器 180° Horizontal Wire Connector	K 旋鈕頭 With Knob
YLDAP 附定位器型 Locator	01 二進制 Real Binary	J 15°	0-23段		0 不附旋鈕頭 None
	02 反二進制 Complimentary Binary	N 30°	0-11段	0 焊接型 Soldering	
	03 格雷碼 Real Gray code				
	04 反格雷碼 Complimentary Gray				

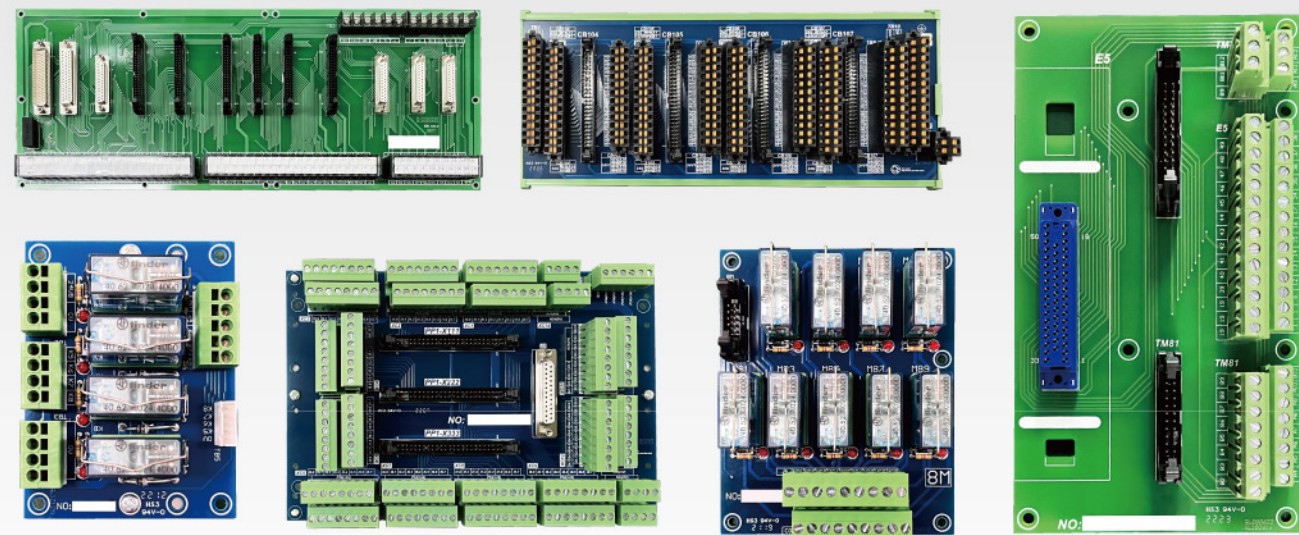
實績照片

Product Photos



實績照片

Product Photos



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