

# MGate 4101-MB-PBS Series

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



### Features and Benefits

- Protocol conversion between Modbus and PROFIBUS
- Supports PROFIBUS DP V0 slave
- Supports Modbus RTU/ASCII master and slave
- Windows utilities with innovative QuickLink function for automatic configuration within minutes
- Status monitoring and fault protection for easy maintenance
- Embedded traffic monitoring/diagnostic information for easy troubleshooting
- Supports redundant dual DC power inputs and 1 relay output
- -40 to 75°C wide operating temperature models available
- Serial port with 2 kV isolation protection (for “-I” models)

### Certifications



## Introduction

The MGate 4101-MB-PBS gateway provides a communication portal between PROFIBUS PLCs (e.g., Siemens S7-400 and S7-300 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 the configuration in just a few minutes by passively detecting Modbus requests with the AutoLearning function, and performs 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 connection to 2 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

### Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1)
No. of Ports	1
Connector	DB9 male
Serial Standards	RS-232/422/485
Baudrate	50 bps to 921.6 kbps
Data Bits	7, 8

Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 2
Flow Control	DTR/DSR, RTS/CTS
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Terminator for RS-485	120 ohms
Isolation	2 kV (I models)

#### Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

#### Serial Software Features

Configuration Options	MGate Manager
Industrial Protocols	Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave, PROFIBUS DP-V0 Slave

#### Modbus RTU/ASCII

Mode	Master, Slave
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Commands	100
Input Data Size	7744 bytes
Output Data Size	7744 bytes

#### PROFIBUS Interface

Industrial Protocols	PROFIBUS DP
No. of Ports	1
Connector	DB9 female
Baudrate	9600 bps to 12 Mbps
Isolation	2 kV (built-in)
Signals	PROFIBUS D+, PROFIBUS D-, RTS, Signal Common, 5V

#### PROFIBUS

Rotary Switch	PROFIBUS addresses 0-99 (addresses 100-125 supported through software configuration)
Mode	DP-V0 Slave
Max. No. of Master Connections	1
Max. No. of PROFIBUS I/O Modules	24 per page
Max. No. of PROFIBUS Pages	32

Input Data Size	7744 bytes
Output Data Size	7744 bytes
<b>Power Parameters</b>	
Input Voltage	12 to 48 VDC
Input Current	275 mA @ 12 VDC
Power Connector	Screw-fastened Euroblock terminal
<b>Relays</b>	
Contact Current Rating	Resistive load: 1 A @ 24 VDC
<b>Physical Characteristics</b>	
Housing	Metal
Dimensions	36 x 105 x 140 mm (1.42 x 4.14 x 5.51 in)
Weight	500 g (1.10 lb)
IP Rating	IP30 Note: It is recommended to attach the M3x3mm Nylok screws at the rear side
<b>Environmental Limits</b>	
Operating Temperature	MGate 4101I-MB-PBS: 0 to 60°C (32 to 140°F) MGate 4101I-MB-PBS-T: -40 to 75°C (-40 to 167°F) MGate 4101-MB-PBS: 0 to 60°C (32 to 140°F) MGate 4101-MB-PBS-T: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
<b>Standards and Certifications</b>	
Safety	EN 60950-1, UL 60950-1, EN 62368-1, UL 62368-1
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Hazardous Locations	ATEX, Class I Division 2, IECEx
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6, IEC 60068-2-64
<b>MTBF</b>	
Time	MGate 4101-MB-PBS Series: 1,537,948 hrs MGate 4101I-MB-PBS Series: 1,315,666 hrs
Standards	Telcordia SR332

## Warranty

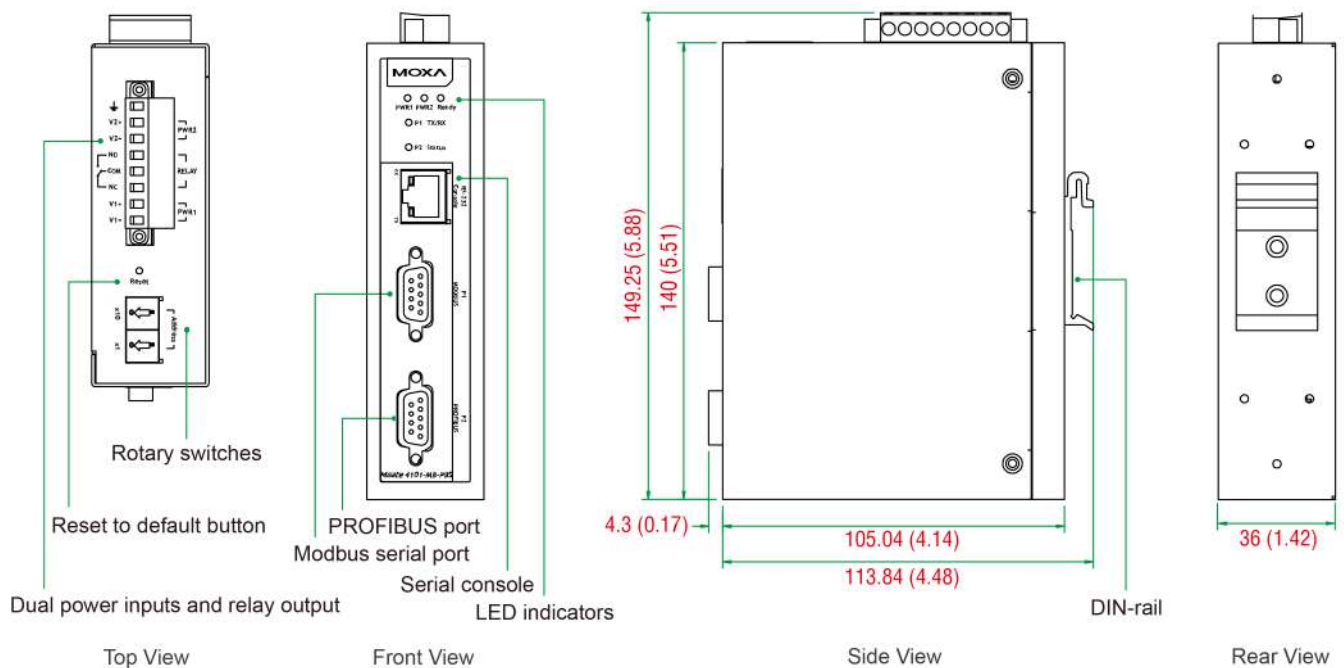
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x MGate 4101-MB-PBS Series gateway
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	1 x DIN-rail kit
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Serial Isolation	Operating Temp.
MGate 4101-MB-PBS	–	0 to 60°C
MGate 4101I-MB-PBS	2 kV	0 to 60°C
MGate 4101-MB-PBS-T	–	-40 to 75°C
MGate 4101I-MB-PBS-T	2 kV	-40 to 75°C

## Accessories (sold separately)

### Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm
CBL-RJ45F9-150	RJ45 to DB9 female serial cable, 1.5 m
CBL-RJ45SF9-150	RJ45 to DB9 female serial shielded cable, 1.5 m

#### Connectors

Mini DB9F-to-TB	DB9 female to terminal block connector
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#### DIN-Rail Mounting Kits

DK-25-01	DIN-rail mounting kit, 2 screws
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#### Wall-Mounting Kits

WK-36-02	Wall-mounting kit, 2 plates, 6 screws, 36 x 67 x 2 mm
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#### Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
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