

# MGate MB3480

## Quick Installation Guide

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## Overview

The MGate MB3480 is a 4-port Modbus gateway that converts between Modbus TCP and Modbus RTU/ASCII protocols. It can be used to allow Ethernet masters to control serial slaves, or to allow serial masters to control Ethernet slaves. Up to 16 TCP masters and 124 serial slaves can be connected simultaneously.

## Package Checklist

Before installing the MGate MB3480 Modbus gateway, verify that the package contains the following items:

- 1 MGate MB3480 Modbus gateway
- Document & Software CD
- Quick Installation Guide
- Product Warranty Statement
- Power Adapter
- 4 Stick-on Pads
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### Optional Accessory

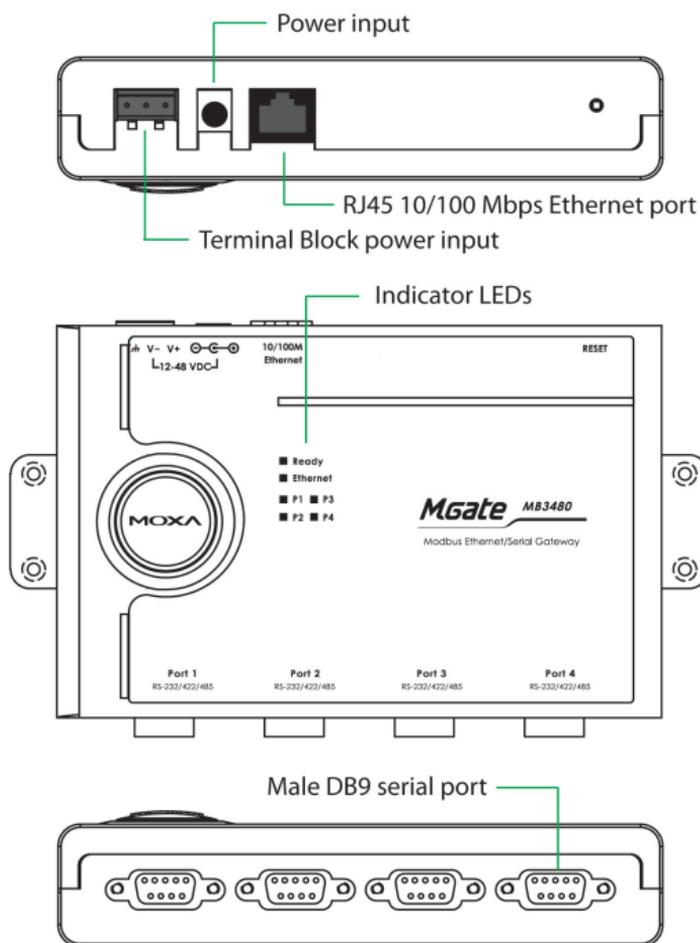
- **DK-35A:** DIN-rail mounting kit (35 mm)
- **Mini DB9F-to-TB Adaptor:** DB9 female to terminal block adapter
- **DR-4524:** 45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-rail 24 VDC power supply with 88 to 132 VAC/176 to 264 VAC input by switch

*Notify your sales representative if any of the above items is missing or damaged.*

**NOTE** The operating temperature of the power adapter in the box is from 0 to 40 °C. If your application is out of this range, please use a power adapter supplied by UL Listed External Power Supply (The power output meets SELV and LPS and is rated 12 - 48 VDC; minimum current is 0.73 A). Moxa has power adapters with wide temperature range (-40 to 75 °C, -40 to 167 F), the PWR-12150-(plug type)-SA-T Series, for your reference.

## Hardware Introduction

As shown in the following figures, the MGate MB3480 has 4 DB9 male ports for transmitting serial data.



**Reset Button**—The reset button is used to load factory defaults. Hold the reset button down for five seconds using a pointed object such as a straightened paper clip. Release the reset button when the Ready LED stops blinking.

**LED Indicators**—Six LED indicators are located on the top panel:

Name	Color	Function
Ready	Red	Steady on: Power is on and the unit is booting up.
		Blinking: IP conflict exists, or DHCP or BOOTP server did not respond properly.
	Green	Steady on: Power is on and the unit is functioning normally.
		Blinking: Unit has found by the Location command in MGate Manager.
	Off	Power is off or power error condition exists
Link	Orange	10 Mbps Ethernet connection
	Green	100 Mbps Ethernet connection
	Off	Ethernet cable is disconnected or has a short
P1, P2, P3, P4	Orange	Unit is receiving data from device
	Green	Unit is transmitting data to device
	Off	No data is being exchanged with device

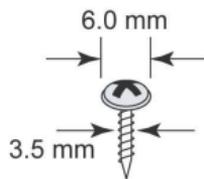
## Hardware Installation Procedure

- STEP 1:** After unpacking the unit, connect the power supply or power adaptor to the unit.
- STEP 2:** Use a standard straight-through Ethernet cable to connect the unit to a network hub or switch. Use a cross-over Ethernet cable if you are connecting the gateway directly to a PC.
- STEP 3:** Connect your device to the desired port on the unit.
- STEP 4:** Place or mount the unit. The unit may be placed on a horizontal surface such as a desktop, mounted on a DIN-rail, or mounted on the wall.

### Wall or Cabinet Mounting

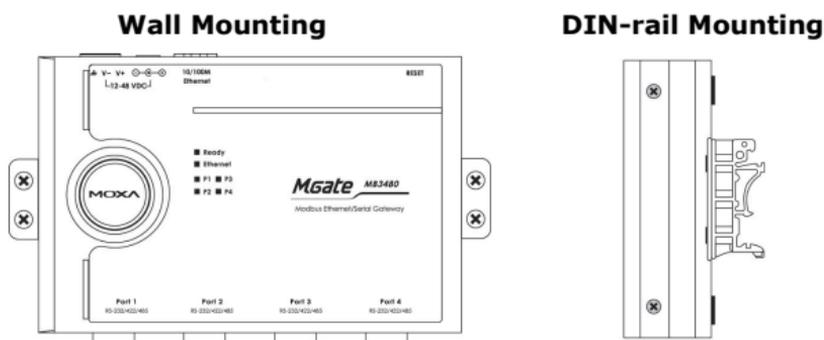
Two metal plates are provided for mounting the unit on a wall or inside a cabinet. Attach the plates to the unit's rear panel with screws. With the plates attached, use screws to mount the unit on a wall.

For each screw, the head should be 6.0 mm or less in diameter, and the shaft should be 3.5 mm or less in diameter.



### DIN-rail Mounting

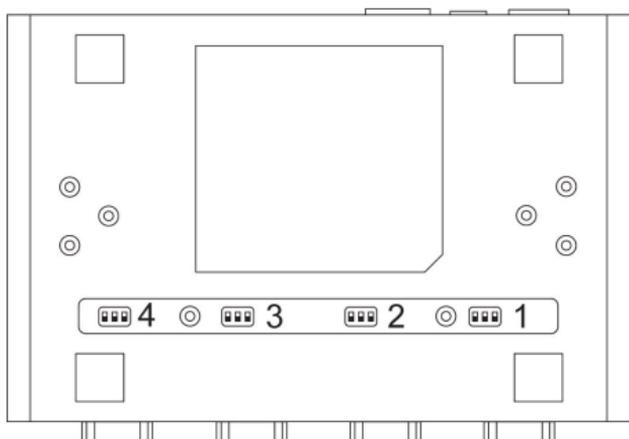
DIN-rail attachments can be purchased separately to mount the MGate MB3480 on a DIN-rail. When mounting the unit on a DIN-rail, make sure that it is oriented with the metal springs on top.



### Termination Resistor and Adjustable Pull High/Low Resistors

For some RS-485 environments, you may need to add termination resistors to prevent the reflection of serial signals. When using termination resistors, it is important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. For each serial port, DIP switches are used for termination resistor and pull high/low resistor settings. To enable the 120  $\Omega$  termination resistor, set switch 3 on the assigned DIP switch to ON; set it to OFF (the default setting) to disable the termination resistor. To set the pull high/low resistors to 150 K $\Omega$  (the default setting), set switches 1 and 2 on the assigned DIP switch to the OFF position; set them both to ON for 1 K $\Omega$ .

## **MGate MB3480 DIP Switches**



### **Pull High/low Resistors for the RS-485 Port**

SW	1	2	3
	Pull High	Pull Low	Terminator
ON	1K $\Omega$	1K $\Omega$	120 $\Omega$
Default OFF	150K $\Omega$	150K $\Omega$	-

## **Software Installation**

To install **MGate Manager**, insert the **MGate Documentation and Software CD** into your PC's CD-ROM drive, and then run the following setup program to begin the installation process from the "Software" directory:

### **MGM\_Setup\_[Version]\_Build\_[DateTime].exe**

The filename of the latest version may have the following format:

### **MGM\_Setup\_Verx.x.x\_Build\_xxxxxxx.exe.**

For detailed information about MGate Manager, refer to the MGate MB3000 User's Manual, which can be found in the "Document" directory.

The MGate MB3480 also supports login via a web browser.

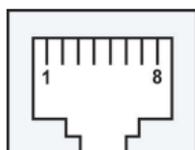
Default IP address: **192.168.127.254**

Default account: **admin**

Default password: **moxa**

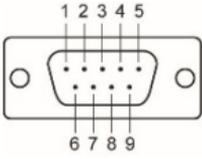
## **Pin Assignments**

### **Ethernet Port (RJ45)**



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

## Serial Port (Male DB9)



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

## Environmental Specifications

Power Requirements	
Power Input	12 to 48 VDC
Power Consumption	385 mA @ 12 VDC, 110 mA @ 48 VDC
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	5 to 95% RH
Dimensions	
With ears:	35.5 x 102.7 x 181.3 mm (1.40 x 4.04 x 7.14 inch)
Without ears:	35.5 x 102.7 x 157.2 mm (1.40 x 4.04 x 6.19 inch)
ESD Protection	15 kV for all serial ports
Magnetic Isolation	1.5 kV for Ethernet
Power Line Protection	1 kV burst (EFT), EN61000-4-4 2 kV surge, EN61000-4-5
Regulatory Approvals	FCC Class A, CE Class A, UL, CUL, TUV