MGate EIP3170/EIP3270 Series

1 and 2-port EtherNet/IP-to-DF1 gateways

Features and Benefits

- PCCC objects for Rockwell Automation networks supported
- Use ProCOM to implement control via COM port mapping
- 8 simultaneous EtherNet/IP client/server pairs with up to 16 queued requests
- Serial redirector keeps the original serial master and slave connection while connecting devices to the Ethernet
- EtherNet/IP and DF1 traffic monitor for easy troubleshooting
- Redundant dual DC power inputs
- Built-in Ethernet cascading for easy wiring
- -40 to 75°C wide operating temperature models available

Certifications

Introduction

MGate™ EIP3000 gateways provide Ethernet/IP-to-DF1 protocol conversion for users who need to connect Allen Bradley PLCs to an EtherNet/IP network. With a number of innovative functions, the MGate™ Series overcomes the difficulties of connecting between legacy serial devices and SCADA software. Both 1 and 2-port gateways are available for use with different-sized control networks.

Protocol Conversion between DF1 and EtherNet/IP

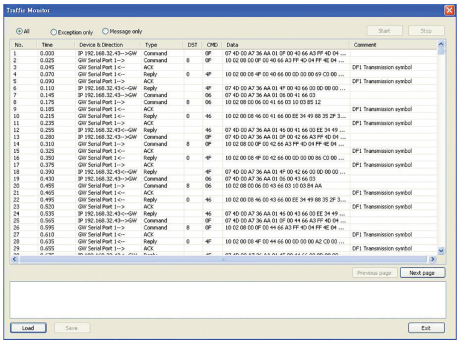
By supporting PCCC objects on CIP, the MGate™ EIP3000 can communicate seamlessly with SCADA software such as RSLinx. For users who develop control software based on EtherNet/IP, the MGate EIP3000 offers the standard interface for connection.

Support for Multiple EtherNet/IP Connections

MGate™ EIP3000 gateways support up to 16 EtherNet/IP clients and servers simultaneously. Each client can send up to 16 requests at a time, and the multiple connection capability can help establish redundancy for more complex control systems.

Windows Utility for Easy Configuration and Traffic Monitoring

Moxa provides a user-friendly Windows utility with multi-language support. The utility supports a traffic monitoring function for EtherNet/IP and DF1 protocols, and not only logs events initiated by the gateway, but also records all commands and responses that pass through the gateway. The utility helps users determine the root cause of failures and performance bottlenecks.



Serial Redirector Function Maintains Original Master/Slave Connections

The serial redirector function allows the commands of a serial master (command initiator) to be redirected to the serial slave (command executor) on another port. In addition, a serial master can operate simultaneously with EtherNet/IP masters without changing the DF1 architecture or software. With the serial redirector function, MGate™ EIP3000 gateways can establish redundant control of legacy slave devices that were originally designed to be controlled by a single serial master.

ProCOM Implements Control via COM Port Mapping

Each MGate™ EIP3000 gateway supports virtual serial ports for the remote PC. You can connect to the MGate™ EIP3000 through the COM port by using Moxa's Real COM driver, with the actual physical connection over the Ethernet. The gateway supports up to four virtual COM port connections and offers greater flexibility when designing redundant control systems.

Pull High/Low Resistors and Terminator Selection

When using termination resistors to prevent serial signal reflection, it is important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor values is universally compatible with all environments, the EIP3000 has DIP switches on the bottom panel for setting the termination and pull high/low resistor values.

Built-In Isolation

Complex device networks that incorporate high amperage devices could be subject to electrical signal distortion from electrical discharges, magnetic noise, or common mode transients. MGate™ Series products solve this problem by using built-in optical isolation.

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	Ethernet/IP (PCCC)
Configuration Options	MGate Manager, Telnet Console
Management	SNMPv1

Serial Interface	
No. of Ports	MGate EIP3170 Series: 1 MGate EIP3270 Series: 2
Connector	MGate EIP3170 Series: DB9 male for RS-232, Terminal block for RS-422/485 MGate EIP3270 Series: 2 x DB9 male
Serial Standards	RS-232, RS-422
Baudrate	1200 bps to 921.6 kbps
Data Bits	8
Parity	None, Even, Odd
Stop Bits	1, 2
Flow Control	RTS/CTS, DTR/DSR (RS-232 only)
Isolation	MGate EIP3170I: 2 kV (I models) MGate EIP3170I-T: 2 kV (I models) MGate EIP3270I: 2 kV (I models)

Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND

Serial Software Features	
Industrial Protocols	DF1

DF1 (Transparent)	
Mode	Full duplex
Max. No. of Client Connections	8

Power Parameters

Input Voltage	12 to 48 VDC
Input Current	MGate EIP3170/EIP3270/EIP3170-IEX/EIP3270-IEX Series: 435 mA @ 12 VDC MGate EIP3170I/EIP3170I-IEX Series: 555 mA @ 12 VDC MGate EIP3270I/EIP3270I-IEX: 510 mA @ 12 VDC

Relays

Contact Current Rating	Resistive load: 1 A @ 30 VDC

Physical Characteristics

Housing	Plastic top cover, metal bottom plate
IP Rating	IP30
Dimensions (with ears)	29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)
Dimensions (without ears)	29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)
Weight	MGate EIP3170 Series: 360 g (0.79 lb) MGate EIP3270 Series: 380 g (0.84 lb)

Environmental Limits

Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -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 60950-1, UL 508
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 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: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs
Hazardous Locations	ATEX, Class I Division 2, IECEx[1]
Maritime	MGate EIP3170: DNV-GL, MGate EIP3170-T: DNV-GL, MGate EIP3170I: DNV-GL, MGate EIP3170I-T: DNV-GL
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6, IEC 60068-2-64

1. If you need an IECEx certificate for this product, please contact a Moxa sales representative.

MTBF

Time	MGate EIP3170: 1,344,456 hrs MGate EIP3170-T: 1,344,456 hrs MGate EIP3170-IEX: 1,344,456 hrs MGate EIP3170-T-IEX: 1,344,456 hrs MGate EIP3170I: 1,344,456 hrs MGate EIP3170I-T: 1,344,456 hrs MGate EIP3170I-IEX: 1,344,456 hrs MGate EIP3170I-T-IEX: 1,344,456 hrs MGate EIP3270: 1,204,573 hrs MGate EIP3270-T: 1,204,573 hrs MGate EIP3270-IEX: 1,204,573 hrs MGate EIP3270-T-IEX: 1,204,573 hrs MGate EIP3270I: 1,204,573 hrs MGate EIP3270I-IEX: 1,204,573 hrs
Standards	Telcordia SR332

Warranty

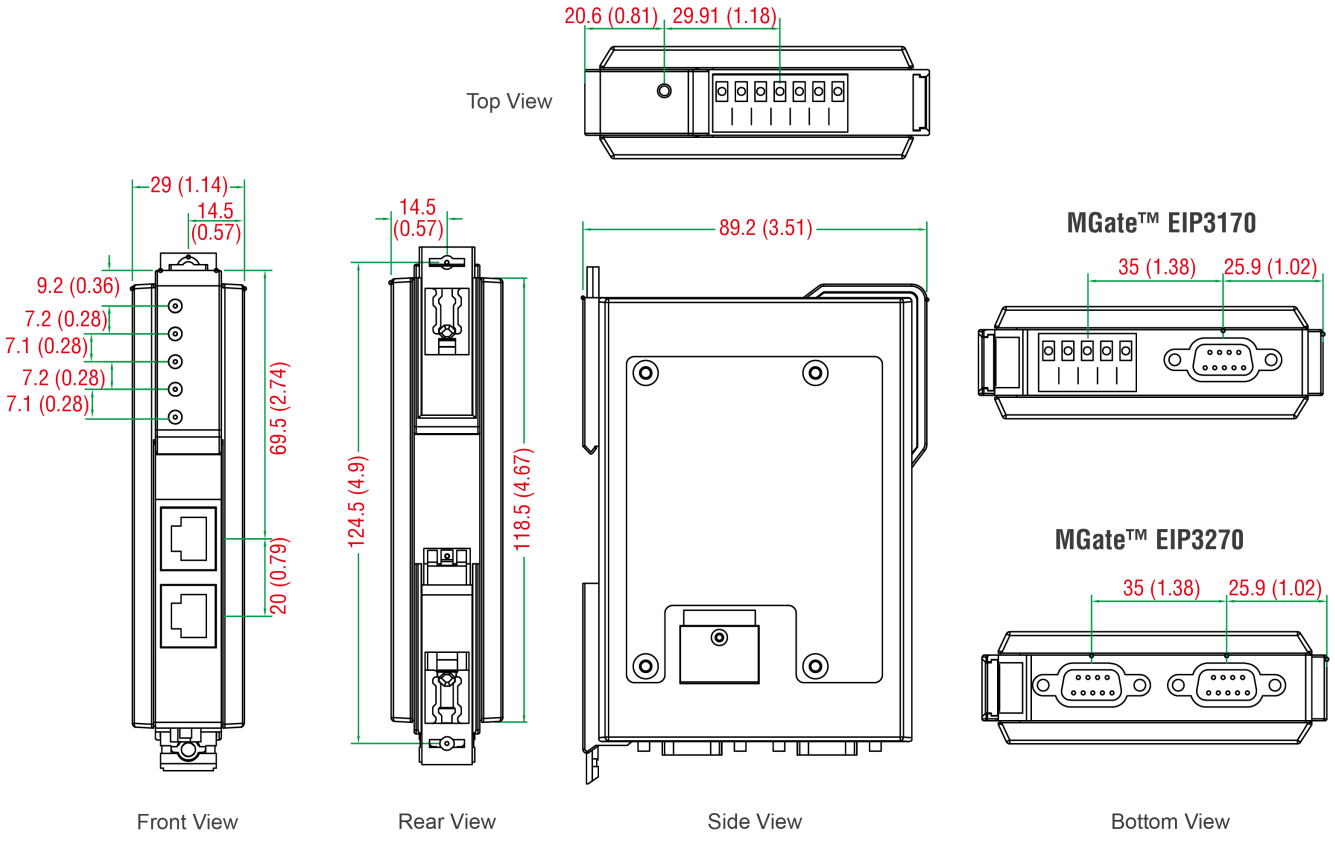
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x MGate EIP3170/EIP3270 Series gateway
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	No. of Serial Ports	Serial Connector	Serial Isolation	Operating Temp.
MGate EIP3170	1	RS-232: DB9 male RS-422/485: Terminal block	–	0 to 60°C
MGate EIP3170I	1	RS-232: DB9 male RS-422/485: Terminal block	2 kV	0 to 60°C
MGate EIP3270	2	DB9 male	–	0 to 60°C
MGate EIP3270I	2	DB9 male	2 kV	0 to 60°C
MGate EIP3170-T	1	RS-232: DB9 male RS-422/485: Terminal block	–	-40 to 75°C
MGate EIP3170I-T	1	RS-232: DB9 male RS-422/485: Terminal block	2 kV	-40 to 75°C
MGate EIP3270-T	2	DB9 male	–	-40 to 75°C

Accessories (sold separately)

Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm

Connectors

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

Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable