



MGate MB3660 Series Quick Installation Guide

Second Edition, October 2017

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)
- Documentation and software CD
- Quick installation guide
- Product warranty statement

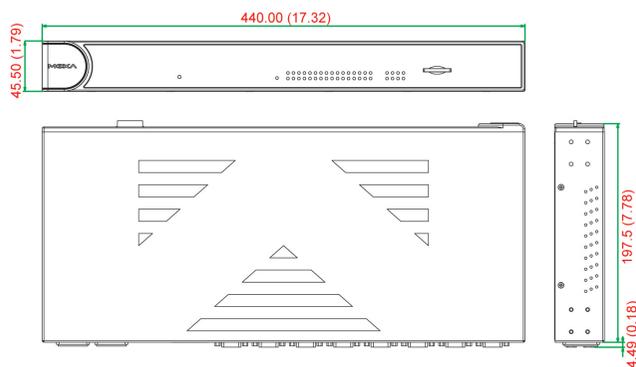
Optional Accessories

- **Mini DB9F-to-TB Adapter:** DB9 female to terminal block adapter for RS-422/485 applications
- **CBL-RJ45M9-150:** 8-pin RJ45 to DB9 male cable, 150 cm
- **CBL-RJ45F9-150:** 8-pin RJ45 to DB9 female cable, 150 cm

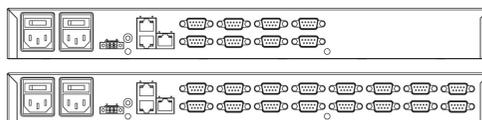
Notify your sales representative if any of the above items are missing or damaged.

Hardware Introduction

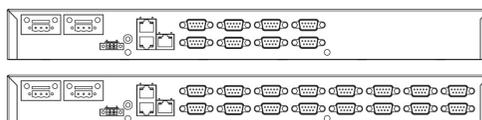
As shown in the following figures, the MGate MB3660-8 has 8 DB9/RJ45 ports for transmitting serial data, and the MGate MB3660-16 has 16 DB9/RJ45 ports for transmitting serial data. The MGate MB3660I series gateways provide 2 kV serial port isolation protection.



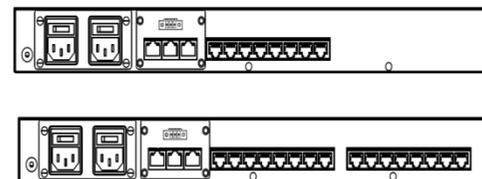
AC-DB9 Models



DC-DB9 Models



AC-RJ45 Models



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, connect the power supply to the unit.

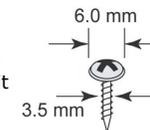
STEP 2: Use an Ethernet cable to connect the unit to the network.

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, 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.

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

P/N: 1802036600011



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. The MGate supports two types of accounts: **admin** and **user**. The **admin** account can modify all settings, whereas the **user** account can only view settings. The default account and password are admin and moxa respectively.

If you forget the modified IP address of the gateway or cannot log in to the gateway via a web browser for any reason, you can access the gateway via a direct Ethernet cable connection using the **Device search utility** to search for the gateway.

To install **Device Search Utility (DSU)**, 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:

dsu_setup_[Version]_Build_[DateTime].exe

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

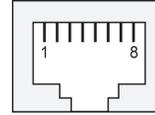
dsu_setup_Verx.x.x_Build_xxxxxxx.exe.

For detailed information about **DSU**, refer to the **MGate MB3660 User's Manual**, which can be found in the "Document" directory.

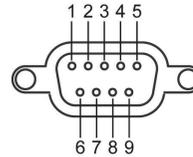
Pin Assignments

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 |

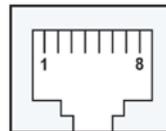


DB9 Male (Serial Ports)



| 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 | - | - | - |

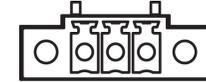
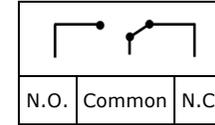
RJ45 (Serial Ports)



| 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) |

| Pin | RS-232 | RS-422/RS-485-4W | RS-485-2W |
|-----|--------|------------------|-----------|
| 6 | DCD | RxD-(A) | Data-(A) |
| 7 | CTS | - | - |
| 8 | DTR | - | - |

Relay Output



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 144mA/110V, 101mA/220V MGate MB3660-8-2DC 312mA/24V, 156mA/48V MGate MB3660I-8-2AC 244mA/110V, 159mA/220V MGate MB3660-16-2AC 178mA/110V, 120mA/220V MGate MB3660-16-2DC 390mA/24V, 195mA/48V MGate MB3660-8-J-2AC 111mA/110VAC, 81mA/220VAC MGate MB3660-16-J-2AC 133mA/110VAC, 92mA/220VAC MGate MB3660I-16-2AC 351mA/110VAC, 221mA/220VAC |
| 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) |
| Magnetic Isolation | 1.5 kV for Ethernet, 2 kV for serial port (for I models) |
| Regulatory Approvals | FCC Class A, CE Class A, UL 60950-1 |
| Fault Relay Circuit | 3-pin circuit with current carrying capacity of 2 A @ 30 VDC |

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The Americas: +1-714-528-6777 (toll-free: 1-888-669-2872)
 Europe: +49-89-3 70 03 99-0
 Asia-Pacific: +886-2-8919-1230
 China: +86-21-5258-9955 (toll-free: 800-820-5036)

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