MGate™ 5101-PBM-MN Series

1-port PROFIBUS-to-Modbus TCP gateways

> Protocol conversion between PROFIBUS and Modbus TCP
> Automatic scan of PROFIBUS devices for easy configuration
> Redundant dual DC power inputs and relay output supported
> Embedded data packet analyzer and diagnostic tool
> Web-based GUI for I/O data visualization
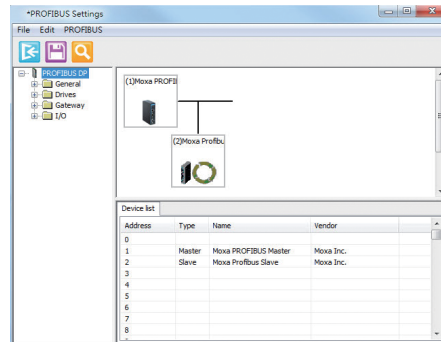> -40 to 75°C wide operating temperature models available

Overview

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 used for troubleshooting.

Various 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 connections to two 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
Number of Ports: 1
Speed: 10/100 Mbps, Auto MDI/MDIX
Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 kV (built-in)
Modbus TCP:
Operation Modes: Modbus TCP Client/Server

PROFIBUS Interface

Protocol: PROFIBUS DP-V1 Master
Number of Ports: 1
Data Rate: 9600 bps to 12 Mbps
Connector: DB9 female
Isolation: 2 kV (built-in)

Serial Signals (Serial Console)

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

Software

Configuration Options: Serial Console, Windows Utility, Web Console (HTTP/HTTPS), Telnet/SSH Console
Utility: MGate Manager for Windows 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64), Windows Server 2008 R2, Windows 7/8/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2
Support: AutoScan, MXview, SNMP (v1, v2, v3), Private MIB

Physical Characteristics

Housing: Metal, IP30
Weight: 500 g (1.10 lb)
Dimensions: 36 x 105 x 140 mm (1.42 x 4.14 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)
Vibration: IEC 60068-2-6, IEC 60068-2-64
Shock: IEC 60068-2-27
Drop: IEC 60068-2-32

Power Requirements

Input Voltage: 12 to 48 VDC
Input Current: 365 mA @ 12 VDC
Power Connector: Terminal block

Standards and Certifications

Safety: UL 60950-1, EN 60950-1
Hazardous Location: Class 1 Division 2, ATEX, IECEx
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
IEC 61000-4-8 PFMF

MTBF (mean time between failures)
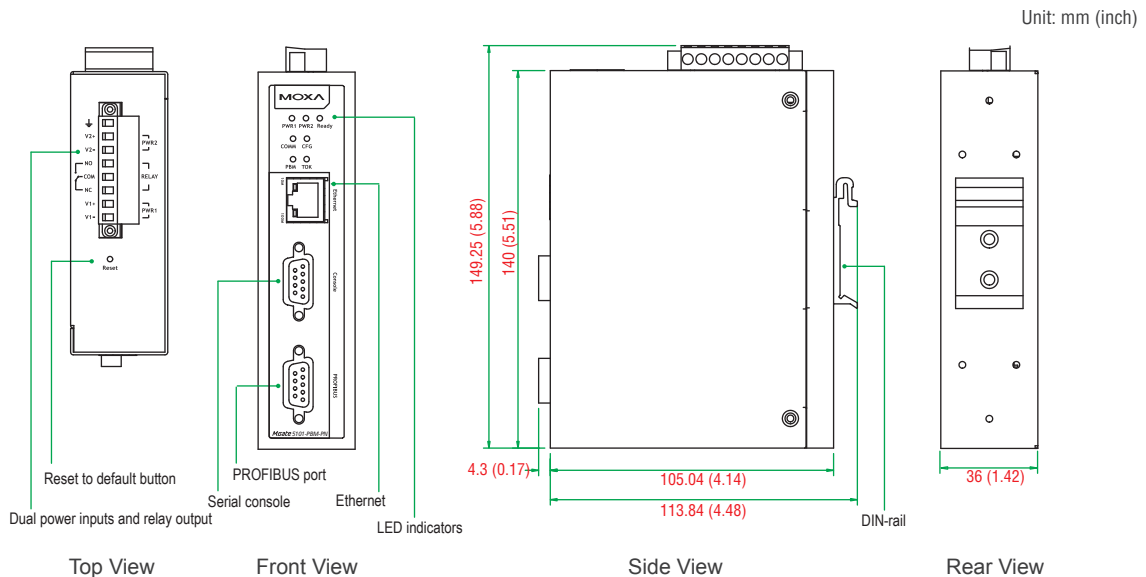
Time: 1,082,881 hrs
Standard: Telcordia SR332

Warranty

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

Dimensions

Unit: mm (inch)

Reset to default button
Dual power inputs and relay output
PROFIBUS port
Serial console
Ethernet
LED indicators
DIN-rail

149.25 (5.88)
140 (5.51)
4.3 (0.17)
105.04 (4.14)
113.84 (4.48)
36 (1.42)

Top View | Front View | Side View | Rear View

:: Ordering Information

Available Models

MGate 5101-PBM-MN: 1-port PROFIBUS master to Modbus TCP gateway, 12-48 VDC, 0 to 60°C operating temperature
MGate 5101-PBM-MN-T: 1-port PROFIBUS master to Modbus TCP gateway, 12-48 VDC, -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)

CBL-F9M9-150: DB9 female to DB9 male serial cable, 150 cm
CBL-F9M9-20: DB9 female to DB9 male serial cable, 20 cm
Mini DB9F-to-TB: DB9 female to terminal block connector

Package Checklist

- 1 MGate 5101-PBM-MN PROFIBUS master to Modbus TCP gateway
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card