

MGate 5114

Quick Installation Guide

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P/N: 1802051140010



Overview

The MGate 5114 is an industrial Ethernet gateway for Modbus RTU/ASCII/TCP and IEC 60870-5-101/104 network communications.

Package Checklist

Before installing the MGate 5114, verify that the package contains the following items:

- 1 MGate 5114 gateway
- 1 serial cable: DBL-RJ45F9-150
- Quick installation guide (printed)
- Warranty card

Please notify your sales representative if any of the above items is 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-RJ45F9-150:** RJ45-to-DB9-female serial cable, 150 cm
- **CBL-RJ45SF9-150:** RJ45-to-DB9-female serial shielded cable, 150 cm
- **Mini DB9F-to-TB DB9:** Female-to-terminal-block connector
- **DK-25-01:** 1 DIN-rail kit with 2 screws
- **WK-36-02:** Wall-mounting kit, 2 plates with 6 screws
- **CBL-PJTB-10:** Non-locking barrel plug to bare-wire cable

Hardware Introduction

LED Indicators

Agent Mode:

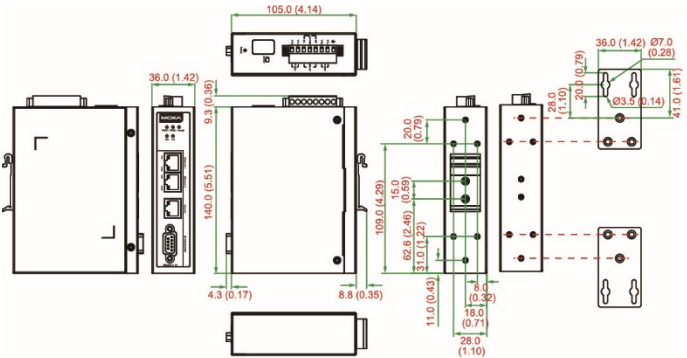
LED	Color	Description
Ready	Off	Power is off or a fault condition exists
	Green	Steady: Power is on, and the MGate is functioning normally
	Red	Steady: Power is on, and the MGate is booting up
		Blinking slowly: Indicates an IP conflict, or the DHCP or BOOTP server is not responding properly
	Flashing quickly: the microSD card failed	
MB*	Off	No serial communication with Modbus device
	Green	Normal Modbus serial communication in progress
	Red	An error in serial communication occurred When the MGate 5114 acts as a Modbus RTU/ASCII master: <ol style="list-style-type: none">1. The slave device returned an error (exception)2. Received a framing error (parity error, checksum error)3. Timeout (the master sends but no response)

		<p>When the MGate 5114 acts as a Modbus RTU/ASCII slave:</p> <ol style="list-style-type: none"> 1. Received an invalid function code The master accessed an invalid register address or coil address 2. Received a framing error (parity error, checksum error)
101*	Off	No serial communication with the IEC 60870-5-101 device
	Green	Normal IEC 60870-5-101 serial communication in progress
	Red	<p>An error in serial communication occurred</p> <p>When the MGate 5114 acts as an IEC 60870-5-101 master:</p> <ol style="list-style-type: none"> 1. Received a slave exception (format error, checksum error, invalid data, slave responds are not supported) 2. Timeout (the master sends but no response) <p>When the MGate 5114 acts as an IEC 60870-5-101 slave:</p> <p>Received a master exception (format error, checksum error, invalid data)</p>

*Only indicates serial communication status; for IEC 60870-5-104 or Modbus TCP status, please refer to the LED indicator on the Ethernet port.

Dimensions

Unit: mm (inch)

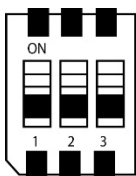


Reset Button

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 (approximately five seconds).

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

Beneath the MGate 5114's top cover, 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 Ω	1 k Ω	120 Ω
OFF	150 k Ω *	150 k Ω *	-*

*Default

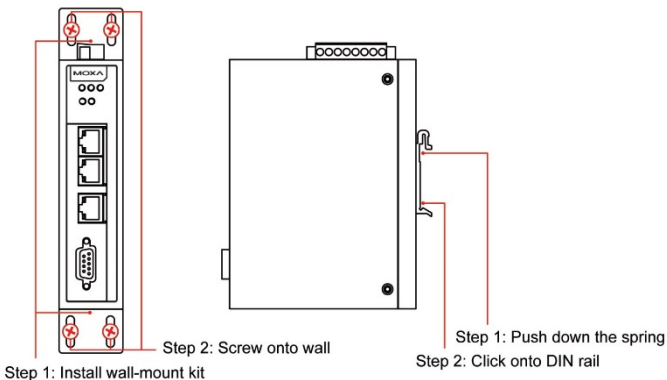
Hardware Installation Procedure

1. Connect the power adapter. Connect the 12-48 VDC power line or DIN-rail power supply to the MGate 5114's terminal block.
2. Use a serial cable to connect the MGate to the Modbus RTU/ASCII or IEC 60870-5-101 device.
3. Use an Ethernet cable to connect the MGate to the Modbus TCP or IEC 60870-5-104 device.
4. The MGate 5114 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

DIN-Rail Installation



Software Installation Information

You can download the User's Manual and Device Search Utility (DSU) from Moxa's website: www.moxa.com. Please refer to the User's Manual for additional details on using the DSU.

The MGate 5114 also supports login via a web browser.

Default IP address: **192.168.127.254**

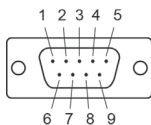
Default account: **admin**

Default password: **moxa**

Pin Assignments

Serial Port (Male DB9)

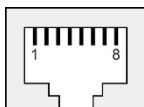
Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	DCD	TxD-(A)	-
2	RXD	TxD+(B)	-
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5*	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-



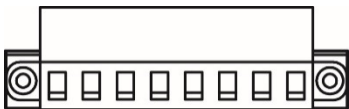
*Signal ground

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
Input Current	455 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)
Ambient Relative Humidity	5 to 95% (non-condensing)
Dimensions	36 x 105 x 140 mm (1.42 x 4.14 x 5.51 in)
Reliability	
Alert Tools	Built-in buzzer and RTC
MTBF	1,140,815 hrs.