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MOXA MGate 5119 Series Modbus TCP Gateway Installation Guide

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MOXA MGate 5119 Series Modbus TCP Gateway

Overview

The MGate 5119 Series is an Ethernet gateway designed for the power industry to integrate Modbus, DNP3, IEC 60870-5-101/104 devices to an IEC 61850 MMS network.

Package Checklist

Before installing the MGate 5119, verify that the package contains the following items:

- 1 MGate 5119 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
- 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

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/101/ 104/DNP3	Off	No communication with a Modbus/101/104/DNP3 device

	Green	Normal Modbus/101/104/DNP3 communication in progress
	Red	When the MGate 5119 acts as a Modbus master:
		1. Received an exception code from the slave device 2. Received a framing error (parity error, checksum error) 3. Timeout (the master sent a request but no response was received)
		When the MGate 5119 acts as an IEC 60870-5- 101/104/ DNP3 master:

LED	Color	Description
		1. Received an outstation exception (format error, checksum error, invalid data , outstation responds are not supported) 2. Timeout (the master sent a command, but no response was received)
850	Off	No communication with the IEC 61850 system
	Green	Normal IEC 61850 communication in progress
	Red	When the MGate 5119 acts as an IEC 61850 server: 1. Received an abnormal package (wrong format, unsupported function code) 2. Failed to establish an IEC 61850 connection 3. Disconnected the IEC 61850 connection

Dimensions

Unit: mm (inch)

149.25 (5.88)
140 (5.51)
36 (1.42)
105.04 (4.14)
109.79 (4.32)
9.8 (0.39)
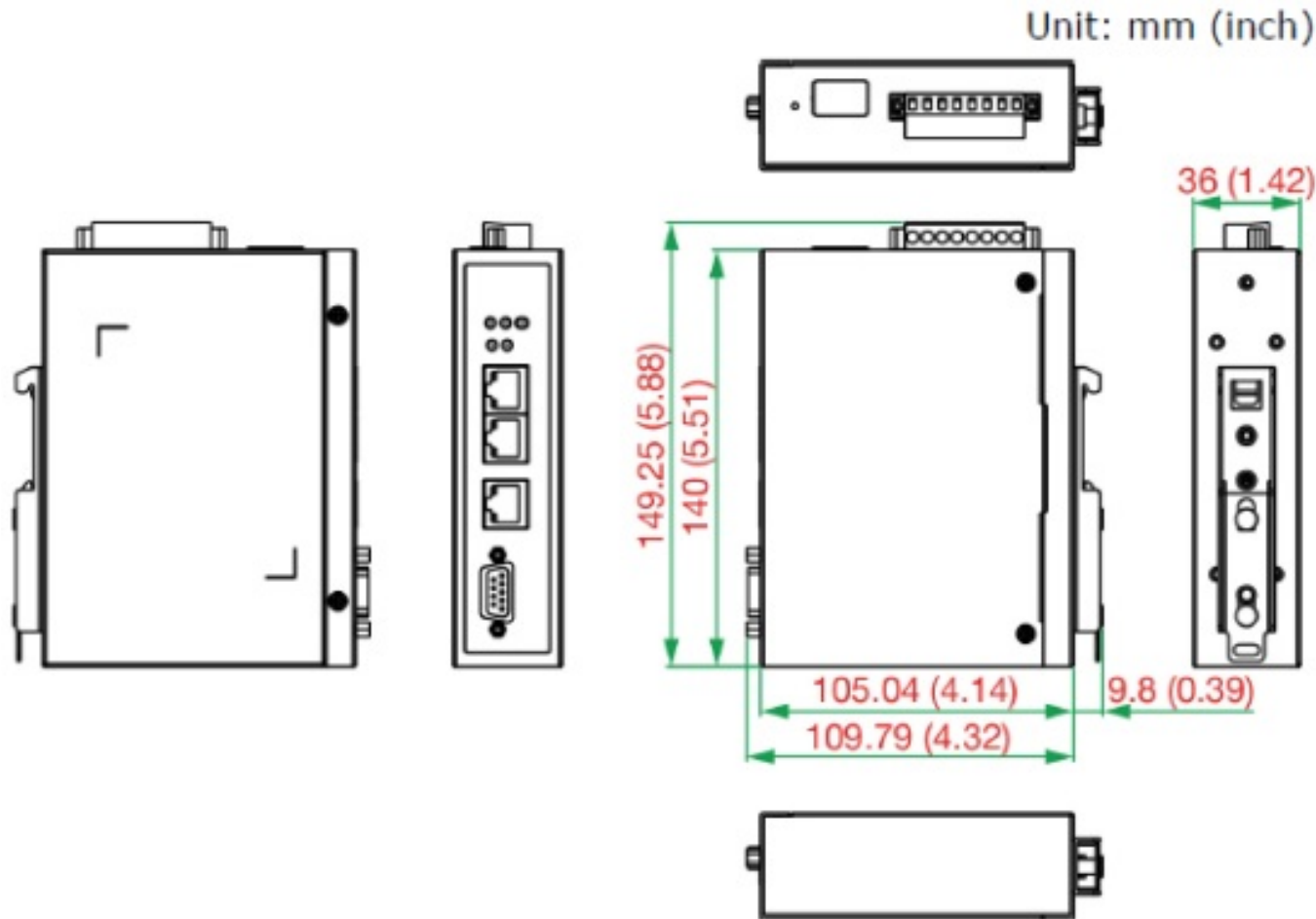
Reset Button

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 5119's top cover, you will find DIP switches to adjust each serial port's pull-high resistor, pull-low resistor, and terminator.
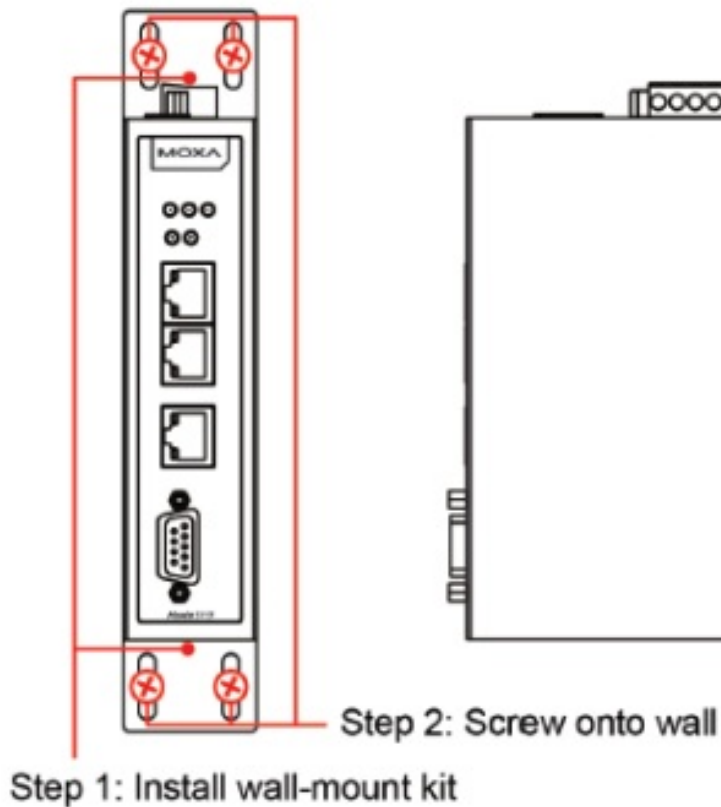
SW	1 Pull-high resistor	2 Pull-low resistor	3 Terminator
ON	1 kΩ	1 kΩ	120 Ω
OFF	150 kΩ*	150 kΩ*	–*

*Default
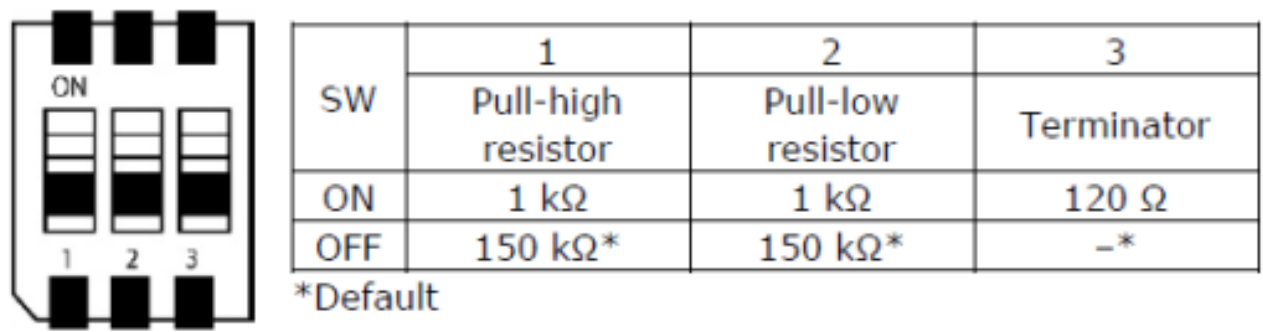
Hardware Installation Procedure

1. Connect the MGate 5119's terminal block to the power supply, which could provide 12 to 48 VDC.
2. Use a serial or Ethernet cable to connect the MGate to the Modbus RTU/ASCII/TCP, DNP3 Serial/TCP, IEC60870-5-101/104 device.
3. Use an Ethernet cable to connect the MGate to the IEC 61850 MMS system.

4. The MGate 5119 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. An M3 screw is suggested, and the minimum length of the screw should be 10 mm.

The following figure illustrates the two suggested mounting options:
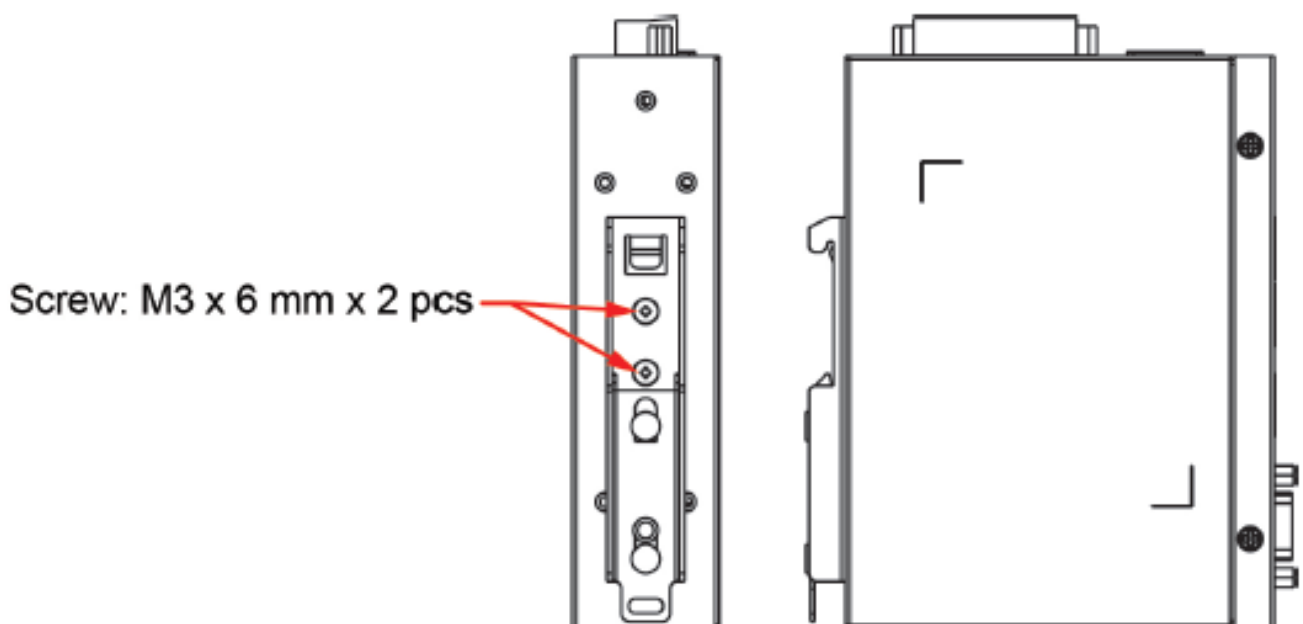

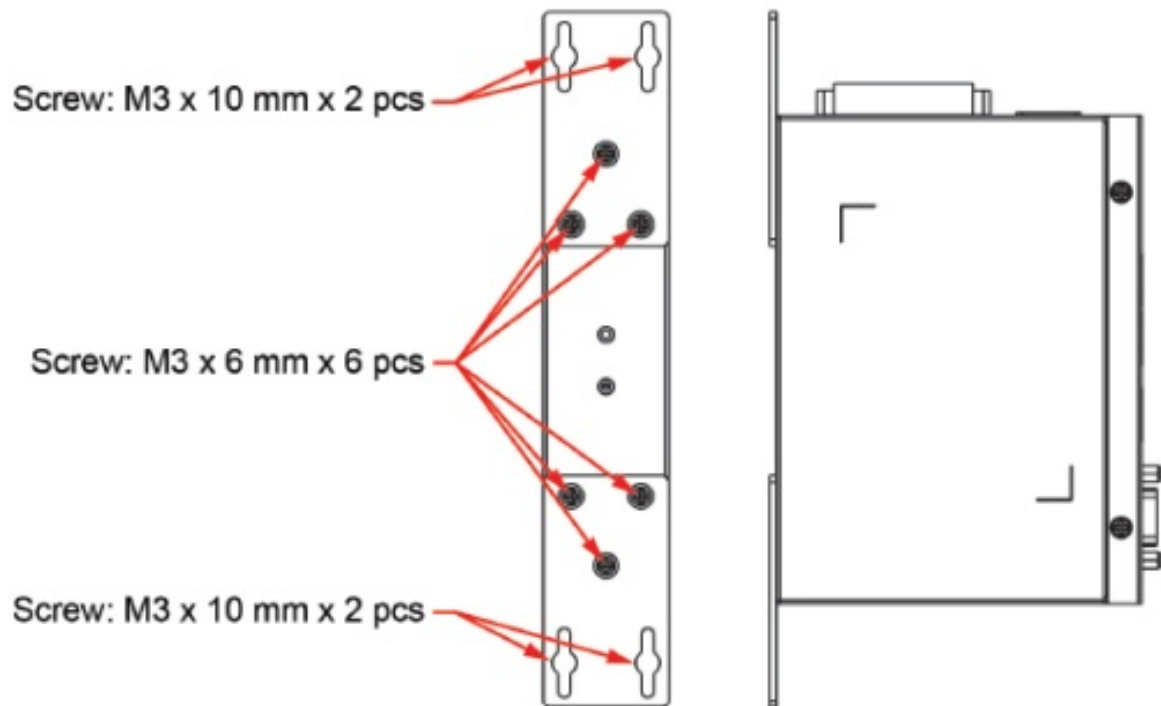Wall-Mount Installation   DIN-Rail Installation

Step 2: Click onto DIN rail

Step 2: Screw onto wall

Step 1: Install wall-mount kit

Step 1: Push down the spring
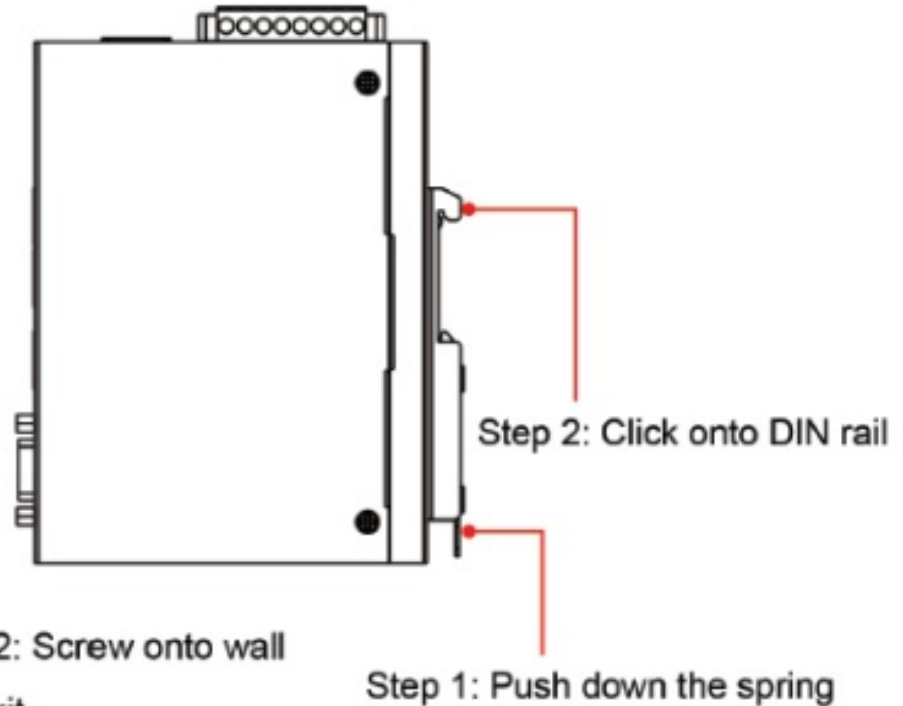
The following figure illustrates how to attach screws to the mounting kits:
DIN Rail:

Screw: M3 x 6 mm x 2 pcs

Wall-mount:

NOTE The equipment is intended to be supplied by the external power source (UL listed/ IEC 60950-1/ IEC 62368-1), which output complies with ES1/SELV, PS2/LPS, output rating is 12 to 48 VDC, 0.455 A min., an ambient temperature 75°C minimum.

NOTE Before connecting the Equipment to DC power inputs, make sure DC power source voltage is stable

- The wiring of input terminal block shall be installed by skilled person.
- Wire type: Cu
- Only use 28-18 AWG wire size, torque value 0.5 N-m.
- One individual conductor in a clamping point.

NOTE If you are using a Class I adapter, the power cord should be connected to an outlet with an earthing connection

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.
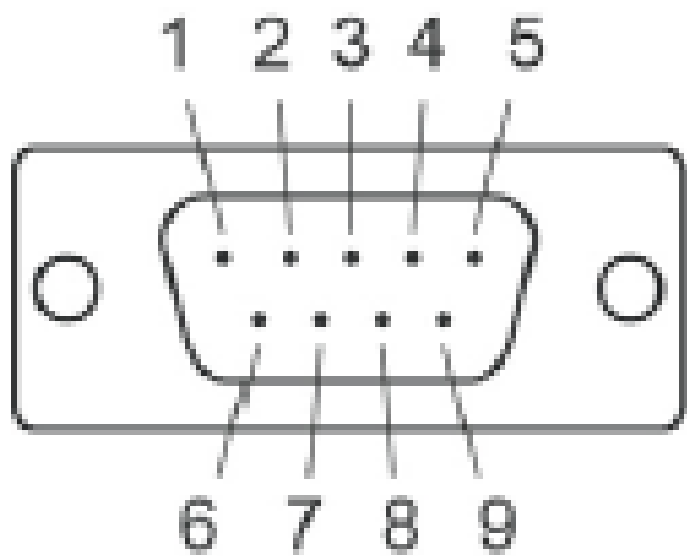The MGate 5119 also supports login via a web browser.
Default IP address: 192.168.127.254
Default account: admin
Default password: moxa

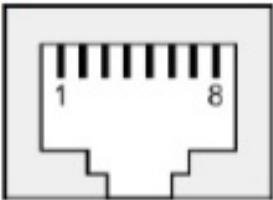## Pin Assignments

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	–	–	–

Ethernet Port (RJ45)

Ethernet Port (RJ45)

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

Power Input and Relay Output Pinouts
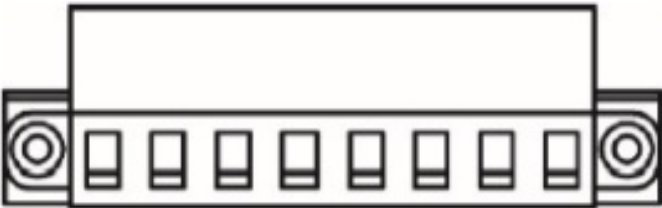
	V2+	V2-				V1+	V1-
Shielded Ground	DC Power Input 2	DC Power Input 2	N.O.	Common	N.C.	DC Power Input 1	DC Power Input 1

Specifications

Power Requirements	
Power Input	12 to 48 VDC
Input Current	455 mA max.
Operating Temperature	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Dimensions	36 x 120 x 150 mm (1.42 x 4.72 x 5.91 in)
Reliability	
Alert Tools	Built-in buzzer and RTC
MTBF	1,180,203 hrs.

Documents / Resources

MGate 5119 Series Quick Installation Guide Version 1.0, December 2021 Technical Support Contact Information www.moxa.com/support MOXA © 2021 Moxa Inc. All rights reserved. P/N: 1802052399016	**[MOXA MGate 5119 Series Modbus TCP Gateway](#)** [pdf] Installation Guide MGate 5119 Series Modbus TCP Gateway, MGate 5119 Series, Modbus TCP Gateway

References

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