

# MGate™ MB3180/3280/3480

*1, 2, and 4-port standard serial-to-Ethernet Modbus gateways*



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



## 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

32 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 Gateways

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-232/422/485 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

**Protocol:** Modbus TCP  
**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

**Protocol:** Modbus RTU/ASCII Slave/Master  
**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, DTR/DSR (RS-232 only)  
**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

**Configuration Options:** Web Console, Serial Console, Telnet Console, Windows Utility

**Utilities:** MGate Manager for Windows 2000/XP/2003/Vista/Server 2008/7/8 (x86/x64), Windows Server 2008 R2/2012 (x64)

### Multi-master and Multi-drop:

Master mode: 32 TCP slaves  
 Slave mode: 16 TCP masters (request queue 32-deep for each master)  
**Support:** Smart Routing, MXview, SNMP v1 (read only)

### Physical Characteristics

**Housing:** Metal, IP30 protection

### Weight:

MGate MB3180: 340 g  
 MGate MB3280: 360 g  
 MGate MB3480: 740 g

### 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 102.7 x 157.2 mm (1.40 x 4.04 x 6.19 in)  
 With ears:  
 MB3180: 22 x 75 x 80 mm (0.87 x 2.95 x 3.15 in)  
 MB3280: 22 x 100 x 111 mm (0.87 x 3.94 x 4.37 in)  
 MB3480: 35.5 x 102.7 x 181.3 mm (1.40 x 4.04 x 7.14 in)

**Environmental Limits**

**Operating Temperature:** 0 to 60°C (32 to 140°F)  
**Storage Temperature:** -40 to 85 °C (-40 to 185°F)  
**Ambient Relative Humidity:** 5 to 95% (non-condensing)  
**Altitude:** Up to 2000 m (795 hPa), higher altitudes on demand  
**Note:** Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

**Power Requirements**

**Input Voltage:** 12 to 48 VDC  
**Power Connector:**  
 MGate MB3180: Power jack  
 MGate MB3280/3480: Power jack and terminal block  
**Power Consumption:**  
 MGate M3180: 200 mA (max.)  
 MGate M3280: 250 mA (max.)  
 MGate M3480: 385 mA (max.)

**Standards and Certifications**

**Safety:** UL 60950-1, EN 60950-1  
**EMC:** CE, FCC

**EMI:** EN 55022 Class A, FCC Part 15 Subpart B Class A

**EMS:**  
 EN 55024,  
 EN 61000-4-2 (ESD) Level 2,  
 EN 61000-4-3 (RS) Level 2,  
 EN 61000-4-4 (EFT) Level 2,  
 EN 61000-4-5 (Surge) Level 2,  
 EN 61000-4-6 (CS) Level 2,  
 EN 61000-4-8 (PFMF) Level 1,  
 EN 61000-4-11

**Reliability**

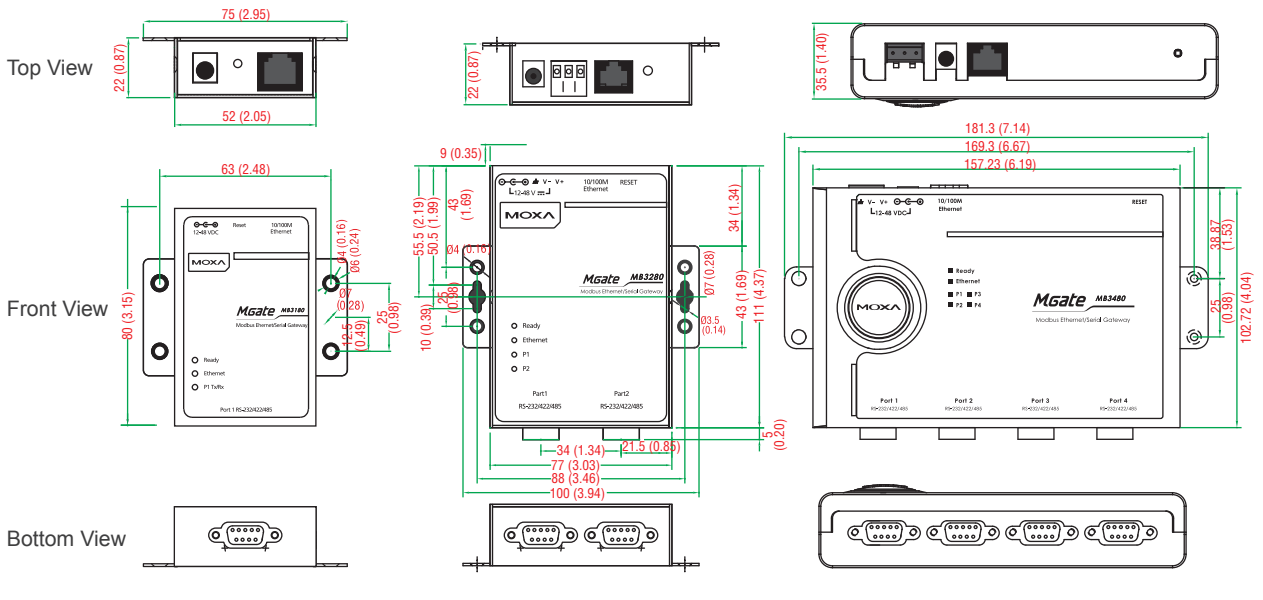
**MTBF (mean time between failures):**  
 MGate M3180: 628,376 hrs  
 MGate M3280: 503,029 hrs  
 MGate M3480: 295,812 hrs

**Warranty**

**Warranty Period:** 5 years  
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

Unit: mm (inch)



**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)

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, 1000, or 2000 nodes  
**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  
**Mini DB9F-to-TB Adapter:** DB9 female to terminal block adapter  
**DK-35A:** Mounting kit for 35-mm DIN-rail

**Package Checklist**

- 1 MGate MB3180 or MB3280 or MB3480 modbus gateway
- Power Adaptor
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

