

MGate MB3170-G2/ MB3270-G2/MB3470-G2 Series Quick Installation Guide

Version 1.0, July 2025

Technical Support Contact Information
www.moxa.com/support



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P/N: 1802031700050



Overview

The MGate MB3170-G2, MB3270-G2, and MB3470-G2 are 1-, 2-, and 4-port Modbus gateways that respectively convert between Modbus TCP, Modbus ASCII, Modbus RTU, and proprietary ASCII/serial communication protocols, such as Modbus extension protocols.

Package Checklist

Before installing the MGate MB3170-G2/MB3270-G2/MB3470-G2, verify that the package contains the following items:

- MGate MB3170-G2/MB3270-G2/MB3470-G2 with power and relay terminal block, and DIN rail kit preinstalled
- Quick installation guide (printed)

NOTE Please notify your sales representative if any of the above items are missing or damaged.

- NOTE**
- The terminal block is preinstalled on the serial port (only for -TB model)
 - Dust cap is preinstalled on the fiber port (only for -SC/-ST fiber model)

NOTE This product is intended to be supplied by an external power source (UL Listed/IEC 62368-1/EN 62368-1/BSMI), of which the output complies with ES1/SELV. The output rating is rated at 12 to 48 VDC and minimum current 583 mA (MGate MB3170-G2/MB3270-G2/MB3470-G2 Series) supports an ambient temperature of minimum 75°C for use with MGate MB3170-G2/MB3270-G2/MB3470-G2 Series -T models, or an ambient temperature of minimum 60°C for use with MGate MB3170-G2/MB3270-G2/MB3470-G2 Series non-T models. When using a Class I external power source, the power cord should be connected to an outlet with an earthing connection.

Panel Layouts

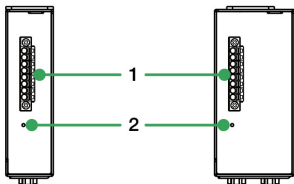
The MGate MB3170-G2 Series features a male DB9 port for connecting to serial devices and provides two Ethernet ports. For fiber models (-ST, -SC, -SFP models), they provide one RJ45 Ethernet port, and another fiber Ethernet port, which can be SC, ST, or SFP type interface. The MGate MB3270-G2 Series has two DB9 connectors or terminal blocks connectors (-TB models) for connecting to serial devices and provides two RJ45 Ethernet ports. The MGate MB3470-G2 Series has four DB9 connectors or terminal blocks connectors (-TB models) for connecting to serial devices and provides two RJ45 Ethernet ports.

Top View

MB3170-G2 Series

MB3270-G2 Series

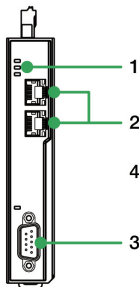
MB3470-G2 Series



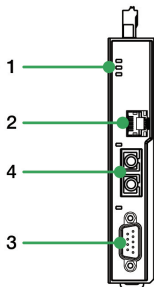
1. Chassis GND, dual power input, and relay output
2. Reset

Front View

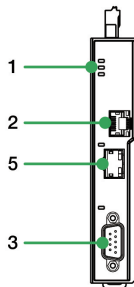
MB3170-G2 Series



MB3170-G2 Series
(ST/SC Model)



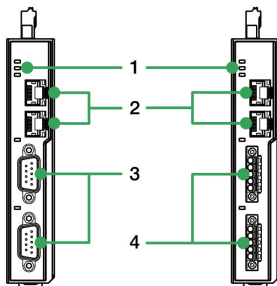
MB3170-G2 Series
(SFP Model)



1. LED indicators
2. Ethernet port (RJ45)
3. RS-232/422/485
4. Ethernet fiber (ST/SC)
5. Ethernet fiber (SFP)

MB3270-G2 Series

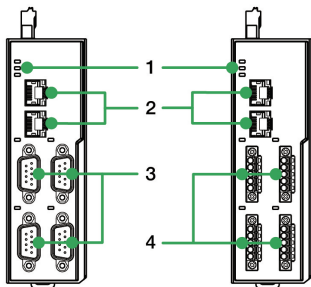
MB3270-G2 Series (TB Model)



1. LED indicators
2. Ethernet port (RJ45)
3. RS-232/422/485 (DB9 male)
4. RS-232/422/485 (terminal block)

MB3470-G2 Series

MB3470-G2 Series (TB Model)



1. LED indicators
2. Ethernet port (RJ45)
3. RS-232/422/485 (DB9 male)
4. RS-232/422/485 (terminal block)

LED Indicators

Name	Color	Function
PWR1	Green	Power is on.
	Off	Power is off.
PWR2	Green	Power is on.
	Off	Power is off.
READY	Red	Steady: Power is on, and the MGate is booting up.
		Blinking: IP conflict or DHCP server did not respond properly.
	Green	Steady: Power is on, and the unit is functioning normally.
		Blinking: The device server has been located by the "Locate" function from Moxa software utilities.
	Off	Power is off or power error condition exists
LAN1, LAN2	Yellow	Steady on: Ethernet cable is connected, and the MGate detects it's linked up with 10 Mbps.
		Blinking: Indicates there is traffic on the Ethernet port.
	Green	Steady on: Ethernet cable is connected, and the MGate detects it's linked up with 100 Mbps.
		Blinking: Indicates there is traffic on the Ethernet port.
	Off	Ethernet cable is disconnected, or the link is inactive.

Name	Color	Function
P1, P2, P3, P4	Yellow	Blinking: Serial port is receiving data.
	Green	Blinking: Serial port is transmitting data.
	Off	Serial port is not transmitting or receiving data

Reset Button

Press the Reset button continuously for at least for five seconds to load factory defaults. The reset button is used to load factory defaults. Use a pointed object such as a straightened paper clip to hold the reset button down for at least five seconds. Release the button when the Ready LED turns steady orange. The device will immediately load the factory default settings and reboot.

Hardware Installation Procedure

STEP 1: After removing the MGate MB3170-G2/MB3270-G2/MB3470-G2 from the box, connect the MB3170-G2/MB3270-G2/MB3470-G2 to a network. Use a standard straight-through Ethernet (or fiber) cable to connect the unit to a hub or switch. When setting up or testing the MGate MB3170-G2/MB3270-G2/MB3470-G2, you might find it convenient to connect directly to your computer's Ethernet port. Here, use a crossover Ethernet cable.

STEP 2: Connect the serial port(s) of the MGate MB3170-G2/MB3270-G2/MB3470-G2 to the serial device(s).

STEP 3: The MGate MB3170-G2/MB3270-G2/MB3470-G2 is designed to be attached to a DIN rail or mounted on a wall. We illustrate the two placement options in the following figures.

STEP 4: Connect the 12 to 48 VDC power source to terminal block power input.

When wiring the relay contact (R) and power inputs (PWR1/PWR2), we suggest using 16 to 20 AWG (American Wire Gauge, 1.5 mm² to 0.5 mm²) as a cable and the corresponding pin-type cable terminals. The stripping length is recommended to be 8 to 9 mm. Use copper conductors only. Use only one conductor on a clamping point on the terminal block. The shielding ground screw (M4) is near the power connector. When you connect the shielded ground wire (min. 16 AWG), the noise is routed from the metal chassis to the ground.

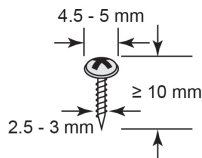
The mounting kit packages include screws. However, if you prefer to buy your own screws, refer to the dimensions below:

- Wall-mounting kit screws: FMS M3 x 5 mm
- DIN-rail mounting kit screws: FMS M3 x 5 mm

Wall or Cabinet Mounting

Installing wall-mount kit onto the MB3170-G2/MB3270-G2/MB3470-G2 Series requires three screws. Refer to the dimensions above.

Mounting the MGate MB3170-G2/MB3270-G2/MB3470-G2 Series on a wall requires two screws. The heads of the screws should be 4.5 to 5 mm in diameter, the shafts should be 2.5 to 3 mm in diameter, and the length of the screws should be more than 10 mm.



MGate MB3170-G2/MB3270-G2/MB3470-G2 工業級 Modbus 協議轉換閘道器內附導軌式安裝配件以安裝在現場的滑軌上或是機櫃中；若需要壁掛式安裝，請另行採購相關配件。以下以圖示說明各種安裝方式的安裝方法與注意事項。

各式安裝配件都會包含對應的螺絲，若您偏好自己採購螺絲，以下為各配件我們建議的螺絲尺寸：

- 壁掛式安裝螺絲尺寸: FMS M3 x 5 mm
- 導軌式安裝螺絲尺寸: FMS M3 x 5 mm

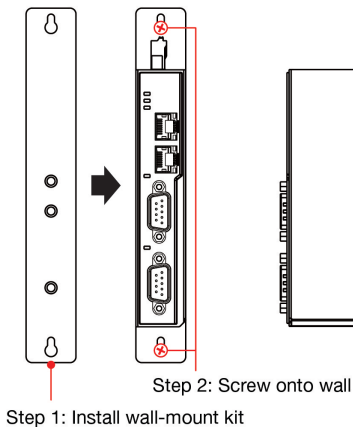
當要透過壁掛式將設備鎖附至牆壁上時，會需要另外採購兩根螺絲，建議兩根螺絲的規格符合以下尺寸：

- 螺絲頭的直徑應在 4.5 至 5.0 mm 之間
- 螺絲本身的直徑應該在 2.5 至 3.0 mm
- 螺絲長度應長於 10 mm

The following figure illustrates the two mounting options:

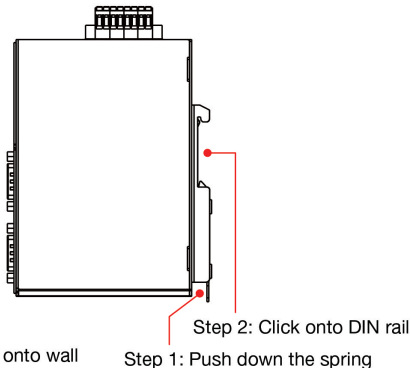
Wall-Mount Installation

壁掛式安裝



DIN-Rail Installation

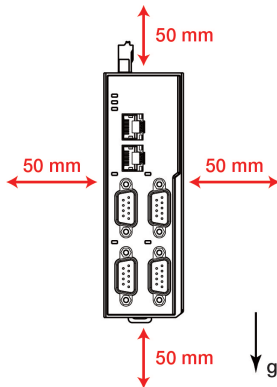
導軌式安裝



Horizontal Installation

Before installing the device, make sure there is enough space between the device and nearby items (walls, other devices, etc.) to ensure proper heat dissipation.

To ensure that the device works properly, we suggest reserving at least 50 mm of space on each of the four sides, as shown in the figure.



Software Installation Information

Download the User's Manual, and Device Search Utility (DSU) version v3.0 from Moxa's website: www.moxa.com. Refer to the User's Manual for additional details on using the DSU G2.

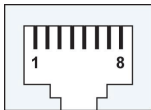
The MGate MB3170-G2/MB3270-G2/MB3470-G2 also supports login via a web browser.

Default IP address: **192.168.127.254**

Create your administration account and password when you log in the first time.

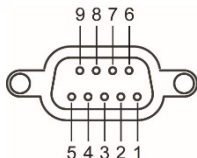
Pin Assignments

Ethernet Port (RJ45)



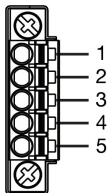
Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-

Serial Port (DB9 Male)



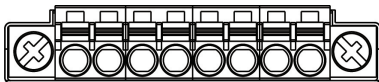
Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	DCD	TxD-	-
2	RxD	TxD+	-
3	TxD	RxD+	Data+
4	DTR	RxD-	Data-
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-

Terminal Block Female Connector on the MGate (only -TB model)



Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	Rx	T+	-
2	-	T-	-
3	Tx	R+	Data+
4	-	R-	Data-
5	GND	GND	GND

Power Input and Relay Output Pinouts



	V2+	V2-				V1+	V1-
Chassis GND	DC Power Input 2	DC Power Input 2	N.O.	Common	N.C.	DC Power Input 1	DC Power Input 1

Optical Fiber Interface

Fiber Cable Type		100BaseFX			
		Multi-mode		Single-mode	
		OM1	50/125 μm 800 MHz*km	G.652	
Typical Distance			4 km		5 km
Wave-length	Typical (nm)		1300		1310
	TX Range (nm)		1260 to 1360		1260 to 1360
	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		0 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: $\text{Link budget (dB)} > \text{dispersion penalty (dB)} + \text{total link loss (dB)}$.



WARNING

This is a Class 1 laser/LED product. Do not stare into the laser beam.

1. Caution—Use of the controls or adjustments or performing procedures other than those specified herein may result in hazardous radiation exposure.
2. Complies with 21 CFR 1040.10 and 1040.11, except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

For SFP module:

Laser Class 1 optical transceiver shall be used only.

Specifications

Power Requirements	
Power Input	12 to 48 VDC
Input Rating	• MGate MB3170-G2/MB3270-G2 Series: 12 to 48 VDC, 452 mA (max.) • MGate MB3470-G2 Series: 12 to 48 VDC, 583 mA (max.)
Power Consumption	• MGate MB3170-G2/MB3270-G2 models: Room temperature: 25°C, 12 to 48 VDC, 377 mA (max.) Room temperature: 75°C, 12 to 48 VDC, 452 mA (max.) • MGate MB3470-G2 models: Room temperature: 25°C, 12 to 48 VDC, 478 mA (max.) Room temperature: 75°C, 12 to 48 VDC, 583 mA (max.)
Relays	
Contact Current Rating	Resistive load: 1 A @ 30 VDC
Environmental Limits	
Operating Temperature	Standard models: -10 to 60°C (14 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% RH
Isolation Protection	Isolation Protection Serial: 2 kV (for "I" models) Ethernet: 1.5 kV (for "I" models)
Physical Characteristics	
Dimensions	• MGate MB3170-G2, MB3270-G2 Series: 25 x 89 x 129 mm (0.98 x 3.5 x 5.07 in) • MGate MB3470-G2 Series: 42 x 89 x 129 mm (1.65 x 3.5 x 5.07 in)
Weight	• MGate MB3170-G2 Series: 338g (0.75 lb) • MGate MB3270-G2 Series: 393g (0.87 lb) • MGate MB3470-G2 Series: 444g (0.98 lb)
Reliability	
Alert Tools	Built-in buzzer and RTC

RoHS Compliance



All Moxa products are marked with the CE logo to indicate that our electronic products have met the RoHS 2 Directive's requirements.



All Moxa products are marked with the UKCA logo to indicate that our electronic products have met the UK RoHS Regulation.

Moxa Inc. declares that the equipment complies with China RoHS (Restriction of Hazardous Substances), officially known as Administrative Measure on the Control of Pollution Caused by Electronic Information Products, along with their associate standards. Product information and the corresponding compliance documentation related to China RoHS are available at the following internet address:

<https://www.moxa.com>

For further information, please visit our website at:

http://www.moxa.com/about/Responsible_Manufacturing.aspx

Simplified EU and UK Declaration of Conformity

Hereby, **Moxa Inc.** declares that the equipment is in compliance with directives. The full test of the EU and UK declaration of conformity and other detailed information is available at: <https://www.moxa.com> or

<https://partnerzone.moxa.com/>

Restricted Bands of Operation for Wireless Devices



The 5150-5350 MHz frequency band is restricted to indoor use for EU member states.

As countries and regions have different regulations regarding the use of frequency bands to avoid interference, please check local regulations before using this device.

EU Contact Information

Moxa Europe GmbH

New Eastside, Streitfeldstrasse 25, Haus B, 81673 München, Germany

UK Contact Information

MOXA UK Limited

First Floor, Radius House, 51 Clarendon Road, Watford, Hertfordshire, WD17, 1HP, United Kingdom

FCC Supplier's Declaration of Conformity

The following equipment:

Product Model: As shown on the product label

Trade Name: MOXA

It's herewith confirmed this device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

It is understood that each unit marketed is identical to the device as tested, and any changes to the device that could adversely affect the emission characteristics will require retesting.

CAN ICES-003(A) / NMB-003(A)

Responsible Party—U.S. Contact Information

Moxa Americas Inc.

601 Valencia Avenue, Suite 100, Brea, CA 92823, USA

Phone number: 1-877-669-2123

Manufacturer address:

No. 1111, Heping Rd., Bade Dist., Taoyuan City 334004, Taiwan

Contact Us:

For our worldwide sales offices, please visit our website:

https://www.moxa.com/about/Contact_Moxa.aspx

Product Warranty Statement

Moxa warrants this product to be free from manufacturing defects in materials and workmanship, starting from the date of delivery. The actual warranty period of Moxa's products varies with the product category. Complete details can be found here:

<http://www.moxa.com/support/warranty.htm>

NOTE The warranty statement on the above web page supersedes any statement in this printed document.

Moxa will replace any product found to be defective within the first three months of purchase, provided said product has been properly installed and used. Defects, malfunctions, or failures of the warranted product caused by damage resulting from acts of God (such as floods, fire, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, are not warranted.

Customers must obtain a Return Merchandise Authorization (RMA) number prior to returning a defective product to Moxa for service. The customer agrees to insure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.

Repaired or replaced products are warranted for ninety (90) days from the date of repair or replacement, or for the remainder of the original product's warranty period, whichever is longer.

产品保修声明

Moxa 自产品出货日起提供产品保修。保修期间，如因零件损坏或生产不良而导致产品故障，将提供免费维修服务。

Moxa 根据产品类别提供不同保修期限，完整细节可在以下网页查看：

http://www.moxa.com.cn/support/warranty_policy.htm

注 上述网页的保修声明可取代本声明的任何陈述。

从 Moxa 出货三个月之内，在正常安装与使用下，如产品发生故障，Moxa 将提供换货服务。产品因雷击、洪水、地震等天灾所造成的损坏，其他外部力量（比如电源干扰、带电拔插、错误接线）、错用或乱用、未经 Moxa 授权的硬件变更或维修所造成的损坏，缺少产品序列号标签或者标签受损，不在保修范围内。

客户必须先提交在线申请，取得 RMA 申请确认单后，再将产品寄回。客户需承担邮寄到 Moxa 维修部过程中遗失或受损的风险，并支付运费；以及使用原有包装或具备同等保护效果的包装寄送产品。

经 Moxa 维修或换货的产品，自维修或换货日起，有 90 天保修期；产品最后保修期限，以五年保修或 90 天保修两者中更长时间为准。

技术支持与服务联络窗口

邮箱：Support.mcn@moxa.com 联系人：Moxa 技术支持部

返修服务联络窗口

邮箱：rma.mcn@moxa.com 联系人：Moxa 客服部

合格证

此产品通过

-外观检查

-功能及性能试验

-绝缘试验

符合出货标准

PASS

Moxa 产品注意事项

1. 请于使用产品前，详读本注意事项。
2. 请保存本注意事项以便后续参考。
3. 请于进行清洁工作前，将产品断电并且从电源端拔除。进行清洁工作时，请勿直接将清洁用溶剂倾倒或喷洒于产品上，请透过清洁布进行清洁工作。
4. 本产品应使用于受限区域（例如受人员管制的计算机室），授权人员须了解并知悉于碰触发热的金属机壳前，应有妥善的安全防护。产品外部的金属件可能会有一定热度，在接触产品前，请操作人员执行特别防护措施以免操作人员的手或身体遭受伤害。
5. 若产品为需插电产品，请勿将产品摆放于电源插座太远的位置，并且确认操作人员可以无阻碍地接近电源插座端。
6. 请让产品远离高湿环境。

7. 请将产品安装于稳固的环境。产品的掉落可能会造成损坏。
8. 产品开口处为力于产品内部空气对流。为确保产品不会过热，请不要阻塞开口处。
9. 连接电源时，请确保电源端的电压输入正确。
10. 请将电源线放置于不会被人员踩踏以及物品重压的位置。
11. 请注意产品上或相关文件中所标示的警告。
12. 若产品不会长时间使用，请断电以避免电源端瞬间压升或压降。
13. 请勿倾倒任何异物于产品开口处，以避免火灾或触电。
14. 请勿自行拆卸产品。就安全考虑，请由合格的技术人员进行拆卸。
15. 若下列任一情形发生，请由合格的技术人员进行确认：
 - a. 电源线或插头损坏。
 - b. 液体侵入产品。
 - c. 产品暴露于高湿环境。
 - d. 产品运作不良，或是您无法透过使用手册进行操作。
 - e. 产品掉落并且造成损坏。
 - f. 产品有明显破损。
16. 任何未经验证的零配件可能造成产品非预期的损害。为确保安装的正确性，请使用配件包所附之零配件进行安装。
17. 工业计算机产品内含有电池供电之实时时钟电路，请依制造商指示进行更换。
18. 请于执行硬件工作时将机壳与电源断开联结。请勿于电源钮为启动状态时连接电源，高感度电子零件可能会因瞬间浪涌电流而造成损伤。
19. 有关产品规格，等级与符合之法规请参考产品本体之标示。

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产品保固相关信息

有关 Moxa 产品保固政策，请参照 Moxa 官网
http://www.moxa.com.cn/support/warranty_policy.htm。

限制责任声明

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Product Disposal



This mark on all Moxa products indicates that equipment should not be disposed of by standard waste treatment processes and should be collected separately.

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：協定閘道器 型號(型式)：MGate MB3170-G2/MB3270-G2/MB3470-G2 Series						
單元 Unit	限用物質及其化學符號					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr+6)	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
外殼	○	○	○	○	○	○
印刷電路板及其電子組件	—	○	○	○	○	○
電纜/電線/連接器	—	○	○	○	○	○
電源設備	—	○	○	○	○	○
機械部件-金屬	○	○	○	○	○	○
機械部件-非金屬	○	○	○	○	○	○
備考1. “超出 0.1 wt %” 及 “超出 0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。						
備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。						
備考3. “—” 係指該項限用物質為排除項目。						

製造商資訊：

Moxa 四零四科技股份有限公司
+886-3-2737575
桃園市八德區和平路 1111 號



警告

為避免電磁干擾，本產品不應安裝或使用於住宅環境。



CAUTION

If the battery is replaced by an incorrect type, there is the risk of an explosion. Dispose of used batteries according to the instructions.