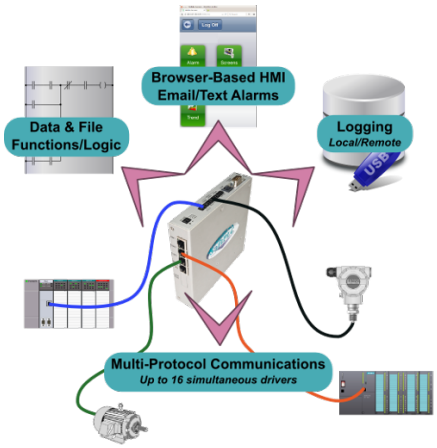
Multi-Function Gateways

Table of Contents

Overview . . . 2
Gateway Applications . . . 3
  Examples . . . 3
Available Protocols . . . 6
Gateway Models . . . 7
  Smart Gateways . . . 7
  NeoPAC Gateways . . . 8
  Other SoftPLC Gateway Models . . . 9
Resources . . . 10
  Data Sheets . . . 10
  Videos . . . 10
  White Papers/Presentations . . . 10
  Manuals . . . 10

Overview

SoftPLC Gateways are unmatched - providing protocol mix flexibility, unlimited data registers and the best communication throughput on the market, as well as providing additional advanced features/options.



All SoftPLC Gateways include a comprehensive set of drivers, from which you can simultaneously specify up to 16 protocols to meet your networking needs. Other vendor's gateways typically support only 2 protocols *(eg: from protocol X to protocol Y)*, and are limited in the number of registers that can be transmitted.

- Up to sixteen (16) different user-selectable protocols are supported simultaneously*
- Hundreds of thousands of data points supported in each Gateway
- Extremely fast data throughput, highly optimized drivers
- Diagnostics, real-time status monitoring & error reporting on each communication network
- Supports user logic for data manipulation *(eg: scaling, averaging, comparisons)*, scheduling, alarm handling, or many other functions
- Built-in data logging
- Compatible with all HMI/SCADA systems
- Optional embedded firewall with VPN support for secure communications
- Optional embedded WiFi/Bluetooth/cell modem for remote access to any attached devices*
- Supports our TagWell cloud platform for remote access via internet
- Optional embedded web server can act as a built-in virtual HMI
- Optional email/text messages to send alarms or reports

A number of SoftPLC Gateway hardware models are available, to meet varying needs for number/type of ports and other requirements. All Gateways are configured using TOPDOC NexGen - included free with your first Gateway purchase!

* *Some protocols may require specific Gateway models and/or hardware configurations.*

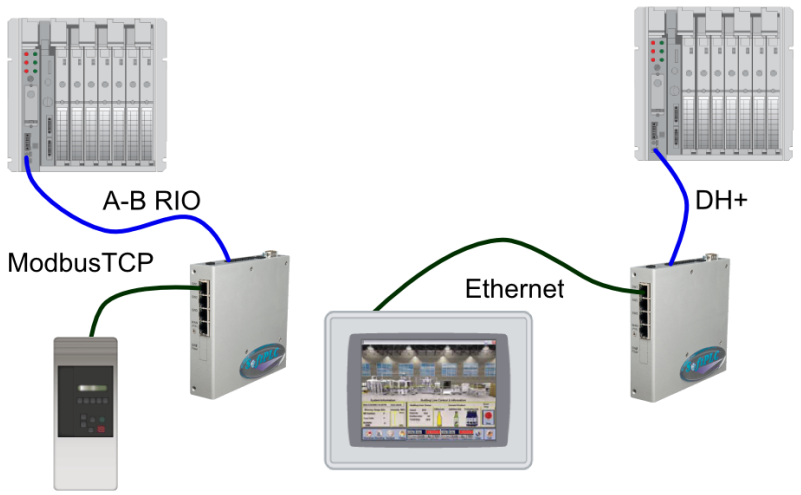
Gateway Applications

Uses for SoftPLC Gateways are many and varied:

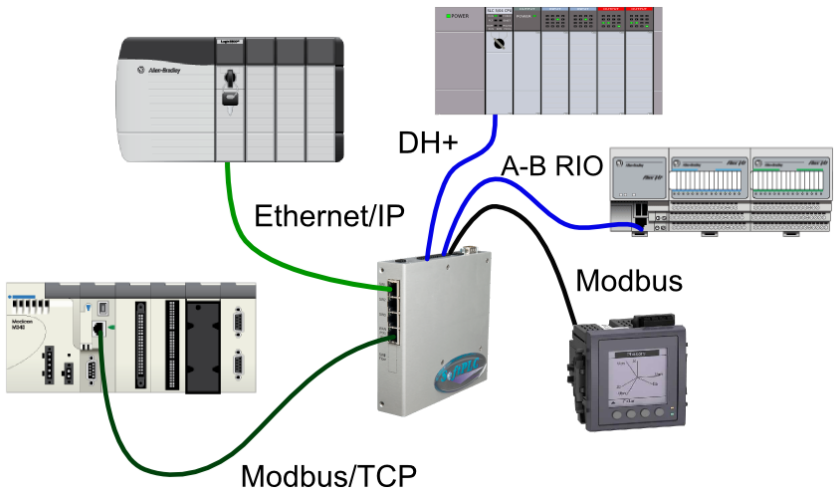
- Multiple protocols provides integration of different vendor's equipment and systems
- Ethernet gateway / data concentrator
- Data logging for tracking and troubleshooting
- Email/text alarms reduce downtime
- Automated data collection/reporting without an HMI/computer
- Remote asset management and control

Examples

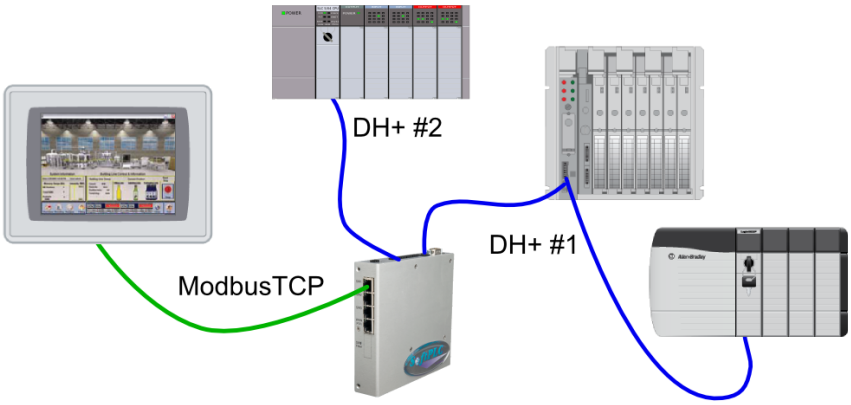
- Upgrade HMI's and/or drives on proprietary networks such as A-B RIO or DH+ without requiring changes to the PLC.



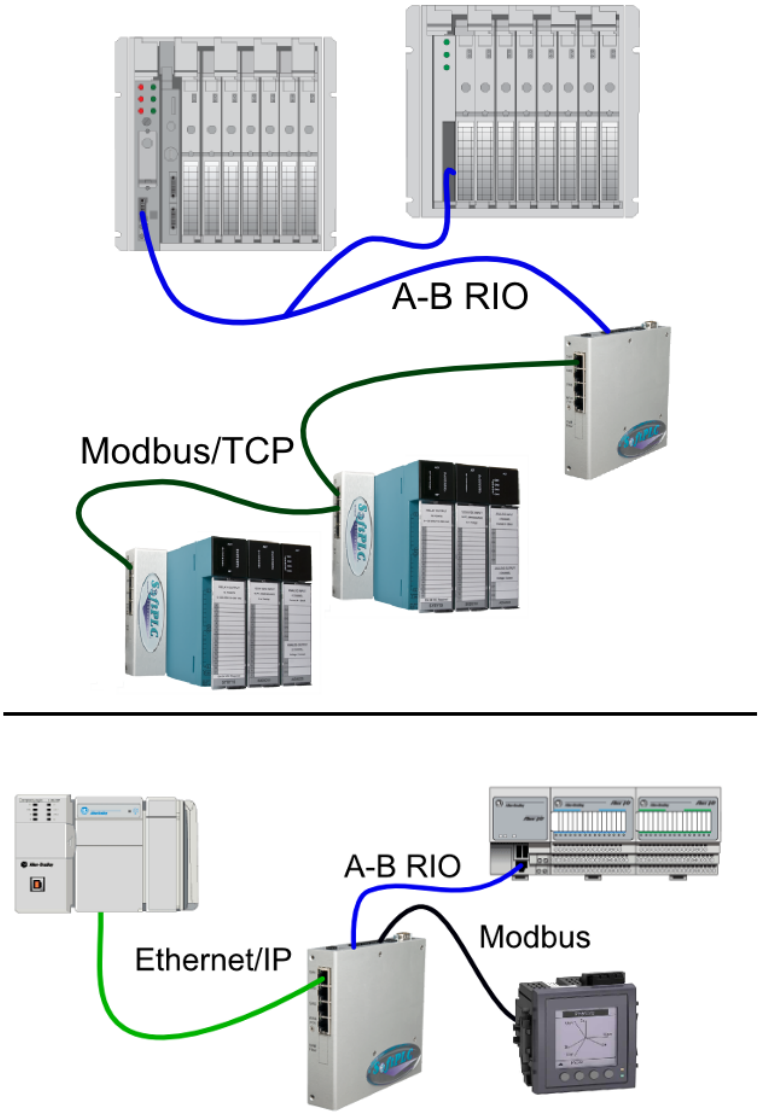
- Communicate data between devices on different network types.



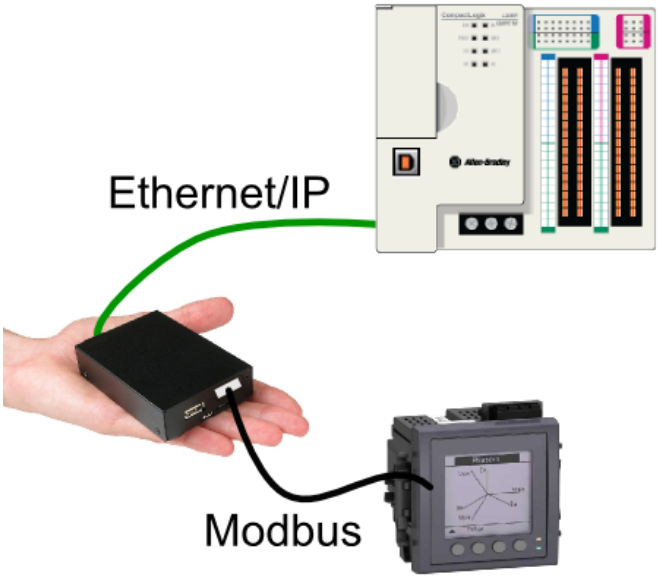
- Pass data from devices on multiple networks or network types to a higher level system *(eg: DCS or SCADA)*.
- Collect data from devices on multiple networks or network types and make it available to a higher level system *("data logger/concentrator")*.



- Add I/O from another vendor to a PAC/PLC installation *(eg: ModbusTCP I/O such as Tealware, DeviceNet/Profibus, Modbus serial.)*



- Low cost serial to ethernet gateways *(eg: Modbus to Ethernet/IP or ModbusTCP, DF1 to Ethernet/IP)*



- Email or text alarm notification from devices at a remote location.
- Provide remote access via a single point to a variety of devices, using a SoftPLC Gateway, a modem, and TagWell cloud for IoT/M2M applications.

Available Protocols

All SoftPLC Gateways can be user configured for up to 16 simultaneous protocols of any mix, dependent only on the available hardware ports in the specific model. The currently available protocols are listed below, others can be added by SoftPLC Corp. or by users with the SoftPLC Programmer's Toolkit. Please contact us for information and/or a quote if you are interested in a protocol not listed.

- ASCII (COMGENIUS)
- Ethernet/IP Adapter (Slave) or Master (Scanner)
- A-B DF1 Serial Full Duplex, Half Duplex Slave
- A-B Ethernet (CSP/PCCC) Master (Client) and Slave (Server)
- A-B RIO Master (Scanner) and Slave (Adapter)*
- A-B Data Highway Plus (DH+)*
- Modbus Serial RTU/ASCII, Master and Slave
- Modbus TCP/UDP Master (Client) and Slave (Server)
- MQTT
- Enron ModbusTCP Master (Client)
- CAN / J1939*
- ProfiNet Slave*
- Profibus Master and Slave*
- DeviceNet Master and Slave*
- CANopen Master and Slave*
- CC Link Slave*
- EtherCAT Master and Slave*
- Powerlink Slave*
- SERCOS Master and Slave*
- ASI Master*
- Interbus Master*
- SDI-12 Sensorbus Master*

* *These protocols require additional hardware and may be limited to specific SoftPLC Gateway models.*

SoftPLC Gateway ports and protocols are configured with TOPDOC NexGen. Most drivers are configured by a simple template editor. Many drivers also include diagnostic registers that can be made available to HMI's, other connected devices, etc.

Gateway Models

A SoftPLC Gateway is, in reality, a SoftPLC Controller. For more details on advanced features, additional hardware/firmware options and available accessories, refer to SoftPLC Controllers for hardware models and universal SoftPLC features information.

Contact us for assistance in selection and configuration of a Gateway for your application.

Smart Gateways

A Smart Gateway combines a basic set of features, to which you can add both hardware and firmware options. Smart Gateways are assembled with your selected options, then undergo a system-level test prior to shipment.

All Smart Gateways include this base set of communication ports:

- 4-port GB managed Ethernet switch with two Ethernet interfaces *(MAC ID's)* to support routing and firewall functions
- One stand-alone GB Ethernet port
- One RS-485 serial communications port
- Two USB 2.0 Host Ports
- Internal WiFi *(requires SPO-WIFIMOD option for antenna extension and case modification)*

For very low cost, up to three (3) factory installed communication option ports can be added, in any mix:

- Additional RS-485 ports, 2-wire isolated
- Allen-Bradley "Blue Hose" ports, support Remote I/O Master or Slave or Data Highway Plus

NeoPAC Gateways

A NeoPAC Gateway combines a basic set of features, to which you can add both hardware and firmware options. NeoPAC Gateways are assembled with your selected options, then undergo a system-level test prior to shipment. NeoPAC Gateways are physically small, value-priced units for serial, Ethernet, and Allen-Bradley bluehose bridging needs. Like all SoftPLC Gateways, NeoPACs provide data passing between networks, and also can be used for advanced functions like data logging, remote access and alarm notification.

Specifications

- (1) GB Ethernet port
- (2) USB 2.0 host ports
- Memory - 512MB RAM minimum
- Storage - 8GB onboard flash, MicroSD up to 8GB optional
- 24VDC power

For very low cost, up to two (2) factory installed communication option ports can be added, in any mix

- RS-485 ports, 2-wire isolated
- Allen-Bradley "Blue Hose" ports, support Remote I/O Master or Slave or Data Highway Plus

Other SoftPLC Gateway Models

Any SoftPLC, such as a Hardbook can also be used as a protocol gateway. Each Hardbook model includes multiple Ethernet, USB, and serial ports, and most can accomodate interfaces to industrial networks via add-on interface cards.

For a small, low cost serial to Ethernet Gateway, a Micro SoftPLC is a great option.

Resources

Data Sheets

SoftPLC Gateways Brochure

Overview of all SoftPLC Gateway features, hardware options, and example applications.

NeoPAC SoftPLC Data Sheet

NeoPAC SoftPLC product features and hardware specifications.

Smart Gateway Data Sheet

Hardware features and specifications for the Smart Gateway.

Available Protocols

Table of available protocols/requirements for each model SoftPLC Gateway.

Videos

A-B Control System Migrations

Describes how SoftPLC Gateways provide great solutions for customers with A-B PLC's to do partial and phased migrations of automation systems to modern technology.

White Papers/Presentations

SoftPLC Gateways

Slide show highlighting features of SoftPLC Gateway products.

Clipboards are out! Protocol Gateways help make IoT efficient, accurate and low cost.

Whitepaper that describes a variety of gateway solutions to tie multi-vendor equipment into cloud-based data acquisition and analytics applications.

Manuals

User manuals and application notes for Gateway configuration, data mapping, etc. for the various protocols can be found in the Support | Resources page.

Smart Quick Start Guide

Quick start communication configuration and troubleshooting guide for Smart family products.

NeoPAC Quick Start Guide

Quick start communication configuration and troubleshooting guide for NeoPAC family products.

Smart/NeoPAC SoftPLC & TOPDOC NexGen User Guide (version 5)

User Guide includes Smart and NeoPAC SoftPLC hardware, and use of TOPDOC NexGen for

configuration for firmware version 5 SoftPLC's. It also describes how SoftPLC operates, common troubleshooting techniques, etc. Detailed programming, instruction set, and software use are in the product's online help system.