MGate 5101-PBM-MN Series

1-port PROFIBUS-to-Modbus TCP gateways



Features and Benefits

- Protocol conversion between PROFIBUS and Modbus TCP
- Supports PROFIBUS DP V1 master
- Supports Modbus TCP client/server
- · Automatic scan of PROFIBUS devices and easy configuration
- · Web-based GUI for I/O data visualization
- · Embedded traffic monitoring/diagnostic information for easy troubleshooting
- Status monitoring and fault protection for easy maintenance
- 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
- Security features based on IEC 62443

Certifications

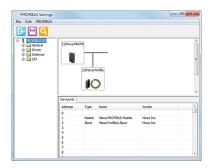


Introduction

The MGate 5101-PBM-MN gateway provides a communication portal between PROFIBUS devices (e.g. PROFIBUS drives or instruments) and Modbus TCP hosts. All models are protected with a rugged metallic casing, DIN-rail mountable, and offer optional built-in optical isolation. The PROFIBUS and Ethernet status LED indicators are provided for easy maintenance. The rugged design is suitable for industrial applications such as oil/gas, power, process automation, and factory automation.

Windows Utility for Easy Configuration and Traffic Monitoring

The MGate Manager utility provides a user-friendly interface to make configuration and operation as easy as possible. Moxa's innovative AutoScan function can automatically detect all connected PROFIBUS slave devices and their available I/O modules to quickly complete gateway configuration, after which an easy-to-read data mapping table is created to assist in the configuration of Modbus TCP master (e.g., SCADA, PLC) settings. In addition, users can configure import/ export maintenance functions, and use embedded monitoring tools to maintain logs of Modbus communication packets, which can be used for troubleshooting.



A Variety of Maintenance Functions

The MGate 5101-PBM-MN provides a Web console and Telnet console for remote maintenance, with both consoles supporting encryption commutation functions such as HTTPS and SSH for preventing unauthorized access. The log functions are provided in firmware such as connection event of Modbus or PROFIBUS for maintenance. Users can monitor each I/O data and review the log through the web console remotely. A relay output alarm is provided for the power input status. It gives maintenance engineers an additional tool for troubleshooting and maintenance.

Redundant Power Inputs

The MGate 5101-PBM-MN has dual power inputs for greater reliability. The power inputs allow simultaneous connection to 2 live DC power sources to provide uninterrupted operation even if one power source fails. The higher level of reliability makes these advanced PROFIBUS-master-to-Modbus-TCP gateways ideal for demanding industrial applications.



Specifications

Ethernet Interface

| Ethernet interface | |
|---------------------------------------|--|
| 10/100BaseT(X) Ports (RJ45 connector) | 1 (auto MDI/MDI-X connection) |
| Magnetic Isolation Protection | 1.5 kV (built-in) |
| Ethernet Software Features | |
| Industrial Protocols | Modbus TCP Client (Master), Modbus TCP Server (Slave) |
| Configuration Options | Web Console (HTTP/HTTPS), Device Search Utility (DSU), MGate Manager, Telnet Console |
| Management | ARP, DHCP Client, DNS, HTTP, HTTPS, SMTP, SNMP Trap, SNMPv1/v2c/v3, TCP/IP, Telnet, SSH, UDP, NTP Client |
| MIB | RFC1213, RFC1317 |
| Time Management | NTP Client |
| Serial Interface | |
| Console Port | RS-232 (TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND), DB9 male (115200, n, 8, 1) |
| Serial Software Features | |
| Configuration Options | Serial Console |
| Industrial Protocols | PROFIBUS DP-V1 Master |
| Modbus TCP | |
| Mode | Client, Server |
| Functions Supported | 1, 2, 3, 4, 5, 6, 15, 16, 23 |
| Max. No. of Client Connections | 16 |
| Max. No. of Server Connections | 32 |
| Max. No. of Commands | 100 |
| Input Data Size | 1536 bytes |
| Output Data Size | 1536 bytes |
| PROFIBUS Interface | |
| Industrial Protocols | PROFIBUS DP |
| No. of Ports | 1 |
| Connector | DB9 female |
| Signals | PROFIBUS D+, PROFIBUS D-, RTS, Signal Common, 5V |
| Baudrate | 9600 bps to 12 Mbps |
| Isolation | 2 kV (built-in) |
| PROFIBUS | |
| Mode | DP-V1 Master |
| Input Data Size | 1536 bytes |
| Output Data Size | 1536 bytes |
| | |



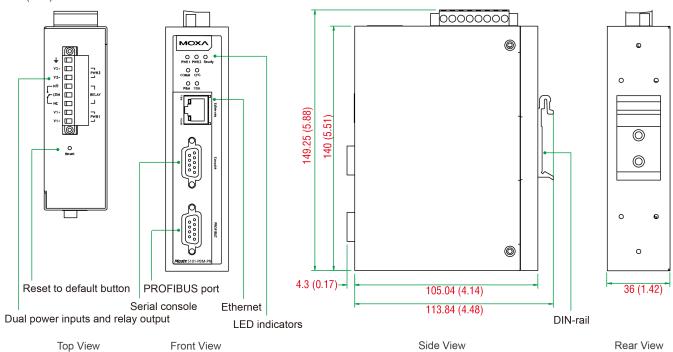
| Power Parameters | |
|--|--|
| Input Voltage | 12 to 48 VDC |
| Input Current | 365 mA @ 12 VDC |
| Power Connector | Screw-fastened Euroblock terminal |
| Relays | |
| Contact Current Rating | Resistive load: 2 A @ 30 VDC |
| Physical Characteristics | |
| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 36 x 105 x 140 mm (1.42 x 4.14 x 5.51 in) |
| Weight | 500 g (1.10 lb) |
| Environmental Limits | |
| Operating Temperature | MGate 5101-PBM-MN: 0 to 60°C (32 to 140°F) MGate 5101-PBM-MN-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) |
| Standards and Certifications | |
| Safety | EN 60950-1, UL 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: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 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 |
| МТВЕ | |
| Time | 1,082,881 hrs |
| Standards | Telcordia SR332 |
| Warranty | |
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |
| | |



| Package Contents | |
|------------------|---|
| Device | 1 x MGate 5101-PBM-MN Series gateway |
| 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 | Operating Temp. |
|---------------------|-----------------|
| MGate 5101-PBM-MN | 0 to 60°C |
| MGate 5101-PBM-MN-T | -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 |
| DIN-Rail Mounting Kits | |
| DK-25-01 | DIN-rail mounting kit, 2 screws |
| Wall-Mounting Kits | |
| WK-36-02 | Wall-mounting kit, 2 plates, 6 screws, 36 x 67 x 2 mm |



CBL-PJTB-10

Non-locking barrel plug to bare-wire cable

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