MGate 5101-PBM-MN Series Quick Installation Guide

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Technical Support Contact Information
www.moxa.com/support

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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)**:**

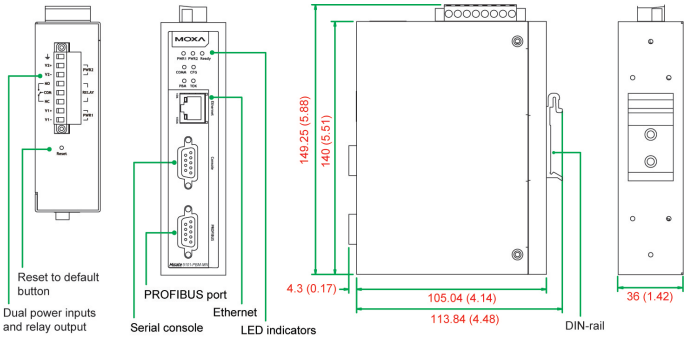
- CBL-F9M9-150: DB9-female-to-DB9-male serial cable, 150 cm
- CBL-F9M9-20: DB9-female-to-DB9-male serial cable, 20 cm
- Mini DB9F-to-TB: DB9-female-to-terminal-block connector
- WK-36-01: Wall-mounting kit

Hardware Introduction

LED Indicators

LED	Color	Function
PWR1	Green	Power is on
	Off	Power is off
PWR2	Green	Power is on
	Off	Power is off
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
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.

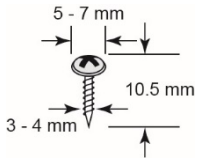
STEP 2: Use a PROFIBUS cable to connect the unit to a PROFIBUS slave device.

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.

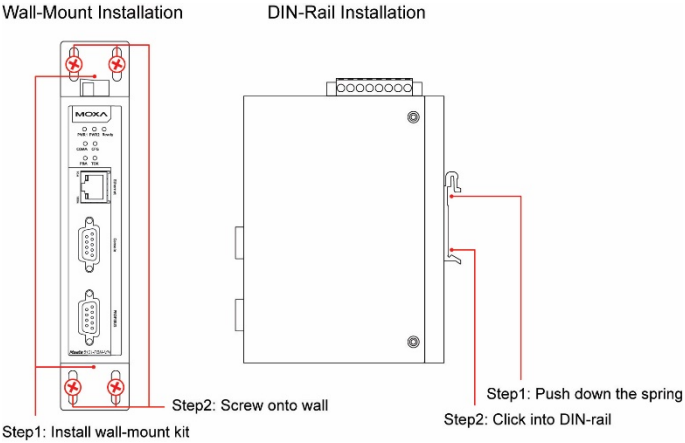
Wall or Cabinet Mounting

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.

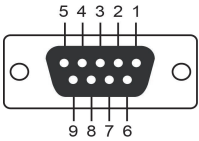
Default IP address: **192.168.127.254**

Default account: **admin**

Default password: **moxa**

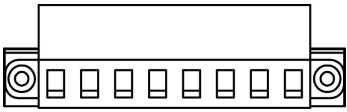
Pin Assignments

PROFIBUS Serial Port (Female DB9)



PIN	Signal Name
1	–
2	–
3	PROFIBUS D+
4	RTS
5	Signal common
6	5V
7	–
8	PROFIBUS D-
9	–

Power Input and Relay Output Pinouts



	V2+	V2-				V1+	V1-
Shielded Ground	DC Power Input 2	DC Power Input 2	N.O.	Common	N.C.	DC Power Input 1	DC Power Input 1

Specifications

Power Input	12 to 48 VDC
Power Consumption (Input Rating)	12 to 48 VDC, 360 mA (max.)
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)

ATEX and IECEx Information

II 3G

1. ATE X 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
   EN 60079-15:2010/IEC 60079-15: Ed 4.0
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 mm^2 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.

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