



# MOXA MGate 5105-MB-EIP Series EtherNet/IP Gateways Installation Guide

[Home](#) » [MOXA](#) » MOXA MGate 5105-MB-EIP Series EtherNet/IP Gateways Installation Guide 

## Contents

- [1 MOXA MGate 5105-MB-EIP Series EtherNet/IP Gateways](#)
- [2 Overview](#)
- [3 Hardware Introduction](#)
- [4 Dimensions](#)
- [5 Reset Button](#)
- [6 Hardware Installation Procedure](#)
- [7 Software Installation Information](#)
- [8 Power Input and Relay Output Pinouts](#)
- [9 Specifications](#)
- [10 ATTENTION](#)
- [11 Documents / Resources](#)
  - [11.1 References](#)
- [12 Related Posts](#)



## MOXA MGate 5105-MB-EIP Series EtherNet/IP Gateways



### Overview

The MGate 5105-MB-EIP is an industrial Ethernet gateway for Modbus RTU/ASCII/TCP and EtherNet/IP network communications.

#### Package Checklist

Before installing the MGate 5105-MB-EIP, verify that the package contains the following items:

- 1 MGate 5105-MB-EIP gateway
- 1 serial cable: CBL-RJ45F9-150
- 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 serial shielded 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

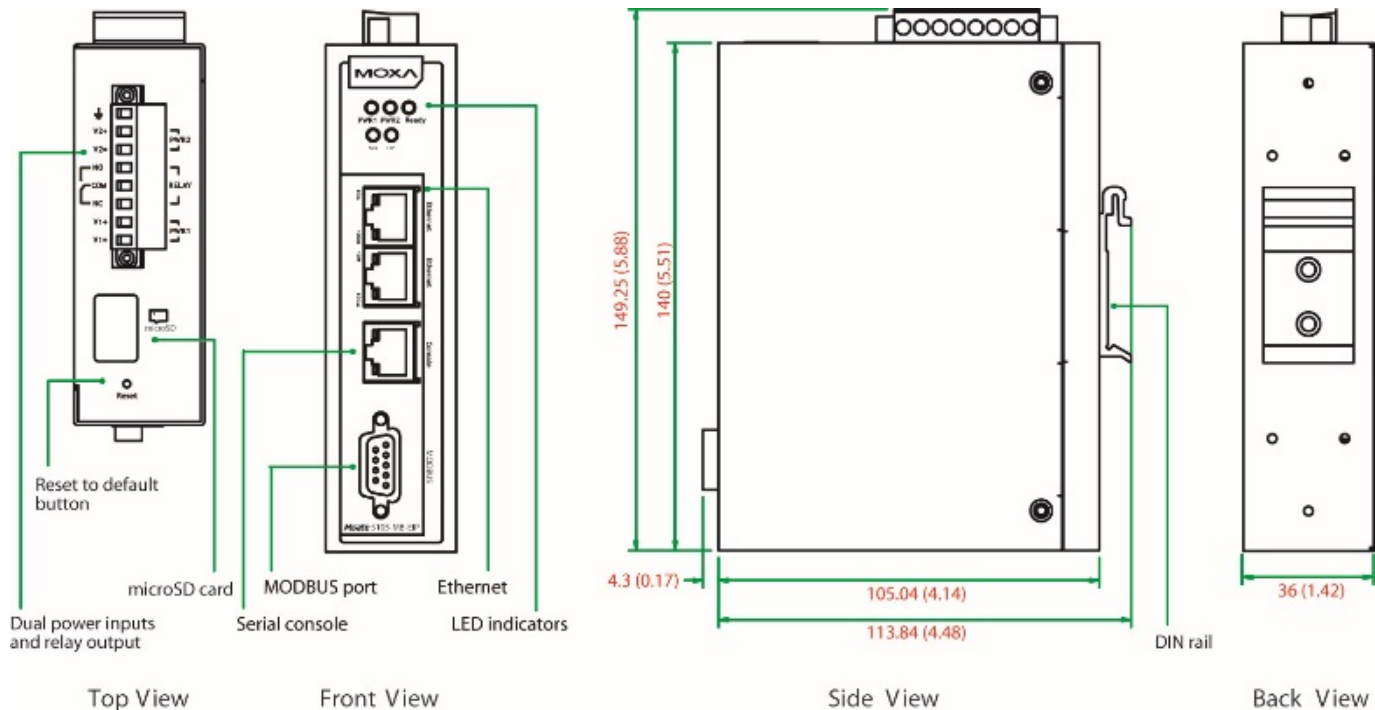
#### LED Indicators

LED	Color	Description
Ready	Off	Power is off or a fault condition exists
	Green	Steady: Power is on, and the MGate is functioning normally
		Blinking: The MGate has been located by the MGate Manager's Location function
	Red	Steady: Power is on, and the MGate is booting up
		Blinking slowly: Indicates an IP conflict, or the DHCP or BOOTP server is not responding properly

		Flashing quickly: microSD card failed
EIP (Scanner)	Off	No I/O data is exchanged
	Green	Steady: I/O data is exchanged with all devices
		Blinking: I/O data is exchanged with at least one device (not all configured devices can communicate with gateway)
EIP (Adapter)	Off	No I/O data is exchanged
	Green	Steady: I/O data is exchanged with all devices

		<p>Blinking: I/O data is exchanged with at least one device (not all configured devices can communicate with gateway)</p>
MB	Off	No communication with Modbus device
	Green	Modbus communication in progress
	Red	<p>Communication error</p> <p>When MGate 5105 acts as Master:</p> <ol style="list-style-type: none"> <li>1. Slave device returned an error (exception)</li> <li>2. Received frame error (parity error, checksum error)</li> <li>3. Timeout (slave device no response)</li> </ol> <p>When MGate 5105 acts as Slave:</p> <ol style="list-style-type: none"> <li>1. Received invalid function code</li> <li>2. Master accessed invalid register address or coil addresses</li> <li>3. Received frame error (parity error, checksum error)</li> </ol>

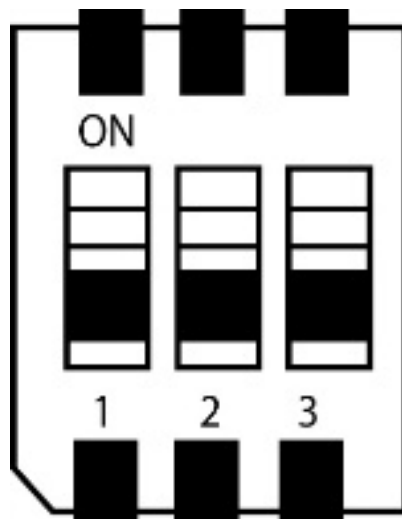
## Dimensions



## Reset Button

Restore the MGate to factory default settings by using a pointed object (such as a straightened paper clip) to hold the reset button down until the Ready LED stops blinking (approx. five seconds).

Remove the MGate 5105-MB-EIP's top cover and you will find DIP switches to adjust each serial port's pull-high resistor, pull-low resistor, and terminator.

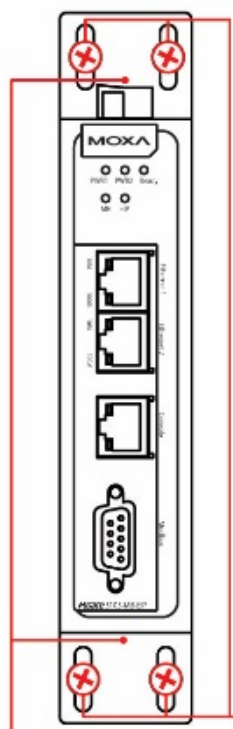


SW	1	2	3
	Pull-high resistor	Pull-low resistor	Terminator
ON	1 k $\Omega$	1 k $\Omega$	120 $\Omega$
OFF	150 k $\Omega$ *	150 k $\Omega$ *	—*

## Hardware Installation Procedure

1. Connect the power adapter. Connect the 12-48 VDC power line or DIN-rail power supply to the MGate 5105-MB-EIP device's terminal block.
2. Use a Modbus serial cable to connect the MGate to a Modbus slave device.
3. Use an Ethernet cable to connect the MGate to the EtherNet/IP controller.
4. The MGate 5105-MB-EIP 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. The following figure illustrates the two mounting options:

## Wall-Mount Installation



Step 2: Screw onto wall

Step 1: Install wall-mount kit

## Software Installation Information

Please download the user's manual and Device Search Utility (DSU) from Moxa's website: [www.moxa.com](http://www.moxa.com). Refer to the user's manual for additional details on using the DSU. The MGate 5105-MB-EIP also supports login via a web browser.

Default IP address: **192.168.127.254**

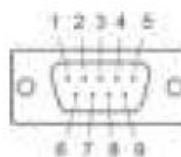
Default account: **admin**

Default password: **moxa**

## Pin Assignments Modbus Serial Port (Male DB9)

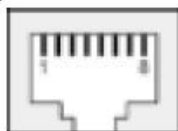
### Modbus Serial Port (Male DB9)

Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	DCD	TxD-(A)	-
2	RXD	TxD+(B)	-
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-

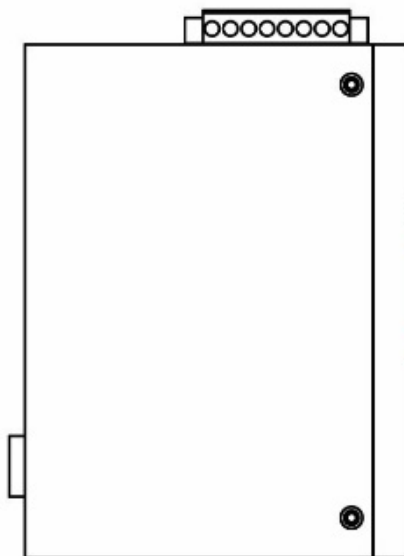


### Ethernet Port (RJ45)

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-



## DIN-Rail Installation

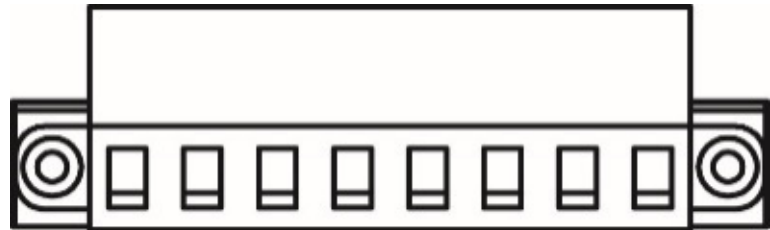


Step 1: Push down the spring

Step 2: Click onto DIN rail



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

	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

1. DEMKO Certification number: 13 ATEX 1307610X IEC Certification Number: IECEx UL 13.0051X;
2. Ambient Temperature Range: 0°C to 60°C (for models without the suffix –T)- 40°C to 75°C (for models with suffix –T only)
3. Certification String: Ex nA nC IIC T3 Gc
4. Standards Covered: EN 60079-0:2013+A11/IEC 60079-0 6th Ed. AND EN 60079-15:2010/IEC 60079-15 4th Ed.
  1. The conditions of safe usage:
  2. 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/EN 60664-1.
  3. Conductors suitable for use in an ambient temperature greater than 86°C must be used for the power supply terminal.
  4. A 4mm<sup>2</sup> conductor must be used when a connection to the external grounding screw is utilized.
  5. 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% of the peak-rated voltage. Terminal block (plug matched with socket): rated at 300 V, 15 A, 105°C, 12-28 AWG (0.0804 mm<sup>2</sup> to 3.31 mm<sup>2</sup>) wire size, torque value 4.5 lb-in (0.509 N-m). The input terminal cable size: 14 AWG (2.1 mm<sup>2</sup>).

## **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 the equipment unless the power has been switched off, or the area is known to be nonhazardous.

## **WARNING EXPLOSION HAZARD**



The 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**

<div><div>MGate 5105-MB-EIP Series</div><div>Quick Installation Guide</div><div>Version 2.3, January 2021</div><div>Technical Support Contact Information</div><div>www.moxa.com/support</div><div> © 2021 Moxa Inc. All rights reserved.</div><div></div></div>	<div><div><a href="#">MOXA MGate 5105-MB-EIP Series EtherNet/IP Gateways</a> [pdf] Installation Guide</div><div>MGate 5105-MB-EIP Series, EtherNet Gateways, IP Gateways</div></div>
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References

- [M Moxa - Your Trusted Partner in Automation](#)
- [M Moxa - Support](#)

Manuals+