MGate 5192 Series

1-port IEC 61850-to-DNP3/IEC 101/IEC 104/Modbus gateways

Features and Benefits

- Supports IEC 61850 MMS client
- Supports DNP3 serial/TCP/UDP outstation
- Supports IEC 60870-5-101 server
- Supports IEC 60870-5-104 client
- Supports Modbus RTU/ASCII/TCP Server (Slave)
- Flexible deployment with Ethernet cascading and dual subnet
- Embedded traffic monitoring/diagnostic information for easy troubleshooting
- Easy device configuration via a web-based console
- microSD card for configuration backup/duplication
- Supports dual redundant DC power inputs and 1 relay output
- Serial port with 2 kV isolation protection
- -40 to 75°C wide operating temperature models available

Certifications

Introduction

The MGate 5192 is an industrial protocol gateway for converting IEC 61850 MMS to Modbus RTU/ASCII/TCP, DNP3 serial/TCP/UDP, IEC 60870-5-101, or IEC 60870-5-104 communications. To integrate existing IEC 61850 devices, such as IEDs or relays, into a Modbus, DNP3, IEC 101, or IEC 104 network, use the MGate 5192 as an IEC 61850 MMS client to collect and exchange data with Modbus RTU/ASCII/TCP, DNP3 serial/TCP/UDP, IEC 60870-5-101, or IEC 60870-5-104 SCADA/devices. All models are protected by a rugged and compact metal housing, are DIN-rail mountable, and offer built-in serial isolation. The rugged design is suitable for industrial applications such as power substation and renewable energy-related applications.
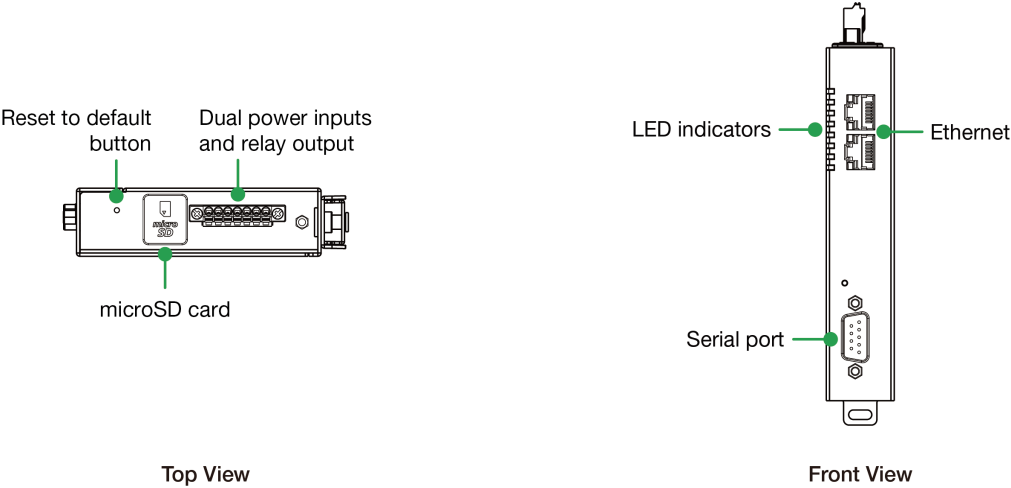
Easy Configuration

The MGate 5192 gateways are provided with a web console to make configuration easy without having to install an extra utility. In addition, HTTPS encryption of communication ensures higher network security. In most data-acquisition applications, configuration of devices with Modbus commands can be time-consuming and increase costs. The MGate 5192 gateways provide offline configuration via a CSV file to help complete the Modbus settings quickly. The MGate gateways provide software-configurable pull high/low and termination resistor settings for RS-485 2-wire to reduce efforts by eliminating the need to open the chassis.

Easy Troubleshooting

The MGate 5192 gateways provide a variety of maintenance functions to reduce troubleshooting time and cost, including LED indicators, protocol diagnostics, traffic monitor, and tag view. These tools help you capture and check data to easily identify the root cause of issues, especially during the installation stage. The MGate gateways also come with status monitoring and fault protection functions. The status monitoring function notifies a SCADA system when a IEC 61850 device gets disconnected or does not respond, in which case the process SCADA gets the status of each end device and then issues alarms to notify operators. The fault protection function keeps the latest data without sending output data to the IEC 61850 devices. When a SCADA gets disconnected, the end devices keep the last operation and do not go offline.

Appearance

Reset to default button Dual power inputs and relay output

microSD card

Top View

LED indicators Ethernet

Serial port

Front View

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2 Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)

Ethernet Software Features

Industrial Protocols	IEC 61850 MMS Client Modbus TCP Server IEC 60870-5-104 Server DNP3 TCP/UDP Outstation
Configuration Options	Web Console (HTTPS) Device Search Utility (DSU)
Management	ARP DHCP Client DNS HTTP HTTPS SMTP SNMP Trap SNMPv1/v2c/v3 TCP/IP UDP
MIB	RFC1213, RFC1317
Time Management	NTP Client

Security Functions

Authentication	Local database
Encryption	HTTPS AES-128 AES-256 SHA-256
Security Protocols	SNMPv3 SNMPv2c Trap HTTPS (TLS 1.3)

Serial Interface

No. of Ports	1
Connector	DB9 male
Serial Standards	RS-232/422/485
Baudrate	300 bps to 921.6 kbps
Data Bits	7, 8
Parity	None Even Odd Space Mark
Stop Bits	1, 2
Flow Control	RTS Toggle (RS-232 only) RTS/CTS
RS-485 Data Direction Control	Automatic Data Direction Control (ADDC)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms software configurable
Terminator for RS-485	120 ohms software configurable
Isolation	2 kV (built-in)

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

Serial Software Features

Industrial Protocols	Modbus RTU/ASCII Server IEC 60870-5-101 Server DNP3 Serial Outstation

IEC 61850

Mode	MMS Client
Max. No. of Server Connections	32
Max. No. of Data Objects	5000 points

Modbus TCP

Mode	Server
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Client Connections	16
Max. No. of Data Tags	5000 tags

MOXA®
Reliable Networks ▲ Sincere Service

Modbus RTU/ASCII

Mode	Server
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Client Connections	1
Max. No. of Data Tags	5000 tags

DNP3 TCP/UDP

Mode	Outstation
Objects Supported	Binary inputs Analog inputs Counters Frozen counters Binary outputs Analog outputs
Max. No. of Client Connections	1
Protocol Security	Secure Authentication v5
Max. No. of Objects	5000 points

DNP3 Serial

Mode	Outstation
Objects Supported	Binary inputs Analog inputs Counters Frozen counters Binary outputs Analog outputs
Max. No. of Client Connections	1
Max. No. of Objects	5000 points

IEC 60870-5-101

Mode	Server (balanced/unbalanced)
Objects Supported	Single point Double point Step position Bit string of 32 bit Measured value (normalized) Measured value (scaled) Measured value (floating) Integrated totals
Max. No. of Client Connections	1
Max. No. of Information Objects	5000 points

IEC 60870-5-104

Mode	Server
Objects Supported	Single point Double point Step position Bit string of 32 bit Measured value (normalized) Measured value (scaled) Measured value (floating) Integrated totals

Max. No. of Client Connections	32
Max. No. of Information Objects	5000 points

Memory

microSD Slot	Up to 32 GB (SD 2.0 compatible)

Power Parameters

Input Voltage	12 to 48 VDC
Input Current	455 mA (max)
Power Connector	Spring-type Euroblock terminal

Relays

Contact Current Rating	Resistive load: 2 A @ 30 VDC

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	25 x 90 x 129.6 mm (0.98 x 3.54 x 5.1 in)
Weight	294 g (0.65 lb)

Environmental Limits

Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	EN 61010-2-201 UL 61010-2-201
EMC	EN 61000-6-2/-6-4
EMI	FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V/m IEC 61000-4-8 PFMF: 100 A/m
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6 IEC 60068-2-64
Power Substation	IEEE 1613 IEC 61850-3
International Approval	UKCA KC

MTBF

Time	1,240,821 hrs
Standards	Telcordia SR332

MOXA
Reliable Networks ▲ Sincere Service

Warranty

Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents	
Device	1 x MGate 5192 Series gateway
Documentation	1 x quick installation guide 1 x warranty card

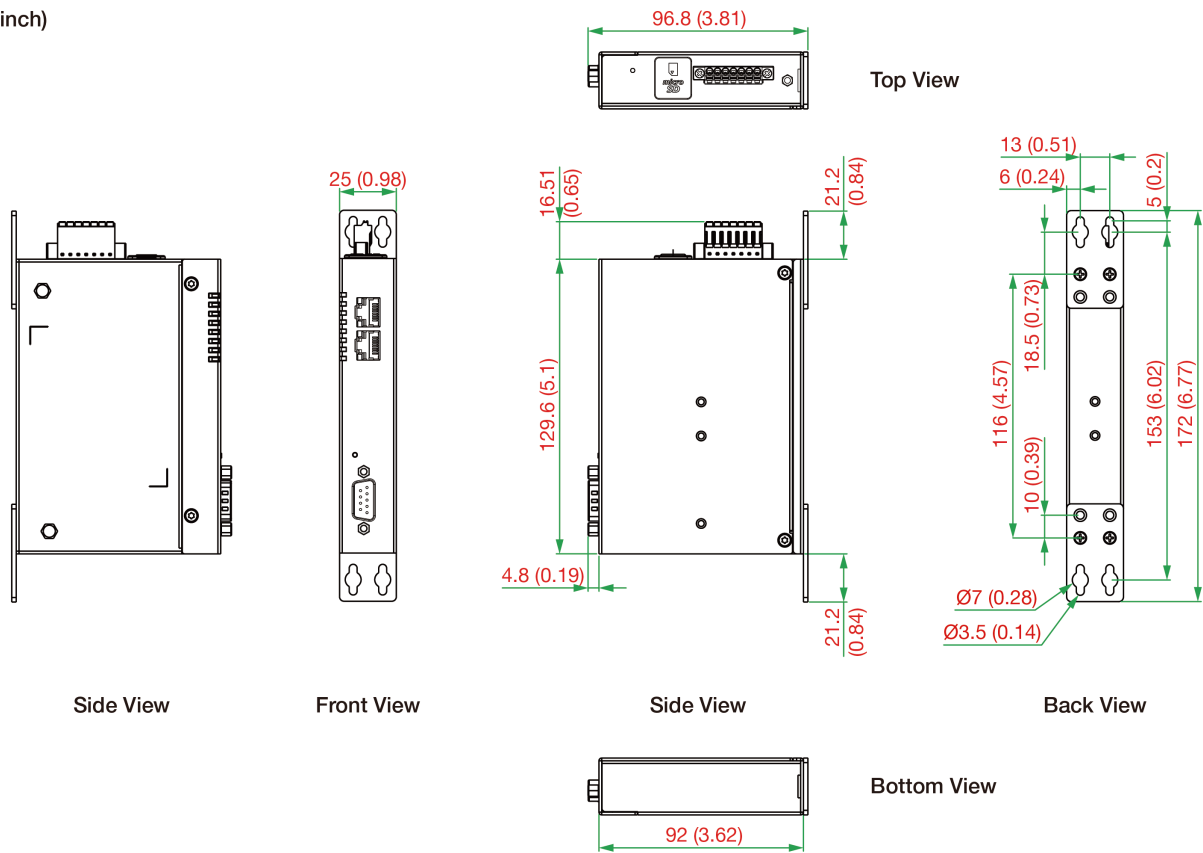# Dimensions

DIN-rail Mounting

Unit: mm (inch)

Top View

25 (0.98)

Side View Front View Side View Back View

Bottom View
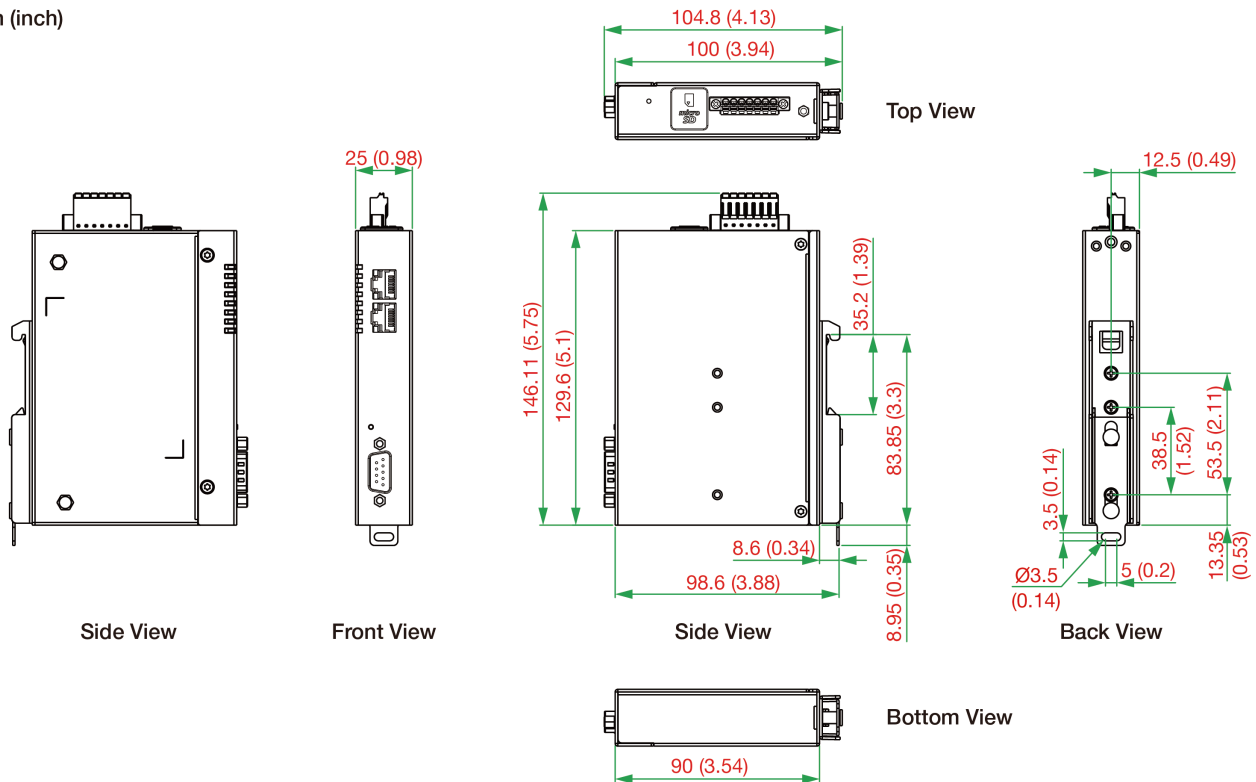
DIN-rail Mounting (side view)

Unit: mm (inch)

94.8 (3.73)
35 (1.38)
Top View

25 (0.98)
45 (1.77)
129.6 (5.1)
146.11 (5.75)
83.85 (3.3)
38.5 (1.52)
53.5 (2.11)
35.2 (1.39)
8.6 (0.34)
33.6 (1.32)
Ø3.5 (0.14)
5 (0.2)
13.35 (0.53)
8.95 (0.35)

Side View   Front View   Side View   Back View

Bottom View

90 (3.54)

Wall Mounting

Unit: mm (inch)

96.8 (3.81)
Top View

25 (0.98)
16.51 (0.65)
21.2 (0.84)
13 (0.51)
6 (0.24)
5 (0.2)
129.6 (5.1)
116 (4.57)
18.5 (0.73)
10 (0.39)
153 (6.02)
172 (6.77)
4.8 (0.19)
21.2 (0.84)
Ø7 (0.28)
Ø3.5 (0.14)

Side View   Front View   Side View   Back View

Bottom View

92 (3.62)
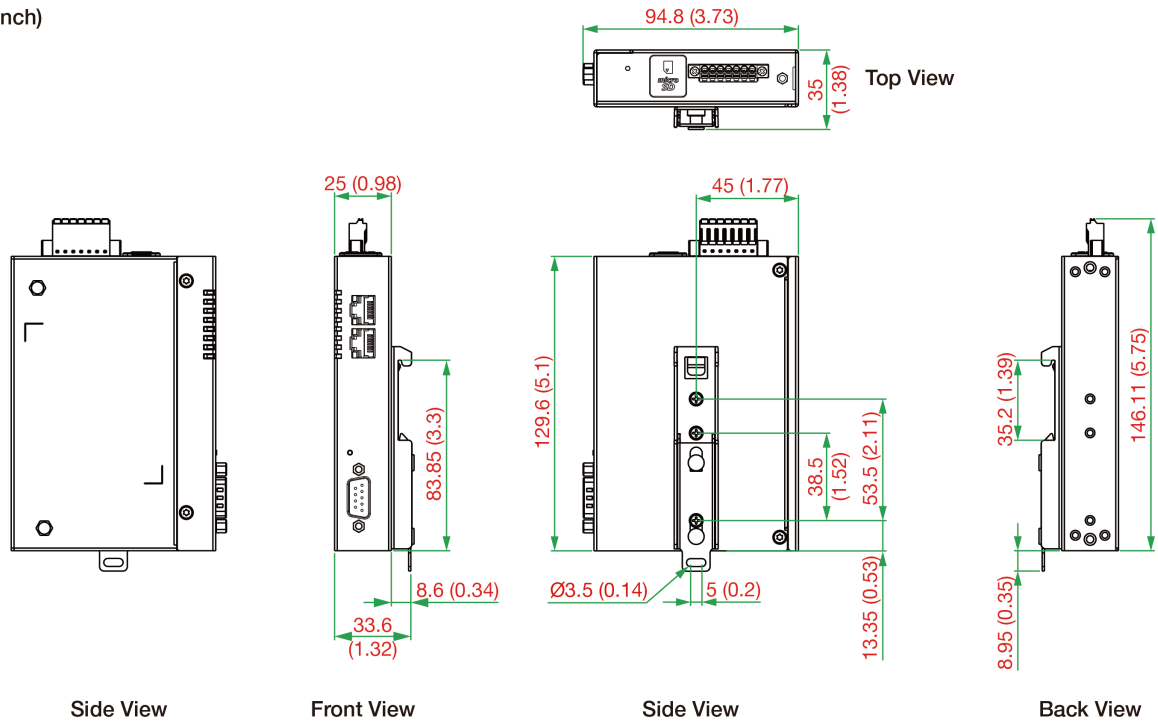
Ordering Information

Model Name	No. of Serial Ports	Operating Temperature
MGate 5192-T	1	-40 to 75°C

Accessories (sold separately)

Connectors

Mini DB9F-to-TB	DB9 female to terminal block connector

Wall-Mounting Kits

WK-25	Wall-mounting kit, 2 plates, 4 screws, 25 x 43 x 2 mm

MOXA
Reliable Networks ▲ Sincere Service