

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
- > 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.

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, 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

Operation Modes: RTU Slave, RTU Master, ASCII Slave, ASCII Master
Utilities: MGate Manager for Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64
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: 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 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)

Storage Temperature: -20 to 70°C (-4 to 158°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

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,

EN 61000-4-11,

EN 61000-4-12

Reliability

MTBF (mean time between failures):

MGate M3180: 628,376 hrs

MGate M3280: 503,029 hrs

MGate M3480: 295,812 hrs

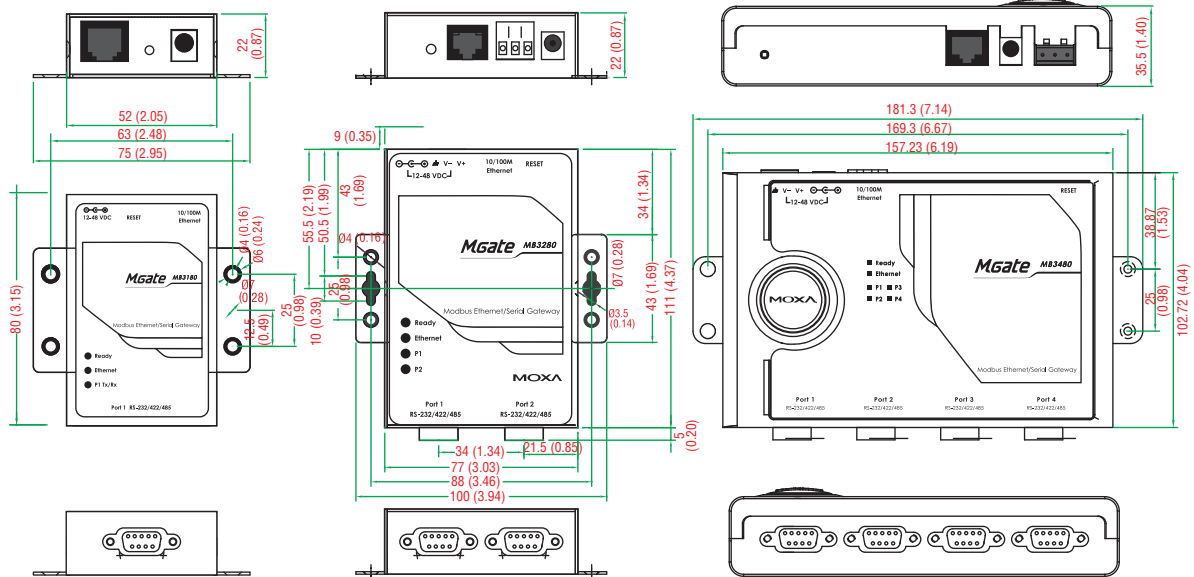
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

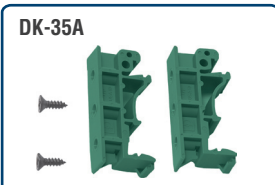
MGate MB3180: 1-port standard Modbus gateway

MGate MB3280: 2-port standard Modbus gateway

MGate MB3480: 4-port standard Modbus gateway

Optional Accessories (can be purchased separately)

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