

MGate 5103 系列

1 埠 Modbus RTU/ASCII/TCP/EtherNet/IP 轉 PROFINET 閘道器



特色與優點

- 將 Modbus 或 EtherNet/IP 轉換為 PROFINET
- 支援 PROFINET IO 裝置
- 支援 Modbus RTU/ASCII/TCP master/client and slave/server
- 支援 EtherNet/IP Adapter (轉接器)
- 透過網頁式設定精靈輕鬆配置
- 內建乙太網路串接 (Ethernet cascading) 功能，簡化佈線
- 內建流量監控/診斷資訊，便於故障排除與雲端數據傳輸，以及成本評估和分析
- microSD 卡可用於備份/複製配置與儲存事件日誌
- 狀態監控和故障保護，可輕鬆維護
- 串列內建埠 2kV 隔離保護
- 提供 -40 至 75°C 寬溫度操作型號可供選用
- 支援備援雙 DC 電源輸入與 1 組繼電器輸出

認證



簡介

MGate 5103 為工業級乙太網路閘道器，可將 Modbus RTU/ASCII/TCP 或 EtherNet/IP 轉換為 PROFINET 架構的網路通訊。在系統整合中，可將 MGate 5103 作為 Modbus 主站/從站或 EtherNet/IP Adapter，負責擷取現場裝置資料，藉以收集並交換 PROFINET 裝置的資料。所有最新資料會暫存於閘道器中，再轉換為 PROFINET 封包，以便 PROFINET IO 控制器控制或監控現場裝置。

透過 Web 主控台輕鬆設定

MGate 5103 系列提供圖形化快速設定 (Quick Setup) 介面，協助使用者快速完成設定流程。透過簡單步驟即可選擇通訊協定轉換模式並完成配置。此外，本系列支援 GSDML 匯出功能，可將設定匯出並匯入至 PROFINET PLC (例如 Siemens PLC)，有效縮短 PLC 設定時間。

Modbus RTU/ASCII/TCP 通訊協定流量監控

MGate 5103 支援 Modbus RTU/ASCII/TCP 通訊流量監控功能，特別適用於安裝與除錯階段。通訊問題通常源自設定錯誤，例如從站 ID、暫存器位址或指令設定不正確。透過流量監控功能，可即時擷取通訊資料並分析內容，協助快速定位問題根因。

維護功能

MGate 5103 提供系統日誌功能，可記錄裝置運作過程中的各類系統事件，並可透過 Web 主控台遠端檢視。此外，設備支援狀態監控與故障保護機制。當 Modbus 裝置斷線或無回應時，系統會即時通知 PLC/DCS/SCADA 系統，使控制系統可掌握各終端設備狀態並發出警報，協助操作人員即時處理異常。

規格

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2 Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)

Ethernet Software Features

Industrial Protocols	PROFINET IO Device Modbus TCP Client (Master) Modbus TCP Server (Slave) EtherNet/IP Adapter
Configuration Options	Web Console (HTTP/HTTPS) Device Search Utility (DSU) Telnet Console
Management	ARP DHCP Client DNS HTTP HTTPS SMTP SNMP Trap SNMPv1/v2c/v3 TCP/IP Telnet SSH UDP NTP Client
MIB	RFC1213, RFC1317
Time Management	NTP Client

Security Functions

Authentication	Local database
Encryption	HTTPS AES-128 AES-256 SHA-256
Security Protocols	SNMPv3 SNMPv2c Trap HTTPS (TLS 1.3)

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1)
No. of Ports	1
Connector	DB9 male
Serial Standards	RS-232/422/485
Baudrate	50 bps to 921.6 kbps
Data Bits	7, 8
Parity	None Even Odd Space Mark
Stop Bits	1, 2
Flow Control	RTS Toggle (RS-232 only) RTS/CTS
RS-485 Data Direction Control	Automatic Data Direction Control (ADDC)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms

Terminator for RS-485	120 ohms
Isolation	2 kV (built-in)

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

Serial Software Features

Configuration Options	Serial Console
Industrial Protocols	Modbus RTU/ASCII Master Modbus RTU/ASCII Slave

Modbus RTU/ASCII

Mode	Master, Slave
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Commands	128
Input Data Size	512 bytes
Output Data Size	512 bytes

Modbus TCP

Mode	Client (Master), Server (Slave) Client (Master), Server (Slave)
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Client Connections	16
Max. No. of Server Connections	32
Max. No. of Commands	128
Input Data Size	512 bytes
Output Data Size	512 bytes

PROFINET

Mode	IO Device IO Device
Max. No. of IO Controller Connections	1 (for read/write)
Input Data Size	512 bytes
Output Data Size	512 bytes

EtherNet/IP

Mode	Adapter
CIP Objects Supported	Identity Message Router Assembly Connection Manager TCP/IP interface

	Ethernet link Port
Max. No. of Scanner Connections	1 (for read-only), 1 (for read/write)
Input Data Size	496 bytes
Output Data Size	496 bytes

Memory

microSD Slot	Up to 32 GB (SD 2.0 compatible)
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Power Parameters

Input Voltage	12 to 48 VDC
Input Current	455 mA @ 12 VDC
Power Connector	Screw-fastened Euroblock terminal

Relays

Contact Current Rating	Resistive load: 2 A @ 30 VDC
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Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	36 x 105 x 140 mm (1.42 x 4.14 x 5.51 in)
Weight	507 g (1.12 lb)

Environmental Limits

Operating Temperature	MGate 5103: 0 to 60°C (32 to 140°F) MGate 5103-T: -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)

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Safety	EN 62368-1 UL 508
Hazardous Locations	ATEX Class I Division 2 IECEx
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6 IEC 60068-2-64

MTBF

Time	859,422 hrs
Standards	Telcordia SR332

Warranty

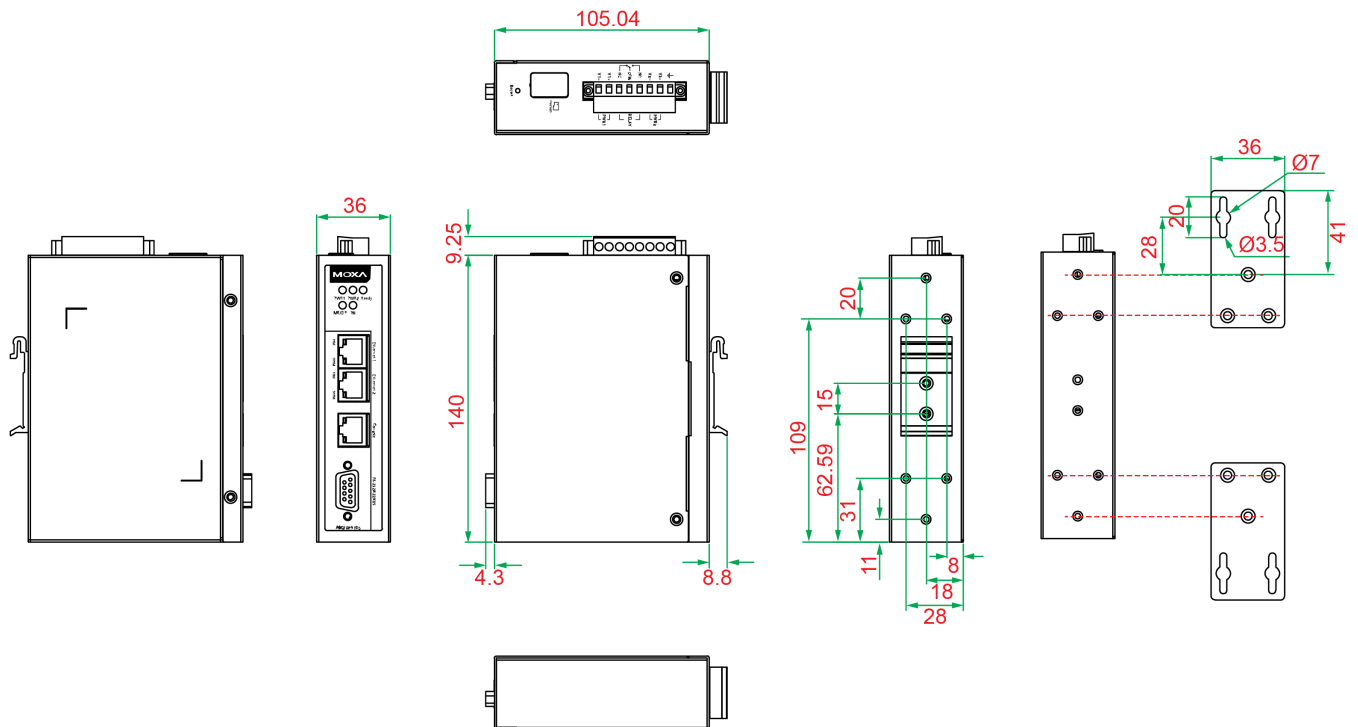
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MGate 5103 Series gateway
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	1 x DIN-rail kit
Documentation	1 x quick installation guide 1 x warranty card

尺寸

單位：公釐



訂購資訊

Model Name	Operating Temp.
MGate 5103	0 to 60°C
MGate 5103-T	-40 to 75°C

配件（選購）

Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
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CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm
CBL-RJ45F9-150	8-pin RJ45 to DB9 female serial cable, 1.5m
CBL-RJ45SF9-150	8-pin RJ45 to DB9 female serial cable with shielding, 1.5m

Connectors

Mini DB9F-to-TB	DB9 female to terminal block connector
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DIN-Rail Mounting Kits

DK-25-01	DIN-rail mounting kit, 2 screws
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Wall-Mounting Kits

WK-36-02	DIN-rail/wall-mounting kit, 2 plates, 6 screws
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Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
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