

MGate™ 4101-MB-PBS Series

1-port Modbus RTU/ASCII-to-PROFIBUS slave gateways



- > Protocol conversion between Modbus and PROFIBUS
- > Windows utilities with innovative QuickLink function for automatic configuration within minutes
- > Redundant dual DC power inputs and relay output supported
- > Embedded data packet analyzer
- > Powerful and visual diagnostic tool
- > -40 to 75°C wide operating temperature models available



Overview

The MGate 4101-MB-PBS gateway provides a communication portal between PROFIBUS PLCs (e.g. Siemens S400 and S300 PLCs) and Modbus devices. With the QuickLink feature, I/O mapping can be

accomplished within a matter of minutes. All models are protected with a rugged metallic casing, are DIN-rail mountable, and offer optional built-in optical isolation.

QuickLink and Windows Utilities for Easy Setup and Traffic Monitoring

The QuickLink windows utility uses a serial console port to connect to the MGate 4101-MB-PBS and makes configuration and operation as easy as possible. QuickLink can finish configuration in just few minutes by passively detecting Modbus requests with the AutoLearning function, and performing error-free I/O mapping with

the AutoMapping feature. QuickLink drastically reduces Modbus-to-PROFIBUS integration time when compared to conventional I/O mapping, which can easily require days to complete. Additionally, embedded monitoring tools can maintain logs of Modbus communication packets and assist in troubleshooting.

Redundant Power Inputs

The MGate 4101-MB-PBS has dual power inputs for greater reliability. The power inputs allow simultaneous connections to two live DC power sources, so that continuous operation is provided even if one

power source fails. The higher level of reliability makes these advanced Modbus-to-PROFIBUS gateways ideal for demanding industrial applications.

Warning by Relay Output

A relay output is provided for the power input status. The relay output gives maintenance engineers an additional tool for troubleshooting and maintenance.

Specifications

PROFIBUS Interface

Protocol: PROFIBUS DP-V0 Slave

Number of Ports: 1

Data Rate: 9600 bps to 12 Mbps

Connector: DB9 female

Isolation: Built-in (2KV)

DIP Switch: For Termination

Rotary Switch: PROFIBUS address 0-99 (address 100-125 supported through software configuration)

Modbus Serial Interface

Number of Ports: 1

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)

Pull High/Low Resistor for RS-485: 1 K Ω , 150 K Ω

Terminator for RS-485: 120 Ω

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

Configuration Options: Serial Console, Windows Utility

Utilities: MGate Manager for Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64

Bonus Features: QuickLink, Paging

Physical Characteristics

Housing: Metal

Weight: 500 g

Dimensions: 36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)

Environmental Limits

Operating Temperature:

Standard Models: 0 to 60°C (32 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°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

Power Connector: Terminal block

Power Consumption:

MGate 4101-MB-PBS: 340 mA @ 12 VDC, 130 mA @ 48 VDC

MGate 4101I-MB-PBS: 375 mA @ 12 VDC, 140 mA @ 48 VDC

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 3,

EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 4,

EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3,

EN 61000-4-8,

EN 61000-4-11,

EN 61000-4-12

Shock: IEC 60068-2-27

Freefall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Reliability

MTBF (mean time between failures): 513,139 hrs

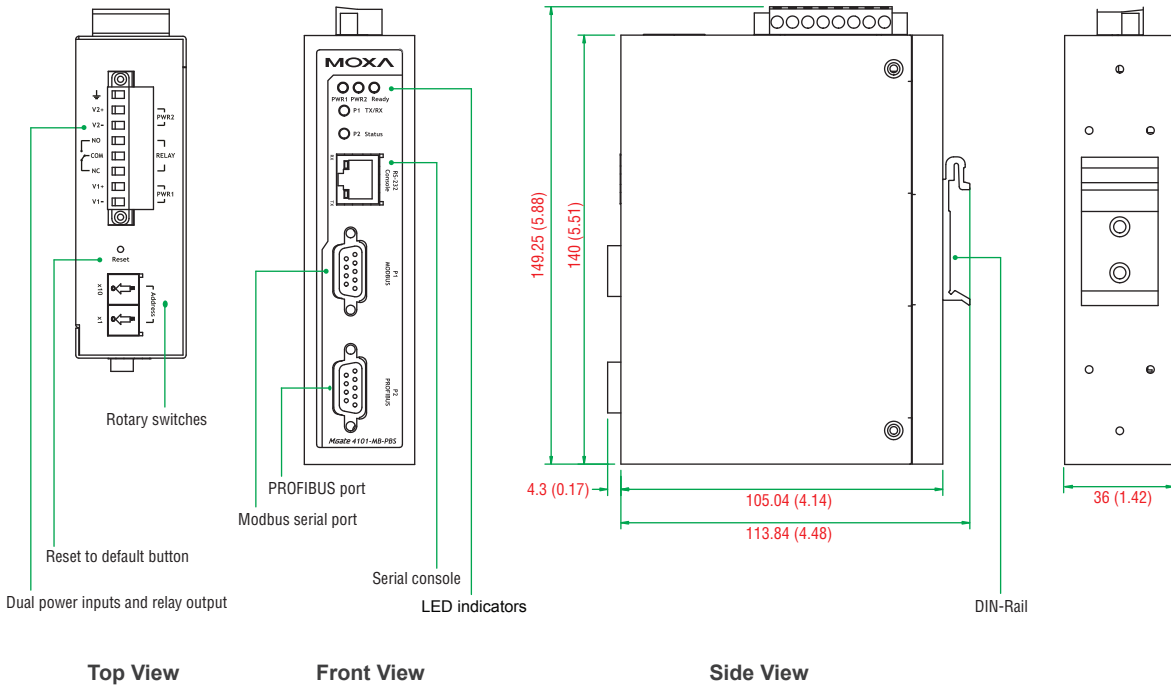
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

MGate 4101-MB-PBS: 1-port Modbus-to-PROFIBUS Slave gateway, 12-48 VDC, 0 to 60°C operating temperature

MGate 41011-MB-PBS: 1-port Modbus-to-PROFIBUS Slave gateway with 2 KV Isolation, 12-48 VDC, 0 to 60°C operating temperature

MGate 4101-MB-PBS-T: 1-port Modbus-to-PROFIBUS Slave gateway, 12-48 VDC, -40 to 75°C operating temperature

MGate 41011-MB-PBS-T: 1-port Modbus-to-PROFIBUS Slave gateway with 2 KV Isolation, 12-48 VDC, -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)

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

WK-36-02: Wall mounting kit

Package Checklist

- 1 MGate 4101-MB-PBS or 41011-MB-PBS Modbus to PROFIBUS slave gateway
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card
- RJ45 to DB9 cable (for console use)