

MGate MB3170/MB3270 系列

1 與 2 埠進階串列轉 Ethernet Modbus 閘道器



特色與優點

- 支援自動裝置路由功能，可輕鬆配置
- 支援按 TCP 埠或 IP 位址路由以進行彈性部署
- 最多連接 32 個 Modbus TCP 伺服器
- 最多連接 31 或 62 個 Modbus RTU/ASCII 從屬裝置
- 可由最多 32 個 Modbus TCP 用戶端存取（為每個主控裝置保留 32 個 Modbus 要求）
- 支援 Modbus 串列從屬裝置對 Modbus 串列從屬裝置的通訊
- 輕鬆佈線的內建乙太網路串接
- 10/100BaseTX (RJ45) 或 100BaseFX（單一模式或多重模式，使用 SC/ST 接頭）
- 緊急要求通道可確保 QoS 控制
- 內嵌 Modbus 流量監控可輕鬆排除故障
- 內建 2 kV 光電隔離保護的串列埠（適用於「-I」型號）
- 提供 -40 至 75°C 寬溫度操作型號可供選用
- 支援備援 DC 電源輸入與 1 點 relay 輸出

認證



簡介

MGate MB3170 與 MB3270 分別是 1 與 2 埠 Modbus 閘道器，可在 Modbus TCP、ASCII 與 RTU 通訊協定之間轉換。閘道器提供串列對乙太網路通訊與串列（主控裝置）對串列（從屬裝置）的通訊。此外，閘道器還支援同時連接串列和乙太網路主控裝置與串列 Modbus 裝置。MGate MB3170 與 MB3270 系列閘道器最多可由 32 個 TCP 主控裝置/用戶端存取，或連接最多 32 個 TCP 從屬裝置/伺服器。透過串列埠路由可由 IP 位址、TCP 埠號或 ID 對應控制。按 TCP 埠與 IP 位址進行串列埠路由可允許存取最多 4 個 TCP 用戶端/主控裝置（MB3270 型號），而按 ID 對應進行路由則允許存取最多 32 個 TCP 用戶端/主控裝置（MB3170/MB3270）。特色優先控制功能可允許緊急命令立即獲得回應。所有型號都堅固耐用，可安裝在 DIN 軌道上，並為串列訊號提供選配內建光學隔離。

整合 TCP 主控裝置而無需更改 Modbus RTU/ASCII 網路或軟體

MB3270 可以整合 Modbus TCP 與 Modbus RTU/ASCII，而無需修改現有 Modbus RTU/ASCII 架構或軟體。有了串列轉接器功能，串列主控裝置可以保持透過特別對應的串列埠直接存取串列從屬裝置。這可讓串列與 TCP 主控裝置同時存取串列從屬裝置。

乙太網路通訊專用光纖

MGate MB3170 系列包含 100BaseFX 光纖型號，支援多模式型號最遠達 4 公里的傳輸距離，以及單一模式型號最遠達 40 公里的傳輸距離。光纖非常適合用於工業應用，因為它不受電磁雜訊及干擾影響。對於可能出現高接地環路電壓的環境，光纖能提供最佳的隔離保護，而且由於不存在火花風險，光纖在危險環境中使用比銅線更安全。

輕鬆配置自動裝置路由功能

對於需要配置大量 Modbus 裝置的工程師而言，Moxa 的自動裝置路由功能可協助消除他們遇到的許多問題與不便。只需要按一下滑鼠鍵，即可設定從屬 ID 路由表並配置使 Modbus 閘道自動偵測來自監督控制與資料擷取 (SCADA) 系統的 Modbus 要求。自動裝置路由功能消除了手動建立從屬 ID 路由表的需要，為工程師節省了大量的時間與成本。

優先控制緊急命令

Modbus 網路提升了規模與複雜度，命令與回應之間的延遲時間成了主要的關切事項。MB3000 系列的進階型號提供了緊急命令的優先控制功能，可讓使用者強制某些命令取得立即回應。根據您系統的需求，可透過不同的方法定義哪些命令可以獲得優先處理。

規格

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2 (1 IP, Ethernet cascade) Auto MDI/MDI-X connection				
Magnetic Isolation Protection	1.5 kV (built-in)				
Optical Fiber			100BaseFX		
			Multi-Mode		Single-Mode
	Fiber Cable Type	OM1	50/125 μm	G.652	
			800 MHz x km		
	Typical Distance		4 km	5 km	40 km
	Wavelength	Typical (nm)	1300		1310
		TX Range (nm)	1260 to 1360		1280 to 1340
		RX Range (nm)	1100 to 1600		1100 to 1600
	Optical Power	TX Range (dBm)	-10 to -20		0 to -5
		RX Range (dBm)	-3 to -32		-3 to -34
		Link Budget (dB)	12		29
		Dispersion Penalty (dB)	3		1
	Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power. Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).				

Ethernet Software Features

Industrial Protocols	Modbus TCP Client (Master) Modbus TCP Server (Slave)
Configuration Options	Web Console (HTTP/HTTPS) Device Search Utility (DSU) MGate Manager MCC Tool Telnet Console
Management	ARP DHCP Client DNS HTTP HTTPS SMTP SNMP Trap SNMPv1/v2c/v3 TCP/IP Telnet 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 HTTPS (TLS 1.2)

Serial Interface

No. of Ports	MGate MB3170 models: 1 MGate MB3270 models: 2
Connector	MGate MB3170 models: DB9 male for RS-232, Terminal block for RS-422/485 MGate MB3270 models: 2 x DB9 male
Serial Standards	RS-232/422/485 (software selectable)
Baudrate	50 bps to 921.6 kbps
Data Bits	7, 8
Parity	None Even Odd Space Mark
Stop Bits	1, 2
Flow Control	DTR/DSR RTS Toggle (RS-232 only) RTS/CTS
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Terminator for RS-485	120 ohms
Isolation	I models: 2 kV
RS-485 Data Direction Control	ADDC (automatic data direction control)

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

Industrial Protocols	Modbus RTU/ASCII Master Modbus RTU/ASCII Slave
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Modbus (Transparent)

Max. No. of Client Connections	32
Max. No. of Server Connections	32

Power Parameters

Input Voltage	12 to 48 VDC
Input Current	MGate MB3170/MB3270: 435 mA @ 12 VDC MGate MB3170I/MB3170-S-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170-M-ST: 510 mA @ 12 VDC
Power Connector	7-pin terminal block

Relays

Contact Current Rating	Resistive load: 1 A @ 30 VDC
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Physical Characteristics

Housing	Plastic
IP Rating	IP30
Dimensions (with ears)	29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)
Dimensions (without ears)	29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)
Weight	MGate MB3170 models: 360 g (0.79 lb) MGate MB3270 models: 380 g (0.84 lb)

Environmental Limits

Operating Temperature	Standard models : 0 to 60°C (32 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)

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 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 IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-11
Hazardous Locations	ATEX Class I Division 2 IECEX
Maritime	DNV
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6 IEC 60068-2-64
Safety	UL 60950-1 IEC 60950-1 EN 62368-1 UL 508

MTBF

Time	MGate MB3170 models: 1,662,526 hrs MGate MB3170I models: 1,484,777 hrs MGate MB3270 models: 1,477,768 hrs MGate MB3270I models: 1,144,837 hrs MGate MB3170-M/-S models: 1,580,051 hrs MGate MB3170I-M/-S models: 1,385,414 hrs
Standards	Telcordia SR332

Warranty

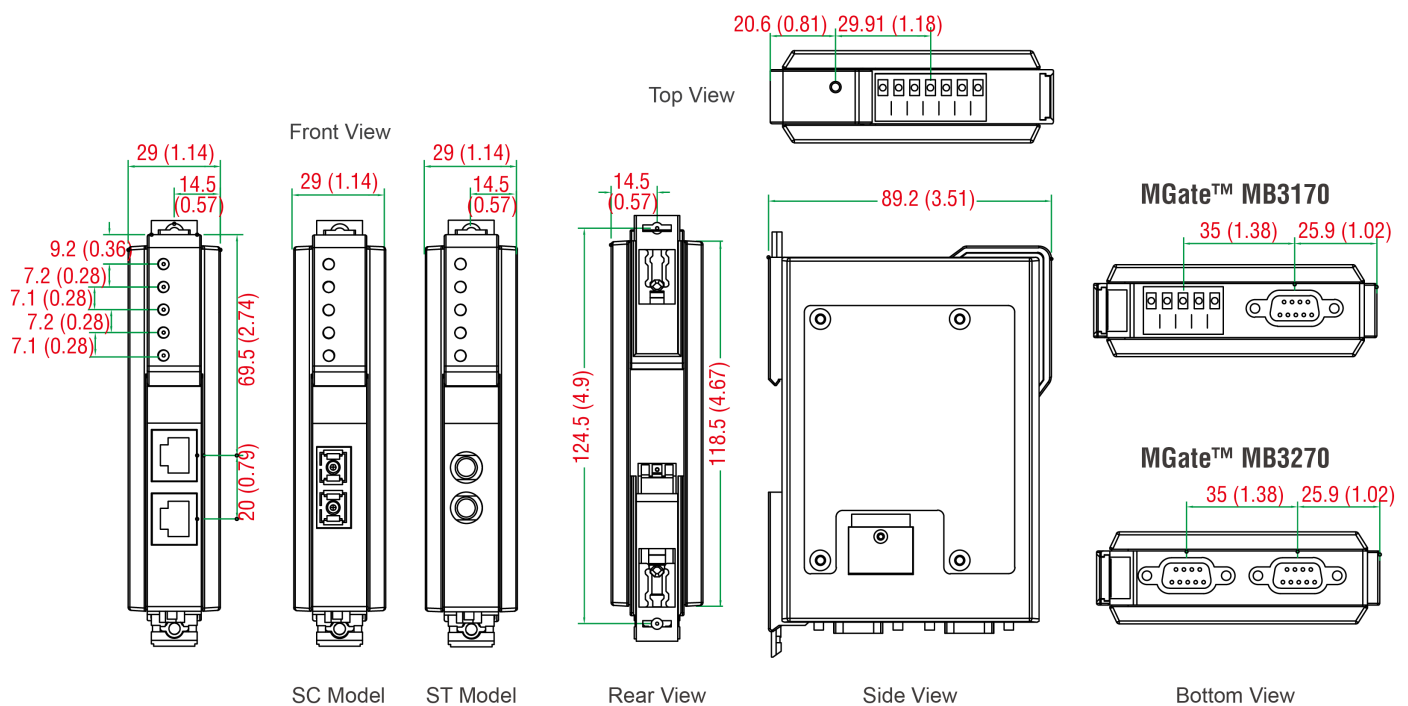
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MGate MB3170/MB3270 Series gateway
Documentation	1 x quick installation guide 1 x warranty card

尺寸

單位：公釐（英吋）



訂購資訊

Model Name	Ethernet	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temp.
MGate MB3170	2 x RJ45	1	RS-232/422/485	–	0 to 60°C
MGate MB3170I	2 x RJ45	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3270	2 x RJ45	2	RS-232/422/485	–	0 to 60°C
MGate MB3270I	2 x RJ45	2	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170-T	2 x RJ45	1	RS-232/422/485	–	-40 to 75°C
MGate MB3170I-T	2 x RJ45	1	RS-232/422/485	2 kV	-40 to 75°C

Model Name	Ethernet	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temp.
MGate MB3270-T	2 x RJ45	2	RS-232/422/485	–	–40 to 75°C
MGate MB3270I-T	2 x RJ45	2	RS-232/422/485	2 kV	–40 to 75°C
MGate MB3170-M-SC	1 x Multi-Mode SC	1	RS-232/422/485	–	0 to 60°C
MGate MB3170-M-ST	1 x Multi-Mode ST	1	RS-232/422/485	–	0 to 60°C
MGate MB3170-S-SC	1 x Single-Mode SC	1	RS-232/422/485	–	0 to 60°C
MGate MB3170I-M-SC	1 x Multi-Mode SC	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170I-S-SC	1 x Single-Mode SC	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170-M-SC-T	1 x Multi-Mode SC	1	RS-232/422/485	–	–40 to 75°C
MGate MB3170-M-ST-T	1 x Multi-Mode ST	1	RS-232/422/485	–	–40 to 75°C
MGate MB3170-S-SC-T	1 x Single-Mode SC	1	RS-232/422/485	–	–40 to 75°C
MGate MB3170I-M-SC-T	1 x Multi-mode SC	1	RS-232/422/485	2 kV	–40 to 75°C
MGate MB3170I-S-SC-T	1 x Single-Mode SC	1	RS-232/422/485	2 kV	–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

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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