MGate 5123 Series

1-port CAN-to-PROFINET gateways

Features and Benefits

- Simultaneous protocol conversions from CANopen, J1939, and proprietary CAN (CAN 2.0A/B) to PROFINET and SNMP
- Supports PROFINET I/O device and SNMP agent
- Supports CANopen master, J1939, and proprietary CAN (CAN 2.0A/B)
- 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
- CAN port with 2-kV isolation protection
- -40 to 75°C wide operating temperature models available
- Developed according to IEC 62443-4-2 with Secure Boot

Certifications

Introduction

The MGate 5123 is an industrial Ethernet gateway for converting CANopen, J1939, and proprietary CAN (CAN 2.0A/B) to PROFINET network communications. To integrate existing CAN–based devices onto a PROFINET network, use the MGate 5123 as a CAN Master to collect data and exchange data with the PROFINET IO controller. All models are protected by a rugged and compact metal housing and are DIN-rail mountable. The rugged design is suitable for industrial applications such as factory automation, process automation, and power applications.

Easy Configuration

The MGate 5123 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 CANopen devices can be time-consuming and increase costs. The MGate 5123 gateways provide EDS file import function and user can auto scan the CANopen devices to help complete the settings quickly. The MGate gateways provide software-configurable termination resistor settings for CANbus to reduce efforts by eliminating the need to open the chassis.

Easy Troubleshooting

The MGate 5123 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 PLC/DCS/SCADA system when a CAN device gets disconnected or does not respond, in which case the process PLC/DCS gets the status of each end device and then issues alarms to notify operators. The fault protection function executes actions pre-defined by the user when a host gets disconnected to prevent the end devices from going offline for long periods of time.

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	PROFINET IO Device
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
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)

CAN Interface

No. of Ports	1
Connector	Spring-type Euroblock terminal
Standards	ISO 11898-2
Baudrate	CANopen, proprietary CAN: 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, 1 Mbps J1939: 250 kbps, 500 kbps, 1 Mbps
Terminator	120 ohms software configurable
Signals	CAN_H, CAN_L, GND, Ext_CAN_H, Ext_CAN_L, CAN_Shield

CAN Software Features

Industrial Protocols	CANopen J1939 Proprietary CAN (CAN 2.0A/B)

CANopen

Mode	Master
Max No. of Nodes	64
Max No. of Receive PDOs	256
Max No. of Transmit PDOs	256
SDOs	Supported

Input Data Size	2048 bytes
Output Data Size	2048 bytes

J1939

Max. No. of Commands	256
Total Input Data Size	2048 bytes
Total Output Data Size	2048 bytes

Proprietary CAN

Frame Format	CAN 2.0A CAN 2.0B
Max. No. of Transactions	256
Input Data Size	2048 bytes
Output Data Size	2048 bytes

PROFINET

Mode	IO Device class B
Max. No. of Master Connections	2 IO controllers (shared devices)
Total Input Data Size	1440 bytes (bytes per IO Controller, total: 2880 bytes)
Total Output Data Size	1440 bytes (bytes per IO Controller, total: 2880 bytes)

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	MGate 5123: -10 to 60°C (14 to 140°F) MGate 5123-T: -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: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6 IEC 60068-2-64

MTBF

Time	1,408,984 hrs hrs
Standards	Telcordia Standard SR-332

Warranty

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

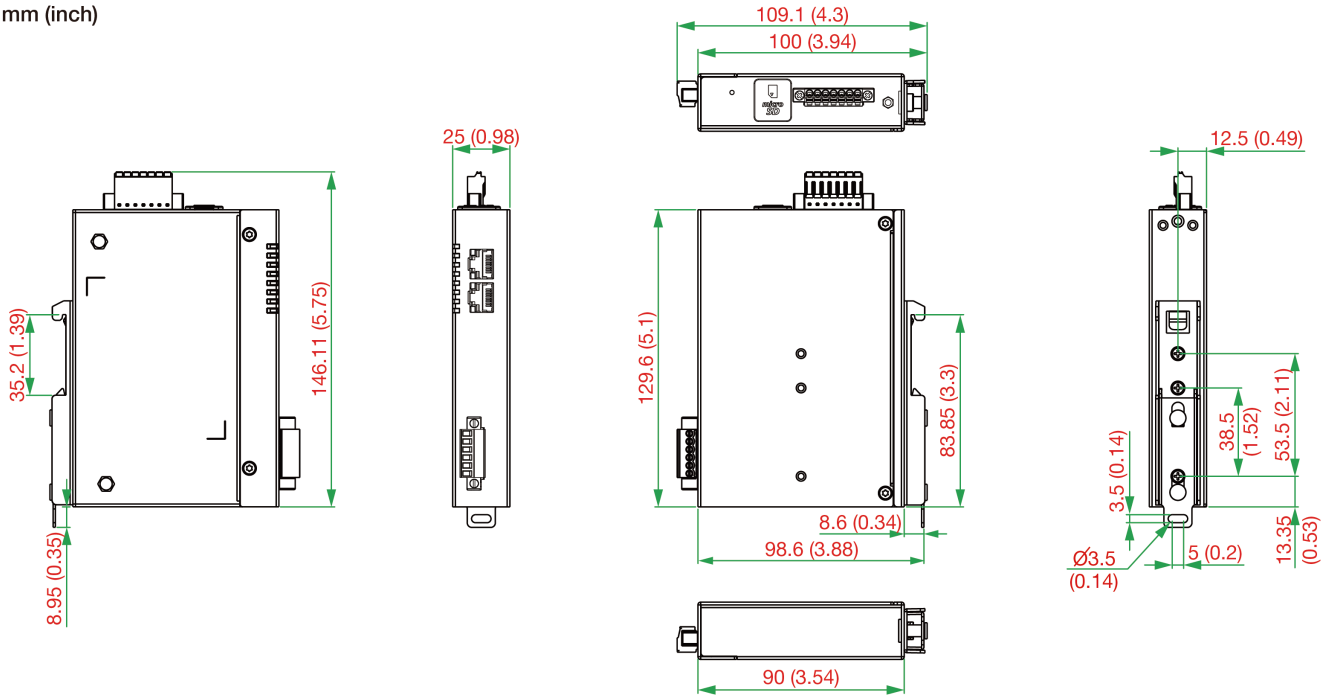
Package Contents

Device	1 x MGate 5123 Series gateway (with DIN-rail bracket preinstalled)
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

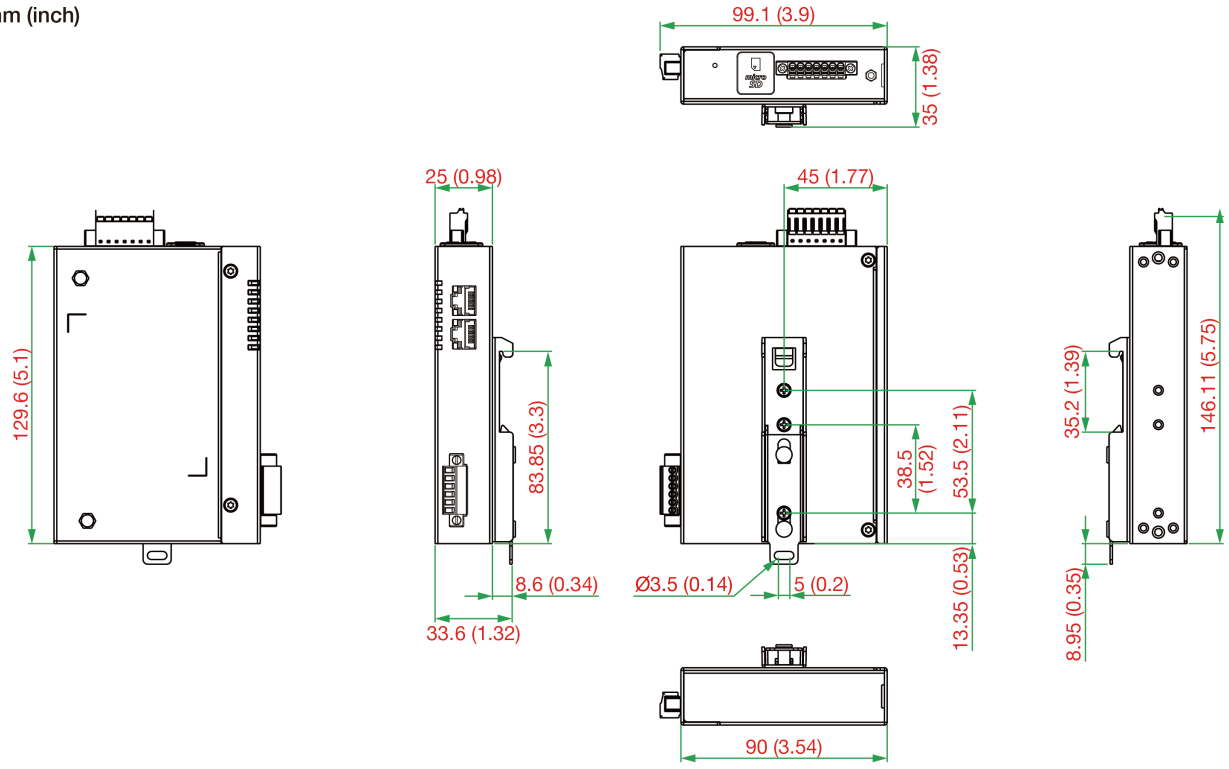
DIN-rail Mounting

Unit: mm (inch)



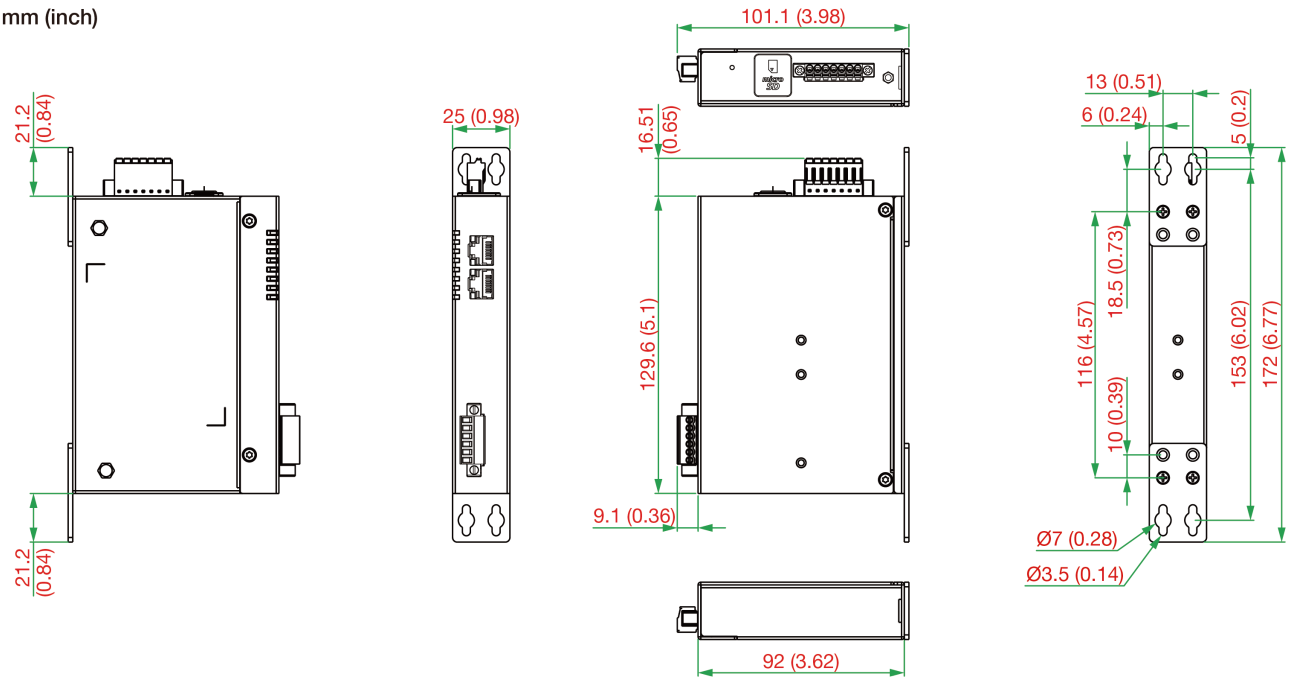
DIN-rail Mounting (side view)

Unit: mm (inch)



Wall Mounting

Unit: mm (inch)



Ordering Information

Model Name	No. of Serial Ports	Operating Temperature
MGate 5123	1	-10 to 60°C
MGate 5123-T	1	-40 to 75°C

Accessories (sold separately)

Wall-Mounting Kits

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