

MGate 5111 系列

1 埠 Modbus/PROFINET/EtherNet/IP 轉 PROFIBUS 從站閘道器



特色與優點

- 將 Modbus、PROFINET 或 EtherNet/IP 轉換為 PROFIBUS
- 支援 PROFIBUS DP V0 從站 (Slave) 模式
- 支援 Modbus RTU/ASCII/TCP Master (Client) 與 Slave (Server) 模式
- 支援 EtherNet/IP Adapter 模式
- 支援 PROFINET IO 裝置
- 透過網頁式設定精靈輕鬆配置
- 輕鬆佈線的內建乙太網路串接
- 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
- 狀態監控和故障保護，可輕鬆維護
- microSD 卡可用於備份/複製配置與儲存事件日誌
- 支援備援 DC 電源輸入與 1 點 relay 輸出
- 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

認證



簡介

MGate 5111 工業乙太網路閘道器能夠將資料從 Modbus RTU/ASCII/TCP、EtherNet/IP 或 PROFINET 轉換為 PROFIBUS 通訊協定。所有型號均有強固的金屬外殼加以保護，可使用 DIN 軌道安裝，而且提供內建串列隔離。

Modbus 是最普遍使用的工業通訊協定之一，EtherNet/IP、PROFINET 和 PROFIBUS 普遍用於工廠自動化和製程自動化。MGate 5111 支援 Modbus RTU/ASCII/TCP Master 與 Slave 雙模式，因此很容易就能將 Modbus 裝置連接到 PROFIBUS PLC 或 DCS (例如 Siemens PLC)。

在系統整合應用上，MGate 5111 可協助實現 EtherNet/IP PLC/SCADA 系統 (如 Rockwell Automation) 與 PROFIBUS 系統整合，PROFINET 架構 (如 Siemens PLC) 與既有 PROFIBUS 系統整合，不同工業網路間的資料互通與轉換。MGate 5111 閘道器有助於輕鬆配置和快速維護。便利的 Web 主控台適用於遠端維護工作，而且配置設定精靈 UI 可供迅速設定閘道器。全系列的故障排除工具有助於縮短配置時間和系統停機時間。堅固設計適合工業應用，例如工廠自動化、電力、石油與天然氣、水資源與廢水，以及其他製程自動化工業。

輕鬆配置

MGate 5111 系列具有便利的使用者介面，可供您快速設定大多數應用的通訊協定轉換程序，完全不需要使用者費時逐一進行繁瑣的參數配置。透過快速安裝，只要幾個步驟即可輕鬆存取通訊協定轉換模式，並完成配置。

MGate 5111 支援 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。此外，也提供系統監控功能來記錄網路連線和系統日誌事件。

多種維護功能

MGate 5111 支援通訊協定診斷和流量監控，故障排除更容易，尤其在安裝階段。可協助識別常見錯誤，例如 Slave ID 或 Node ID 設定錯誤，Register / Object Address 配置錯誤和通訊指令格式不正確，都可能造成通訊問題。

MGate 5111 具備完善的系統監控與故障保護機制。當 Modbus 裝置離線或無回應時，可即時回報 PLC/DCS/SCADA 系統，PLC/DCS 可取得各終端設備狀態並觸發警報。當 PROFIBUS 線路中斷時，可依使用者預設值執行預定保護動作。此設計可提升整體系統可靠性與安全性，避免產線異常擴大。

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) PROFINET IO Device 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

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	PROFIBUS DP-V0 Slave 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	2048 bytes
Output Data Size	2048 bytes

Modbus TCP

Mode	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	2048 bytes
Output Data Size	2048 bytes

PROFIBUS Interface

Industrial Protocols	PROFIBUS DP
No. of Ports	1
Connector	DB9 female
Baudrate	9600 bps to 12 Mbps
Isolation	2 kV (built-in)
Signals	PROFIBUS D+, PROFIBUS D-, RTS, Signal Common, 5V

PROFIBUS

Rotary Switch	PROFIBUS addresses 0-99 (addresses 100-125 supported through software configuration)
Mode	DP-V0 Slave
Max. No. of Master Connections	1
Max. No. of PROFIBUS I/O Modules	24

Input Data Size	244 bytes
Output Data Size	244 bytes

PROFINET

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

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	416 mA @ 12 VDC
Power Connector	Spring-type Euroblock terminal

Relays

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

Housing	Metal
IP Rating	IP30
Dimensions	45.8 x 105 x 134 mm (1.8 x 4.13 x 5.28 in)
Weight	589 g (1.30 lb)

Environmental Limits

Operating Temperature	MGate 5111: 0 to 60°C (32 to 140°F) MGate 5111-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 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
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: 4 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 61010-2-201
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	718,131 hrs
Standards	Telcordia SR332

Warranty

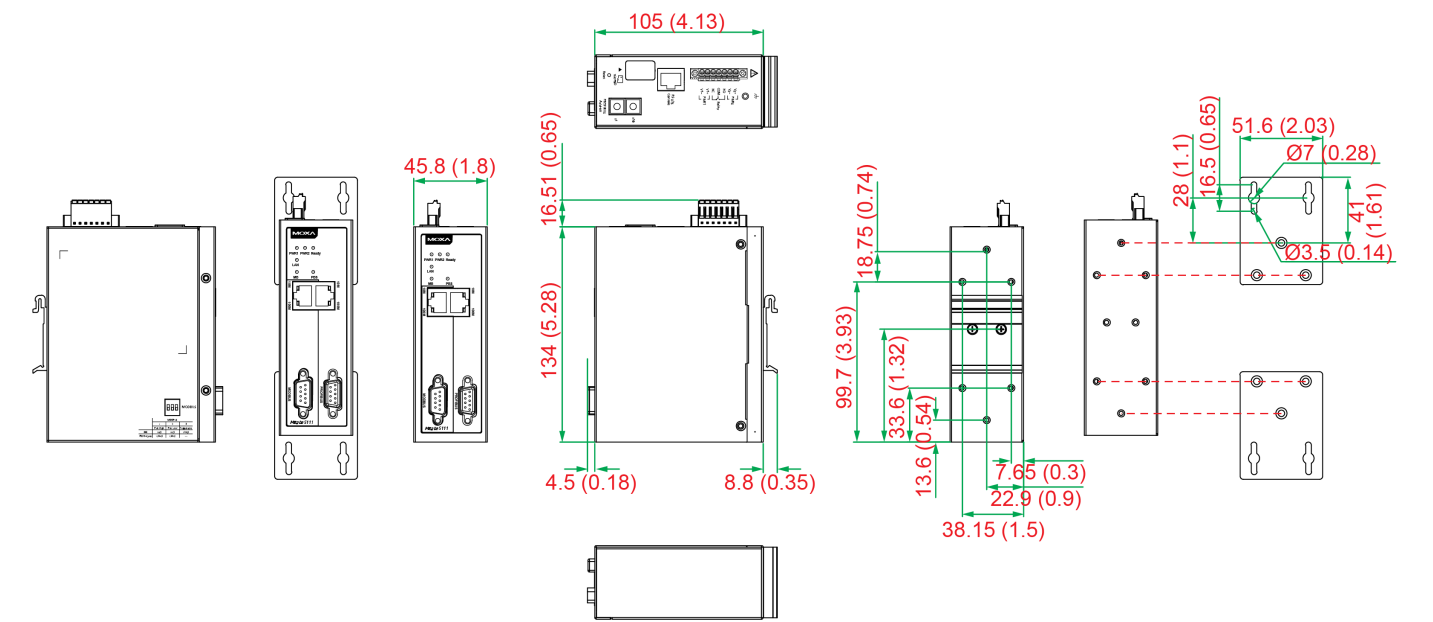
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MGate 5111 Series gateway
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 5111	0 to 60°C
MGate 5111-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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Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws
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Power Cords

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