

MGate 5109 系列

1 埠 Modbus RTU/ASCII/TCP 轉 DNP3 串列埠/TCP/UDP 閘道器



特色與優點

- 支援 Modbus RTU/ASCII/TCP master/client and slave/server
- 支援 DNP3 串列埠/TCP/UDP master and outstation (層級 2)
- DNP3 Master 模式最多支援 26,600 個資料點
- 支援 DNP3 時間同步功能 (Time Synchronization)
- 透過網頁式設定精靈輕鬆配置
- 內建乙太網路串接功能 (Ethernet Cascading)，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
- 備援雙直流電源輸入和繼電器輸出
- 提供 -40 至 75°C 寬溫度操作型號可供選用
- 串列內建埠 2kV 隔離保護

認證



簡介

MGate 5109 為一款工業級乙太網路閘道器，提供 Modbus RTU/ASCII/TCP 與 DNP3 (串列 / TCP / UDP) 之間的通訊協定轉換功能。全系列採用堅固金屬外殼設計，支援 DIN rail 軌道安裝，並內建串列隔離保護，適用於嚴苛工業環境。MGate 5109 支援 transparent mode，很容易就可以將 Modbus TCP 整合到 Modbus RTU/ASCII 網路或將 DNP3 TCP/UDP 整合到 DNP3 串列網路。MGate 5109 也支援 agent mode，能夠在 Modbus 和 DNP3 網路之間交換數據，多個 Modbus Slave 或多個 DNP3 Outstation 的資料集中 (Data Concentrator)。堅固設計適合電力、石油與天然氣以及水資源與廢水等工業應用。

透過 Web 主控台輕鬆配置

MGate 5109 系列提供圖形化 Quick Setup 快速設定精靈，可在幾個步驟內完成通訊協定轉換設定。MGate 5109 系列也支援 DNP3 串列 Outstation 自動偵測 (Auto Detection)，自動讀取 Outstation 物件資訊，簡化 DNP3 Master 設定流程。

Modbus 和 DNP3 通訊協定流量監控

MGate 5109 閘道器支援 Modbus 和 DNP3 通訊協定流量監控，故障排除更容易，尤其在安裝階段。可協助排查常見問題，例如：Slave ID 設定錯誤，Register / Object Address 錯誤，指令格式不正確都會造成通訊問題。有了 Modbus/DNP3 通訊協定流量監控，您可以檢查所擷取的數據，並輕鬆判斷問題根本原因。

多種維護功能

MGate 5109 閘道器提供 Web 主控台和 Telnet 主控台，適用於遠端維護。支援加密通訊功能 (包括 HTTPS 和 SSH)，強化網路安全。另提供韌體記錄功能，可記錄連網事件和 Modbus 維護事件。使用者可以透過 Web 控制台遠端查看日誌資料。

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	Modbus TCP Client (Master) Modbus TCP Server (Slave) DNP3 TCP Master DNP3 TCP Outstation
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 DNP3 Serial Master DNP3 Serial Outstation

Modbus RTU/ASCII

Mode	Master, Slave
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Commands	100

Modbus TCP

Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Client (Master), Server (Slave)
Max. No. of Client Connections	16
Max. No. of Server Connections	32
Max. No. of Commands	100

DNP3 (Transparent)

Max. No. of Master Connections	16
Max. No. of Outstation Connections	32

DNP3 Serial

Mode	Master, Outstation
Max. No. of Master Connections	1
Max. No. of Outstation Connections	31

Internal Master Database (MGate as DNP3 Master)	Binary Inputs: 8192 points (256 points per outstation) Analog Inputs: 2048 points (64 points per outstation) Counters: 2048 points (64 points per outstation) Binary Outputs: 8192 points (256 points per outstation) Analog Outputs: 2048 points (64 points per outstation)
Internal Outstation Database	Binary Inputs: 8192 points Analog Inputs: 2048 points Counters: 2048 points Binary Outputs: 8192 points Analog Outputs: 2048 points Binary Input Events: 1024 Analog Input Events: 1024 Counter Events: 1024

DNP3 TCP/UDP

Mode	Master, Outstation
Max. No. of Master Connections	1
Max. No. of Outstation Connections	32
Internal Master Database (MGate as DNP3 Master)	Binary Inputs: 8192 points (256 points per outstation) Binary Outputs: 8192 points (256 points per outstation) Analog Inputs: 2048 points (64 points per outstation) Analog Outputs: 2048 points (64 points per outstation) Counters: 2048 points (64 points per outstation)
Internal Outstation Database	Binary Inputs: 8192 points Analog Inputs: 2048 points Counters: 2048 points Binary Outputs: 8192 points Analog Outputs: 2048 points Binary Input Events: 1024 Analog Input Events: 1024 Counter Events: 1024

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 5109: 0 to 60°C (32 to 140°F) MGate 5109-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	888,926 hrs
Standards	Telcordia Standard SR-332

Warranty

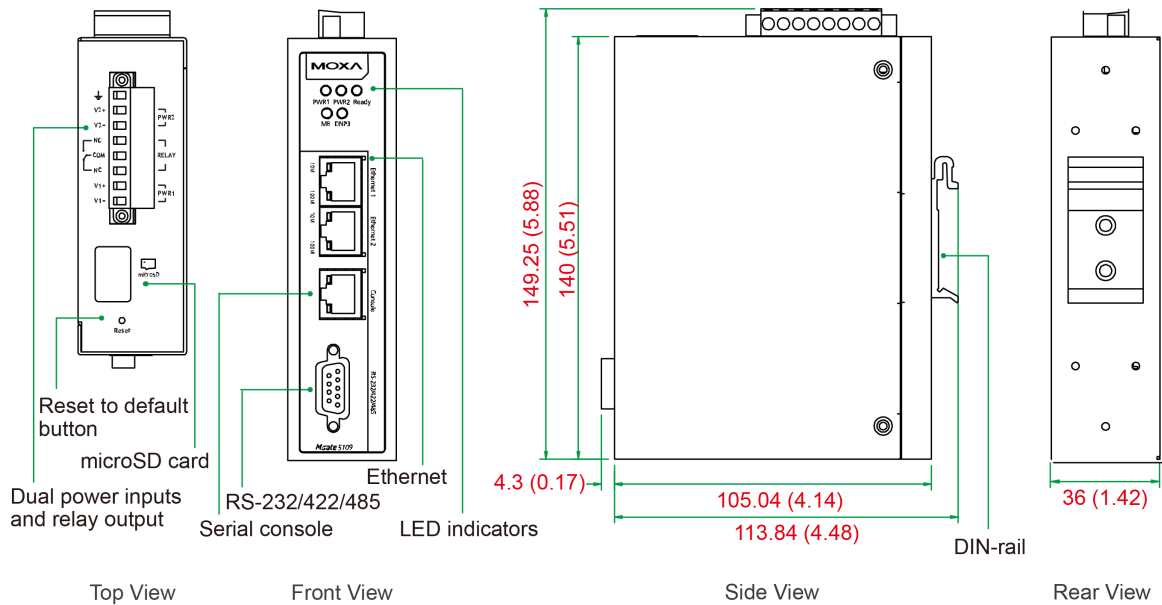
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MGate 5109 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（英吋）



訂購資訊

Model Name	Operating Temp.
MGate 5109	0 to 60°C
MGate 5109-T	-40 to 75°C

配件（選購）

Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
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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Power Cords

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

DK-25-01	DIN-rail mounting kit, 2 screws
WK-36-02	DIN-rail/wall-mounting kit, 2 plates, 6 screws

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