

# MGate™ MB3180/3280/3480

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



- Supports Auto-Device Routing for easy configuration
- Supports route by TCP port or IP address for flexible deployment
- 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

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 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.

### Auto-Device Routing for Easy Configuration (Patent Pending)

Moxa's Auto-Device Routing function helps eliminate many of the problems and inconveniences encountered by engineers who need to configure large numbers of Modbus devices. A single mouse click is all that's required to set up a slave ID routing table and configure Modbus

gateways to automatically detect Modbus requests from a supervisory control and data acquisition (SCADA) system. By removing the need to manually create the slave ID routing table, the Auto-Device Routing function saves engineers significant time and cost.

### Specifications

#### Ethernet Interface

**Protocols:** 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, RTS Toggle (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, Telnet Console, Windows Utility  
**Utility:** MGate Manager for Windows 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64), Windows Server 2008 R2, Windows 7/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2

#### 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

**Weight:**

MGate MB3180: 340 g (0.75 lb)

MGate MB3280: 360 g (0.79 lb)

MGate MB3480: 740 g (1.63 lb)

**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)

**Power Requirements**

**Input Voltage:** 12 to 48 VDC

**Input Current:**

MGate M3180: 200 mA @ 12 VDC

MGate M3280: 250 mA @ 12 VDC

MGate M3480: 385 mA @ 12 VDC

**Power Connector:**

MGate MB3180: Power jack

MGate MB3280/3480: Power jack and terminal block

**Standards and Certifications**

**Safety:** UL 60950-1, EN 60950-1

**EMC:** EN 55032/24

**EMI:** CISPR 32, FCC Part 15B Class A

**EMS:**

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power: 1 kV (MB3180/MB3280)

IEC 61000-4-5 Surge: Power: 1 kV; Signal: 2 kV (MB3480)

IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m

IEC 61000-4-8 PFMF

IEC 61000-4-11

**MTBF** (mean time between failures)

**Time:**

MGate M3180: 908,440 hrs

MGate M3280: 749,455 hrs

MGate M3480: 1,242,173 hrs

**Standard:** Telcordia SR332

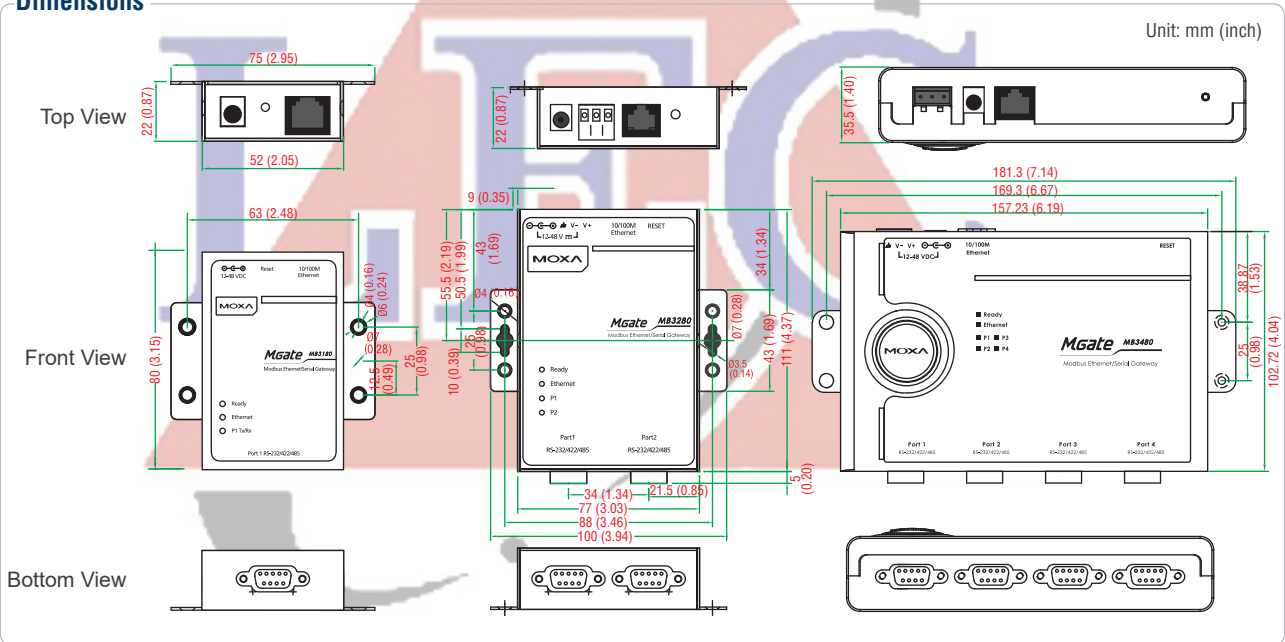
**Warranty**

**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)

**CBL-RJ458P-100:** 8-pin RJ45 CAT5 Ethernet cable, 100 cm

**CBL-F9M9-150:** DB9 female to DB9 male serial cable, 150 cm

**CBL-F9M9-20:** DB9 female to DB9 male serial cable, 20 cm

**CBL-RJ45SF9-150:** RJ45 to DB9 female shielded serial cable, 150 cm

**ADP-RJ458P-DB9F:** DB9 female to RJ45 connector

**A-ADP-RJ458P-DB9F-ABC01:** DB9 female to RJ45 connector

**Mini DB9F-to-TB:** DB9 female to terminal block connector

**DK35A:** DIN-rail mounting clips, 35 mm, 2 DIN-rail plates with 4 screws

**Package Checklist**

- 1 MGate MB3180 or MB3280 or MB3480 Modbus gateway\*
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

\*The package includes one power adapter suitable for your region.

**DK35A**

