

# MGate™ MB3180/3280/3480

1, 2, and 4-port standard Modbus gateways



- > Convert between Modbus TCP and Modbus RTU/ASCII
- > 1 Ethernet port and 1, 2, or 4 RS-232/422/485 ports
- > Supports 16 simultaneous TCP masters with up to 32 simultaneous requests per master
- > Easy hardware setup and configuration



The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

## Overview

The MB3180, MB3280, and MB3480 are standard Modbus gateways that convert between Modbus TCP and Modbus RTU/ASCII protocols. Up to 16 simultaneous Modbus TCP masters are supported, with up to

31 RTU/ASCII slaves per serial port. For RTU/ASCII masters, up to 32 TCP slaves are supported.

## Standard Modbus network integration

The three standard MGate™ models (MB3180, MB3280, and MB3480) are designed for easy integration of Modbus TCP and RTU/ASCII networks. With these models, Modbus serial slave devices can be seamlessly incorporated into an existing Modbus TCP network, and

Modbus TCP slaves can be made accessible to serial masters. The MB3180, MB3280, and MB3480 offer features that make network integration easy, customizable, and compatible with almost any Modbus network.

## High density, cost-effective gateway

The MGate™ MB3000 gateways can effectively connect a high density of Modbus nodes to the same network. The MB3280 can manage up to 62 serial slave nodes, and the MB3480 can manage up to 124 serial slave nodes. Each RS-233/422/485 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.

## Specifications

### Ethernet Interface

**Number of Ports:** 1  
**Speed:** 10/100 Mbps, Auto MDI/MDIX  
**Connector:** 8-pin RJ45  
**Magnetic Isolation Protection:** 1.5 KV built-in

### Serial Interface

**Number of Ports:**  
 MB3180: 1  
 MB3280: 2  
 MB3480: 4  
**Serial Standards:** RS-232/422/485, software selectable  
**Connectors:** DB9 male  
**ESD Protection:** 15 KV for all signals  
**RS-485 Data Direction Control:** ADDC® (automatic data direction control)

### Serial Communication Parameters

**Data Bits:** 7, 8  
**Stop Bits:** 1, 2  
**Parity:** None, Even, Odd, Space, Mark  
**Flow Control:** RTS/CTS, XON/XOFF

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND  
**RS-422:** Tx+, Tx-, Rx+, Rx-, GND  
**RS-485-4w:** Tx+, Tx-, Rx+, Rx-, GND  
**RS-485-2w:** Data+, Data-, GND

### Software

**Operation Modes:** RTU Slave, RTU Master, ASCII Slave, ASCII Master  
**Utilities:** MGate™ Manager Suite for Windows 98, ME, NT, 2000, XP, 2003, Vista  
**Multi-master and Multi-drop:**  
 Master mode: 32 TCP slaves  
 Slave mode: 16 TCP masters (request queue 32-deep for each master)  
**Bonus Feature:** Smart Routing

### Physical Characteristics

#### Housing:

MB3180/3280: Aluminum (1 mm)  
 MB3480: SECC sheet metal (0.8 mm), IP30 protection

#### Dimensions:

Without ears  
 MB3180: 22 x 52 x 80 mm (0.87 x 2.05 x 3.15 in)  
 MB3280: 22 x 77 x 111 mm (0.87 x 3.03 x 4.37 in)  
 MB3480: 35.5 x 103 x 158 mm (1.40 x 4.06 x 6.22 in)  
 With ears  
 MB3180: 22 x 75.2 x 80 mm (0.87 x 2.96 x 3.15 in)  
 MB3280: 22 x 100 x 111 mm (0.87 x 3.94 x 4.37 in)  
 MB3480: 35.5 x 103 x 181 mm (1.40 x 4.06 x 7.14 in)

### Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 85°C (-4 to 185°F)

### Power Requirements

**Input Voltage:** 12 to 48 VDC

#### Power Connector:

MGate™ MB3180: Power jack  
 MGate™ MB3280/3480: Power jack and terminal block

**Power Line Protection:** 1 KV burst (EN61000-4-4: EFT/B), 0.5 KV surge (EN61000-4-5)

### Regulatory Approvals

**EMC:** CE (EN55022 Class A and EN55024), FCC Part 15 Subpart B Class A

**Safety:** UL (UL60950-1), TÜV (EN60950-1)

**EN61000-4-2 (ESD):** Level 2

**EN61000-4-3 (RS):** Level 2

**EN61000-4-4 (EFT):** Level 2

**EN61000-4-5 (Surge):** Level 2

**EN61000-4-6 (CS):** Level 2

**EN61000-4-8:** Passed

**EN61000-4-11:** Passed

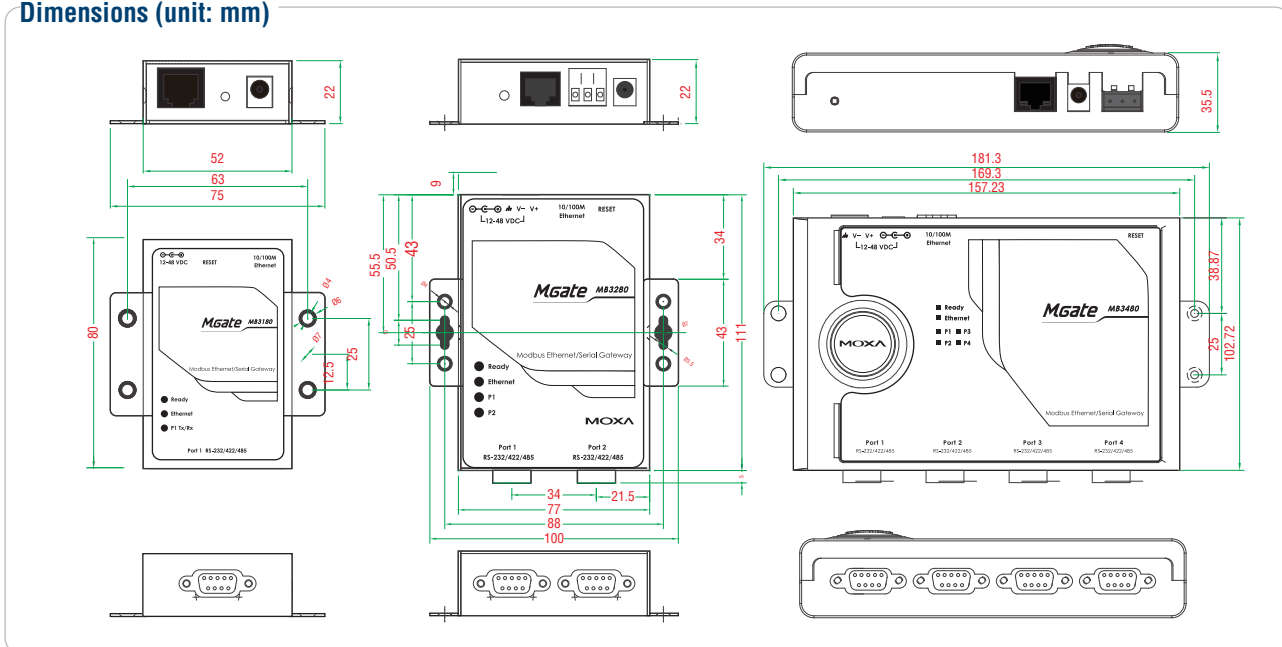
**EN61000-4-12:** Passed

### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

### Dimensions (unit: mm)



### Ordering Information

#### Available Models

MGate™ MB3180: 1-port standard Modbus gateway

MGate™ MB3280: 2-port standard Modbus gateway

MGate™ MB3480: 4-port standard Modbus gateway

#### Optional Accessories (can be purchased separately)

**DK-35A:** Mounting kit for 35-mm DIN-rail



#### Package Checklist

- MGate™ MB3180 or MB3280 or MB3480 Modbus Gateway
- Power Adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card