MOXA MGate 5102-PBM-PN Series Profinet Gateway Installation Guide

Contents

MGate 5102-PBM-PN Series Profinet Gateway

Installation Guide

Overview

The MGate 5102-PBM-PN is an industrial Ethernet gateway for PROFIBUS-to-PROFINET network communication.

Package Checklist

Before installing the MGate 5102-PBM-PN, verify that the package contains the following items:

- 1 MGate 5102-PBM-PN gateway
- RJ45 to DB9 cable (for console use)
- 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
- CBL-RJ45SF9-150: RJ45-to-DB9-female shielded serial cable, 150 cm
- ADP-RJ458P-DB9F: DB9-female-to-RJ45 connector
- A-ADP-RJ458P-DB9F-ABC01: DB9-female-to-RJ45-connector
- Mini DB9F-to-TB: DB9-female-to-terminal-block connector

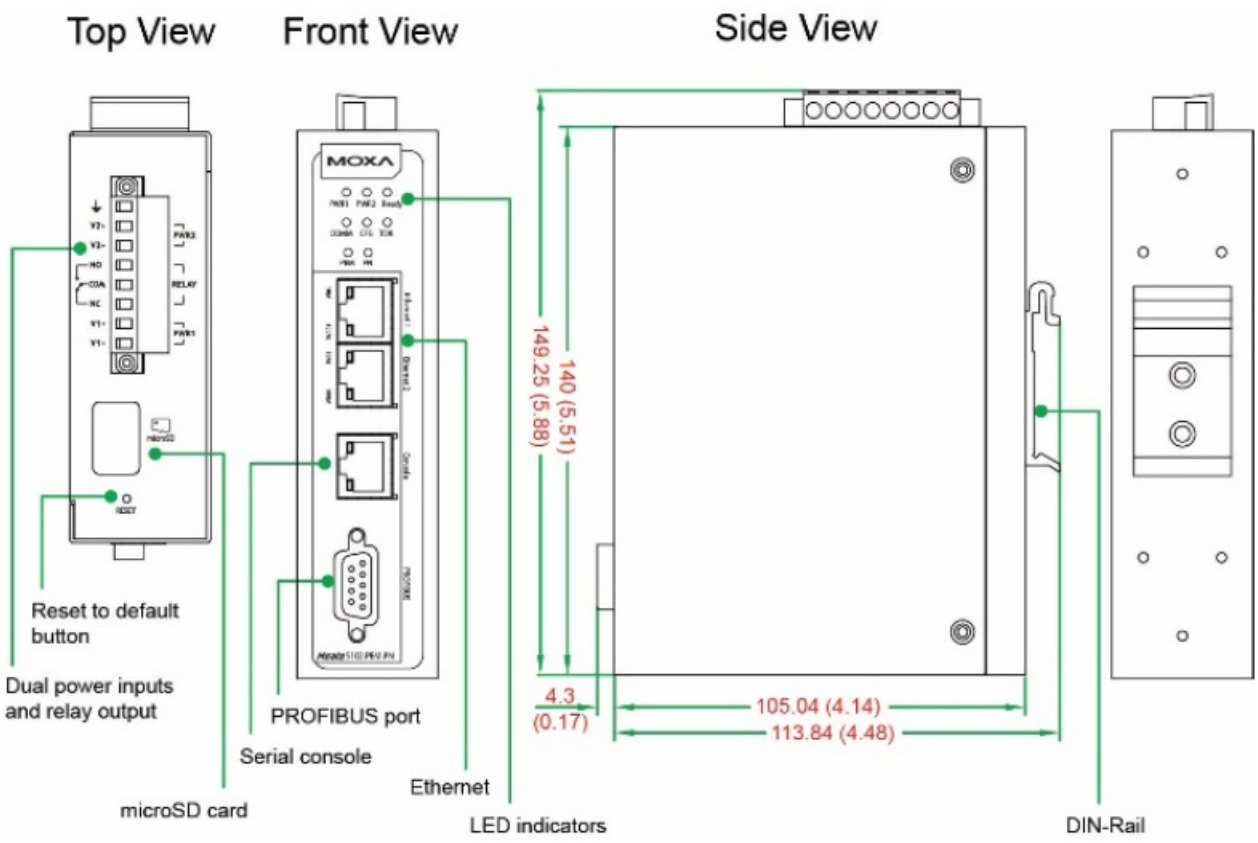
Hardware Introduction

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
		Fast blinking: microSD card failed
	Off	Power is off or fault condition exists
COMM	Green	Steady on: Data exchange with all slaves
		Blinking: Data exchange with at least one slave
	Red	Bus control error
	Off	No data exchange
CFG	Green	PROFIBUS configuration OK
	Off	No PROFIBUS configuration
TOK	Green	Gateway holds the PROFIBUS token
	Off	Gateway is waiting for the PROFIBUS token

LED	Color	Function
PBM	Green	Steady on: PROFIBUS master is in OPERATE mode
		Blinking: PROFIBUS master is in CLEAR mode
	Red	PROFIBUS master is in STOP mode
	Off	PROFIBUS master is offline
PN	Green	Steady on: PROFINET I/O is connected and controller is in RUN mode
		Blinking: PROFINET I/O is connected but controller is in STOP mode
	Off	No connection with I/O Controller
Ethernet	Amber	Steady: 10 Mbps, no data is transmitting
		Blinking: 10 Mbps, data is transmitting
	Green	Steady: 100 Mbps, no data is transmitting
		Blinking: 100 Mbps, data is transmitting
	Off	Ethernet cable is disconnected

Dimensions



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 in for five seconds. Release the reset button when the Ready LED stops blinking.

Hardware Installation Procedure

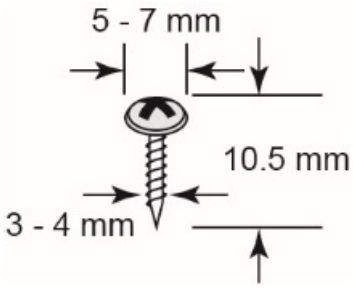
1. Connect the power adapter. Connect the 12-48 VDC power line or DIN-rail power supply to the MGate 5102-PBM-PN's terminal block.

Make sure the adapter is connected to an earthed socket.

2. Use a PROFIBUS cable to connect the unit to a PROFIBUS slave device.
3. Connect the unit to the PROFINET I/O controller.
4. The MGate 5102-PBM-PN 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.

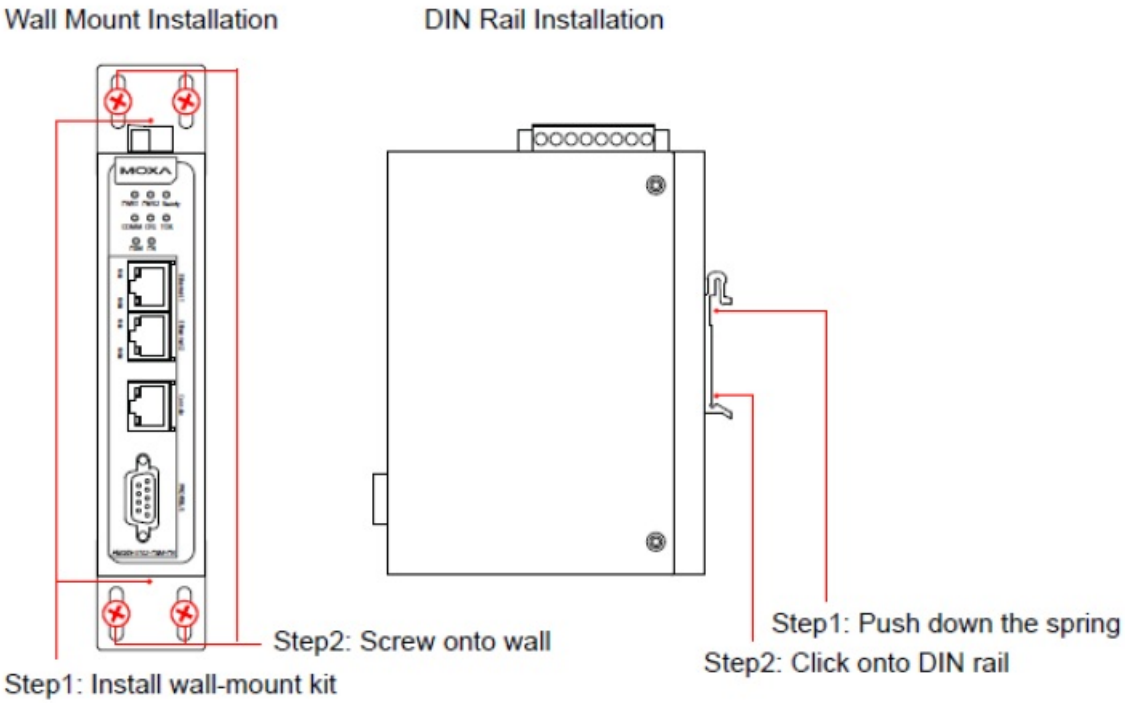
Wall or Cabinet Mounting

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 to7 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:



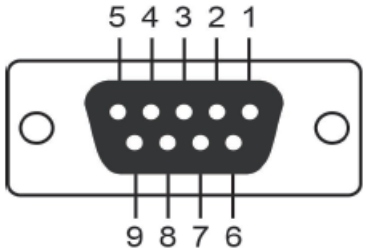
Software Installation Information

To install MGate Manager, please download it from Moxa's website at
http://www.moxa.com
For detailed information about MGate Manager, refer to the MGate 5102-PBM-PN User's Manual, which can be downloaded from Moxa's website at **http://www.moxa.com**

Default IP address: 192.168.127.254
Default account: admin
Default password: moxa

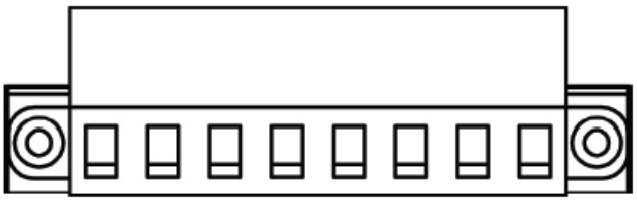
Pin Assignments

PROFIBUS Serial Port (female DB9)



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

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, 430 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

1. **DEMKO Certification number:** 13 ATEX 1304499X
   IEC Certification Number: IECEx UL 13.0031X;
2. **Ambient Temperature Range:**
   0 to 60°C (for models without the -T suffix)
   -40 to 75°C (only for models with the -T suffix)
3. **Certification String:** Ex nA nC IIC T3 Gc
4. **Standards Covered:** EN 60079-0:2012+A11:2013;
   EN 60079-15:2010; IEC 60079-0 Ed.6; IEC 60079-15 Ed.4.
5. **The conditions of safe usage:**
   a. The Ethernet Communications Devices are intended for mounting in a tool-accessible IP54 enclosure and used in an area of not more than pollution degree 2 as defined by IEC 60664-1.
   b. Conductors suitable for use in an ambient temperature greater than 85°C must be used for the power supply terminal.
   c. A 4 mm2 conductor must be used when a connection to the external grounding screw is utilized.
   d. Provisions shall be made, either in the equipment or external to the equipment, to prevent the peak-rated voltage being exceeded by transient disturbances of more than 140%.

Terminal Block (Plug mated with Socket): rated 300 V, 10 A, 105°C, 12-28 AWG (0.0804 mm2 – 3.31 mm2) wire size, torque value 4.5 lb-in (0.509 N-m). The input terminal cable size 14 AWG (2.1 mm2).

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: This equipment is suitable for use in Class 1, Division 2, Groups A, B, C, D, or nonhazardous locations only.

WARNING

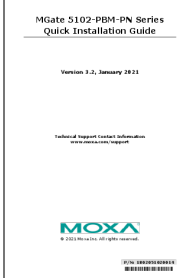
EXPLOSION HAZARD
Do not disconnect equipment unless the power has been switched off, or the area is known to be nonhazardous.

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.
No. 1111, Heping Rd., Bade Dist., Taoyuan City 334004, Taiwan

Documents / Resources

 MGate 5102-PBM-PN Series Quick Installation Guide Version 3.2, January 2021 Technical Support Contact Information www.moxa.com/support MOXA	MOXA MGate 5102-PBM-PN Series Profinet Gateway [pdf] Installation Guide MGate 5102-PBM-PN Series Profinet Gateway

References

- Moxa - Your Trusted Partner in Automation
- Moxa - Support

Manuals+.