

Get Integrated— It's Quick, Easy, and Reliable



Industrial Ethernet Gateway Solutions

- **Quick** installation, in just minutes
- **Easy** to maintain, with built-in monitoring and diagnostics
- **Reliable** performance, for uninterrupted operation

Easily Integrate Industrial Ethernet and Fieldbus Devices with MGate

To optimize production and efficiency and reduce operational costs, more and more industrial automation operators are taking advantage of industrial Ethernet-based networking options—including PROFINET, EtherNet/IP, and Modbus TCP—for the centralized control of real-time data.

Operators are understandably reluctant to discard existing investments in Fieldbus devices, even though network migration comes with a long list of useful enhancements. In addition, operators may reduce costs by using devices that support different protocols, such as for calibration, configuration, diagnostics, and testing, which will inevitably require a gateway to link new and old field devices.

Many system operators know the benefits of automation networks, but the obstacles to switching may seem too high. Fortunately for them, Moxa's industrial Ethernet gateways come with innovative technologies that simplify the deployment and maintenance of Fieldbus devices. System operators can use Moxa's gateways as a convenient solution to connect their Fieldbus devices with industrial network protocols, while retaining their traditional devices.

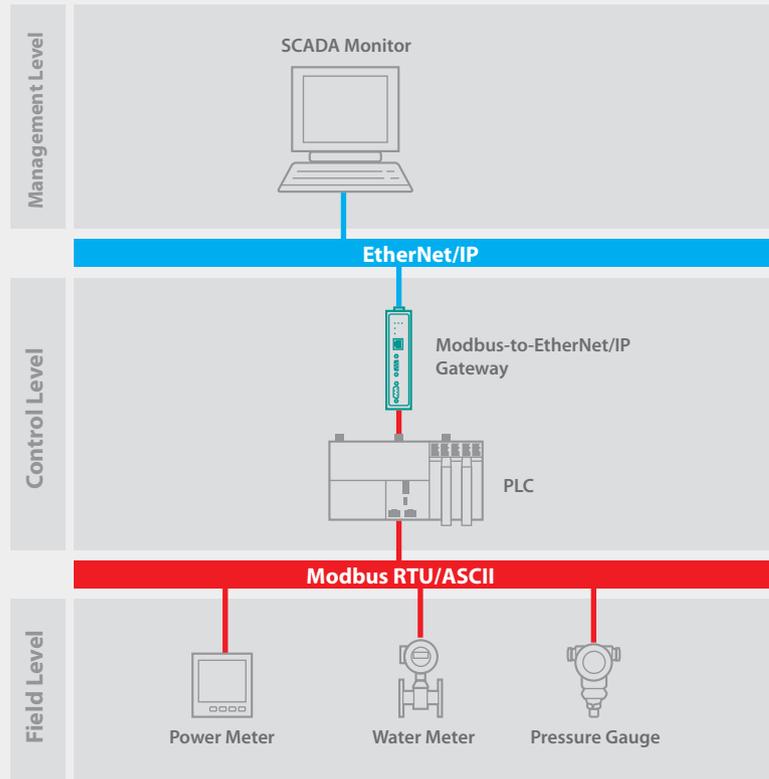




Typical MGate Gateway Applications

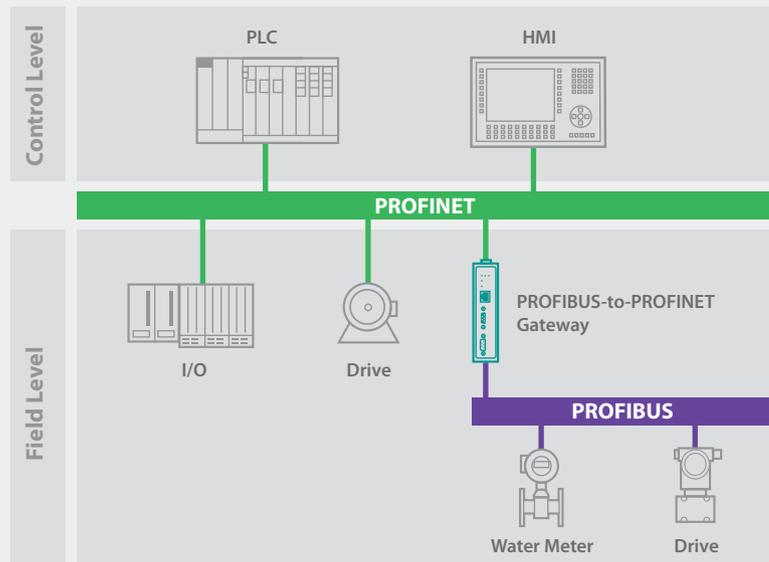
- **PLC as slave:**

Integrate field devices to allow remote monitoring and management



- **PLC as master:**

Integrate new intelligent devices with existing devices



Moxa's industrial Ethernet gateways let you

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Quick installation, in just minutes

To make integration easier, Moxa's industrial Ethernet gateways provide automatic technologies that allow users to configure the gateways in only a few minutes. The **AutoScan** function enables MGate to automatically detect PROFIBUS devices with just one click, and the **AutoCalibration** function can be used to easily configure response timeout settings. In addition, the **QuickLink** function allows gateways to automatically detect parameters, and map them into a format suitable for use by PLCs.

Easy to maintain, with built-in monitoring and diagnostics

Unpredictable adverse events will increase the cost of manufacturing operations, and Moxa gateways provide effortless management tools for easy monitoring and troubleshooting. Administrators can take advantage of the web-based monitoring tool to monitor I/O data and log recording of field devices. In addition to minimizing downtime, Moxa gateways provide **Event Log** to record important events such as network problems and protocol issues, and use **Fault Relay** to turn on alarms for onsite troubleshooting.

Reliable performance, for uninterrupted operation

For mission-critical industrial applications, the failure of a single link can affect operational efficiency. Moxa's gateways are certified for use in hazardous environments (**ATEX Zone 2, Class 1 Division 2**), support a **-40 to 75°C** wide operating temperature (the highest operating temperature on the market; available with some models), and feature **Dual Power Inputs** for connecting to a redundant power source to ensure reliable performance. In addition, Moxa gateways are recognized by several important organizations, such as PROFIBUS & PROFINET International (PI), Open DeviceNet Vendors Association (ODVA™), and the Modbus Organization (Modbus.org).

Visit the MGate website (www.moxa.com/MGate_Gateway) for further information

Oil Pipeline Monitoring



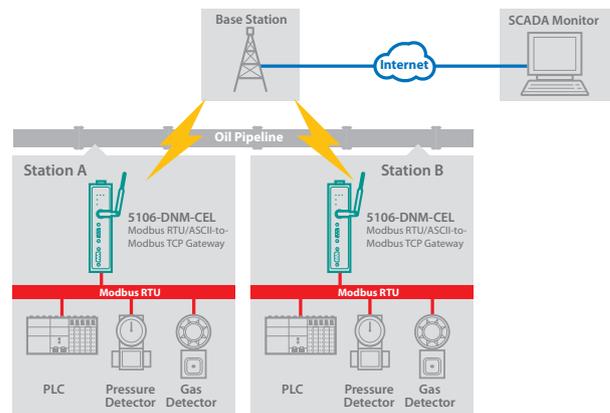
Modbus RTU/ASCII to Modbus TCP (cellular network)

Pipeline networks can stretch for hundreds of miles, and to decrease the risk of explosions and leakage, a reliable remote monitoring system that includes meters and PLCs to manage onsite operations is an absolute must. To achieve this, many systems now use a cellular network to transmit Modbus RTU data from field devices back to the SCADA Modbus TCP network. In this case, a Modbus gateway that supports cellular transmissions and VPN tunneling is required to provide a reliable and secure connection.

Moxa's Solution:

MGate 5106-DNM-CEL (available in Q3, 2013)

- Supports VPN tunneling to avoid security issues
- Surge and isolation protection for serial ports
- Relay alarms and dual power inputs for event notification and power redundancy
- Wide operating temperature range of -40 to 75°C, suitable for outdoor environments



Drilling Rig Control and Monitoring



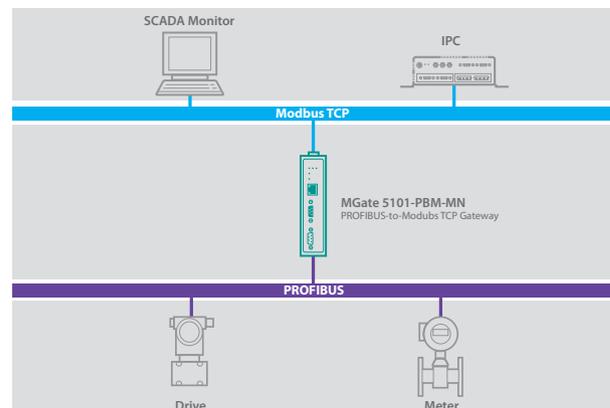
PROFIBUS to Modbus TCP

Drilling for oil and gas involves many risks, and even a tiny mistake could cause leaks or spills that result in serious accidents and contribute to environmental pollution. To prevent accidents and ensure accurate drive-to-drill operation, operators use industrial gateways to bridge Modbus TCP networks with PROFIBUS-based meters or drives for real-time remote control.

Moxa's Solutions:

MGate 5101-PBM-MN

- The one-click AutoScan function allows gateways to detect data from PROFIBUS I/O modules directly
- The web-based monitoring tool enables easy maintenance and configuration
- The fault value function allows gateways to automatically return to default settings to prevent unpredictable operation when the SCADA connection is lost



Monitoring a Small-Scale Power Generation System



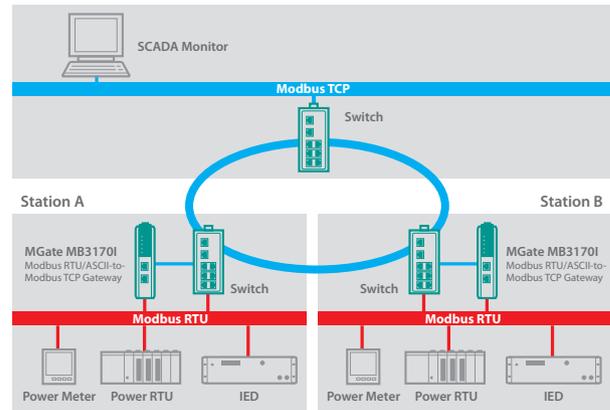
Modbus RTU/ASCII to Modbus TCP

Industrial plants often have their own power generation systems to provide an uninterrupted power supply. To enable continuous monitoring, Modbus is commonly adopted as a communication protocol to transmit large volumes of Modbus RTU monitoring information from power RTUs, IEDs (Intelligent Electronic Devices), and meters, via industrial gateways to the process control system running on a Modbus TCP network.

Moxa's Solutions:

MGate MB3170I

- Surge and isolation protection of serial ports to prevent damage in high power noise environments
- Software selectable RS-232/422/485 function
- Supports up to 31 RS-485 devices on a multi-drop network to connect multiple field devices



Electric Control Panel Monitoring



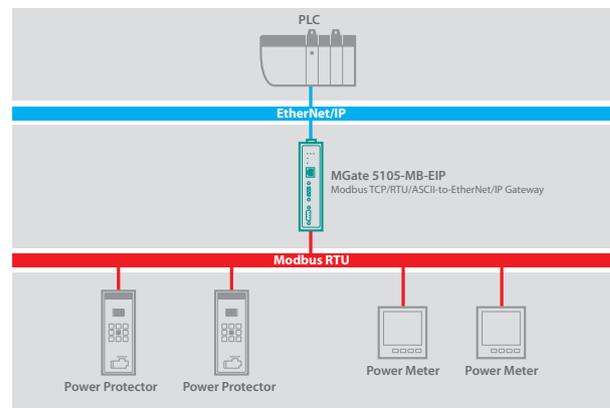
Modbus RTU/ASCII to EtherNet/IP

EtherNet/IP is a communications protocol developed by Rockwell Automation, and is widely used in many large-scale power systems for remote monitoring to ensure reliable performance and energy control. Although ControlLogix PLCs support Modbus modules for connecting a Modbus RTU to EtherNet/IP, it may be too expensive to modify the PLC code and a convenient rack slot may not be available. For this reason, gateways have become a popular way to achieve Modbus communication requirements.

Moxa's Solutions:

MGate 5105-MB-EIP (available in Q2, 2013)

- Friendly web console for easy management
- Surge and isolation protection for serial ports
- Software selectable RS-232/422/485 function
- Supports up to 31 RS-485 devices on a multi-drop network



Monitoring Industrial Scales

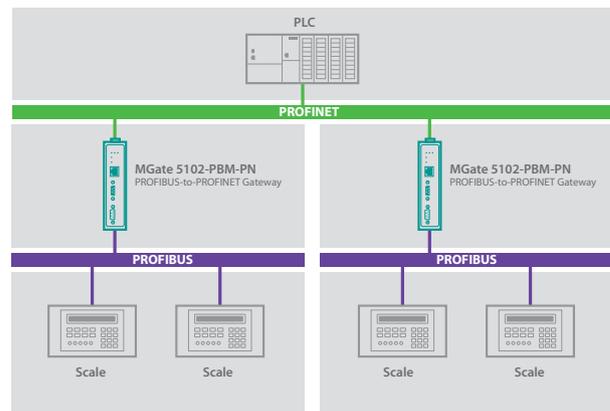


PROFIBUS to PROFINET

In factory automation, more and more engineers are using PROFINET as the major protocol for control-level communication; however, some field devices, such as industrial scales, are still using the PROFIBUS protocol. Although Siemens PLCs support PROFIBUS, this protocol cannot be used to connect the control room to distant field devices. For this reason, engineers use gateways as PROFINET I/O devices, and to transmit data between PROFIBUS devices via a PROFINET network.

Moxa's Solutions: MGate 5102-PBM-PN

- Friendly web console for easy management
- PROFIBUS network status for remote management on PROFINET networks
- SD card function for configuration backup and easy replacement



Water Treatment Plant Monitoring

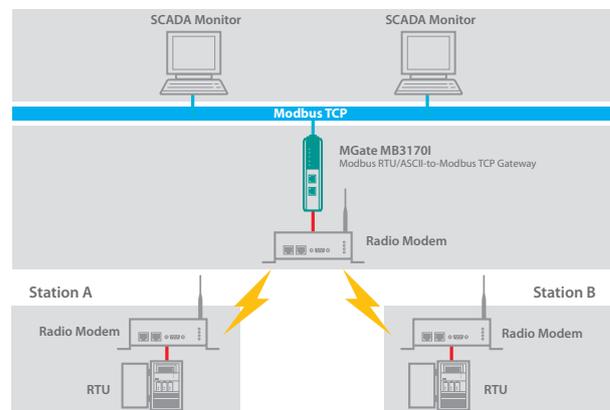


Modbus RTU/ASCII to Modbus TCP

Water treatment is a complicated process that includes both physical and chemical processes, with the two process often separated by a considerable distance. To make monitoring easier, engineers use radio modems to collect RTU system data in Modbus RTU format. However, since most SCADA monitors use Modbus TCP for remote monitoring, a gateway is used to connect the two protocols.

Moxa's Solutions: MGate MB3170I

- Multiple access points for SCADA systems
- Surge and isolation protection of serial ports
- Relay alarm for unexpected event notification
- Dual power inputs for redundancy
- Supports RTS delay function for radio modem communication





Reliable Networks ▲ Sincere Service

Product	MGate MB3170/ 3270	MGate MB3180/ 3280/3480	MGate EIP3170/3270	MGate 4101- MB-PBS	MGate 5101- PBM-MN	MGate 5102- PBM-PN	MGate 5105- MB-EIP	MGate 5106- DNM-CEL
Appearance								
Supported Protocols								
Modbus RTU/ASCII	Master/Slave	Master/Slave		Master/Slave			Master/Slave	Master/Slave
Modbus TCP	Client/Server	Client/Server			Client/Server		Client/Server	Client/Server
DNP3 Serial								Master/Slave
DNP3 TCP								Client/Server
DF1			Full-duplex					
EtherNet/IP			Adaptor				Scanner/Adaptor	
PROFIBUS				DP-V0 Slave	DP-V1 Master	DP-V1 Master		
PROFINET I/O						Device		
Quick Installation								
Innovative Functions*	Modbus AutoCalibration			Modbus QuickLink	PROFIBUS AutoScan	PROFIBUS AutoScan	Modbus QuickLink	
Easy Maintenance								
Protocol Analyzer	Modbus Serial and TCP	Modbus Serial and TCP	DF1	Modbus Serial	Modbus TCP		Modbus Serial and TCP	Modbus Serial and TCP
Fault Relay	•		•	•	•	•	•	•
Event Log					•	•	•	•
Innovative Functions*					I/O Monitoring	I/O Monitoring Active Alarm	I/O Monitoring Active Alarm	
Optimal Deployment								
Ethernet Cascade	•		•			•	•	
Class 1 Division 2, ATEX	•		•			(Pending)	(Pending)	
Temp.: -40 to 75°C	•		•	•	•	•	•	•
Innovative Functions*	ProCOM, Priority Control		ProCOM					

*Learn more about MGate's functions on page 3

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