MGate 5118 Series
Quick Installation Guide

Version 1.3, February 2023

Technical Support Contact Information
www.moxa.com/support

P/N: 1802051180013

Overview

The MGate 5118 is an industrial Ethernet gateway for J1939-to-Modbus RTU/ASCII/TCP, PROFINET and EtherNet/IP network communications.

Package Checklist

Before installing the MGate 5118, verify that the package contains the following items:

- 1 MGate 5118 gateway
- 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)

- **Mini DB9F-to-TB:** DB9-female-to-terminal-block connector
- **WK-51-01:** Wall-mounting kit, 51 mm wide

Hardware Introduction

LED Indicators

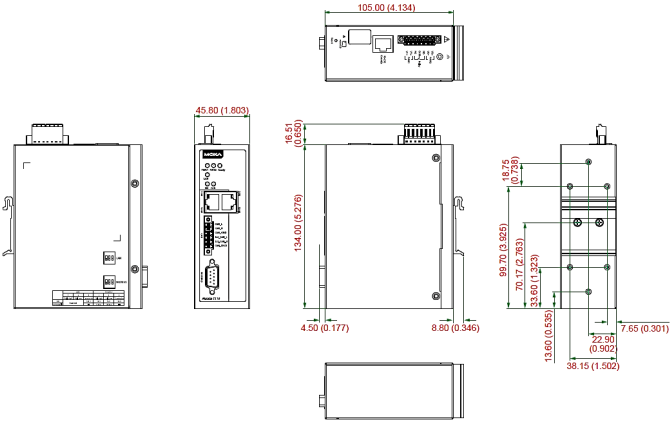
LED	Color	Description
PWR 1, PWR 2	Green	The power cable is connected
	Off	The power cable is disconnected
Ready	Off	Power is off or a fault condition exists
	Green	Steady on: Power is on, and the unit is functioning normally Blinking: The unit is responding to the software's Locate function
	Red	Steady on: Power is on, and the unit is booting up Blinking: Indicates an IP conflict, or the DHCP or BOOTP server is not responding properly Flashing quickly: the microSD card failed
LAN	Green (Flashing only)	The Ethernet port is receiving or transmitting data **Modbus TCP Client:** Modbus communication in progress **Modbus TCP Server:** Modbus communication in progress **EIP Scanner:** I/O is exchanging data with at least one device **EIP Adapter:** I/O is exchanging data **PROFINET:** PROFINET I/O interface is exchanging data

LED	Color	Description
	Red (Flashing only)	A communication error occurred **Modbus TCP Client:** 1. Received an exception code or framing error (parity error, checksum error) 2. Command timeout (slave device is not responding) 3. TCP connection timeout **Modbus TCP Server:** 1. Received an invalid function code or framing error (parity error, checksum error) 2. Accessed invalid register address or coil address **Ethernet/IP Scanner:** 1. Command timeout (the adapter is not responding) 2. TCP connection timeout **Ethernet/IP Adapter:** The connection was refused due to incorrect configuration
	Off	No communication
MB*	Green (Flashing only)	Modbus is receiving or transmitting data
	Red (Flashing only)	A communication error occurred **Master Mode:** 1. Received an exception code or framing error (parity error, checksum error) 2. Command timeout (the slave device is not responding) **Slave Mode:** 1. Received an invalid function code or framing error (parity error, checksum error) 2. Accessed invalid register address or coil address
	Off	No communication
CAN	Green (Flashing only)	CANbus(J1939) communication is receiving or transmitting data
	Red (Steady)	A communication error occurred 1. The J1939 address claim failed 2. CAN is in bus-off state because the error counter is exceeding its limitations
	Off	No communication
Eth1, Eth2	Green	Indicates a 100 Mbps Ethernet connection
	Amber	Indicates a 10 Mbps Ethernet connection
	Off	The Ethernet cable is disconnected

*Only indicates serial communication status; for Modbus TCP status, please refer to LAN LED indicator.

Dimensions

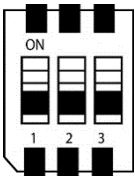
Unit = mm (inch)



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 and CAN

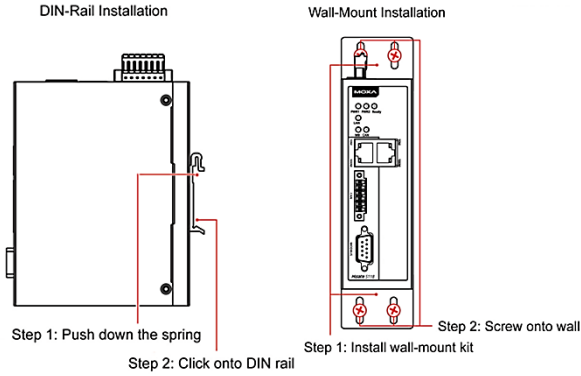


On the MGate 5118's left side panel, you will find DIP switches to adjust each CAN port or serial port's pull-high resistor, pull-low resistor, and terminator.

SW	CAN			MODBUS		
	1	2	3	1	2	3
	Pull-high resistor	Pull-low resistor	Terminator	Pull-high resistor	Pull-low resistor	Terminator
ON	Reserved		120 Ω (default)	1 kΩ	1 kΩ	120 Ω
OFF			–	150 kΩ (default)	150 kΩ (default)	– (default)

Hardware Installation Procedure

1. Connect the power adapter. Connect the 12-48 VDC power line or DIN-rail power supply to the MGate 5118's terminal block.
2. Use a serial cable to connect the MGate to the Modbus or CAN device.
3. Use an Ethernet cable to connect the MGate to the Modbus, Ethernet/IP or PROFINET device.
4. The MGate 5118 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

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

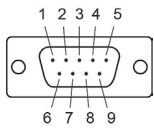
The MGate 5118 also supports login via a web browser.

Default IP address: **192.168.127.254**
Default account: **admin**
Default password: **moxa**

Pin Assignments

Modbus Serial Port (Male DB9)

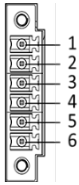
Pin	RS-232	RS-422/ RS-485 (4W)	RS-485 (2W)
1	DCD	TxD-(A)	–
2	RXD	TxD+(B)	–
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5*	GND	GND	GND
6	DSR	–	–
7	RTS	–	–
8	CTS	–	–
9	–	–	–



*Signal ground

CAN Port (6-pin Terminal Block)

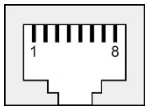
Pin	CAN
1	CAN_L
2	CAN_H
3	CAN Signal GND
4	Ext-CAN_L*
5	Ext-CAN_H*
6	CAN_SHLD



* For the CAN port, plug CAN_L and CAN_H into the terminal block. If another device is connected to the same CAN bus, use the Ext_CAN_L and Ext_CAN_H as extension pins.

Ethernet Port (RJ45)

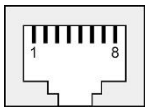
Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-



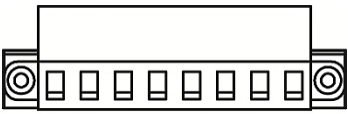
Console Port (RS-232)

The MGate 5118 series can use a RJ45 serial port to connect to a PC to configure the device.

Pin	Signal
1	DSR
2	RTS
3	GND
4	TXD
5	RXD
6	DCD
7	CTS
8	DTR



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	12 to 48 VDC, 416 mA (max.)
Operating Temperature	Standard model: 0 to 60°C (32 to 140°F) Wide temperature model: -40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% RH
Dimensions	45.8 x 105 x 134 mm (1.80 x 4.13 x 5.27 in)
Reliability	
Alert Tools	Built-in buzzer and RTC
MTBF	727,873 hrs.

NOTE In the following section, ATEX and C1D2 certifications will be detailed separately.

ATEX Information

1. ATEX Certificate number: DEMKO 17 ATEX 1848X
   IECEx Certificate number: IECEx UL 17.0019X
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 T4 Gc
4. Standards Covered:
   IEC 60079-0, Edition 7
   IEC 60079-7, Edition 5.1
   IEC 60079-15, Edition 5
   EN IEC 60079-0: 2018
   EN IEC 60079-7: 2015 + A1: 2018
   EN IEC 60079-15: 2019
5. The conditions for safe use:
   a. Ethernet communications devices are intended for mounting in a tool-accessible IP54 enclosure and use in an area of not more than pollution degree 2 as defined IEC/EN 60664-1.
   b. Conductors suitable for use in an ambient temperature greater than 85°C must be used for the power supply terminals.
   c. A 4 mm² conductor must be used when a connection to the external grounding screw is used.
   d. Provisions shall be made, either in the equipment or external to the equipment, to prevent the rated voltage from exceeding the transient disturbances by over 140% of the peak-rated voltage.

Installation instructions

When wiring the relay contact (R), digital input (DI), and power inputs (P1/P2), we suggest using American Wire Gauge (AWG) 16 to 20 as a cable and the corresponding pin-type cable terminals. The stripping

length is recommended to be 8 to 9 mm. The wire temperature rating should be at least 85°C. The shielding ground screw (M4) is near the power connector. When you connect the shielded ground wire (min. 16 AWG), the noise is routed from the metal chassis to the ground.

C1D2 Information

1. These devices are open-type devices that are to be installed in an enclosure only accessible with the use of a tool and suitable for the environment.
2. This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D or non-hazardous 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.

WARNING

EXPLOSION HAZARD

Indoor use and Pollution degree 2.

WARNING

EXPLOSION HAZARD

The equipment and label must be wiped by a dry cloth.

WARNING

EXPLOSION HAZARD

This unit is intended to be supplied by an UL Listed/IEC 60950-1 approved power supply suitable for use at 75°C. And the power supply output meets SELV, LPS and rated output 12-48 VDC, and 416 mA minimum.

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