

# **MGate 5114 Series Quick Installation Guide**

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**Version 1.3, October 2024**

**Technical Support Contact Information**  
**[www.moxa.com/support](http://www.moxa.com/support)**

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**P/N: 1802051140013**



## 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: CBL-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

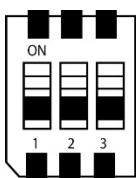
#### Agent Mode:

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"><li>1. The slave device returned an error (exception)</li><li>2. Received a framing error (parity error, checksum error)</li><li>3. Timeout (the master sends but no response)</li></ol>



## 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 $\Omega$	1 k $\Omega$	120 $\Omega$
OFF	150 k $\Omega$ *	150 k $\Omega$ *	-*

\*Default

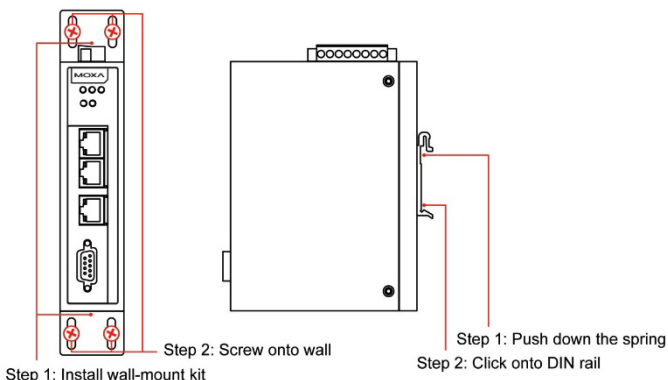
## Hardware Installation Procedure

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](http://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**

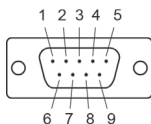
Default account: **admin**

Default password: **moxa**

## Pin Assignments

### Serial Port (Male DB9)

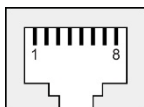
Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	DCD	TxD-(A)	-
2	RXD	TxD+(B)	-
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5*	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-



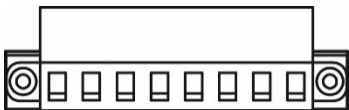
\*Signal ground





### 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.



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 suffix -T)  
-40°C to 75°C (for models with suffix -T only)
3. Certification String: Ex ec nC IIC T3 Gc
4. Standards:  
EN IEC 60079-0  
EN IEC 60079-7  
EN IEC 60079-15  
IEC 60079-0  
IEC 60079-7  
IEC 60079-15
5. The conditions of safe use:
  - a. Ethernet Communications Devices are intended for mounting in a tool-accessible IP54 enclosure by IEC/EN IEC 60079-0 and use in an area of not more than pollution degree 2 as defined by IEC/EN 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 4 mm<sup>2</sup> 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 rated voltage from being exceeded by the 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 to 24 AWG (4.0 mm<sup>2</sup> to 0.205 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>). Each clamping point can only have one conductor. We recommend using a 7 to 8 mm wire strip length.



### **WARNING**

There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.



### **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.

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