

MGate 5105-MB-EIP 系列

支援 1 埠 MQTT 的 Modbus RTU/ASCII/TCP 轉 EtherNet/IP 閘道器



特色與優點

- 透過通用 MQTT 將現場匯流排資料連接到雲端
- 支援使用內建裝置 SDK 的 MQTT 連接到 Azure/Alibaba Cloud
- Modbus 和 EtherNet/IP 之間的通訊協定轉換
- 支援 EtherNet/IP Scanner/Adapter
- 支援 Modbus RTU/ASCII/TCP master/client and slave/server
- 支援使用 JSON 和 Raw 數據格式的 TLS 和憑證進行的 MQTT 連接
- 內建流量監控/診斷資訊，便於故障排除以及雲端數據傳輸的分析和成本評估
- 用於配置備份/複製和事件日誌的 microSD 卡，以及雲端連網中斷時的數據緩衝
- 提供 -40 至 75°C 寬溫度運作型號可供選用
- 串列埠內建 2kV 隔離保護

認證



簡介

MGate 5105-MB-EIP 是 Modbus RTU/ASCII/TCP 和 EtherNet/IP 網路與工業物聯網應用程式進行通訊的工業乙太網路閘道器，基於 MQTT 或第三方雲端服務，例如 Azure 和 Alibaba Cloud。若要將現有的 Modbus 裝置整合於 EtherNet/IP 網路，可使用 MGate 5105-MB-EIP 做為 Modbus 主控裝置或從屬裝置，藉以收集數據並與 EtherNet/IP 裝置交換數據。最新的交換數據也將儲存於閘道器。閘道器將儲存的 Modbus 數據轉換為 EtherNet/IP 數據封包，以便 EtherNet/IP Scanner 控制或監控 Modbus 裝置。MGate 5105-MB-EIP 上支援雲端解決方案的 MQTT 標準運用進階的安全、配置和診斷技術進行故障排除，藉以提供適合遠端監控應用程式（例如能源管理和資產管理）的可擴充解決方案。

透過 microSD 卡備份配置

MGate 5105-MB-EIP 配備 microSD 卡插槽。microSD 卡可用於備份系統配置和系統日誌，並可用於方便地將相同的配置複製到多個 MGate 5105-MB-EIP 設備。系統重新啟動時，儲存在 microSD 卡中的配置檔案將被複製到 MGate 本身。

透過 Web 主控台進行輕鬆配置和故障排除

MGate 5105-MB-EIP 也提供 Web 主控台，無需安裝額外的公用程式即可輕鬆配置。只需以管理員身分登入即可存取所有設定，也能夠以擁有唯讀權限的一般使用者身分登入。除了設定基本通訊協定設定之外，您也可以使用 Web 主控台監控 I/O 數據值和傳輸。尤其是，I/O 數據對應顯示閘道器記憶體中兩種通訊協定的數據位址，I/O 數據檢視可供您追蹤線上節點的數據值。此外，每個通訊協定的診斷和通訊分析也可以提供故障排除的實用資訊。

備援電源輸入

MGate 5105-MB-EIP 具有雙電源輸入，可靠性更高。可同時連接到 2 個帶電直流電源，因此即使電源供應失效也能保持運作不中斷。這些具備高度可靠性的功能使得這款進階的 Modbus 轉 EtherNet/IP 閘道器成為嚴苛工業應用的理想選擇。

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) EtherNet/IP Scanner EtherNet/IP Adapter MQTT
Configuration Options	Web Console (HTTP/HTTPS) Device Search Utility (DSU) MGate Manager 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	100
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	100
Input Data Size	2048 bytes
Output Data Size	2048 bytes

EtherNet/IP

Mode	Scanner, Adapter
CIP Objects Supported	Identity Message Router Assembly Connection Manager TCP/IP interface Ethernet link Port
Max. No. of Scanner Connections	16 (for read-only), 1 (for read/write)
Max. No. of Adapter Connections	100
Input Data Size	496 bytes
Output Data Size	496 bytes

MQTT

Mode	Publisher/Subscriber of MQTT Azure IoT Hub Device Alibaba IoT Platform Device
Version Supported	v3.1.1
QoS Level	QoS 0,1,2
Secure Transmission	TLS (1.0, 1.1, 1.2) encryption with user's root CA Client certificate Private key
Max. No. of Data Tag	300 data tags
Max. No. of Message	20 messages
MQTT General Features	Keep Alive Retain Message Last Will Message Clean Session

Memory

microSD Slot	Up to 32 GB (SD 2.0 compatible; Data buffering up to 2 GB)
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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 5105-MB-EIP: 0 to 60°C (32 to 140°F) MGate 5105-MB-EIP-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

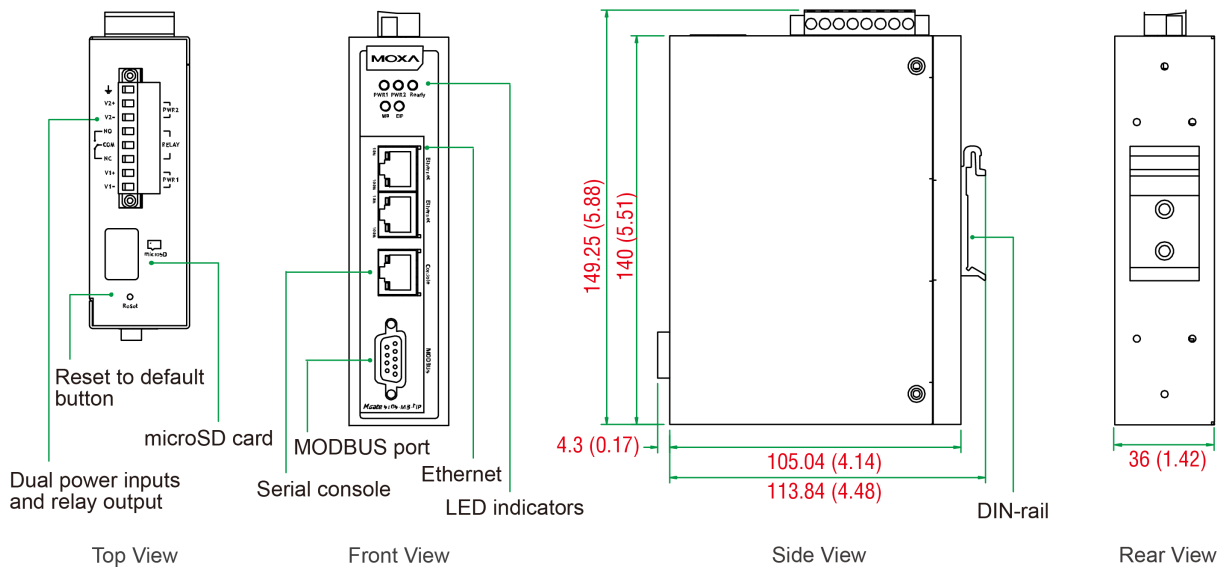
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MGate 5105-MB-EIP 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 5105-MB-EIP	0 to 60°C
MGate 5105-MB-EIP-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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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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