MGate 5101-PBM-MN
Quick Installation Guide

Version 3.1, November 2019

Technical Support Contact Information
www.moxa.com/support

Moxa Americas:
Toll-free: 1-888-669-2872
Tel: 1-714-528-6777
Fax: 1-714-528-6778

Moxa China (Shanghai office):
Toll-free: 800-820-5036
Tel: +86-21-5258-9955
Fax: +86-21-5258-5505

Moxa Europe:
Tel: +49-89-3 70 03 99-0
Fax: +49-89-3 70 03 99-99

Moxa Asia-Pacific:
Tel: +886-2-8919-1230
Fax: +886-2-8919-1231

Moxa India:
Tel: +91-80-4172-9088
Fax: +91-80-4132-1045

© 2019 Moxa Inc. All rights reserved.
Overview
The MGate 5101-PBM-MN is an industrial Ethernet gateway for PROFIBUS-to-Modbus-TCP network communication.

Package Checklist
Before installing the MGate 5101-PBM-MN, verify that the package contains the following items:

- 1 MGate 5101-PBM-MN gateway
- Quick installation guide (printed)
- Warranty Card

*Please notify your sales representative if any of the above items are missing or damaged.

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
- WK-36-01: Wall-mounting kit

Hardware Introduction

LED Indicators

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR1</td>
<td>Green</td>
<td>Power is on</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Power is off</td>
</tr>
<tr>
<td>PWR2</td>
<td>Green</td>
<td>Power is on</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Power is off</td>
</tr>
</tbody>
</table>
| Ready | Green | Steady on: Power is on and the MGate is functioning normally  
Blinking: The MGate has been located by the MGate Manager's Location function |
| | Red | Steady on: Power is on and the MGate is booting up  
Blinking: Indicates an IP conflict, or the DHCP or BOOTP server is not responding properly |
| | Off | Power is off or fault condition exists |
| COMM | Off | No data exchange |
| | Green | Data exchange with all slaves |
| | Green, flashing | Data exchange with at least one slave (not all configured slaves can communicate with gateway) |
| | Red | Bus control error |
| CFG | Off | No PROFIBUS configuration |
| | Green | PROFIBUS configuration OK |
| PBM | Off | PROFIBUS master is offline |
| | Red | PROFIBUS master is in STOP mode |
| | Green, flashing | PROFIBUS master is in CLEAR mode |
| | Green | PROFIBUS master is in OPERATE mode |
| TOK | Green | Gateway holds the PROFIBUS token |
| | Off | Gateway is waiting for the PROFIBUS token |
### LED Color Function

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Function</th>
</tr>
</thead>
</table>
| Ethernet | Amber | Steady: 10Mbps, no data is transmitting  
Blinking: 10Mbps, data is transmitting |
| | Green | Steady: 100Mbps, no data is transmitting  
Blinking: 100Mbps, data is transmitting |
| | Off | Ethernet cable is disconnected |

### Reset Button

The reset button is used to load factory defaults. Use a pointed object such as a straightened paper clip to hold the reset button down for five seconds. Release the reset button when the Ready LED stops blinking.

### Hardware Installation Procedure

**STEP 1:** Connect the power adapter. Connect the 12-48 VDC power line or DIN-rail power supply with the MGate 5101-PBM-MN device’s terminal block. Make sure the adapter is connected to an earthed socket.

**STEP 2:** Use a PROFIBUS cable to connect the unit to a PROFIBUS slave device.

**STEP 3:** Connect the unit to the Modbus TCP device.

**STEP 4:** The MGate 5101-PBM-MN series is designed to be attached to a DIN rail or mounted on a wall. For DIN-rail mounting, push down the spring and properly attach it to the DIN-rail until it “snaps” into place. For wall mounting, install the wall-mount kit (optional) first and then screw the device onto the wall.

### Wall or Cabinet Mounting

Two metal plates are provided for mounting the unit on a wall or inside a cabinet. Attach the plates to the unit’s rear panel with screws. With the plates attached, use screws to mount the unit on a wall. The heads of the screws should be 5 to 7 mm in diameter, the shafts should be 3 to 4 mm in diameter, and the length of the screws should be more than 10.5 mm.

For each screw, the head should be 6 mm or less in diameter, and the shaft should be 3.5 mm or less in diameter.
The following figure illustrates the two mounting options:

Software Installation Information

To install MGate Manager, please download it from Moxa’s website at http://www.moxa.com. For more detailed information about MGate Manager, click the Documents button and select the MGate 5101-PBM-MN User’s Manual.

The MGate 5101 also supports login via a web browser.

Default IP address: 192.168.127.254

Default account: admin

Default password: moxa

Pin Assignments

PROFIBUS Serial Port (Female DB9)

<table>
<thead>
<tr>
<th>PIN</th>
<th>Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>PROFIBUS D+</td>
</tr>
<tr>
<td>4</td>
<td>RTS</td>
</tr>
<tr>
<td>5</td>
<td>Signal common</td>
</tr>
<tr>
<td>6</td>
<td>5V</td>
</tr>
<tr>
<td>7</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>PROFIBUS D-</td>
</tr>
<tr>
<td>9</td>
<td>–</td>
</tr>
</tbody>
</table>
### Power Input and Relay Output Pinouts

<table>
<thead>
<tr>
<th>Shielded Ground</th>
<th>V2+</th>
<th>V2-</th>
<th>V1+</th>
<th>V1-</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Power Input 2</td>
<td></td>
<td></td>
<td>DC Power Input 1</td>
<td></td>
</tr>
<tr>
<td>DC Power Input 2</td>
<td>N.O.</td>
<td>Common</td>
<td>N.C.</td>
<td></td>
</tr>
<tr>
<td>DC Power Input 1</td>
<td></td>
<td></td>
<td>DC Power Input 1</td>
<td></td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Power Input</th>
<th>12 to 48 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption (Input Rating)</td>
<td>12 to 48 VDC, 360 mA (max.)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to 85°C (-40 to 185°F)</td>
</tr>
</tbody>
</table>

### ATEX and IECEx Information

1. ATEX Certificate number: DEMKO 14 ATEX 1288
2. IECEx number: IECEx UL 14.0023X
3. Certificate string: Ex nA IIC T4 Gc
   - Ambient range: 0°C ≤ Tamb ≤ 60°C (for suffix without –T)
   - Ambient range: -40°C ≤ Tamb ≤ 75°C (for suffix without –T)
4. Standards covered:
   - EN 60079-0: 2012+A11:2013/IEC 60079-0: Ed 6.0
5. Field-wiring connection:
   - The device uses a terminal block, solder on the power distribution board, suitable for 12-24 AWG wire size, torque value 4.5 lb-in (0.51 N-m).
6. Battery information: Battery is not user replaceable.
7. Installation instructions:
   - A 4 mm² conductor must be used when the connection to the external grounding screw is utilized.
   - Conductors suitable for use at an ambient temperature of 84°C must be used for the power supply terminal.
8. Special conditions for safe use:
   - The device is to be installed in an IECEx/ATEX Certified IP54 enclosure and accessible only through the use of a tool.
   - The device is for use in an area of not more than pollution degree 2 in accordance with IEC 60664-1.
ATTENTION
For installations in hazardous locations (Class 1, Division 2):
These devices are to be installed in an enclosure with a tool-removable cover or door, suitable for the environment.

NOTE
The equipment must be suitable for use in Class 1, Division 2, Groups A, B, C, D, or nonhazardous locations only.

WARNING
EXPLOSION HAZARD
Do not disconnect equipment unless the power has been switched off, or the area is known to be nonhazardous.

WARNING
EXPLOSION HAZARD
Substitution of any components may impair suitability for Class 1, Division 2.

WARNING
EXPOSURE TO SOME CHEMICALS MAY DEGRADE THE SEALING PROPERTIES OF MATERIALS USED IN THE FOLLOWING DEVICE:
Sealed Relay Device U21.

Moxa Inc.
Fl. 4, No. 135, Lane 235, Baoqiao Rd.
Xindian Dist., New Taipei City, 23145, Taiwan, R.O.C.