MGate 5105-MB-EIP
Quick Installation Guide

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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
- RJ45 to DB9 cable (for console use)
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Optional Accessories:

- DR-45-24: 45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input
- DR-75-24: 75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input
- DR-120-24: 120W/5A DIN-rail 24 VDC power supply with 88 to 132 VAC/176 to 264 VAC input by switch
- WK-36-02: Wall-mounting kit
- Mini DB9F-to-TB Adapter: DB9-female-to-terminal-block adapter

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

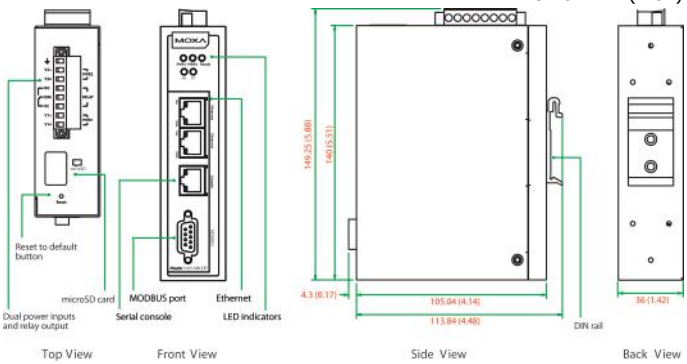
Hardware Introduction

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
		Blinking: I/O data is exchanged with at least one device (not all configured devices can communicate with gateway)
MB	Off	No communication with Modbus device
	Green	Modbus communication in progress
	Red	Communication error When MGate 5105 acts as Master: 1. Slave device returned an error (exception) 2. Received frame error (parity error, checksum error) 3. Timeout (slave device no response) When MGate 5105 acts as Slave: 1. Received invalid function code 2. Master accessed invalid register address or coil addresses 3. Received frame error (parity error, checksum error)

Dimensions

Unit: mm (inch)

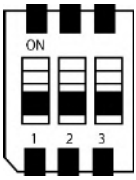


Reset Button

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).

Pull-high, Pull-low, and Terminator for RS-485

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.

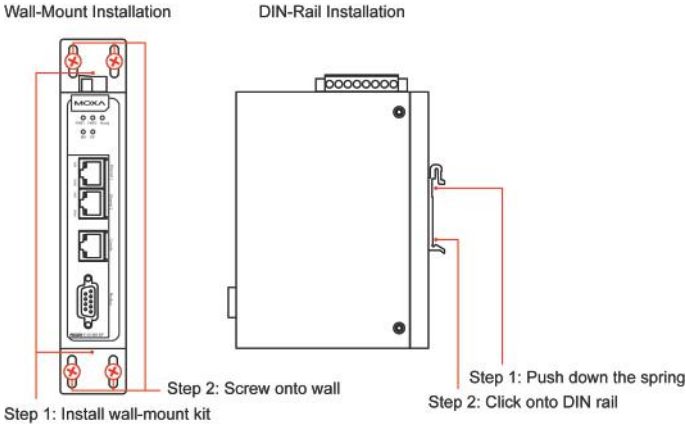


SW	1	2	3
	Pull-high resistor	Pull-low resistor	Terminator
ON	1 kΩ	1 kΩ	120 Ω
OFF	150 kΩ*	150 kΩ*	–*

*Default

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:



Software Installation Information

To install MGate Manager, insert the MGate Documentation and Software CD into your PC's CD-ROM drive. Then, run the following setup program to begin the installation process from the "Software" directory:

MGM_Setup_[Version]_Build_[DateTime].exe

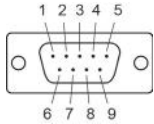
The filename of the latest version may have the following format: MGM_Setup_Verx.x.x_Build_xxxxxxxx.exe.

For detailed information about MGate Manager, refer to the MGate 5105-MB-EIP User's Manual, which can be found in the "Document" directory.

Pin Assignments

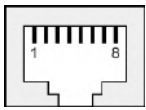
Modbus Serial Port (Male DB9)

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	–	–	–

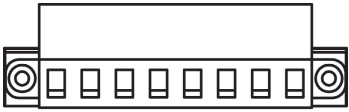


Ethernet Port (RJ45)

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



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 Requirements	
Power Input	12 to 48 VDC
Power Consumption	455 mA @ 12 VDC, 125 mA @ 48 VDC
Operating Temperature Standard models: Wide temp. models:	 0 to 60°C (32 to 140°F) -40 to 75°C (-40 to 167°F) for –T model
Ambient Relative Humidity	5 to 95% RH
Dimensions	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)
Reliability	
Alert Tools	Built-in buzzer and RTC
MTBF	513,139 hrs.

1. DEMKO Certification number: 13 ATEX 1307610X
   IEC Certification Number: IECEx UL 13.0051X;
2. Ambient Temperature Range: (-40°C ≤ Tamb ≤ 75°C)
3. Certification String: Ex nA nC IIC T3 Gc
4. Standards Covered: EN 60079-0:2013/IEC 60079-0 6th Ed. AND EN 60079-15:2010/IEC 60079-15 4th Ed.
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 86°C must be used for the power supply terminal.
   c. A 4mm^2 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 matched with socket): rated at 300 V, 15 A, 105°C, 12-28 AWG (0.0804 mm^2 - 3.31 mm^2) wire size, torque value 4.5 lb-in (0.509 N-m). The input terminal cable size:14 AWG (2.1 mm^2).

For HazLoc installation (Class I, Division 2):

- Devices are to be installed in an enclosure with a tool-removable cover or door, suitable for the environment.

- The equipment must be suitable for use in Class I, Division 2, Groups A, B, C, D, or nonhazardous locations only.
- WARNING - EXPLOSION HAZARD - Do not disconnect equipment unless 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 I, Division 2.
- WARNING - EXPOSURE TO SOME CHEMICALS MAY DEGRADE THE SEALING PROPERTIES OF THE MATERIALS USED IN THE FOLLOWING DEVICE: Sealed Relay Device U21.

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