MGate MB3660 Series
Quick Installation Guide

Version 2.2, January 2021

MOXA®

Overview

The MGate MB3660 (MB3660-8 and MB3660-16) series gateways are 8 and 16-port redundant Modbus gateways that convert between the Modbus TCP and Modbus RTU/ASCII protocols. The gateways come with built-in dual AC or DC power inputs for power redundancy, and have dual Ethernet ports (with different IPs) for network redundancy.

The MGate MB3660 series gateways provide not only serial-to-Ethernet communication, but also serial (Master)-to-serial (Slave) communication, and can be accessed by up to 256 TCP master/client devices, or connected to 128 TCP slave/server devices.

Each serial port can be configured individually for Modbus RTU or Modbus ASCII operation and for different baudrates, allowing both types of networks to be integrated with Modbus TCP through one Modbus gateway.

Package Checklist

Before installing the MGate MB3660 series gateway, verify that the package contains the following items:

- 1 MGate MB3660-8 or MB3660-16 gateway
- 1 RJ45-to-DB9 female serial cable for console setting
- 2 L-shaped brackets for wall mounting
- 2 AC power cords (for AC models)
- Quick installation guide
- Warranty card

Optional Accessories

- **Mini DB9F-to-TB:** DB9 female to terminal block connector
- **CBL-RJ45M9-150:** RJ45 to DB9 male serial cable, 150 cm
- **CBL-RJ45F9-150:** RJ45 to DB9 female serial cable, 150 cm
- **CBL-F9M9-20:** RJ45 to DB9 female serial cable, 150 cm
- **CBL-RJ45SF9-150:** RJ45 to DB9 female serial shielded cable, 150 cm
- **WK-45-01:** Wall-mounting kit, 2 L-shaped plates, 6 screws, 45 x 57 x 2.5 mm
- **PWC-C13AU-3B-183:** Power cord with Australian (AU) plug, 183 cm
- **PWC-C13CN-3B-183:** Power cord with three-prong China (CN) plug, 183 cm
- **PWC-C13EU-3B-183:** Power cord with Continental Europe (EU) plug, 183 cm
- **PWC-C13JP-3B-183:** Power cord with Japan (JP) plug, 7 A/125 V, 183 cm
- **PWC-C13UK-3B-183:** Power cord with United Kingdom (UK) plug, 183 cm
- **PWC-C13US-3B-183:** Power cord with United States (US) plug, 183 cm
- **CBL-PJTB-10:** Non-locking barrel plug to bare-wire cable

Notify your sales representative if any of the above items are missing or damaged.
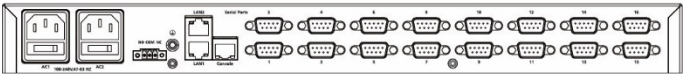
Hardware Introduction

As shown in the following figures, the MGate MB3660-8 has 8 DB9/RJ45 ports for transmitting serial data, and the MGate MB3660-16 has 16 DB9/RJ45 ports for transmitting serial data. The MGate MB3660I series gateways provide 2 kV serial port isolation protection.
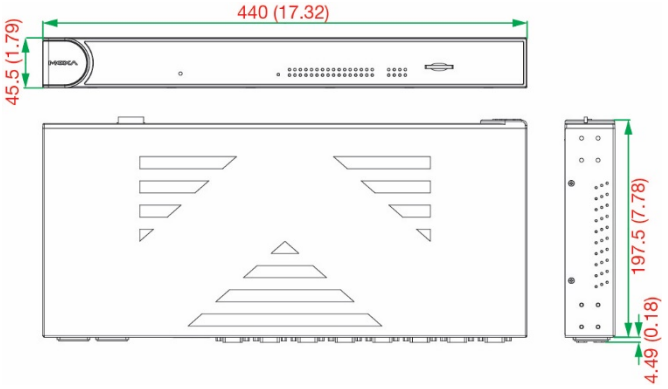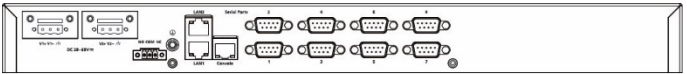

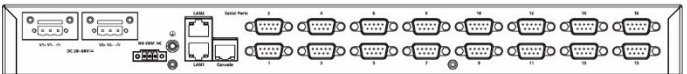
AC-DB9 Models
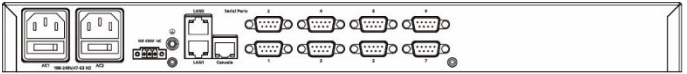
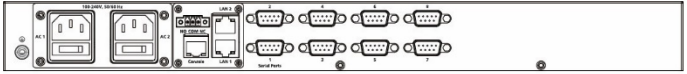MGate MB3660-8-2AC

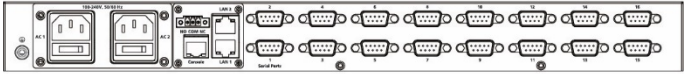MGate MB3660-16-2AC

DC-DB9 Models

MGate MB3660-8-2DC

MGate MB3660-16-2DC
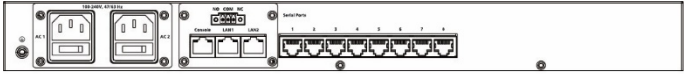
AC-DB9-I Models

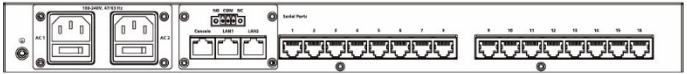

MGate MB3660I-8-2AC

MGate MB3660I-16-2AC

AC-RJ45 Models

MGate MB3660-8-J-2AC

MGate MB3660-16-J-2AC

Reset Button— *Press the Reset button continuously for 5 sec to load factory defaults*

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

Name	Color	Function
PWR 1, PWR 2	Red	Power is being supplied to the power input
	Off	Power cable is not connected
Ready	Red	Steady on: Power is on and the unit is booting up
		Blinking: IP conflict, DHCP, or BOOTP server did not respond properly, or a relay output occurred
	Green	Steady on: Power is on and unit is functioning normally
		Blinking: Unit is responding to the locate function
	Off	Power is off, or power error condition exists
Tx	Green	Serial port is transmitting data
Rx	Amber	Serial port is receiving data
LAN 1, LAN 2	Green	Indicates 100 Mbps Ethernet connection
	Amber	Indicates 10 Mbps Ethernet connection
	Off	Ethernet cable is disconnected

Hardware Installation Procedure

STEP 1: After unpacking the unit, use an Ethernet cable to connect the unit to the network.

**STEP 2:** Connect your device to the desired port on the unit.

STEP 3: Place or mount the unit. The unit may be placed on a horizontal surface such as a desktop, or mounted on the wall.

STEP 4: Connect the power supply to the unit.

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.

The heads of the screws should be 5.0 to 7.0 mm in diameter, the shafts should be 3 to 4 mm in diameter, and the length of the screws should be more than 10.5 mm.
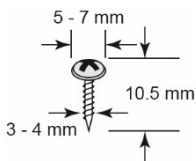
Termination Resistor and Adjustable Pull High/Low Resistors

In some critical 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. The MGate MB3660 uses DIP switches to set the pull high/low resistor values for each serial port. To expose the DIP switches located on the back of the PCB, first remove the screws holding the DIP switch cover in place, and then remove the cover. The sequence from right to left is port 1 to port 16.

To add a 120 Ω termination resistor, set switch 3 on the port's assigned DIP switch to ON; set switch 3 to OFF (the default setting) to disable the termination resistor.

To set the pull high/low resistors to 150 KΩ, set switches 1 and 2 on the port's assigned DIP switch to OFF. This is the default setting.

To set the pull high/low resistors to 1 KΩ, set switches 1 and 2 on the port's assigned DIP switch to ON.

Pull High/low Resistors for the RS-485 Port

	SW	1	2	3
		Pull High	Pull Low	Terminator
	ON	1 KΩ	1 KΩ	120 Ω
Default	OFF	150 KΩ	150 KΩ	–

Software Installation Information

To configure your MGate MB3660, connect the gateway's Ethernet port directly to your computer's Ethernet port and then log in from a web browser. The default IP addresses of LAN1 and LAN2 are 192.168.127.254 and 192.168.126.254, respectively.

You can download the User's Manual and Device Search Utility (DSU) from Moxa's website: www.moxa.com. Please refer to the User's Manual for additional details on using the DSU.

The MGate MB3660 also supports login via a web browser.

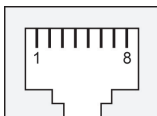Default IP address: **192.168.127.254/192.168.126.254**
Default account: **admin**
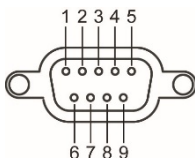Default password: **moxa**

Pin Assignments

RJ45 (LAN, Console)

Pin	LAN	Console (RS-232)
1	Tx+	DSR
2	Tx-	RTS
3	Rx+	GND
4	–	TxD
5	–	RxD
6	Rx-	DCD
7	–	CTS
8	–	DTR

DB9 Male (Serial Ports)

Pin	RS-232	RS-422/ RS-485-4W	RS-485-2W
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	–	–	–

RJ45 (Serial Ports)

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

Relay Output

N.O.	Common	N.C.
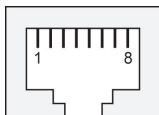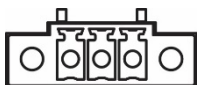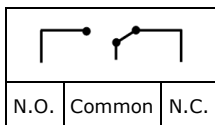
Specifications

Power Input	Dual 20 to 60 VDC (for DC models); or dual 100 to 240 VAC, 47 to 63 Hz (for AC models)
Power Consumption	
MGate MB3660-8-2AC	144 mA/110 V, 101 mA/220 V
MGate MB3660-8-2DC	312 mA/24 V, 156 mA/48 V
MGate MB3660-16-2AC	178 mA/110 V,120 mA/220 V
MGate MB3660-16-2DC	390 mA/24 V, 195 mA/48 V
MGate MB3660-8-J-2AC	111 mA/110 V, 81 mA/220 V
MGate MB3660-16-J-2AC	133 mA/110 V, 92 mA/220 V
MGate MB3660I-8-2AC	100-240 VAC, 50/60 Hz, 310 mA (max.)
MGate MB3660I-16-2AC	100-240 VAC, 50/60 Hz, 310 mA (max.)
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 (W x D x H)	440 x 197.5 x 45.5 mm (17.32 x 7.78 x 1.79 in)
Fault Relay Circuit	3-pin circuit with current carrying capacity of 2 A @ 30 VDC