

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

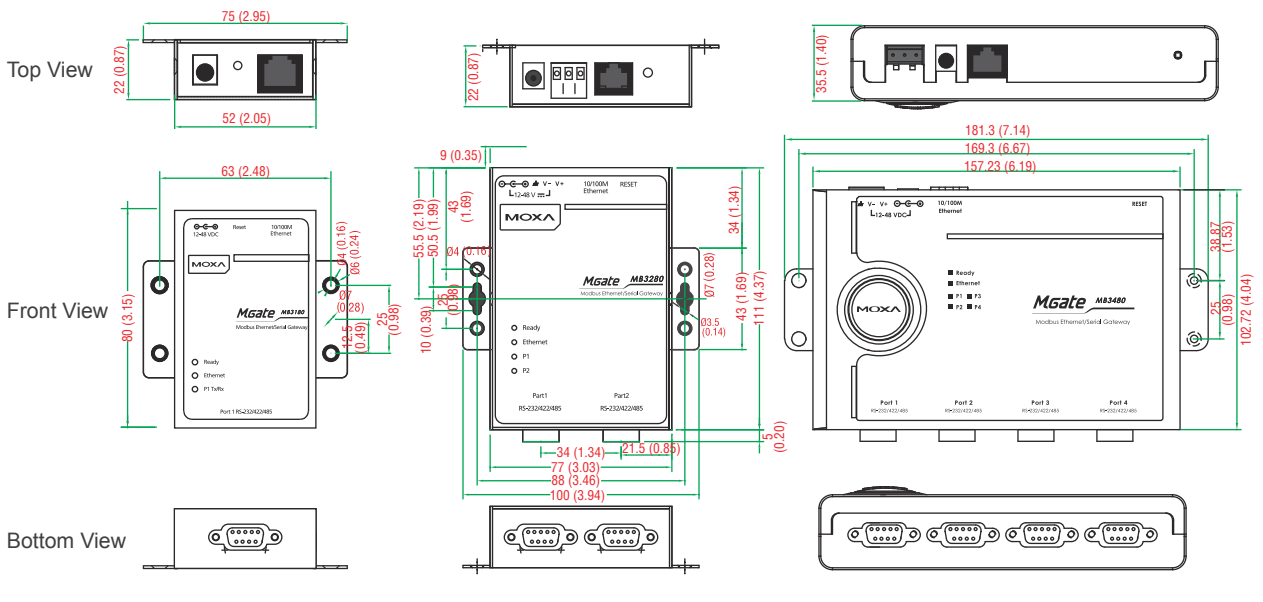
MTBF (mean time between failures):
 MGate M3180: 628,376 hrs
 MGate M3280: 503,029 hrs
 MGate M3480: 295,812 hrs

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

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

