MGate™ EIP3000 Series

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

- 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

ProCOM

IEC IECEx Ex cULus LISTED CE FC

Overview

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

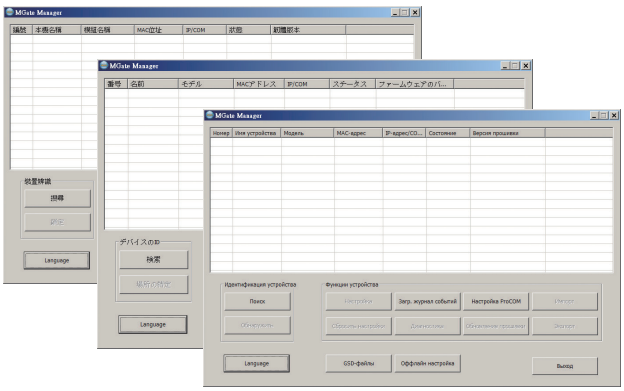
By supporting PCCC objects on CIP, the MGate™ EIP3000 can communicate seamlessly with SCADA software such as RSLinx. For users who develop control software based on EtherNet/IP, MGate EIP3000 offers the standard interface for connection.

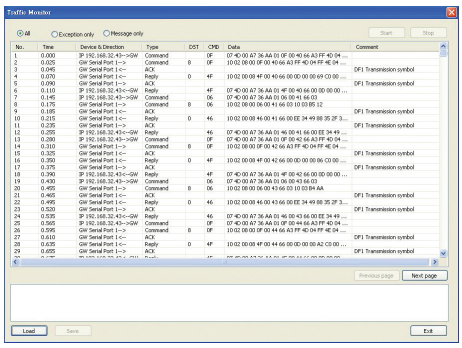
Support for Multiple EtherNet/IP Connections

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 Setup 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 4 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

Protocols: CIP (PCCC) on EtherNet/IP
Number of Ports: 2 (1 IP, supports Ethernet cascading)
Speed: 10/100 Mbps, Auto MDI/MDIX
Connector: 8-pin RJ45
Magnetic Isolation Protection: 1.5 kV (built-in)

Serial Interface

Protocol: DF1 Full-duplex
Number of Ports:
EIP3170/3170I: 1
EIP3270/3270I: 2
Serial Standards: RS-232/422, software selectable
Connectors:
EIP3170/3170I: DB9 male for RS-232, terminal block for RS-422
EIP3270/3270I: DB9 male x 2
ESD Protection: 15 kV for all signals

Serial Communication Parameters

Data Bits: 8
Stop Bits: 1, 2
Parity: None, Even, Odd
Flow Control: RTS/CTS, DTR/DSR (RS-232 only)
Baudrate: 1200 bps to 921.6 kbps

Serial Signals

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

Software

Configuration Options: Serial Console, Telnet Console, Windows Utility
Utility: MGate Manager for Windows 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64), Windows Server 2008 R2, Windows 7/8/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2
Support: Smart Routing, Serial Redirection, ProCOM, MXview, SNMP v1 (read only)

Physical Characteristics

Housing: Plastic, IP30
Weight:
MGate EIP3170: 360 g (0.79 lb)
MGate EIP3270: 380 g (0.84 lb)
Dimensions:
Without ears: 29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)
With ears extended: 29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)

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: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Vibration: IEC 60068-2-6, IEC 60068-2-64
Shock: IEC 60068-2-27
Drop: IEC 60068-2-32

Power Requirements

Input Voltage: 12 to 48 VDC
Input Current:
MGate EIP3170: 435 mA @ 12 VDC
MGate EIP3170I: 555 mA @ 12 VDC
MGate EIP3270: 435 mA @ 12 VDC
MGate EIP3270I: 510 mA @ 12 VDC
Power Connector: Terminal block
Relay Output: 1 digital relay output to alarm (normal close); Current carrying capacity: 1 A @ 30 VDC

Standards and Certifications

Safety: UL 508, EN 60950-1
Hazardous Location: Class 1 Division 2, ATEX, IECEx
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: 150 kHz to 80 MHz: 10 V/m
IEC 61000-4-8 PFMF
IEC 61000-4-11

MTBF (mean time between failures)

Time:
MGate EIP3170: 210,794 hrs
MGate EIP3270: 125,234 hrs
Standard: Telcordia SR332

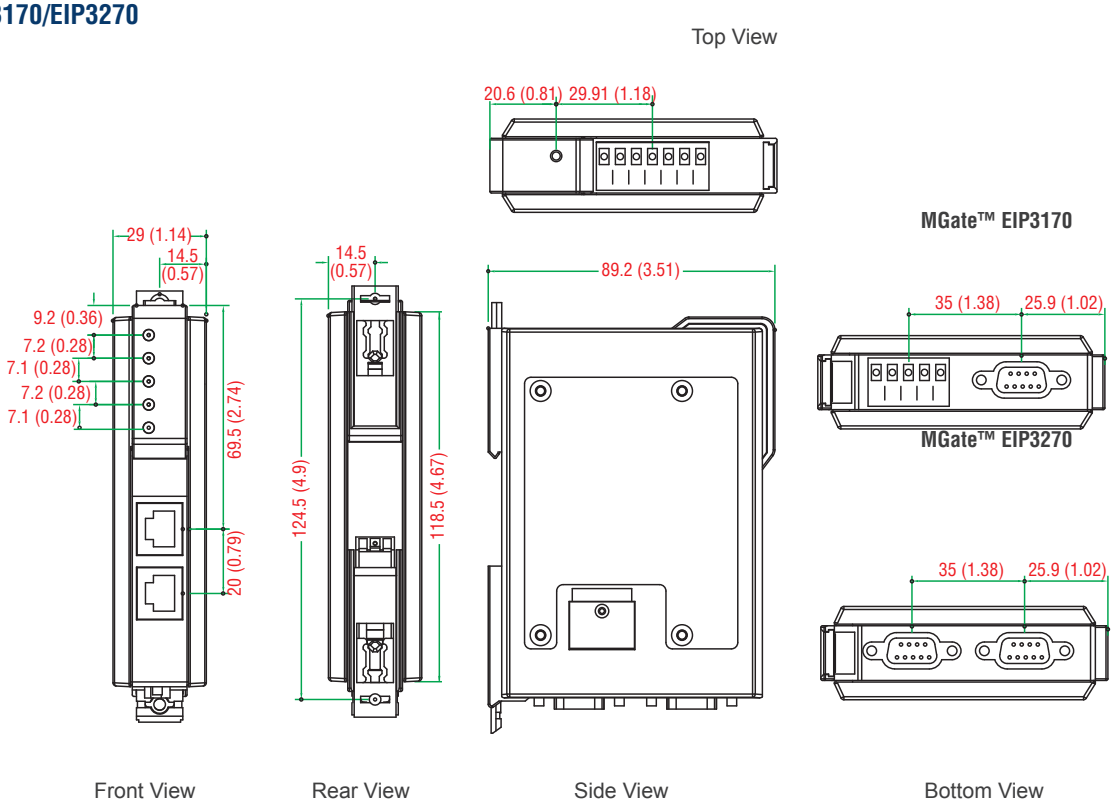
Warranty

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

Dimensions

Unit: mm (inch)

EIP3170/EIP3270



Ordering Information

Available Models

MGate EIP3170: 1-port EtherNet/IP-to-DF1 gateway, 0 to 60°C operating temperature
MGate EIP3170I: 1-port EtherNet/IP-to-DF1 gateway with 2 kV isolation, 0 to 60°C operating temperature
MGate EIP3270: 2-port EtherNet/IP-to-DF1 gateway, 0 to 60°C operating temperature
MGate EIP3270I: 2-port EtherNet/IP-to-DF1 gateway with 2 kV isolation, 0 to 60°C operating temperature
MGate EIP3170-T: 1-port EtherNet/IP-to-DF1 gateway, -40 to 75°C operating temperature
MGate EIP3170I-T: 1-port EtherNet/IP-to-DF1 gateway with 2 kV isolation, -40 to 75°C operating temperature
MGate EIP3270-T: 2-port EtherNet/IP-to-DF1 gateway, -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)

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

Package Checklist

- 1 MGate EIP3170 or EIP3170I or EIP3270 or EIP3270I EtherNet/IP gateway
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card