

ioLogik E1200 系列

配備 2 埠乙太網路交換器的乙太網路遠端 I/O



特色與優點

- 使用者可定義的 Modbus TCP 從屬裝置定址
- 支援 IIoT 應用程式的 RESTful API
- 支援 EtherNet/IP 轉接器
- 菊鏈拓樸的 2 埠乙太網路交換器
- 透過點對點通訊節省時間和接線成本
- 與 MX-AOPC UA 伺服器進行的主動通訊
- 支援 SNMP v1/v2c
- 使用 ioSearch 公用程式輕鬆進行大量部署和配置
- 透過網頁瀏覽器輕鬆完成配置
- 使用 Windows 或 Linux 版 MXIO 程式庫簡化 I/O 管理
- Class I Division 2、ATEX Zone 2 認證¹
- 提供寬操作溫度型號，適合 -40 至 75°C (-40 至 167°F) 環境

認證

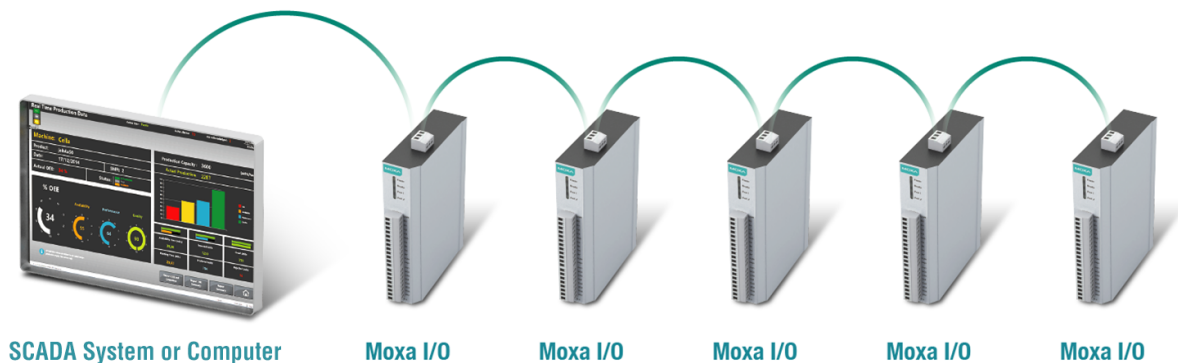


簡介

ioLogik E1200 系列支援最常用的 I/O 資料擷取協定，能夠處理各種應用。大多數 IT 工程師使用 SNMP 或 RESTful API 協定，不過 OT 工程師更熟悉基於 OT 的協定，例如 Modbus 和 EtherNet/IP。Moxa 的智慧 I/O 使 IT 和 OT 工程師很容易就可以從同一個 I/O 裝置擷取資料。ioLogik E1200 系列支援六種不同的協定，包括適合 OT 工程師的 Modbus TCP、EtherNet/IP 和 Moxa AOPC，以及適合 IT 工程師的 SNMP、RESTful API 和 Moxa MXIO 程式庫。ioLogik E1200 擷取 I/O 資料並同時將資料轉換為這些協定中的任何協定，您很容易就可以連接應用程式。

菊鏈乙太網路 I/O 連線

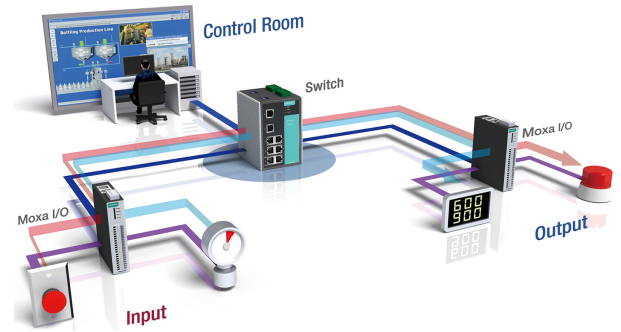
這種工業乙太網路遠端 I/O 配備兩個交換乙太網路連接埠，允許資訊在下游自由傳輸到另一個本機乙太網路裝置，或透過可擴充的菊鏈乙太網路 I/O 陣列在上游將資訊傳輸到控制伺服器。工廠自動化、安全和監視系統以及通道連線等應用程式可以使用菊鏈乙太網路透過標準乙太網路纜線建構多點 I/O 網路。許多工業自動化使用者都熟悉在現場匯流排解決方案中做為最常用配置的多點。ioLogik 乙太網路遠端 I/O 裝置支援的菊鏈功能不僅增加遠端 I/O 應用的可擴充性和安裝可能性，而且減少對個別乙太網路交換器的需求來降低整體成本。藉由這種方式以菊鏈連接裝置也將減少整體人力和接線費用。



1. Class I Division 2 和 ATEX 目前不適用於 E1213/E1213-T 型號。

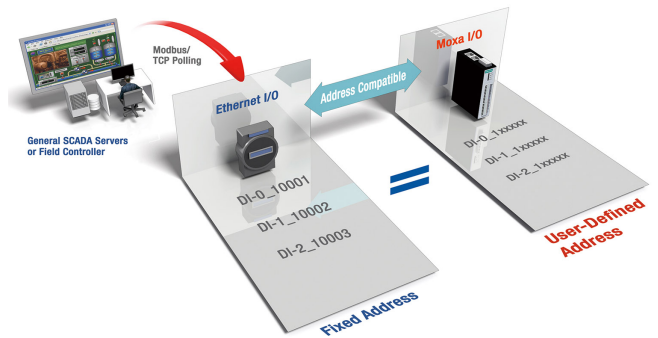
透過點對點通訊節省時間和接線成本

在遠端自動化應用中，控制室和感測器通常距離相當遙遠，因此長距離接線成為持續的挑戰。透過點對點網路，使用者現在可以對應一對 ioLogik 系列模組，以使輸入值將被直接傳輸到輸出通道，從而大幅簡化接線過程並降低接線成本。



使用者可定義的 Modbus TCP 定址，可輕鬆升級現有系統

對於固定位址控制和偵測的 Modbus 裝置，使用者需要花費大量時間研究和驗證初始配置。使用者需要定位各個裝置的網路詳細資訊，例如 I/O 通道或供應商定義的位址，藉以啟用 SCADA 系統或 PLC 的初始或起始位址。支援使用者可定義 Modbus TCP 定址的裝置提供更大的彈性和更簡單的設定。使用者不需要擔心個別裝置，只需要按照本身的需求配置功能和位址對應。



事件推送技術

與 MX-AOPC UA 伺服器一起使用時，裝置可以在將狀態和/或事件的變化傳送到 SCADA 系統時使用主動推送通訊。不同於輪詢系統，使用推送架構與 SCADA 系統進行通訊時，只有在狀態或配置事件發生變化時才會傳遞訊息，藉以提高準確性並減少需要傳輸的資料量。



規格

Input/Output Interface

Digital Input Channels	ioLogik E1210 Series: 16 ioLogik E1212/E1213 Series: 8 ioLogik E1214 Series: 6 ioLogik E1242 Series: 4
Digital Output Channels	ioLogik E1211 Series: 16 ioLogik E1213 Series: 4
Configurable DIO Channels (by jumper)	ioLogik E1212 Series: 8 ioLogik E1213/E1242 Series: 4
Relay Channels	ioLogik E1214 Series: 6
Analog Input Channels	ioLogik E1240 Series: 8 ioLogik E1242 Series: 4
Analog Output Channels	ioLogik E1241 Series: 4
RTD Channels	ioLogik E1260 Series: 6

Thermocouple Channels	ioLogik E1262 Series: 8
Isolation	3k VDC or 2k Vrms
Buttons	Reset button

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Sensor Type	Dry contact Wet contact (NPN or PNP)
I/O Mode	DI or event counter
Dry Contact	On: short to GND Off: open
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC
Counter Frequency	250 Hz
Digital Filtering Time Interval	Software configurable
Points per COM	ioLogik E1210/E1212 Series: 8 channels ioLogik E1213 Series: 12 channels ioLogik E1214 Series: 6 channels ioLogik E1242 Series: 4 channels

Digital Outputs

Connector	Screw-fastened Euroblock terminal
I/O Type	ioLogik E1211/E1212/E1242 Series: Sink ioLogik E1213 Series: Source
I/O Mode	DO or pulse output
Current Rating	ioLogik E1211/E1212/E1242 Series: 200 mA per channel ioLogik E1213 Series: 500 mA per channel
Pulse Output Frequency	500 Hz (max.)
Over-Current Protection	ioLogik E1211/E1212/E1242 Series: 2.6 A per channel @ 25°C ioLogik E1213 Series: 1.5 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	35 VDC

Relays

Connector	Screw-fastened Euroblock terminal
Type	Form A (N.O.) power relay
I/O Mode	Relay or pulse output
Pulse Output Frequency	0.3 Hz at rated load (max.)
Contact Current Rating	Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Contact Resistance	100 milli-ohms (max.)
Mechanical Endurance	5,000,000 operations
Electrical Endurance	100,000 operations @ 5 A resistive load

Breakdown Voltage	500 VAC
Initial Insulation Resistance	1,000 mega-ohms (min.) @ 500 VDC
Note	Ambient humidity must be non-condensing and remain between 5 and 95%. The relays may malfunction when operating in high condensation environments below 0°C.

Analog Inputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
I/O Type	Differential
Resolution	16 bits
Input Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA 4 to 20 mA (with burn-out detection)
Accuracy	ioLogik E1240/E1242: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1240-T/E1242-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ±0.5% FSR @ -40 to 75°C
Sampling Rate	ioLogik E1240: 12 samples/sec per module (shared between up to 8 channels) ² ioLogik E1242: 12 samples/sec per module (shared between up to 4 channels) ²
Built-in Resistor for Current Input	120 ohms
Input Impedance	10 mega-ohms (min.)

Analog Outputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
Output Range	0 to 10 VDC 4 to 20 mA
Resolution	12-bit
Accuracy	ioLogik E1241: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1241-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Voltage Output Short-Circuit Protection	10 mA
Internal Resistor	400 ohms Note: 24 V of external power required when loading exceeds 1000 ohms

RTDs

Connector	Screw-fastened Euroblock terminal
Sensor Type	PT1000 (-200 to 350°C) PT50, PT100, PT200, PT500 (-200 to 850°C)

2. 如果啟用 N 個通道，則各個已啟用通道所達到的採樣率 = 12/N 個樣本/秒。

Resistance Type	310, 620, 1250, and 2200 ohms
Input Connection	2- or 3-wire
Sampling Rate	ioLogik E1260: 12 samples/sec per module (shared between up to 6 channels) ³
Resolution	0.1°C or 0.1 ohms
Accuracy	ioLogik E1260: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1260-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Input Impedance	625 kilo-ohms (min.)

Thermocouples

Connector	Screw-fastened Euroblock terminal
Sensor Type	J, K, T, E, R, S, B, N
Millivolt Type	±19.532 mV ±39.062 mV ±78.126 mV Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)
Resolution	16 bits
Millivolt Accuracy	ioLogik E1262: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1262-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
TC Accuracy	Types J, T, E, S, B: ±5°C Types K, R, N: ±8°C
CJC Accuracy	±0.5°C @ 25°C ±1.5°C @ -40 to 75°C
Sampling Rate	ioLogik E1262: 12 samples/sec per module (shared between up to 8 channels) ³
Input Impedance	10 mega-ohms (min.)

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2, 1 MAC address (Ethernet bypass)
Magnetic Isolation Protection	1.5 kV (built-in)

Ethernet Software Features

Configuration Options	Web Console (HTTP), Windows Utility (ioSearch), MCC Tool
Industrial Protocols	Modbus TCP Server (Slave), Moxa AOPC (Active Tag), MXIO Library, EtherNet/IP Adapter
Management	RESTful API, SNMPv1/v2c, SNMPv1 Trap, HTTP, DHCP Client, BOOTP, IPv4, TCP/IP, UDP
MIB	Device Settings MIB
Security	Access control list

3. 如果啟用 N 個通道，則各個已啟用通道所達到的採樣率 = 12/N 個樣本/秒。

LED Interface

LED Indicators	Power, Ready, Port 1, Port 2
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Modbus TCP

Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Server (Slave)
Max. No. of Client Connections	10

EtherNet/IP

Mode	Adapter
Max. No. of Scanner Connections	9 (for read-only), 1 (for read/write)

Power Parameters

Power Connector	Screw-fastened Euroblock terminal
No. of Power Inputs	1
Input Voltage	12 to 36 VDC
Power Consumption	ioLogik E1210 Series: 110 mA @ 24 VDC ioLogik E1211 Series: 200 mA @ 24 VDC ioLogik E1212 Series: 155 mA @ 24 VDC ioLogik E1213 Series: 130 mA @ 24 VDC ioLogik E1214 Series: 188 mA @ 24 VDC ioLogik E1240 Series: 121 mA @ 24 VDC ioLogik E1241 Series: 194 mA @ 24 VDC ioLogik E1242 Series: 139 mA @ 24 VDC ioLogik E1260 Series: 110 mA @ 24 VDC ioLogik E1262 Series: 118 mA @ 24 VDC

Physical Characteristics

Housing	Plastic
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	200 g (0.44 lb)
Installation	DIN-rail mounting, Wall mounting
Wiring	I/O cable, 16 to 26 AWG Power cable, 12 to 24 AWG

Environmental Limits

Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	4000 m ⁴

Standards and Certifications

EMC	EN 55032/24, EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m

4. 如果您需要產品能在高海拔地區正常運作，請與 Moxa 聯繫。

	IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX, Class I Division 2 ⁵
Safety	UL 508
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Declaration

Green Product	RoHS, CRoHS, WEEE
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MTBF

Time	ioLogik E1210 Series: 671,345 hrs ioLogik E1211 Series: 923,027 hrs ioLogik E1212 Series: 561,930 hrs ioLogik E1213 Series: 715,256 hrs ioLogik E1214 Series: 808,744 hrs ioLogik E1240 Series: 474,053 hrs ioLogik E1241 Series: 888,656 hrs ioLogik E1242 Series: 502,210 hrs ioLogik E1260 Series: 660,260 hrs ioLogik E1262 Series: 631,418 hrs
Standards	Telcordia SR332

Warranty

Warranty Period	ioLogik E1214: 2 years ⁶ ioLogik E1210/E1211/E1212/E1213/E1240/E1241/E1242/E1260/E1262: 5 years
Details	See www.moxa.com/tw/warranty

Package Contents

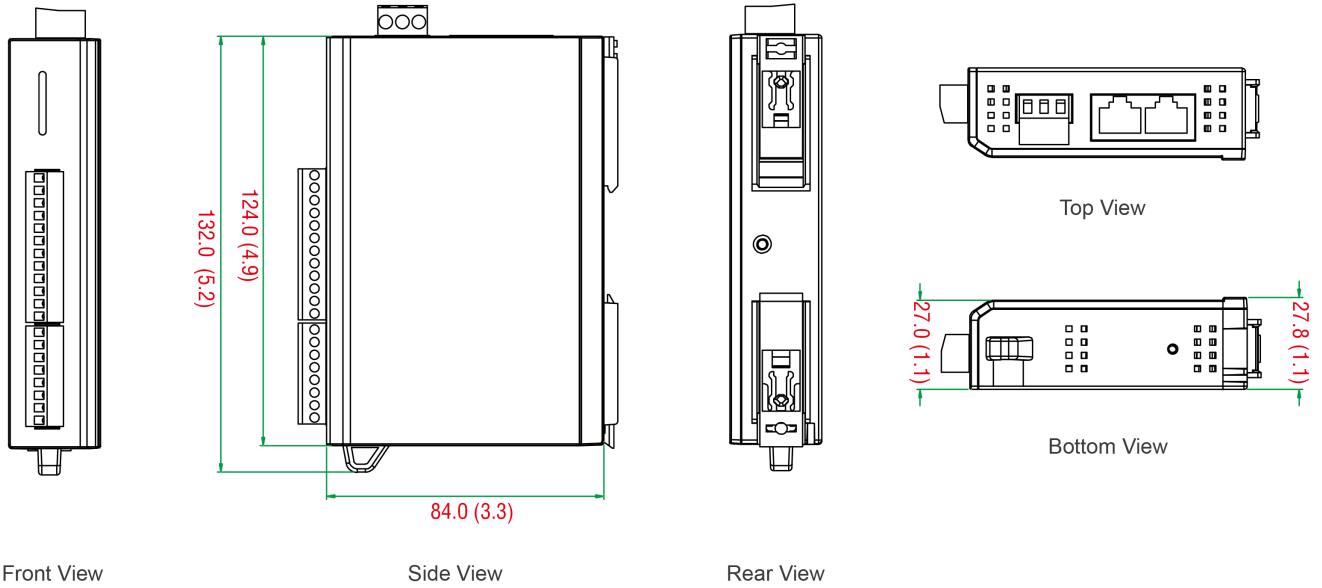
Device	1 x ioLogik E1200 Series remote I/O
Installation Kit	1 x terminal block, 8-pin, 3.81 mm 1 x terminal block, 12-pin, 3.81 mm 1 x terminal block, 3-pin, 5.00 mm
Documentation	1 x quick installation guide 1 x warranty card

5. ATEX 和 Class I Division 2 目前不適用於 ioLogik E1213/E1213-T 型號。

6. 由於功率繼電器的使用壽命有限，使用此元件的產品享有 2 年保固。

尺寸

單位：公釐（英吋）



訂購資訊

Model Name	Input/Output Interface	Digital Output Type	Operating Temp.
ioLogik E1210	16 x DI	-	-10 to 60°C
ioLogik E1210-T	16 x DI	-	-40 to 75°C
ioLogik E1211	16 x DO	Sink	-10 to 60°C
ioLogik E1211-T	16 x DO	Sink	-40 to 75°C
ioLogik E1212	8 x DI, 8 x DIO	Sink	-10 to 60°C
ioLogik E1212-T	8 x DI, 8 x DIO	Sink	-40 to 75°C
ioLogik E1213	8 x DI, 4 x DO, 4 x DIO	Source	-10 to 60°C
ioLogik E1213-T	8 x DI, 4 x DO, 4 x DIO	Source	-40 to 75°C
ioLogik E1214	6 x DI, 6 x Relay	-	-10 to 60°C
ioLogik E1214-T	6 x DI, 6 x Relay	-	-40 to 75°C
ioLogik E1240	8 x AI	-	-10 to 60°C
ioLogik E1240-T	8 x AI	-	-40 to 75°C
ioLogik E1241	4 x AO	-	-10 to 60°C
ioLogik E1241-T	4 x AO	-	-40 to 75°C
ioLogik E1242	4 DI, 4 x DIO, 4 x AI	Sink	-10 to 60°C
ioLogik E1242-T	4 DI, 4 x DIO, 4 x AI	Sink	-40 to 75°C
ioLogik E1260	6 x RTD	-	-10 to 60°C
ioLogik E1260-T	6 x RTD	-	-40 to 75°C
ioLogik E1262	8 x TC	-	-10 to 60°C
ioLogik E1262-T	8 x TC	-	-40 to 75°C

配件 (選購)

Software

MX-AOPC UA Server

OPC UA Server software for converting fieldbus to the OPC UA standard

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